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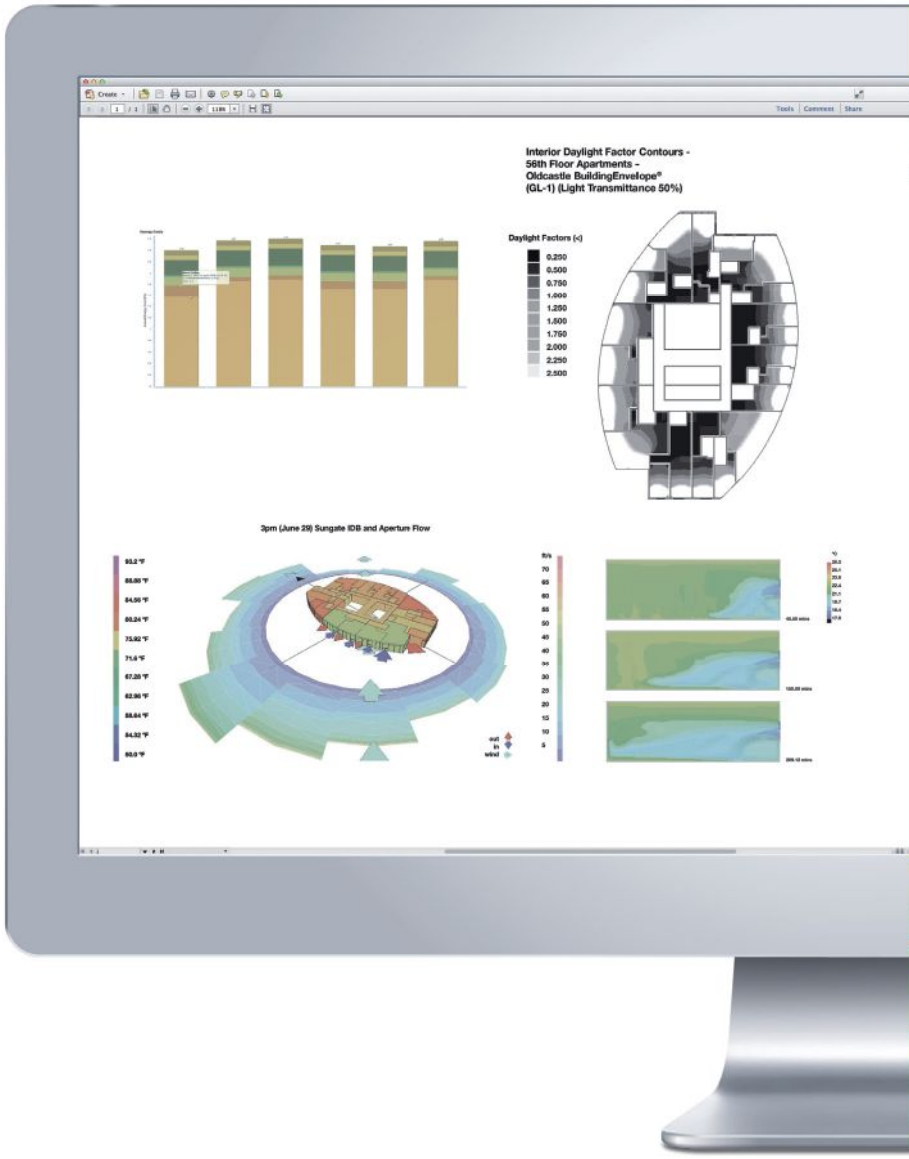

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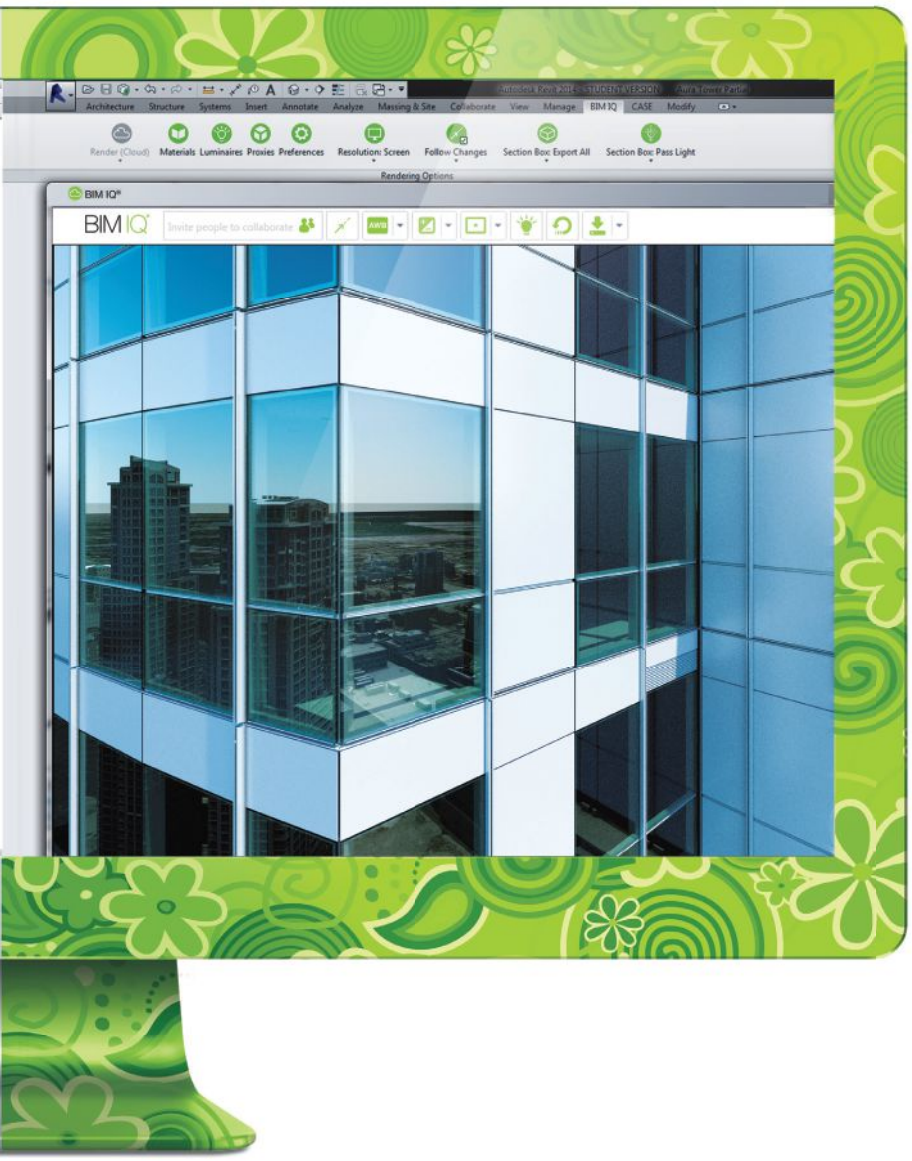

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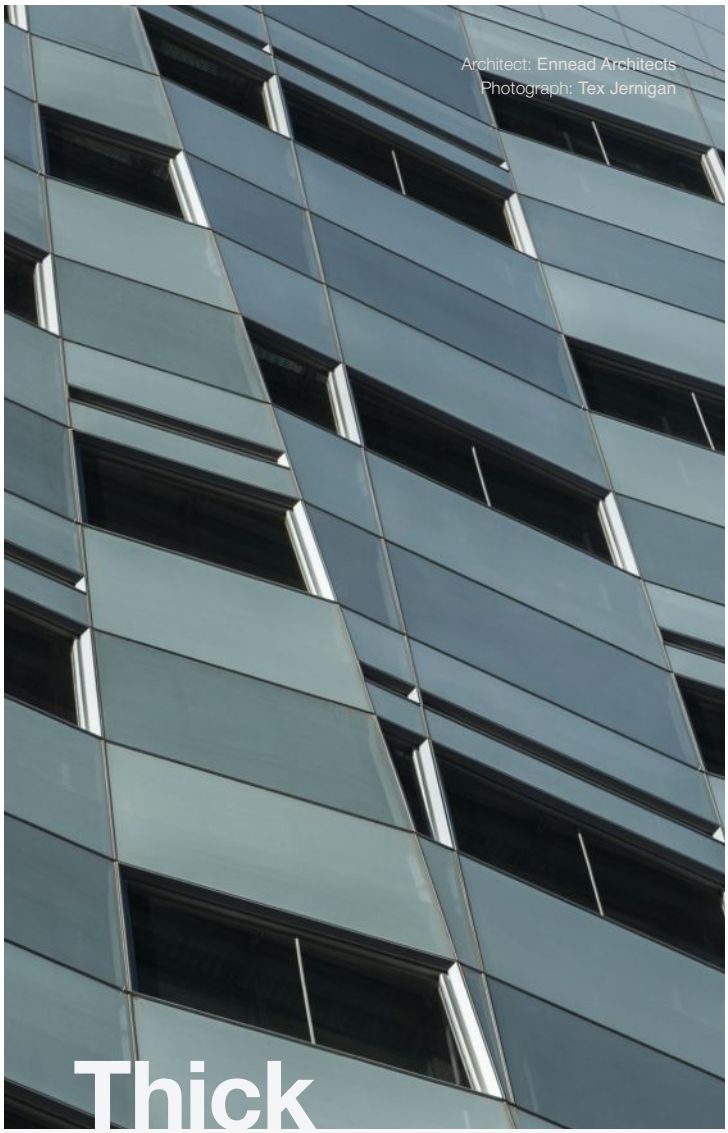

Architect: Ennead Architects
Photograph: Tex Jernigan

Thick Skinned

Weill Cornell Medical College wants its buildings to last a century, but not feel like they were built last century. So **Ennead Architects** enclosed the **Belfer Research Building** with a double-skin curtain wall to better regulate lab environments—increasing their efficiency and the school's prestige within the research community. Read more about it in **Metals in Construction** online.

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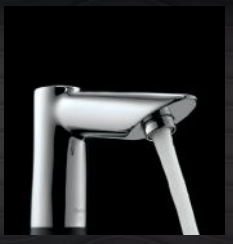
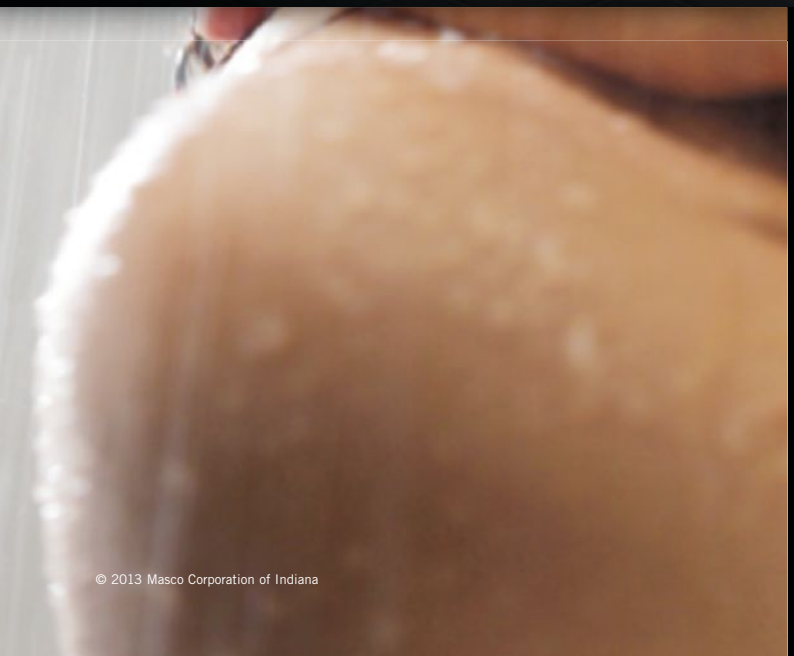


Front-of-house



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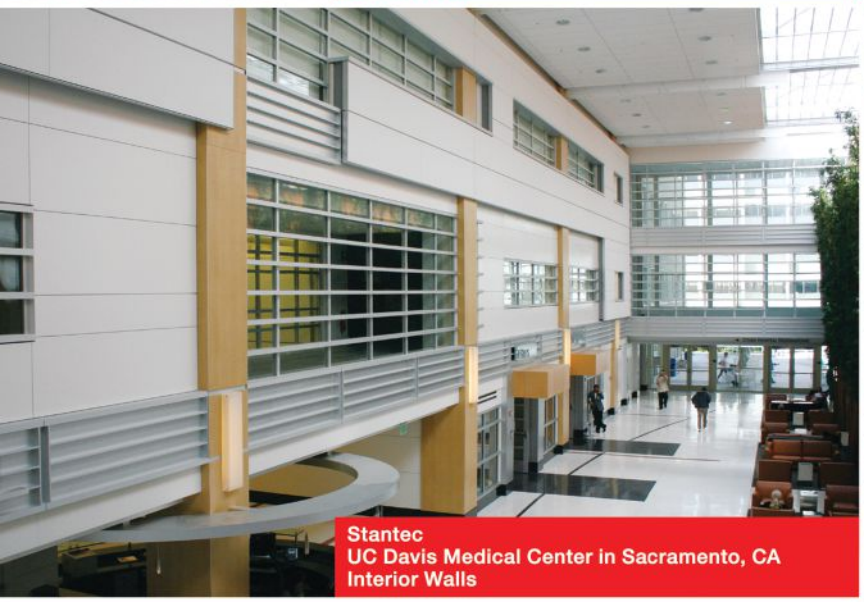

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A Paragon of Classicism

The University of Notre Dame selected Washington, D.C.–based David Schwarz, AIA, as the recipient of this year's Richard H. Driehaus Prize. Established in 2003, the Driehaus Prize is awarded to a living architect whose work exemplifies the values of traditional and classical architecture. As in the 2006 Schermerhorn Symphony Center (above) in Nashville, Tenn., Schwarz and his eponymous firm have developed a sophisticated house style redolent of Art Deco, Stripped Classicism, and the Viennese Secession. The architect will receive the $200,000 prize at a ceremony on March 21 in Chicago. —CAROLINE MASSIE

> *See more of Schermerhorn Symphony Center and other David Schwarz designs in ARCHITECT's online Project Gallery at architectmagazine.com/project-gallery.*

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CASE STUDY

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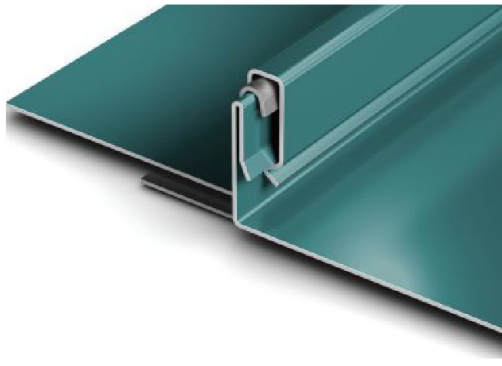

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A Whiff of Kahn

How does the Kimbell smell? Argentinian designer Julian Bedel, of perfume laboratory Fueguia 1833, was inspired by Louis Kahn's masterpiece museum in creating Chamber No. 1, a unisex fragrance that takes the aromatic form of concrete, travertine, glass, grass, and—somehow—natural light. It is the first scent for Chamber, a gallery-slash-boutique in New York founded by Juan Garcia Mosqueda and designed by MOS Architects. A different creative team will make over the store and its wares every two years. Studio Job is responsible for the first iteration and for the design of the Chamber No. 1 bottle. —CHELSEA BLAHUT

> *Learn more about the fragrance and the Chamber boutique at chambernyc.com.*

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The Corseted Tower

Dutch firm MVRDV has won a competition to design a mixed-use tower for Austrian developer BAI. The concept, *Turm mit Taille* (German for "tower with a waist"), is a 361-foot skyscraper with an hourglass shape. It will rise near Vienna's landmark Gasometers, repurposed 19th century gas tanks. The top 20 floors are designed to maximize space with a square footprint and column-free interiors, while lower floors are twisted so that the structure will cast its neighbors into shadow for no more than two hours per day, in compliance with local regulations. Construction is slated to begin in 2016. —CAROLINE MASSIE

> *See more images of the tower at bit.ly/MVRDVinVienna.*

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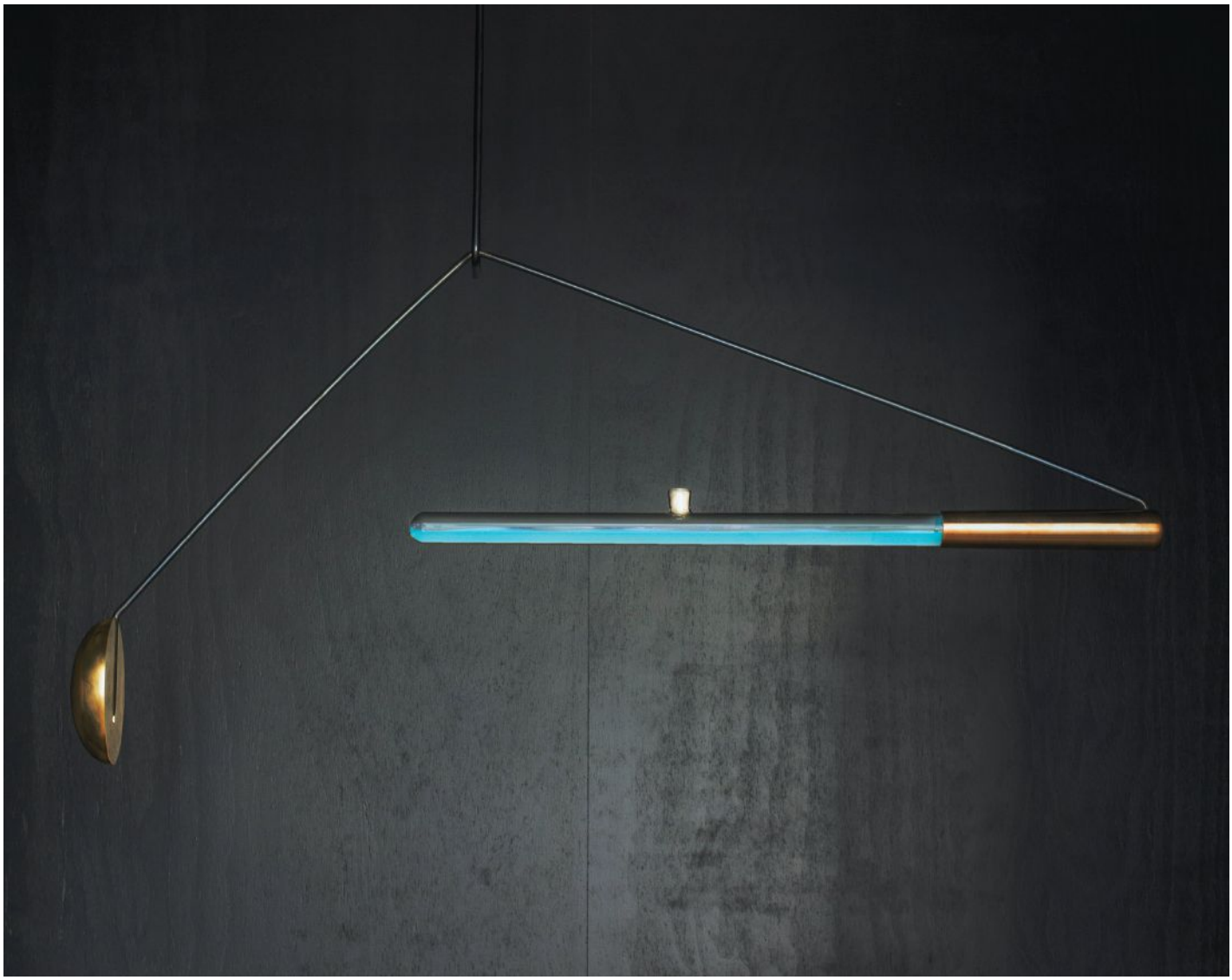

HANS BODDEKE

A Task for Bacteria

Dutch designer Teresa van Dongen studied biology before studying design. So it follows that her graduation project at the Design Academy Eindhoven, the Ambio pendant fixture (above), is infused with bioluminescent bacteria found living on octopus tentacles that temporarily emit a blue light when exposed to oxygen. To stay lit continuously, the fixture would require perpetual motion—something van Dongen nearly achieves not through an electric motor, but through the incorporation of a simple brass counterweight. When nudged, it churns the liquid in its clear tube and causes the bacteria to glow again. —HALLIE BUSTA AND CAROLINE MASSIE

> *Stay up to date on the latest technological breakthroughs with our This Week in Research series at architectmagazine.com.*

Float Down to My Place

Concerned about flooding in the United Kingdom, an increasing threat due to climate change, London-based Carl Turner Architects has developed an open-source project called Floating House. Targeting unused waterways as potential sites, and building on a British houseboat tradition, the approximately 1,345-square-foot residences sit upon a buoyant concrete hull. The blueprints are free, adaptable to suit individual tastes and needs, and available from the Paperhouses website. The rendering above shows the Floating House as outfitted with a roof deck, translucent side panels, and a winter garden. —CYPRIEN ROY

> *Register to receive the blueprints at paperhouses.co.*

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Best Practices: Time Management

TEXT BY NATE BERG

When stereotyping the architectural profession, people often think of "a culture of long hours [and] all the all-nighters," says Bob Borson, AIA, a principal at Dallas-based Malone Maxwell Borson Architects and blogger on Life of an Architect. "It's something that drives me a little crazy."

Borson says the excessive overtime is mostly a myth. "I know that there are firms around the country where people do work a lot of extra hours. But nobody I know works the kind of hours people think that architects work," he says. And he decided to try to prove it. By reviewing his company's time-tracking software and running reports for how he spent his time in 2014, he calculated that he worked about 225 hours more than what he would have if he'd worked typical 40-hour weeks. That comes out to about five hours of overtime a week or one extra hour per weekday.

> "Rather than having deadlines that are far reaching, we create smaller milestones and shorter periods of time between those deadlines."
>
> —Bob Borson, AIA, principal, Malone Maxwell Borson Architects

For Borson's eight-person firm, keeping overtime to a reasonable minimum comes from conscientious planning by separating work into small tasks. "We create milestones, and each milestone has a deadline. Rather than having deadlines that are far reaching, we create smaller milestones and shorter periods of time between those deadlines," he says. "It's easier to keep track of how your progress is coming, whether or not you have an issue, and if you need support or help from somebody else in the office."

For larger firms, when managing time means managing the day-to-day work lives of sometimes hundreds of people, the job of dividing resources and keeping projects on track can be complicated. But with the right approach—and some useful technologies—firms can make sure the right jobs are being handled by the right people, and that everyone is on pace to hit their deadlines.

Each member of the 100-person, five-office Boulder Associates plans tasks for each week, with entries for every hour of the day, according to principal James Lenhart, AIA. This hour-by-hour breakdown is an estimate, but it lets managers know who is doing what and where additional resources may be needed. At the end of the week, everyone sends a form to a database that calculates how much of their planned work was actually completed. The sweet spot is about 85 percent. "If you're lower than that, then something's going on and we need to talk about it," Lenhart says. "If you're higher than that, maybe you don't have enough of a workload and we need to adjust."

The firm also creates project blueprints. Lenhart says that prior experience becomes a guide for benchmarking projects. "The blueprint tells, especially the younger staff, what should be in a schematic design set of drawings, or a DD or CD set of drawings, and how to build it and when to build it," he says. "It's kind of a roadmap that says, 'Do this at this phase.'"

This approach to mapping out projects is common. Los Angeles–based Modative breaks each of its projects into phases defined by tasks and are presented visually in the office as checklists, with each person's progress out in plain sight. Principal Christian D. Návar says this approach helps create a "manageable competitive environment" where people are encouraged to stay on track.

"Outside of keeping people accountable, it also allowed us to create a roadmap for people to operate without those constant interruptions throughout the day of, 'What do I do next?'" he says.

Modative uses the software Evernote to track progress. Návar says everyone has access to everyone else's checklists, which helps with project management as well as keeping people on pace with each other.

"It sounds really dry and boring," Návar says. "But the reality is it's allowed my business partner and me to not be here until 10 o'clock every night. It allows my employees to be more efficient with their production. It actually frees up more time to do what we like to do, which is design."

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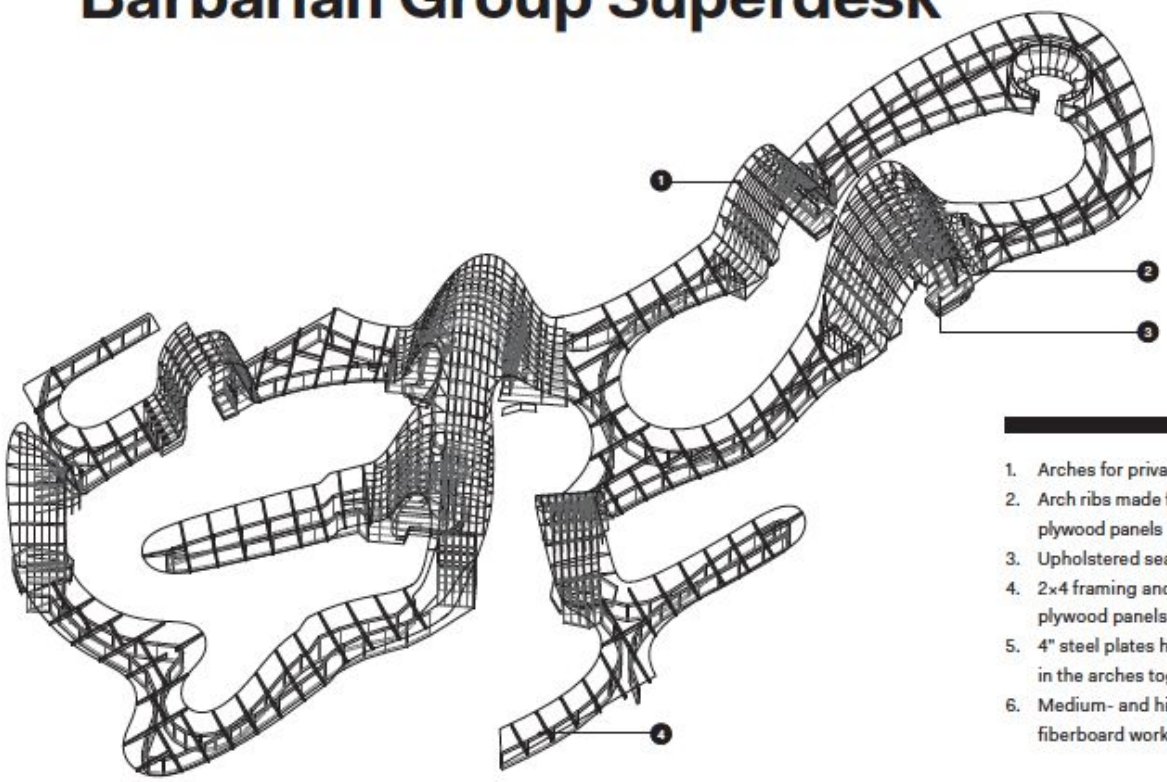

1. Arches for privacy and circulation
2. Arch ribs made from 4'-wide by 8'-long plywood panels
3. Upholstered seating
4. 2×4 framing and 4'-wide by 8'-long plywood panels
5. 4" steel plates hold the plywood pieces in the arches together
6. Medium- and high-density fiberboard worktop

TEXT BY JENNY JONES

While the open-office layout of the Barbarian Group's New York City headquarters is not unusual, its undulating "superdesk" is unexpected. Designed by Los Angeles–based Clive Wilkinson Architects (CWA), the 4,400-square-foot installation weaves through the 20,000-square-foot office. The desk measures 1,100 feet long and 11½ feet across at its widest point, and it can accommodate up to 170 people.

While the unobstructed nature of the desktop encourages discourse, upholstered seating located under the arches is ideal for more private discussions. "The coffers of the arches themselves offer acoustic privacy, and within them we put acoustic insulation," says Chester Nielsen, associate at CWA. "You're very protected."

The desk uses simple materials to give it a raw look and keep costs low. Custom fabricator Machineous manufactured all of the components in its Los Angeles studio using repurposed automotive industrial robots. The robots cut 500 individual pieces for the six arches, which were then shipped cross-country and put together like a jigsaw puzzle.

The team sandwiched the fiberboard pieces together and sealed the seams with Bondo before covering the desktop with a water-based pearlescent white paint to create a seamless top. After that, Los Angeles–based artist Casper Brindle covered it with a surfboard-inspired resin topcoat. The water-based, eco-friendly resin was poured continuously for 24 hours to maintain the desktop's continuity.

MICHAEL MORAN/OTTO

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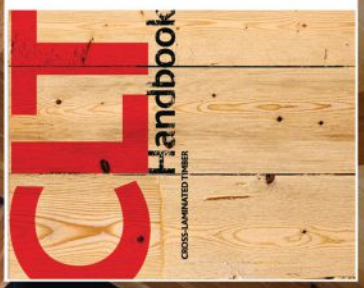

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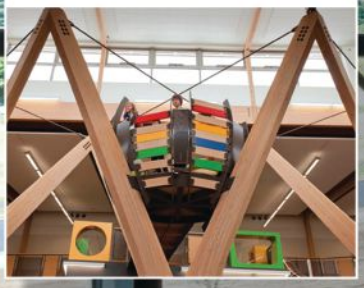

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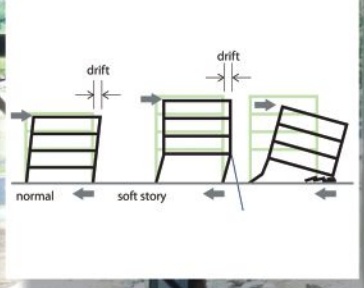

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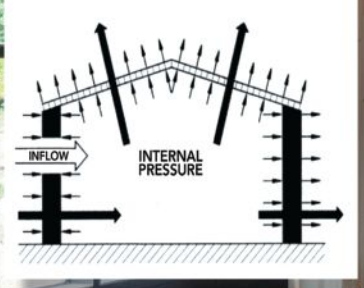

The Crossroads, Good Manufacturing Practices Facility, Madison, WI
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AS TOLD TO ALEX HOYT
PORTRAIT BY ETHAN HILL / REDUX PICTURES

Born in the Philippines to a Spanish–Filipino father and a Colombian mother, Carlos Arnaiz was educated first at a Jesuit school run by exiled Chinese priests, then at Williams College and the Harvard Graduate School of Design (GSD). In 2003, he joined Field Operations, the landscape architecture firm then led by James Corner and Stan Allen, FAIA, where he assisted with the competition phase of the High Line. But there wasn't room for him to fully develop as an architect—"I was the electrician in the plumber's office," he says—so he left to help Allen, by then the dean of the Princeton School of Architecture, with his practice in Brooklyn. When the recession hit, Arnaiz found himself out of work and on his own. "It was freaky," he says. "I'd just had my second child, and I was out of a job." Nearly five years later, as he explains below, CAZA, the firm Arnaiz founded in Brooklyn, has a satellite office in the Philippines, a parallel urbanism research venture, and a host of interesting projects on the boards.

Read Philosophy, Do Architecture

At Williams, there were no architecture classes. I was a literature and philosophy double major. I started a class with one of my professors called "Space, Place, and Fiction"—we read novels where geographic identities influenced plot and development. My junior year abroad at Oxford, I enrolled in the School of Geography, where I studied how place affects politics. Back at Williams for my senior year, I started reading architectural theory. That's how it all got started.

HMS Harvard

At the GSD, I was able to dabble in urbanism and landscape at the same school. At the time, it seemed a bit classical and orthodox, especially compared to the really avant-garde places like SCI-Arc. But it was like a cruise liner: You may not always like where it's going, and you may not always agree with the captain, but there are so many rooms and so many parties, it doesn't really matter.

The Culture of CAZA

I obsess about two things: How are we going to design the world, and what kind of team are we going to do it with? Architecture doesn't treat its young very well, and I wanted to do things differently—preserve the startup energy and leverage my own diversity. It's not a shop where I have all the answers, where I toss an associate a napkin sketch. I ask Socratic questions, and rely on the range of multidisciplinary skills we have. That's what keeps us agile in a competitive marketplace. We don't want egos in the room. We don't own the ideas here. When I look at our projects, I can't remember what part came from whom.

Teaching and Firm Improvement

I teach every semester at the Pratt Institute in Brooklyn, N.Y. In the fall, I teach a course on housing, and we test a lot of the concepts blooming in the office. It's a great open platform for testing ideas—students don't have the same constraints as professionals, and it's refreshing to hear their unencumbered responses. I also teach theory-based classes—the history of ornamentalism, for instance. I isolate myself in academic mode.

What's Next

A year ago, I started this research venture, Studio for Urban Analysis (SURBA), with Peter Rowe, a former professor of mine at Harvard, and dean at the GSD from 1992 to 2004, who's an expert on urbanism in China. We've been hired by China Calxon Group, one of that nation's largest developers, to set up a research institute dedicated to the development of the country's towns.

CAZA founding principal, Carlos Arnaiz

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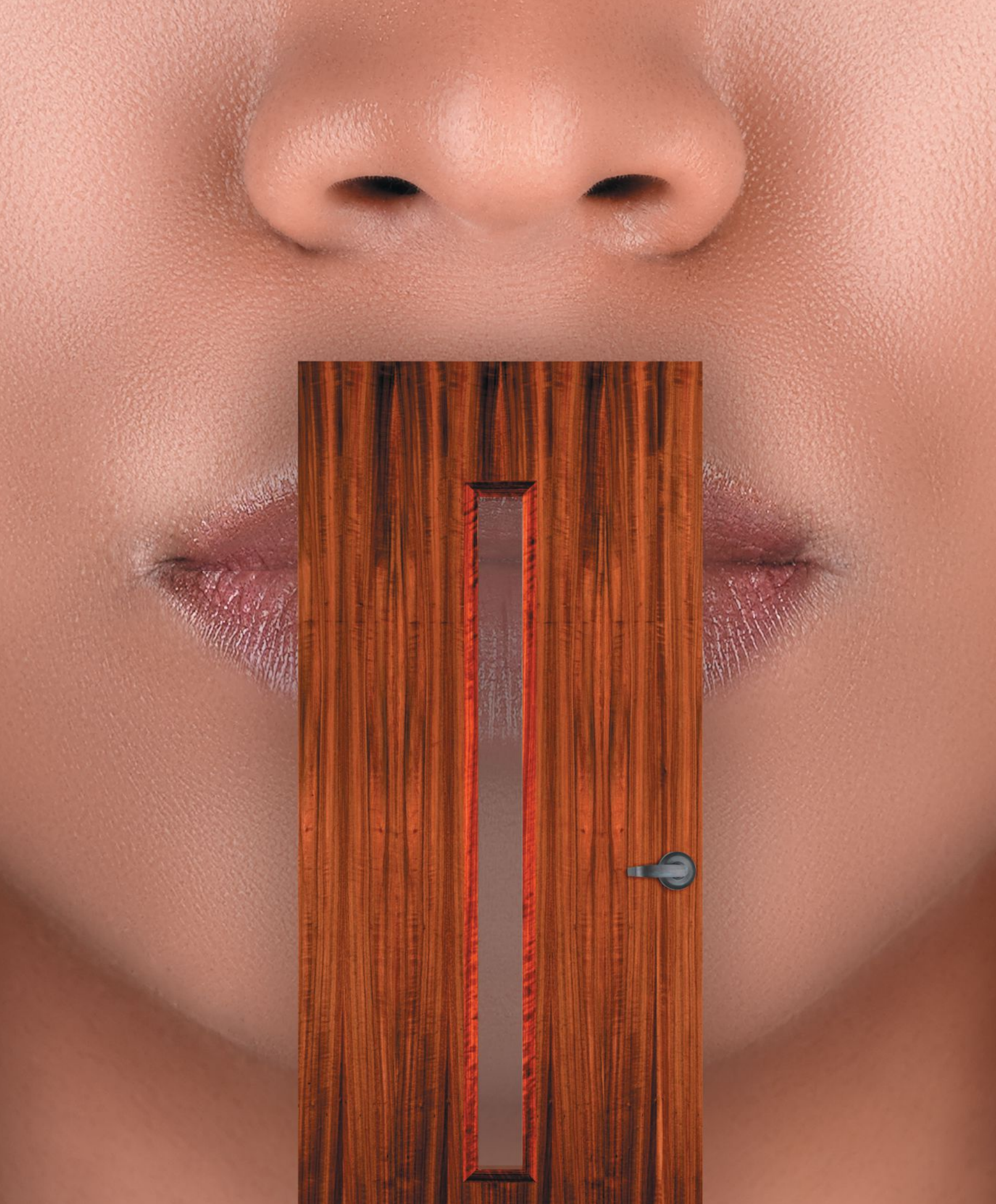

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Next Progressives:
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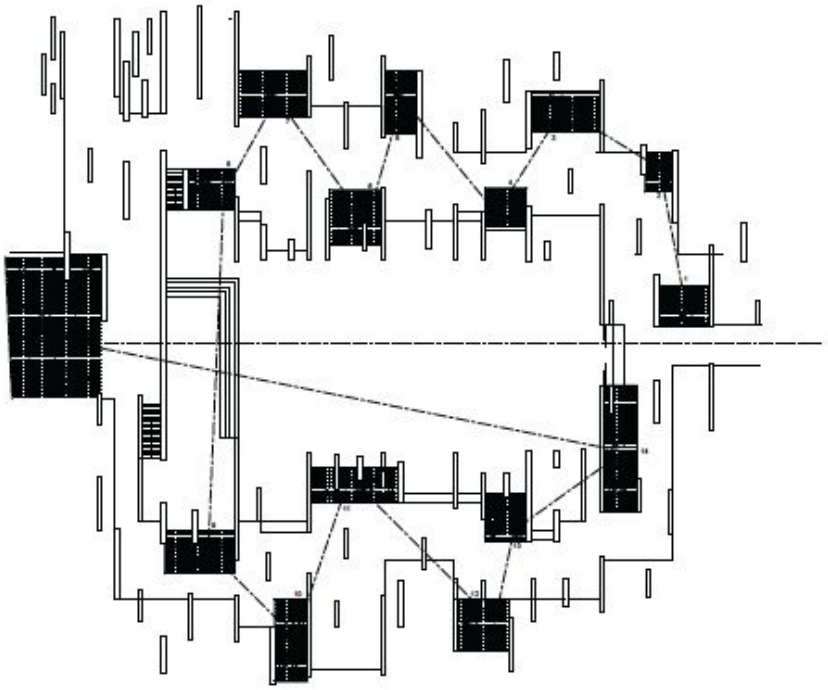
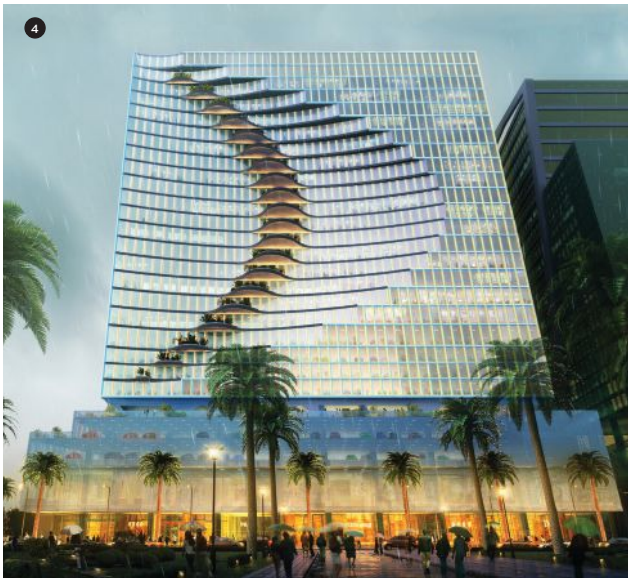
100 Walls Church Gardens and Walls Diagram



1. Arnaiz envisions the 100 Walls Church in Cebu, Philippines, as a forest of walls and gardens, within which visitors search for meaning. CAZA produced matrixes of gardens and walls (this page, right) in order to develop passages between the open spaces. **2.** A concept proposal for the Cervita Civic Center in Bogotá, Colombia, surrounds a historic structure with new facilities. **3.** A competition entry for the Meridian Headquarters in Manila, Philippines, carves discrete programmatic spheres from a structural canopy. **4.** Currently under construction in Manila, the City Center blends typical rectilinear office tower form with intersecting concentric circles to produce balconies.


1


4

Up + Running: Keep Your People Informed and Involved

TEXT BY NATE BERG

In a field as collaborative as architecture, internal communication is crucial to creating quality design and moving projects forward. Here are a few tips to help make firms more communicative, transparent, and effective.

Say it in Person

Make most office communication happen face-to-face. Though some information must be sent through email or on paper, most of what happens on a day-to-day basis can be communicated live. David Greusel, FAIA, principal of Kansas City, Mo.–based Convergence Design, prefers a verbal approach after years at big firms where communication was often electronic, impersonal, and overly bureaucratic. "I felt like there were too many emails coming down from Mount Olympus," he says. "Some of them weren't even attributed to a person, they just said, 'We have decided ... ' "

Design a Communicative Office

Workspaces can encourage interaction. "Every single decision about the layout of our office is predicated on making it easy to talk to one another," Greusel says. "Everything from the height of the partitions to the way the workstations are laid out." He paid close attention to the design of his office space based on his prior experiences in a firm where he says he learned as much by overhearing the conversations of more experienced colleagues as he did by actually working. The office doesn't have an earbud ban, but Greusel advises against listening to music all day. "You miss a lot if you're plugged into your iTunes," he says. "You're not hearing those things going back and forth across the office."

Expose Staff to Clients

Assure that staff members at all levels interact with clients at meetings and site visits as frequently as possible, to give employees an understanding of the work underway. "They would appreciate the rationale for some of the decision-making," says Andrew Pressman, FAIA, head of his own Washington, D.C., firm.

Expose Staff to Other Roles

Rotate administrative roles among employees to create a more comprehensive understanding of how the firm works, ensure transparency among staff, and help employees grow professionally. "It creates opportunities for staff to understand the nuances of running a practice and then also to contribute to running it," Pressman says. "Every employee can contribute beyond a specific task they're assigned to at the moment, if they have a broader picture of what's going on in the firm in terms of marketing or business development or budgets and so on."

Provide an Annual Review

Give a yearly update—a strategy used by the 900-person, multi-office SmithGroupJJR. Every January, firm president Carl Roehling, FAIA, and chairman David R.H. King, FAIA, travel to each office to report on the past year's work, projects in the pipeline, awards received, and the community activities in which the firm has engaged. Susan Arneson, SmithGroupJJR's director of marketing, says it's important, especially in a big firm, to personally connect to the staff. "We try to share a lot of information so that they understand how important their role is within the firm and what an impact they personally have on the success of us as a firm," she says.

Keep Marketing in the Loop

Managers should regularly give project updates to the marketing team to help identify milestones and news worthy of sharing. "Since we're on the front lines to get the word out and help communicate those messages, the more information we have, the better we can be at our jobs in terms of trying to craft the right message or make sure that we incorporate all the relevant information that we want to share with the outside world," says Arneson.

> "Every employee can contribute beyond a specific task they're assigned to at the moment, if they have a broader picture of what's going on in the firm."
>
> —Andrew Pressman, FAIA

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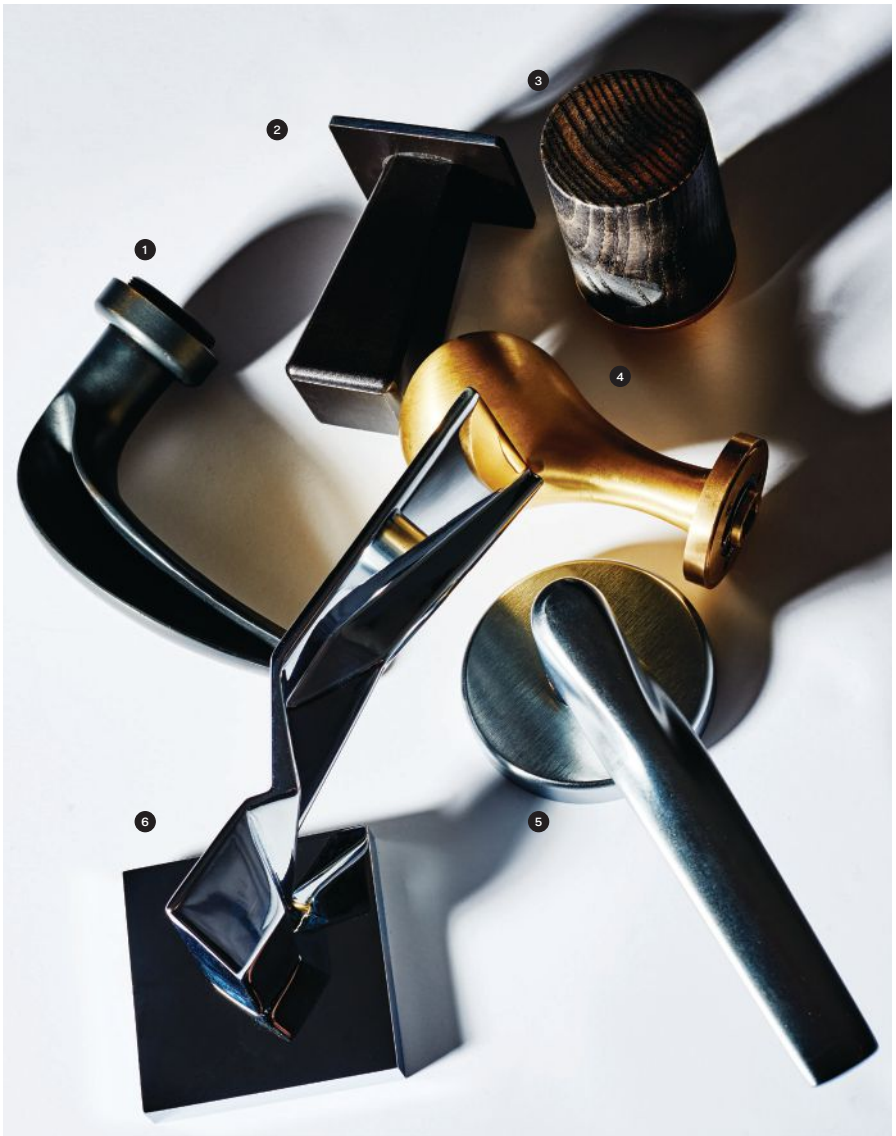

Architects considering product design have long looked to hardware as a starting point. These knobs and levers employ the formal and material signatures of their creators' work.

1. Designed in 1951 by Italian-born architect Lina Bo Bardi for her own home in São Paolo, these elegantly curved levers were first mass-produced only recently by hardware maker Izé with the cooperation of Bo Bardi's namesake institute. **2.** Izé also collaborated with British architect David Adjaye, HON. FAIA, on his 2004 Wedge knob; the tapered cuboid form, ubiquitous in modern design, was chosen in part for its unlikely ergonomic benefits. **3.** Glasgow, Scotland–based NORD Architects worked with Izé to make the NDK01, an indented Douglas fir knob on a brass back plate that was originally designed in 2010 for the firm's Shingle House in Dungeness, England. **4.** Inspired by the form of a Regency knob, London firm 6a Architects cast its 6AK01 sans classical embellishment. Fabricated by Izé, the knob has since served as a blueprint for the architecture firm's project hardware. **5.** Skidmore, Owings & Merrill used aerodynamic technology from the auto industry to generate the twisted cylindrical H 359 lever with Italian hardware brand Valli&Valli in 2008. **6.** Zaha Hadid Design's angular H 356 lever, also made by Valli&Valli, features a pronounced downward crimp that supports a firm grip while adding an unexpected detail to doors.


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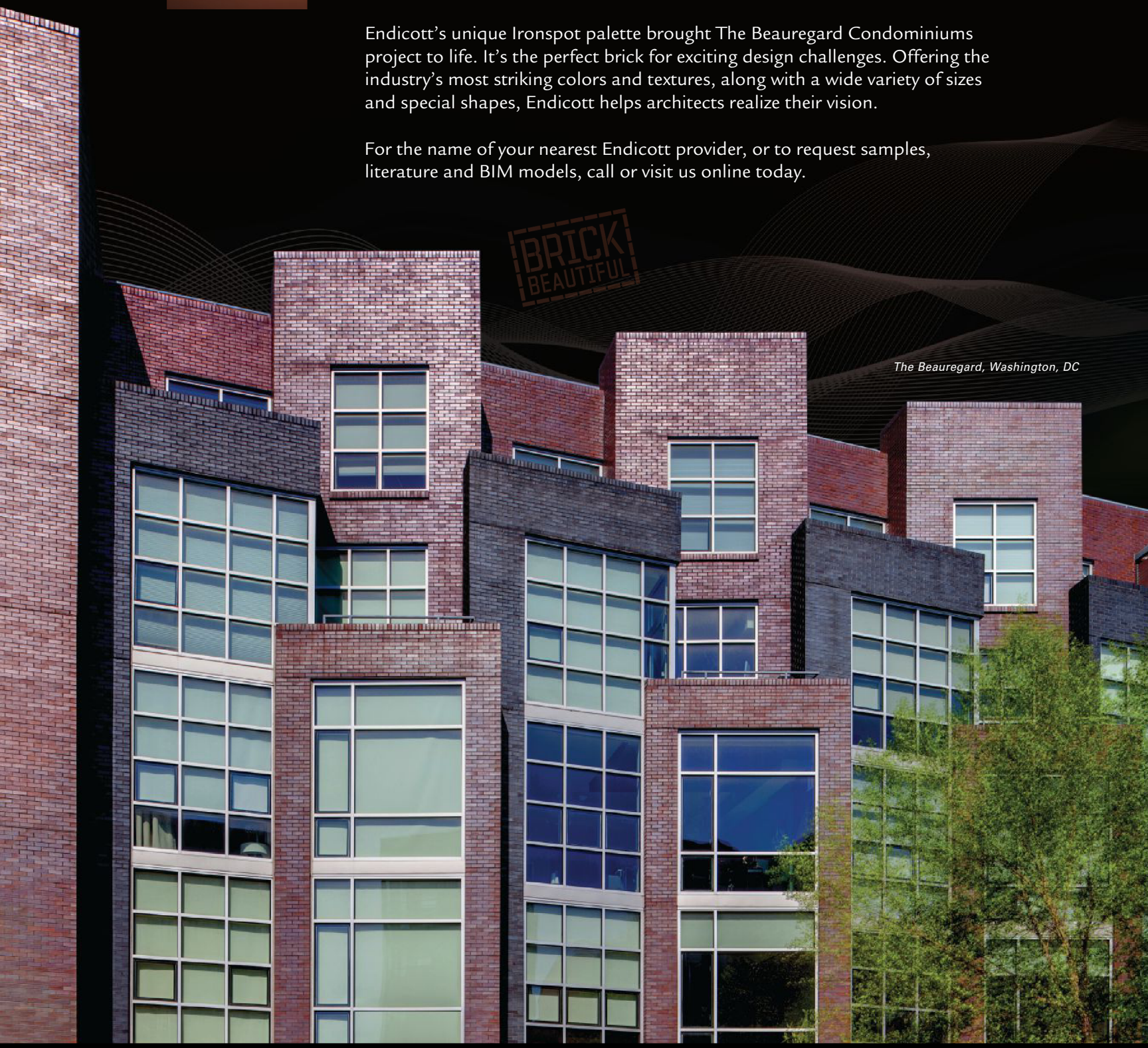

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PHOTO: CARL BOWER

AIAVOICES

THE ETHICIST | IMPERATIVES, INHERENT AND OTHERWISE

Victoria Beach, AIA, is vice mayor of Carmel, Calif., and a noted ethicist whose research formed the foundation for the Harvard Graduate School of Design's first ethics course, now required for its architecture students. Beach is the first (and, to date, only) architect admitted into fellowship at the Harvard University Center for Ethics. "There's a real difference between business ethics and architectural ethics," she says, "and it's an important difference."

ARCHITECTS SHOULD CARE ABOUT ETHICS, BUT ARCHITECTURE HAS an unusual relationship to ethics. Ethics are about obligation and duty, which covers a great deal of what any professional does in service to society; and, in the case of building, ethics poses pressing questions such as, "Will the buildings stand?" or "Will they be healthy for their inhabitants?" So there's a high ethical standard attached to what architects do in regard to building. However, there is a great difference between the science of building and the art of architecture, and perhaps an even greater difference between building's profound duty to ethics and art's complete freedom from ethics.

As to the broader topic of ethics, people have some misconceptions about what that means. It's common to think that ethics is about right and wrong, a moral compass, or whether or not your conscience is guiding you in the right way. However, the ancient roots of the word "ethics" have to do with customs, or group tradition—the value system that defines a group of people. The mistake is thinking that one can have ethics by oneself. In fact, ethics is about a covenant you share with others.

As someone very new to politics, I used to think—as many people do—that politics is hindered by disagreement. But architects embrace conflict. They shape it into something creative and good. In doing my job every day on behalf of Carmel, I have seen first-hand that design thinking can be transformative to gridlocked debates. In fact, my architectural training has helped solve some wicked problems in the political arena.

So it turns out that "design thinking" is not just an interesting exercise that is particular to architects. There is transferable power within design to influence other disciplines. I've learned that while ethics seeks reconciliation of group conflicts, design makes creative use of group conflicts. This means that the design thinking that architects embody is not a luxury for society—it's a necessity.

—As told to William Richards AIA

I AM AIA

Evelyn Lee, AIA
Member since 2003

"As an architect, I do not thrive as a designer of buildings, project manager, or construction administrator. I found my place as a design strategist. I get involved early in the process, when decisions are made about spending capital assets. I offer clients design thinking upstream rather than responses to preexisting conditions. Some may call this an alternative career. I call it architecture plus."

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AIANOW

By William Richards
Art Direction by Jelena Schulz

1 *Flowing Along.* The Gowanus area of Brooklyn needs help. Its canal is a Superfund site; its southern border is cleaved by a freeway and rail line; and its still-thriving industries are imperiled by chic gentrifiers. Gowanus by Design—one of a dozen community groups in the area—has launched its third international competition, Axis Civitas, to encourage mapping and analysis as a means of finding the best way forward. The registration deadline to propose an "urban field station" to build public awareness is March 6.

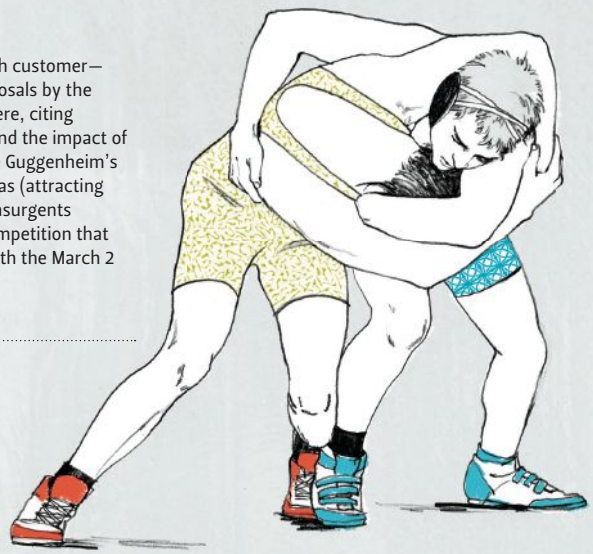
↗ Learn more at *www.gowanusbydesign.org.*

2 *Layers of Meaning.* Ai Weiwei's oeuvre is hard to parse. His installations are sculptural, his sculptures are surreal, and his brand of surrealism is not unbelievable at all but weirdly documentary. Beyond that, you can't talk about his art without talking about his political activism—a balance (and a conflict) at the center of "@Large: Ai Weiwei on Alcatraz," an installation that explores the incongruent layers of fortress, penitentiary, Native American heritage site, and, now, National Park. "@Large" is on view until April 26.

↗ Learn more at *www.for-sitet.org.*

3 *Third Time's a Charm.* Helsinki is a tough customer—its managing City Board rejected two proposals by the Guggenheim Foundation for a museum there, citing concerns about financing, maintenance, and the impact of a museum on a plum harbor site. After the Guggenheim's 2014 design competition to draw fresh ideas (attracting more than 1,700 entrants), a coalition of insurgents organized The Next Helsinki, a counter-competition that addresses the city's concerns head-on, with the March 2 submission deadline looming.

↗ Learn more at *www.nexthelsinki.org.*

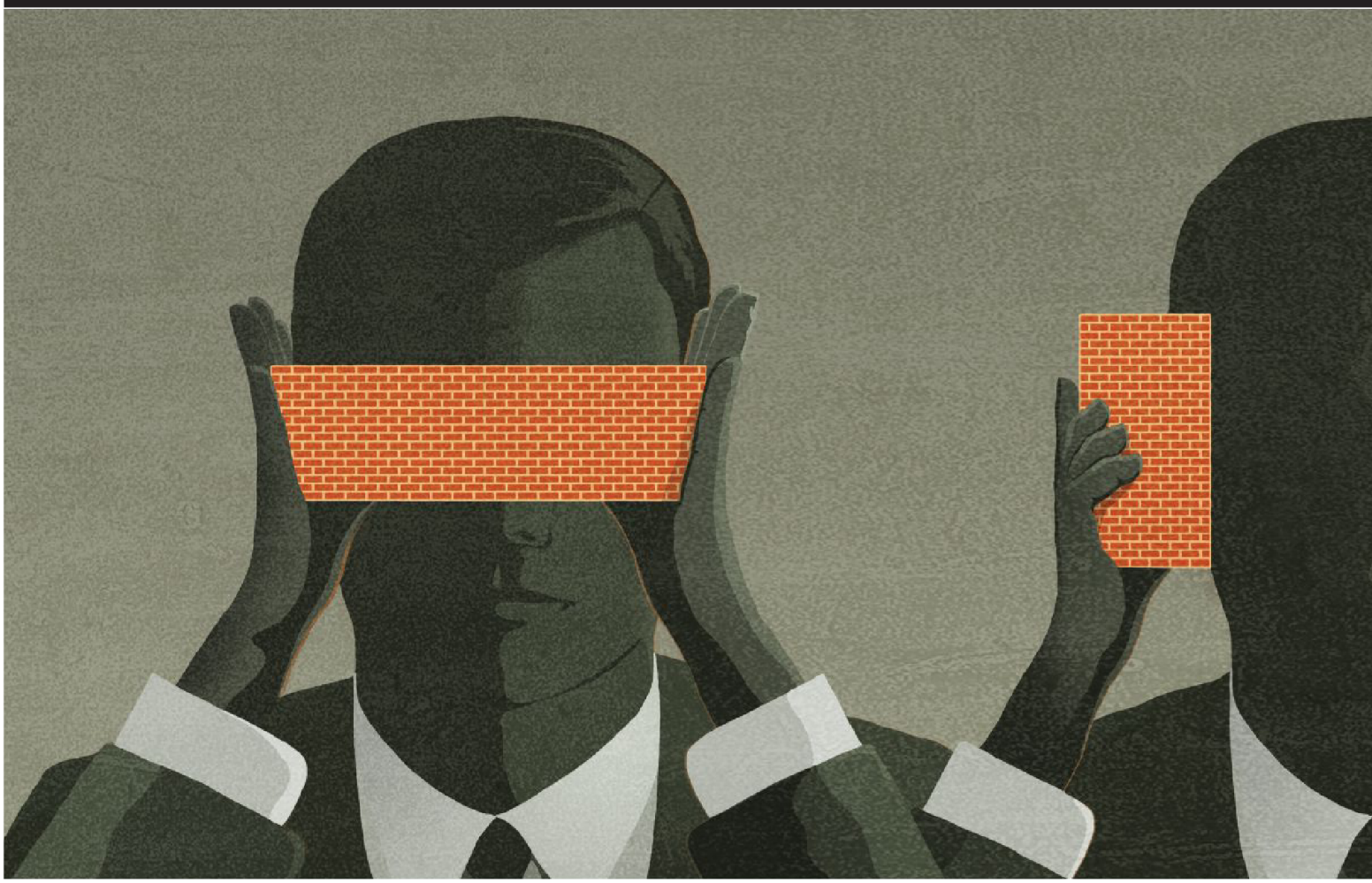


4 *Light Fright.* Walking around the older parts of London, you may see signs that read "Ancient Lights" hanging near windows. It's a vestige of an old eponymous law (renewed in 1996 as the Rights of Light and Daylight under the Party Wall etc. Act) that protects building owners from adjacent developments that may eclipse the natural light their properties receive. It's a big deal for architects working in London, legally and ethically, and on March 12, RIBA will host two experts to outline risks and compliance solutions.

↗ Learn more at *www.architecture.com/whatson.*

ILLUSTRATION: LAUREN NASSEF

Architecture, Big-A and Little-a



ETHICAL DISCOURSE WITHIN ARCHITECTURE IS TEPID AT BEST. WHAT HAVE ARCHITECTS LOST, AND WHAT DO THEY STILL HAVE TO GAIN, IN ASKING THE HARD QUESTIONS?

LAST FEBRUARY, *THE GUARDIAN*'S OWEN GIBSON REPORTED ON hundreds of migrant worker deaths in Qatar owing to preparations for the FIFA World Cup 2022. Al Wakrah's Saoud bin Abdulrahman Stadium in southern Qatar, designed by Zaha Hadid, Hon. FAIA, which had not yet started construction at the time, is among the World Cup's most prominent projects. When asked at a London event about conditions for construction workers there, *The Guardian*'s James Riach reported in a follow-up story Hadid's now-famous reply: "I have nothing to do with the workers. I think that's an issue the government—if there's a problem—should pick up. Hopefully, these things will be resolved."

That dustup came on the heels of two other critical debates, one over the aesthetics of the stadium that Hadid had designed, and the other surrounding general concerns about the World Cup—as well as major global sporting events like the Olympics—in displacing people and abusing power within host countries. Hadid said that she did not take the Qatar situation lightly, but that ultimately worker safety was "not my duty as an architect to look at."

Her comments drew fire from architecture critic Paul Goldberger, Hon. AIA, among others, who wrote in *Vanity Fair* last August that Hadid's fame alone was fuel enough to drive significant attention toward the Qatari problem. "No one forces an architect to accept a job that carries with it a serious ethical compromise," he wrote.

Goldberger wasn't the only one to evoke the "E" word. The Al Wakrah stadium is, in many respects, a case study for ethical quandary. Safety, aesthetics, politics, economics, globalization, client

ILLUSTRATION: MICHAEL GLENWOOD

relations, and environmental and public good all come into play in this multibillion-dollar structure. But while critiques of Hadid made salient headlines for several months, it didn't exactly galvanize the profession as a whole around issues of morality.

And this speaks to a broader truth: Ethical discourse within architecture is tepid at best, even with a new generation of architects who believe that social responsibility should drive the profession. What, exactly, are architectural ethics and what do they entail?

Parsing Ethics

Architects share a series of ethical obligations with other professionals, like lawyers, doctors, or engineers: Do no harm, pursue fairness in every engagement, behave appropriately, and so on. Some would argue that architects have a second set of professionally specific ethics that are rooted in aesthetics and culture. Yes, architects must design buildings that stand up and do right by a client. But, they must also contribute to the surrounding context where these buildings reside as well as honor the ecology, make a positive impact on the lives of the people who live and work in these buildings, and, at the highest level, accomplish something that points more towards "Architecture" with a capital "A" rather than mere "building."

This broader definition of ethics is so fundamental to an architect's pursuits that it becomes an explicit part of everyday decisions. Yet the topic remains largely invisible within the profession.

Tom Spector, AIA, is a professor at the Oklahoma State University School of Architecture, where he focuses on questions of architectural design ethics. "When someone asks my specialty, their eyebrows always go up when I say 'Ethics,'" Spector says. "Professional ethics is an established discipline in other fields, like medicine and law, but it's in its infancy in architecture, even though we make decisions that profoundly affect people's lives for a long period of time."

Spector theorizes that two things have kept this topic in the background. First, he says, architects have a sense of powerlessness about their overall role within the hierarchy of lenders, clients, and contractors. That's evident enough in Hadid's assertion that she had no control over how her stadium was constructed. "We have to disabuse ourselves of that powerlessness," Spector says.

Second, Spector says, is a concern that aesthetics and ethics make uncomfortable bedfellows. "Art and morality have a famous antipathy to each other," Spector says. Yet, if there is an area of cultural production that combines aesthetics and ethics, it's architecture.

It is this intersection of aesthetics and ethics that is of particular interest to Victoria Beach, AIA. (See this month's AIA Voices story on page 37.) Beach, who served for six years on the AIA National Ethics Council and has taught ethics at the Harvard Graduate School of Design (GSD), says that it is the obligation of all professions to define shared values. Yet in architecture, she warns, the primary ethical focus falls more on professionalism and less on design.

"Almost everything that's written or discussed, or that's written into the AIA Code of Ethics, has to do with building ethics, which translates effectively into: 'Treat your clients well and keep the public safe,'" Beach says. "Do no harm is important, but that's not all that architecture is."

Mack Scogin, AIA, principal of Atlanta's Mack Scogin Merrill Elam Architects, says that the gap between just doing a building and doing true architecture is the central ethical question for the profession. "In a way, it's not hard to do a building," Scogin says. "If it was that hard, almost every building would [have to] be done by architects, and that's far from the truth. Lots of people do buildings. It is, then, the ethical responsibility of the architect with the big 'A' to give clients something beyond a building. That is at the heart and soul of the issue. How can you get beyond the practical constraints that everyone has to deal with and give clients more?"

Belief in the significance of architecture requires, then, a more refined ethical definition beyond merely designing something safe. Beach laments the oft-heard argument "that the public needs us because if you don't hire us, your buildings will fall down."

"The fact is," she says "that lie is not persuasive. A computer can do that."

By emphasizing public safety over the unique public value of design, architects risk losing their exclusive moral imperative. "When we say to the public that we know what it takes to be an architect—that it will require schooling, tests, and an internship—and that when you get that stamp you will be making architecture, well, that's not really true," she says.

"The training that we get prepares us to be a whole-building engineer, but that's still not architecture. To attempt a work of architecture, you need to also embed the building in the culture in a meaningful way."

In other words, it's not about the hard-earned license. It's what one does with the opportunity a license affords.

School Is in Session, Always

So where might architects grapple with the issues surrounding their moral imperative? Increasingly, the conversation is happening in schools of design. Scogin, who has taught for over 30 years in places like the Harvard GSD, says that students are much more apt to raise questions about the architect's larger responsibility in society today than when he began teaching. "I think it's gone from practically zero concern to one of the primary pedagogical norms, frankly, in the school."

The challenge for architecture instructors, whether they run a design studio, teach building technology, or lead a business course, is moving the ethical conversation from the theoretical to the concrete.

That's easier said than done. Architects rarely share details of a project, for important legal reasons or in the interests of protecting intellectual property. Realistic ethical debate becomes difficult. This is why, while at Harvard, Beach and Scogin along with Carl Sapers, Hon. AIA, worked to bring real-world case studies directly from architects into the classroom. "It's very hard to talk about ethics because we're talking about truly subjective issues, and so you have to get the conversation grounded in real-world situations," Scogin says.

At Oklahoma State, Spector sees his students enter architecture school interested in the creative aspects of the career, but soon begin to recognize how creativity bumps up against the realities of working in collaboration with other disciplines and the public. Spector asks his students to read case studies of contemporary ethical challenges and write position papers.

"I've added in this controversy over Zaha Hadid and working abroad," Spector says. "It is really interesting because you get an even split between those who believe that she abrogated professional duty and those who say that she is in no way responsible. That just shows you how complex and challenging these questions are. But that doesn't mean that we shouldn't talk about them."

Conversations may be progressively robust in the classroom, but professional practice offers few, if any, opportunities to address ethics directly. The AIA Ethics Council routinely discusses the nuts and bolts of a particular case, Beach reports, but as an adjudicating body, its official purview is relatively narrow.

To broaden the discussion, Spector recently launched a new journal, *Architecture Philosophy*, with the editorial goal of attracting some articles on architectural ethics. "I've been trying to come at it from the scholarly side," Spector says. "I titled the journal *Architecture Philosophy*, because I didn't quite think that there would be enough readership for just an ethics publication."

Another challenge, according to Scogin, is the complexity of understanding ethical issues, owing to the increasing complexity of contemporary practice. New technologies, more nuanced intellectual property issues, economic globalization, and an increased number of specialists working on the average project: all factor into ethical debates and make it harder for an architect to, well, be an architect.

"The range of practices, which seem to now involve every culture on Earth in every way imaginable, and the range of projects and how they are structured make it more difficult now than it ever has been to be an architect," Scogin says. "That's why it's more important than ever to discuss and understand these complexities in order to establish grounded and clear definitions to the present-day ethical practice in architecture." —*Elizabeth Evitts Dickinson* AIA

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DON'T JUST CONSUME TECHNOLOGY; MAKE IT | EXPERTS CALL ON ARCHITECTS TO TAKE ACTION

ILLUSTRATION: MICHAEL KIRKHAM

THE MESSAGE OF THE 2015 AIA BUILDING CONNECTIONS CONGRESS, hosted by the AIA's Technology in Architectural Practice (TAP) at AIA National in Washington, D.C., on Jan. 5, came through loud and clear: Think outside of the box.

Attended by architects, software developers, federal employees, and engineers, TAP's congress serves as a yearly forum for the architecture community to come together and discuss how technology is affecting design projects and performance.

This year, TAP focused on the limitations of existing technological options. Despite the inquisitive, problem-solving nature of architects, there is often blanket acceptance of what's available in the digital marketplace. Speakers pressed attendees to look beyond the familiar to create smaller tools that might benefit their organizations, and larger tools that would advance the community as a whole.

Jeffrey Ouellette, Assoc. AIA, the 2015 TAP chair, welcomed everyone to the forum with a call for personal industriousness.

"It's about going beyond making something for yourself, and trying to provide a solution for a broader marketplace," said Ouellette. "Architects are meant to use ingenuity and innovation.

"Don't make the excuse that we can only take what's given to us," he added.

That message was accentuated by AIA CEO/EVP Robert Ivy, FAIA, who gave a brief presentation on the Institute's long-awaited Digital Transformation and how the AIA intends to upgrade its systems and technological capabilities. "We're changing our organization at all levels," said Ivy, "the way we work together at [AIA headquarters] and the way we work with our components."

"We've been thinking differently about the way we bring things to market, the way we work with our members," he added. "We need to be leading in our thinking and our execution."

AIA President Elizabeth Chu Richter, FAIA, spoke about how both the Institute and its members need to anticipate the impact of technology's constant evolution.

"Time is a precious commodity," said Richter. "How we use time, and the value of how we use it, is of great importance. Technology can give, and also take away, time."

She also acknowledged just how predisposed architects are for such an augmented future: "Architects are good at mastering tools that already exist, and inventing tools for tomorrow's work, in order to enhance productivity and stretch our talents further."

The question for conference-goers then became about the role of architects in developing software and applications that benefit both process and performance. The general response was to instead promote curiosity and inventiveness. Instead of necessitating in-house development, they advised increasing the involvement of younger staff members with technical skills, along with learning to recognize areas where technology can help alleviate the mundane.

"If you catch yourself doing something repetitive, step back and say, 'Could this be automated?'" asked Andrew Heumann, a designer at Seattle's NBBJ.

"What's crucial to success," he added, "is training firm leadership not on how to code, but on how to think about how computational tools work."

Ouellette also raised the question of how architects respond to these issues at a core level.

"Are we applying the design process—and that sort of reasoning, methodologies, investigation—to our own problems?" he asked. "We're very good at solving everyone else's problems, but not our own, in many cases."

Changes on the Horizon

In a subsequent session on new business opportunities for architects, the speakers stressed the importance of clients in pushing this conversation further.

"How do we as architects begin the dialogue with our clients and ask them, 'How do we build the right building?'" said Zigmund Rubel, AIA, co-founder of Aditazz, a data-modeling company.

Any industry-wide need for technology upgrades would be a major disruption, and Rubel noted that "disruption always comes from the outside." While the majority of architects may not have a need for novel tools right now, a collection of clients asking for advanced systems—hospitals were mentioned—would add new value to the proposition.

"One day, the owners will flip," said Dennis Shelden, director of global services and strategy for Trimble (formerly Gehry Technologies). "The risk is the owners will flip and this [architecture] community will not be able to respond in time."

Along the same lines, several discussants expressed concern that fears about cultural change, not the tech itself, would slow many firms from moving forward. "Technology doesn't mean anything if no one takes it on and uses the tools," Ouellette said.

That said, the conversation generally tilted away from immediate answers and towards the value of interoperability and the need for collaboration between all members of the architecture, engineering, and construction industry.

"This conversation is still relatively new," said Nathan Miller, director of Architecture & Engineering Solutions at CASE, "and we're having it in an industry that, historically, does not move fast. But we need to break down silos of interest and discuss how to find and build business models and workflows that allow all of these different groups to interrelate better."

In a conversation after the conference, Ouellette voiced those same goals for the rest of 2015.

"I want to take this theme of making tools and carry it throughout the year," he said, "to work on expanding that understanding of what we're trying to talk about.

"We're at least 10 years behind the rest of the computing world curve when it comes to innovation and functionality and general growth of ideas," he added. "I want to know why that is and what we are going to do about it in the future." —*Steve Cimino* AIA

For more on TAP, including awards and other upcoming events, visit *www.aia.org/tap.*

AIAPERSPECTIVE

DISCOVERING WHAT'S RIGHT FOR A SITE | MYRIAD DECISIONS AND A CLEAR MISSION

PHOTO: CARL BOWER

A FEW YEARS AGO, OUR FIRM WAS OFFERED A COMMISSION TO design a conference facility for a religious retreat. What could be better? A great client, a great site, and God's work! But with its beauty and potential, the site also posed ethical as well as moral questions. The project was along the Texas coast on a barrier island. Should anything at all be built on these fragile, shifting sands? Our clients shared the same concern, yet they had the gift of the land and a mission. Could these be reconciled?

Making the right decision called for research and long hours spent analyzing and discussing our findings. We studied precedents, of course, but no source was more important than the site itself. We walked the island, often stopping to sit and hear what the dunes, the vegetation, and even the light and wind were telling us about what makes this place special. As we looked and listened, the dialogue among firm members, the client, and the site became increasingly rich through a process of discovery.

Yes, Mustang Island could embrace the client's mission. More than that, this beautiful place could be a teaching resource. The conference center would introduce and educate visitors to the extraordinary variety of life supported by the rich ecologies that ribbon through the island. In our eyes, the project was also an opportunity to share with our profession a new precedent for barrier island development.

The facility that today welcomes those who seek a peaceful space touches the ground lightly and quietly, far behind the beach and the critical dune lines. Visitors tell us they have indeed come away with a greater appreciation for the ecology of the island, from the vines running through the sand to the natural grasses, wetlands, sand dunes, and ultimately the beach itself. Client constituents most concerned with the ethics of barrier island development became ardent advocates.

Grappling with questions of right and wrong is an integral part of what it means to be a professional. This essential element of how an architect works is a part that the public too seldom sees. This is unfortunate. Our commitment to ethical and moral behavior is as much a part of our profession's reputation as our skill in the making of solid forms out of ideas.

The ever-growing list of new technologies provides wonderful tools to enhance the flesh and bone of our work. The soul of this process, however, is the values—both ethically and morally—that we bring when we use these technologies. Chief among these is a sense of responsibility in how we use the resources of this planet. It's a responsibility for the legacy we will leave to future generations, who will use our buildings and, if need-be, determine new uses for the buildings we leave behind.

The best architecture, whether humble or spectacular, does more than accommodate the needs of people and the planet. It nourishes them by probing questions of right and wrong, of what we owe our clients, and what, by our actions, we owe ourselves. Whether or not this responds to a higher authority, it is our work and the bedrock of our reputation. AIA

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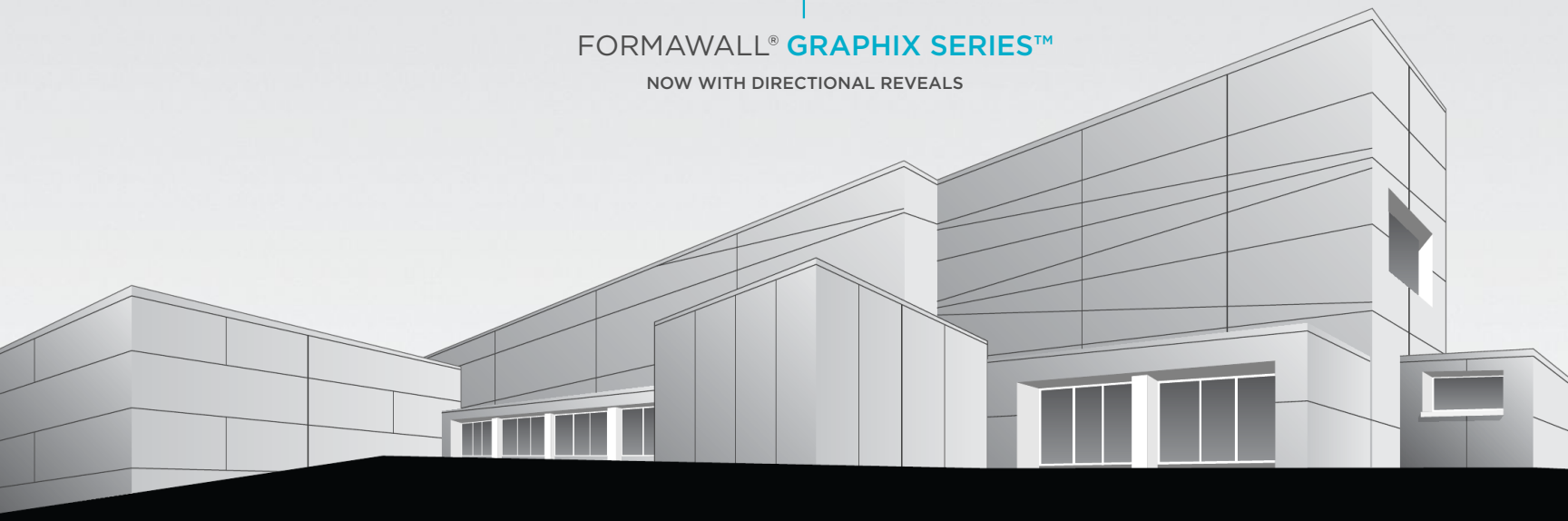

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"In some ways, the river is the city's backbone. It really is one of the few connecting things in what has been a disconnected city."

Reinventing the Los Angeles River by Karrie Jacobs

Speculative urbanism: That's the phrase that Los Angeles architect Michael Maltzan, FAIA, uses to describe the decades-long effort that has recast and revived the L.A. River. A concrete-lined drainage ditch for much of its 51-mile length, the river has nonetheless been celebrated by its boosters as the organizing device that will reinvent this ultimate decentralized city for the 21st century. A radically updated Los Angeles, long connected (and torn asunder) by freeways, will instead be tied together by verdant riverside promenades, bike paths, and an extended string of waterfront parks. The concept has the transformative potential of New York's High Line, except that the L.A. River, stretching from Canoga Park in the San Fernando Valley to the Pacific Ocean in Long Beach, is 35 times longer.

Maltzan, for the moment, is the architect whose impact on the river is most conspicuous. His recently completed One Santa Fe on the fringe of downtown L.A. is a skinny apartment complex with two extremely long side-by-side buildings, elevated above levels of parking and open-air plazas, that extend for over a quarter mile on a site parallel to the river. Completed last year, the project houses 438 market-rate rental units directly across the street from SCI-Arc, in a neighborhood—the Arts District—that, despite its close proximity to Skid Row, is gentrifying at a breakneck pace. You can get a glimpse of the river from many of the complex's east-facing apartments, but the view is mostly dominated by the railroad tracks—a half dozen at least—that run along the water.

Early in the planning process, Maltzan partnered with a local organization called Friends of the L.A. River (FOLAR) to brainstorm a way for residents and the general public to access the river. Together they drew up a quartet of landscaped overpasses, erratically angular and layered with flowers. The pedestrian bridges are sadly unrealized; they were never intended to be more than just concepts. But Maltzan believes that the very act of visualization drives things forward: "The more images of what those connections could look like, the more that it's possible for people who have the real power to effect those changes," he says. "They have something to fight for, something to point to."

Incrementally, up and down the river, highly speculative visions *are* being realized. A master plan that L.A. adopted in 2007 calls for a series of revitalization projects along the 31 miles of the river within city limits. Bits and pieces, formerly fenced in, have been turned into pocket parks, including one at the river's headwaters in Canoga Park and several in surprisingly pastoral Glendale Narrows, where snowy egrets wade, indifferent to the noise from the nearby freeway. Last May, the Army Corps of Engineers—the federal entity that more or less owns the river—approved a $1 billion plan called Alternative 20, which aims to convert 11 miles just north of downtown into something approximating nature by removing the concrete, widening the river, creating wildlife-friendly wetlands, and adding access points. Federal and local governments would fund it jointly. And in January, the city debuted an Enhanced Infrastructure Financing District, which would allow property tax dollars to fund river improvements. Los Angeles Mayor Eric Garcetti is a major supporter of these efforts. "In some ways, the river is the city's backbone," he tells me. "It really is one of the few connecting things in what has been a disconnected city."

The Poet and the Postmodern River

The river was once a meandering, wild stream that covered much of western L.A. with impassable, jungle-like wetland. It was often dry and, in many places, invisible, but was also prone to catastrophic floods. In the 1930s, Congress funded the Army Corps of Engineers' effort to "channelize" the river. The unpredictable waterway was contained in a concrete culvert and was quickly hemmed in by industry, freeways, and modest neighborhoods. It was largely forgotten—until speculative urbanism, in the form of a poet named Lewis MacAdams, rediscovered it.

"Poetry and politics has always been the cusp I've operated on," MacAdams, a stately presence topped by a pork-pie hat, told me recently. We were chatting at FOLAR's office at the River Center, a hub for nonprofits. Now 80, MacAdams came to L.A. from Northern California in the 1970s and began writing for a small, eccentric magazine: *WET: The Magazine of Gourmet Bathing*. Suffice it to say he was probably thinking more deeply about water than the average Angeleno. He recalls walking to a bus stop and catching his first glimpse of the river. Somehow it


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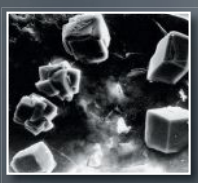

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became his obsession, his life's work. In 1985, he staged a performance piece called Friends of the L.A. River. "I borrowed a set of wire cutters," MacAdams recalls, "cut a hole in the fence, and declared the river open."

A year later, MacAdams founded FOLAR, which now has eight employees, a $1 million annual budget, and a riverfront café, the Frog Spot. MacAdams has a gift for describing the river's inherent contradictions: "I call it the postmodern river, a collaboration between humans and nature," he says.

It's not just the concrete he's talking about. For much of the year, the water that flows between the banks is reclaimed from sewage treatment plants rather than coming from the river's more pristine source in the Santa Monica Mountains. But his goal has always been simple: "I thought all I had to do was convince people that the river could be a beautiful place."

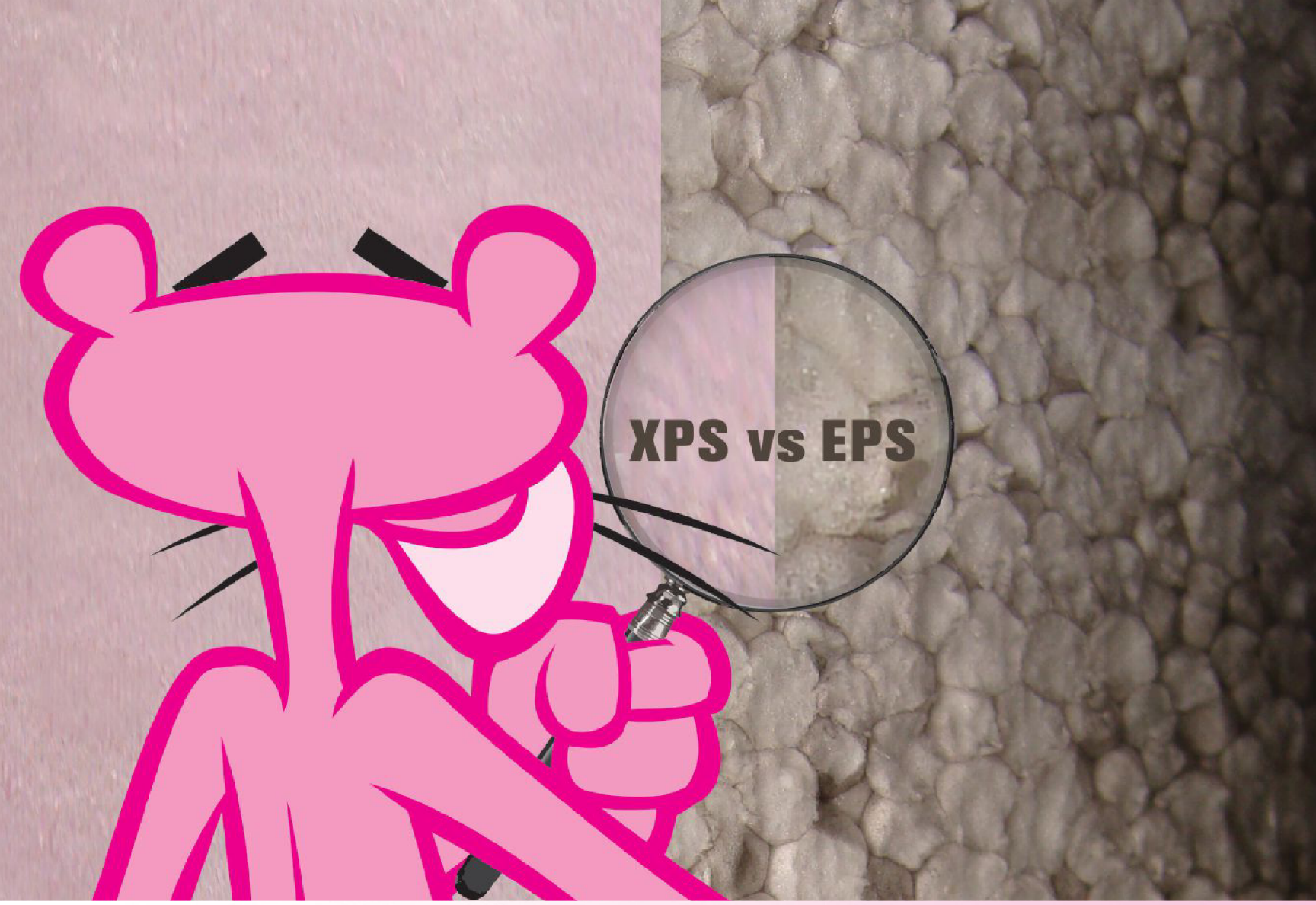
Mia Lehrer's term for what she and her colleagues have been up to all these years: "a guerrilla planning activity."

While the river's revitalization has been a collective effort, MacAdams has been singularly pivotal. He was Mayor Garcetti's high school creative-writing teacher. And his La Gran Limpieza, an annual cleanup, was where landscape architect Mia Lehrer first encountered the river 20 years ago. Wiry and hyperkinetic, Lehrer simply thought the event would be good for her "rambunctious" son. Then the river became her passion. Lehrer's term for what she and her colleagues have been up to all these years: "a guerrilla planning activity."

Lehrer has been one of the most prolific creators of ideas that change the way the public and political culture regard the city. "The river," says Lehrer, "is this gash, this linear infrastructure element." Revitalizing it, she says, "is solving a lot of problems," such as L.A.'s limited supply of parkland and water. And, she says, "It allows the city to get sewn back together."

Lehrer was a key player in creating the city's 2007 L.A. River Master Plan. She also helped influence the 2008 River Improvement Overlay District, which imposes development guidelines on land adjacent to the river: complete streets that are pedestrian and cyclist friendly, for instance, and landscaping that incorporates bioswales and green roofs. Every time kayakers paddle through the new Glendale Narrows recreation zone, they're bringing to life the river that has thrived in her mind's eye for decades.

Lehrer gives me a tour of riverfront neighborhoods featuring funky old warehouses, slick multimillion-



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dollar townhouses, and new microbreweries, a familiar template for urban transformation. She points out the spot in Atwater Village where a cable-stayed bridge, the La Kretz Crossing, will soon carry pedestrians, bikes, and equestrians across the river to Griffith Park. The donor of more than half the projected $9.6 million cost of the bridge, developer Morton La Kretz, has also announced his intention to build 60 townhouses on industrial land he owns nearby. This sort of mixture of altruism and opportunism is typical along the river; community activists warn that its rising profile has inspired a land grab. Mayor Garcetti says there's been a 21 percent year-over-year increase in real estate values in

A Piggyback Yard Feasibility Study rendering

river-adjacent Elysian Valley (as opposed to 16 percent in L.A. as a whole).

But developer Mott Smith of Civic Enterprise, a firm devoted to infill projects that has been buying properties near the river, has a different theory. "I don't know that anyone has done any analysis to look at how differently the market is responding in river-adjacent areas than it is in other parts of the city that are relatively central and close to transit," he says. "I actually think that the proximity to downtown and to walkable neighborhoods is actually the most important influencer right now in real estate."

In other words, Smith is suggesting that the river boosters might have it backwards. Land isn't becoming more valuable because of their success at reimagining the river. Instead, the river has become a cause célèbre because it's in a part of town, long neglected, that's increasingly desirable to home buyers who have been priced out of nearby Silverlake, for instance. Either way, the river has inspired planners, designers, and politicians to think big.

Take, for example, the Piggyback Yard Feasibility Study. From 2005 to 2010, Lehrer, MacAdams, and Maltzan, along with Perkins+Will and Silverlake-based

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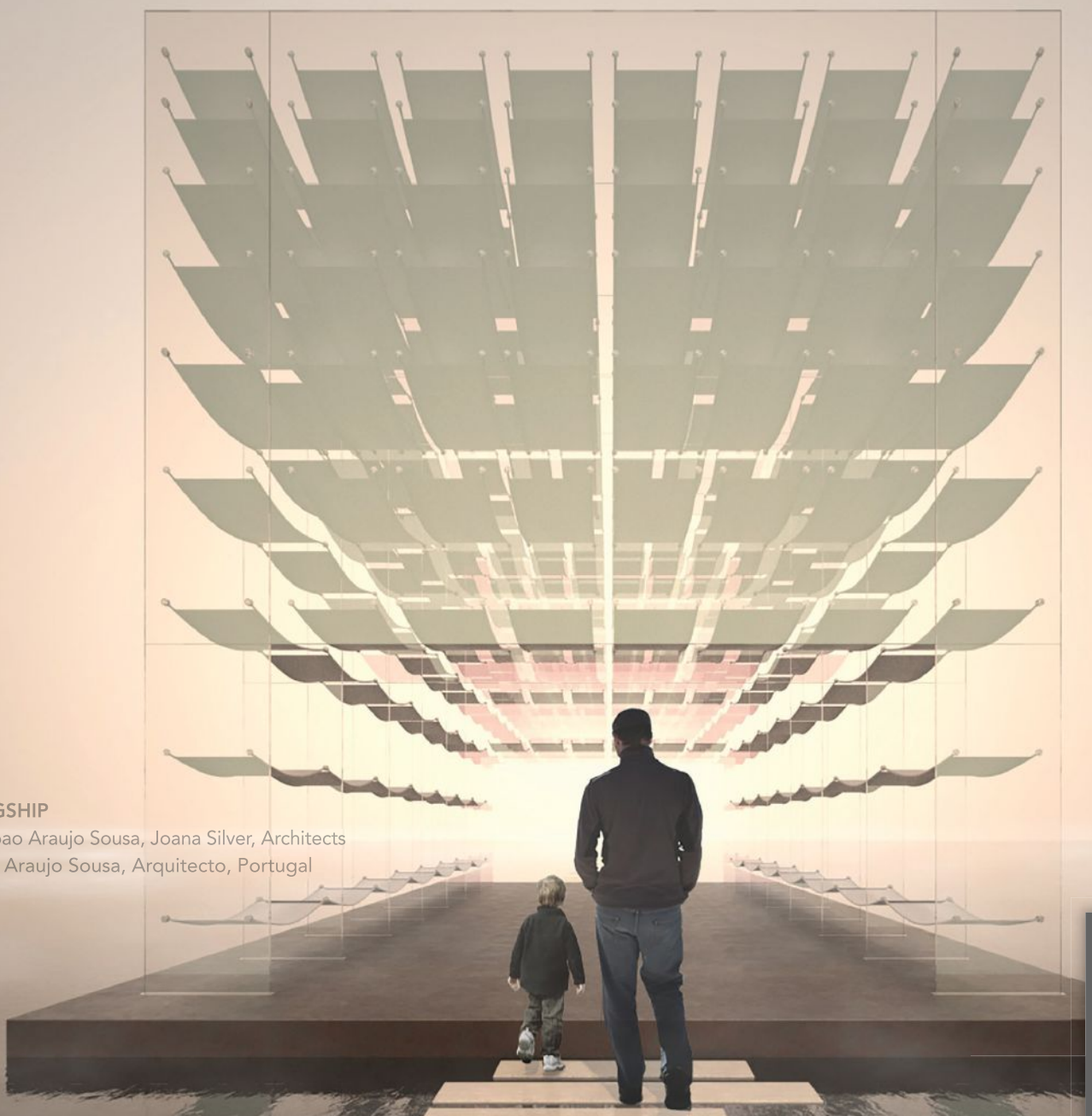

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Chee Salette Architecture Office, conspired to rethink a 130-acre Union Pacific freight yard on the river's east side, just opposite downtown L.A. "We would meet every Friday, as if it were a real project," Lehrer recalls. The idea was to redevelop the property for an arts school campus, workforce housing, and parkland that the river could harmlessly flood. The project intended to shift the center of L.A. eastward towards the revitalized Union Station and high-speed rail lines. Renderings on Chee Salette's website show a dreamy, lush place, lined with translucent white towers and pedestrians everywhere, much like the L.A. depicted in the Spike Jonze movie *Her*.

The Bridge as Destination

The Piggyback Yard plan is a lovely example of speculative urbanism, but it's still unclear whether Union Pacific intends to sell the land to the city. Until then, the most profound and least speculative river-related project remains Maltzan's Sixth Street Viaduct, scheduled for completion in 2019. The original Sixth Street Bridge, an Art Deco landmark built in 1932, was the largest concrete bridge in California prior to World War II. But the concrete, with its high alkali content, is plagued by what Maltzan calls "concrete cancer."

"The original plans for the bridge were to basically tear it down and build a highway-style bridge," says Maltzan. After community activists pushed for something more, he teamed up with engineers at HNTB, landscape architects at Hargreaves Associates, and urban designer A.C. Martin. The team's winning entry in a 2012 design competition features a 3,500-foot-long series of spans supported by looping arches that appear to be skipping across the landscape. The structure carries cars across the river and rail yards, but it also has multilevel paths and ramps for pedestrians and bikers and, below, large soccer fields and public plazas. "Infrastructure," says Maltzan, "doesn't have to be a separator. It can be a destination."

"If you look at iconic structures in other cities, like the Eiffel Tower or the Statue of Liberty, what they really do is they're observatories," Maltzan says. "You look out." So this bridge has "climbing arches," which are outfitted with stairways that will allow pedestrians to stand well above the roadway. Of course, there are already bridges in downtown L.A. with splendid views of the manmade river, which originally captured MacAdams' imagination. It is an extraordinary object, the sort of thing that Charles Sheeler would have happily painted. But the view from the new bridge will likely be different: less concrete, more greenery. The viaduct's arches will be the best spot in the city to see the reinvented river that pulls everything together.

“Decisions are going to get made this year about the built environment, whether architects are there or not. So let’s make sure that we’re engaged.”

Architecture and the New Congress by Elizabeth Evitts Dickinson

For much of recent memory, the news about Congress has more often been about partisan gridlock than about progress. Congressional job approval ratings last year averaged a near-historic low of 15 percent. Even so, the AIA managed to move some important legislative priorities through the system, according to Andrew Goldberg, ASSOC. AIA, managing director of the Institute's Government Relations & Outreach. "In 2014, we were able to get two key pieces of legislation passed," Goldberg says. "The tax incentive for energy efficient buildings had expired and the AIA helped lead a big coalition to get it back in the books. We also made some strides towards reforming the laws on how the government does design and build."

Some strides, yes, but a lot of work remains. In 2015, a record number of members—nearly 6,000—contributed to the AIA's annual call for legislative priorities, which informs the Institute's four-part legislative plan. They overwhelmingly asked for a strategy to support and protect their work. "Members want policy that promotes the value of what they do every day for their communities and policies that help position architects and their firms to design better buildings," Goldberg says.

Reforming the procurement process used by the government to award design and construction contracts remains a major agenda item. Federal rules currently inhibit many firms from even applying. Between 2007 and 2011, firms competing for public sector bids spent a median of $260,000, while shortlists grew to include as many as 10 competitors. "Many firms have to do 80 percent of the design work in order to compete for government contracts with no guarantee they'll get that work," Goldberg says. "They are working for free." Even when firms win the bid, the way that federal contracts are written can prevent the work from being profitable. "There's a statute going back 60 years that limits what an architect can charge—the fees are limited to 6 percent of the estimated cost of the entire project—but then change orders come in, and firms have to eat those extra costs," Goldberg says. This winter, the AIA will convene a roundtable of architects and federal agency representatives to explore potential modifications to this process.

Another place where architects can face undue fiscal burden is in the rebuilding of communities hit by disaster. While the AIA plans to advance policies that would help mitigate natural and manmade disasters in the first place—better building codes and investments in infrastructure, for instance—the Institute also wants to enact a national Good Samaritan law. "Good Samaritan legislation protects architects and engineers from unnecessary liability when they volunteer after disasters," Goldberg explains. "We've had situations where architects are poised to go in, but the state doesn't have Good Samaritan protection. They want to help, but they don't have insurance to cover it. We want laws in place that allow architects and engineers to help rebuild."

Perhaps the most pressing issue, however, remains taxes. President Obama made it clear in his State of the Union Address that tax reform is a priority, including an overhaul of the corporate tax structure. Nearly 70 percent of AIA member firms are considered small businesses, making less than $1 million a year. Most firms—about 80 percent—are structured as pass-throughs rather than corporations, according to Goldberg. This means that those firms operate under individual, not corporate, tax code. The AIA has partnered with organizations such as the S Corporation Association to make sure that tax reform ensures an even playing field. "Our number one priority is to make sure that Main Street companies are equal partners," says Brian Reardon, president of the S Corporation Association. "The bottom line today is, if you're an S Corporation or a partnership and you're profitable, your top tax rate goes up to almost 45 percent. For C Corporations, the top rate is 35 percent. Architects need to make sure politicians understand that the companies they work for pay a lot of tax, and right now they are paying more than corporations. We need to restore parity."

"If you're an S Corporation or a partnership and you're profitable, your top tax rate goes up to almost 45 percent. For C Corporations, the top rate is 35 percent. Architects need to make sure politicians understand that the companies they work for pay a lot of tax, and right now they are paying more."

–Brian Reardon, president, S Corporation Association

Looking to the future, the AIA also wants to mitigate student loan debt to support future architects entering the profession. Obama mentioned student loans in the State of the Union, and the AIA hopes to capitalize on a growing national concern about debt by passing a National Design Service Act. This would

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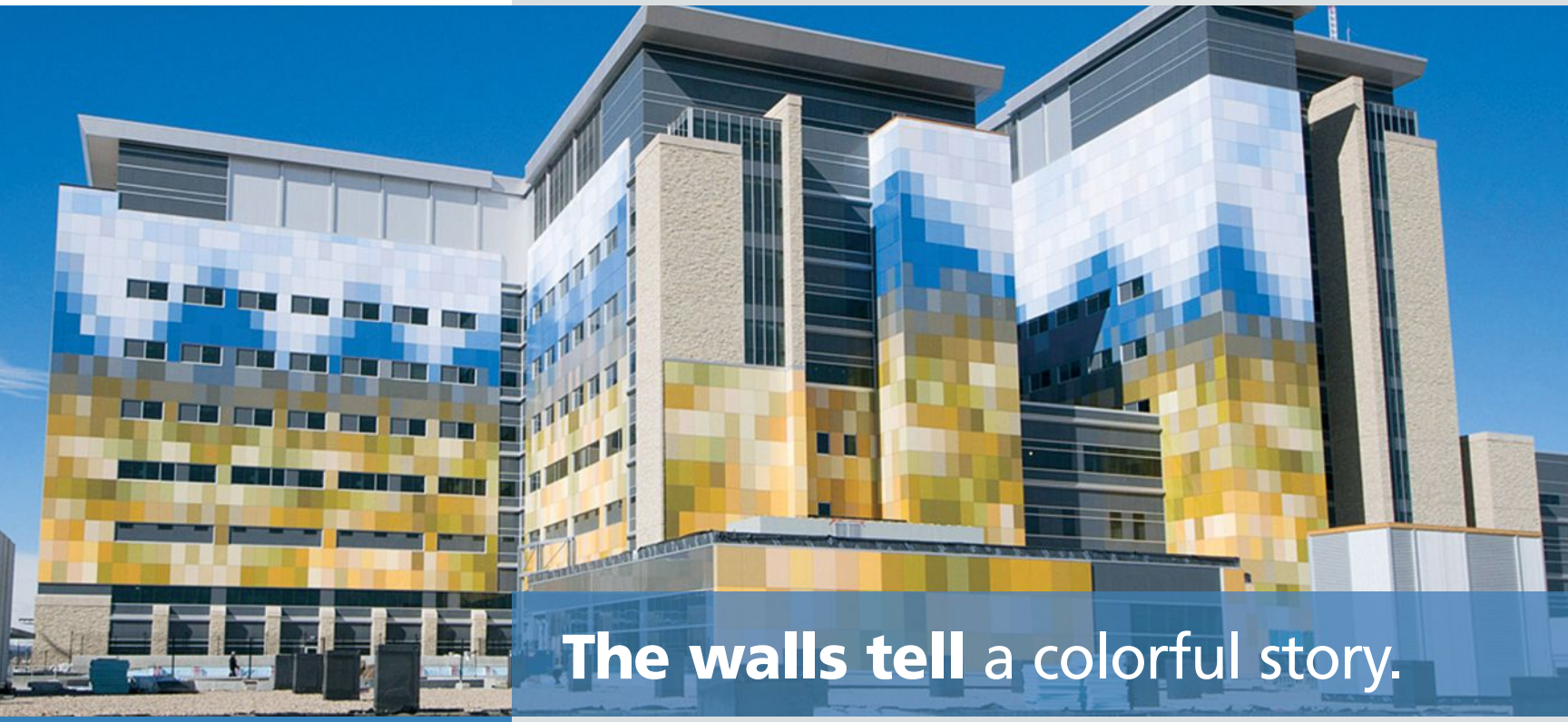

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The future of the profession not only hinges on educating emerging architects, Goldberg points out, but also the incoming Congressional representatives themselves. Many successful pieces of legislation—like the 2030 federal targets—were passed before some members of Congress started their terms. "One of our priorities is educating Members of Congress about the importance of existing policies so that they understand their value," Goldberg says.

The AIA also hopes to better inform its members about how they can help lobby a shared agenda. Just as architecture has become an ever more layered and complex process, so, too, has politics. Making sure that policymakers hear and understand your goals is a multifaceted approach. "The days when you could simply have the D.C. lobbyist go up to the Hill are gone," Goldberg said.

To that end, the AIA is calling this the year of the advocate. "We are working to empower architects so that they can advocate in D.C., at the state level, and within their local government," Goldberg says. "It doesn't have to be much. It can be a small investment, like sending one message to Congress, or sending a small contribution to a PAC. Every bit helps."

In addition to the usual tactics—lobbying, contacting representatives, writing and placing op-eds in key publications—things like social media are becoming invaluable, Goldberg says. We live in an era where a hashtag can be as powerful as a trip to Capitol Hill. "Politicians are looking at Facebook and Twitter, and you have to use those tools to break through the news and the clutter," Goldberg says. "Decisions are going to get made this year about the built environment, whether architects are there or not, so let's make sure that we're engaged and at the table. We're not small. Eight-six thousand members can do quite a lot."

POLITICS AND PRACTICE: A PRIMER

Susannah Drake, AIA, founder of Brooklyn, N.Y.–based Dlandstudio,

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understands how political cycles affect a firm's business. Drake has navigated several complex, multiagency projects through the political system, including Sponge Park, her design for an environmental overhaul of the Gowanus Canal. That project alone required more than 200 permits. "I have a vision in my practice that is rooted in community and environmental activism, and to the extent that I can make that vision align with a political vision, I can get more done," Drake says. Here, she offers a few tips for architects hoping to use the political system to support their work:

Get to Know Your Local Leaders

When Drake was a young mother, she would sit on the front stoop of her house in Brooklyn with her kids. Inevitably she would have conversations with neighbors and others about local politics, and Drake soon got to know the key players who made things happen in her community. Wherever you live, Drake says, find your equivalent of that front stoop. "I make sure to run into community representatives on the street and at events in order to maintain these ongoing, casual conversations."

Follow Politicians on Social Media

Drake follows the blogs, tweets, and Facebook pages of her city council people and of those in neighboring districts. By staying on top of their personal priorities, Drake can more successfully advocate for her projects by showing how they dovetail with political agendas.

Get to Know Staffers

The electorate can be fickle, and politicians come and go, but agency staffers often survive multiple administrations. "My city council person has term limits, but there are staffers who have worked there for 20 years," Drake says. "That history of how things have happened, and how things get done, is critical."

Think Like a Designer About Politics

Drake equates politics to urban design, with myriad hidden influences affecting how things happen. "There are all of these different agencies controlling the city, and it's the same thing for the political decision process," she says. "Designers are skilled at unpacking complicated systems. So apply that to politics to understand the true reasons behind the way politics happen."

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“These guys are not just beam-and-column engineers. They’re designers. I swear, they’re like architects, but they just happen to practice engineering.”

The Creative Engineers of Studio NYL by David Hill

Colorado School of Mines, a small engineering university in the old-west town of Golden, has never been known for its architectural legacy. Most of the school's buildings, even the historic ones, are unremarkable. But one stands out: Marquez Hall, home of the petroleum engineering department. Designed by the Seattle office of Bohlin Cywinski Jackson (BCJ) with Denver-based partner Anderson Mason Dale Architects, the building dazzles with a gravity-defying cantilevered roof that extends 60 feet over a glass-enclosed entrance lobby.

It's exactly the bold statement BCJ principal Robert Miller, FAIA, had in mind when he helped design the 87,000-square-foot facility, completed in 2012. Still, even Miller was prepared for the inevitable compromises that occur when projects go from concept to reality. "We wanted to push the limits a bit," he says. "But we also thought, 'We'll probably need to put some columns in there somewhere.'"

Given potential snow loads and wind forces, not to mention budget constraints, Miller concedes that using columns "would have been a much simpler solution." But columns—whether along the outside perimeter of the overhang or as part of the curtainwall—would have diminished the effect of the roof's cantilever.

Miller and his colleagues found themselves working with Christopher O'Hara, a young structural engineer from nearby Boulder. He and his partner, Julian Lineham, launched Studio NYL (now 13 employees) in 2004. "We're always pushing," O'Hara says. "We like to hear the initial vision, before the compromises, and figure out how to make it happen."

In discussions about Marquez Hall, Miller recalls, "Chris kept saying, 'We can do a big cantilever. We just need enough backspan.' We said, 'We have the entire building as a backspan. Can we use that?' The conversation just kept steamrolling forward. Before we knew it, the roof was entirely cantilevered."

One of O'Hara's solutions was to support the roof plane with a pair of tapered box girders that project from the back end of the lobby to the outer edge of the roof. From ground level, the taper is imperceptible, so the roof appears impossibly thin and flat. "An illusion," O'Hara says. Two angled, fin-like steel columns inside the lobby help support the box girders, but otherwise the space is open and drenched in sunlight during the day. "We're not the ones who came up with the idea of a cantilever," O'Hara says. "We just gave the architects the ammunition to say, 'Yes, we should be doing this.'"

"There's Nobody Out There We Shouldn't Be Working With"

Design-focused engineering firms have a storied tradition, particularly in Britain, where companies like Arup have long taken a holistic approach to engineering and architecture. But Studio NYL, as a boutique firm, can offer the kind of personalized services that large firms simply cannot provide. "When you hire us," O'Hara says, "you get us. The work doesn't get handed off to some B team, because there is no B team." Which helps explain why Studio NYL has landed high-profile clients like Gensler, Sasaki Associates, Payette, and Rojkind Arquitectos. O'Hara admits there's another factor behind the firm's rising profile: "They compare us to Arup, and say, 'These guys are much more affordable' because we're in Colorado."

Sitting at a glass conference table in their office, O'Hara, 41, and Lineham, 49, are a study in contrasts,

Marquez Hall

NIC LEHOUX

despite their oddly similar physical appearance. "I'm the obnoxious New Yorker," O'Hara says, "and Julian's the reserved Londoner."

Lineham began his career at London-based YRM Architects before joining the engineering firms Campbell Reith Hill (now CampbellReith) and Oscar Faber (now part of AECOM). In 1997, however, he and his wife moved to Boulder, eager to "live more of an outdoors life," he says. He took a job at Loris and Associates, a small civil engineering firm.

Meanwhile, O'Hara got his start at New York–based M.G. McLaren Engineering Group and at London-based structural engineering firm Dewhurst Macfarlane and Partners, where he worked on projects with Rafael Viñoly Architects and what was then Studio Gang/O'Donnell. By 2001, however, he was burned out. During a Colorado ski vacation, he spent a day visiting local engineering firms, including Loris. There, he met Lineham, and the two hit it off immediately. "Julian kept badgering me until I moved," says O'Hara.

After launching Studio NYL out of O'Hara's home, they went knocking on doors of Colorado architecture firms. They pitched themselves as designers who just happened to be structural engineers; creative thinkers, not number crunchers. "We started to get into a little trouble," Lineham says, laughing. "We had this idea

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that we wanted to elevate the level of design in Colorado. Certain people appreciated that, but others thought we were a bit arrogant."

Still, they landed some small-scale institutional commissions around Denver, and some high-end residential projects in Boulder and Aspen. Eventually, O'Hara says, "We got to the point where we said, 'There's nobody out there we shouldn't be working with.'"

In 2010, Michel Rojkind asked Gerardo Salinas, AIA, to join his

La Cineteca Nacional

PAÚL RIVERA

Mexico City architecture firm as a partner. Salinas had spent seven years in Denver working for Anderson Mason Dale. "I knew the projects [Studio NYL] had worked on were complex and challenging," Salinas says. "They were not afraid to do anything." Even before he left for Mexico, Salinas asked them to collaborate with Rojkind.

For a new three-story Liverpool department store in the Mexico City suburb of Interlomas, O'Hara and Lineham devised the engineering for a curved, double-layered stainless-steel façade that glows at night. Presented with Rojkind's design, based on the idea of interlocked fingers of two

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hands, they began to ask questions: How do we make this as simple as possible to build, given the project's aggressive construction schedule? How do we make it light but strong? And how do we involve as many local tradespeople as possible? O'Hara came up with a system using aluminum fins attached to the building's concrete structure, which support the façade's stainless-steel panels.

Studio NYL has now become an integral part of Rojkind's creative team. Other projects in Mexico City include a second Liverpool department store with a honeycomb façade made of aluminum, steel, and fiberglass (see June 2014, page 274); a perforated steel-and-glass canopy for La Cineteca Nacional, Mexico's national film archive; and a Chedraui supermarket with a glass-fiber reinforced concrete façade. Salinas calls it a "true collaboration." "With Chris and Julian," he says, "we're constantly exploring different methods and systems. It's not just about figuring out how a building is going to stand up. Is there a better way to do it? Is there a way that enhances the architecture?"

Sasaki's Leap of Faith

In 2013, Salinas and O'Hara gave presentations on their projects at a conference in Chicago. Brad Prestbo, senior associate with Sasaki Associates, was in the audience. "Chris's talk was a really fresh take on structural engineering and the integration of façade design into building systems," Prestbo says.

Studio NYL ended up signing its largest-ever contract, to do engineering and façade work with Sasaki for four new buildings at Mexico's Tecnológico de Monterrey, part of a massive campus redevelopment project. Prestbo admits it was something of a leap of faith for Sasaki, which tends to work with Arup, Burrow, and LeMessurier. But given Studio NYL's work with Rojkind, he says, it made perfect sense: "These guys are not just beam-and-column engineers. They're designers. I swear, they're like architects, but they just happen to practice engineering."

In 2012, O'Hara and Lineham created a dedicated façade division called The Skins Group. But despite their growth, the partners remain committed to elevating the quality of design in Colorado. They point to the new science-education center at Denver Botanic Gardens. Studio NYL worked with Denver-based Burkett Design to devise a roof and façade system using hexagonal-shaped panels of Swisspearl, a fiber-cement material generally used for vertical walls. "I'd like to see our best work done in Colorado," O'Hara says. "It's important for us to be able to see things being built, to be part of the process. It's not just about designing something and walking away."

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Even though the economy is improving, hoteliers still need smart solutions to maximize occupancy and make the best use of maintenance budgets. Photo Courtesy of Sherwin-Williams

LEARNING OBJECTIVES

After reading this article you will be able to:

1. Explain how a sealed resinous flooring system is advantageous for hotel kitchens and food prep areas.
2. Describe what features are important for coatings specified on pool decks.
3. Explain how an exterior coating system can help to reduce energy use and increase occupant comfort.
4. Explain the purpose of intumescent coatings and why they are specified in some hospitality settings.
5. Know how certain advanced coatings can help to improve the quality of indoor air.
6. Identify a type of exterior coating that can reduce heat transfer and help lower energy costs.

Presented by:

CONTINUING EDUCATION

CREDIT: 1 LU

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Use the learning objectives above to focus your study as you read this article.

Visit http://go.hw.net/AR215Course2 to read more and complete the quiz for credit.

By Cathy Brugett in collaboration with Joe Kujawski

By most accounts, the hotel industry in the United States is enjoying a growth spurt that it hasn't seen since the 1970s. In fact, Smith Travel Research reports that hotel occupancy rates in the United States are at an all time high, and new construction projects at the beginning of 2014 were up 16% over the preceding year. That trend is expected to continue well into 2016. While much of that new construction has been focused on small, boutique hotels and large convention centers in urban areas, the hotel sector leading new construction projects for U.S. chains is the so-called 'select service' segment. These properties don't offer ballrooms or fine dining, but they typically include fitness rooms, business centers, pools, laundry rooms and modest food service—making them an economical choice for modern travelers without eliminating popular amenities.

The industry's growth is being driven by a number of factors. The 2015 Dodge Construction Outlook® points to bank lending standards being eased for commercial loans, making it easier for investors to secure financing for new construction and remodeling projects. Citing strong escalation in business and leisure travel, combined with rising occupancy and room rates, the report projects a 14% increase in square footage and a 17% increase in hotel industry revenues in 2015. Improving employment figures also puts more disposable income in the pockets of individual travelers, and a growing senior population with the time and money to travel have all contributed to sustained momentum in the lodging market.

But with growth in demand comes growth in competition, and that's driving hotel-to-hotel renovations and upgrades designed to attract a larger share of travelers' dollars.

"Last year was a record breaker for hotel renovations in the U.S.," says Bjorn Hanson of the prestigious Preston Robert Tisch Center for Hospitality at New York University, "with one out of five existing properties getting an upgrade."

Regardless of whether it involves new construction or a major upgrade, the coming year presents an opportunity for hotel companies to capitalize on this fresh momentum in the travel industry by improving their image with customers. From the moment they walk into the lobby, guests begin to form an impression. As they check into their room, dine in the hotel restaurant, or take a dip in the pool, first impressions give way to decisions about whether

to return to the same property in the future, or book a room elsewhere on their next trip.

Experts agree that, despite the bright forecast for increasing demand for hotel rooms, one of the greatest changes influencing the hospitality industry stems from the internet. Long gone are the days when a person had to actually call a hotel to make a reservation. Today guests have instant access to room availability, transparent room rates, and extensive reviews posted online by fellow travelers. The impact of a single bad impression will be magnified by on-line word of mouth, while positive postings can dramatically enhance demand. With so much at stake, it's more critical than ever that architects and designers allocate their client's construction and remodeling budget wisely to maximize value and satisfy the evolving demands of modern travelers. "*Clients today want more for less," says Bill DuBois, Northeast Region specifications leader for Gensler. "They have smaller budgets and less time, so that puts a lot of pressure on us to get the job done fast, but still find ways to create innovative designs that are also cost effective.*"

State of the art coating systems contribute to these goals by offering more flexibility than ever—providing attractive coating options throughout the property, fast dry times to reduce downtime during renovations and repaints, and significant savings in ongoing maintenance and energy costs. There are high performance coating systems engineered for virtually every space in your client's property—from floors and walls, to advanced roofing systems.

A cost-effective roof coating system can save thousands of dollars in energy and long term maintenance costs. Photo Courtesy of Sherwin-Williams

SMART INVESTMENTS START AT THE TOP

A leaking roof can cause costly damage and premature deterioration of the building envelope. Yet tearing off and replacing a roof can punch a deep hole in a hotel's operating budget and dramatically undermine guest satisfaction due to the noise, dirt, and the general disruption of such a large renovation project. Nevertheless, hotels can rarely afford to shut down while work is completed. Fortunately, a fluid applied roofing system can extend the life of the existing roof system by as much as ten years, while virtually eliminating disturbance to guests and staff. Formulated for application over existing metal, single-ply, concrete, polyurethane foam and asphalt roofing materials, a high quality fluid applied roof system is engineered to create a water tight membrane. Available in both elastomeric and fabric-reinforced formulas, fluid applied roofing systems eliminate the need to tear off the old roof and allow hotels to carry on 'business as usual' throughout the process.

While these advanced roofing systems are easy on guests and workers, they provide hard working defense against wind driven rain, blistering, chalking or flaking, and can be installed at a fraction of the cost of a new roof installation. With none of the hot kettles or flames required for asphalt roof applications, fluid applied systems are safer, and offer significant environmental benefits. The highly reflective white color of a fluid applied system reflects 85% of the sun's radiant heat, and according to EnergyStar.gov, a white reflective roof can reduce surface temperatures by up to 100% over a conventional black roof. This decreases the amount of heat transferred into the building and reduces energy consumption by lowering cooling costs.

New coating technologies give owners of hotel properties in hot, sunny climates a new way to beat the heat. Photo Courtesy of Sherwin-Williams

BEAT THE HEAT, CUT COSTS WITH SOLAR REFLECTIVE COATINGS

Another innovative way to help clients beat the high cost of maintaining a comfortably cool interior is by specifying an exterior coating that reflects solar rays back into the atmosphere. This revolutionary type of coating is engineered with advanced infrared technology, so buildings painted with an IR reflective coating deflect, rather than absorb, heat. Because the building's surface remains cooler, less heat is transferred through the building envelope, helping to reduce the energy required to keep interior temperatures cool. Solar reflective coatings are typically offered in a palette of colors that have been selected to maximize the heat-reflecting qualities of the formula. For maximum performance in climates where heat and moisture combine to pose a double threat to masonry substrates, the solar reflective masonry coating you specify should also be formulated to resist moisture penetration. This will resist the premature chalking or blistering that are common to standard masonry coatings exposed to intense sun, salt air, and wind driven rain.

First impressions say a lot about a property's commitment to comfort, quality, and cleanliness. Photo Courtesy of Sherwin-Williams

MAKING FIRST IMPRESSIONS COUNT

Appearances can make or break a guest's favorable opinion of an individual hotel. "*First impressions are lasting impressions," says Timothy Sefchok. As senior director, interior design, of Global Design Americas, Mr. Sefchok is employed by Marriott International. "The hotel guests today are design savvy and expect a higher level of quality finishes. Guests walk in and immediately form an opinion about the property.*" Furnishings, décor, and color schemes must appeal to a broad spectrum of clients, and wall finishes play an important role in supporting the overall ambiance. "*We've been seeing a big trend toward painting the entire guest room, even the bathrooms, rather than using wallcoverings", says Patricia Richey, Hospitality Interiors Principal at tvsdesign. "Paint has a fresher appeal, and it can feel more residential, which is something guests want these days*".

Thanks to their versatility, latex paints are frequently specified in hospitality settings. Available in a wide range of shades and sheens, latex paints typically have less odor and lower VOCs than solvent-based coatings, but their formulas differ widely in terms of performance. "*Cleanliness is extremely important, so we always have to think about the operational aspect of a coating," adds Mr. Sefchok. "How will the coating be cleaned? How will our engineers or housekeepers be able to maintain it? When we specify a coating, we always think about the product's longevity, and whether it will last through our renovation cycle.*" Consequently, a key attribute to consider when specifying a coating for a commercial property is the coating's ratio of volume solids to liquids. Premium latex paints with a greater ratio of high quality solids to liquid require fewer coats to deliver excellent hide and longer lasting durability, although it's noteworthy that inferior 'filler solid' such as clay, will not enhance hide or produce lasting performance. For this reason, it pays to specify coatings from an established and reputable paint manufacturer.

Premium latex coatings are also engineered to withstand the routine scuffs, abrasion, and burnish marks that are inevitable in any hospitality setting. In food service areas such as breakfast rooms, look for latex coatings that are formulated with cross-linking technology. This advanced chemistry forms a highly resilient film surface that resists stains and water spotting, making it easier for maintenance crews to keep surfaces clean and fresh looking. This is a crucial consideration, considering that in at least one study, 76% of hotel guests rank 'dirty or untidy rooms' as the thing they "hate most", and every year, Tripadvisor publishes an annual list of the dirtiest hotels! Clearly, coatings that can be washed repeatedly and still retain their fresh appearance are a major asset to a well-maintained property.

Another way for discriminating hoteliers to distinguish their properties from the competition is with a distinctive textured wall finish. The rustic look of a Tuscan villa, the warmth of Southwestern stucco, or distinctive 'splatter' or 'orange peel' effects are appealing to guests, and offer advantages over typical vinyl wallcoverings. "*We often do knockdown finishes on walls that used to be vinyl because owners were finding that the vinyls were tearing, and once they were damaged they were difficult to repair," explains Marc Mussachio, Partner, Mussacho Architects, "but labor cost is definitely an issue with knockdown finishes, and it can be difficult to get a consistent look throughout the room.*"

One cost effective alternative to the additional labor and potential inconsistency of traditional knockdown finishes is a high build, texture coating that is optimized for high pressure spray application. By adjusting the spray tip, various effects can be achieved in a fraction of the time required using conventional techniques. Some high-build texture coatings are tintable as well, so the additional steps of priming and topcoating are also eliminated. That's important, says Mr. Mussachio, because applying two or three layers of paint over a traditional knockdown surface affects the look of the finish, making it look smoother than desired. "*A tintable product would be an asset,*" he adds. Also, because the color is infused in the coating, bumps and scrapes are far less likely to mar the look of the finish. In new construction, a premium high build texture coating can take a Level 4 drywall finish to a Level 5 basecoat, and is a cost effective solution for hiding surface flaws in gypsum board.

While many latex coatings are sufficiently durable for diverse areas in your client's property, they can fall short in high profile, high traffic areas where walls take a lot of abuse from the constant flow of people, luggage trolleys, and wheeled suitcases.

Standard architectural coatings found in MasterFormat® section 099123 for interior paint may quickly show signs of wear when they're subjected to abrasion and frequent cleaning, forcing hotel owners to repaint more frequently. The heavy duty 'industrial' coatings found in MasterFormat section 099600 are formulated for harsh industrial environments, so although they're very durable, they typically have limited colors and sheens options, making them aesthetically unacceptable for lobbies, guest rooms, corridors, and other public spaces. Fortunately, a new generation of high performance coatings eliminates the need to compromise between a coating that looks beautiful but wears tough.

These technologically advanced acrylic coatings are formulated with greater durability than traditional architectural coatings, require no special equipment to apply, are typically fast drying, and available in a broad selection of sheens and colors to suit any aesthetic requirement. Because they are water based, these coatings usually have less odor and lower VOC levels than most solvent based or epoxy coatings, and some are GREENGUARD® Certified for low chemical emissions into indoor air during product usage. That makes it easier to meet the criteria established by the Leadership in Energy and Environmental Design (LEED®) and to comply with the Green Globes® Certification established by the Green Building Initiatives®.

Any place where moisture, heat, abrasion, and harsh cleaning agents can quickly ruin the finish of an architectural coating, such as hotel spas, kitchens, restrooms, or workout rooms, is a perfect place for a high performance, water based acrylic coating system. The most demanding environments, such as indoor pool areas, require the specification of water based catalyzed epoxies to withstand the constant humidity and pool chemicals common to these applications.

Being able to breathe freely in a quiet, healthy environment earns high marks from guests and helps to build a loyal clientele. Photo Courtesy of Sherwin-Williams

The Right Coating May Help Improve Guest Comfort

One of the many challenges every hotel or resort manager confronts is ensuring that the air that guests breathe is fresh and smells clean. "*Anytime we specify paint," says Ms. Richey, "we always look for products with low VOCs because most properties conduct renovations while other areas of the hotel are still operational, so our biggest concern is to avoid guest complaints due to paint odors.*" Taking paint chemistry a step beyond less odor and low

VOC formulas, technologically advanced latex coatings have recently been introduced that help to improve indoor air quality by reducing airborne concentrations of formaldehydes and other aldehydes. Because this unique technology helps reduce the levels of these volatile organic compounds (VOCs) from potential sources like insulation, carpet, fabrics, and other building materials, this type of product is especially useful for new construction and renovation projects.

The most advanced coatings combine formaldehyde reducing properties with odor eliminating technology and mildew resistance. This can be particularly useful in hotel spas or workout rooms where odors tend to accumulate. The length of time these types of products actively reduce odors and formaldehyde depends on the concentration, the frequency of exposure, and the amount of painted surface area.

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QUIZ

1. A fluid applied roofing system can save money and help to reduce energy costs, thanks to what attributes?
   a. It is less expensive than traditional asphalt roofing systems and absorbs solar energy, helping to maintain comfortable interior temperatures
   b. It can extend the life of the existing roof, and the reflective white surface decreases heat transfer to the building interior
   c. Because fluid applied roofing systems are far thicker than traditional roofing materials, they prevent heat transfer through the building envelope
   d. A fluid applied roofing system meets EnergyStar standards, so clients qualify for tax credits

2. In a premium latex coating, why is the ratio of volume solids to liquids important?
   a. A higher volume of solids relative to liquids results in truer color rendering
   b. Typically, exterior coatings have a greater ratio of solids to liquid.
   c. A greater ratio of high quality solids to liquid contributes to better hide and longer lasting durability
   d. A larger ratio of volume solids to liquids leads to faster dry times for improved productivity

3. In addition to offering enhanced sound control at lower cost than conventional wall panels, some high density glass textile acoustical wall surfacing systems offer what additional advantages?
   a. They are only ¼" thick, and resist mold and mildew.
   b. They are fire resistant and cleanable.
   c. They're available in a wide range of textures and patterns, and can be topcoated in virtually any color
   d. All of the above

4. Generally speaking, a urethane slurry floor coating system is particularly suitable for what area in a hotel property?
   a. In the kitchen, thanks to it's seamless, non-slip surface that is highly impervious to grease, heat, moisture, and abrasion
   b. In the lobby, due to its polished sheen and attractive color options
   c. As an underlayment to carpeting, helping to deaden sound between floors
   d. On an exterior pool deck, because it has high resistance to UV rays

5. Under what circumstances would you be most likely to specify a thin film intumescent coating?
   a. Any place where it is required to comply with the PFP requirements of Underwriters Laboratories.
   b. Where exposed steel beams or girders must meet a higher level of aesthetic standards.
   c. On any project where time and money are top priority
   d. In back-of-the-house applications where aesthetics are less critical

6. Writing a Coating Maintenance Manual into your specifications is advantageous to your and your client. Why?
   a. A Coating Maintenance Manual is an excellent blueprint for painting contractors, insuring that what you specify is precisely what is applied.
   b. A Coating Maintenance Manual will stipulate the types of cleaning agents that are acceptable for use on each distinct coating
   c. A Coating Maintenance Manual protects your client by transferring responsibility for coating maintenance to the painting contractor
   d. A Coating Maintenance Manual makes it easy for owners to know exactly what coating products were used in each area of their property, so future touch ups or repaints are facilitated

7. How do you determine the life cycle cost of a coating system?
   a. Divide the initial cost of the material by its expected lifecycle to get a per-year analysis of your client's total investment
   b. Add the initial cost of the labor and material and divide that total by the expected lifecycle of the coating
   c. Subtract the cost of the coating from the cost of the labor and divide that by the expected lifecycle of the coating
   d. Multiply the number of years in the coating's expected lifecycle and divide that by the initial cost of labor and materials

8. Of the following options, which is the best way to improve the indoor air quality of a hotel?
   a. Recommend a high-tech coating that is not just lower odor and low VOC, but also reduces existing airborne concentrations of formaldehydes and aldehydes
   b. Complete all painting projects when the hotel is closed for renovation
   c. Recommend wallpaper whenever possible
   d. Only specify latex coatings

9. Pool decks pose special challenges for property owners. Which of these types of coatings can provide an attractive, slip resistant finish with the durability to resist moisture and UV rays?
   a. A flexible concrete waterproofing coating
   b. A high build, elastomeric coating system
   c. A decorative concrete finish that can bridge minor cracks
   d. An IR reflective coating that deflects solar rays

10. The most efficient way to 'beat the heat' and reduce energy costs in warm climates is to specify which of the following?
    a. Specify exterior colors with cool gray undertones
    b. Specify solar panels on roof tops
    c. Specify a solar reflective exterior coating that deflects, rather than absorbs heat
    d. Specify an exterior coating that has zero VOCs

PROPER BRICK MASONRY DETAILING

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LEARNING OBJECTIVES

After reading this article you will be able to:

1. Identify the minimum requirements found in the building code to design masonry walls.
2. Describe the ways masonry walls resist moisture penetration.
3. Identify the best ways to design a masonry wall to avoid cracking and unsafe structural conditions.
4. Learn to design brick walls with interesting details while balancing performance and aesthetic issues.

CONTINUING EDUCATION

CREDIT: 1 LU

COURSE NUMBER: ARfeb2015.1

Use the learning objectives above to focus your study as you read this article.

Visit http://go.hw.net/AR215Course1 to read more and complete the quiz for credit.

By Marissa Hovraluck, LEED Green Associate

INTRODUCTION

Nothing good ever happens when water gets into walls. The water penetration can result in water entry into the interior damaging finishes and causing mold or lead to efflorescence, staining, spalling, corrosion, or even reduced insulating capacity. Since over 80 percent of all lawsuits relating to building failures are the result of water penetration, it is important to look more closely at how to design and detail masonry walls accordingly.

The keys to providing water penetration resistance are: using quality materials, using good and proper construction techniques, properly detailing the wall and maintaining the wall over time. Although masonry is known for its low maintenance characteristics, it still requires some routine maintenance over time. All of these keys to preventing water penetration will result in a happy owner and a good performing building that everyone can be proud of.

Many people talk about the four D's when discussing ways to reduce moisture penetration: deflection, drainage, drying and durable materials. The first way to reduce moisture penetration is through deflection, or keeping water off of the wall in the first place. The next way is drainage, which is the removal of surface water from an area. Another way to reduce moisture penetration is by designing the wall so that you drain any moisture that does happen to penetrate the wall. The wall should be allowed to dry, as it will need to dry out any water that has entered the wall to avoid damage. This drying process is often done using an air cavity that may be vented. Finally, it is important to use durable materials that aren't sensitive to moisture and can last a long time. In addition to the four D's, this course will discuss the proper detailing of brick masonry. It provides information on the basic details to allow for brick masonry to last a lifetime and provides details to create interesting designs in brick without costing too much money for your project.

BASIC WALL TYPES

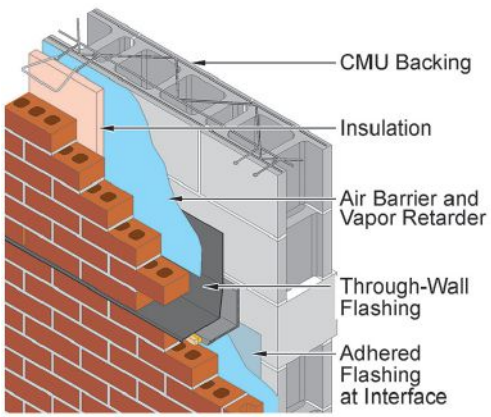
There are three basic wall types when considering water penetration: drainage walls, barrier walls (also known as mass walls) and single wythe walls. Single wythe walls combine principals from both drainage walls and barrier walls. Over decades of use, we have found out that drainage walls tend to work the best when trying to resist moisture. While barrier walls can also resist moisture, the thickness needed to keep the water out is either too great, or the drainage plane has to be too perfect for common use in our buildings today.

A famous masonry consultant from Texas, Clayford T. Grimm, has said, "A four-inch nominal wythe of brick masonry, no matter how built, by whom, or of what never stopped a wind-driven rain." A pretty strong statement, but you know what? He is right. You should not expect a single wythe of brick masonry to be waterproof. While it may resist all water in some buildings, it is better to assume that some leakage will occur and design our walls based on this.

DRAINAGE WALLS

Sometimes we can get into intense discussions about how and why brick walls leak. Does the brick leak? Or, does the mortar leak? In many cases it doesn't matter how the water gets in, it just matters that it may get in and we design for that. In reality, the bricks don't leak and the water rarely goes directly through the mortar. The water generally gets in between the brick and the mortar, mostly through unfilled mortar joints.

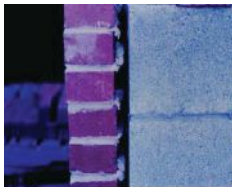
In a drainage wall, water travels down back side of the outer wythe, is collected on the flashing, and then is channeled to the exterior through weep holes. Some examples of drainage walls include cavity walls, brick veneer walls, and rain screen walls. A good masonry drainage wall includes: a 2 to 4½ inch clear cavity, a moisture, air, or vapor barrier, and flashing and weeps.



Here is a typical detail of a drainage wall with all of the elements called out.

It is always recommended to have a two inch air space behind the brick wythe to allow water to drain down to the flashing and weeps. Anything less than two inches can be easily bridged with mortar.

Nowadays, we are dealing with more insulated cavity walls where there is little room for the insulation, let alone the air space. For these walls, a one inch clearance is permitted between the back of the brick and the insulation. While it is still desirable to see a two inch air space here, it is understandable there are difficulties of keeping the wall system thin that prohibit the extra air space.



In the photo on the left, the air space is about ¾" inch, and the mortar is almost bridging the cavity allowing water to get deeper into the wall system. In the photo on the right, you can see a larger air space where it would be difficult to create bridges in that air space.

RAIN SCREEN WALLS

Rain screen walls diminish the forces that typically drive water into the wall assembly, such as: air pressure difference, gravity, surface tension, capillary action, and rain drop momentum.

Of these forces, air pressure difference is the dominant force with the potential to drive a considerable amount of rainwater into the wall assembly. The airspace decouples most of the cladding from the support wall, thereby reducing splash and capillary moisture transfer. Vents or weep holes at the top and bottom of the wall promote convective airflow, allowing moisture to quickly drain or evaporate from the air cavity. An air barrier in the wall is required to stop the passage of air completely through the wall system and allowing pressure differences across the wall to be equalized with the exterior.

MOISTURE RESISTANT LAYERS

It is important to have a second layer of defense in these wall systems. There are some barriers that keep help keep water out, in the form of bulk, or rain water or in the form of vapor. Weather resistive barriers, such as building felt, are used to redirect water that gets across the air space to the backing. While these can be effective in redirecting water, they don't have the added benefit of also stopping air movement. We have learned that stopping the flow of air through our walls is critical in reducing the amount of moisture flowing through on air currents. That is why air barriers are used in all wall systems, to stop the flow of air into or out of our buildings. Air barriers stop the air movement, but they are also vapor permeable, so as to let the wall breathe and dry. Vapor barriers or retarders stop water and the vapor flowing through the walls to reduce the potential of condensation from occurring.

THROUGH WALL MASONRY FLASHING

Through-wall masonry flashing's primary goal is to collect and redirect moisture that infiltrates a brick wall. It can also keep water out when it acts as a coping. It can break the bond between the brick and the foundation to avoid cracking. It can also prevent rising damp by acting as a dampproof course.

Through-wall masonry flashing is installed at any discontinuity in the cavity so it should be detailed: at the base of the wall, under window sills and window heads, at shelf angles, and under copings and caps. It should also be installed at locations not often considered as a risk, such as at transitions at a higher wall and lower roof.

These images show proper (left) and improper (right) installation of flashing.

Properly installed flashing should go up the wall approximately eight inches and fastened or installed into or onto the backing wall. Its outer edge should come flush to the face of the wall or extend out to form a drip edge. Incorrectly installed flashing that stops short of the wall edge is bad practice. Any water running down this flashing has a chance to go back into the wall below or sit on steel angles possibly leading to corrosion.

FLASHING MATERIALS

There are various flashing products on the market today. When choosing a flashing material, it is important to keep in mind the longevity of the wall system since the flashing will be expected to last at least that long. Flashing materials can be divided into three categories: sheet metals, composite flashing, and plastic and rubber materials.

Sheet Metals

Stainless steel and copper are commonly used as a flashing product, and since copper is very expensive it is not used as often and it is rarely seen any more. Stainless steel possesses excellent weather and chemical resisting properties. Preformed sections must be properly sized so that modifications on the site are minimal. The typical thickness of metal

flashing is 0.010 inches. Lapped sections must be soldered, which is often difficult to do in the field so sealant beads between the sections are used to create a lap. Stainless steel is currently the most durable product on the market.

Composites

Some companies provide flashings that are combinations of metals and plastics. Copper and stainless steel composites are popular since they combine the durability and malleability of metal with the non-staining characteristics of the coating. The coating is often Kraft paper or polyethylene. The composites are much easier to form in the field than their sheet metal counterparts. Composites containing aluminum should be avoided because they corrode when used in fresh mortar.

Plastics and Rubber

Plastics and rubber compounds are commonly used to make flashing membranes. The various types are easy to work with and tend to be less expensive than sheet metals. But since they are more flexible, they may need full support across an air space. Some may also degrade in sunlight and need to be used in conjunction with a metal drip edge.

Ethylene propylene diene monomer, or EPDM, is a synthetic rubber that is often used as a single ply roofing membrane, but now is often used as a flashing material, too. It has better low temperature performance than PVC and will not become brittle over time. It offers ultraviolet light and ozone resistance and can be left exposed.

Self-adhering, rubberized asphalt membranes consist of a composite of flexible plastic film for puncture and tear resistance combined with a rubberized asphalt adhesive layer. This material adheres to itself, requiring less effort to seal laps or corners which speeds installation. Because it degrades in the presence of extended UV exposure, it should not be left exposed and requires a metal drip edge. Manufacturers of plastic flashings should be consulted for documentation establishing the longevity of the plastic.

Polyvinyl chloride, or PVC, is a flashing membrane that has been used for years, but is usually not durable for a masonry wall that is expected to last for several decades. While PVC is usually chosen because it is inexpensive, it degrades in sunlight, is easily damaged and doesn't last very long. While using a thicker PVC material, such as 30 mils or more, will extend its life, it still may not be suitable for masonry walls.

Materials Not Recommended

Flashing materials that are not recommended include aluminum, since it corrodes in fresh mortar. Building felt is also not recommended since it is not water resistant over long periods of time. Finally, plastic sheeting is not recommended for flashing because it is too easily punctured and is not durable over the long term.

DRIP EDGES

Drip edges are commonly used with flashing to help force the water away from the wall, but designers may not like the appearance of a drip edge in their design.

Drip edges are a common detail for flashing. Drip edges provide the benefit of forcing water away from the wall. Without these drip edges, water running out of a weep would continue to run down the face of the wall. Designers are often apprehensive to include drip edges though due to their appearance. If it is decided that drip edges will not be used, then the flashing should come out to the face of the wall at a minimum and not be held back within the wall.

Often, flashing materials can't be exposed to sunlight, so a small metal drip edge is used in combination with flexible flashing. This creates a cleaner edge and may be deemed appropriate for a wall. In all cases, the metal drip edge goes underneath the through-wall flashing.

PROPER ROOFING/WALL INTERFACE

At the interface of a tall wall and a lower roof, through-wall flashing should be placed to drain out water from the higher wall element. Roof flashing and counter-flashing are not enough on their own since they don't deal with water that finds its way into the air space. When installed, the through-wall flashing should go all of the way into the cavity and then up the wall at least eight inches. When the roof slopes, stepped through-wall flashing is used.

END DAMS

When flashing is not continuous, such as at window heads or sills, the ends of the flashing should be turned up as a dam to water. The ends only need to be turned up one or two inches high in the head joint to be effective.

WEEP HOLES

The most desirable types of weeps are ones that extend the entire height of a head joint. While an empty mortar head joint can be used, vent type weeps are often preferred. These include mesh type weeps, cellular weeps, and plastic or coated metal weeps. Besides the advantage of draining water out of the wall, they can also be used as vents when designing a vented cavity wall or rain screen wall. Their placement should be directly on top of the flashing and be not more than 24" o.c. apart.

Some of the less desirable weeps are rope wicks and small diameter tubes, which can get easily clogged. They also cannot act as vents, which can help to dry out the wall system. If these types of weeps are used, their spacing should be no more than 16" o.c.

WORKMANSHIP

It is important to remember that some of the best design details may not keep a wall from leaking if the workmanship does not meet industry standards.

FULL MORTAR JOINTS

Getting full mortar joints is critical to proper performance of the wall. The mortar joints must be full to resist loads and keep water out of the wall. While we assume that brick walls may leak, having partially filled mortar joints will allow too much water in the wall. A workmanship practice called "clipping the head joints" is an example of poor practices that lead to leaky walls. This practice only places mortar at the outer edge of the brick, leaving the wall easily susceptible to water penetration.

CLEAR CAVITY

A clear cavity is also important for a properly performing drainage wall. If the mortar drops into the air space, it could clog it and create bridges for water to get across the wall system. Different practices used by the mason can assist in keeping the air space clean. Beveling the back side of the mortar bed is one method to ensure that mortar doesn't drop to the base of the cavity. A board in the cavity was once

recommended as a way to keep the cavity clear; however, that practice is not practical in wall cavities today. One means of keeping the weeps open and clear for drainage is using a drainage material at the base of the air space. This mesh material can handle quite a bit of mortar droppings before it would clog the air space.

Tooling Mortar Joints

Proper tooling of mortar joints help seal the wall from water penetration. The best mortar joint profiles that help resist water penetration are concave, "v" and grapevine. These profiles held shed water and the process compresses the face of the mortar making it denser and less susceptible to water penetration. Mortar joint profiles such as struck and raked joints do not resist water penetration and should only be used in arid climates.

LAPPED AND SEALED FLASHING

Lapping and sealing flashing is important for the mason to do. Sections of flashing should be lapped at least six inches and sealed with an appropriate mastic or sealant. Sealing the top edge of flashing at a termination bar should also be done to avoid water leaking behind it.

COATINGS

Colorless coatings and paints are used on masonry for a variety of reasons, but they often are not effective and may actually cause more damage. Many people use the term "sealers" since they want to reduce water penetration in the wall, but the proper term is water repellent. Many true "sealers" trap water in the wall and may cause deterioration of the units. Because of this issue, their use is questionable for brick masonry. If the application of a water repellent is necessary, then the coating must be breathable. Water repellents, based on silane or siloxane, are breathable and typically last the longest. It should be remembered that any of these coatings will have to be reapplied in the future.

CAUSES OF CRACKING

Cracking occurs in masonry walls for a number of reasons, but cracks in brickwork can be avoided by taking into account the various movements that occur within buildings.

- Differential Movement
- Restraint
- Settlement
- Elastic Deformations
- Creep

QUIZ

1. The keys to providing water penetration resistance is:
   a. using quality materials.
   b. using proper construction techniques.
   c. properly detailing the wall.
   d. All of the above

2. What are the three basic wall types when considering water penetration? (Select three)
   a. drainage walls.
   b. barrier/mass walls.
   c. double wide walls.
   d. single wythe walls.

3. True or False: Water generally gets in between the brick and the mortar, mostly through unfilled mortar joints.

4. Flashing materials can be divided into which of the following categories? (Select all that apply)
   a. sheet metals
   b. composite flashing
   c. plastic/ rubber
   d. wood

5. True or False: Drip edges are commonly used with flashing to help force the water away from the wall, but designers may not like the appearance of a drip edge in their design.

6. True or False: The most desirable types of weeps are ones that do not extend the entire height of a head joint.

7. Cracking occurs in masonry walls for a number of reasons such as:
   a. Restraint
   b. Settlement
   c. Creep
   d. All of the above

8. Which of the following is a horizontal expansion joint?
   a. Corner joint
   b. Shelf angle
   c. Corbelling
   d. None of the above

9. True or False: Corners are especially vulnerable to movement so an expansion joint should be placed somewhat near the corner at least on one side.

10. It is always recommended to have a _____ air space behind the brick wythe to allow water to drain down to the flashing and weeps.
    a. One inch
    b. Two inch
    c. Four inch
    d. Six inch

MOVEMENT

All materials move in different ways. Movements are caused by temperature and moisture conditions, elastic deformation or stresses being placed on masonry, and creep. To deal with these movements, a series of movement joints are placed into the wall to avoid stresses.

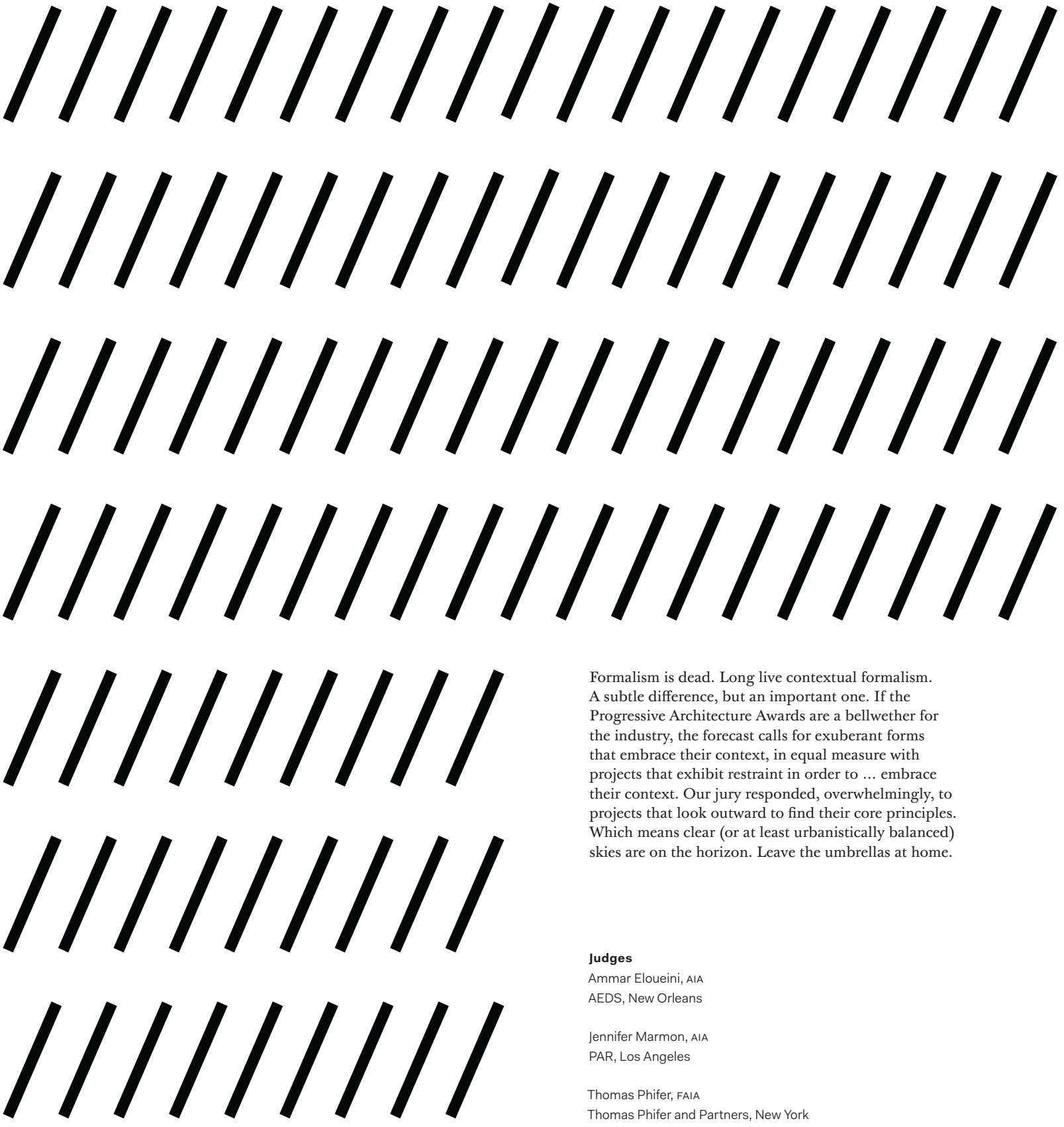
Visit http://go.hw.net/AR215Course1 to read more and complete the quiz for credit.

SPONSOR INFORMATION

THE BRICK INDUSTRY ASSOCIATION

The Brick Industry Association is the national authority on brick construction. The BIA has various publications to assist design professionals including the Technical Notes and Brick in Architecture. We also sponsor research to support the information we put into the Technical Notes. We also answer questions from architects, engineers, contractors, builders and homeowners.


p/a
62nd
Progressive
Architecture
Awards



Formalism is dead. Long live contextual formalism. A subtle difference, but an important one. If the Progressive Architecture Awards are a bellwether for the industry, the forecast calls for exuberant forms that embrace their context, in equal measure with projects that exhibit restraint in order to … embrace their context. Our jury responded, overwhelmingly, to projects that look outward to find their core principles. Which means clear (or at least urbanistically balanced) skies are on the horizon. Leave the umbrellas at home.

Judges

Ammar Eloueini, AIA
AEDS, New Orleans

Jennifer Marmon, AIA
PAR, Los Angeles

Thomas Phifer, FAIA
Thomas Phifer and Partners, New York

Honorable Mention

Ordos 20+10 Office Complex
Ordos, Inner Mongolia, China
NADAAA in association with Himma Studio

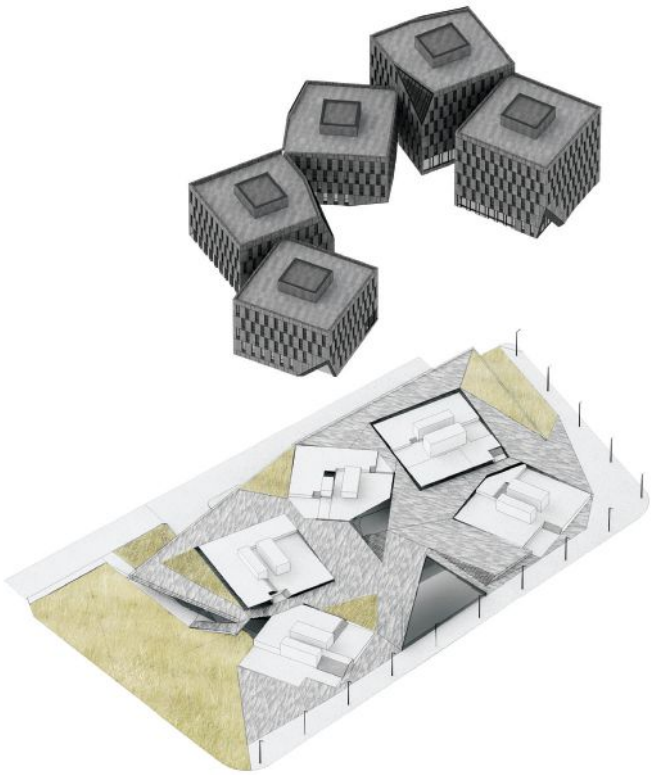
In Ordos, the 10-year-old boomtown in Inner Mongolia, the speed with which a project can be completed is a prime consideration. To facilitate rapid development, Boston-based NADAAA designed this office complex to meet a tight set of parameters.

Its site came with strict floor area limits and a prescribed 85-foot-square office floor configuration. Given these strictures, the challenge for the architects was to shape a complex with a distinctive identity that would meet further objectives: Effective vehicular and pedestrian access; flexibility in the assignment of office space, both horizontally and vertically; and shared open space to help make the project "greater than the sum of its parts."

NADAAA's solution houses the program in five cubic volumes, rotated at odd angles and connected variously at their corners or along their flanks. The resulting "necklace" of construction defines a shared plaza. The joining of modules is achieved with angular slices at their corners that can yield sheltered entries, glazed lobbies, or canted skylights for upper levels.

Since Ordos is located in a region of China with extreme temperature variations, environmental performance of the campus was crucial. An insulation value of R40 will be achieved in a façade of locally quarried stone slabs with operable triple-glazed windows, recessed to minimize solar gain. Offices are to be heated and cooled by radiant hydronic ceiling panels served by a geothermal loop. Stormwater runoff will be stored on site for nonpotable uses, including the filling of a reflecting pool to temper summer heat on the plaza. —JOHN MORRIS DIXON, FAIA

Massing and Site Diagram



Axonometric Section Diagram

"I like the restraint that was used here, and the sensibilities exercised in resolving the varied constraints. It was deftly handled."

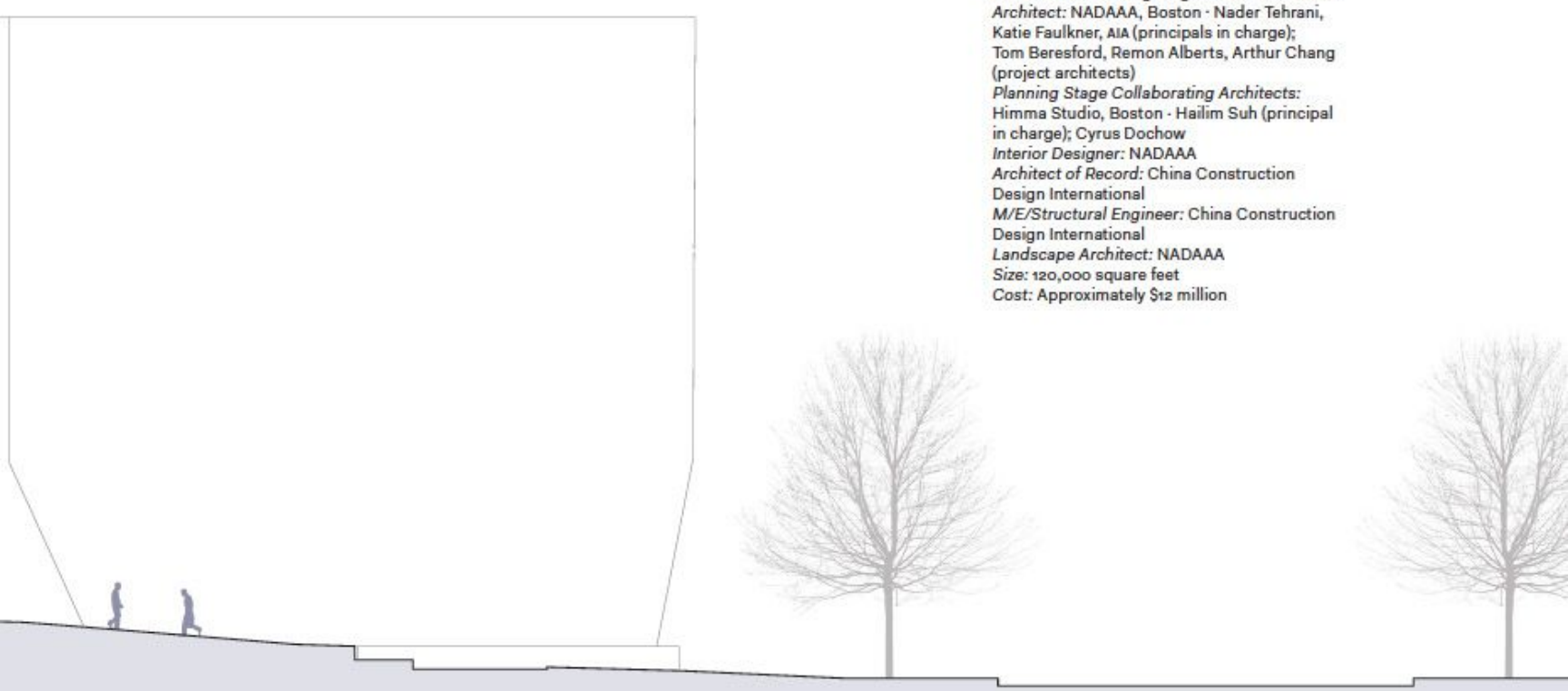
—Jennifer Marmon, AIA

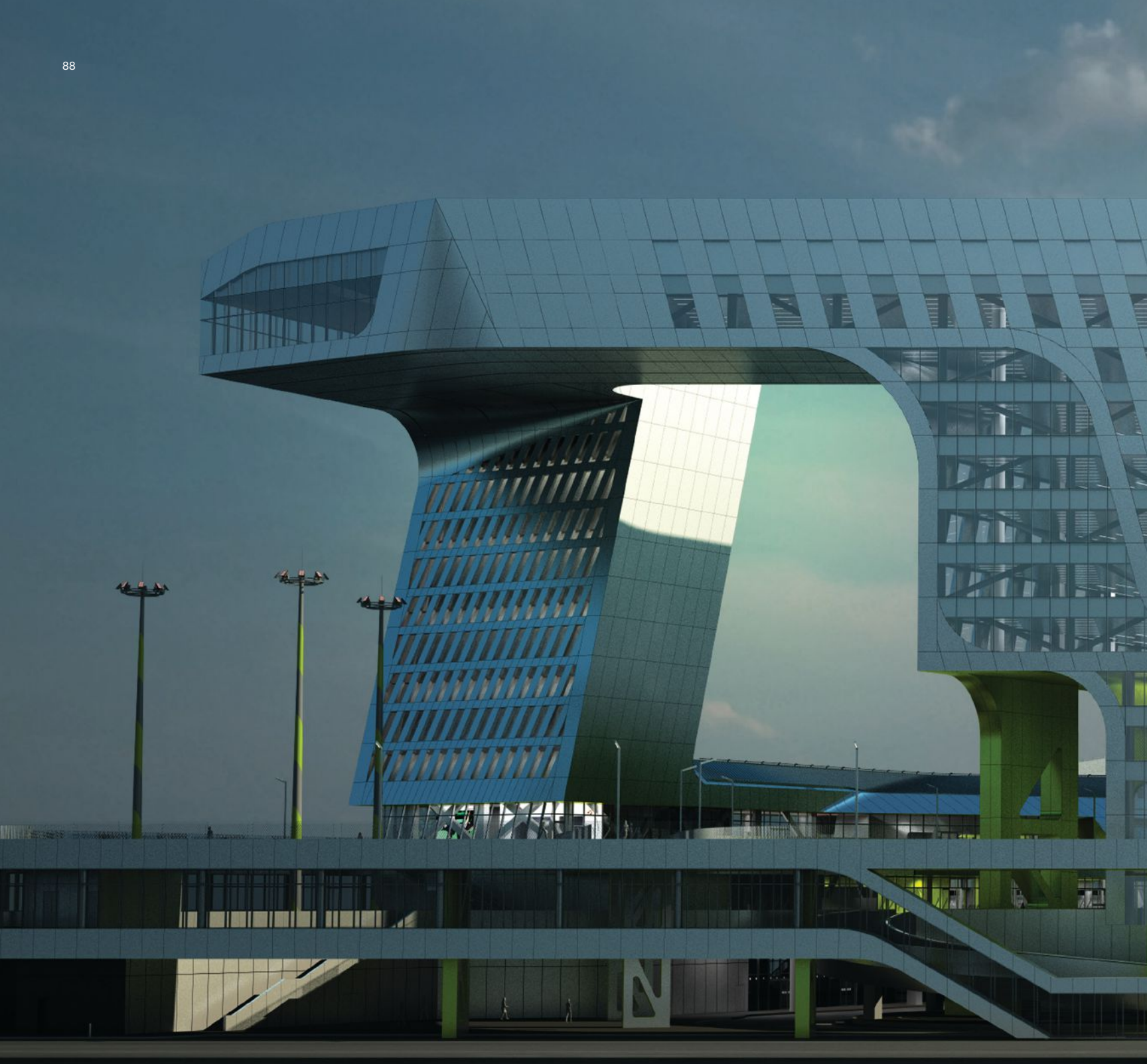
Office Building and Plinth Section

View of the office complex

Project Credits

Project: Ordos 20+10 Office Complex, Ordos, Inner Mongolia, China
Client/Owner: Shengbang Co. · Mr. Bai Yukuan
Architect: NADAAA, Boston · Nader Tehrani, Katie Faulkner, AIA (principals in charge); Tom Beresford, Remon Alberts, Arthur Chang (project architects)
Planning Stage Collaborating Architects: Himma Studio, Boston · Hailim Suh (principal in charge); Cyrus Dochow
Interior Designer: NADAAA
Architect of Record: China Construction Design International
M/E/Structural Engineer: China Construction Design International
Landscape Architect: NADAAA
Size: 120,000 square feet
Cost: Approximately $12 million





Citation

New Keelung Harbor Service Building
Keelung, Taiwan
Neil M. Denari Architects

"It's an iconic building, and it is a very personal expression of an architect that is executed in a very controlled and rigorous way."

—Ammar Eloueini, AIA

Previous Spread: View of the terminal building and cantilevered restaurant from the east

Taiwan's Keelung port, 14.5 miles northeast of Taipei, serves as many as 10,000 cruise ship passengers a day. Los Angeles–based Neil M. Denari Architects' New Keelung Harbor Service Building provides a new waterfront landmark by combining a 368,165-square-foot, three-level cruise ship terminal with a 230-foot-tall, 501,045-square-foot office building. Public amenities include boardwalks, plazas, and a restaurant.

The architects drew inspiration for the building's contorted forms from the local landscape, where mountains surround the harbor on three sides and climatic conditions produce seemingly perpetual rainy days. "Located somewhere between a mountain, a cloud, and a purely geometric prism, the formal logic of the scheme is determined both by fuzziness/irregularity (misregistered and shrinkwrapped floors) and legibility (color and window pattern) in the attempt to fuse contradictory design logic," they explain.

The steel-and-reinforced-concrete terminal extends the length of the quay as a three-story linear form suited to the movement of people and supplies. At its northern end, the form turns upwards to support a cantilevered restaurant at the highest level of the complex, and to connect with the office building to the west. The contorted form of the office structure is configured around a courtyard to create ideal lease spans with natural light and ventilation.

The scale of the building is masked by several formal moves: The contorted shape breaks down the mass while creating favored views towards local landmarks; punched openings through the metal-paneled skin of the building are set on a bias; and circulation is denoted by the use of chartreuse and sea foam green, which creates a perceptual difference between the inner and outer layers of the carved mass.

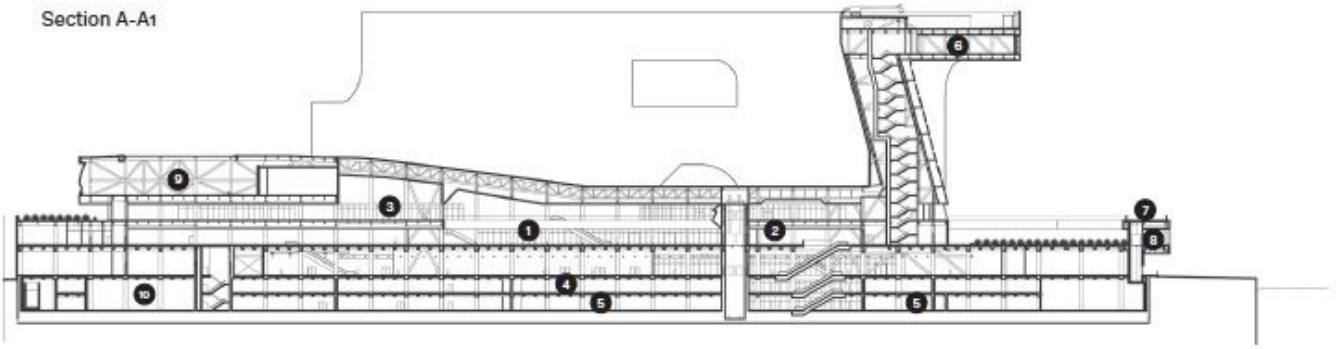
—EDWARD KEEGAN, AIA

Project Credits

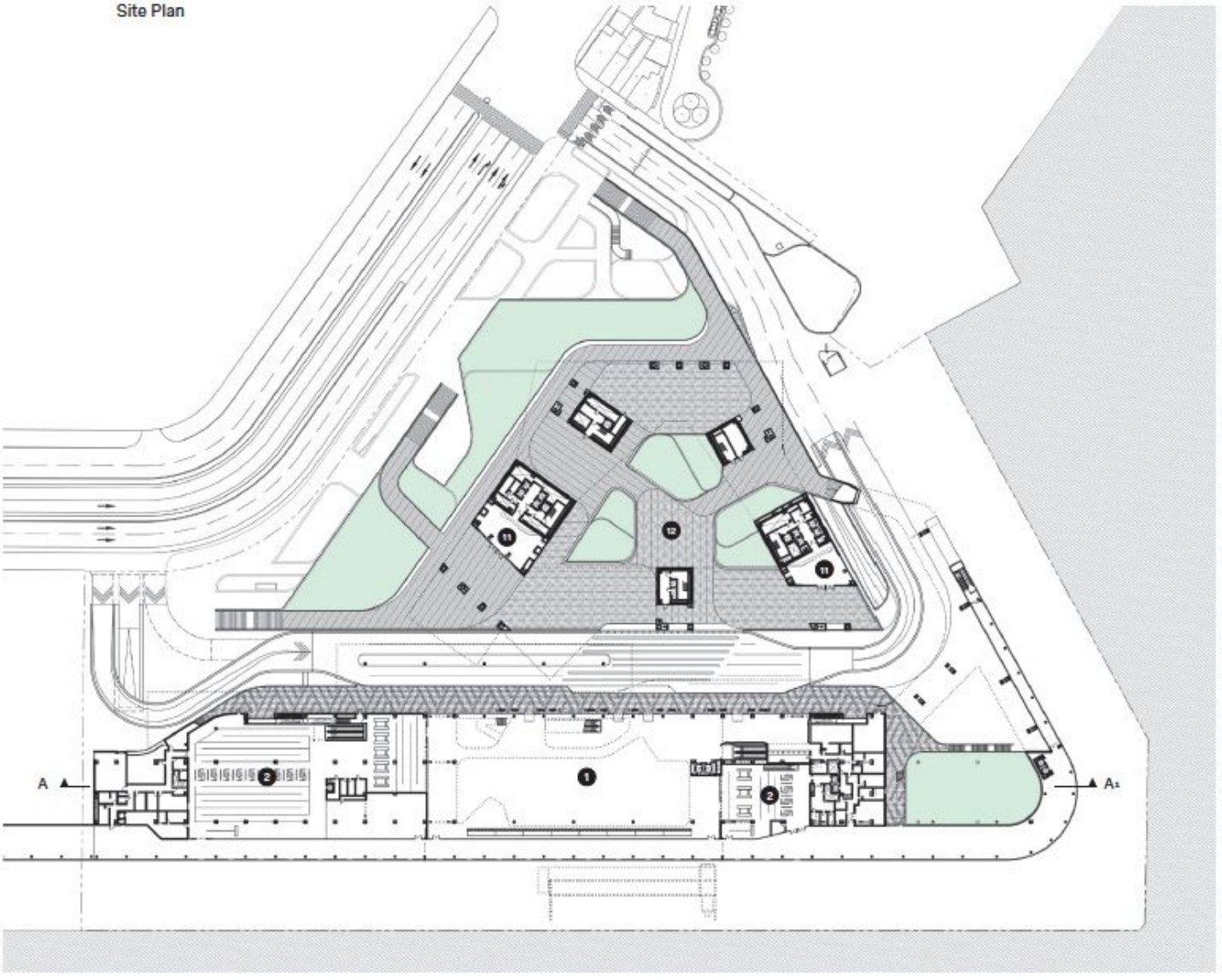
Project: New Keelung Harbor Service Building, Keelung, Taiwan
Client/Owner: Port of Keelung, Taiwan International Ports Corp.
Architect: Neil M. Denari Architects, Los Angeles · Neil M. Denari, AIA (principal and designer-in-charge); James Black, AIA, Frank Weeks (project architects); Yun Yun Wu (project manager); Jonathan Schnure, Jeff Chinn, Lillian Zeinalzadegan, Catherine Pham (design team); Daniel Poei, Junpei Okai, Eli Arkin, Jonathan Gayomali, Francisco Martinez, Shen Li, Alex Tehranian (competition team)
Collaborating Architect: Fei and Cheng Associates
M/E/P Engineer: Arup; Heng Kai
Structural Engineer: Thornton Thomasetti; Supertech
Civil/Geotech Engineer: Sino Geotechnology
General Contractor: Far Eastern General Contractor
Landscape Architect: Environmental Arts Design
Lighting: Izumi Okayasu Lighting Design
Signage Designer: Kotobuki
Façade Consultant: Thornton Thomasetti; Meinhardt
Size: 368,165 square feet (terminal); 501,045 square feet (office tower); 454,500 square feet (parking)
Cost: $5 billion TWD ($159.45 million US)

1. Lobby
2. Security/immigration
3. Retail
4. Baggage claim
5. Parking
6. Restaurant
7. Boardwalk
8. Boarding
9. Cooling tower
10. Chiller
11. Office lobby
12. Plaza

Section A-A1



Site Plan



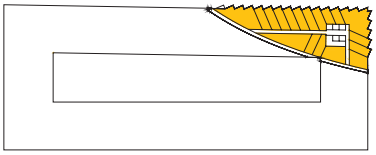
Citation
West 57th
New York
Bjarke Ingels Group (BIG)

Manhattan is not quite a stranger to offbeat typological experiments: Pyramidal multi-use buildings and sprawling indoor–outdoor complexes were quite popular 40 or so years ago, before developers lost their nerve and started going for anodyne context-iness. So BIG's West 57th is, in a sense, a return to form—and a big, jagged, twisting V of a form, at that.

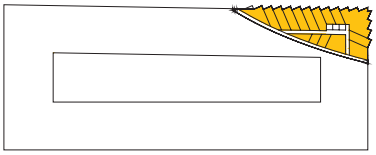
Rising from a simple rectangular base, each of the 1.003-million-square-foot building's four elevations appears entirely different from the next, the effect of carefully contrived cutaways that bring light and views (the Hudson River to the west, the skyline to south and east) to all of the 700 apartments within. This visual dynamism is complemented by a programmatic complexity unusual in a residential high-rise: Public-facing street-level storefronts, art displays, and an improved pedestrian streetscape bring a little action to what has long been a very dull enclave of West Midtown. A grand staircase connects these to a verdant central courtyard on the third floor that echoes the proportions of nearby Central Park, with some apartments opening directly onto the courtyard.

The overall sense of a private building with a public dimension—and one in which the boundary between the two spheres is deliberately blurred—seems in keeping with the Copenhagen- and New York–based designers' avowed "Scandimericanism," a blending of their open, socially minded Danish outlook with a rougher Gothamite edge. This hybridization is also expressed in a materials palette that mixes natural elements like cork and oak with decidedly urban ones like blackened steel and exposed brick. —IAN VOLNER

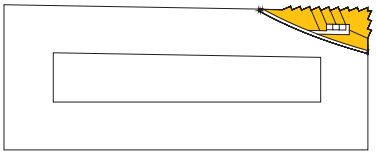
26th-Floor Plan



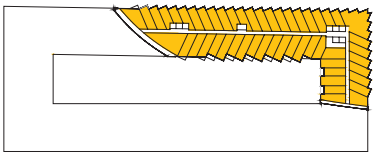
29th-Floor Plan



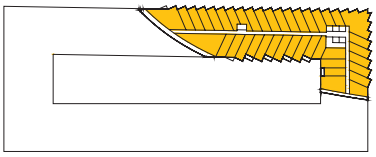
32nd-Floor Plan



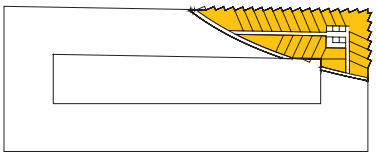
15th-Floor Plan



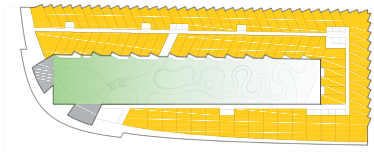
18th-Floor Plan



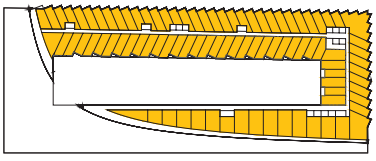
24th-Floor Plan



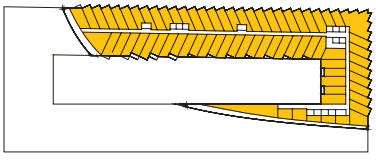
Fourth-Floor Plan



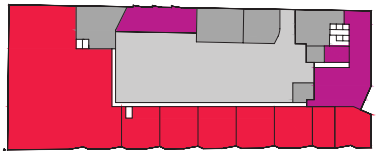
Fifth-Floor Plan



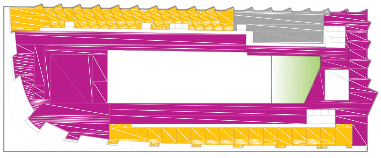
Ninth-Floor Plan



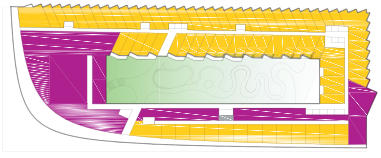
First-Floor Plan



Second-Floor Plan



Third-Floor Plan



Retail
Amenities
Residences

"I simply love the way that it leans back from the river. It softens your experience against the water here in New York."

—Thomas Phifer, FAIA

Previous Spread: View of the northwest corner

Above: View looking west down West 58th Street

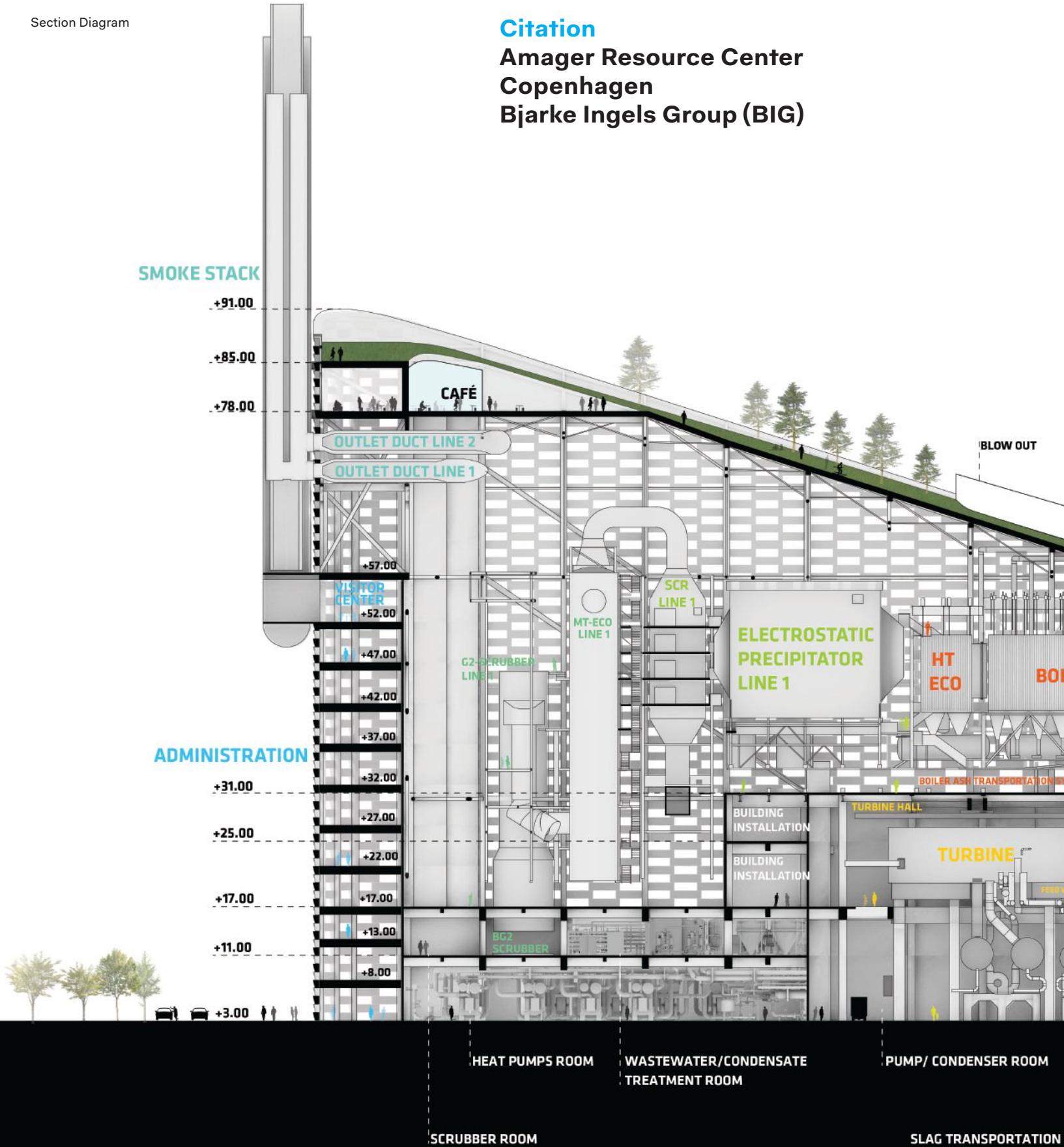
Opposite: Courtyard view, looking southwest

Project Credits
Project: West 57th, New York
Client: Durst Fetner Residential
Architect: Bjarke Ingels Group (BIG), New York and Copenhagen · Bjarke Ingels, Thomas Christoffersen (partners in charge); Beat Schenk, AIA (project manager); David Brown, AIA, Sören Grünert (project designers); Aleksander Tokarz, ASSOC. AIA, Alessandro Ronfini, Alessio Valmori, Alvaro Garcia Mendive, Benjamin Schulte, Birk Daugaard, Celine Jeanne, Christoffer Gotfredsen, Daniel Sundlin, Dominyka Mineikyte, Eivor Davidsen, Felicia Guldberg, Florian Oberschneider, Gabrielle Nadeau, Gül Ertekin, Ho Kyung Lee, Hongyi Jin, Julian Liang, Julianne Gola, Laura Youf, Lucian Racovitan, Marcella Martinez, Maria Nikolova, Maya Shopova, Mitesh Dixit, Nicklas Rasch, Ola Hariri, Riccardo Mariano, Steffan Heath, Stanley Lung, Tara Hagan, Thilani Rajarathna, Tyler Polich, Valentina Mele, Valerie Lechene, Xu Li, Yi Li (core and shell project team); David Brown, AIA (interior designer); Aaron Hales, Alessandro Ronfini, Brian Foster, Christoffer Gotfredsen, Ho Kyung Lee, Hongyi Jin, Ivy Hume, Jenny Chang, Lauren Turner, Mina Rafiee, Rakel Karlsdottir, Tara Hagan, Thomas Fagan, Tiago Barros, Valentina Mele (interiors project team)
Architect of Record: SLCE Architects
Landscape Architect: Starr Whitehouse
Structural Engineer: Thornton Tomasetti
Size: 1.003 million square feet
Cost: Withheld

Section Diagram

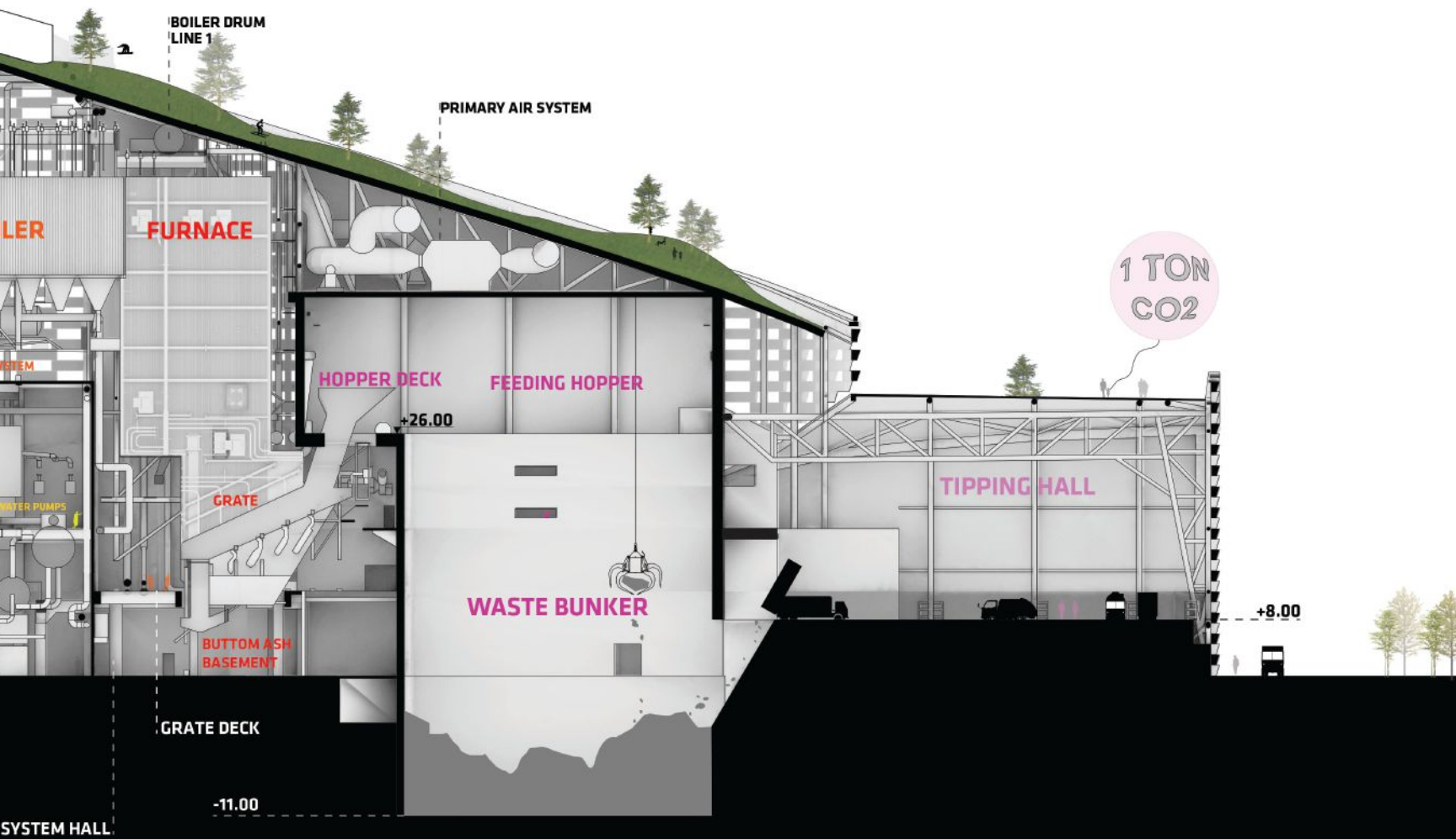
Citation

Amager Resource Center
Copenhagen
Bjarke Ingels Group (BIG)



"The combination of programs here is very interesting. The fact that it has been carried forward as a real project is exceptional."

—Jennifer Marmon, AIA



BIG won the competition for the 1.02 million-square-foot Amager Resource Center with this widely touted scheme, which promises to turn a waste-to-energy plant into a popular attraction. By integrating a ski slope into the roof and a rock-climbing wall up one face, the architects build upon the project's location: a part of Copenhagen on the island of Amager that has become a destination for extreme sports enthusiasts, thanks to its parks, beaches, dunes, and a lagoon for kayaking and windsurfing. At 100 meters tall, the center will be one of the city's tallest landmarks when completed—and a striking example of building-as-landscape. Indeed, the client has taken to calling it the Amager *Bakke*, or Amager Hill.

The processing portions of the building are constructed of cast-in-place concrete with administrative offices framed in steel. The exterior is composed of a checkerboard grid of stacked planters with glazing between, creating a sort of supersized green masonry wall of great porosity that will provide the interiors with substantial natural light and give the elevations a patterned appearance. The switchback of the rooftop ski slope will be a highly visible fifth façade that most fully expresses the architects' desire to create a building that is economically, environmentally, and socially profitable.

The plant will turn roughly six pounds of kitchen garbage into five hours of heating and four hours of electricity. (It's designed to process 435,000 tons of waste per year, and serve about 140,000 local households.) Its chimney marks each ton of carbon dioxide exhausted by venting a steam "smoke ring," giving Copenhagen's population a clear—and playful—indication of the plant's productivity. —E.K.

Opposite: Interior view of waste-to-energy machinery

Above: Aerial view, showing rooftop ski slope and chimney

Project Credits

Project: Amager Resource Center, Copenhagen
Client: Amager Resource Center
Architect: Bjarke Ingels Group (BIG), New York and Copenhagen · Bjarke Ingels, David Zahle (partners-in-charge); Claus Hermansen, Nanna Gyldholm Møller (project designers/architects); Alberto Cumerlato, Aleksander Wadas, Alexander Ejsing, Alina Tamosiunaite, Alexandra Gustafsson, Anders Hjortnæs, Andreas Klok Pedersen, Annette Jensen, Ariel Wallner, Armor Gutierrez, Ask Andersen, Balaj Iulian, Blake Smith, Brian Yang, Brygida Zawadzka, Buster Christensen, Chris Falla, Chris Yuan, Daniel Selensky, Dennis Rasmussen, Espen Vik, Finn Nørkjær, Franck Fdida, George Abraham, Gonzalo Castro, Gül Ertekin, Helen Chen, Henrick Poulsen, Henrik Kania, Horia Spirescu, Jakob Lange, Jakob Laursen, Jalena Vucic, Jeppe Ecklon, Jesper Andersen, Ji-Young Yoon, Joanna Jakubowska, Johanna Nenander, Kamilla Heskje, Katarzyna Siedlecka, Krzysztof Marciszewski, Laura Wätte, Liang Wang, Lise Jessen, Long Zuo, Maciej Zawadzki, Mads Stidsen, Marcelina Kolasinska, Marcos Garcia Bano, Maren Allen, Mathias Stigsen, Matti Nørgaard, Michael Andersen, Narisara Schröder, Niklas Rausch, Oanh Nguyen, Øssur Nolsø, Pero Vukovic, Richard Howis, Ryohei Koike, Se Hyeon Kim, Simon Masson, Sunming Lee, Toni Mateu, Xing Xiong, Zoltan Kalaszi (project team)
Size: 1.02 million square feet (building); 344,000 square feet (roof/ski slope)
Cost: Withheld

Award

Sylvan Theater
Washington, D.C.
Weiss/Manfredi + Olin

The new Sylvan Theater at the Washington Monument will come as a great relief to visitors to our nation's capital. No spot in D.C. is so central, yet so maddeningly in the middle of nowhere, as the wide grassy rise that leads to the famous obelisk. Working with the Philadelphia office of landscape architecture firm Olin, New York–based Weiss/Manfredi finally introduces a few amenities to this breathtaking but isolated patch, and all without disturbing the historic sightlines down and around the National Mall.

On the south side of the monument, as the hill slopes down, a sinuous two-pronged pavilion slowly peels away from the ground to open up a light-filled interior, with a program that includes a café, bookstore, bathrooms, and more. Making maximum use of the site, the designers have perched auditorium-style lawn seating for 1,100 in terraced rows atop semi-buried lobes of this pavilion. These rows of seats are in addition to a much larger south-facing amphitheater embedded in the adjacent hill, which can accommodate an audience as large as 10,000.

The plan also looks to the broader landscape and urban context in an effort to further integrate the new feature into its surroundings, creating a double-length allée of trees that extends the regular plantings of the eastern National Mall while providing some desperately needed shade on the otherwise starkly open site.

And there's an especially poignant significance to putting an amphitheater next to a monument like Washington's: Obelisks entered the language of Western architecture when the Romans absconded with one from Egypt as a trophy for their imperial Circus Maximus, site of bloody chariot races and gladiatorial games. Here, rather than making the obelisk a spectacle of conquest, the designers frame it as part of a truly democratic vista. —I.V.

"The project is very progressive in how subtle it is. It's done in a minimal, elegant, and beautiful way that is as progressive as working with very sophisticated formal geometries."

—Ammar Eloueini, AIA

1. Washington Monument
2. Tidal Basin
3. Sylvan Amphitheater
4. Sylvan Pavilion
5. Pedestrian Woodland Walk

Previous Spread: Aerial view from the southwest

Opposite: Interior view of the café

North–South Section

Project Credits

Project: Sylvan Theater, Washington, D.C.
Client/Owner: Trust for the National Mall
Lead Designer: Weiss/Manfredi + Olin, New York and Philadelphia
Weiss/Manfredi Team: Marion Weiss, FAIA, Michael A. Manfredi, FAIA (partners); Michael Harshman, AIA (project manager); Bryan Kelley, Noah Z. Levy, Allison Wicks (competition team leaders); Patrick Armacost, Constantine Bouras, Justin Kwok, Joe Littrell, Kerry O'Connor, Andrew Ruggles, Joe Vessell, Tsvetelina Zdraveva (additional team members); Bryan Kelley, Hugo de Pablo (project team)
Olin Team: Hallie Boyce, Skip Graffam (design partners); Greg Burrell (competition team leader); Jennifer Birkeland, Chris Landau, Vivian Martinez, Nick Mitchell, Henry Moll, Ben Monette, Laura Rennekamp, Jenn Richey-Nicholas, Danni Sinisi (competition team); Leigh Ann Campbell (project manager); Stephen Benz (green infrastructure partner); Ari Miller, Dana Williamson, ASSOC. AIA (project team)
Structural/Civil Engineering: Magnusson Klemencic Associates
Performance Planning: Fisher Dachs Associates
Mechanical Engineering: Jaros, Baum & Bolles
Acoustics: Threshold Acoustics
Sustainability: Atelier Ten
Performance Art Advocate: Sphinx Organization
Circulation/Planning: Space Syntax
History/Archaeology: John Milner Associates
Lighting Design: Fisher Marantz Stone
Artist: Studio Echelman
Signage/Wayfinding: Bruce Mau Design
Security: Ducibella Venter & Santore
Geotechnical Engineer: Geoconcepts Engineering
Blast: Hinman Consulting Engineers
Size: 578,000 square feet (site); 41,190 square feet (new construction); 7,600 square feet (renovation)
Cost: Withheld

"I like the subtractions. They bring a humanistic sense to the tower, and make the people that work there the focus of the project. And the way it opens up to the city allows it to participate in the life of the city."

—Thomas Phifer, FAIA

Award

Reforma Towers
Mexico City
Richard Meier & Partners Architects with Diametro Arquitectos

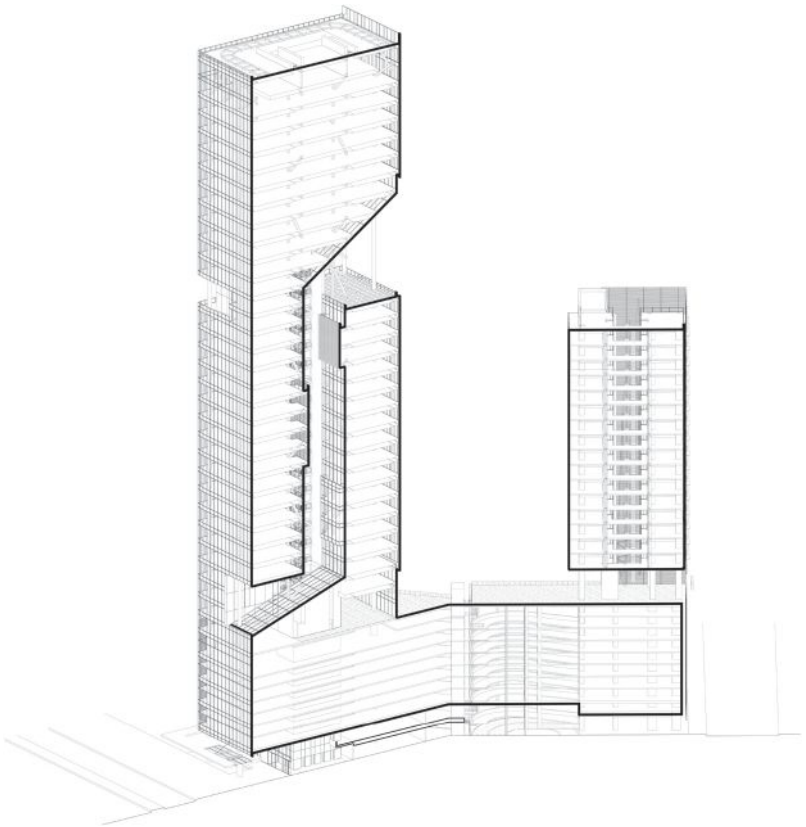
Fronting the Paseo de la Reforma, Mexico City's grand boulevard, is a dense mixed-use complex that is already under construction. The 1.29 million-square-foot development, designed by New York–based Richard Meier & Partners Architects with local firm Diametro Arquitectos, juxtaposes a 40-story office tower with a 27-story hotel. Responding to the angular boundaries of its site, the design places the office tower along Reforma and aligns the hotel with the quieter street on the other end of the through-block parcel.

The two towers rise from a single base structure that covers the entire site, which accommodates parking for both primary functions, plus retail, restaurants, and a fitness center. Topping this podium, at the 11th floor, is an elevated plaza that the architects characterize as "an urban courtyard in the sky." This public platform, with views extending over and beyond neighboring mid-rise structures, links the upper-floor lobbies of both towers and provide access to shared amenities.

The rectangular form of the office tower has been incised with a vertical void through the core, which links to cutouts that visibly penetrate to the exterior. Stairs and elevator lobbies serving the office floors overlook this central atrium, providing occupants with exceptional natural ventilation, daylight, and views. A generous notch cut into the upper section of the office tower opens onto the atrium and provides a "sky terrace" with outdoor gathering space.

Echoes of historic Mexican building traditions can be seen both in the contemporary, elevated version of the public plaza atop the base and in the void that pierces the larger tower, an adaptation of the private inner courtyard so prevalent in colonial architecture to today's high-rise construction. —J.M.D.

Section Diagram



Project Credits
Project: Reforma Towers, Mexico City
Client/Owner: Diametro Arquitectos
Architect: Richard Meier & Partners Architects, New York · Richard Meier, FAIA, Bernhard Karpf, AIA (partners); Ringo Offermann, AIA (project manager); David Ricardo Davila (project architect); Techan Abe, Kevin Browning, Amy DeDonato, John Jourden, Aung Thu Kyaw, Chris Layda, Christopher Lewis, Ian Lotto, Sharon Oh, Giorgio Villa (project team)
Associate Architect: Diametro Arquitectos, Mexico City
Mechanical Engineer: DYPRO
Structural Engineer: WSP Group
Electrical Engineer: COESA/MR Soluciones
Plumbing Engineer: Garza Maldonado y Asociados
Lighting Consultant: Artec3 Studio
Code Consultant: Enrique Muñoz Caceres
Size: 1.29 million gross square feet (120,000 square meters)
Cost: Withheld

Previous Spread: Aerial view from the west, with office tower at left

This Image: Office tower atrium

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TEXT BY KATIE GERFEN
PHOTOS BY ADRIÀ GOULA

In Granollers, Spain—a small city of 60,000 near Barcelona—an architectural Narnia is hidden down a quiet residential street. But this is no mere wardrobe: When the wooden door in a historic stone façade is opened, what is revealed is an angularly modern world of brick structures, terraces, and walled gardens.

The house is the creation of H Arquitectes, a firm that has been practicing in Barcelona since 1999. The team helped their clients select the site in the historic town center, and created what partner Roger Tudó Galí calls "a sequence of spaces, where you can't always tell what is inside and what is outside."

The strictures on the site were two-fold: one, the architects had to keep the 21-foot-wide historic façade to comply with local guidelines (but could demolish the rest of the dilapidated structure), and two, they could not build out the entirety of the site, which stretches all the way from a pedestrian throughway at the front to a vehicular street behind. This was just fine for the clients, who wanted both privacy and more public entertaining options for guests.

Behind the historic façade, an enclosed terrace with a retractable glass roof provides a year-round threshold to a three-story brick volume that houses living, dining, and family rooms, as well as four bedrooms. On the other side of this volume, in the middle of site, is a walled garden with a covered seating area. "We tried to design an outdoor room where you still feel surrounded by the walls," Galí says.

At the rear of the garden is another brick structure, with a large kitchen and dining area for entertaining, as well as a basement guest suite. A second terrace, which also serves as the garage, lies beyond, and opens up to the vehicular street.

But the craft here isn't simply in the processional sequence from front to back. The formal simplicity of the brick volumes belies the complexities of their construction. "We produced different types of bricks," Galí says, explaining that the heaviest ones are laid at the base of the structures, and that they become lighter with each level. This was done to minimize the structural load. Steel lintels allow for large window openings in the masonry walls. These openings are covered with oversized steel shutters affixed to the façades with custom steel frames.

The house nods to context in material (masonry) and scale (modest), so that it does not feel out of place in historic Granollers. But within is an alternate world, distinctly modern and verdant, and a retreat from the rigors of daily life.

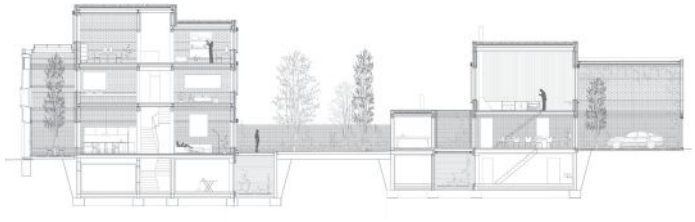
First-Floor Plan

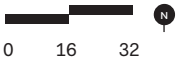
Third-Floor Plan

Basement-Floor Plan

Second-Floor Plan

Section A–A1





Previous Page: The guest volume is located across the site's central garden from the main residence. It, like the covered patio, is capped by a green roof.

Above Left: The architects retained the historic façade along a pedestrian street. Behind it, a terrace with a retractable glazed roof provides a modern threshold into the kitchen of the main house. *Above Right:* In the kitchen, shown here, and throughout the ground floor, the architects exposed the corrugated metal decking on the ceilings. The wood floor covers a concrete slab with radiant heating; the concrete slab of the second floor (above the decking) is laid with radiant heating as well.

Opposite: A new masonry wall forms the rear façade, along a street that is open to vehicular traffic. Wood sliding doors reveal a terrace that doubles as a garage. As with the front terrace, a retractable glazed roof facilitates year-round use.

Project Credits
Project: House 1014, Granollers, Spain
Architect: H Arquitectes, Barcelona · David Lorente Ibáñez, Josep Ricart Ulldemolins, Xavier Ros Majó, Roger Tudó Galí (partners); Blai Cabrero Bosch, Montse Fornés Guàrdia (architects); Carla Piñol Moreno (quantity surveyor)
Interior Design: Fátima Vilaseca
Quantity Surveyor: Ramon Anton Brossa
Structural Engineer: DSM Arquitectes
Installations: Igetech; Àbac Enginyers
Landscape: Anna Esteve
Size: 673 square meters (7,244 square feet)

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Editorial: Oh, the Humanity

It's hard to imagine anyone would have been happy to learn that Architecture for Humanity filed for bankruptcy. The nonprofit and its founders (Kate Stohr, who stepped down in 2013, and Cameron Sinclair, who left in 2014) are practically synonymous with public interest architecture, what with their 200,000-plus Twitter followers; TED Prize; book with the sassy title, *Design Like You Give a Damn*; and celebrity friends like Jennifer Lopez and Brad Pitt.

How does the profession recover from the passing of its highest-profile humanitarian initiative? A little perspective helps: The bankruptcy is a sad setback, but it doesn't mean the end of the movement. Architecture for Humanity chapters are signaling their intent to carry on without the parent organization, and the AIA issued a statement "promising to seek opportunities … to advance the mission that Architecture for Humanity so strongly embodied." And yes, there are other groups out there dedicated to public-interest architecture.

Lord knows there's demand for their services. Too much research points to the same troubling conclusion: More and more wealth is being concentrated in fewer and fewer hands. Even the *Wall Street Journal* is treating the gap as a given. A Jan. 28 article asserted, "The emergence of a two-tiered U.S. economy, with wealthy households advancing while middle- and lower-income Americans struggle, is reshaping markets for everything from housing to clothing to groceries to beer."

Tragically, for millions of people in the U.S. and billions more abroad, it's not a question of affordability on a sliding scale: buying a home vs. renting, splurging at Whole Foods vs. scrimping at Walmart. It's a matter of basic survival, as in: "Can I feed my family today?"

Few people who read this publication know firsthand what it means to be truly poor, but relative prosperity hasn't stopped legions of architects and designers from using their skills in an effort to help the less fortunate. Architects possess the ability to design a hospital in Haiti or a house in the Ninth Ward, and many of them have. They've volunteered with AIA's disaster assistance initiative or participated in Public Architecture's 1% program, and they deserve huge credit for it. The profession as a whole has to protect such networks for public interest architecture.

Architects are incredible innovators when it comes to the art and science of building. And increasingly, the profession is producing innovators of another kind: philanthropic entrepreneurs, who bring revolution to the design of their own practices. Some do so through teaching. The late Samuel Mockbee's venerable Rural Studio at Auburn University has inspired other advocacy-through-academia initiatives—the Design/BuildLab at Virginia Tech, being one example (see January 2015, page 134).

And I'm especially intrigued by the spate of alternative business models that are emerging in the realm of public interest architecture: the firm-as-nonprofit that is Michael Murphy and Alan Ricks' MASS Design Group; the separate-but-symbiotic "for-benefit" operations of Erinn McGurn, AIA, and Guy Baron's SCALEAfrica and SCALEStudio. Architecture needs more such brave experiments into the provision of design services for the needy, and it needs them now. The clientele can't afford to wait.

STEPHEN VOSS


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