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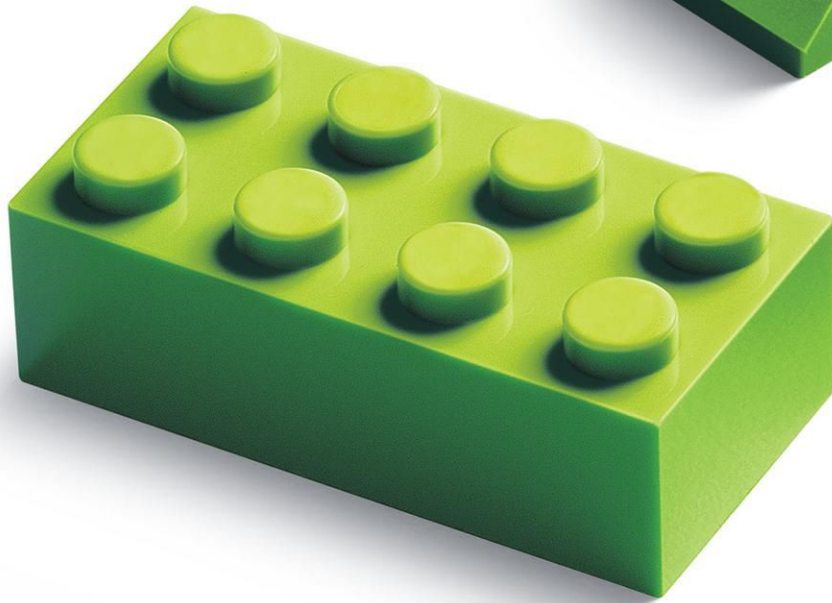
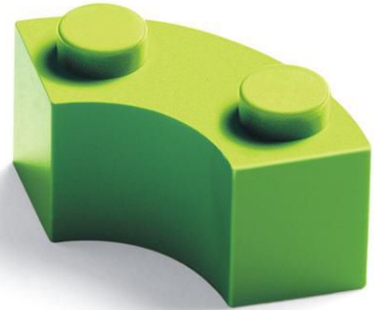
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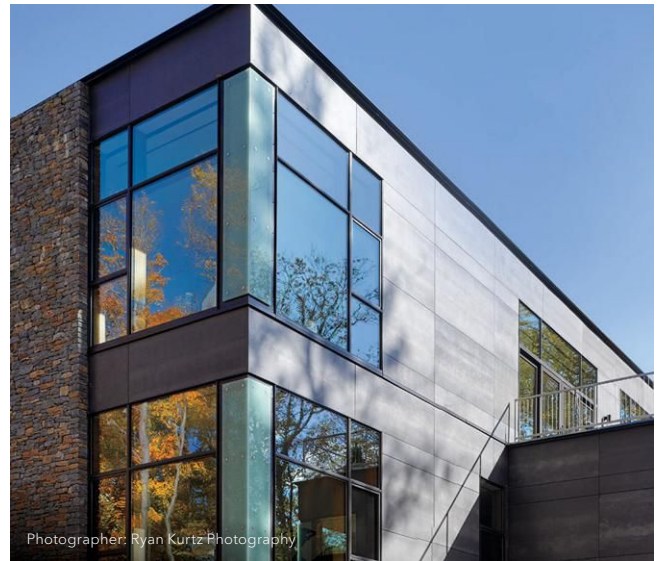
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Beyond the Glass

HOW PELLA ARCHITECTURAL SERVICES HELPED CREATE A MODERN MASTERPIECE.

River Birch House | Jose Garcia Design | Cincinnati, OH



Aiming to create a strikingly modern residence with narrow sightlines, expansive glass and natural materials, Jose Garcia Design turned to the Pella Architectural Support Services team. From preliminary drawings to installation advisory, Pella worked with the acclaimed firm and contractor to deliver solutions that met challenging design requirements – and created one of Cincinnati’s most innovative structures.



JARON VOS
Manager, Architectural Services

AT THE DRAWING BOARD

Pella’s experts started by drawing up plans for Garcia’s extra-large window combinations. Using design parameters provided by structural engineers, the team developed several conventional mullion-reinforcing options that would withstand wind loads at spans greater than 14 feet.

“Conventional reinforcing options are too wide for a project like this, so the width of the mullions was very important,” said Jaron Vos, manager of Architectural Services at Pella. “So we designed a one-inch custom extrusion that was deeper than the frame but could hold a narrow width.”

A NEW USE FOR TRUCK BED LINER

A span this long required a unique solution. To obtain the right structural capacity, the depth of the aluminum extrusion needed to extend beyond the window frames and into the interior. This design presented the potential for condensation. And though the extrusion would be insulated by wood trim, the team wanted to be sure that condensation would not be an issue.

After utilizing thermal modeling and conductance testing, Pella’s architectural engineers concluded that a coat of truck bed liner applied to the extrusion would solve the issue.

“It has durability and low thermal conductivity. Plus, it’s thin enough to not interfere with the trim,” Vos said. “Once the interior trim was installed, the condensation concern was alleviated.”

SMART INSTALLATION PRACTICES

Because large combinations and custom extrusions were new to the installer, a field services specialist from Pella Architectural Support Services worked on-site to advise on the installation procedures.

“With specialized engineering, drafting, testing and field services, we can say ‘yes’ to an architect’s vision, help contractors make those visions reality, and provide customers the looks and performance they want,” Vos explained.

ARCHITECTURAL EXPERTISE FROM BEGINNING TO END

Design and performance analysis

Thermal analysis

Custom extrusion design

Preliminary design drawings

Custom product design

Installation shop drawings

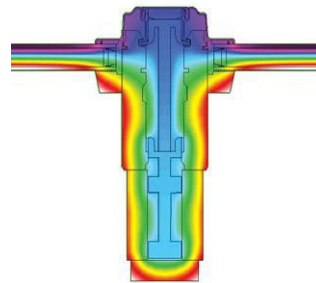
Field services and on-site training



We owe this project to one thing – truck bed liner.

When Jose Garcia Design needed a custom aluminum extrusion for their contemporary masterpiece, we were game. But Pella's thermal and performance analyses determined that condensation might be a problem. So the Pella Architectural Support Services team got creative, recommending a coating of truck bed liner to deliver a building envelope that exceeded performance requirements – and helped our client achieve their most ambitious goals.

FROM CONCEPT THROUGH COMPLETION.



Thermal model represented is specific to this project.

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THE OWNER'S PERSPECTIVE

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The building facade system combines attributes of both performance and appearance like nothing else in architecture. Navigating the implementation of a contemporary facade system program is the single most challenging component of building design and construction. Yet, the outcome largely determines the ultimate success of a new building project or deep green renovation. Escalating code requirements, increasingly complex facade system technology, emerging novel delivery strategies, convoluted supply chains and a constantly morphing risk environment combine to challenge the most savvy and experienced building owner/developer. Facade Tectonics Forum: NYC explores these issues with the aim of improving the facade system implementation process from the unique perspective of building ownership.

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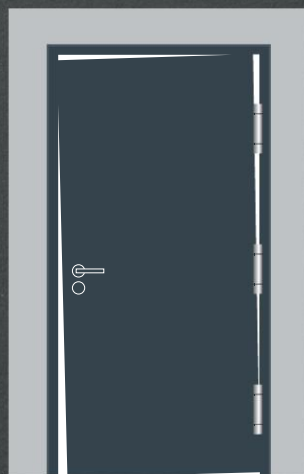
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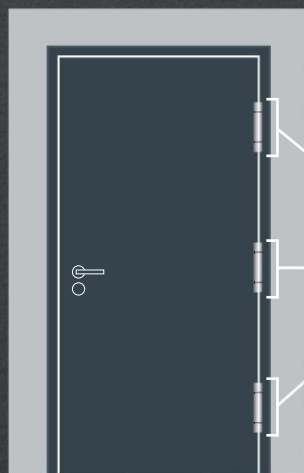
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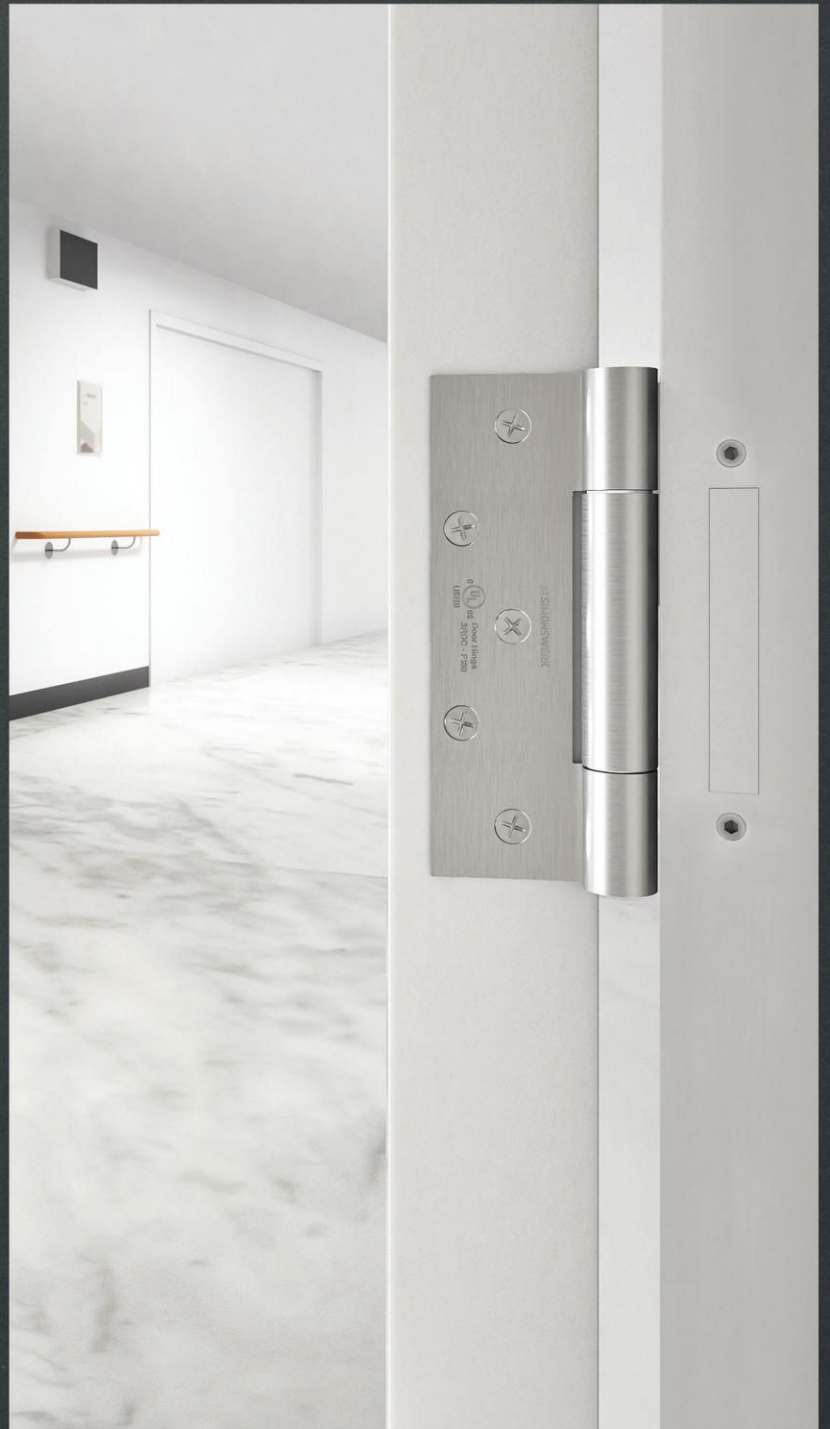
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AND STUDIO DAVID THULSTRUP. PHOTO BY SØREN AAGAARD.
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Expansion Joint Fundamentals and Field Practice

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Integrated Cladding Support Systems for Better Thermal Performance

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Innovative Design Strategies Written in Stone

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Landmark Designs Set in Stone

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A More Transparent Shade of Green: PCR's Drive Restrooms to the Lead in Green Design

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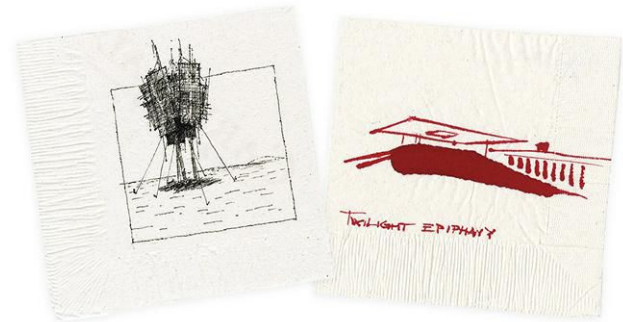
OUTSIDE THE INTERIOR

BIG-Bjarke Ingels Group created a cluster of small farm-style buildings for the resuscitation of chef René Redzepi's celebrated restaurant Noma (page 74) in Copenhagen. Shown here, the main dining room (at left) and lounge (at right) flank the entrance pavilion (center).



VIDEO FROM VIRGINIA

Take a virtual tour of Steven Holl Architects' Institute for Contemporary Art at Virginia Commonwealth University in Richmond (Record, May 2018).



SUBMIT YOUR SKETCH

Just a few more days to enter this year's Cocktail Napkin Sketch Contest! Visit ArchitecturalRecord.com/Call4Entries for full details on how to participate.



GOODBYE FOR NOW

In mid-August, we bid farewell to editorial assistant Brooke Henderson (at right), pictured here with managing editor Beth Broome. Brooke joined our staff for 10 weeks as part of a summer internship program sponsored by the American Society of Magazine Editors.



RECORD ON THE ROAD

On September 20 at the Center for Architecture in Philadelphia, senior editor Joann Gonchar will moderate a panel on designing new commercial projects in historic cities. Visit RecordontheRoad.com for more information and to register.

2018 WOMEN IN ARCHITECTURE AWARDS
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Too Darn Hot

Anyone still doubting global warming?
Welcome to the fourth-worst summer ever.

SEPTEMBER ARRIVES this year in the northern hemisphere with less regret than usual that summer is ending—instead, there's a surge of relief that the searing temperatures of the last few months may finally be over. As you have undoubtedly heard, 2018 is shaping up to be the fourth-hottest year on record, with the first three being 2016, 2015, and 2017, in that order. While the privileged among us sweated mainly as we scurried between our air-conditioned offices, cars, and houses, elsewhere, people were dropping dead in extreme heat, not only in poorer countries like Pakistan—where an all-time record temperature for April on the planet was set at 122 degrees Fahrenheit—but in places like Japan, where more than 80 people died in July (and where another record, of 104 degrees, was set), and Canada, where unusually hot summer weather has cost at least 70 people their lives.

And while California was fighting the biggest wildfire in its history, the Mendocino Complex, forest fires in drought-ridden Sweden were breaking out even above the Arctic Circle, where high temperatures had baked the land and turned the woods into kindling.

In one of the weirder weather stories, a reporter for *The New York Times* recounted a recent visit to Muynak, Uzbekistan, in the aftermath of a windstorm that had covered everything in a white grit like snow. But, actually, the grit was salty—a reminder that the parched village was once a port on the Aral Sea, now 75 miles away and far smaller than in its glory days as the earth's fourth-largest inland body of water. Still, the news was not all bad: the rusted hulks of ships that are beached like whales on Muynak's dry seabed have been drawing sightseers, boosting the local economy and giving new meaning to the term ecotourism.

Among the scariest aspects of the many reports detailing this year's heat waves are the remarks from scientists reminding us that radical climate change used to be a fear for the future. But the future has arrived. "What we're seeing today is making me, frankly, calibrate not only what my children will be living, but . . . what I am currently living," Kim Cobb, a professor of earth and atmospheric science at the Georgia Institute of Technology in Atlanta told the *Times*.

While the causes of extreme weather and natural disasters can be complicated, scientists agree that the rising baseline of global temperatures is a significant factor—and as carbon emissions continue to go up, so will the thermometer.

According to the just-published annual State of the Climate report, from the National Oceanic and Atmospheric Administration (NOAA), part of the U.S. Commerce Department, last year saw the highest levels of greenhouse gases, the highest sea-level rise, and the lowest ice coverage in the Arctic and the Antarctic ever.

The scenario is grim: severe droughts and flooding. Failed crops and famine. Uncontrollable fires. Crashing electrical grids. And rapidly



rising human casualties. One recent study projects five times as many heat-related deaths in the U.S. by 2080, with much higher mortality in the less developed world. An article last year in *National Geographic* maintained that, without a major reduction in greenhouse-gas emissions, the majority of the world's population will be threatened by heat-related death by 2100.

As stewards of the built environment, architects continue to have a role to play in communities and with clients about how to positively affect the ecological future of our world.

This is not a good time to be a skeptic about the human factor in climate change, or to politicize the issue. That the President announced the U.S. is withdrawing from the Paris Agreement on climate—the *only* nation in the world to not stand with every other country to undertake serious measures to reduce carbon emissions and stem the rise of global warming—is a terrible failure to confront the reality of a crisis that we're all sweating every day.

Cathleen McGuigan

Cathleen McGuigan, Editor in Chief



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There's a slow disaster unfolding, which is the absence of good fire in so many places that need it. In the absence of tame fire, we're going to have feral fires, which is what we're seeing.

—Fire historian **Stephen J. Pyne**, speaking to New York Public Radio about using controlled burns as a form of wildfire prevention.

Disastrous Effects of 2017 Storms Linger One Year Later

BY DEANE MADSEN

TO CALL the 2017 hurricane season “devastating” hardly captures the severity of the toll levied upon lives, homes, and infrastructure over the course of a single month. Hurricanes Harvey, Irma, and Maria were responsible for hundreds of deaths—some 1,400 in Puerto Rico alone, according to the most recent estimates at press time—and approximately \$300 billion in damages last year. Each of these storms brought enough destruction to rank in the five costliest since 1980, and their quick succession compounded the carnage; many hurricane victims had barely recovered from one storm before the next arrived.

Recovery efforts began as soon as the winds subsided and the waters receded, yet, a year later, many displaced residents are still rebuilding, and, in some places, power still a problem. In the immediate aftermath of the 2017 season, ARCHITECTURAL RECORD contacted architects in each affected region and has followed up with many of the same people a year into the recovery efforts. Rising sea levels and climate change are pushing waterfront communities to reevaluate their hurricane preparedness strategies and push for increased resiliency measures, to make communities better able to withstand whatever weather is in future forecasts.

Hurricane Harvey

Landfall: August 25, 2017 (Texas)

Fatalities: 103

Damages: \$125 billion

From August 25 to 29, Hurricane Harvey made landfall along the Gulf Coast of Texas, stalling over the southeast part of the state and drenching some areas, including the 627-square-mile city of Houston, with more than 40 inches of rain in less than 48 hours. Harvey submerged roughly 70 percent of Harris County, flooding 154,170 houses there, of which only 36 percent carried flood insurance, according to a final report compiled by the Harris County Flood Control District (HCFCD). Houston is prone to flooding thanks to its low elevation, clay soil, and poor drainage; since the HCFCD's establishment in 1937, the agency



Hurricane Harvey hit Texas on August 25, 2017, as a Category 4 storm, inundating communities along the Texas Gulf Coast for days, including Houston, seen here on August 31, 2017.

has recorded more than 30 floods and estimates a flood is likely to occur at least every two years.

In the face of the city's history of flooding, combined with uncertainty about when the next major storm is coming, it might seem easy to concede that some flooding is sure to take place. Yet it was just a few years ago that Houstonians suffered through an extreme drought, recalls architect Catherine Callaway, a senior associate with Kirksey and past president of AIA Houston. In her mind, it's not just about preparing for floods but becoming generally more resilient and able to adapt to unpredictable shifts in climatic behavior. “All of these things are in our code of ethics, to provide for health, safety, and welfare of the public,” Callaway says. “Harvey has affected architects in our area, reminding us of our obligation and what we're trained to do.”

AIA Houston's Disaster Recovery Task Force spent the six months after Harvey assembling a homeowner guide aimed at “building back better” with detachable, nonabsorbent materials that can be easily removed, cleaned, and reinstalled in the event of another flood. In addition to solutions for individual homeowners, Houston is also in the process of exploring larger-scale flood control and storm-water mitigation efforts that would take place over the longer term. “We're thinking of how they're doing it in the Netherlands, we're having the right conversations, and we're thinking about spending the right kind of money,” says Allyn West, who writes the *Houston Chronicle's* “Gray Matters” column. “The city is facing the future and saying, ‘How are we going to continue to exist?’ I think that's something to be optimistic about.”



Three weeks after Hurricane Maria lashed Puerto Rico, RPPR installed its first solar array, on the roof of a community center in Caño Martín Peña (above). More than 10 months after Hurricane Irma struck the Caribbean, volunteers clean debris out of a pond on the island of Saint Martin (left), hit just after Barbuda on September 6, 2017.



Hurricane Irma

Landfall: Sept. 6, 2017 (Barbuda), Sept. 10, 2017 (Florida)

Fatalities: 96

Damages: \$50 billion

Hurricane Irma carved a path from west of Africa's Cape Verde Islands across the Atlantic Ocean and through the Caribbean, making landfall in the Florida Keys on September 10 before sweeping up the state's Gulf Coast. Thankfully, residents of Southern Florida heeded warnings in advance of Irma's arrival, and more than 6 million people evacuated. But strong winds and rain downed trees, caused storm surges, and flooded parts of the state as far north as Jacksonville, which experienced one of the worst floods in the city's 225-year history. Although the cities of Miami and Miami Beach were largely spared from the full force of Irma, architects in both locales see addressing sea-level rise and fortifying against future storms as keys to their continued exist-

tence. "If you live in Florida, and have lived here a long time, it's kind of inevitable that you try to be as prepared as you can," says Cheryl Jacobs, executive vice president of AIA Miami. "Any coastal area in our country has those same issues."

Other Irma victims have been less fortunate: the island of Barbuda has been largely abandoned as a result of two successive hurricanes, Irma and Jose, that threatened the island just two days apart. Residents who escaped the brunt of Irma—which wiped out 95 percent of the structures on the island, with winds topping 185 mph when it hit on September 6—were evacuated again to dodge Jose. (Although Jose missed the island, evacuated residents were not permitted to return for another three weeks due to health concerns.) Puerto Rico, too, suffered power and potable-water outages, as well as nearly \$1 billion of damages—but this would pale in comparison to the havoc wreaked by Hurricane Maria two weeks later.

Hurricane Maria

Landfall: Sept. 20, 2017 (Puerto Rico)

Fatalities: 1,427 (latest estimate as of press time)

Damages: \$125 billion

The damage dealt to Puerto Rico in the one-two punch of Irma and Maria was so extensive that its government estimates recovery may take

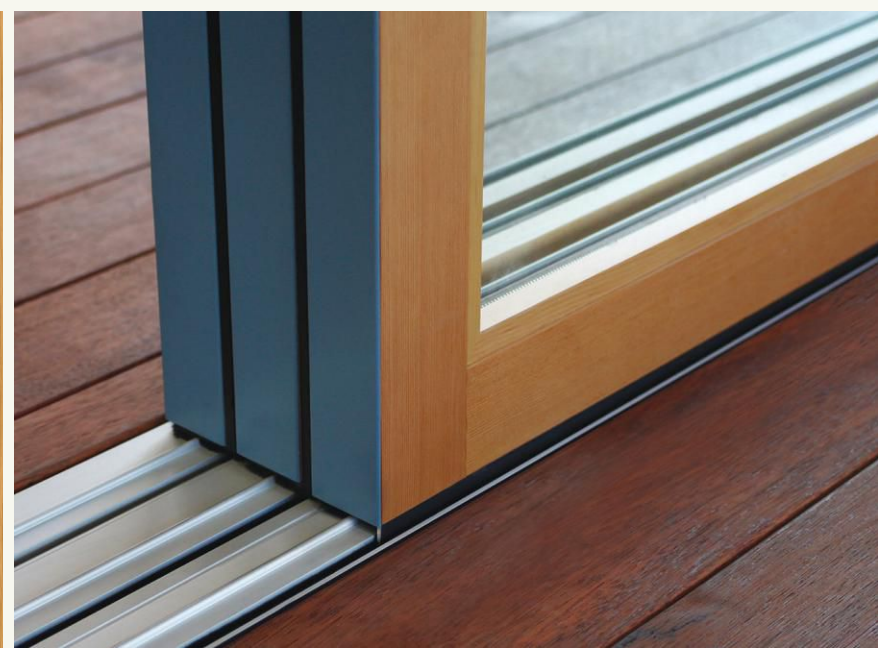
another decade, according to a report issued to Congress in August. The island's aging electrical grid, strained by Irma, was nearly obliterated during Maria, leaving 3.4 million inhabitants in the dark for months; though authorities say power has been restored, the system is considered vulnerable. Also ongoing are efforts to assess with any accuracy exactly how many fatalities Maria caused; long-term flooding, combined with lack of potable water and basic sanitation, are among the lingering detrimental effects that have elevated the number of deaths indirectly caused by Maria, especially among weaker segments of the population. The island's economy and infrastructure, which were already suffering prior to the hurricanes, will require significant reinvestment just to bring baseline services back online.

One of the biggest challenges in Puerto Rico's recovery is its geographic position as an island territory; Florida and Texas, by contrast, were able to make use of established interstate routes, networks, and supply chains to begin disaster assistance even before their respective storms hit. "Being on an island, it's easy to see your borders, and it's also easy to understand that you're kind of on your own and there's no way to get immediate help," says Jonathan Marvel, one of the cofounders of Resilient Power Puerto Rico (RPPR). His team mobilized in the immediate aftermath of last year's hurricanes to begin installing solar arrays on the roofs of community centers, to power up critical services, and, long-term, create redundancy with the power grid in the event of future outages. "What we're trying to do is create a shelter-in-place model, using renewable energy, that could be attractive at a global scale for other places," he says. (Read an interview with Marvel on page 32.)

Meanwhile, in regions less affected by the storms, architects continue to provide aid in whatever manner they are able. Elizabeth Camargo, who serves as chair of AIA Miami's Resilience Recovery Task Force, describes how her group plans to work with a contractor in Puerto Rico to build a roof as an educational prototype for rebuilding, using materials and techniques that are familiar and readily available in the Caribbean. "We'll be videotaping the construction, so that can be used as a teaching tool for other communities to make the process easier and faster for them," she says.

Though Florida and Puerto Rico are more than a thousand miles apart, both areas face similar issues as the climate continues to change and the ocean that connects them continues to rise; in such crises, these and other threatened waterfront regions will have to rely on each other to find the best ways to stay afloat. ■

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SWA's Design Selected for Sandy Hook Memorial

BY MIRIAM SITZ

ON DECEMBER 16, 2012, two days after a gunman murdered 20 children and six adults at Sandy Hook Elementary School in Newtown, Connecticut, President Barack Obama offered words of comfort to families and members of the community at an interfaith vigil. "There's only one thing we can be sure of, and that is the love that we have—for our children, for our families, for each other." An excerpt of his message that day will be inscribed on a stone wall in the entrance pavilion to the Clearing, a permanent memorial designed by the landscape architects SWA Group. It was selected last month after an almost year-long competition.

Conceived as a series of concentric circles, SWA's design will draw visitors into the five-acre site near the new school (RECORD, September 2016), guiding them from a small parking lot (accessible via a gated entrance drive) to an open-air pavilion where they can prepare to meander through the memorial. "The path has no true beginning or end, allowing visitors to experience the space at their own pace and in their own way," wrote the designers in their

proposal to the Permanent Memorial Commission. "We wanted to acknowledge that the healing process does not end, but continues and grows . . . We felt a path would both represent and nurture this process."

Intersecting walking paths, which include wood footbridges over two existing ponds, will lead to a central clearing, where a young American sycamore tree will be planted on an island in a 22-foot reflecting pool. Twenty-six panels of granite, each bearing the name of a victim, will encircle the water feature.

The 10-member commission, which was convened in September 2013 and includes three Sandy Hook parents, unanimously selected the scheme developed by Ben Waldo and Daniel Affleck, both of SWA Group in San Francisco, and Justin Winters of SWA/Balsley in New York. "We found their sensitivity to the land, and their use of pathways and seasonal plantings, very appealing," says Alan Martin,



The scheme's spiraling paths lead visitors to a central reflecting pool.

vice chair of the commission, which received nearly 200 submissions. "The families are overwhelmingly in favor of it too."

The commission will recommend the design to the Newtown Board of Selectmen for official approval on September 4. According to Martin, the goal is to break ground by spring, then dedicate the memorial on the seventh anniversary of the tragedy, December 14, 2019. ■

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Former AT&T Building Receives Landmark Designation

BY BROOKE HENDERSON

ON JULY 31, the New York City Landmarks Preservation Commission (LPC) voted to designate Philip Johnson and John Burgee's AT&T Building, now known as 550 Madison Avenue, as a landmark. The move makes the world's first Postmodern skyscraper the youngest building in New York to receive this designation.

The LPC's decision protects the exterior of the building, including the facades of the office tower, annex, and enclosed covered passageway. It also preserves the rose-colored Stony Creek granite cladding and the broken pediment at the structure's crown. Going forward, any proposed alterations to the exterior will require approval and permitting by the LPC.

The LPC will also review proposals for any interior work that requires a Department of Buildings permit, to determine whether the construction will affect the building's exterior. (Advocates for the building were up in arms earlier this year about the demolition of the lobby, which took place in January 2018.)



The 37-story tower now called 550 Madison Avenue previously housed the headquarters of Sony and AT&T.

Anthony Fusco, head of real estate at Olayan America, which owns 550 Madison, says the company is proud of the building's new status. "Since acquiring the building, we have taken our role as stewards of this important building

very seriously," Fusco told RECORD via e-mail. "We look forward to an ongoing dialogue with the LPC and other stakeholders to preserve 550 Madison's legacy with smart and sensitive modifications to serve modern tenants."

The LPC's decision came after months of contentious debate as many members of the design community criticized the proposal by Snøhetta, the firm commissioned by Olayan, for a renovation of the structure, which would have replaced part of the now-protected facade with a glass curtain wall and demolished the annex to create more public space. By press time, the firm had not revealed an updated proposal, nor did it comment on future plans.

"I am thrilled the Commission has recognized the importance of the AT&T Corporate Headquarters Building," said Frederick Bland, vice chair of the LPC. "This is the building that established Postmodernism as a legitimate architectural movement. It deserves to be preserved for future generations." ■

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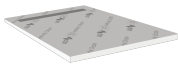
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Obituary: Robert Silman, 1935–2018

BY FRED A. BERNSTEIN

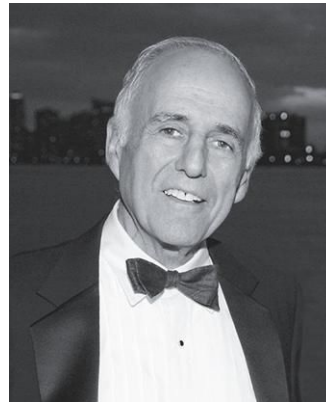
ROBERT SILMAN, the prolific structural engineer who died of cancer at his home in the Berkshires on July 31, was at his best when great buildings needed his help.

Twenty years ago, when a section of Fallingwater, Frank Lloyd Wright's masterpiece in Pennsylvania, was drooping by 7 inches, he developed innovative ways to fix it. A consensus builder, he presented his ideas at a public forum before implementing them. "This is an icon, and I want to do it right," he said.

Silman was a patient teacher, walking reporters through the causes of Fallingwater's structural problems and the reasoning behind his planned repairs. And he could turn a phrase. Explaining the effect of temporary girders shoring up the house's sagging balcony, he stated pithily, "The cantilever isn't a cantilever anymore."

Silman wasn't an architect, but he had as much impact on the built environment as any architect of his generation. In the 52 years since he founded Robert Silman Associates (now known simply as Silman), the structural-engineering firm has handled more than 24,000 projects, according to its president, Joseph F. Tortorella. He maintained decades-long relationships with many prominent architects. "He was the rare engineer who had an understanding of design," said James Polshek, who turned to him repeatedly. Boston architect Ann Beha, who worked with Silman on dozens of projects over 35 years, said, "He was completely absorbed by possibility, with making our ideas reality. He saw structures and architecture as partners."

An NYU-trained civil engineer, Silman worked for Ove Arup & Partners in London and Ammann & Whitney in New York before starting his own Manhattan firm in 1966. At first he took whatever jobs came in—which included rehabilitating burnt-out tenements. Those jobs, which larger firms didn't want to touch, established Silman as a preservation expert. Soon he was getting calls about Ellis Island (where he helped turn the crumbling main building into an immigration museum) and Carnegie Hall. There, working with Polshek, he engineered the building's 1980s renovation and, later, the creation of the underground Zankel Hall.



Fallingwater was just one of many Frank Lloyd Wright buildings Silman helped restore. They included New York's Guggenheim Museum, where he used lasers to map the building's surfaces in preparation for a facelift. Silman advocated resurfacing the Guggenheim with carbon fiber, to give it the pristine finish that Wright envisioned. The restoration architect, however, opted for a bumpy surface that ostensibly revealed the building's craftsmanship.

Though the Silman firm (which now has 170 employees in Boston, New York, and Washington, D.C.) became best known for its preservation projects, it has also engineered thousands of ground-up buildings, including, in recent years, Renzo Piano's Whitney Museum, Steven Holl's new public library in Queens, and SANAA's Grace Farms in Connecticut. Altogether, the firm has worked on buildings by 14 Pritzker Prize winners, according to Nat Oppenheimer, its executive vice president and senior principal.

In recent years, Silman spent as much time as he could at his farm in Great Barrington, Massachusetts, with Roberta, his wife of 62 years. She said that her husband was diagnosed with multiple myeloma in 1984 and in 2017 learned he had myelodysplastic syndrome, "another bone marrow cancer, which developed as a result of chemotherapy." But he continued working until June, both at his Boston office and at Harvard, where he taught a course called Philosophy of Technology. Thousands of architecture students there and at other universities (including Columbia and Yale) benefited from his teaching. Silman "inspired interest in what engineers do," said Karen Frome, an architect who took the course in the late 1980s. In recent years, he subtitled the course "Technology and Responsibility." "What are our responsibilities as we design the built environment?" he asked in the course description. "What do we owe the future?"

"He was a throwback, a mensch," Oppenheimer said, adding that, at Silman offices, "It was never about having the biggest firm or making the most money—it was about having fun and doing a good job." ■

Silman explained his philosophy of engineering in the June 2018 issue of RECORD.

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Jonathan Marvel

BY MIRIAM SITZ

JONATHAN MARVEL moved to New York some 30 years ago, but he was born and raised in Puerto Rico, where his late father had an architectural practice and where he still has deep roots, now running the office there as part of his New York-based Marvel Architects. After Hurricanes Irma and Maria pulverized the Caribbean in summer 2017 (page 23), Marvel and several others with close ties to Puerto Rico quickly mobilized, forming a group called Resilient Power Puerto Rico (RPPR) in an effort to connect community centers around the island to solar power arrays.

RPPR initially aimed to bring solar power to 100 sites in 100 days, but limited resources—namely, a lack of access to the necessary equipment—has hindered their progress; Marvel anticipated having 25 sites up and running by the one-year anniversary of Hurricane Maria this month.

He spoke to *RECORD* about RPPR's broader goals.

How has RPPR changed since you and Cristina Roig-Morris first founded it?

Initially we installed solar hubs as our one act of humanitarian lift. Now we're realizing that it's much more than just installing panels—it's educating and training people, it's creating the workforce, it's reaching out to people who don't know how valuable renewable energy is to their communities.

So, we have formalized ourselves as a 501(c)(3), and we're renting a warehouse in the small inland city of Caguas that we'll use as an office, workshop, and educational venue for people to come and learn about solar. We're going to put 100 panels of our own on top of the warehouse so we can be off the grid, and we can offer that as a prototype. We want to hire three to five employees in our new office

warehouse. This is a decades-long commitment to Puerto Rico, not just a one-off adventure.

And what prompted this shift in your mission?

We realized this wasn't all going to happen as fast as we had hoped. The island doesn't have enough of a retail solar infrastructure; it's hard to buy batteries and panels, because there's very limited availability, and you have to wait in long lines. Ideally, we'd work out a way to buy wholesale and bring in our own equipment. Also, the island doesn't have a large workforce just ready to go. Stepping up the rollout the way we had planned was not going to happen; it's more like 100 installations in 100 weeks, not 100 days. While we're doing those installations, though, we're not just sitting idle—we're spreading our efforts around to different operations.

How do you expect the arrays you've installed to fare during this next hurricane season?

That's the big question—they are exposed on rooftops and very vulnerable during a storm. We took a look at the systems that survived last year and determined the best

ways to build them. For instance, you upgrade the diameter of bolts from $\frac{1}{4}$ inch to $\frac{3}{8}$ inch, you use a certain kind of racking system, you build a small parapet or knee wall around the panels: those are the primary lessons we learned.

Does your work in Puerto Rico speak to a larger issue?

The larger issue for us is that so-called natural disasters due to global-warming trends and rising sea levels are really man-made—they're something we're aiding and abetting as a species, and underserved communities are the most vulnerable. So translating what we're doing from solar-energy hubs to a larger message, we want people to shelter in place. The human species is community-driven, and sheltering in place within the community where you live is a human right. ■

**Highway Bridge Collapses in Italy**

A section of a highway bridge collapsed in Genoa on August 14, killing at least 39 as of press time. Transport minister Danilo Toninelli said that the bridge had shown "signs of problems" in the past. The port city is located in the northwest of the country. The section that fell is part of the A10 highway, near where the bridge crosses the Polcevera River.

Alan Jones Elected RIBA President

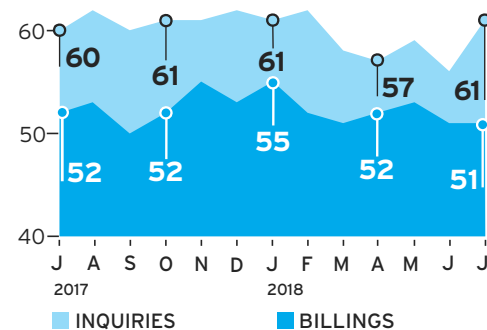
Members of the Royal Institute of British Architects have chosen the Northern Irish practitioner to lead the organization for a two-year term. Jones beat out Philip David Allsop, as well as Elsie Owusu (*RECORD*, July 2017), who has accused RIBA of institutionalized racism and sexism.

Herzog & de Meuron Tapped for Gund Hall Expansion

The Swiss firm will renovate and expand the Harvard Graduate School of Design's primary facility. New York-based Beyer Blinder Belle will serve as architect of record. Concept and schematic-design development will take place in the fall of 2018.

J. Meejin Yoon Named Dean of Cornell University AAP

A winner of *RECORD*'s 2015 Women in Architecture Awards, Yoon will become the first woman to head the College of Architecture, Art and Planning. She currently leads the architecture department at the Massachusetts Institute of Technology, where she was also the first woman in the role.

**Billings Up for 10th Month Straight**

The latest Architectural Billings Index (ABI) data show that billings rose for the 10th consecutive month, although at a slightly slower clip, with the ABI dipping from 51.3 in June to 50.7 in July. (Scores over 50 indicate an increase in billings.) The projects inquiries index jumped 4.5 points, while the design contracts index decreased by 0.3 points.

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AN ARTICULATED BUT SIMPLE STRUCTURE BY MATHIAS KLOTZ AND CAROLINA PEDRONI REVITALIZES A MODERNIST LEGACY. BY SUZANNE STEPHENS



SOMETIMES ARCHITECTS' enthusiasm for modernist designs in residential commissions ends up with predictable results. But the same-old, same-old syndrome does not apply in the case of the compact 1,700-square-foot, one-bedroom cottage for the Las Musas vacation retreat in José Ignacio, near Punta del Este, Uruguay. It demonstrates convincingly how well-crafted details, rendered in native woods with a concrete structure, and elegant proportions can reinvigorate the language of 20th-century masters. Mathias Klotz, a Chilean architect with an office in Santiago, and longtime friend Carolina Pedroni, an architect based in Punta del Este, worked with an Argentine client, Sandra Perelmuter, to create a private enclave not far from the point where the Rio de la Plata flows into the Atlantic Ocean. Klotz and Pedroni's master plan for the 12-acre property calls for nine houses of one and two stories and a small, 12-room hotel to be arranged around common spaces—a restaurant, wine cellar, yoga pavilion, and swimming pool.

The architects designed the first completed villa so that it appears to levitate

The first completed vacation house at Las Musas is entered at the corner of the porch, protected by folding screens of Lapacho wood (top). The screens can be closed and fixed (above, left); the only stair is on the west face and leads to the roof terrace. A small pool is close to the main level, which is lifted slightly above the lawn (above).



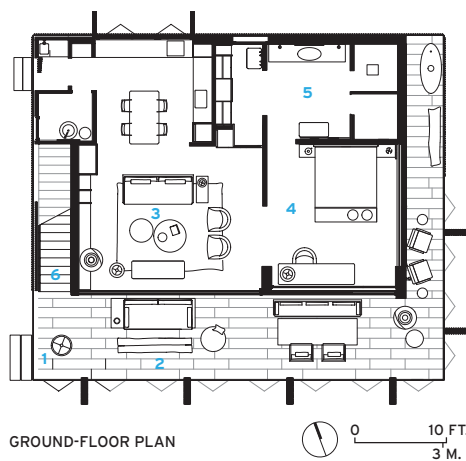
The one-story cottage's interiors were designed by Mauro Bernardini with a low-key elegance. The living/dining room (above, left) becomes one space with the porch by sliding back the window walls. Travertine floors and Louro-wood wall paneling continue into the bedroom (above).

with highs of 60 degrees in July, 80 in January.)

Inside, the architects used Brazilian Louro wood for wall paneling and left the concrete roof deck exposed for the ceiling, while covering the floor in travertine. The richly tactile surfaces provide a quiet setting for the minimal furnishings chosen by interior designer Mauro Bernardini.

Spaces flow from the dining room, kitchen, and living room to the porch without hallways; the only circulation element is a stair on the exterior west face. It ascends to the roof terrace, where guests can sunbathe and look at the surrounding landscape, a nearby lagoon, and, in the distance, the sea. Photovoltaic panels installed on one portion of the roof help generate energy for the air-conditioning.

The architects strove for “the luxury of simplicity,” says Klotz, who searched for “the essential” instead of relying on “useless spaces and complex programs.” In their interpretation of modernist strategies, Klotz and Pedroni have created a comfortable haven that pays fitting homage to the high points of this familiar legacy. ■



- 1 ENTRANCE
- 2 PORCH
- 3 LIVING/DINING
- 4 BEDROOM
- 5 BATH
- 6 STAIR TO ROOF

lightly above the compound's lawn, to which it is connected by open-riser steps—bringing to mind Mies van der Rohe's Farnsworth House of 1951 in Plano, Illinois. The cottage's concrete roof projects over a gallery that wraps partly around the house and can be closed in by wood folding screens. When pulled back into vertical clusters, the screens create pier-like forms on which the heavy roof almost seems to rest. This pseudo-structural articulation evokes the lightness of touch that Louis Kahn displayed in his Trenton Community Center bathhouse (1955), where pyramidal roofs appear to barely sit on concrete-block piers.

Klotz and Pedroni chose a local reddish wood (Lapacho) for these shutters, which fold on the south side and partly on the east, then turn into flat scrims along the rest of the exterior walls. When closed, this “veil,” as Klotz calls it, gives the sheltered porches privacy, and the house can become a discreetly flat wood chest—the extreme opposite of Farnsworth's transparency. When the screens are pulled back, the entire volume turns into one large covered porch by virtue of expansive window walls that slide open between the living/dining room and bedroom. (The warm-temperate climate promotes outdoor living,

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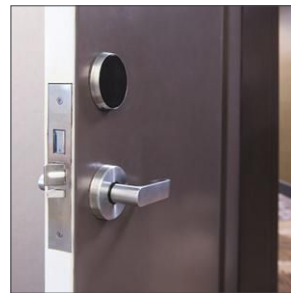
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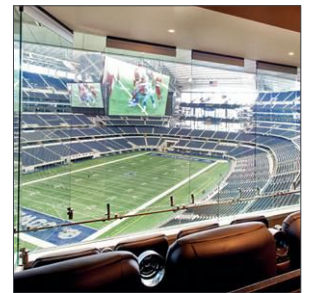
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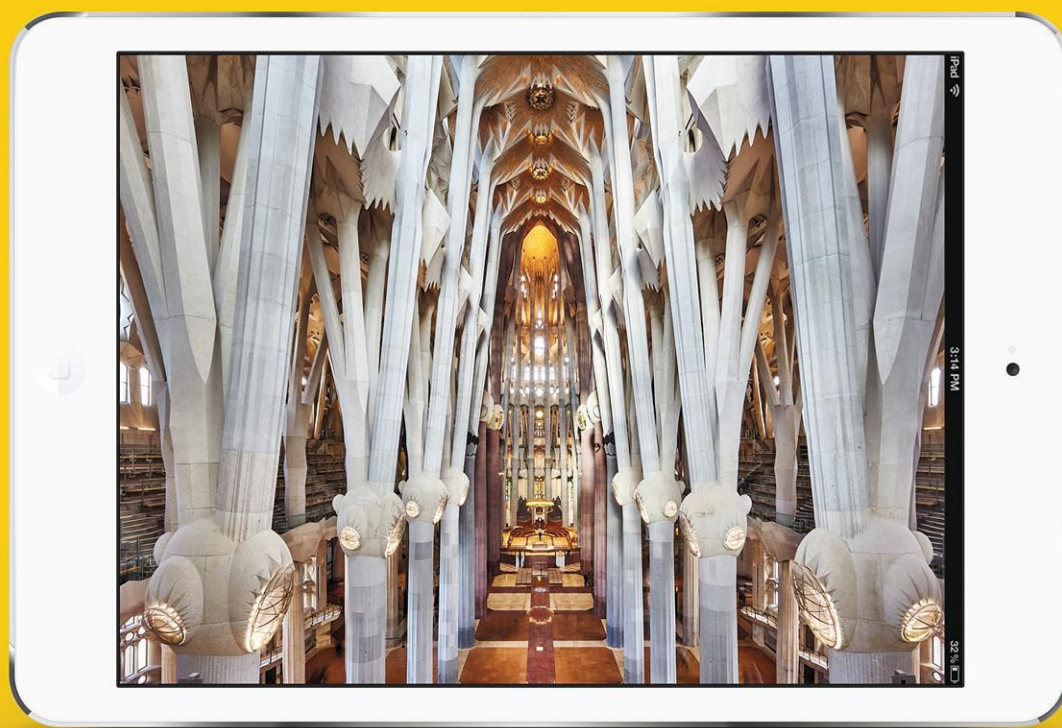
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Place Maker

A long-awaited multimodal station finally opens in downtown San Francisco—or at least part of it does.

BY LYDIA LEE
PHOTOGRAPHY BY TIM GRIFFITH

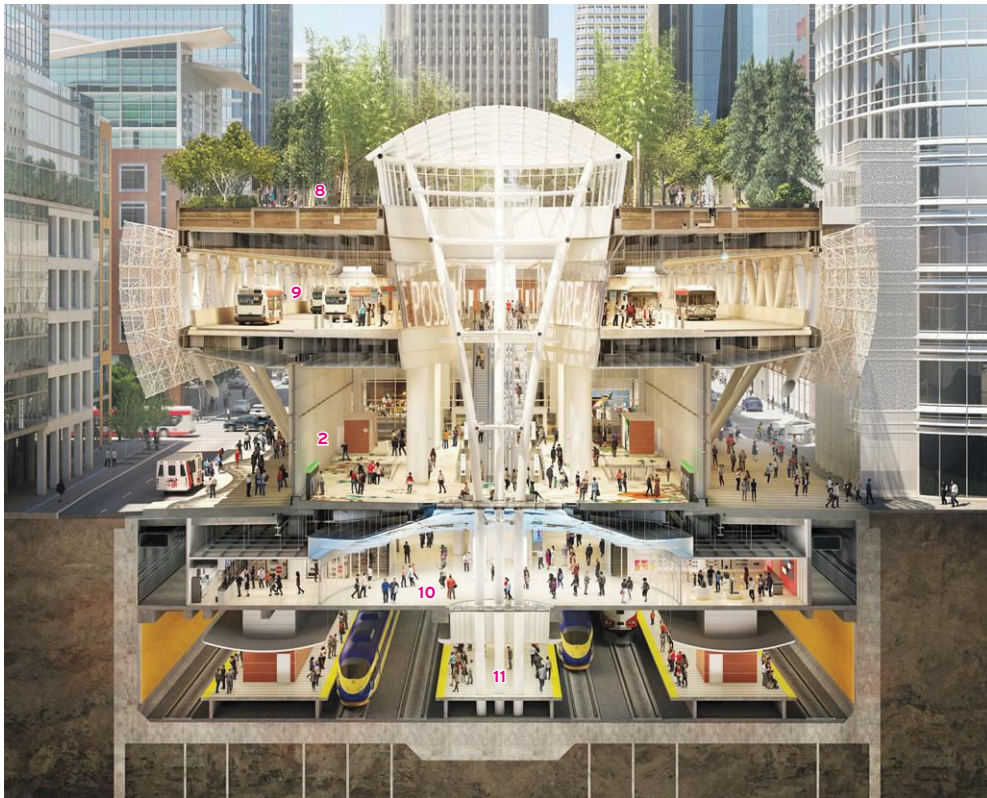
A GRAND ACT of place making, San Francisco's just-opened Salesforce Transit Center elevates an oft-mundane building type—a mass transit station—with a 5.4-acre public park, one of the largest accessible green roofs in the country. The 1.2 million-square-foot center, designed by Pelli Clarke Pelli Architects, helps to assert a new identity for the city, as a metropolis of distinctly contemporary density and form. It also presents an alluring vision of a sustainable future. But with some key functionality missing, it must wait to fulfill its larger mission.

Conceived as the “Grand Central Station of the West,” the nearly \$2.3 billion project has been more than 10 years in the making, a saga of funding problems, budget overruns, political scuffles, and delays of the kind that seem to bedevil all large public infrastructure projects in the U.S. Back in 2005, city officials approved a plan to redevelop what they dubbed the Transbay District—a rundown 40-acre area to the south of the city's financial center where a now-demolished freeway and ramps once cut through. The plan embodied the latest thinking in urban-planning circles: a transit hub that would replace a dilapidated Depression-era bus station and connect to commuter and high-speed

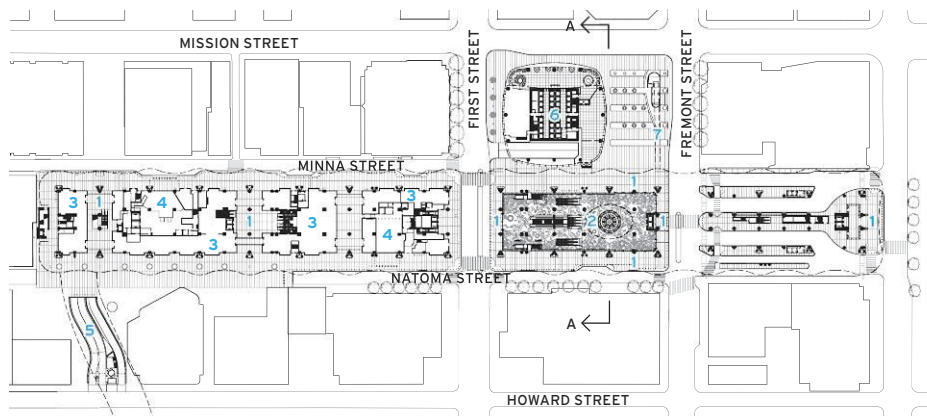


The new transit center stretches for four blocks at the edge of the city's financial district, but its lacy facade (above) makes the immense building appear to float. Daylight streams into the station's main hall (right), emphasizing a terrazzo floor by artist Julie Chang that features local flora and fauna. The space also includes a Jenny Holzer LED piece that scrolls around the skylight.





SECTION A-A



GROUND-FLOOR PLAN

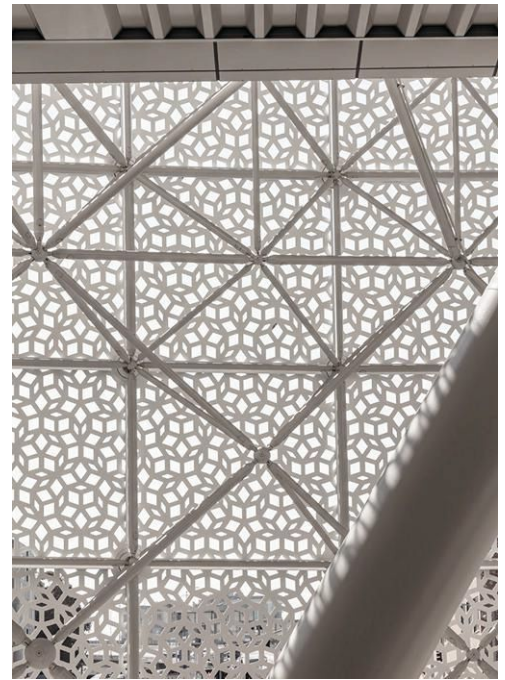
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|----------------|--------------------|--------------------|
| 1 ENTRY | 5 VEHICLE RAMP | 9 BUS DECK |
| 2 MAIN HALL | 6 SALESFORCE TOWER | 10 TRAIN CONCOURSE |
| 3 RETAIL | 7 GONDOLA TO PARK | 11 TRAIN PLATFORM |
| 4 LOADING DOCK | 8 PARK | |

rail, surrounded by a dense, mixed-use, mixed-income (35 percent of the planned 4,400 housing units are designated as affordable) development. Land sales, along with developer fees and taxes for an adjacent tower, the tallest in the city (RECORD, July 2018), and other high-rises, would provide a substantial portion of the funding for the public terminal.

In 2007, the developer-architect team of Hines and Pelli Clarke Pelli won the competi-

tion for the station and a skyscraper (named Salesforce Tower for its lead tenant) with a proposal for a greensward in the sky. But this vision was more than romantic—it was practical too: in addition to being a public amenity, the transit-center park would provide other long-term benefits, including energy management and water conservation, says Fred Clarke, senior principal at Pelli Clarke Pelli.

Despite some nail-biting moments during



The perforations of the aluminum veil (seen here from the bus deck) are based on a fractal pattern devised by mathematician Roger Penrose. It is made up of a grid of diamonds reassembled to create radiating circles.

the recession, the completed project is remarkably unchanged from the competition-winning scheme. The four-block-long layer cake has two levels below grade, with train platforms at the bottom for future commuter and high-speed rail, and a train-concourse level. Aboveground are two floors of concourse and retail space, topped by the bus deck—which had to be elevated to connect to the freeway leading to the Bay Bridge—and then the rooftop park.

One significant change is not necessarily for the worse. The original scheme included undulating glass facades, bulging out where columns inclined outward to support the cantilevered bus deck. But the curved glass would have to have been very thick to meet blast requirements and consequently proved too expensive. Instead, the project team wrapped the building with a white aluminum screen, perforated with an intricate pattern devised by mathematician Roger Penrose, a nonrepeating kaleidoscope that maps elegantly to the irregular curves. The gauzy screen effectively veils the station's heft and creates a delicate backdrop for the bus level within. "The cloudlike exterior makes the building look as though it floats," says Clarke. "It's that kind of civility and friendliness we were after."

The double-height main hall, which occupies about a quarter of the ground floor, celebrates daylight and engineering. Here, a generous skylight is supported by a sculpture of steel columns that curve out to the edges of the



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The building's 5.4-acre public park atop the station (above and right) cleverly integrates exit stairs, elevator overruns, and mechanical vents into its rolling landscape. The living roof includes more than 600 trees and 16,000 plants, and filters graywater and rainwater for non-potable uses.



65-by-85-foot elliptical roof opening. It beams sunlight down on a bank of escalators, making wayfinding to the bus deck and the park intuitive. The profusion of white and reflective surfaces, from columns to the metal ceiling to a terrazzo floor that features a colorful design by artist Julie Chang, amplify the light and feeling of openness. (Salesforce's purchase of the station's naming rights for \$110 million over 25 years will go toward the building's upkeep, helping to maintain its pristine and airy atmosphere.)

Designed by PWP Landscape Architects, the park (RECORD, August 2018) is a rolling topography that cleverly integrates exit stairs, elevator overruns, and mechanical vents amid its hillocks and more than 600 trees, including redwoods and palms. A half-mile loop trail passes a restaurant, playground, amphitheater, and a water fountain by artist Ned Kahn with a row of jets that fire up as buses pass below. In addition, it offers views of the cityscape à la New York's High Line. An infusion of open space into an area bereft of parks, the living roof is also a critical part of the center's operations, helping mitigate heat gain and incorporating wetlands that filter rainwater and graywater for non-potable uses. The green roof, along with such features as the naturally ventilated bus deck and a geothermal loop for conditioning the enclosed spaces, is projected to cut energy use in half compared to the requirements of California's stringent energy code.

As wonderfully verdant as it is, it remains to be seen whether the park, located 75 feet above the street, will become a bustling part of city life or whether it will function more like a private garden for the adjacent office and apartment buildings that bridge directly to it. Unlike the High Line, the park doesn't serve as a handy path from point A to point B, and, to get to it, visitors will have to take a small gondola, one of several street-level elevators or escalators, or reach it from inside the terminal or a neighboring building.

Another question is if or when the facility will be a full-fledged multimodal transit center, which presumably will be needed for the center's retailers to truly flourish (about half of the 100,000 square feet of retail has been leased, with the first store openings expected next year). For the foreseeable future, the station will handle an average of 37,000 bus commuters on weekdays, though it has been designed in anticipation of 100,000 travelers. One major challenge is to secure a daunting \$4 billion to build a 1.3-mile tunnel to connect to an existing Caltrain commuter-rail station and the long-planned high-speed rail to Los Angeles (itself far from a done deal). A pedestrian tunnel that would link to Bay Area Rapid Transit (BART) trains is also planned but also has yet to be funded. But the hub itself and its rooftop oasis are finally here to welcome all these potential users, and that should gladden the hearts of urbanists everywhere. ■

Lydia Lee is a San Francisco-based journalist who writes about architecture, design, and urban development.

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A Space Needle Odyssey

Olson Kundig's dramatic architectural reboot of the Seattle icon is complete.

BY RANDY GRAGG

PHOTOGRAPHY BY NIC LEHOUX





SEATTLE'S QUIRKY Space Needle began as a hotel promoter's doodle. One architect, John Graham Jr., designed the top, another, Victor Steinbrueck, the base. It was built in a break-neck 13 months. But, since the 605-foot-tall Needle's opening for the 1962 World's Fair, over 60 million visitors have soaked in the views from the top. Dismissed as "gimmickecture" by the architectural intelligentsia at the time, the now-vintage space-age shape raised Seattle's skyline profile to a rank of No. 2 for instant global recognizability, behind only Paris and the Eiffel Tower, according to one recent survey. Yet, up close and inside, the Needle was riddled with glitchy systems and clunky add-ons and work-arounds. The famed revolving restaurant, for instance, lurched and creaked.

In 2013, after a few years of exploring a rebrand, the Needle's owners engaged the Seattle-based practice Olson Kundig in order to "get an architectural perspective." Soon, firm partner Alan Maskin and project architect Blair Payson began brainstorming bigger moves than new finishes, logos, and slogans. Five years and \$100 million later, the first and largest phase of "the Century Project," a dramatic, top-to-bottom architectural reboot, is complete.

"Our work has really been about subtraction," says Maskin, "peeling away all these walls, tiny little doors, and floors, and, in almost every case, replacing them with glass." The architects worked to "widen the lens, to create more ways to look at the city." Indeed, Maskin and a team that included structural engineer Clayton Binkley of Arup have transformed the kitschy, aging icon into a joyous interactive



The Space Needle rises at the north end of downtown Seattle (left), protected from encroaching high-rises by zoning caps. The idea of a glass ceiling was considered but abandoned, in favor of acoustically buffering rings (above), which lend a cozier ambience.



kinetic sculpture, reengineered with Swiss-watch intricacies.

The designers enjoyed unusual freedom from the kind of constraints that so often tether renovations of historic structures to era rather than privileging improvement. The family whose firm built the Needle—the Wrights, of Howard S. Wright Construction—owns it, so all final decisions rested with that group. Originally engineered to double the era's seismic codes and to withstand a Category 5 hurricane, the structure required mostly minor, easily hidden, laterally stabilizing updates. The Needle is a locally designated landmark but, since it's not on the National Register of Historic Places, Olson Kundig's reinterpretations required only nods from an 11-member local landmarks board.

The circumstances invited a rethink of the original designers' intentions of creating an instrument for views. There are the grand panoramas, of course, but you can also see its structure while inside it. As Maskin notes, "The Eiffel Tower has views of itself. This was our chance to show off the original engineers' and architects' work."

From the elevator doors' parting, the Needle's new transparency unfolds—25 percent more of it, according to the architects. Gone are the old pony walls and ribbon windows, replaced with tall glass panels, glare free courtesy of museum-grade antireflection coating. Widened stairs (one



Structural glass panels, separated by 4-inch gaps, replace a '70s-era protective cage (top, left). A new spiral stair unites the Needle's multiple levels (left). An anti-reflective coating reduces glare, while tinted interstitial layers of glass maintain the historic dark look (bottom, left).

equipped with an elegantly hidden retracting wheelchair lift) step down and out to the observation deck, where floor-to-sky expanses of structural glass—each panel weighing over a ton—cant outward over the city.

The once-solid steel floor is now 10 layers of glass, the inner thermal barriers sandwiched between a fritted underside, to maintain the structure's historic look from below, and a sacrificial top layer, easily stripped away when high heels have taken their toll.

A new spiral stair, terminating with a dizzying, downwardly aimed oculus, connects to what is being billed as the world's first revolving glass floor, redubbed the Loupe. Long shuddering on a fixed 47-minute rotation along a greasy train-track system, the space—which will house a wine bar and, eventually, a restaurant—now glides as smoothly as an audiophile's turntable. Designed with an Olson Kundig trademark, exposed kinetics, and engineered by Fives Lund, a company that normally moves rockets for Boeing and SpaceX, the system's 12 small motors silently spin a single platform-wide cog in either direction, the cycle adjustable from 20 to 90 minutes.

The renovation had its bumps and holdups. Demolition revealed unforeseen degradation. Top-to-bottom digital scanning showed so many quirks—the observation deck, for instance, is neither round nor flat—that every glass panel had to be custom-fabricated and fitted. An unusually windy winter periodically shut down crews working 500 feet in the air.

But, in the end, Maskin and Payson believe the renovation better fulfills the original designers' ambitions—they turned up historic sketches displaying glass walls. Vintage photos show more carefree days for the Needle—before suicide jumps and parachute pranks called for the installation of wire barriers (now gone)—when visitors dangled over the railings to snap pictures downward. "People are using the space differently," notes Maskin, as visitors rambunctiously scramble around the terrace, where sturdy glazing both highlights the thrilling elevation and allays related fears. "Now it's like an adventure."

As if on cue, a 6-year-old carefully tests the glass floor, first over a beam. A tentative step farther out leads to a leap onto a thick glass bench and, finally, to arms spread against the slanting glass wall for a Superman flight in the clouds.

"Right there," observes Maskin, "a threshold crossed—a little risk, a big reward." ■

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The architect and landscape designer for the August issue's classical **Temple of Ancient Virtue** and the pastoral Elysian Fields in England is the multidisciplinary talent William Kent, who began work on the grounds of Stowe, an existing manor, in the 1730s. Kent, later called the "father of modern gardening," brought a free manner to the pastoral setting.

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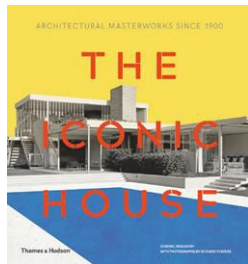
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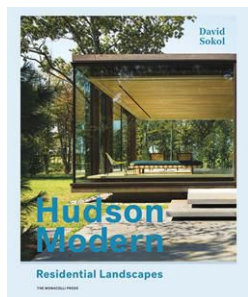
Four Takes on Houses and Interiors

Reviewed by Wendy Moonan



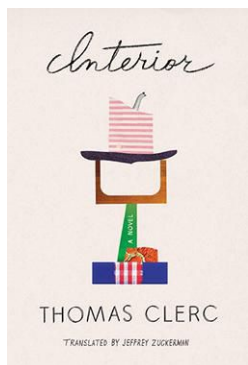
The Iconic House: Architectural Masterworks Since 1900, by Dominic Bradbury. Thames & Hudson, 376 pages, \$35.

Updated from the 2009 edition, this global survey features modern houses that longtime British design journalist Dominic Bradbury considers groundbreaking and influential. It opens with Victor Horta's Hotel Solvay in Brussels and ends with Tom Kundig's Studhorse house in Winthrop, Washington. The 100-plus dwellings are shown with photographs, plans, and concise texts. Bradbury is awestricken by "the intoxicating breadth of ideas, inspiration and original thought contained in these buildings." You will be too.



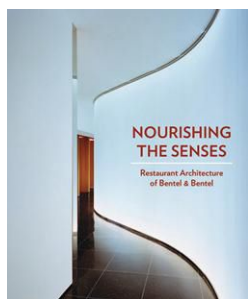
Hudson Modern: Residential Landscapes, by David Sokol. Monacelli Press, 261 pages, \$60.

David Sokol, a New York journalist (and *RECORD* contributor) who specializes in architecture, focuses on 18 modernist residences recently built in and around the Hudson River Valley. They are weekend retreats designed by, among others, such top talents as Steven Holl, KieranTimberlake, Joel Sanders, and Tsao & McKown. In style, they are unpretentious; in scale, modest. Whether they represent a distinct Hudson River school of architectural thought is debatable. They could be anywhere—they just happen to be in the Hudson River Valley. On the other hand, they are beautifully crafted and well thought-out contemporary takes on classical Miesian style.



Interior: A Novel, by Thomas Clerc; translated from the French by Jeffrey Zuckerman. Farrar, Straus & Giroux, 337 pages, \$27.

Thomas Clerc is a professor of French literature and the author of several books, including *The Man Who Killed Roland Barthes*. This book may be called a novel, but it is more a true-life literary tour, room by room, of the narrator's modest 540-square-foot apartment in Paris's 10th arrondissement. He meticulously documents the mundane contents and the memories and literary associations they evoke, whether it be a game of Clue or an old glass milk bottle from Ireland. The objects are so unrelentingly ordinary, I have to ask, "Why bother?" If the flat is a metaphor, I don't get it. Nonetheless, it would be fascinating to see how this approach could be used by an architect to reveal himself or herself through a description of domestic objects. Think of what Rem Koolhaas or Denise Scott Brown might come up with.



Nourishing the Senses: Restaurant Architecture of Bentel & Bentel, by Dr. Carol Rusche Bentel, Dr. Paul Bentel, and Peter Bentel; edited by John Morris Dixon. Visual Profile Books, 231 pages, \$60.

Founded in 1957, the Locust Valley, New York, firm Bentel & Bentel, with a 30-year specialty in hospitality work, is now run by the sons of the founders. Here they reveal the creative process and thinking behind the designs of such successful and stylistically varied Manhattan restaurants as Gramercy Tavern, Craft, Le Bernardin, and the Modern at the Museum of Modern Art. Through extensive photography, line drawings, and concise writing, the architects show they are masters at harmonizing food, service, and design for a diverse roster of clients. While the firm is modern to the core (with warmly crafted overtones), it is more motivated by the character of a client's restaurant than any given style. As Peter Bentel has written, "We think of our design work as portraits of the owners and how they engage the world." ■



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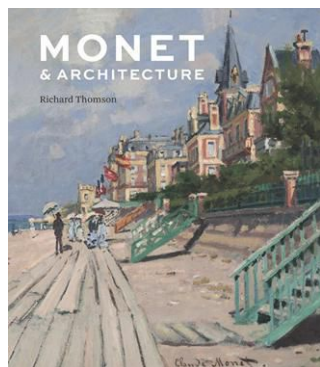


An Impressionist's Point of View

Monet and Architecture, by Richard Thomson. National Gallery/
Yale University Press, 248 pages, \$40.

Reviewed by Jeffrey Meyers

RICHARD THOMSON defines the scope of this valuable book by writing that Claude Monet painted “cities and villages, houses and monuments, churches and cathedrals, bridges and railway stations” in Paris, London, Amsterdam, Rouen, and Venice. Monet excluded substantial human figures but used architecture to suggest, as Thompson writes, “human presence, sheltered and enduring.”



Monet usually observed buildings from a high vantage point and wrote, “I want to paint the air that surrounds the bridge, the house, the boat—the beauty of the light [and colors] in which they exist . . . If you walk along the banks of the Seine, at Asnières for example, you can catch in a glance the red roof and the striking white of a chalet wall, the tender green of a poplar, the yellow of the track, the blue of the river.” The theme of this handsome catalogue of the exhibition (recently at the National Gallery, London) sharpens the traditional focus on Monet’s landscapes and reveals how he captured the dancing moments of architectural reality. As Proust wrote of the madeleine in *Swann’s Way*, Monet’s paintings, “taking their proper shapes and growing solid, spring into being.”

American architects should be interested in seeing important European buildings through the eye of a great painter. Monet’s bridges, connecting people and linking the traditional to the modern world, create a structural and psychological harmony. The purplish *Bridge at Amsterdam* (1874) depicts a wide, rippling canal flowing beneath a long curved bridge that supports pedestrians carrying umbrellas under a low, heavy sky. The two thick poles of the drawbridge boldly cut the distant church in two, separating the tower from the lacy apertures of the upper spire. The humbler *Houses on the Old Bridge at Vernon* (1883) portrays several dark peasant dwellings with sagging roofs, crowded onto a wooden bridge that can scarcely hold them up and seems about to collapse beneath their oppressive weight. The higher, longer, and more solid structure in *Wooden Bridge, Argenteuil* (1872) supports a coach and horses and a file of walkers. The placid river, framed by the pillars of the bridge, opens onto docked sailboats and a distant church dwarfed by the spume of smoke from a factory chimney, all reflected in the gray Seine. The jollier *Railway Bridge at Argenteuil*, completed the following year, provides a striking contrast. Resting on eight thick concrete pillars driven into the riverbed, the bridge, made of steel, juts straight across from shore to shore and carries a train exhaling clouds of smoke. Pleasure boats sail harmoniously beneath the modern structure as two men on the bank of the river gaze at them.

Monet was inspired by architectural subjects that were anchored to his varied landscapes. But his late paintings of Venice blur, dissolve, and seem to sink into the stagnant water. This voluptuous melancholy and diaphanous melting prophesied his near blindness in the 1920s—a loss of vision that also plagued his friends and colleagues Camille Pissarro, Edgar Degas, and Mary Cassatt.

Jeffrey Meyers’s *Resurrections: Authors, Heroes—and a Spy will be published in October 2018.*

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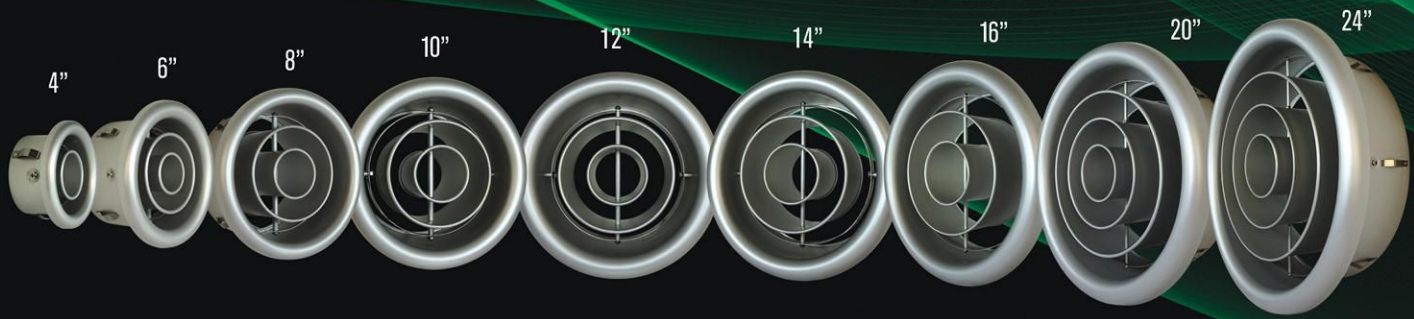
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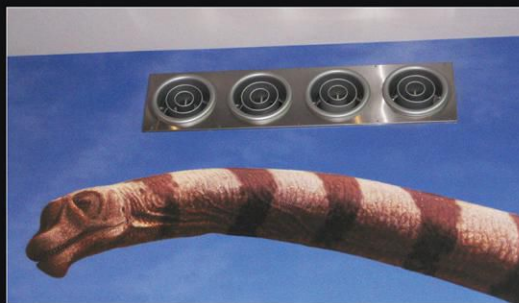
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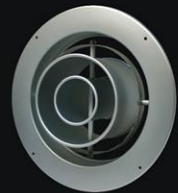


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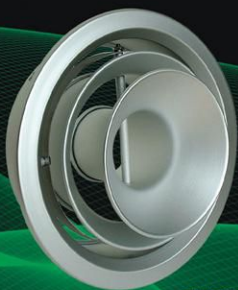


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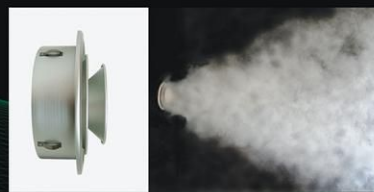
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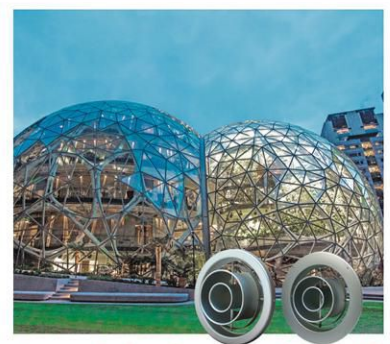


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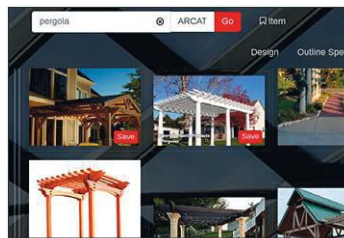


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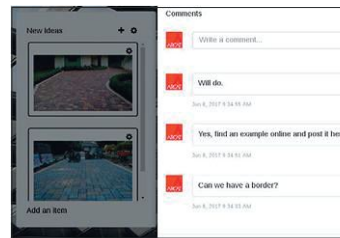
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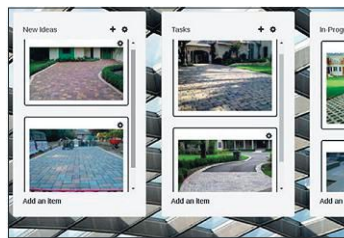
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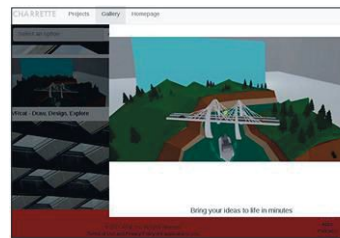
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Future Perfect

Mirrorlike or masquerading as other materials, these coatings represent a new direction in home aesthetics.

By Kelly Beamon



Miraia

The glassy finish of this fiber-cement cladding makes it an affordable alternative to metal and glazing for modern residences. A new offering from wall-panel manufacturer Nichiha USA, Miraia is 5/8" thick, weather-resistant, easy to install using the company's proprietary fastening system, and comes in three mirrorlike finishes, with a 15-year warranty.

nichiha.com



So Good

Wolf-Gordon collaborated with Brooklyn studio Me and General Design on this addition to the manufacturer's Curated Collection of wall-coverings. So Good features four reflective Mylar-accented patterns, which draw inspiration from New York and from the designers' film and music backgrounds. The elongated diamond shapes of Echo (shown) reference movement, adding visual interest to any room.

wolfgordon.com



Century

A soft, leatherlike matte finish distinguishes this new line of small-batch paints by Benjamin Moore. Developed by the company's chemists to help designers add dimension to painted surfaces, Century is available in 75 deeply saturated colors, including Wild Caraway, Viridian, and Açai (shown).

experiencecentury.com



TruTEX

Easy to install over existing floors, this vinyl option is a low-VOC, mildew-resistant extension of Tarkett's Breathe-Easy line. Available in 20 colors and in patterns that imitate other materials such as stone and wood, this flooring comes with a fabric backing that enables it to dampen sound as well as resist gouges, tearing, and mold.

residential.tarkett.com



Atlantic Cabinet Hardware

Colonial craftsmanship (specifically the turned spindles of Windsor chairs) informs a new line of solid brass pulls and knobs by Rhode Island manufacturer O&G Studio. Ideal for high-end kitchens, the hardware comes in polished and tumbled finishes and in eight lengths ranging from a tiny, round knob to a 14" handle.

oandgstudio.com

In Control

Clean lines and thoughtful design make these levers, handles, and locks more accessible for all users.

By Kelly Beamon

Vale

The sleek midcentury profile of this collection of knobs and pulls from Belwith-Keeler actually debuted in 1953 in the company's *Modern Hardware Catalog*. Today, Vale still looks at home in stylish residential settings. Made of zinc, the handles are available in round and elongated shapes and five finishes.

belwith-keeler.com



Obsidian

Kwikset developed this programmable entry-door lock for accessible security. By generating unique codes, users can share access at their discretion, and the system can be programmed to lock after 30 seconds. The hardware's profile is also streamlined, projecting less than 1" from the door, and is available in a range of finishes and handle styles.

kwikset.com

Kubic

The latest grab-bar collection from Ginger was made to be ADA-compliant and blend in with the rest of a project's design elements. Available in five lengths and four finishes, solid brass Kubic bars are built to satisfy safety requirements in hotels, public restrooms, and assisted-living settings.

gingerco.com



Lollipop Lever

Among the latest additions to Franz Viegner's popular brass faucets, the single-lever version of Lollipop incorporates a 6" spout, a tilting handle, and a choice of eight finishes.

franzviegner.com



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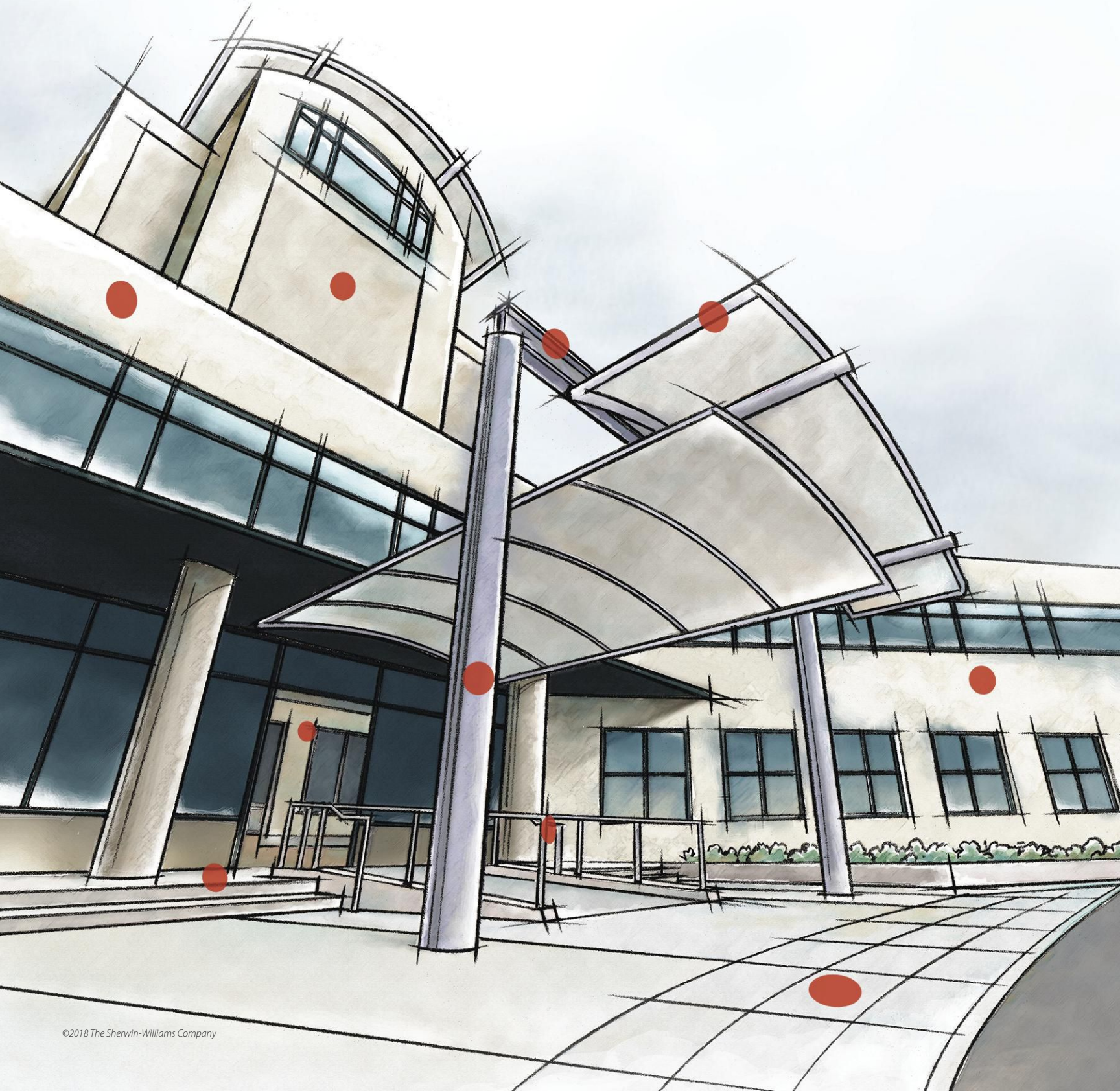




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America's **Top** Architecture Schools 2019

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.



Students and faculty gather for a final review of graduate student work at Princeton University School of Architecture.

BY DAVID GILMORE, PRESIDENT AND CEO OF DESIGNINTELLIGENCE

THE MANDATE from the architecture profession to the education community is to steadily move toward convergence. If the profession is to maintain and increase its relevance, everyone on the design continuum must come together. The preparation for the profession is where this path to relevance begins, and the schools of architecture must expand their understanding of relevance in order to maintain their own.

DesignIntelligence (DI) is dedicated to the business success of architecture, engineering, construction, and design organizations. Over the past year, our company has directly engaged with leaders and decision-makers of hundreds of architecture firms. In myriad discussions, the subject of design education has come to the forefront, usually coupled

with the themes of relevance and convergence between the profession and the schools—or not. Increasingly, our conversations with leaders in the field reveal the growing gap between the practice of architecture and the academy. Within this growing gap, however, is the call from the architecture profession to the education community to move together toward a point of intersection to ensure the future relevance of both. Through its research and strategic advocacy, DesignIntelligence can help bridge that gap.

As new players—from organizations as varied as WeWork and Katerra to venture capitalists or the big tech companies (FAANG)—move into the A/E/C industry, they are focused on disruption in hopes of capitalizing on the industry's myopia. These disruptors are growing in

The Top 10 Undergraduate Programs

1	Cornell University
2	Rice University
3	Cal Poly, San Luis Obispo (SLO)
4	Syracuse University
5	Cooper Union
6	Rhode Island School of Design
7	Pratt Institute
8	Virginia Tech
9	Southern California Institute of Architecture (SCI-Arc)
10	University of Texas (U.T.), Austin

The Top 10 Graduate Programs

1	Harvard University
2	Columbia University
3	Massachusetts Institute of Technology (M.I.T.)
4	Cornell University
5	Yale University
6	Princeton University
7	Rice University
8	University of California (U.C.), Berkeley
9	SCI-Arc
10	University of Michigan

COMPARISON OF PREVIOUS RANKINGS: UNDERGRADUATE

	2019	2018	2017	2016	2015	2014	2013	2012	2011
Cornell University	1	1	1	1	1	2	1	1	1
Rice University	2	6	4	5	3	3	3	5	3
Cal Poly, SLO	3	2	2	2	2	1	5	4	4
Syracuse University	4	3	3	4	5	6	3	7	2
Cooper Union	5	15	12	14	13	-	16	14	13
RISD	6	10	7	6	7	10	7	6	11
Pratt Institute	7	9	8	11	9	11	11	10	9
Virginia Tech	8	4	5	3	4	5	7	3	4
SCI-Arc	9	8	10	12	8	9	2	7	6
U.T., Austin	10	7	6	7	6	4	6	2	7

COMPARISON OF PREVIOUS RANKINGS: GRADUATE

	2019	2018	2017	2016	2015	2014	2013	2012	2011
Harvard University	1	1	1	1	1	1	1	1	2
Columbia University	2	2	4	4	2	3	2	3	4
M.I.T.	3	5	3	5	4	4	4	6	5
Cornell University	4	3	2	2	5	5	5	6	6
Yale University	5	4	5	3	3	2	3	2	3
Princeton University	6	22	16	12	13	13	15	19	15
Rice University	7	16	9	8	7	5	15	14	16
U.C., Berkeley	8	8	6	6	10	9	7	14	10
SCI-Arc	9	13	17	23	17	-	6	13	13
U. of Michigan	10	11	7	7	6	7	11	8	1

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

influence as traditional A/E/C firms maintain a status quo of slow, plodding, incremental improvement. In reality, what the industry and the profession need today is a disciplined transformation with expansive intellectual leaps and a “Why not?” attitude to both invention and innovation.

This disciplined transformation can happen, but only through working together and with reciprocal influence. Interaction, in both directions, is the way to integration. As professional firms and the academy move toward each other, schools will become more sensitive to the realities of professional practice, altering their programs to ensure that students are readied to support the profession. The firms will become more focused on the value and practice of research, intellectual exchange, and career-long learning as central to their relevance. For students and professionals alike, exploring new means to advance humankind’s relationship with and responsibility to the earth is perhaps the most important way time

can be spent in the study and application of architecture.

As the profession and academy converge, both will raise the bar for all contributors and participants. The quality of the built environment will improve, accelerated by breakthroughs in science and art, and by design that is centered on human experience.

At DesignIntelligence, we envision the possibility of a new unity, but it will only occur when destructive patterns of entrenched thinking are challenged and old paradigms of entitlement are deemed irrelevant. Only then does a new landscape of intellectual contribution become possible. It is our hope, backed by intentional effort and investment, to bring stakeholders into proper alignment.

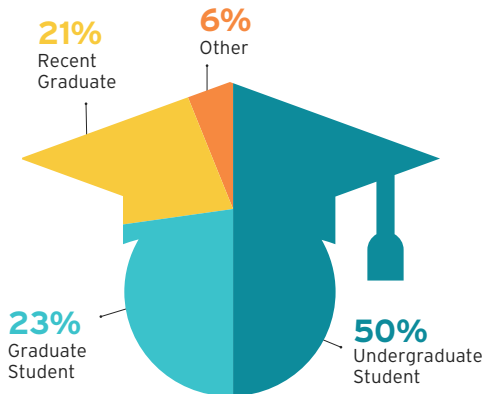
Each year for the past 19 years, DesignIntelligence has conducted the same survey across the design industry regarding architecture-school rankings. The number of valid responses from hiring managers of architecture and design-professional firms typically range between

Architecture Student Survey

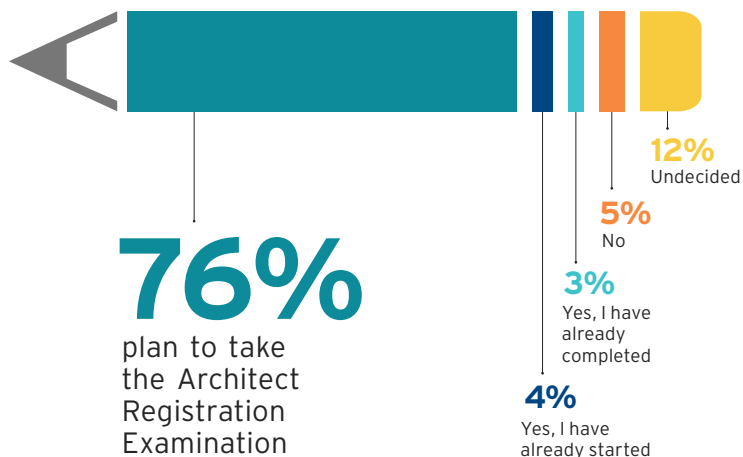
This year, DesignIntelligence received 3,663 valid responses from architecture students and recent graduates. Of this group, 50 percent of the respondents were undergraduates. Of that percentile, 60 percent were enrolled in a B.Arch. program, 16 percent are seeking a B.A. in architecture, and 18 percent a B.S. in architecture; 23 percent of respondents were enrolled in graduate programs, and, of those, 89 percent are pursuing an M.Arch.



Graduation Status

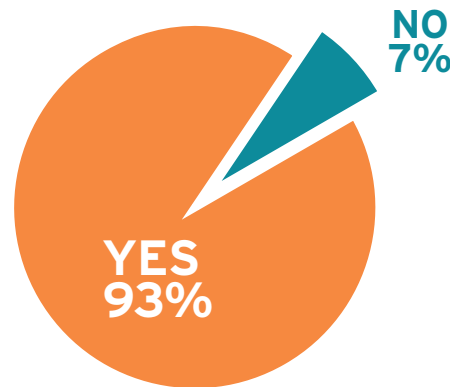


Architect Registration Exam

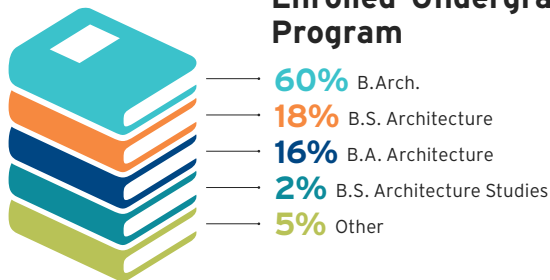


Preparedness

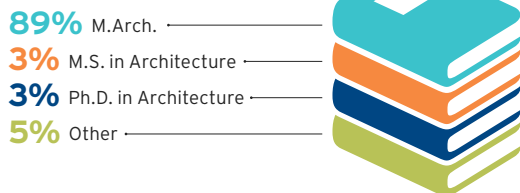
Believe they will be, or were, well prepared for their profession upon graduation:



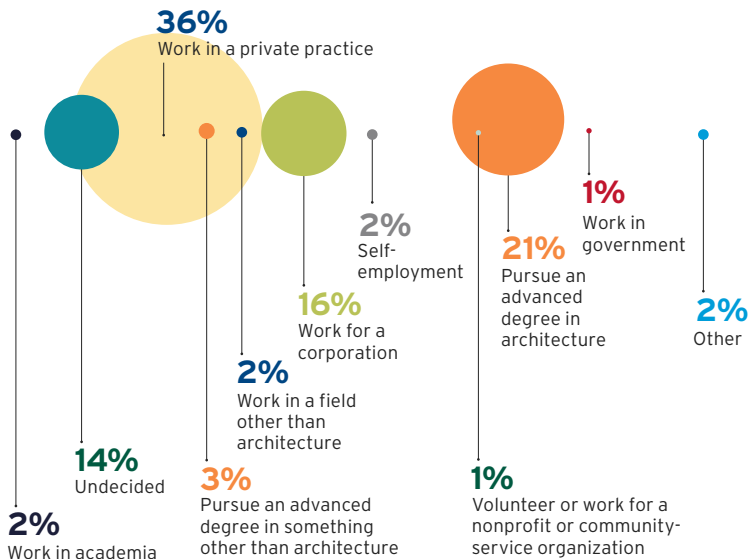
Enrolled Undergraduate Program



Enrolled Graduate Program



What they'll do after graduation



Skills Assessment

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

DESIGN THEORY UNDERGRADUATE

1	Cornell University
2	Cooper Union
3	SCI-Arc
4	Rice University
5	Syracuse University

CONSTRUCTION METHODS & MATERIALS UNDERGRADUATE

1	Cal Poly, SLO
2	Virginia Tech
3	Cornell University
4	Auburn University
5	Syracuse University

SUSTAINABILITY UNDERGRADUATE

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

RESEARCH UNDERGRADUATE

1	Cornell University
2	SCI-Arc
3	Cal Poly, SLO
4	Cooper Union
5	Carnegie Mellon University

DESIGN THEORY GRADUATE

1	Harvard University
2	Columbia University
3	Yale University
4	Princeton University
5	Cornell University

CONSTRUCTION METHODS & MATERIALS GRADUATE

1	M.I.T.
2	Harvard University
3	Cornell University
4	Georgia Institute of Technology
5	Virginia Tech

SUSTAINABILITY GRADUATE

1	M.I.T.
2	Harvard University
3	Columbia University
4	U.C., Berkeley
5	Cornell University

RESEARCH GRADUATE

1	Harvard University
2	M.I.T.
3	Columbia University
4	Cornell University
5	Princeton University

2,600 and 3,200, year over year. But this year was markedly different: we had more than 4,500 valid responses, which may reflect the urgency of improving architectural education.

For 2018, we made a fundamental shift in rankings from one primary question to two. We moved away from asking for “the best” (i.e., “Which programs are best preparing students for a future in the profession?”) to asking for “the most admired” (i.e., “What schools do you most admire for a combination of faculty, programs, culture, and student preparation for the profession?”). Asking for “the best” assumed objectivity, while asking for “the most admired” is a mix of objectivity and the experiential factor. We made this move because we felt that



Undergraduate students at the Rhode Island School of Design (RISD).

“the most admired” was a broader question.

The second primary question we asked this year is, “From which schools have you hired the greatest number of (undergraduate or graduate) students in the last five years?” (The responses to this second question will be available on the DI Rankings website.)

The movement across the Top 10 Most Admired Architecture Schools had some nice surprises. In the undergraduate-program category, Cooper Union jumped from number 15 last year to number 5 this year. Rice University rose from number 6 last year to number 2 this year.

Among the graduate programs, four schools are new to the Top 10. Princeton jumped from number 22 last year to number 6 this year. Rice University went from number 16 to number 7; Southern California Institute of Architecture (SCI-Arc) moved from number 13 to number 9; and University of Michigan advanced from number 11 last year to occupy the number 10 spot this year.

The reasons for these shifts are, frankly, unknown. It could have been the difference in the question (i.e., “best” to “most admired”). It could have been the larger response rate we received. But, nonetheless, we congratulate those highlighted above.

Last year, DesignIntelligence provided a total list of 58 National Architecture Accrediting Board (NAAB) undergraduate architecture programs and 114 NAAB-accredited graduate programs for the rankings survey. Undergraduate and graduate architecture programs were ranked together across 11 categories of focus for each program. This year, we ranked undergraduate architecture programs and graduate architecture programs across four categories of focus: design theory; construction methods and materials; sustainability; and research. Of particular note are the broad appeal of Cornell, SCI-Arc, and Virginia Tech. Cornell and SCI-Arc ranked in the Top 10 of all four focus areas across both their undergraduate and graduate programs. Virginia Tech. ranked in the Top 10 of all focus areas except one, across both undergraduate and graduate programs. These schools and the others in our top rankings are preparing the best of the best to enter the profession and to help transform it for the good of all. ■

For more information on the rankings, including the Top 25 Most Admired Educators in Architecture, Interiors, and Landscape Architecture, go to architecturalrecord.com. Additional details and information will be available on the [DesignIntelligence website, DI-rankings.com](http://DesignIntelligence.com).



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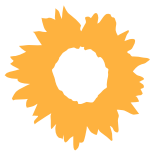
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- 80 Renovation on Cox's Row, Washington, D.C.
- 86 Private Office, Chicago
- 92 Petra, the Stone Atelier, Valencia, Spain
- 96 Oi Mari, Matera, Italy
- 102 Expensify, Portland, Oregon

Noma | Copenhagen | BIG-Bjarke Ingels Group and Studio David Thulstrup

A Feast for the Senses

A celebrated restaurant's new home provides a tactile rustic setting that complements the kitchen's spectacular seasonal cuisine.

BY MAIRI BEAUTYMAN





Chef René Redzepi's interpretation of Nordic cuisine contains a few surprises—live ants being among the more startling ingredients on the legendary Noma's tasting menu, which starts at around \$350—but this has not deterred customers. Since he opened his experimental restaurant in a Copenhagen waterfront warehouse in 2003, it has been repeatedly lauded as one of the world's best.

While the original Noma closed in 2017, its success gave co-owner Redzepi the chance to build his dream restaurant from the ground up. He envisioned a modest agricultural commune in a bucolic but urban setting, a cluster of small farm-style buildings in which he would serve a cuisine parceled into three seasonal segments: seafood in the winter and spring, vegetarian for summer, game and forest in the autumn. So, when the opportunity arose, Redzepi snatched up a lakefront site near the city's Christiania neighborhood. Then he signed on the architect Bjarke Ingels, with whom he had been discussing a potential project.

Employing oak, brick, steel, concrete, and tombac—a brass alloy with high copper content—Ingels, founder and creative director of BIG-Bjarke Ingels Group, devised a 14,000-square-foot “village” comprising 11 one-story pavilions that correspond to the client's vision. Three are greenhouses—one serving that purpose, another a bakery, and the third a test kitchen. The remaining eight—including a renovated existing concrete warehouse that once stored explosives for the Danish navy—are occupied by the restaurant, integrated and connected by glass-covered walkways. “You see sun,” says Ingels. “The roofs get covered with snow, and on rainy evenings, you know certain things might be foraged the next morning.”

The architects divided the restaurant's programs among these structures, imparting a unique identity to each through a rich variety of building materials: the entrance is wood, partially clad with tombac; a lounge built with two shades of brick; the main dining room, and one for private dinners, both wood; a dark-concrete storage building for the wait staff's equipment; a barbecue station in weathering steel; and the existing building, which houses refrigeration, a fermentation lab, prep

TABLE D'HOTE BIG created a gracious daylight private dining room with a canted ceiling constructed with white-oiled Douglas fir beams. David Thulstrup designed the oak chairs and long table seating 20.



kitchen, a staff canteen, and changing room. These are all grouped around the 600-square-foot service kitchen, Noma's pulsating heart. This way, says Ingels, "cooks can see a table is about to finish." Also, people come here to experience the cooking process. That doesn't include its smoke, steam, and heat, however. The entire blackened-steel roof of the service kitchen contains a powerful ventilation system.

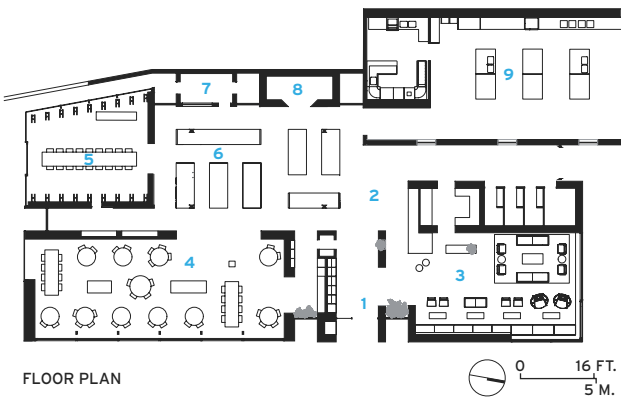
To create a comfortable atmosphere, Redzepi turned to an interior designer he had admired on Instagram, the Copenhagen-based Studio David Thulstrup. "They were looking for something that felt homey," recalls Thulstrup, which he responded to with spare, concise layering, using mostly custom furniture and subtle, nature-inspired art.

Within the entrance, the architects applied untreated oak to the ceiling and walls. Collaborating with the BIG design team, Thulstrup set river stones into a sandblasted concrete floor—to allow bare feet, if desired, to feel "the texture, which is like walking on a little riverbed," he says. Redzepi also commissioned Icelandic-Danish artist and friend Olafur Eliasson to create an installation for this space. The ceiling-mounted driftwood-and-rare-earth-magnet sculpture, named *Conscious Compass*, flies due north. The only other furnishings here are a roughly cast ceramic vase by Frederik Nystrup-Larsen and Oliver Sundqvist, propped on a rugged piece of reclaimed wood, and a lone seat, one of the dining chairs designed by Thulstrup, with slightly elevated woven-cord seats to encourage diners to lean toward the table.

Wanting to maintain a "bright environment" in the 680-square-foot lounge adjacent to the entrance, the design team clad its ceiling with oiled oak. Thulstrup selected a buttery-hued brick for the walls and open



PHOTOGRAPHY: © SØREN AAGAARD (TOP); IRINA BOERSMA (BOTTOM; OPPOSITE, TOP 2); ALDO AMORETTI (OPPOSITE, BOTTOM)



- 1 ENTRANCE
- 2 FOYER
- 3 LOUNGE
- 4 MAIN DINING ROOM
- 5 PRIVATE DINING ROOM

- 6 SERVICE KITCHEN
- 7 BARBECUE
- 8 WAITERS' STATION
- 9 EXISTING BUILDING



CREATURE COMFORTS
 Noma's farm-style buildings comprise a series of pavilions on a lake (opposite, bottom), including a wooden main dining pavilion, wood and tombac lounge, and brick lounge. A glass roof connects the lounge and entry (opposite, top left). A custom oak-topped granite bar sits near the lounge's fireplace (opposite, top right). The lounge (above) features benches upholstered in tan leather and lounge chairs by Jasper Morrison & Wataru Kumano flank low Swedish granite tables. In the foyer (left) a crushed-stone sculpture by Danish artist Carl Emil Jacobsen is mounted on a wall behind a display of large laboratory jars.



fireplace, several shades lighter than the brick BIG used on the building's facade. This genial area, illuminated with conical Oregon pine pendants by Jorgen Wolff and furnished with a mix of new and vintage Danish classics, references a 1970s home and offers views of the lake.

The fermentation and research incorporated into Redzepi's cooking are evident in the foyer outside the lounge just beyond the entrance, where an arrangement of glass laboratory jars on a custom oak table contains such changing seasonal "treasures" as a preserved octopus floating in amber embalming fluid. Sea life brims in one large aquarium; in another, burrowing ants. Nearby, mechanical thumps and whirs of high-tech machinery emerge from the fermentation lab. The ultrahomogenizer, says research-and-development sous chef David Zilber, "sounds like a dying hellcat."

The service kitchen reveals the staff at work around oak-clad islands conceived to withstand the wear and tear of daily use. "Some parts are veneer or metal, with no wood joinery—which would break—and some are solid wood, which won't crack if you oil it," Thulstrup says.

The main and private dining areas, in oak and Douglas fir respectively, offer an entirely different type of comfort, with pitched roofs that add a barnlike feel. Scandinavian craft is apparent everywhere.



OUTSIDE IN The restaurant revolves around the service kitchen (left). Tableware is stored at the waiters' station (above). Large windows and a skylight run the length of the main dining room (opposite, top) with views into the service kitchen (opposite, bottom).

The skylit 1,300-square-foot main dining room features stacked-oak walls, joined by 250,000 invisible screws, in stark contrast to the naturally blackened pine beams used to fabricate a service credenza and also tall sculptural installations that jut out of the floor. The beams were found in a local harbor, says Thulstrup. "They were put in the water in preparation for making warships and then just forgotten."

Artist Jonas Edvard's ground-seaweed pendants hang above the 20-foot-long smoked-oak communal table that dominates the 660-square-foot private dining room, which also opens onto the kitchen. A rhythmic progression of canted wood beams overhead sets a playful mood. The beams align with columns along a window wall on one side of the room and with shelving on the opposite wall, where artifacts from the restaurant's collection are showcased.

With such clearly stated simplicity, the result of a creative collaboration among the two design teams and the restaurateur, Noma's fresh new digs (dubbed Noma 2.0 in-house) only serves to magnify the astonishing complexity of Redzepi's dishes—think a minimalistic, nature-inspired stage for a rich broth of Faroese sea snails or teal for two. ■

Mairi Beautyman is a design and travel journalist based in Berlin.



credits

ARCHITECT: BIG-Bjarke Ingels Group

INTERIOR DESIGNER: Studio David Thulstrup

ENGINEERS: Helden ApS (electrical); LuVa Consulting (ventilation/water/plumbing); BIG Engineering (construction)

CONSULTANTS: Big Ideas (wind); Anker & Co. (lighting); Sif-Gruppen (acoustics); Elgaard Architecture (listed-building advisor); Thing og Brandt Landskab (landscape architect); NT Consulting (site and project manager); Cowi Brand (fire prevention)

CLIENT: Noma/Ejendomsselskabet Søminedepotet

SIZE: 14,000 square feet

COST: withheld

COMPLETION DATE: February 2018

SOURCES

DOUGLAS FIR: Dinesen

BRICKS: Petersen Tegl

TERRAZZO: Peter Bendtsen (river stones)

RUGS: Kasthall

KITCHEN: Maes Inox; Malte Gormsen

FURNITURE: Tärnsjö; Nikari; Malte Gormsen; Brdr. Krüger

TEXTILES: Astrid.se; Sørensen Leather; Kvadrat; Pierre Frey; Ragnhild Højgaard; Audrey Louise Reynolds

LIGHTING: XAL; Anker & Co.; Jonas Edvard; Wasterberg



Renovation on Cox's Row | Washington, D.C. | Robert M. Gurney, Architect

A Modern Classic

A dowdy 200-year-old townhouse is born again as a light-filled contemporary residence.

BY BETH BROOME

PHOTOGRAPHY BY ANICE HOACHLANDER

In a typical version of a family's evolution, when the kids grow up and move out, the parents embark on a downsizing mission. In the case of a couple in Washington, D.C., whose children had just flown the nest, however, reimagining their life involved undertaking an ambitious adventure: rather than scaling back, they transformed a stodgy 200-year-old townhouse in Georgetown into an airy, modern home.

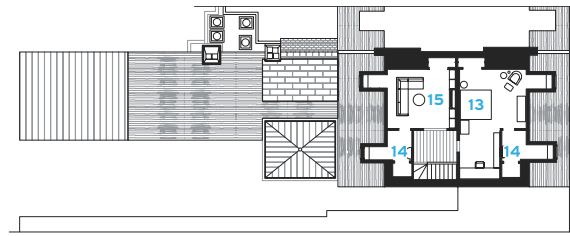
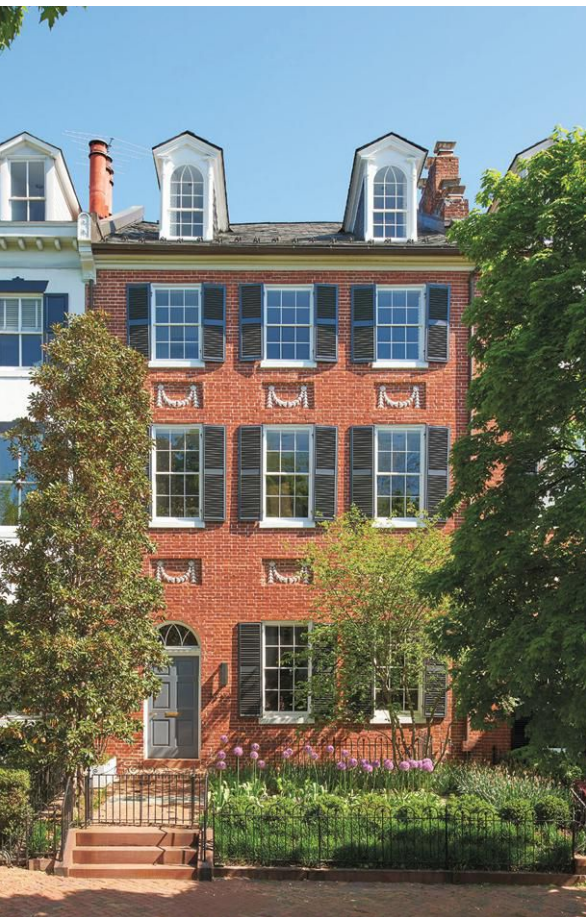
The couple had raised their family in a large, traditional house in the city's leafy Wesley Heights neighborhood, but the husband, who grew up in D.C. and runs a real-estate management and private equity firm, had always loved Georgetown. "We were looking to change our lifestyle through a more urban, walkable living situation," he says, noting that the historic precinct struck the right balance, with its neighborhood feel and urbane sensibility. But the old housing stock was not without challenges: much of it does not easily accommodate contemporary needs, and preservation restrictions are stringent.

The family's years-long house hunt ended when they took a fresh look at a residence they had earlier rejected—a stately four-story redbrick Federal-style townhouse dating to 1818 that is one of five comprising Cox's Row, built by Colonel John Cox, who would later serve as the mayor of Georgetown. It was not easy to see past the heavy furnishings, chandeliers, and draperies, and, as townhouses are wont to be, it was dark at its center and chopped up by additions at the rear (a two-story extension trailed by a one-story one), resulting in a fractured flow and awkward circulation. But the couple was captivated by the house's bones—in addition to its robust original structure, the building had been well tended over time, undergoing numerous renovations and infrastructural updates. And they were enamored of the unusually grand scale of the high-ceilinged rooms on the first floor, which would be ideal for displaying their extensive modern and contemporary art collection and for entertaining—two things that were critical in the vision for their future. "Boy," the husband recalls thinking, "if you could figure out a way to make this house fit our modern aesthetic, that would be a neat trick."

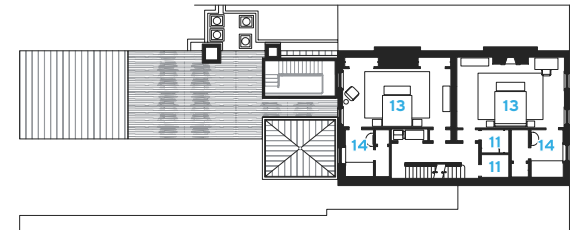
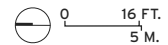
To pull off the stunt, the client turned to D.C.-based architect Robert Gurney, whom he had hired previously to work on some of his commercial properties and who has decades of residential experience in the city and its environs. He admired Gurney's pragmatic approach and knew that his deep knowledge of the Old Georgetown Board's priorities (as well as those of myriad other local governing bodies) would be an asset. Visiting the property, Gurney immediately saw the potential for respecting the historic architecture while transforming the residence



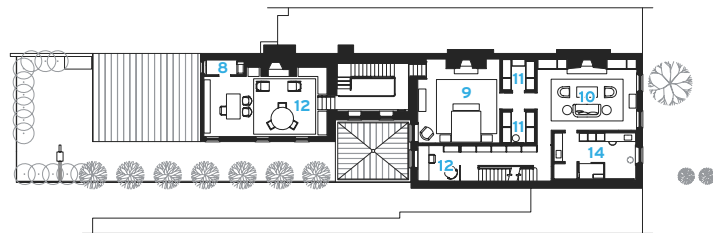
LIVING IN HARMONY Modern interventions, such as the glass-and-steel entry, marble flooring (opposite), and fireplace mantel (above) complement original elements, like the front stair, crown molding, columns, and pilasters in the living room. LSS Interiors designed some furnishings, such as the sofas (opposite), and scoured the globe for others, like the midcentury Gio Ponti chandeliers (above and opposite).



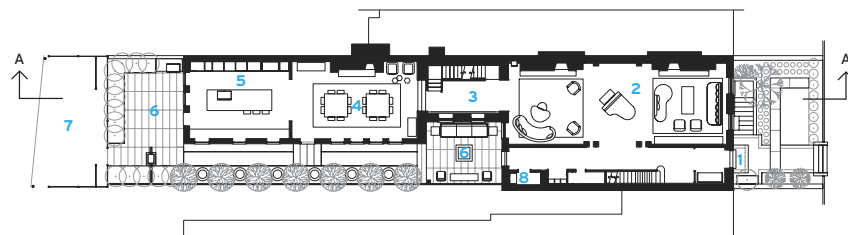
FOURTH-FLOOR PLAN



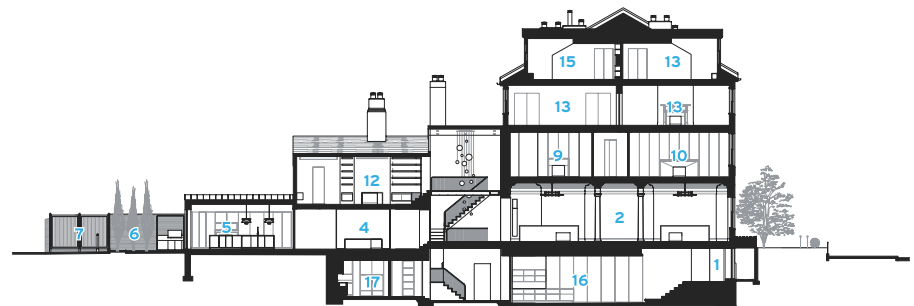
THIRD-FLOOR PLAN



SECOND-FLOOR PLAN



FIRST-FLOOR PLAN



SECTION A - A

credits

ARCHITECT: Robert M. Gurney, Architect – Robert M. Gurney, principal; Kara McHone, project architect

CONSULTANTS: Leroy Street Studio Interiors – Sybille Schneider (interior design); United Structural Engineers – Aziz Paracha (structural engineer); New Age Electric (lighting & electrical); Allegheny Wood Works, Affinity Woodworking (millwork); Atlantic Control Technologies (audiovisual); Harvey W. Hottel (HVAC); R.L. Voight & Son (plumbing); Campion Hruby Landscape Architects – Kevin Campion (landscape)

GENERAL CONTRACTOR: Peterson + Collins

SIZE: 6,600 square feet

COST: withheld

COMPLETION DATE: May 2018

SOURCES

WINDOWS & DOORS: Hope's; Parrett Windows & Doors; AK Metals (interior steel-and-glass doors)

PAINTS & STAINS: Benjamin Moore

LIGHTING: DeltaLight (downlights); Luminii (task lighting); decorative fixtures provided by LSS Interiors

LIGHTING CONTROLS: Lutron

PLUMBING/FIXTURES: Waterstone; Julien; Kallista; Boffi; Lacava; Duravit

- | | | | |
|------------------|------------------|------------------------|-------------|
| 1 ENTRANCE | 6 PATIO | 10 MASTER SITTING ROOM | 14 BATHROOM |
| 2 LIVING ROOM | 7 PARKING | 11 WALK-IN CLOSET | 15 DEN |
| 3 NEW STAIR HALL | 8 POWDER ROOM | 12 OFFICE | 16 GYM |
| 4 DINING ROOM | 9 MASTER BEDROOM | 13 BEDROOM | 17 LAUNDRY |
| 5 KITCHEN | | | |



THE MISSING LINK The landmarked redbrick front facade (opposite) appears much as it did 200 years ago. A soaring new oak-and-steel stair (above and right) has healed the house's fractured circulation and, topped by a new light monitor, carries daylight deep into its core. A bridge at the second level connects the master suite with an office.

into a 21st-century home that would meet the clients' goals, including enough bedrooms for each of their three grown children when they came to visit. The couple purchased the house in 2015.

"The house's biggest flaw," recalls Gurney, "was this lack of connectivity." The kitchen at the back was severed from the rest of the interior by a narrow stair that was the only point of entry for a second-level office. In the middle of the main floor was a double-height parlor-like space, linking the dining and living rooms, an odd passage with a corner fireplace and—curiously—a superfluous and cheesy balcony leading off the office upstairs.

In a seeming sleight of hand, the architectural team addressed both the disjointed circulation and flow as well as the lack of light with one major gesture: transforming the no-man's land of the middle parlor into a beautiful steel-and-wood stair hall that has become a show-stopping centerpiece for the house. Rising from the basement level, where there is a gym, media room, and laundry, the stair travels up through the main living level to the master suite one flight up (the two floors of children's rooms above are accessed by the original, front stair). At the top, a light monitor pushes out through the roof, throwing daylight deep into the heart of the building. A bridge at the second level connects the master



bedroom, stair, and office, eliminating the need for the narrow stair at the back. Removing this element resulted in the reinvention of the main level as one large, contiguous space. Though the 119-foot length is defined by the parameters of the rooms—living, dining, and kitchen—you can see clear through from front to back. The effect is stunning. While enough of the original elements—moldings, columns, and pilasters—have been preserved, anchoring the house's unique place in history, the introverted nature and fustiness have been replaced with an open, forward-looking sensibility. Modern finishes and fixtures, as well as furnishings and soft goods carefully selected or designed by Sybille Schneider of New York-based Leroy Street Studio (LSS), imbue the large spaces with sophistication and intimacy. All the walls are painted white, an apt backdrop for the family's exquisite art, including work by Donald Judd, Josef Albers, Yayoi Kusama, and Sol Lewitt.

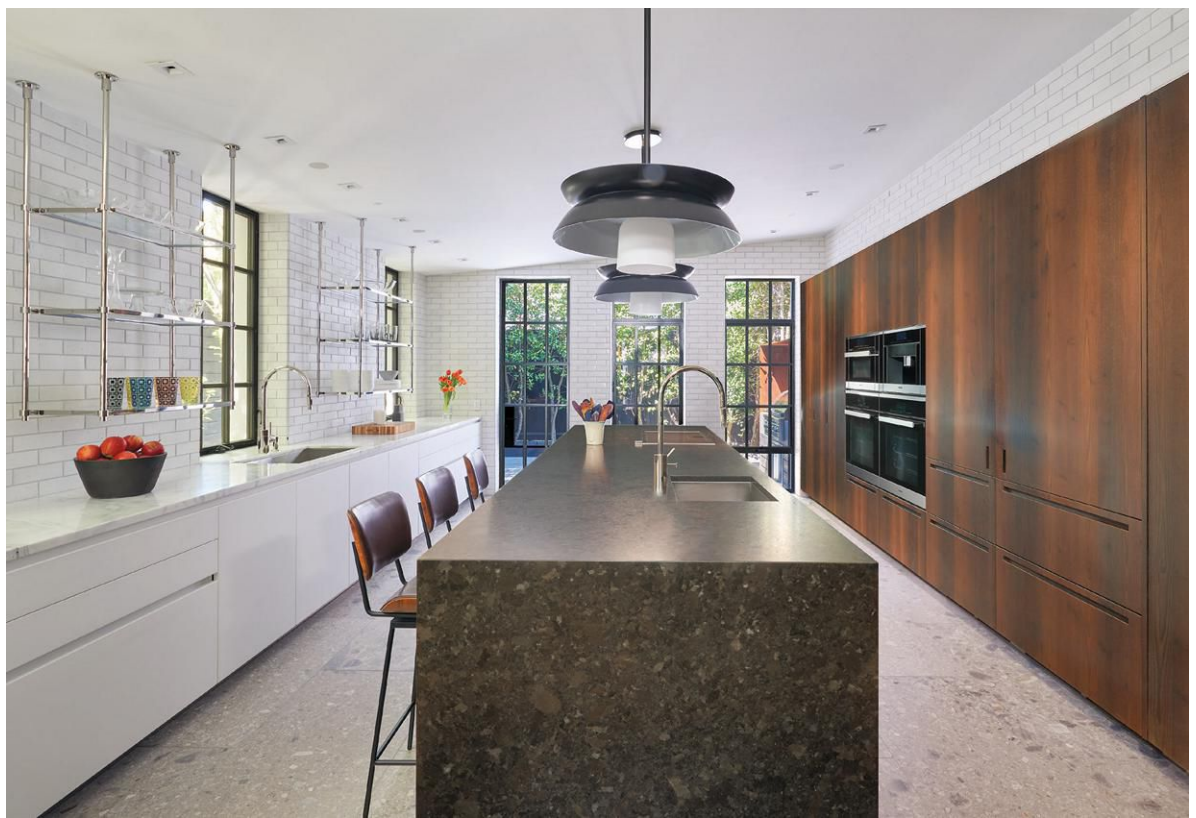
To bring in additional light, the team added windows on the west facade, which looks out to a long, narrow yard with a seating area and fire pit, as well as enlarging the openings in both the dining room and kitchen with tall casement windows. The front of the house, not surprisingly, could not be touched.

The questions that the architects kept coming back to, says Gurney,



TOTALLY CONNECTED

The design team removed a narrow stair, so that the dining room (above) now flows into the kitchen beyond (right). They then enlarged windows in both rooms. A door in the master bedroom (opposite, top) connects to the new central stair as well as a bridge, which leads to an office (opposite, bottom).



were: "How much do we intervene? And how much historic fabric should we preserve? What is the right balance?" What guided their decisions, beyond regulatory restrictions (which extend to interiors), was the quality of the preexisting elements. Deep moldings would stay. Lesser moldings and baseboards were more likely to be eliminated. The original heart pine and Douglas fir flooring on the upper levels had a pleasing character, but it was a quilt-work of pieces and patches with wide gaps between. So the team wire-brushed it and stained it dark, carrying the idea downstairs to the new rift and quarter-sawn white oak floors laid in a chevron pattern, which replace the inlaid cherrywood flooring from an earlier renovation. Historicism was not an option. New and old stand in bold but respectful contrast, as with the steel-framed corrugated-glass doors that punctuate thresholds and signal that this house, despite all the history that defines it, will not be beholden to what was. Instead, it has fearlessly entered a new chapter as it travels through time. ■



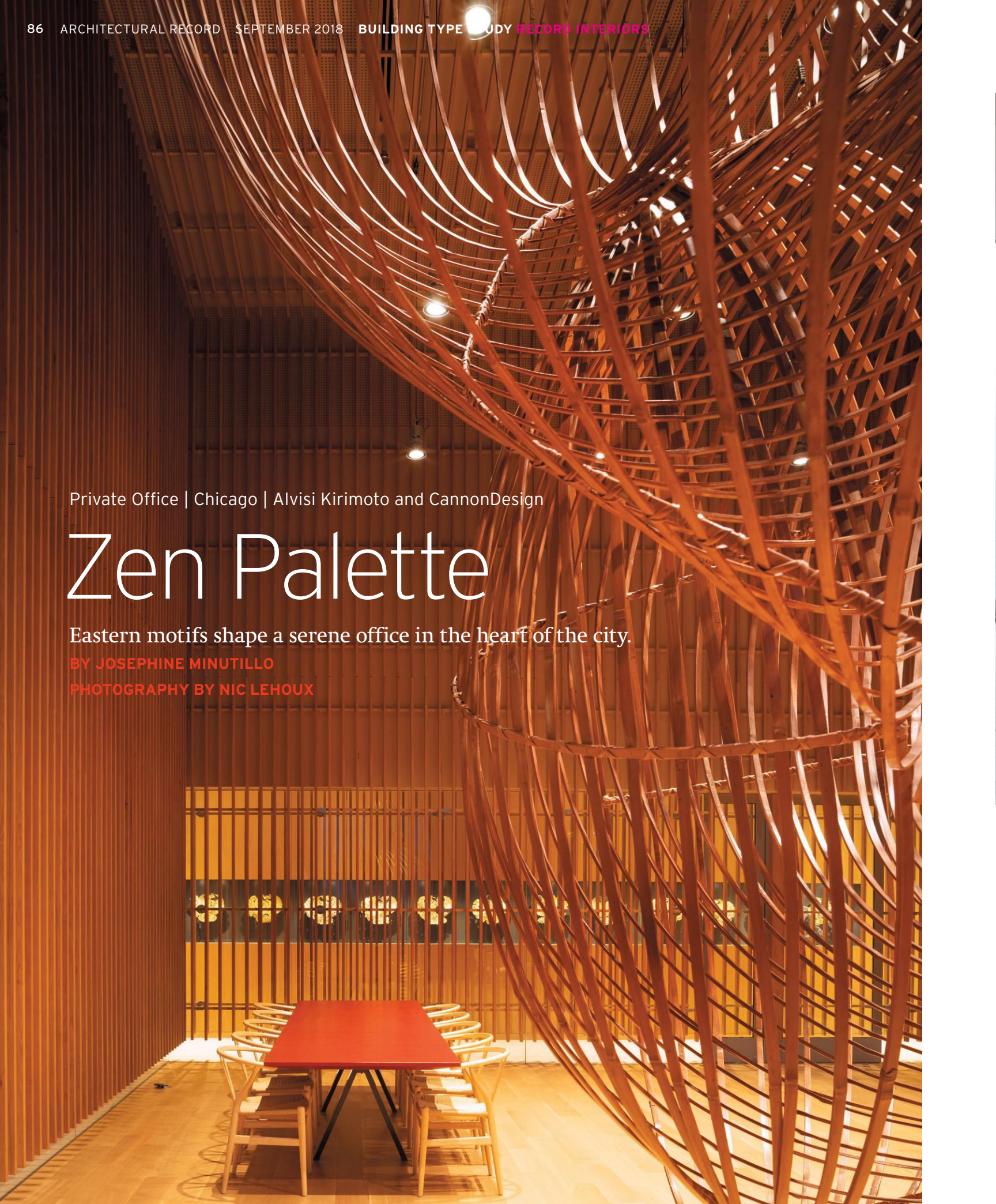
Private Office | Chicago | Alvisi Kirimoto and CannonDesign

Zen Palette

Eastern motifs shape a serene office in the heart of the city.

BY JOSEPHINE MINUTILLO

PHOTOGRAPHY BY NIC LEHOUX





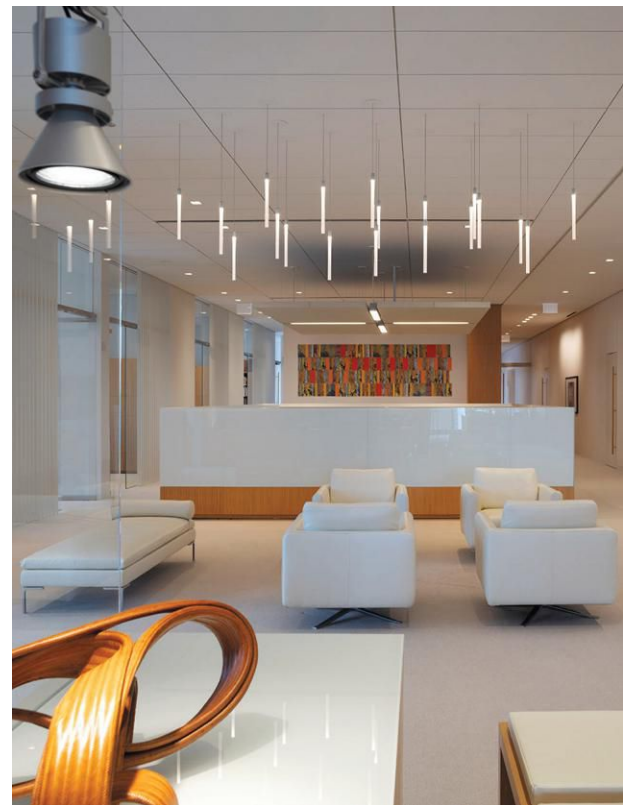
It's not often one walks into an office and feels a sense of calm and utter tranquility. An uncommon workplace in the center of downtown Chicago is serious in tone, as well as serene, designed as much for receiving visitors as for providing its 25-person staff the best environment in which to work.

The space, with its zen atmosphere, is, not surprisingly, anchored by a strong Eastern influence, reflecting a desire of the client, who has traveled extensively in Asia and amassed an impressive collection of art from the continent. What may be surprising, however, is that its design comes via Italy.

The Rome-based architecture firm Alvisi Kirimoto, headed by Massimo Alvisi and Japanese-born partner Junko Kirimoto, was tapped to tailor the space—its first project in the U.S.—working with the local office of CannonDesign, which had been brought on earlier to organize the layout of the rectangular floor plate. The straightforward arrangement has private offices and conference rooms lining the window walls around a central core containing the elevator banks and bathrooms.

DAY AT THE OFFICE A spiraling bamboo sculpture, over 6 feet in diameter and suspended 3 feet above the floor, punctuates the soaring volume of the Winter Garden (opposite). A nearly 100-year-old bonsai tree is the centerpiece of the reception area, where plush sofas welcome visitors (above).

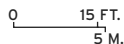
“It was very clear from the beginning that the client wanted something special,” recalls Alvisi. Working with CannonDesign, the client had already selected two consecutive midlevel floors in a new tower being built along the Chicago River, after deciding to relocate from just a few blocks away. The office for one enterprise would occupy the full lower floor, nearly 30,000 square feet, taking advantage of its 12-foot ceiling height and carving out a piece of the floor above—which houses another of the client’s businesses—to create a large double-height room that has come to be known as the Winter Garden. “We had an unusual amount of flexibility with the building, which was just beginning construction,” says CannonDesign principal Mark Hirons. “We were even offered the possibility of balconies, but we opted for a light-filled interior space at one end of the floor that could be enjoyed year-round.”



FLOOR PLAN



SECTION A - A



- | | | | |
|-------------------|------------------|--------------------|---------------------|
| 1 ELEVATOR LOBBY | 6 WINTER GARDEN | 11 WINDOW OFFICE | 16 EXECUTIVE OFFICE |
| 2 RECEPTION | 7 PRIVATE DINING | 12 INTERIOR OFFICE | 17 COFFEE AREA |
| 3 BOARD ROOM | 8 LUNCH AREA | 13 MAIL ROOM | 18 COPY ROOM |
| 4 CONFERENCE ROOM | 9 KITCHEN | 14 CUBICLE | 19 CEO |
| 5 LOUNGE/LIBRARY | 10 GAME ROOM | 15 WAITING AREA | |

ART FILLED Soft-colored rice paper covers panels along a wall of the reception area beside a Henry Moore sculpture (top, left), while a deep red marks the lunch area (top, middle). Cubicles and desks are finished in glossy white glass (above). Hickory slats, like those in the Winter Garden, line the walls of private offices (opposite).

credits

- ARCHITECT:** Alvisi Kirimoto
- ARCHITECT OF RECORD:** CannonDesign
- CONSULTANTS:** Arup (acoustics); Netrix (audiovisual); S20 (food service); CannonDesign (m/e/p, structural, lighting)
- GENERAL CONTRACTOR:** Executive Construction
- CLIENT:** withheld
- SIZE:** 27,700 square feet
- COST:** withheld
- COMPLETION DATE:** December 2017

SOURCES

- LIGHTING:** Fabbian, iGuzzini, MP Lighting, SSL Lighting, Tech Lighting, Vibia (interior ambient lighting); Artemide (task lights); Juno, Usai, Focal Point, Kenall (downlights)
- GLASS DOORS:** Christopher Glass & Aluminum
- WOOD DOORS & MILLWORK:** Parenti & Raffaelli
- HARDWARE:** Adams Rite, Dorma
- ACOUSTICAL CEILINGS:** Armstrong
- WORKSTATIONS:** Halcon
- PAINTS AND STAINS:** PPG, IdeaPaint
- FABRIC:** Maharam, Edelman (leather)
- FURNITURE:** Carl Hansen, Herman Miller, Knoll, B&B Italia, DePadova, Diardi



The 24-foot-high Winter Garden, with a giant window over the river, serves as a multipurpose room—for meetings, events, exhibitions, and even as a place to relax. (The office not only regularly hosts clients but board members of related companies and institutions.) Alvisi Kirimoto initially conceived the space as a wood box, but wanted it to appear weightless. So they developed its walls as two layers of offset vertical hickory slats with a glass partition between them. The slats begin at the ceiling and end 10 inches above the floor, giving the impression that the box is suspended. “Because the layers of slats don’t

align, it looks very different when seen from straight on or from an angle. That’s a very Eastern concept—to have different views of the same object,” says Alvisi. “We also wanted to bring in daylight on all sides but needed to control it, since there would be art inside at times.” (The motif of hickory slats set in front of glass is used for partitions throughout the floor, including ones that enclose private offices and small conference rooms.)

A permanent artwork was commissioned for the Winter Garden. Japanese bamboo artist Ueno Masao created a 12-foot-tall spiraling



SANCTUARY CITY A large contemporary Buddha statue marks one end of a long hallway, in front of vast city views (left). The office occupies a full floor in a new tower (bottom). The 24-foot-high Winter Garden is a rare amenity in an office building (opposite).

sculpture that hangs from the ceiling like a lantern to punctuate the soaring volume, its thin, curving bamboo poles in dialogue with the thicker slats surrounding it. Kirimoto designed a long table, manufactured in Japan, to stand beside it. Its deep red lacquered top adds another eye-catching note in the dramatic space.

The design team applied touches of color, both soft and bold, throughout the mainly monochromatic office—unified by a creamy white carpet—to striking effect. Bright orange fabric-wrapped acoustic panels, hung beneath the tall ceilings in private offices, match desk chairs; rose-hued Japanese rice paper covers wall panels in the reception area; glossy white cubicles separate private offices along the perimeter from interior, windowless ones; more deep reds mark the staff lunch area and private dining room (served by a professional-grade kitchen that often hosts renowned chefs). A game room, where employees, who tend to work long hours in the office when not traveling, can take a break with a table tennis match or a round of virtual golf, introduces more pops of color.

The integration of the client's extensive collection of modern and Asian art was as critical an element of the design as any. A bronze Henry Moore sculpture of abstract reclining figures greets visitors in the reception area. Ceiling-high murals, previously on loan to the Art Institute of Chicago, line a wall by a waiting area near the executive offices; large, ancient bronze medallions are arrayed along a wall beside the Winter Garden. A contemporary Buddha statue marks an end of a long hallway (one of two corridors that traverse the entire floor), set in front of the floor-to-ceiling windows that offer the city as a backdrop.

Perhaps even more than the Eastern influences, it is those 360-degree vistas high above Chicago, with the Willis Tower and other landmarks nearby, that take this office space to another level. "Part of the goal was to turn the hallways into small streets with a very strong direction, to connect flows of people with these incredible views," says Alvisi. While providing a quiet, art-filled oasis in the sky, the office also grounds its occupants in the center of a dense urbanity—a reminder that, despite its luxury-hotel or museum-like feel, it is a place where business gets done. ■







Petra, The Stone Atelier | Valencia, Spain | Fran Silvestre Arquitectos

Circle in the Square

A surprising scheme provides a pristine backdrop for the selection of opulent materials.

BY DAVID COHN

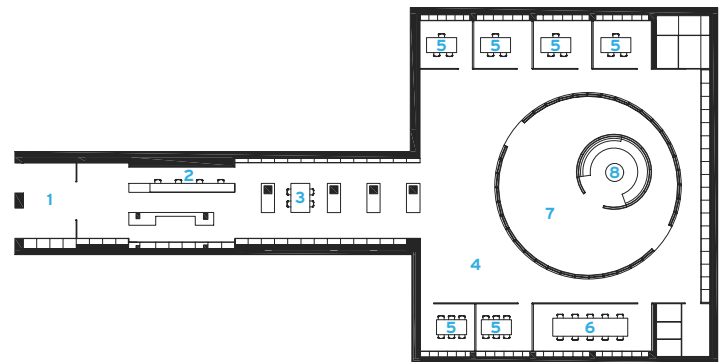
RING CYCLE Flanked by glazed offices and conference rooms, the circular wall at the rear of the Petra showroom opens to reveal a secret display area with a smaller ring inside, used for private meetings and business transactions.



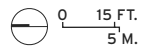
THERE ARE NO evident samples on display at Petra, the Stone Atelier, a stone showroom and supplier in Valencia, Spain. Instead, sales associates lead clients to a luminous area at the rear of the minimalist space, where glazed offices and conference rooms on each side flank a 7-foot-high circular wall at its center. But as a segment of this ringlike form pivots open, visitors will discover a secret room lined with a contiguous series of discreet flush doors, each opening to reveal a slab of one of 36 varieties of stone, all organized chromatically from light to dark and evenly illuminated from above. The project's architect, Valencia-based Fran Silvestre, rejected more conventional display systems such as racks with sliding panels as too

much "like a bazaar." Summing up the client's upscale marketing strategy, he explains, "The better the product, the less of it you should see on display."

The journey into the inner sanctum of hidden stone is part of a design calculated to convert the sales process into "an experience" involving a succession of spatial settings. These proceed from the entrance and reception area, through a long, broad corridor to the back, and culminate within the ring, which—like a nesting Matryoshka doll—contains a smaller circular room for private meetings and closing deals. Situated off-center so as not to crowd the space around it (a strategy that also contributes to dynamic circula-



GROUND-FLOOR PLAN



- | | |
|---------------------|------------------------|
| 1 ENTRANCE | 5 OFFICE |
| 2 RECEPTION | 6 CONFERENCE ROOM |
| 3 SITTING AREA | 7 STONE DISPLAY |
| 4 MULTIPURPOSE AREA | 8 PRIVATE MEETING ROOM |

tion patterns), this intimate sphere is upholstered in a black sound-absorbing textile and, at slightly under 6 feet, is just tall enough to prevent a person of average height from easily seeing inside.

The overall sequence builds on the irregular configuration of the 6,870-square-foot showroom. Originally constructed for light industry in the 1950s, its largest section occupies what had been the inner courtyard of a turn-of-the-century apartment building located in a recently revived, fashionable neighborhood. From the entrance on the street, a long corridor tunnels under the building to the former courtyard, with a procession of structural columns down its center that the architect enlarged into regular piers. The diaphanous space that now houses the circular rooms is spanned by a truss-supported roof with skylights. Silvestre mixes daylight with electric light, filtering both through distinct, translucent textile panels set flush in the suspended ceiling. He also eliminated a row of columns, which divided the space, by reinforcing the trusses above.

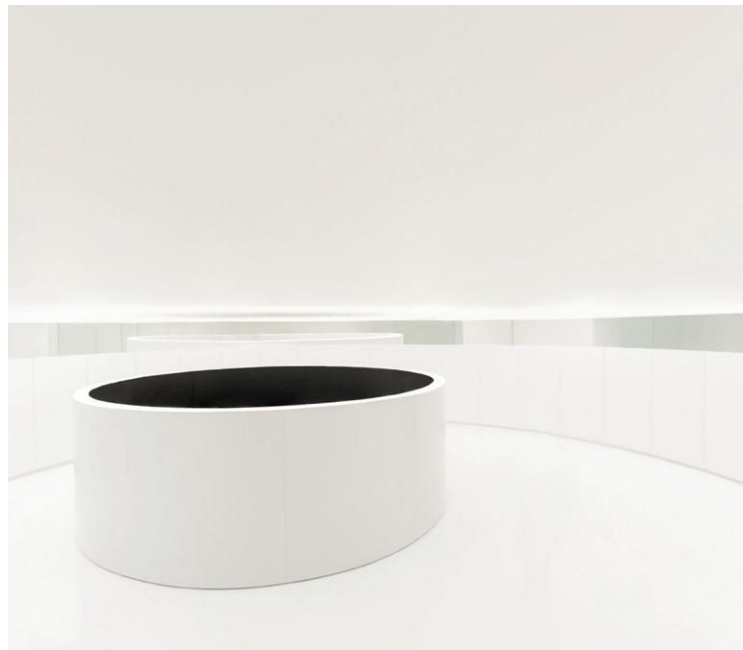
A pair of substantial entry doors pivot into the foyer's side walls when this "atelier" is open. These feature gray-veined panels of limestone-like dolomite that can be easily replaced if desired. The only

visible stone in the showroom is found just beyond the entrance, where surfaces at the reception desk and a small sitting area between the first two piers are quietly dressed in book-matched dolomite. The remaining finishes, including an epoxy floor, are understated and white so as not to upstage or influence the client's selection process.

Flush doors reappear along each side of the corridor beyond reception. This is where the company stores its most exotic and expensive samples, such as onyx and semiprecious stones, backlit or mounted on glass—flamboyant appetizers to the more "classic" varieties exhibited within the circle at the rear of the showroom.

Silvestre developed the double rings to maximize the sense of space. From outside, the large one offers an illusion of expansive continuity as it curves out of sight, he says, and, from within, it seems even larger. "They don't reach the ceiling, so the space feels bigger," he explains. "Inside, you feel as if you are in another room." Overhead, uplights around the top edge of the outer ring create a halo effect on the ceiling, encircling an atmospheric shadow cast by the internal ring room, a subtle indication of its dark finishes.

The distilled geometry of Silvestre's design echoes with metaphoric



allusions. At the most basic level, the larger circle is a kind of Stonehenge, and, despite the easy joke of this association, its ring of stone offers, in its own way, a whiff of mysterious, mystic harmonies. A more direct reference for the architect was the plan of Gordon Bunshaft’s Hirshhorn Museum in Washington, D.C. (1967–74), which features a circular drum inside a low-walled square court. Silvestre is fascinated by the space between these two forms and the almost gravitational tension of the circle’s tangential approach toward and retreat from the perimeter of its container, an effect seen at Petra as the large circle nears the rear wall of the space.

The circular figures in the Petra showroom are close to the crisp shapes of abstract geometric art, as in the work of the local sculptor Andreu Alfaro (1929–2012) that is a constant, if indirect, reference for Silvestre. At another extreme, they may recall the exalted geometries of Étienne-Louis Boullée or Claude Nicolas Ledoux. Silvestre’s exquisitely demanding transformation of material and program into spatial form thus engages with some of the eternal visual narratives of architecture without betraying the immediate task at hand, the crafting of a unique marketing venue. ■

SALES SEQUENTIAL The reception area is clad in stone (opposite, left), leading to glass-enclosed offices (opposite, right). Stone samples are kept behind flush doors backing the larger ring wall (above, left). The small meeting room at its core is lined with sound-absorbing fabric and furnished with a stone-based table by Silvestre, part of the Petra collection (above and top).

credits

- ARCHITECT:** Fran Silvestre Arquitectos – Fran Silvestre, principal in charge
- ENGINEERS:** Logicus
- CONSULTANTS:** Alvaro Hoffman (interior designer); MG Lighting (lighting design); Papema (carpentry)
- CLIENT:** Stonehegen/Petra, the Stone Atelier
- SIZE:** 6,870 square feet
- COST:** withheld
- COMPLETION DATE:** December 2017

SOURCES

- FURNITURE:** Dynamobel; Petra, the Stone Atelier
- LIGHTING:** iGuzzini; Enrique Ferre Cofer
- GLAZING:** Montserrat

Oi Marì | Matera, Italy | Manca Studio

Underground Gourmet

A young firm mines the potential of an ancient cave dwelling for a popular local eatery.

BY CHRIS FOGES

PHOTOGRAPHY BY PIERANGELO LATERZA

Under most circumstances, Manca Studio's renovation of the restaurant Oi Marì in Matera, a small city on a rocky outcrop in southern Italy, might be called minimalist. It features a concise material palette of rusty weathering steel, frameless glass and unfussy oak furniture; in the architects' words, the project proceeded with the guiding aim of "subtraction, not addition." But such a characterization underplays the warmth and wit of the intervention, and more importantly ignores the impact of its setting, in a labyrinthine limestone cave.

Like most of Matera's ancient Sassi (rocks or stones) district, which tumbles down steep hillsides in Escheresque cascades of walls, stairs, and arching buttresses, the structure that houses Oi Marì comprises both man-made subterranean caverns excavated from the bedrock and additional aboveground elements formed from the same material, so that it is hard to tell where the terrain ends and building begins.

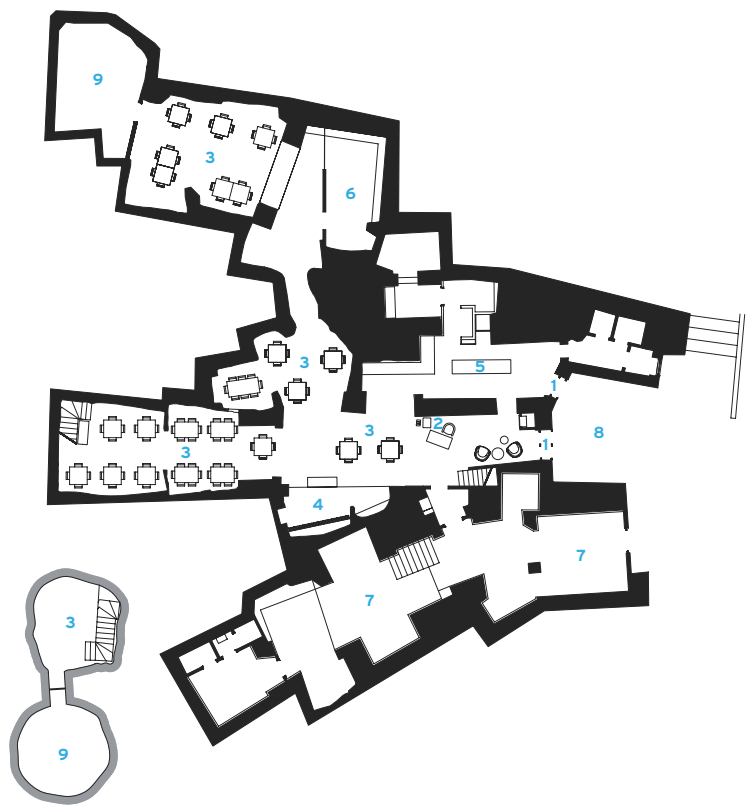
Manca Studio, led by siblings Alfredo and Marina Manca, has worked extensively in the Sassi, whose impoverished residents were evacuated to new-build apartments after the second World War, and which only began to be reoccupied in the 1990s. Oi Marì, named after a popular



SET IN STONE Laser-cut glass panels screen a wine cellar (above) sited in a niche alongside the main dining room (opposite). This feature "is the part of which we are most proud," says the architect. "It is integrated harmoniously in the environment, satisfying the desire of the owner, a great wine connoisseur."







FLOOR PLAN



- | | |
|---------------|------------------------|
| 1 ENTRANCE | 6 WINE-TASTING CANTINA |
| 2 RECEPTION | 7 KITCHEN |
| 3 DINING | 8 TERRACE |
| 4 WINE CELLAR | 9 STORAGE |
| 5 BAR | |



Neapolitan ballad, was an early example of this return. Established 19 years ago by four friends, it originally served traditional Neapolitan pizza, but the menu has subsequently broadened to include high-end cooking and fine wines, which prompted the \$520,000 comprehensive overhaul.

From the outside, there's little evidence of all that rebuilding. The restaurant is at the bottom of the gorge, and its only facade is a somewhat dilapidated single-story wall of stone blocks protruding from the stack of buildings that ascend the hillside. Cross the small forecourt edged with rosemary and lavender, and step through the inconspicuous entrance door, however, and a revelation awaits.

Standing at the reception desk, one's eye travels through a long dining room that extends back into the rock in an enfilade sequence of interconnected chambers, demarcated by limestone arches originally constructed to support the undulating cave roof, which rises up to 17 feet. Oak tables draped in crisp white linens are dotted about the porcelain-tiled floor. White-shirted waiters glide between them, bearing delicate arrangements of grilled octopus and salt-cured cod. To one side, a small grotto has been converted into a 2,000-bottle wine cellar whose contents are exposed to view through a plate-glass screen, laser-

ON THE ROCKS Plastered walls appear in just a few areas, such as a staircase ascending to the owners' quarters, adjacent to the entrance (opposite), and the bar adjoining the reception area (top and above). Shadow gaps are created between the walls and the cave roof, articulating the junction of new and old.



cut to follow exactly the craggy surface of the cave. Around the walls, skeletal grids of Cor-Ten steel loosely frame the bar, or carry lighting fixtures and oak shelves on which pottery is displayed. These slender scaffolds are tied to the walls at just a few points, and, like the oak cabinetry's, their warm, earthy tones harmonize with the pale, buttery color of the stone.

The careful articulation of every junction between the old and the new preserves the integrity of the existing stone structure and maximizes its visibility. Mirrored doors and partition walls are also used to divide spaces without creating visual distraction. In retrofitting the cave, the architects acted as if "on tiptoe," says Alfredo Manca. The intention was "not to make any noise in a place that looks almost holy." (Co-owner Luca Mangiapia intuitively, from a corniced, pointed arch in the main dining room, that the cave might once have been a church, but the architects speculate that it was either a dwelling or a warehouse.)

Aside from cleaning the stone with high-pressure water jets, and minimal repair where necessary, the existing structure has been left almost entirely untouched. The soft calcarenite limestone—called *tuffo* locally (though it is not volcanic, as is other rock of the same name)—is porous and enlivened by myriad natural holes. It also retains the traces of historic occupation. Walls are pockmarked by crude niches made for candles and by sockets for poles, to which animals were tethered. At the back of the main dining room, stairs ascend to a small chamber, just large enough for a single table, whose domed vault is peppered with pickax scars.

On either side of the main dining room, the restaurant has been extended into other networks of spaces that burrow eccentrically into the terrain and into adjacent structures. To the left of the entrance, behind an electrically operated oak sliding door, the gleaming kitchen has tripled in size to almost 1,000 square feet.

It contains one preparation area devoted to fine dining, with a glazed door to the street, and another dominated by a giant mosaic-tiled pizza oven. To the right, a small antechamber gives onto a narrow, smooth-walled passage that leads to an additional dining room and a wine-tasting "cantina" created from caves formerly used for storage.

One might expect these windowless underground spaces to feel gloomy or claustrophobic, but the architects' close attention to ambience and environmental control ensures that this is not the case. The air pumped through floor grilles feels cool and fresh, and the electric light, from wooden



CAVE ART A chamber off the main dining room provides an intimate setting for a single large table (opposite). A semiprivate dining space (above, right) is reached by a stair at the back of the restaurant (above). Mirrored doors leading to storerooms minimize visual distraction from its ax-scarred walls and add spatial intrigue (right, top and bottom).

fixtures threaded on looping black cables, lends welcoming warmth to the stone. The bespoke light fixtures are modeled on rolling pins used for pizza dough, which injects a humorous note but also has a more earnest intent, representing continuity between the restaurant's past and future. Rootedness in culinary tradition remains important to Oi Mari, even as it seeks new expression for its ingredients. A similar spirit animates Manca Studio's treatment of its spaces. "Throughout, we have tried to reinterpret the philosophy of the restaurant in an architectural key," says Alfredo Manca. "From simple raw materials of the highest quality, we can reinvent traditional cuisine without erasing the memory of history." ■

credits

ARCHITECT: Manca Studio – Marina and Alfredo Manca, principals in charge; Marima de Pace, project architect

ENGINEERS: Fluidotecnica Grandi Impianti (m/e/p)

GENERAL CONTRACTOR: ILAN Societa Cooperativa

CLIENT: Oi Mari s.r.l.

SIZE: 4,300 square feet

COST: \$520,000

COMPLETION DATE: July 2018

SOURCES

FLOOR: Inalco

STAIRS: Marmeria Lionetti

FURNISHINGS: L'Abbate; Framework; Miniforms; Hay; Ebanisteria Peragine; Emu

METALWORK: Nuzzi Metal Design

GLASSWORK: Vetro & Vetro di Eugenio Santoiemma

LIGHTING: Flexalighting (downlights)

KITCHEN FURNITURE: Omnia







Expensify Office | Portland, Oregon | ZGF

Bank on It

Modern and classical design languages combine to create a convivial workplace.

BY JAMES GAUER

PHOTOGRAPHY BY GARRETT ROWLAND

The Oregon Pioneer Savings Landmark Building in downtown Portland seems an unlikely home for Expensify. The online expense-management service was created 10 years ago by CEO David Barrett, who describes its mission as “making expense reports that don’t suck.” The company was founded in San Francisco (and now has offices in London and Melbourne), but it outgrew its original space. Portland, with its laid-back ambience and cheaper real estate, was an attractive alternative for another West Coast office. The stately neoclassical monument, designed by Boston-based Coolidge and Shattuck, was the first building Barrett saw. It has graced a corner site since 1916, with a pedimented Doric colonnade distinguishing its marble-clad front facade and a richly decorated skylit atrium dominating its interior.

“It was the perfect blank canvas,” Barrett recalls, “with a classy core that we could build on to create a unique space for our team to grow and our culture to thrive.”

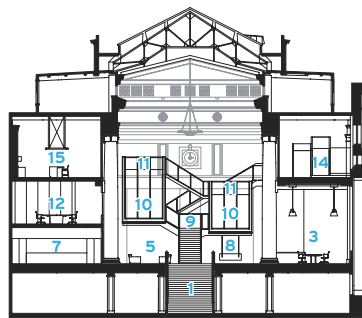
ZGF’s principal in charge, Alan Gerencer, and his team, Gabriella Caldwell and Franco Rosete, shared Barrett’s enthusiasm for the venerable landmark. The client asked them to remain true to its original aesthetic while adapting it to his company’s offbeat working model. “Expensify hires people who thrive in a fast-paced, collaborative environment with lots of personal freedom,” Barrett explained. “We have only two rules: get shit done, and don’t ruin it for everyone else.” Here, Gerencer realized, was an opportunity to balance respect for history with edgy design.

Barrett’s brief was simple. He needed flexible spaces where his employees—currently 50 but potentially up to 150, whose average age is 31—could be comfortable, whether their work required collaboration or heads-down focus. Eschewing assigned workstations, he wanted a mix of open spaces and meeting rooms in which employees could choose to work depending on their mood or the task at hand.

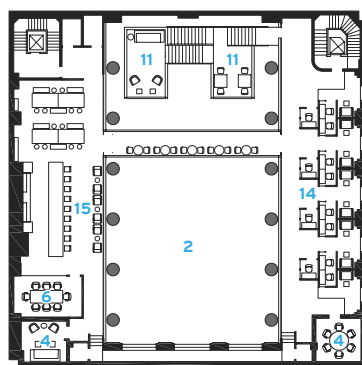
The four-story, 34,000-square-foot building—of which Expensify currently occupies 17,350 square feet—came with challenges. It was leased rather than bought, limiting the scope of work. The 57-foot-high atrium did not translate obviously into usable square footage. And the total timeline from initial interview to opening day was only 10 months. Both Expensify and ZGF saw these problems as opportunities to be creative.

The bank’s spatial hierarchy led to a vertical distribution of pro-

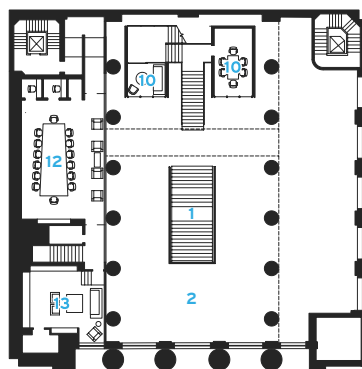
TREE HOUSE Glazed conference rooms (left) in the 57-foot-high atrium lobby of the 1916 bank building appear to float on the cantilevered landings of a new blackened-steel and oak stair. ZGF’s insertion of this transparent element successfully converts an empty space into a lively meeting place.



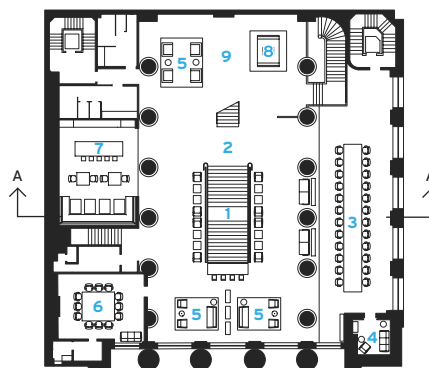
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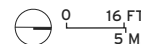
THIRD-FLOOR PLAN



MEZZANINE-FLOOR PLAN



SECOND-FLOOR PLAN



- 1 MAIN STAIR (ENTRANCE)
- 2 ATRIUM
- 3 COMMUNITY TABLE
- 4 VAULT CONFERENCE ROOM
- 5 LIVING ROOM
- 6 MEETING PLACE
- 7 KITCHENETTE
- 8 SUSPENDED CHAISE
- 9 TREEHOUSE
- 10 FLOATING CONFERENCE ROOM
- 11 CROW'S NEST
- 12 BOARDROOM
- 13 SALON
- 14 VILLAGE
- 15 KITCHEN

gram. On the ground floor, a grand stair—surrounded by space slated to be a café—leads up to Expensify’s quarters, which occupy the atrium and the surrounding second and third floors. The fourth floor, accessed by elevator from a secondary entrance, can be subleased to a tenant.

The atrium is a marvel of classical proportions and details, including 18-foot-tall windows screened by X-patterned bronze grilles, entablatures highlighted by gilt friezes and medallions, and colossal Ionic columns. Behind these, on one side, is a communal workspace with a 22-foot ceiling, vertically gridded windows and a 41-foot-long walnut table. On the other side is a casual open kitchen and café with cabinetry of spalted maple. On a mezzanine above, a boardroom, richly paneled in a mix of oak, stained navy blue, and walnut, and accented with brass inlays, overlooks the atrium’s sun-filled, multi-story volume. Comfortable seating, in an eclectic range of styles, is everywhere, even in old bank vaults. The third floor contains another



open work area and a “village” of oak pavilions for private phone calls. These are part of a strategy to create varying levels of auditory privacy. Acoustical panels are discreetly distributed throughout, dampening noise but still allowing for an energetic buzz.

ZGF capitalized on the atrium’s height by adding a monumental stair of blackened steel and oak with small conference rooms, clad in glass and panels of aluminum printed to look like brass, at its cantilevered landings. Conceived as a treehouse—a conceit reinforced by a suspended chaise that hangs like a swing—this bold sculptural intervention began with an evocative sketch by Rosete, drawn in response to Barrett’s request for “something special” to connect the various levels. “It evolved,” says Rosete, “as a place to meet, hang, perch, and connect.”

Thoughtful rigor underlies the intersection of old and new. “Our approach was not to mimic but to adapt and embellish, drawing from original elements but using contemporary details,” Gerencer explains. For example, patterns of oak leaves and



OLD AND NEW A grand stair leads to the skylit atrium (opposite), which retains its traditionally classical details. A “village” of oak pavilions accommodates private phone calls (top); an informal work area includes a kitchen and mix of seating on a mezzanine overlooking the atrium (above).



VIEW FROM ON HIGH “Floating” conference rooms (bottom) overlook the atrium. They are topped by open perches (left) that serve as work areas and are enclosed by aluminum-paneled walls printed to look like brass.

acorns on the historic bank vault doors led to the selection of oak for flooring and millwork. The boardroom paneling pattern and the gabled pavilion tops refer to the classical X motifs in balustrades and grilles. The juxtaposition of gold leaf and dark bronze inspired a metalwork palette of brass and blackened steel. And vertical window proportions informed the glazing of the “treehouse” conference rooms. All of this was executed with a high level of craft. “No detail was overlooked,” says Caldwell.

Expensify’s new surroundings are suitably sophisticated for a successful financial-services firm but retain the casual character of the company’s startup culture. The kombucha-sipping young staff—and their dogs—seem very much at home in ZGF’s mash-up of subtle reference and bold intervention. “I love that we maintained the history and aesthetic of the bank but also made it our own,” says one business-development manager. “The space inspires so much creativity,” adds Barrett, with obvious pride. “We’ve been able to host everything from open events for the Portland community to employee yoga classes and wine tastings. It never gets old.” ■

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



credits

ARCHITECT: ZGF – Alan Gerencer, principal in charge; Franco Rosete, Gabriella Caldwell, Kirsten Justice, Jeanne Jameson, Chardonay Cintron, Jan Willemse, design team

ENGINEERS: KPFF (structural); Glumac (m/e/p)

CLIENT: Expensify

SIZE: 17,350 square feet

COST: withheld

COMPLETION DATE: December 2017

SOURCES

ALUMINUM BRASS PANELS: Pure+Freeform

LIGHTING: Cerno Group; Tom Dixon Lighting; BuzziSpace; Luceplan; Nemo; Roll & Hill

ACOUSTICAL CEILINGS, SUSPENSION GRID: Armstrong

PLASTIC LAMINATE: Formica, Arborite

SOLID SURFACING: Pentel Surfaces

PAINTS AND STAINS: IdeaPaint; Miller Paint

FLOOR AND WALL TILE: United Tile

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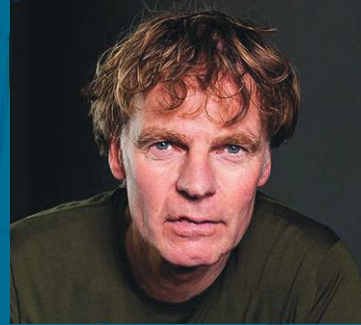
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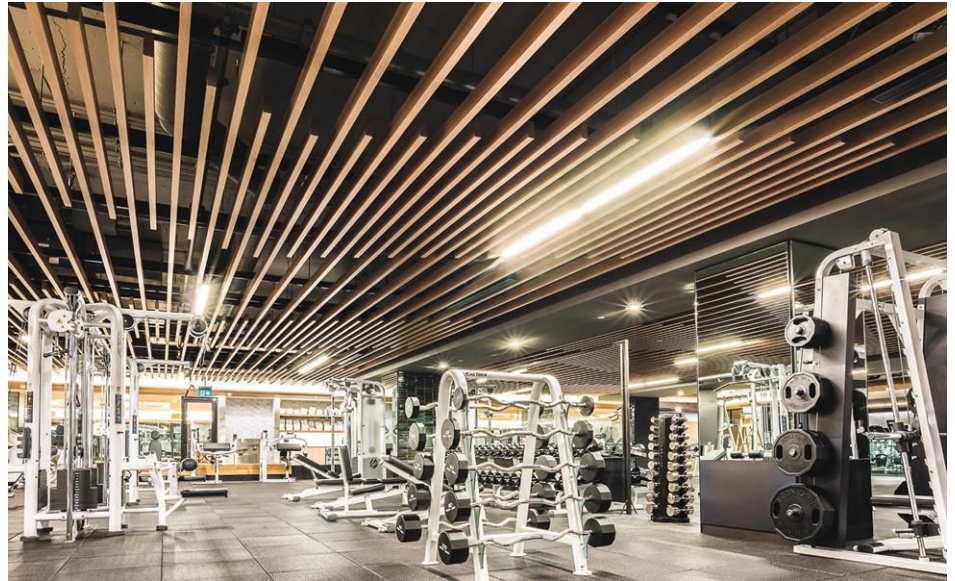


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BRUNSWICK PARK PRIMARY SCHOOL IN LONDON BY SURMAN WESTON



London Teaching Kitchen

London

Surman Weston

KITCHENS NEED an efficient configuration and durable surfaces. But a teaching kitchen completed a year ago for cooks ages 8 to 11, at Brunswick Park Primary School in London, also needed to display the cooking process, encourage students to participate, and ensure safe, hands-on involvement for up to eight little chefs simultaneously.

“There’s a bit of a movement here to get kids to cook and eat healthily to fight obesity. Because of that, there’s a new opportunity to build these specialty classrooms,” says Tom Surman, a principal at the architecture firm Surman Weston, which designed the new kitchen.

In fact, the UK’s Department for Education has made cooking lessons a compulsory part of the national curriculum and recently instituted a requirement for dedicated teaching kitchens. Brunswick Park had been holding its cooking classes in a staff room, but, rather than renovate this space, Surman suggested revamping a century-old two-story caretaker’s cottage that had been sitting unused in a corner of the schoolyard for five years. “It’s common here for a lot of old brick buildings to dot school grounds. Many of these are crumbling but are quite nice,



WHAT'S COOKING?

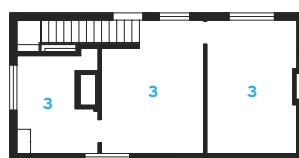
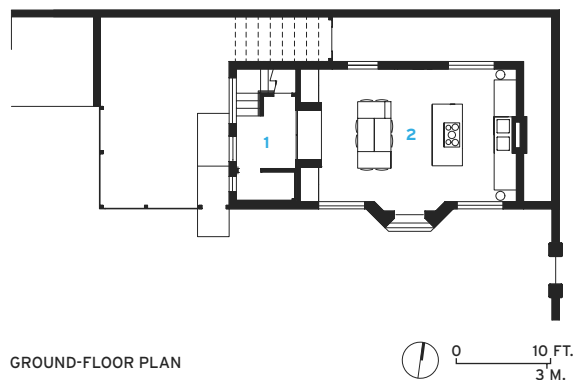
Classroom kitchens specially designed for grade schoolers, like this one (above) by London firm Surman Weston, are setting a new standard in the UK. The architects installed it in the school's former caretaker cottage (left).

and have a certain charm,” Surman says.

To salvage that charm, his team first had to rip out interior partitions, an existing kitchen, and part of a chimney hearth; relocate the stairs; and demolish some load-bearing walls while supporting the second floor on steel beams. Once the ground level was opened up, an east-facing wall in space previously occupied by the stairs became an ideal location for the new 330-square-foot kitchen—full of daylight from windows on either side.



ON THE MENU The architects specified new, painted-mahogany entry doors with window lights to allow passive supervision by staff (top, left). Cabinet doors (top, right) and the child-height surface of the custom worktable (above) are made from recycled yogurt containers.



SECOND-FLOOR PLAN

- 1 ENTRY
- 2 KITCHEN
- 3 THERAPY ROOM

Removing a drywall ceiling, added over the years, revealed pine joists with diagonal bracing that support the floor above. Keen to preserve the details and add height and interest to the space, Surman left them exposed, installed identical new bracing where it was needed, then painted the adjacent new steel structure pink for a fun contrast. New pine stairs, located along the north wall, were also stained pink to emphasize their treads and risers. The playful hue is echoed in the kitchen's simple shelf brackets and complemented by the custom kid-friendly cabinet doors, fabricated from recycled yogurt containers.

The motivation for this approach was pedagogical. "We deliberately exposed the profile of the stairs and other elements, so the kids would understand the building has components, the way a recipe has ingredients," the architect says. But showcasing the ceiling structure meant rerouting lines for gas, electricity, and plumbing. Because areas on the second level were designated as therapy rooms, which required soundproof construction, the architects built up the floor by nearly 3½ inches with layers of plywood, rubber, and rock wool insulation, then snaked service lines underneath.

Revealing the building's bones provided a tactile and engaging learning environment, and the central island serves as a stage for displaying cooking techniques and inviting students to join in. It is visible from every seat at the custom U-shaped work surface, topped in the same recycled plastic as the cabinet doors. Next up for the firm is a similar but more ambitious facility in the London neighborhood of Hackney, to serve an entire borough and accommodate classes of 30 students. Says Surman, "We hope that will have an even bigger impact." *Kelly Beamon*

credits

ARCHITECT: Surman Weston
LEAD ARCHITECT: Tom Surman
ENGINEER: Structure Workshop
GENERAL CONTRACTOR: D.F. Keane
CLIENT: Brunswick Park Primary School
SIZE: 870 square feet
COST: \$217,000
COMPLETION DATE: September 2017

SOURCES

FLOORING: Nora Systems
TABLETOP AND CABINETS: Smile Plastics
PAINT: Thermoguard, Dulux
LIGHTING: Eglo
DOORS AND WINDOWS: Touchwood Joinery



Teaberry Residence

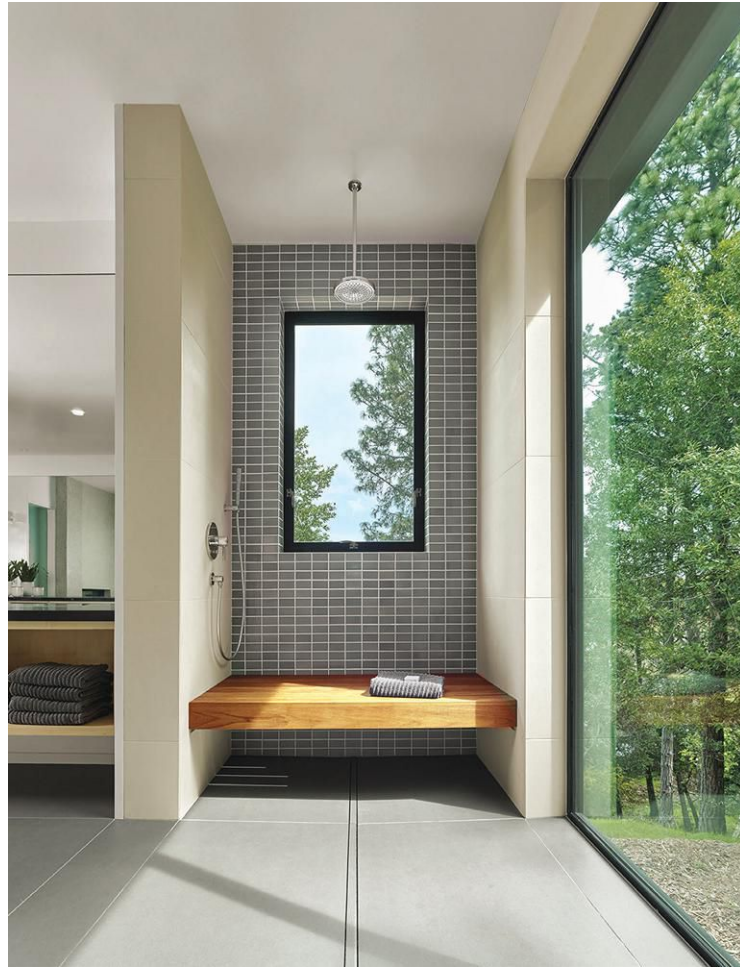
Tiburon, California

Cary Bernstein

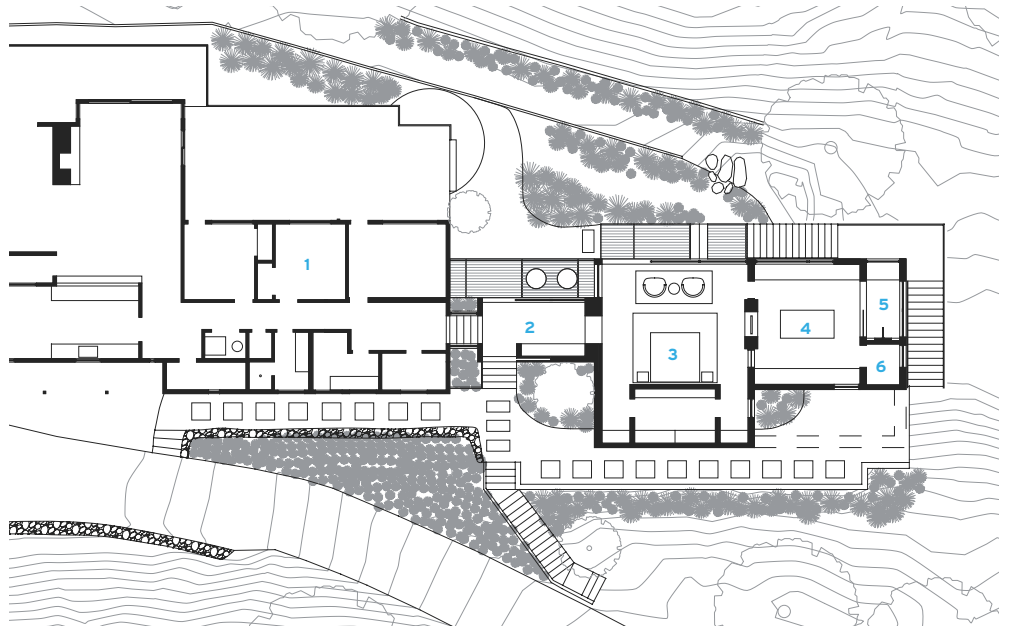
THE LEAFY settings that make many California hillsides attractive to homeowners, can also make the locations challenging to build on.

Such was the case for owners of a '50s-era single-story house who asked San Francisco architect Cary Bernstein to build an 1,100-square-foot master suite on an unused eastern portion of their lot. The house, which sat downslope of a densely wooded hill, enjoyed privacy and a postcard view of the bay. The adjacent plot was level and seemed ideal for an addition they had always wanted: a serene personal retreat with a spalike bathroom.

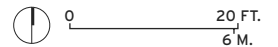
The site, however, was unstable, with a history of landslides. So



BATHED IN BEAUTY
Large-format porcelain floor tiles and 16-foot-long vanities complement the master bath's proportions (opposite). In the walk-in shower (left), a window wall immerses bathers in the view.



FLOOR PLAN



- 1 EXISTING HOUSE
- 2 BRIDGE
- 3 MASTER BEDROOM
- 4 MASTER BATH
- 5 SHOWER
- 6 WATER CLOSET

Bernstein, a local architect, worked with her team to devise a deep pier and grade beam foundation to bypass the loose soil. They embedded more than 30 concrete piers 8 feet into the bedrock before any construction on the addition could begin. As an extra precaution, they erected a 50-foot-long, 6-foot-high concrete retaining wall uphill to buffer the new volume from future landslides.

The existing structure has 8-foot high ceilings, typical of the era in which it was built. To create the contemporary feel the clients desired, Bernstein devised a master-suite wing with a 10-foot-high ceiling in front of the retaining wall, bridging old and new with a



DIFFERENT POINTS OF VIEW Architects located the shower and water closet (above) side by side along the addition's east wall. The translucent glass of the shower's partial enclosure (above, right) adds privacy and filters light.

credits

ARCHITECT: Cary Bernstein Architects
– Cary Bernstein, Matthe DeMotte, Sarah Hirschman, Stephen Zecher (design team)
ENGINEERS: Herzog Geotechnical; ILS Associates (civil); Strandberg Engineering (structural)
CONSULTANT: Illuminosa (lighting)
GENERAL CONTRACTOR: Weitekamp Remodeling & Construction
CLIENT: Chris and Laura Porter
SIZE: 1,100 square feet
COST: withheld
COMPLETION DATE: October 2017

SOURCES

WINDOWS AND DOORS: Fleetwood Windows & Doors; Bonelli
GLASS DOORS: Dorma
MILLWORK: Precision Cabinets
SOLID SURFACING: CaesarStone
FIREPLACE: Montigo Gas
LIGHTING: Lightolier; Leucos; Lutron; Flos
TUB: Bain Ultra
SINK: Kohler
SHOWER DRAIN: QuickDrain USA
FAUCETS: Grohe

small, 9-foot-high interstitial structure to mediate the variations in height. Glazed doors on its north and south sides provide alternate entry points to the house.

Inside the suite, a double-sided limestone fireplace screens the bedroom from a scene-stealing 340-square-foot master bathroom, which Bernstein wrapped in thermally broken low-E windows to let in daylight and expansive views. “In all of our projects, we try to have daylight enter a room from at least two sides,” she says.

An acrylic soaking tub occupies the center of the space, flanked by a pair of 16-foot-long floating vanities mounted on facing walls. A mirrored wall above one of the vanities reflects the tree-lined views of the window on the opposite wall. A spacious walk-in shower and private water closet are positioned back to back at the east end of the wing. Although the clients were motivated primarily by aesthetic interests, the shower’s zero-threshold entry, low integral bench, and handshower conveniently positioned for a seated user, are all designed to accommodate aging in place. Thanks to full-height glazing here, even the bench is immersed in the view.

While the addition succeeds in inviting the owners to slow down and soak up the setting, the architect made sure it still feels dynamic. “It is even more lively as the sunlight moves across it throughout the day,” Bernstein says. *Leslie Clagett*

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Brazilian Prefab

São Paulo

Studio Arthur Casas

A GREAT KITCHEN ranks high on any home buyer's wish list. But it takes a creative builder to offer a dream kitchen that owners can take with them if they move. Brazil-based sysHaus, an engineering and construction startup that will manufacture handsome prefabricated and sustainable houses in 2019, has begun doing just that, with help from architect Arthur Casas. For now, interested parties can tour a fully built model of the 2,100-square-foot, one-story steel house to preview its possible configurations, finishes, and sustainable attributes, which range from photovoltaic panels to a "bio-digester" that converts organic waste into gas for the kitchen and fireplace. But perhaps most surprising are the kitchen modules that homeowners can relocate with ease.

"The kitchen can be moved to another place or house just like a table or chair," says Casas, whose project team conceived the modules as freestanding units to make this possible, and to ensure that the entire



A MOBILE HOME Architect Arthur Casas has designed the debut line of prefab houses (above) for Brazilian startup sysHaus. Almost everything in the model home (below), including furniture and cabinet pulls, was designed by Casas's studio.





CHILD'S PLAY Channels in the kitchen's veneered backsplash (above) hold mounting brackets for easily reconfiguring shelves and racks. The kitchen is designed as freestanding modules (right) to be moved when residents do.



house is move-in ready within six months.

The architect specified the modules in stainless steel for both practical and aesthetic reasons: durable and hygienic, steel imparts an industrial character that will have lasting appeal for most homeowners, Casas says. The look is softened by wood pulls and handles—in the show house, these are a Brazilian species called freijó, but other species will be available. Casas developed the kitchen with Mecal Brasil, a manufacturer of steel kitchen and bath components, in different dimensions to complement international appliance brands. In the model, Brazilian appliances were

tucked into the island or under the counter. Meanwhile, backsplash panels are made of veneered MDF with an antibacterial and easy-to-clean finish, and have channels for wall-mounting cantilevered dish racks, pot hooks, and shelving. The shelves come with LED strip lights underneath. Residents choose modules, sizes, initial configuration, and appliances ahead of time to allow plumbing and electrical installation in advance.

While the project's sustainable features have earned accolades, it is the kitchen's innovative design that may promise buyers the most flexibility. After the initial installation, owners

can rearrange the island and storage at will.

While sysHaus tapped Casas for its debut line of prefab houses, the company plans to collaborate with other architects on future designs and expand to other countries (when it launches, the house will only be offered in Brazil). "I'm particularly curious to see how my colleagues design a project with this process. It's a challenge," says Casas. *Sheila Kim*

credits

ARCHITECT: Studio Arthur Casas – Arthur de Mattos Casas, principal in charge

CONSULTANTS: Studio Serradura (lighting); Studio Cidade Jardim (green roof); Renata Tilli (landscaping)

CLIENT: sysHaus

SIZE: 2,200 square feet

COST: \$320,000

COMPLETION DATE: May 2018

SOURCES

GLAZING: Cinex

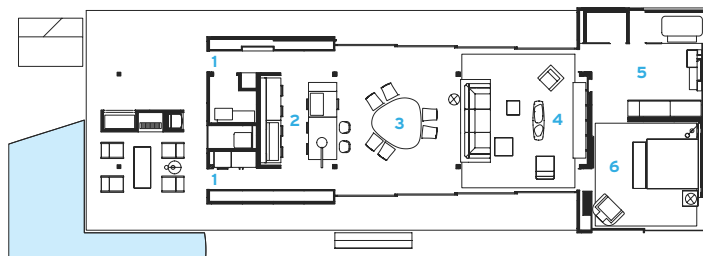
EXTERIOR CLADDING: Alukroma

CUSTOM WOODWORK: Marvelar

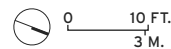
KITCHEN: Mecal

LIGHTING: Oikós; Lumini; TAAG Brasil

- 1 ENTRANCE
- 2 KITCHEN
- 3 DINING
- 4 LIVING ROOM
- 5 EN SUITE BATH
- 6 BEDROOM



FLOOR PLAN





Rustic Townhouse

Brooklyn, New York

4|Mativ

THE DESIGN of a bathroom doesn't normally steer a larger renovation. For many clients, it's often an afterthought. But when architecture firm 4|Mativ began a partial overhaul of a Brooklyn townhouse, the bold and playful concept for a small new bathroom on the basement level came first and inspired the plans for the larger second-story master bath and set the tone for the entire project.

In fact, the firm's principals, architect Priya Patel and interior designer Esther Beke, believe that kitchens and bathrooms should take priority most of the time, given the benefits they can bring. "A bathroom's design, in particular, adds enormous value," says Patel. "Beyond the function, it adds quality to the client's life."

In this case, designing an inviting bathroom was the logical first step in meeting the clients' goal of converting an 800-square-foot basement from an unfinished storage area into a lively space for their growing family, with the wife expecting a second child. The couple's overall wish list for their house—a home office, a family room, a fifth bedroom for visiting grandparents, and a cozier master bath—would all take cues from the new 38-square-foot bath below grade.

There were practical reasons for letting the bathroom take the lead. A guest bedroom on the lowest level needed an adjoining bath. And to avoid the cost and time associated with new plumbing, the designers needed to find the easiest way to connect the fixtures to any existing pipes and the water main. They determined that the new bath should sit near the center of the floor, beside a concrete interior wall that was already lined with pipes extending into the basement from a second-floor powder room and first-floor kitchen. A utility sink and a floor drain were next to the wall, indicators that the team could plumb the toilet and a shower there without digging a new trench to extend the drainpipes. "Staying close to the original drain helped, because we were able to use the existing infrastructure," says Patel.

But that decision also meant placing the bath far from the basement level's windows and giving up access to natural light. Patel and Beke were ready to accept that tradeoff and rely on design to solve the problem. Intending to recall the idea of being outdoors instead of trying to simulate daylight, they used outdoor wall sconces next to the mirror, recessed dimmable LEDs above the shower, and as much light-reflecting bright, white tile as possible. "We love working on material details," Patel says.

The owners had asked the firm to take inspiration from the idyllic look of a cabin in the woods. Beke

BARNYARD TO BATH Designers used features of rural outbuildings, such as exposed pipes and garden faucet knobs in the basement bath, to draw attention from its low ceiling and windowless walls (left).



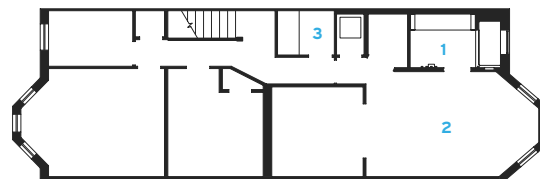
PRIDE OF PATTERN To unify the master bath (above) with new basement-level spaces, the designers repeated the color scheme of the smaller bath's wallcovering in a new cement-tiled floor (right).

picked wallpaper with patterns that reference Pendleton blankets, and took an ironic approach to a cabin's rustic features, exaggerating the utility of the little room to steer attention from its low 7-foot ceiling and windowless new walls. Exposed copper pipes, garden faucet knobs, an enameled cast iron sink, wainscot wood paneling, and a black-and-white hex-pattern ceramic tile floor are all reminiscent of "a retreat upstate, where you might not hide the plumbing," Beke says.

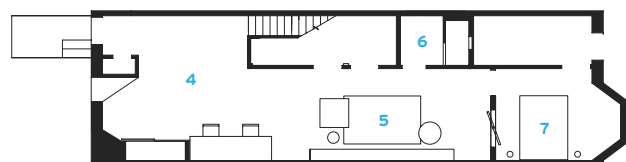
Exposing the copper pipes required significant time. The team, who value clean lines, first installed plasterboard over the concrete foundation wall and the ceiling, to cover up a network of exposed floor joists and wiring. In the shower, where the low ceiling limited the height of the showerhead, the firm tucked plumbing up into the rafters to position the fixture just high enough to let its supply pipe protrude from the wall. "It would've been easier to recess the showerhead in the ceiling, but that wouldn't have been as much fun," Patel says.

With the bathroom neatly resolved, Patel and Beke created the home office, family room, and extra bedroom along the basement's exterior walls. The cabin theme and color scheme translated easily to other rooms, unifying the new spaces—the bathroom's wallpaper, for instance, was repeated in the adjoining bedroom. Upstairs, in the updated 50-square-foot master bath, the Pendleton-blanket pattern is abstracted in a black-and-white cement-tile floor; the cross shapes of hot- and cold-water knobs wink at the shape of real outdoor faucet knobs used in the downstairs bathroom.

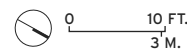
To increase the master bath's comfort level, 4|Mativ added radiant heating under the floor tiles and built wall-mounted cubbies for toiletries on either side of a new stained-walnut double vanity. True to the firm's philosophy, both bathrooms now contribute a little drama to the family's daily routine. *Diana Mosher*



SECOND-FLOOR PLAN



BASEMENT-FLOOR PLAN



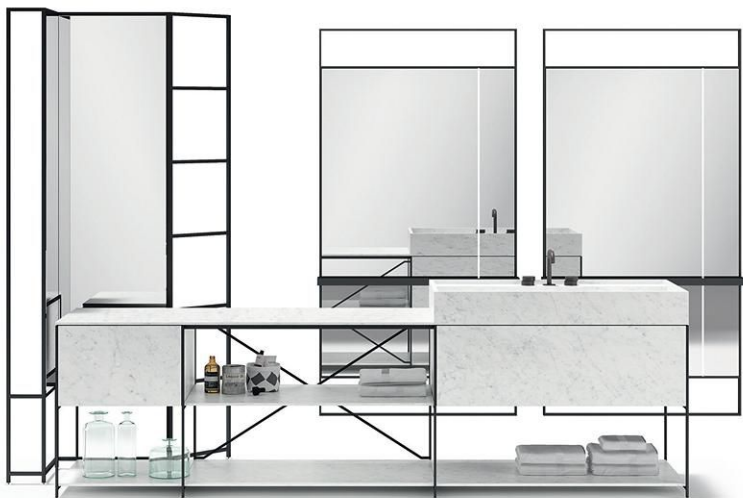
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|------------------|-----------------|
| 1 MASTER BATH | 5 FAMILY ROOM |
| 2 MASTER BEDROOM | 6 GUEST BATH |
| 3 POWDER ROOM | 7 GUEST BEDROOM |
| 4 HOME OFFICE | |

credits

ARCHITECT: 4|Mativ
GENERAL CONTRACTOR:
 Blu Contract
SIZE: 850 square feet
COST: \$260,000
COMPLETION DATE: February 2016

SOURCES

FITTINGS: California Faucets, Home Depot
SINKS: Rejuvenation, Nameek's
TOILET: Toto
LIGHTING: Rejuvenation, OneFortyThree
WALLCOVERING: Cavern Home
FLOOR TILE: Somer Tile, Cement Tile Shop
PAINT: Benjamin Moore



R.I.G. Module Bathroom

A solution from Boffi-owned manufacturer MA/U Studio lets designers install many bathroom elements in conveniently reconfigurable powder-coated steel framed units. Custom-made modules contain sinks, mirrors, light bars, towel racks, and storage shelves that can be wall-mounted or installed freestanding. Designers can specify sink basins in wood or marble.

maustudio.net

The Power of Choice

New components for the busiest rooms in the house can be reconfigured and personalized on demand.

By Kelly Beamon

NEOREST NX

As an update to the NEOREST toilet line, which already features heated seats, personal cleansing systems, and auto-close lids, NEOREST NX Intelligent Toilets add a new ergonomic seat and integrated UV lighting that works with the bowl's antimicrobial glaze and misting systems to keep it cleaner.

totousa.com



Raindance

Hansgrohe's Raindance showerheads feature an updated nozzle design. The technology, PowderRain, produces a gentler shower, because each individual nozzle has six tiny apertures instead of one for a dense, lightweight spray that delivers thousands of fine microdroplets. The special nozzles reduce water consumption on the company's hand showers and produces 20% less noise.

hansgrohe-usa.com

AA/27

A streamlined single-handle faucet set by UK-based Michael Anastassiades is the latest extension of the Aboutwater collection, a design-driven joint venture from Boffi and Fantini that already boasts collaborations with Piero Lissoni, Naoto Fukasawa, and Paik Sun Kim. Featuring a simplified spout profile and one handle to control water flow and temperature, the AA/27 is available in brushed stainless steel and matte gunmetal finishes.

fantiniusa.com



Pure

As an update of offerings available on its Pure kitchens, this concept from manufacturer SieMatic takes its design cues from retail displays, incorporating tall, illuminated glass fronts, mirrored toe kicks, and adjustable LEDs hidden in horizontal and vertical recesses. Pure cabinets also feature the company's popular handle-free doors.

siematic.com



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Sounds Good!

Architects designing open offices tackle the common annoyance of workplace noise.

By Katharine Logan

THE RATTLING of an air diffuser, the ping-pong of an elevator, the laughter of colleagues gathered around the water cooler, the conversations of neighbors overheard loud and clear: such distractions in the workplace are so irksome that acoustics consistently rank as the No. 1 or 2 complaint on employee surveys, with poorly designed open offices largely to blame. “It’s not easy to deal with noise,” says Bill LaPatra, a partner with the Seattle-based architecture firm Mithun. Unlike thermal discomfort, the other top-ranked workplace complaint, “You can’t just



BEYOND THE CUBICLE Instead of trying to stop workplace noise, Mithun's renovation of Microsoft's marketing offices in Bellevue, Washington, provides several types of environments, including kitchens (left) and collaboration nooks (above), so that employees can select a spot with the physical layout and acoustical properties best suited to the task at hand.

put on a sweater" to fix it, he says.

Many architects, along with employers, are grabbing this issue by the ears—especially in the tech industry, where productivity is a direct function of engineers' ability to focus, and sector growth keeps workplace design on the leading edge. The cycle of build, occupy, test, and repeat is exceedingly short for the most quickly growing tech companies, says Stuart Colby, a principal at Portland, Oregon-based SERA Architects, and acoustic design is a significant aspect of those iterations.

One example is Microsoft Corporation,

which made the transition to open offices about five years ago. Since then, providing employees with acoustic comfort has become something of an obsession for Brenda Ball, the company's Americas workplace strategist. "If you'd told me 20 years ago that I'd be this dialed in on acoustics, I would have been surprised," she says, but with multiple factors in this high-pressure industry fragmenting employees' attention, "it's more important than ever to get acoustics right."

So when Microsoft renovated its marketing offices in Bellevue, Washington, acoustics were a top priority. The limited-scope "refresh," designed by Mithun and completed in 2017, comprises 139,000 square feet on seven floors in a downtown high-rise, with the graphics, textures, and colors of each floor

intended to evoke one of the company's seven U.S. operating regions. On the level designed to recall the Midwest/Great Lakes region, for example, the social hub uses charred wood and a bricklike tile for a gritty, urban feel, with wavy-edged wood ribbing overhead inspired by steel bridge structures; in the Pacific hub, perforated metal sails, blond wood, aqua chairs, and a food-truck-effect canopy over the bar create a very different tone.

While each floor's aesthetic is unique, the acoustic strategy is consistent and is based on "modes of behavior," says acoustic consultant Basel Jurdy, a principal with the local office of Stantec. He identifies three types of activity, each with a corresponding quality of attention: administrative, characterized by light focus that can accommodate colleagues' stop-



PARK VS. PARKING SERA's revamp of a complex for LinkedIn in Mountain View, California, replaced a parking lot with a landscaped courtyard (top), removing car noise from the campus center. The buildings' interiors are zoned so that areas where people would naturally gather, such as kitchens (above), are positioned adjacent to skylit atria.

ping by; focused, requiring concentration without interruption; and re-energizing, when a round of intense work is completed and it's time to recharge, either by socializing with coworkers or unwinding alone.

Each floor of Microsoft's new space offers a choice of environments tailored to each mode. Besides the shared open office, there are small nooks and soft-seating areas for informal collaboration, as well as enclosed meeting rooms and two-person conversation rooms for high-focus activities, with even smaller rooms for making phone calls, and a social hub where employees can take a break. To encour-

age people to use the environment most appropriate to their acoustic needs, ancillary spaces are located conveniently close to the shared open office area. "Instead of trying to stop the sound of voices in the open workspace," says LaPatra, "we provide a variety of acoustically different zones."

Meeting rooms are designed with particular attention to the acoustics of digital conferencing so that crucial presentations aren't undermined by muffled or garbled sound. To prevent acoustic reflections that might not be noticed by people in the room but can be picked up by microphones, fabric-wrapped

semi-rigid fiberglass boards cover three-quarters or more of the ceiling, with additional sound absorption from carpeted floors and acoustic treatments on one or—ideally—two walls. Meeting and phone rooms are isolated from adjacent spaces with walls comprising three layers of drywall on fiberglass-insulation-stuffed stud framing. And because occupants of the small phone rooms are inevitably speaking close to the walls, the risk of booming is eliminated with acoustic panels.

Getting the design right is necessary but not sufficient for success. It's equally essential that contractors maintain acoustic seals and inspect for holes before walls are closed in. Otherwise, says Ball, "you spend money to provide a highly performing space, and with one leak the money goes out the window."

The Microsoft renovation—which Ball says is generating a lot of positive feedback—illustrates how much can be achieved acoustically with spatial and surface interventions' targeting specific areas for maximum benefit. A more thoroughgoing revamp of 300,000 square feet in three two-story buildings in Mountain View, California, allowed SERA, the architect for the project, to make some big moves. The renovation, initially designed for a another tech client with a strong commitment to good acoustics, was taken over by LinkedIn during construction and completed in 2017; it engaged site, building envelope, mechanical systems, and structure, as well as the configuration and finishing of the interiors.

The first move was to transform a central parking lot into a landscaped meadow crisscrossed with boardwalks. The transformation connects the buildings, provides a place of respite for workers—whether visiting the meadow or just glancing out a window—and removes vehicle noise and movement from the campus's center. The peaceful space that now resides between the buildings is a huge resource, says Colby. To animate this new park, and to pull noise-generating program elements away from focused-work zones, cafés and fitness facilities are located at building corners, with access from inside and out.

The campus's existing ribbon windows, tinted almost black, transmit less than 15 percent of visible light. However, replacing them with clearer glass would have entailed re-engineering to meet new energy code requirements. So, within the buildings' enormous floor plates (the largest is 386 feet across), the architect introduced skylit atria. Because people are naturally drawn to daylit spaces, areas adjacent to the new openings are zoned for group activity, with such potentially noisy elements as kitchens and game rooms positioned away from more-focused-work areas.

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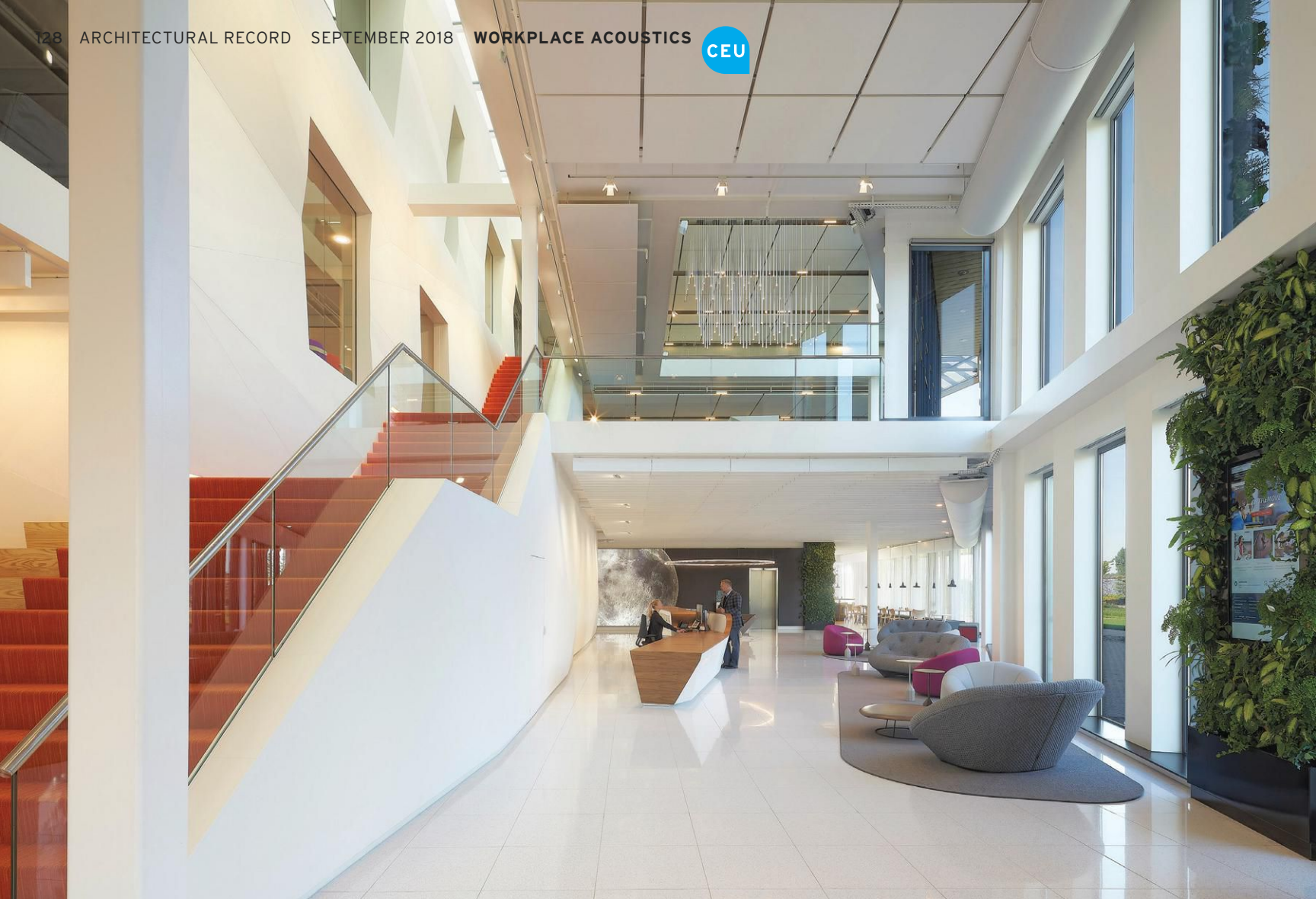
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Open workspaces are divided into 50- to 70-person neighborhoods separated by 66-inch-tall partitions. (Such high panels are generally not a good acoustic choice for enclosing individual and small-group workspaces, as people tend to confuse visual for acoustic privacy and speak more loudly than when they can see their neighbors. But for separating large groups, where there is no illusion of privacy, this isn't an issue.) Neighborhoods were further subdivided into teams of about 16, using lower furnishing partitions such as felt panels and sliding whiteboards. As at Microsoft, conveniently located ancillary spaces provide acoustic flexibility and choice. At any given time, every employee has at least one spot, in addition to an assigned desk, where he or she could choose to work.

Informing the design for the project, acoustician Ethan Salter, a principal consultant with San Francisco-based Charles M. Salter Associates, used several computer-based methods to predict speech privacy, including the Privacy Index (an ASTM-defined metric—based on the percentage of words spoken that may

be understood by people nearby—for determining whether a space provides a “normal,” “confidential,” or “secure” level of privacy). Each method evaluated some common factors: noise level, sound isolation between spaces, room finishes, and background-noise levels.

SERA's approach to acoustics on all of its projects, LinkedIn included, is based on recommendations in the General Services Administration's publication *Sound Matters*. In addition to defining essential terms, providing an overview of the relevant research, summarizing key concepts, and detailing specific strategies, the publication (intended to assist owners and employers, architects, user groups, and other members of the design team) provides a 10-step checklist for achieving acoustic comfort in offices. The first four steps, pre-design, consist of developing the acoustic program and defining workplace policies. The next three address the design of the spatial layout, while the final steps deal with the acoustical treatment of spaces.

Acoustics rank as a high priority for any company wanting to foster productivity and

well-being in the workplace, but for Plantronics, an audio-communications-equipment company, acoustics are a matter of identity. So its first ground-up, new office facility, the company's Europe, Middle East, and Asia headquarters, completed last year in Hoopdorp, the Netherlands, puts acoustics first and foremost. The 40,000-square-foot, three-story building's clean, monochromatic exterior is intended to reflect the company's mission and design philosophy, according to the architect, William McDonough+Partners. The spacing of reflective metal panels and windows, shifting between solid and transparent areas, is inspired by sound wave patterns.

The interior, designed by a team from Gensler's New York and San Francisco offices in collaboration with local N30 Architects, engages visitors and employees in an acoustic-integrated narrative. Beginning with the parking garage—where most people will arrive—graphics provide an overview of the company's history. The elevator and stairwell provide an acoustic pause, with sound-absorbing panels creating a sense of calm, and light



example—as well as screens that act as digital windows (or skylights) to a view of nature. “We’re really working with psychoacoustics,” says James Waddell, a managing director at Plantronics, referring to the branch of psychology concerned with the perception of sound and its emotional effects. “How does a human feel in the space? That’s the No. 1 thing to think about.”

That one thing is affected by a multitude of factors, and Plantronics, LinkedIn, and Microsoft each emphasize different strategies, or give different expression to similar strategies, in their approach to workplace acoustics. In a comment that pertains equally to all three projects, however, SERA’s Colby identifies what underlies their acoustic excellence. “It isn’t that they faced some heroic challenge, like creating the world’s greatest concert hall,” he says. “It’s that they required a lot of discipline, consistency, and follow-through to apply a wide range of acoustic-design principles across a variety of spaces—with the typical budget pressures that even well-funded projects face.” That lesson is not just for the tech sector; it has the potential to help people in open offices everywhere to concentrate more easily, and to enjoy better acoustics during their time at work. ■

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



CORPORATE IDENTITY
The Gensler-designed interiors for the offices of audio-equipment company Plantronics in Hoopdorp, the Netherlands, include a double-height lobby (opposite) with a faceted wall that mitigates acoustic reflections. Upstairs, water features (left) provide low-level background noise. A nearly anechoic room (above) allows visitors to experience soundscaping.

and white surfaces supporting the silence.

From the ground-floor lobby—which provides a fuller introduction—stairs ascend within two diagonally stacked double-height atria. To prevent the free roaming of sound from floor to floor, a large wall rising through the space is faceted and fissured with acoustic plaster to absorb and break up reflections. “You can dampen, you can block, you can cover,” says Milena Jovovic, design director at Gensler, “but this breaks up the sound waves so they would naturally dissolve.” A living wall, intended primarily for biophilic effect, also helps dissolve sound waves.

The narrative continues in an exhibition area on the second floor, where a special room designed to approximate an anechoic chamber (one that absorbs reflections of sound or electromagnetic waves) creates nearly complete silence. Here, an interactive tabletop with a complementary lighting installation allows visitors to experience the acoustics of a typical workspace and then transform them with soundscaping. This technology is a refinement of sound masking, an active strategy

among the primarily passive tactics of acoustic design. Masking delivers low-level background sound matched to the spectrum of human speech—mitigating what might otherwise be uncomfortable silence and rendering normal conversation unintelligible to the casual listener. Soundscaping achieves the same effect using identifiable sounds, such as flowing water, which Plantronics has found to be most effective at mitigating speech distraction. The sound of water also has the benefit of mood-enhancing associations. Soundscaping can also be dynamic, residing in the Cloud and using sensors in an Internet-of-Things (IoT) infrastructure to respond to the volume of noise in different parts of the office in real time.

On the third floor, where Plantronics hopes to inspire its engineers to solve modern workplace problems by immersing them in a modern workplace, an open office uses soundscaping for real. To help dispel any cognitive dissonance that a sourceless sound of water might set up, the interior design incorporates water features—to define a waiting area, for

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Learning Objectives

- 1 Outline spatial-layout strategies that can mitigate distracting workplace noise.
- 2 Describe finishes and construction details that can improve open-office acoustics.
- 3 Discuss methods for determining the level of speech privacy a particular design will provide.
- 4 Describe technologies such as sound masking and soundscaping.

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Interior Motives

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Expansion Joint Fundamentals and Field Practice

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LS PM ST

CREDIT: 1 AIA LU



Image courtesy of Allied Metal Group

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Integrated Cladding Support Systems for Better Thermal Performance

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A More Transparent Shade of Green: PCRs Drive Restrooms to the Lead in Green Design

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Photo courtesy of Schindler Elevator Corporation

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Cutting-Edge Elevator Technology

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p149

Spray-Applied Glass Fiber Insulation

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CATEGORIES

ACC ACCESSIBILITY

BE BUILDING ENVELOPE DESIGN

EM ELECTRICAL AND MECHANICAL

IN INTERIORS

LS LIFE SAFETY AND CODES

PM PRODUCTS AND MATERIALS

RR RENOVATION AND RESTORATION

ST STRUCTURAL

SU SUSTAINABILITY

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

The latest interior design products and systems can have a critical impact on performance, aesthetics and the overall design of a space, leading to a greater sense of satisfaction and well-being for occupants. Shown here—the use of an advanced clear glass product enhances the interior of a contemporary building design.

Photo courtesy of Guardian Glass

Interior Motives

Interior design trends support structural integrity, ease of maintenance, occupant well-being, and a wide variety of aesthetic choices for today's built environment

Sponsored by Construction Specialties, Guardian Glass, and XtremeInterior Architectural Solutions by TAMLYN

While a building's exterior provides that all-important first impression, it is really the interior at the heart of the human experience—the space where people live, work, play, relax, learn, and heal. Which products provide variety in colors and textures? How can we balance structural integrity with a desired aesthetic and occupant well-being? What role does nature have in current interior design decisions? This course will answer these questions and more as it delves into the world of interior design to help architects and designers keep up with what's next on the interior horizon—from biophilic design strategies and updated interior wall systems to metal trim and innovative glass.

THE PRACTICE OF BIOPHILIC DESIGN

Biophilic design is a therapeutic way of designing our homes, work, health-care, hospitality and learning spaces. Bringing nature into a space has been proven to contribute to stress reduction, enhanced creativity and clarity of thought, expedited healing, improved emotional and physical well-being, and increased productivity in learning and work settings.

Biophilic design has been practiced unknowingly for generations. More recently, it has become a well-practiced and more defined design trend for interior spaces. Interior designers and architects are tasked with creating environments that are structurally sound as well as benefit the mental

CONTINUING EDUCATION



1 AIA LU



1 IDCEC CEU

Learning Objectives

After reading this article, you should be able to:

1. Define biophilic design and detail several interior design strategies that support this concept.
2. Identify the ways that innovations in interior design products and systems can impact aesthetics and the overall design of a space.
3. Describe the benefits of extruded aluminum as a popular material for trim in interior design projects.
4. Discuss trends in interior wall surfacing and wall protection from performance, sustainability, and aesthetic perspectives.
5. Explain interior glass trends, including innovations in clear, etched, and laminated glass.

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"Doing it right since 1971."

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Warm wood tones are featured throughout the wall paneling system at Parkview Randallia Hospital in Fort Wayne, Indiana. Additionally, potted plants and large open windows to the exterior provide an abundance of natural life and views to nature.

and physical well-being of the individuals who will be spending their time in such environments. From wall colors and patterns to introducing natural light and views of the outdoors, details make the difference.

Interior Wall Protection and Design: Biophilia and Beyond

Interior wall protection not only contributes to LEED v4 points for sustainability, but it also benefits those who come in contact with the material visually as a biophilic design element, thereby fostering everyday well-being for building occupants.

Whether following biophilic design strategies or some other design directive, designers tend to ask how easy it is to get their unique design into a space. With the capability of custom printing on interior wall protection, there are endless possibilities for how a space can be made to look and feel, thus answering the designers' question that, yes, they can create a unique space unlike any other and leave their own stamp on it.

Protection for interior surfaces is necessary and a fact of life. With recent advances, selecting the right wall-protection solutions to protect your project's interior while providing a pleasing aesthetic is fully achievable.

Types of Wall Protection

High-impact wall coverings are available in many thicknesses. At their best, high-impact wall coverings stand up to scrapes, scuffs, and damage caused by humans and machinery in high-traffic areas. Manufacturers offer products in a range of colors, textures, and simulated patterns, allowing designers to create virtually endless options. If the combination of standard colors, textures, and patterns aren't unique enough, there are products available that allow customization so that almost any image or mes-

saging can be printed (often behind a clear rigid sheet) for a truly unique look. In addition to the myriad design options, the contemporary texture of the rigid sheet allows for easy cleaning and maintenance. Look for products that are environmentally friendly—for example, PVC-free and contain no halogens or other known persistent bioaccumulative toxins (PBTs). Also, products should be tested to the Standards Council of Canada CAN/ULC-S102.02 standard, and be UL Class A/1 fire rated and labeled to ensure eco-friendly and safe choices.

Easily installed wall panel systems provide a needed solution for many spaces. Recent functional and aesthetic improvements in the market allow the use of certain wall panels in a variety of spaces with protective and decorative needs. In certain cases, the panels can be coordinated with the colors and patterns of the specified wall coverings. A variety of wall panel configurations, edge, and trim options can be incorporated into virtually any design, and they can be permanently adhered to the wall or installed with innovative snap systems, which can allow for easy removal or replacement of individual panels.

Wall Coverings and Panels: Design and Performance

The goal of high-impact wall coverings and custom wall panels is to enhance the design of a space by offering a number of capabilities, including the ability to incorporate large-format graphics, unique applications, collaborative design, multifunctional panels, and custom printing. In terms of biophilic design, when the right elements are in place, these products make successful biophilic design possible by bringing nature indoors with choices that feature such designs as simulated wood patterns and nature imagery.

Photo courtesy of Construction Specialties



This waiting room at Children's Medical Center of Dallas features colorful and playful nature imagery. The abstract art serves to fuel the imagination, providing a positive distraction for young patients and families alike. Here, the wall imagery works in conjunction with the columns, which create tree-like sculptures, to further the soothing natural feeling within the space.

Wall protection now comes in unlimited visual freedom, with products that offer architects, interior designers, and owners the ability to use large-format graphics, photography, and messaging safely embedded behind durable sheet, creating stunning interiors without the worry of damage. According to Richelle Cellini, visualization specialist at Construction Specialties, "Specifying customized wall-protection products gives the A&D community the ability to use photographs, designs, and illustrations by bringing the surrounding outdoors in. Whether that be using local agriculture, individuals, or architecture, the latest wall coverings and panels can be used to digitally capture these elements and preserve them on the wall for the users to enjoy, recognize, and honor for the lasting lifetime of the product."

INNOVATIVE WALL SURFACING WITH TRIM

Regardless of the building type, among the first surfaces that people experience in an interior space are the walls. They can be as simple and understated as white painted gypsum board or as elaborate and detailed as a designer's imagination allows.

All the while, interior walls need to be easy to maintain and clean over the life of the building. With this in mind, many interior designers lean toward a simpler, more elegant wall surface solution with a clean, modern look and minimalistic details. Others select certain walls to feature added detailing and trim to create a total aesthetic. Achieving any of these looks typically involves panels of some sort, such as gypsum board or other rigid materials with reveals or trim around the edges. That trim can be metal, wood, or other suitable choices to frame and accentuate a wall surface while protecting and aligning the panels.

Benefits of Extruded Aluminum

Material performance and sustainability are two top requirements in modern interior design. This applies to everything from design to materials, and in the case of trim, extruded aluminum is one of the top materials. Not only does aluminum have numerous sustainability features, but it also has performance characteristics that make it an affordable choice for interior projects.

Extruded aluminum is frequently referred to as the "miracle metal" because it has such an extensive list of favorable properties, including physical and health characteristics (it is durable, doesn't rust, poses no health or physical hazards, and is fire resistant and noncombustible). Furthermore, when used for interior architectural purposes, aluminum trim can withstand daily use and long-term wear and tear better than most other materials, as well as being lightweight and easy to install.



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Images provided by Tamlyn



Aluminum trim systems can create simple but stunning profiles for innovative wall surfaces. They can provide base and corner protection or produce vertical, diagonal, or horizontal drywall designs.

All this, combined with its sustainability features (aluminum products can help earn LEED v4 certification) and versatile aesthetic and design, make extruded aluminum ideal for many building applications.

Aluminum Trim Pieces

In fact, one increasingly popular method of dealing with finish panels on wall surfaces is the inclusion of manufactured trim pieces made of aluminum. Products are readily available that are designed to be used with drywall, panels, or in conjunction with wrapped surface finishes, such as fabric or vinyl wall coverings. They are available in a variety of traditional, contemporary, and modern looks to create subdued or emphatic three-dimensional appearances. As noted, since aluminum is highly durable, recyclable, lightweight, and noncombustible, it is a popular and logical choice for interior trim of this type. Its strength helps provide wall protection when used for corners and other areas that need some reinforcement. In that sense, it is a good example of a well-known material that can be used in innovative ways for interior designs.

In addition to standard products, custom profiles can be made to not only accommodate particular styles but also to hold other materials, such as glass, tile, or panels in a variety of thicknesses. Some manufacturers offer customized service and designs to architects and will readily meet to discuss design ideas and solutions. This service is not only centered on aesthetic issues but also on technical and performance issues of the trim related to its ability to hold up over time. The results can be profiles that are project specific or part of a mass-production selection, such as aluminum extrusions of simple reveals and transitions to improve and enhance drywall surfaces. It can also include new shapes and forms that introduce the appearance of fine-crafted

metal integrated with drywall and panelized surfaces. Part of the beauty of aluminum extrusions is that they are very economical, meaning that they can more easily be incorporated into projects.

The unique design possibilities of this trim approach can create clean lines, shadow lines, or reveals that make a wall surface stand out as part of an interior space. It is also possible to create rounded corners, smooth transitions, or other shapes that enhance the overall design of the space in ways that wouldn't be possible with traditional wall-surfacing techniques. Economical aluminum trims are available in a primed finish for painting in the field or prefinished in common anodized aluminum colors, such as clear, champagne, bronze, and black.

Wayne Braun, an interior designer with a leading firm in Houston, has worked with manufacturers on designs of this type and created some very successful interiors in the process. He notes, "The manufacturer has introduced the appearance of fine metal craft integrated with drywall and panelized surfaces at a fraction of the cost of having custom metalwork designed, detailed, and fabricated for a project." Needless to say, it is easy to see why his firm is able to continue to innovate with this wall surface and trim approach.

Designers like Braun have also found that to be fully successful, a design needs to address all of the conditions and details of wall surfaces. That includes the wall base, corners, top edge, and any openings or variations. In that regard, they find that working with a single manufacturer who can provide all of the needed trim pieces in a coordinated system is a big key to success. Maybe just as importantly, being able to work out the details using a consistent and proven system means that innovation is possible without taking on undue design risk.

Extruded Aluminum Trim Gaining Popularity for Interiors

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

To this point, Dan Brunn of Dan Brunn Architecture was looking for the perfect finishing solution for all of the firm's modern building needs, such as work done on Bridge House in Los Angeles. He says, "I love the unique extrusions to create light pockets and that perfect reveal."

INTERIOR GLASS: FORM AND FUNCTION

The right interior glass creates value for architects and designers by offering capabilities ordinary glass doesn't—from clarity and light control via low-iron glass to privacy and security via acid-etch glass. A question many architects and designers have is: How do I incorporate glass into my space and still provide privacy?



Image provided by Tamlyn

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

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Architects and designers know that glass has value beyond aesthetics. Numerous studies have demonstrated how much better we function when we have access to natural light and views to the outside, furthering the idea discussed earlier related to biophilia. Incorporating interior glass means many occupants enjoy that benefit, not just the people on the perimeter.

Additionally, interior glass creates a more collaborative, engaging environment where people can maintain a visual, social connection. It also provides a blank canvas to paint/create inspiration and add color or texture, via back-painted glass or company branding, without blocking off spaces or limiting the footprint.

If a building exterior is made up of high-performance, low-E coated glass, the light that's coming into interior spaces brings added value because the solar heat gain is better controlled. That means the natural light passing through strategically located interior glass is not going to bring unwanted heat gain or excessive glare.

Open office plans continue to be very popular; however, architects and designers can create the best of both worlds—open and private—by customizing the space. The right coated, painted, or acid-etched glass could be the perfect answer to keep the open feel and view while incorporating privacy elements via partitions that can incorporate laminated glass to reduce noise distractions or silkscreen gradient patterns that provide a good mix of light and privacy.

Types of Glass Products to Bring in the Light

Different types of glass products serve different purposes in terms of design and performance.

Clear low-iron glass on walls, partitions, tables, stairs, and more allows architects and designers to create spaces that pull light through interiors with exceptional clarity. The latest clear low-iron glass offers very high light transmission and appears color-neutral clear to the edge, reducing the green tint that often accompanies standard glass formulations.

Designers and architects choose this type of glass to flood interiors with natural light and create spaces that feel bright, open, and boundless. Applications are many, including frameless enclosures, walls and partitions, entranceways, display cases, tables, railings, and more—anywhere neutral color and clarity count.

Tom Daly, owner of Oasis Shower Doors, New England's largest shower door company, says, "Low-iron glass allows natural light to

pass through with remarkable clarity and brilliance that is perfect for shower applications, retail, and hospitality settings. Customers want true color transmission without the green tint from standard glass."

Expanding on this, Sarah Wansack, interiors segment manager, Guardian Glass, says, "Low-iron glass is increasing in use for frameless applications such as shower enclosures and office partitions. It helps create uninterrupted views in office design and reduces the greenish cast of standard float glass for enhanced clarity. We're also seeing more **acid-etched glass** in those applications when more privacy is required. Acid-etched glass is a happy medium, keeping the look and allowing for even dispersion of light—spaces seem to glow from within, especially when using low-iron glass—while adding some separation. This product is also durable and fingerprint resistant, an added bonus for upkeep."

Specialized finishes, such as a satin-smooth, translucent finish used on clear glass, can bring brighter translucence to acid-etched glass for interior applications, obscuring the view through the glass while maintaining a high level of light transmittance, providing beauty, light, and privacy in one solution. By providing visual and tactile interest, and offering privacy while still welcoming abundant light, architects and designers may choose this type of finish to create unforgettable settings, and once installed, it should ideally retain its elegance and ease of care. One manufacturer's proprietary product offers higher light transmission, more uniform light diffusion, and superior color neutrality via low-iron glass. Because it has a silky-smooth surface that resists smudges and fingerprints, this finish is easy to maintain using standard, nonabrasive products. The product can be cut-to-size, bent, screen printed, and fabricated for commercial exteriors.

Architects and designers use this type of specialized finish to make visually striking and memorable doors and moveable walls, partitions and panel systems, tabletops, stairways, shower enclosures, windows, and more. It brings depth and sophistication while incorporating privacy with light in a variety of commercial applications, including offices, retail settings, hospitality, and health-care environments. Use it on its own as a monolithic glass, or it can be fabricated into an insulated glass unit that includes performance glazing for added thermal insulation or solar control. Among the features to look for include its ability to be cut to size, heat treated, bent, screen printed, laminated, drilled, notched, and polished.

Image courtesy of Guardian Glass



By providing visual and tactile interest, and offering privacy while still welcoming abundant light, architects and designers may choose satin-smooth, translucent finishes for interior applications to create inviting, comfortable, unforgettable settings.

Decorative coated glass is another glass product available on the market that was created using a proprietary coating system and is a high-opacity, smooth glass with a uniform finish ideal for back-painted applications in the workplace, ranging from whiteboards to backsplashes. Both durable and eye-catching, its tempered quality ensures it can define spaces for years to come.

Other Interior Glass: Laminated Glass

Laminated glass is another choice. Its benefits include its ability to block harmful ultraviolet rays, which protects home, office furnishings, and artwork from fading and damage. You can use an accent color as a design statement or to delineate an area or function of a space using laminated glass.

Laminated glass can control sound, reducing interior noise levels and keeping inside conversations private. Laminated glass can also enhance the acoustic properties of a room, reducing echoes, improving sound quality, and insulating against sound passing through walls to prevent noisy outside environments from disturbing occupants.

CONCLUSION

With recent statistics asserting that we spend approximately 87 percent of our time indoors, it is no surprise that great attention is being paid to creating interior spaces that will enhance our everyday lives. Manufacturers are paying attention, and now more than ever, they are making great strides in developing new, advanced products that can boost the look, feel, and performance of the indoor environment—everywhere from single-family homes, multifamily dwellings, workplaces, health-care facilities, schools—you name it.

Continues at ce.architecturalrecord.com

PRODUCT REVIEW

Interior Motives

Construction Specialties

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XtremeInterior Architectural Solutions is the newest venture from Tamlyn, a leader in the builder supply industry for more than 40 years. This unique and diverse line of extruded aluminum trims was designed to enhance all practical aspects of drywall construction and transform it into a design medium that can make it the feature, the focus, and the most impactful element of a well-designed space. Our profiles introduce the appearance of fine metal craft integrated with drywall and panelized surfaces at a fraction of the cost of having custom metalwork designed, detailed, and fabricated for a project.

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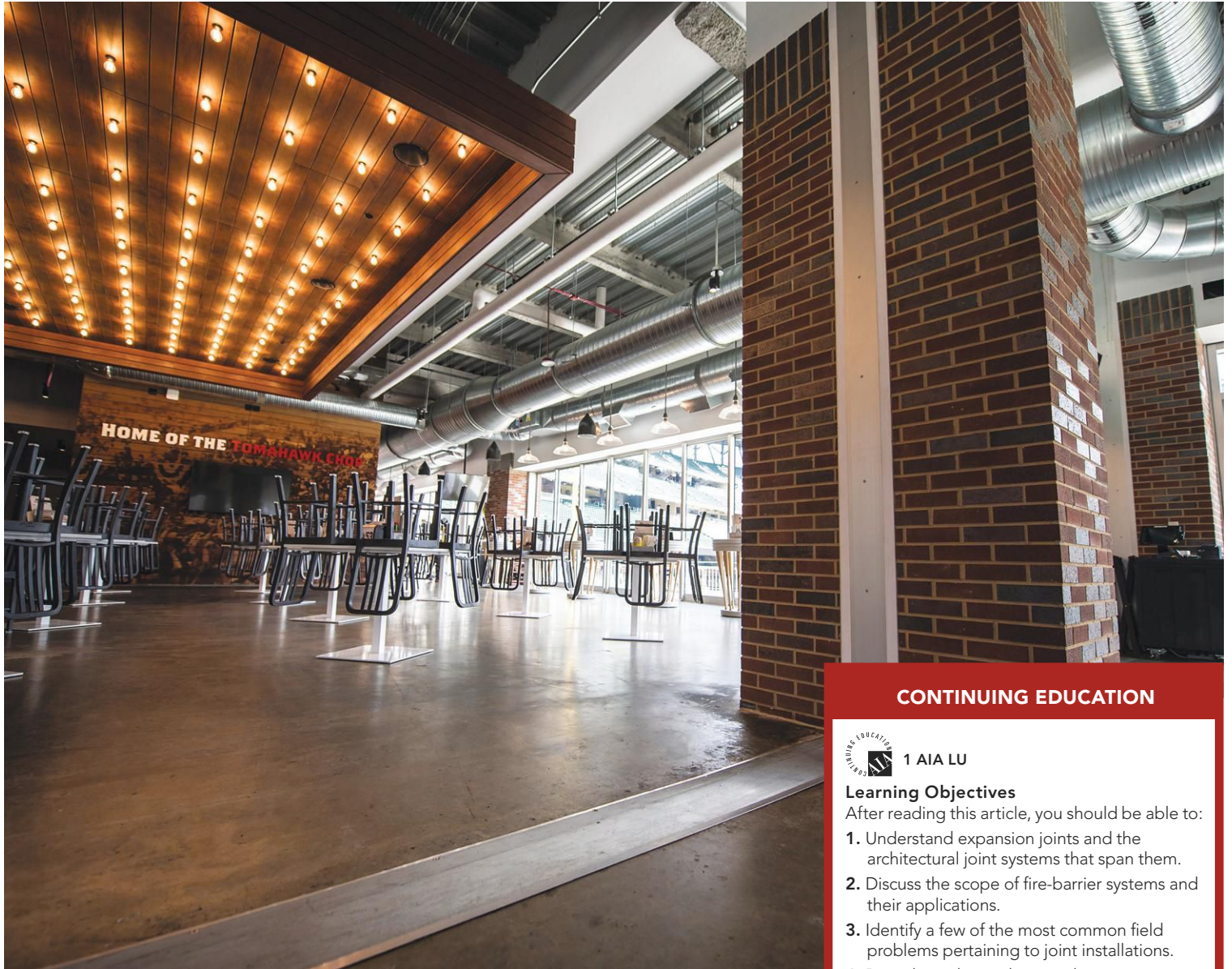
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Expansion Joint Fundamentals and Field Practice

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This course addresses some of the basic knowledge needed to understand the role expansion joint systems play in structural integrity as well as their compatibility with the function and finishes within the space. We will also discuss the role of fire barriers and the many forms they may take

given the conditions surrounding the project. Additionally, we will touch on common field problems encountered during the installation of joint systems.

▶ Continues at ce.architecturalrecord.com

CONTINUING EDUCATION



Learning Objectives

After reading this article, you should be able to:

1. Understand expansion joints and the architectural joint systems that span them.
2. Discuss the scope of fire-barrier systems and their applications.
3. Identify a few of the most common field problems pertaining to joint installations.
4. Describe industry changes that are necessary to ensure the architect is designing with liability in mind.

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Integrated Cladding Support Systems for Better Thermal Performance

Sponsored by CL-Talon Cladding Support Systems

Freedom Tower in New York City was designed with exterior cladding to help create a visually stunning appearance and also meet energy efficiency goals.



All images courtesy of Allied Metal Group

Energy efficiency is one of the top challenges in building design. Reduced heating and cooling loads save building owners and occupants money, and they lower associated greenhouse gas emissions. Energy-efficient cladding systems are one of the top two ways to improve thermal performance, with newer, more energy-efficient HVAC systems being the other. Cladding systems can be an important part of the building envelope, which is central to modern building design and construction. Building envelopes are comprised of a system of components that physically separate the interior and exterior of the building, with the primary goal of keeping the building dry and at a comfortable temperature. The envelope typically consists of the foundation, floors, walls, fenestrations and doors, roof, and exterior cladding. Together the envelope layers address the energy-flow needs of the structure and provide buffers from outside noise.

The layers will vary between buildings in different climates and with different materials, but the goal is the same: to keep the inside of the building dry and at a comfortable temperature, all while addressing the building's energy needs. While the concept of layering a building envelope sounds simple at first, the main challenge arises when it comes to attaching the outer layers to the building structure. Every single attachment point that punctures the insulation is a thermal bridge that connects the building's interior and exterior. In cold weather, thermal bridges allow heat to escape and cold to enter the building; in summer, the opposite is true.

One way of reducing the impact of thermal bridging is to include a thermal break with a nonconductive material, such as plastic. A plastic cap on a metal fastener or along the

CONTINUING EDUCATION



1 AIA LU/HSW



1 GBCI CE HOUR

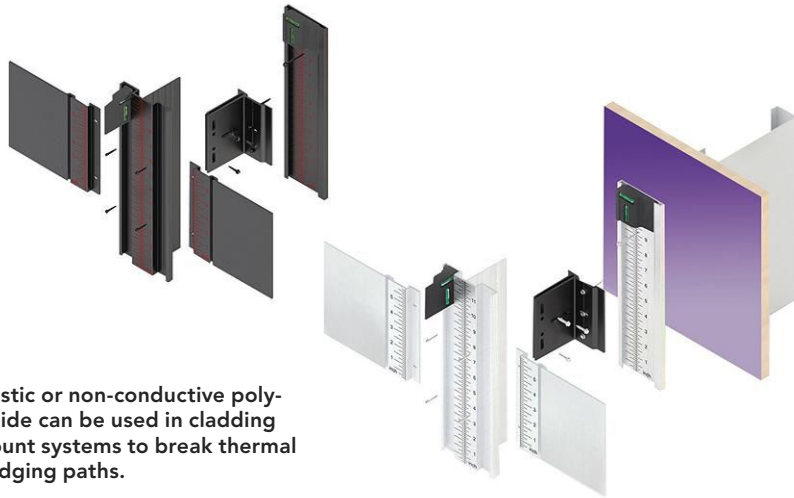
Learning Objectives

After reading this article, you should be able to:

1. Describe the basic purpose and challenges of thermal performance in modern cladding systems.
2. Explain the challenges associated with cladding support systems and installation.
3. Discuss the importance of mitigating thermal bridging when specifying cladding systems.
4. List the ways certain railing systems can accommodate different cladding materials.

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Plastic or non-conductive polyamide can be used in cladding mount systems to break thermal bridging paths.

edge of a metal window, for example, can help break the heat transfer and improve the energy efficiency of the building.

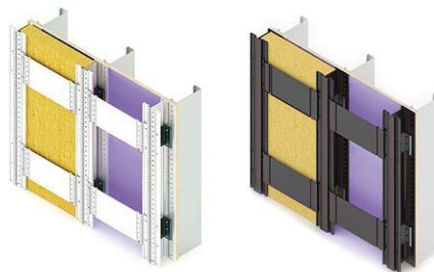
Another thermal break material is polyamide, which is a fiberglass compound; the material has several benefits over plastic. First, where plastic may weaken and crack under certain conditions, polyamide is very strong and can bend without cracking. Second, strips of polyamide are generally much thicker, and the thickness translates directly into improved thermal performance. When used as a thermal break for an aluminum cladding support system, polyamide breaks can drastically improve the overall thermal performance of the system.

Another way to reduce this energy loss is through continuous insulation (CI), which is becoming increasingly common and is a code requirement in states following ASHRAE 90.1-2007 and IECC 2009. Continuous insulation is basically what its name suggests: insulation that is continuous across all structural members of a building, with fasteners and service openings as the only thermal bridges. Continuous insulation often is described as rigid foam insulation or mineral wool and can be installed on the building's interior or exterior (underneath the cladding). When used on a building's exterior, continuous insulation can improve energy performance up to 50 percent compared to traditional interior insulation.

This approach to insulation is great for residential projects, and it's relatively easy to implement. Commercial and multifamily residential projects that include large-panel exterior cladding systems and ventilated facades are a bit trickier because of the load requirements associated with

the panels. Exterior cladding is often used as a rainscreen to protect the building's structure and interior from wind, rain, and sun exposure, and it also can damper outside sound and provide a relatively easy way to change the look of the building.

Cladding is available in different materials, including aluminum panel, thin ceramic or cement, and even stone, but the attachment systems are generally made of metal such as aluminum and, more importantly, are attached with metal fasteners to the building structure via a specially constructed substructure. Basic requirements of the attachment system are that it can safely hold the gravity load of the panels and accommodate wind loads (and snow, depending on the climate) as well as any movement the building may experience. Each of these attachment points is a thermal bridge that can compromise the overall energy efficiency of the building.



Cladding systems are installed over the substrate using a series of rails, often in a grid form, that are attached to the exterior of the building and secured to the substructure by means of some form of fastener, such as a screw.

New energy-efficient building designs are increasingly built with high-performance materials that improve not only the thermal performance but also positively impact the health and welfare of the building occupants. Exterior cladding materials often are used in this capacity while adding to the beauty and resiliency of the building. As designers shift toward creating high-performance structures that can withstand the unpredictability of changing climates and harsh environments, materials such as cladding will become increasingly important.

In addition to thermal performance, exterior cladding contributes to overall health, safety, and welfare of building occupants by protecting the building interior from moisture. The long-term impacts of damp buildings can include everything from respiratory problems caused by mold, fungus, and spore growth to the physical problems caused by rotting substrates. In other cases, moisture that gets into a building can release volatile organic compounds (VOCs), which can cause serious health problems when occupants are exposed over an extended time.

CLADDING INSTALLATION

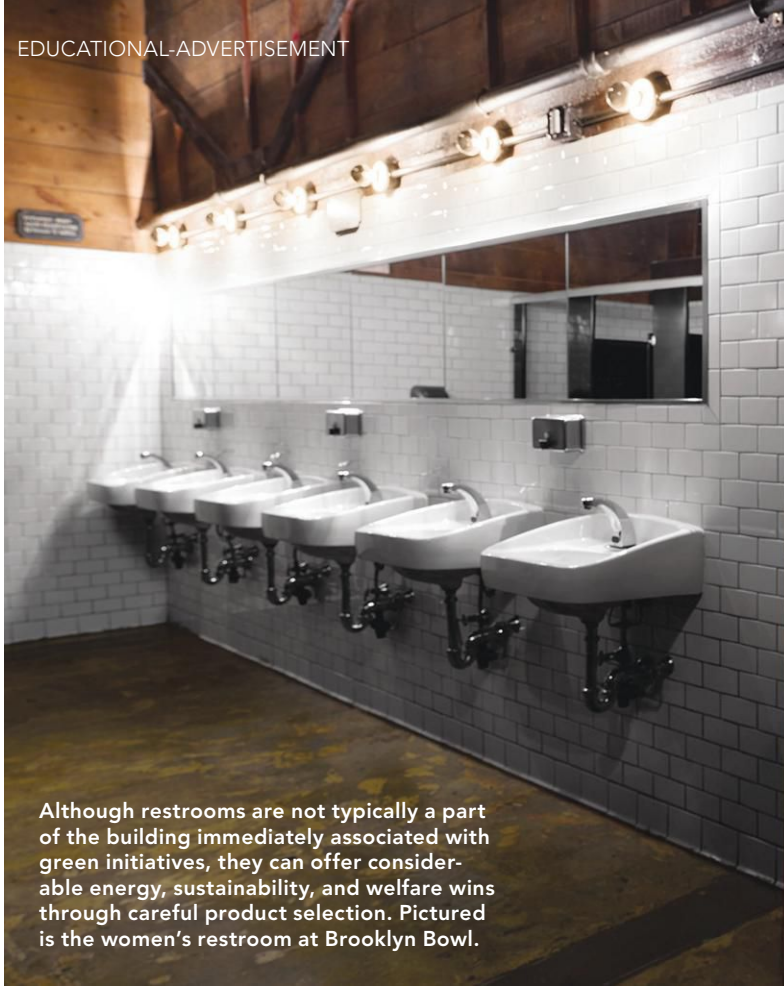
In the previous section, we noted that cladding is an important part of the building envelope. From the substrate out, envelope layers include vapor control (such as a housewrap or water-resistant barrier), thermal control (insulation), the building structural support (framing), air control (HVAC and fenestrations), and an external weather-resistant layer (cladding and siding). With the exception of the framing, the other layers are lightweight and do not contribute to structural support. In traditional cladding systems, a substructure must be built over top of the exterior substrate as a way of securing the cladding load. This means that when cladding is installed, its railing system needs to be secured through the other insulating layers and into the framing. And that railing system needs to support not only the gravitational load of the cladding panels but also any additional wind load and snow load that impact the panels. Moreover, each attachment point from the railing to the substrate is a thermal bridge that needs to be broken in order to maintain the energy performance of the building. In short, the railing systems are an incredibly important part of the cladding system.

While attachment systems vary between manufacturers, the general preparation and installation process tends to be similar. Prior to installation, there is a lengthy and complex process to prepare a substructure on the wall surface.

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CL-Talon is a new support system for cladding designed to construct more sustainable buildings. It improves the building's thermal performance while reducing installation time and cost. Its benefits include reducing environmental impacts, ease of installation, durability, and performance. CL-Talon allows vertical and horizontal installation with zero sightline. cl-talon.com



Although restrooms are not typically a part of the building immediately associated with green initiatives, they can offer considerable energy, sustainability, and welfare wins through careful product selection. Pictured is the women's restroom at Brooklyn Bowl.



A More Transparent Shade of Green: PCRs Drive Restrooms to the Lead in Green Design

Sponsored by Excel Dryer, Inc. | *By Amanda C Voss, MPP*

Construction is going green. As both sustainability and efficiency advance in the built environment, architects, specifiers, and buyers are increasingly concerned with purchasing products that are environmentally friendly and can achieve project performance and client welfare goals. Architects and designers are, in essence, visionaries. Their ultimate success depends on choosing products that will accurately support and fuel their passion for possibilities.

Restrooms are not typically a part of the building immediately associated with green initiatives. Although restrooms are a necessary space, they consume resources and generate costs. High water usage, waste generation, and energy consumption for electrical and lighting can plague bathroom design. However, careful

product selection and planning can turn this water, energy, and dollar-hungry real estate into a high-efficiency, cost-conscious space.

More green is good. But, hand-in-hand with the proliferation of green, it has become more difficult to determine exactly which products are environmentally preferable. Many industries do not have guidelines in place to delineate the environmental differences, or guidelines that exist are unclear or not universal. A clutter of claims confuses the marketplace. This means that, when it comes to choosing a product, it can be like comparing apples to oranges.

Decision-makers need an easier path for sorting through the confusion of marketing claims, thereby leveling the product playing field. They want to be able to clearly and consistently

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1 AIA LU/HSW



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Learning Objectives

After reading this article, you should be able to:

1. Discuss how environmental product declarations (EPDs) allow for apples-to-apples comparisons of building products in terms of hygiene, welfare, and health performance.
2. Explain how product category rules (PCRs) establish clear, consistent evaluation methods for building products as a means to help ensure and validate the environmental performance of buildings.
3. Describe how PCRs are used to underpin and generate life-cycle assessments (LCAs) that evaluate a building product's total environmental impact and outcomes for human hygiene and global health.
4. Describe how PCRs, LCAs, and EPDs can be used together to assess and optimize the hygiene, health, and sustainability characteristics of high-performance restroom designs.

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distinguish between green product attributes on eco-labels. They also need to know that the products selected to transform restrooms into efficient, energy- and welfare-conscious spaces are going to perform as advertised.

DEFINING TRANSPARENCY

Therefore, along with the rise of green, there also needs to begin an age of transparency to avoid confusion in the marketplace. The only way to accurately compare products in an apples-to-apples approach rather than an apples-to-oranges one is by entering the decision-making process with balanced scales. The only way to achieve this balance is through transparency. A simple dictionary definition of transparency includes the concepts of something that is easily perceived or detected, along with those of honesty and openness. When applied to the process of choosing the best building product, transparency means the ability to evaluate the environmental impact of products using a common, easily perceived, and forthright approach. The result is less market confusion in this new age of transparency.

Today's product declarations and eco-labels offer a standardized way of quantifying the environmental impact of a product by studying the raw materials and energy consumption during its production, its present use, and its future disposal. For buyers and specifiers, these disclosure tools help them better understand a product's sustainable qualities and its environmental repercussions, allowing for more informed product selections.

THE TOOLBOX: GETTING TO KNOW LABELS AND CERTIFICATIONS

Eco-labels and product declarations are the workman's tools in the age of transparency. To wield these in the battle for clear, confident product evaluations, decision-makers need to get comfortable with an alphabet soup: PCRs, EPDs, and LCAs.

What Is a PCR?

A PCR, or product category rule, establishes a set of internationally recognized and consistent rules, requirements, and guidelines that all functionally equivalent products in a specific industry must use when creating environmental product declarations (EPDs). That means that in order for a product in a given industry to be transparent, it must be tested and evaluated in a clear, consistent way, allowing decision-makers to make better-informed choices. A global PCR allows manufacturers worldwide to evaluate the environmental impact of products using a common approach, resulting in less market confusion.

Testing guidelines and reporting methods are created through industry consensus and review. Using the same calculation, testing, and reporting methods allows for a more apples-to-apples comparison. A PCR levels the playing field for all products industry wide. By using an internationally recognized standard, every product in a given industry can have its environmental impacts evaluated in a clear, consistent manner.

PCRs minimize confusion among various types of environmental reporting by establishing a clear, consistent evaluation method by which the environmental impact claims of all products in that industry are evaluated. Once a PCR is established, an EPD can be created based on product evaluations. An EPD is based on the rules created in the PCR. "The resulting EPD allows for a more fair comparison of environmental impacts between similar products," writes Anna Nicholson Lasso, product manager of environmental product declarations at UL Environment.

What Is an LCA?

PCRs are the first step in the development of an EPD, which is an important transparency tool. To produce an EPD, companies must first develop a life-cycle assessment (LCA) for their product that uses product-specific calculations and requirements specified in a PCR.

An LCA investigates a product's total environmental impact from time of manufacture (beginning of life) to time of disposal (end

of life), providing insight on the environmental impact of products from cradle to grave. The only truly valid LCAs are commissioned through an independent, third-party evaluator.

The LCA method examines a broad range of environmental impacts at all stages of a product life cycle, including all material, energy, and pollutant inputs and outputs, according to product rules.

What Is an EPD?

An EPD is a standardized way of quantifying the environmental impact of a product by studying the raw materials and energy consumption during its production, use, and disposal. For buyers and specifiers, an EPD becomes a disclosure tool that helps purchasers better understand a product's sustainable qualities and environmental repercussions, enabling more informed product selections.

The First-Ever Global PCR—and for Hand Dryers

Leading hand dryer manufacturers initiated the first-ever global PCR in 2016, which was created for the hand dryer industry and published by UL Environment, a business division of Underwriters' Laboratories. The rules established product evaluation methods used to determine key values such as dry time and energy consumption through industry consensus. Under UL protocol and the direction of a UL program operator, leading manufacturers of high-speed, energy-efficient



Decision-makers need an easier path for sorting through the confusion of marketing claims and want to be able to clearly and consistently distinguish between green product attributes on eco-labels. They also need to know that the products selected to transform restrooms into efficient, energy- and welfare-conscious spaces are going to perform as advertised. Enter the age of transparency. Pictured is the restroom project for Max Burger.



Restrooms are challenging spaces to turn green. They're zones of energy intensity, with high water usage and waste generation. However, careful product selection and planning can turn water, energy, and dollar-hungry real estate into a high-efficiency, cost-conscious space. Pictured is a restroom at Longmeadow High School.

(HSEE) dryers formed a committee to draft the rules by which all hand dryers will be evaluated and to report those findings for environmental impact in EPDs. Competitors sat together on the committee to establish industry consensus by agreeing on several key hand dryer elements.

Once those elements were selected and approved, the demanding process of drafting a PCR moved forward, bringing an open response period for other manufacturers in the industry and interested parties to comment. After receiving feedback, an expert review panel considered the draft and comments from manufacturers before finalizing and publishing the PCR.

At its conclusion, the hand dryer PCR is the culmination of more than a year-long process and is the first step toward the development of EPD eco-labels that govern one or more product category.

Applying the PCR to Product Selection

Now, with advent of the global hand dryer PCR, all hand dryer manufacturers seeking eco-labels are required to test for data such as dry times and energy use in exactly the same way, creating a new age of transparency. If products are not tested to the industry standards, then buyer beware.

Under this global rule, manufacturers submitted HSEE products for evaluations and had their environmental claims substantiated under the industry's first EPDs.

"The hand dryer market, like so many others, is inundated with knockoff products and manufacturers making unsubstantiated claims. Architects and specifiers may approve 'or equal' products that are not true equivalents. The same is true for buyers looking to compare and purchase the best product for their facilities. All products need to be evaluated by the same set of rules and reporting guidelines—for hand dryers, that rule is the new global PCR from UL Environment," says William Gagnon, vice president of marketing and sales for Excel Dryer.

Using an LCA in Product Evaluation

Leading manufacturers also obtain LCAs for their products. LCA studies should be peer-reviewed by an independent panel of LCA experts to ensure compliance with the standards contained in ISO 14040.

An LCA not only weighs a product's energy efficiency but also measures to what degree its efficiency translates into significant environmental benefits over the full life cycle of the product. It also provides a valuable tool for comparing the product to alternative methods; for example, comparing HSEE dryers with other hand-drying alternatives, such as virgin or recycled paper towels.

The LCA method examines a broad range of environmental impacts at all stages of a product's life cycle, including all material, energy, and pollutant inputs and outputs.

For example, assume that architects and decision-makers want to gather the full energy and environmental impacts of three proposed hand-drying methods: a leading manufacturer's patented high-efficiency electric hand dryer, a conventional electric hand dryer, and paper towels containing between 0 percent and 100 percent recycled content. Employing an LCA, each system is evaluated to determine the environmental impact of providing 10 years of service (drying 260,000 pairs of hands). The results show that the HSEE hand dryer reduces the environmental impact of hand drying by 50 percent to 75 percent over the other two methods.

Then, a wide variety of environmental impact categories were evaluated, and yet again, the HSEE proved to provide an environmental advantage in each category. In addition to reducing climate change impacts (carbon footprint), the HSEE dryer also reduced the use of nonrenewable energy, impacts on ecosystems, and emissions that damage human health.

In comparison to paper towels, the combined environmental impact of producing the paper towels and associated materials far exceed the impact from the use of a hand dryer. Although the use of recycled paper fibers in the towels may reduce some of the impacts of this system, even at 100 percent recycled content, the HSEE dryer still maintains a significant margin of benefit.

A wide variety of sensitivity tests and scenario evaluations conducted under an LCA demonstrate that the margin of benefit for the HSEE dryer over other evaluated methods is quite substantial and not dependent on certain assumptions or conditions. A test of uncertainty in the results shows that the confidence in the benefit of the energy-efficient hand dryer, in comparison to the other systems, is quite high. Particularly in comparison to paper towels, the combined environmental impact of producing the paper towels and associated materials far exceed the impact from the use of energy-efficient dryers. Among the sensitivity tests that have been conducted are variation in the amount of recycled content for the towels, the methods for determining the impacts of recycled content, the assumed source of electricity, and the behavior of the user.

The LCA scenarios regarding user behavior reveal the important role that the user plays in determining the overall impacts of each system. "High-intensity" users will cause a significantly larger impact because the increase is nearly in proportion to the amount of dry time or amount of towels used. However, even "high-intensity" users of the HSEE system remained at a lower level of impact than "low-intensity" users of other systems.

USING TRANSPARENCY TO CREATE GREENER RESTROOMS

Let's face it—restrooms are challenging spaces to turn green. They're zones of energy intensity, with high water usage and waste generation. However, careful product selection and planning can turn water, energy, and dollar-hungry real estate into a high-efficiency, cost-conscious space.

A variety of low-flow, water-conscious plumbing fixtures exist to aid in creating more efficient restrooms, with low-flow toilets and automatic, low-flow sinks ranking among the most widespread solutions. However, there is an often-overlooked area of energy consumption in restrooms that remains: how a user dries his or her hands after washing them.

Creating More Efficient and Green Hand-Drying Solutions

Today, the two choices for hand drying in commercial restrooms are either paper towels, made from virgin or recycled content, or electric hand dryers, both traditional and high-speed. Paper towels consume resources and generate waste. Electric dryers use energy. How can a buyer or specifier best sort through and compare these very different products and their environmental impacts?

Environmental Building News (EBN) commissioned a group of life-cycle analysis experts to perform a comparison of the four common methods of hand drying: 1) virgin paper towels, 2) recycled paper towels, 3) traditional electric hand dryers, and 4) high-speed, energy-efficient (HSEE) hand dryers.

The results of the EBN study overwhelmingly support HSEE hand dryers as a best solution for both total cost and efficiency. The EBN study concluded that HSEE hand dryers consume less energy than paper towels, with an 80 percent reduction of energy used per hand drying versus both virgin paper and recycled paper towels. For cost of use, the study showed that converting to a high-speed, energy-efficient hand dryer results in a 90 percent to 95 percent savings versus paper towel costs. With the cost savings from HSEE, a typical facility experiences payback on its investment in less than one year. In addition, the cost of ordering, storing, replenishing, collecting, and disposing of the paper towels is also eliminated, as well the resultant waste.

Quantis, an international life-cycle assessment research firm, undertook a complete beginning-to-end life-cycle assessment (LCA) in 2009 to compare the environmental performance of paper towels, 100 percent recycled paper towels,

standard hand dryers, and HSEE hand dryers. The study was peer reviewed by an independent panel of LCA experts via ISO 14040 standards. The Quantis assessment accounts for the total climate change impacts, or global warming potential, over the entire life cycle of each system. It also measures the carbon footprint of each system in kilograms of equivalent carbon dioxide (Kg CO₂ eq). Of the four types evaluated, HSEE hand dryers had a carbon footprint one-third to one-fourth the magnitude of the other choices.

USING TRANSPARENCY TO CREATE SUSTAINABLE RESTROOM PRODUCT SOLUTIONS

High-speed, energy-efficient (HSEE) hand dryers were developed to enhance a restroom user's experience and to create a more sustainable product. In the U.S., the first HSEE was introduced to the industry in 2001 under patented technology. Traditional electric hand dryers typically take 30 to 45 seconds to dry hands versus the 8 to 10 seconds needed with paper towels. Because of the dramatic amount of time needed and the user congestion resulting from waiting for an available dryer, traditional hand dryers are an unpopular application and found in only 10 percent of restrooms. In response, HSEE was developed. HSEE dryers use a focused, high-velocity airstream that eliminates water droplets in 3 to 4 seconds and an additional stream of heated air to blow off any excess water film, completely drying hands in 8 seconds as tested to PCR guidelines. Using 80 percent less energy than conventional hand dryers and reducing a facility's hand-drying carbon footprint by 50 to 75 percent, HSEE dryers can generate a huge environmental win for facilities and businesses. However, the hand dryer market, like so many others, has its own share of knockoff products and manufacturers making unsupported claims. Architects and specifiers may approve 'or equal' products that are not true equivalents or units that are not as reliable.

The development and publication of standards like environmental product declarations and life-cycle analyses reflect a manufacturer's commitment to transparency and encourage other manufacturers to follow suit, allowing decision-makers a clear path when specifying products.

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

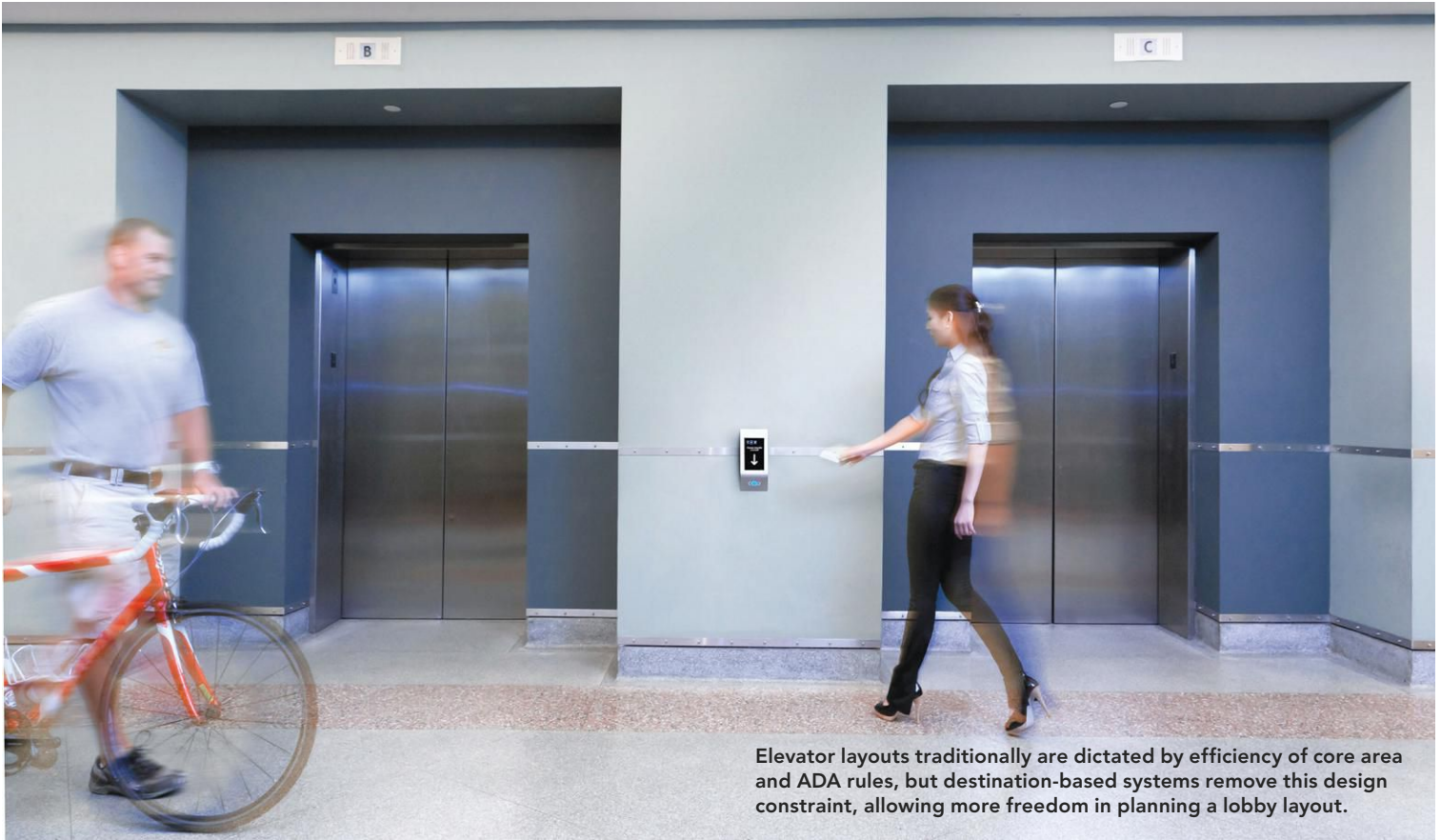


Pictured is the Grand Central Terminal restroom renovation in New York City.



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Cutting-Edge Elevator Technology

Elevating architecture with destination dispatch controls

Sponsored by Schindler Elevator Corporation | By C.C. Sullivan

Over the past decade, new techniques in controlling elevators have radically changed thinking about how building mobility is organized and operated. For architects, these advances are essential knowledge for designing and renovating any buildings that rely on elevators for moving their occupants and visitors. The most important advancement in recent years is destination control. About 20 years ago, destination control systems were commercialized based on this approach. Not only did the controls reduce wait times and traveling times by up to 30 percent, but they also allowed for new techniques in core layouts, elevator stacking, and overall building designs.

From the 1940s to today, elevator call systems have operated on a single, uniform principle: the up-and-down hall push button. These systems are known today as conventional technology. Used to guide elevators and tell them which floor to visit next, this approach is familiar to anyone who regularly rides an elevator. The essential logic is:

- A car will continue traveling in the current direction as long as there are remaining requests in that direction.

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C.C. Sullivan is a marketing communications consultant specializing in architecture and construction.

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Learning Objectives

After reading this article, you should be able to:

1. Discuss the context for developments in elevator technology, with particular emphasis on controls.
2. Describe new destination-based dispatching technology and how it is installed and implemented in both new construction and modernization projects.
3. List the energy-efficiency implications and other operation and efficiency benefits of destination-dispatch elevator controls and similar optimization techniques.
4. Explain how destination dispatch benefits specific building typologies, citing case studies.

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Thanks to the launch of the USGBC Center for Green Schools in October 2010, as well as the unfortunate curbing of education funds, there has been a greater emphasis on developing effective models for sustainable, energy-saving public schools in districts around the country. Learn how architects are achieving these goals through resourceful case studies that include both

new construction and renovation/addition projects in urban and suburban contexts. Issues of budget, design, materials, adaptive reuse, processes, neighborhood engagement, and attaining LEED for Schools or the equivalent will all be addressed during the topical presentations.

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Learning Objectives

After reading this article, you should be able to:

1. List components of spray-applied glass fiber insulation and discuss the installation method of this product.
2. Identify situations where spray-applied glass fiber would add value to a project.
3. Justify the use of this product for thermal and acoustic control based on benefits and competitive advantages.
4. Explain potential LEED credits and environmental credentials of both glass fiber and binder.

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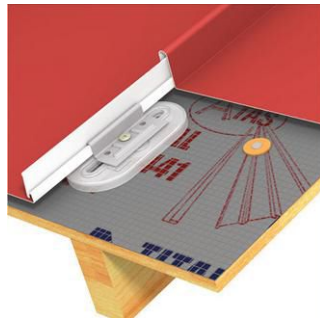
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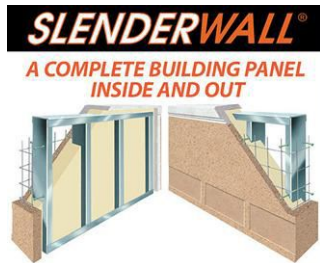
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Lectures, Conferences, and Symposia

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Launched in 2007, the London Design Fair is a trade show that features 550 exhibitors from 36 countries. The event showcases new work from both independent and established brands of materials, furniture, lighting, and textile design. See londondesignfair.co.uk.

Beirut Design Fair

Beirut

September 20–23, 2018

The second edition of the fair will present collectible and limited-edition furniture and design objects by leading international designers and galleries from across the world, with about 60 exhibitors from over 10 countries. The event includes a program consisting of conferences, roundtables, workshops, installations, and live performances. For more information, see beirut-design-fair.com.

Exhibit Columbus 2018 National Symposium: Design, Community, and Progressive Preservation

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Competitions

The Rifat Chadirji Prize 2018: Baghdad Design Centre

Submission deadline: September 9, 2018

This annual competition, named for Iraqi architect Rifat Chadirji, seeks proposals for the renovation of a partially demolished vacant building in Baghdad. What remains of the structure's damaged facades should be incorporated into the new structure, which will become a center dedicated to design. Organized by Tamayouz Excellence Award. More information at rifatchadirji.com.

Bruno Zevi Prize 2018

Submission deadline: September 10, 2018

This 12th annual essay competition seeks entries following Bruno Zevi's methodology of critical and historical inquiry to examine an architectural work, theme, or architect. The competition is open to any Ph.D. researcher studying topics related to architecture. More information at fondazionebrunozevi.it/en.

Network Rail Footbridge Design Ideas Competition

Registration deadline: September 13, 2018

Sponsored by the Royal Institute of British

Architects, this competition seeks innovative ideas that can help guide Network Rail in its design and installation of pedestrian footbridges across the United Kingdom's rail network. More information at ribacompetitions.com/networkrailfootbridge.

Site Memorial Competition

Registration deadline: September 17, 2018

This international competition invites architects up to 40 years old and architecture students to design a new landmark in Lisbon that pays tribute to those who died in a series of earthquakes that struck Portugal's port city in 1755. More information at arkxsite.com.

2019 Better Philadelphia Challenge: Re-Imagining the Heart of Kensington

Submission deadline: September 27, 2018

Founded as a tribute to Philadelphia urban planner Edmund Bacon, this annual competition asks university-level students to tackle design issues in Pennsylvania's largest city. This year, the contest is looking for concepts that address the needs of North Philadelphia's Kensington neighborhood. More information at philadelphiacfa.org.

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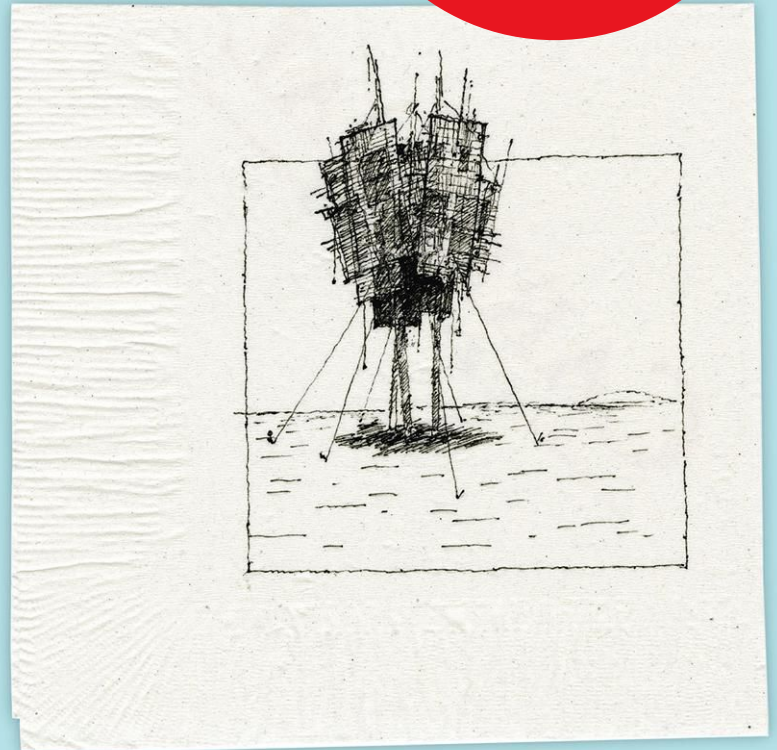
If you are a licensed architect or related professional who practices in the United States, you can enter this remarkable contest.

All you need is a white cocktail napkin and pen to demonstrate that the art of the sketch is still alive. Two grand prize winners will be chosen (1 licensed architect, 1 related professional). Grand prize winners will receive a \$300 gift card and a set of cocktail napkins with their winning sketch printed on it!

The sketches of the winners and runners-up will be published in the November 2018 of *Architectural Record* and shown online in the ArchitecturalRecord.com Cocktail Napkin Sketch Gallery.

HOW TO ENTER:

- ▶ Sketches should be architecture-oriented and drawn specifically for this competition.
- ▶ Create a sketch on a 5-inch-by-5-inch white paper cocktail napkin.
- ▶ Use ink or ballpoint pen.
- ▶ Include the registration form below or from the website.
- ▶ You may submit up to 6 cocktail napkin sketches, but each one should be numbered on the back and include your name.
- ▶ All materials must be postmarked no later than September 5, 2018.



"Faculty Meeting #12" by Eric J. Jenkins, 2016 Winner, Registered Architect

DEADLINE: September 5, 2018. ENTER NOW!

For more information and official rules visit: architecturalrecord.com/cocktail-napkin-sketch-contest

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SEND ALL SUBMISSIONS IN ONE ENVELOPE TO:

Cocktail Napkin Sketch Contest
Architectural Record
350 5th Avenue, Suite 6000
New York, NY 10118

For more information, email: ARCallforEntries@bnpmedia.com with the subject line "Cocktail Napkin"

WITHIN A pristine alpine setting in northeastern Italy, a new factory building—marked by a gleaming tangle of metallic pipes, scaffolding, and chimneys that run through it—is the most recent addition to the sprawling industrial complex of office-systems manufacturer Fantoni. Nearly 1,000 feet long and 160 feet high, the plant, designed by Udine- and Milan-based Studio Valle Architetti Associati, replaces outdated facilities and holds Europe’s largest press for medium density fiberboard (MDF) production. An exposed load-bearing metal frame supports a base building clad in corrugated precast concrete as well as the various mechanical structures, which are placed at different heights. “We knew the architecture could not compete with the machinery,” says principal Pietro Valle, “so we designed the building to serve as its backdrop.” The addition joins over two dozen other metal-clad buildings on the campus designed by Pietro’s father, Gino, between 1972 and 2001. The new structure, says the younger Valle, sits “like a cathedral” amid its surroundings. *Alex Klimoski*



AIA Contract Documents

Real projects start with the Industry Standard

Before they broke ground, HBG Design ensured the **Guest House at Graceland™ Resort** was protected with AIA contracts.

AIA Contract Documents used: B103–Owner/Architect Agreement for a Complex Project, C401–Architect/Consultant Agreement, E201–Digital Data Protocol Exhibit, plus associated administrative G-forms.

Learn more about the **Guest House at Graceland™ Resort** project at aiacontracts.org/ar

Photography ©Jeffrey Jacobs

 **AIA**® Document B103
Standard Form of Agreement Between Owner and
Project

AGREEMENT made as of the _____ day of _____
in the year _____
(In words, indicate day, month and year.)

BETWEEN the Architect's client identified as the Owner:
(Name, legal status, address, and other information)



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