

ARCHITECTURAL RECORD

CHICAGO

An aerial night photograph of the Chicago skyline. The city is illuminated with various lights, including streetlights, building lights, and a Ferris wheel. The Chicago River is visible in the lower center, with several bridges crossing it. The sky is dark, and the overall scene is a vibrant display of urban architecture at night.

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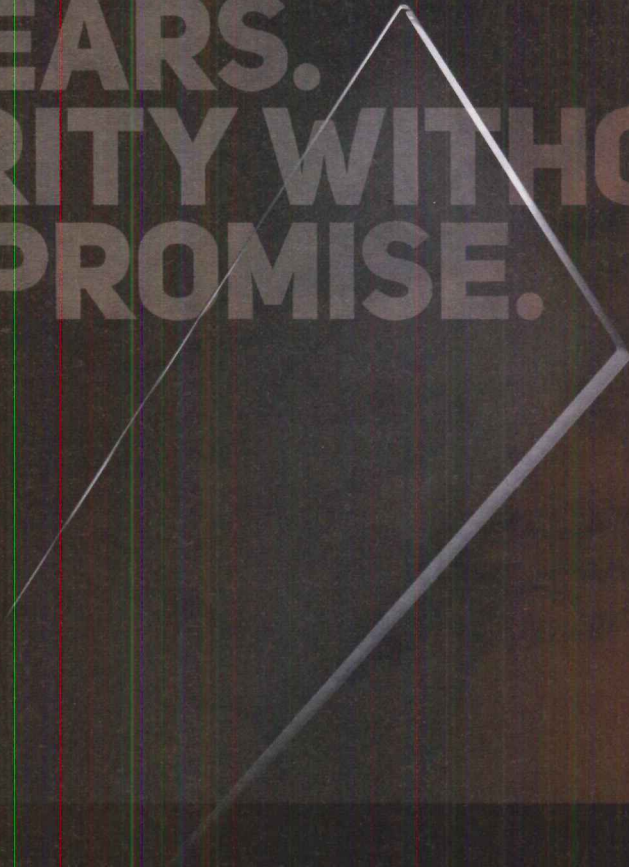
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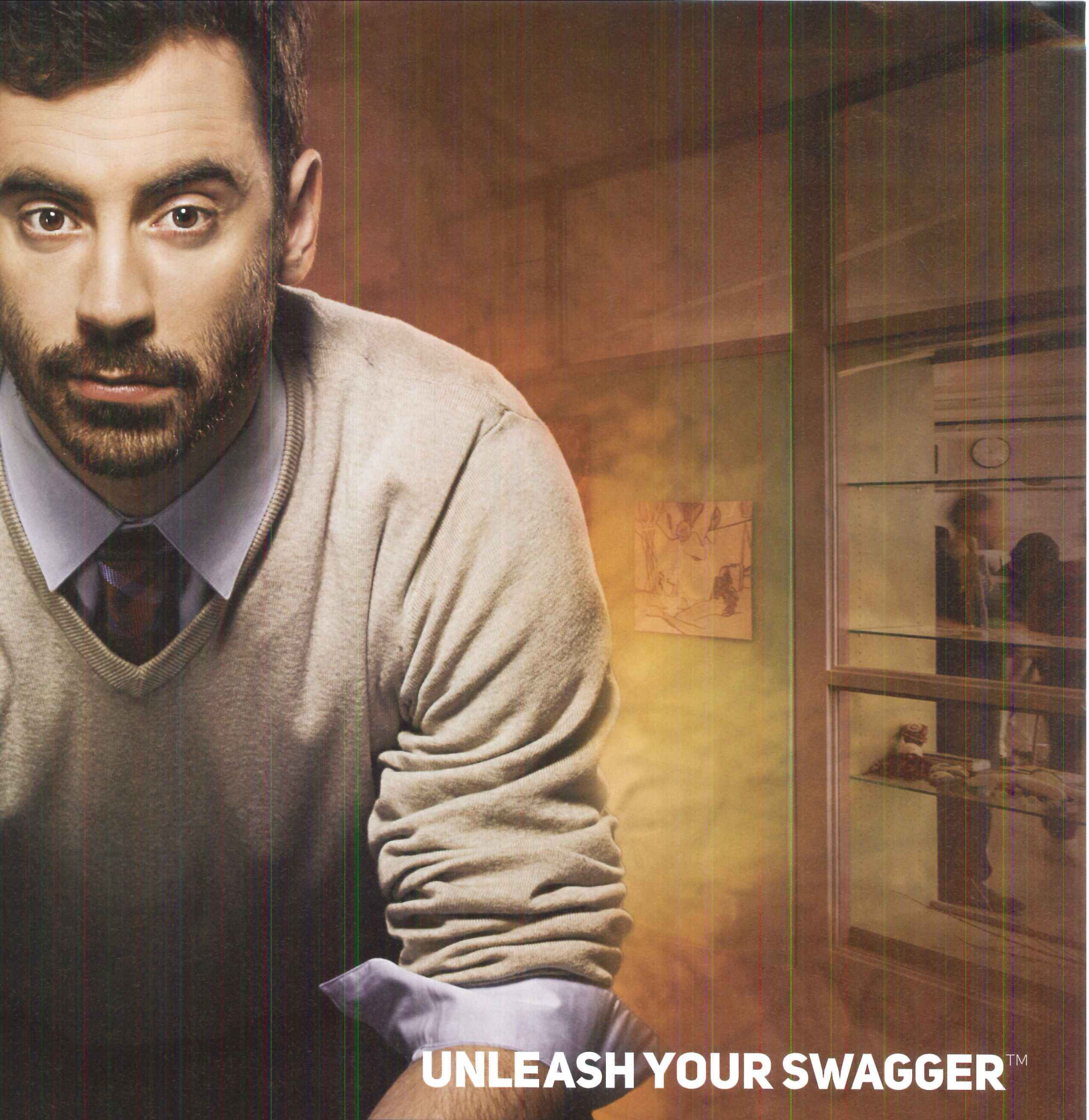
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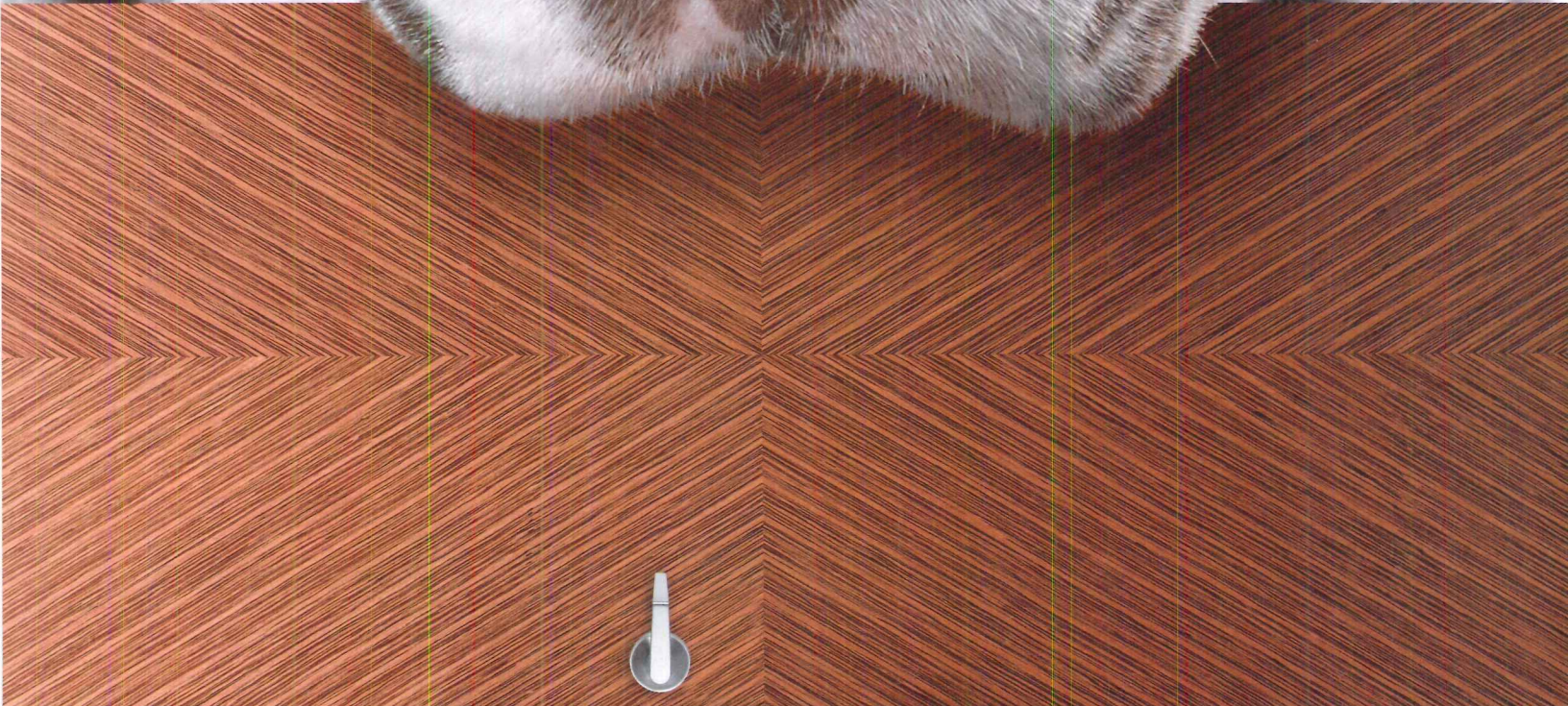
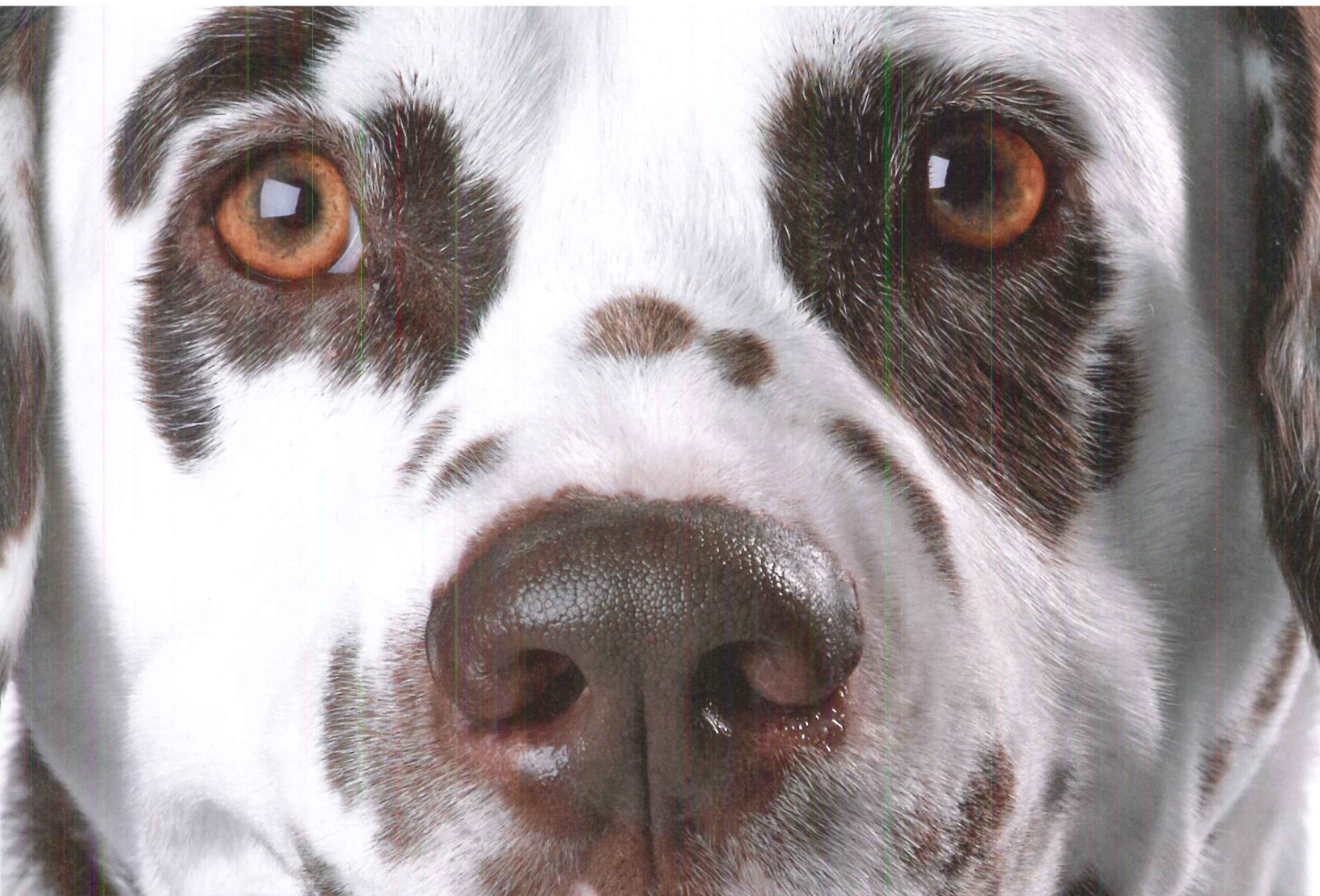
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World View

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Photograph: Tex Jernigan



Sub Culture

Every day 300,000 subway riders stream through Manhattan's **Fulton Center**, their underground trek now brightened by entertainment venues and daylight reflected from its skylit cable-net overhead. An integrated artwork by **James Carpenter Design Associates**, **Grimshaw Architects**, and **Arup**, this marvel of collaboration is a new bright spot beneath city streets. Read more about it in **Metals in Construction** online.

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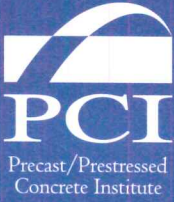
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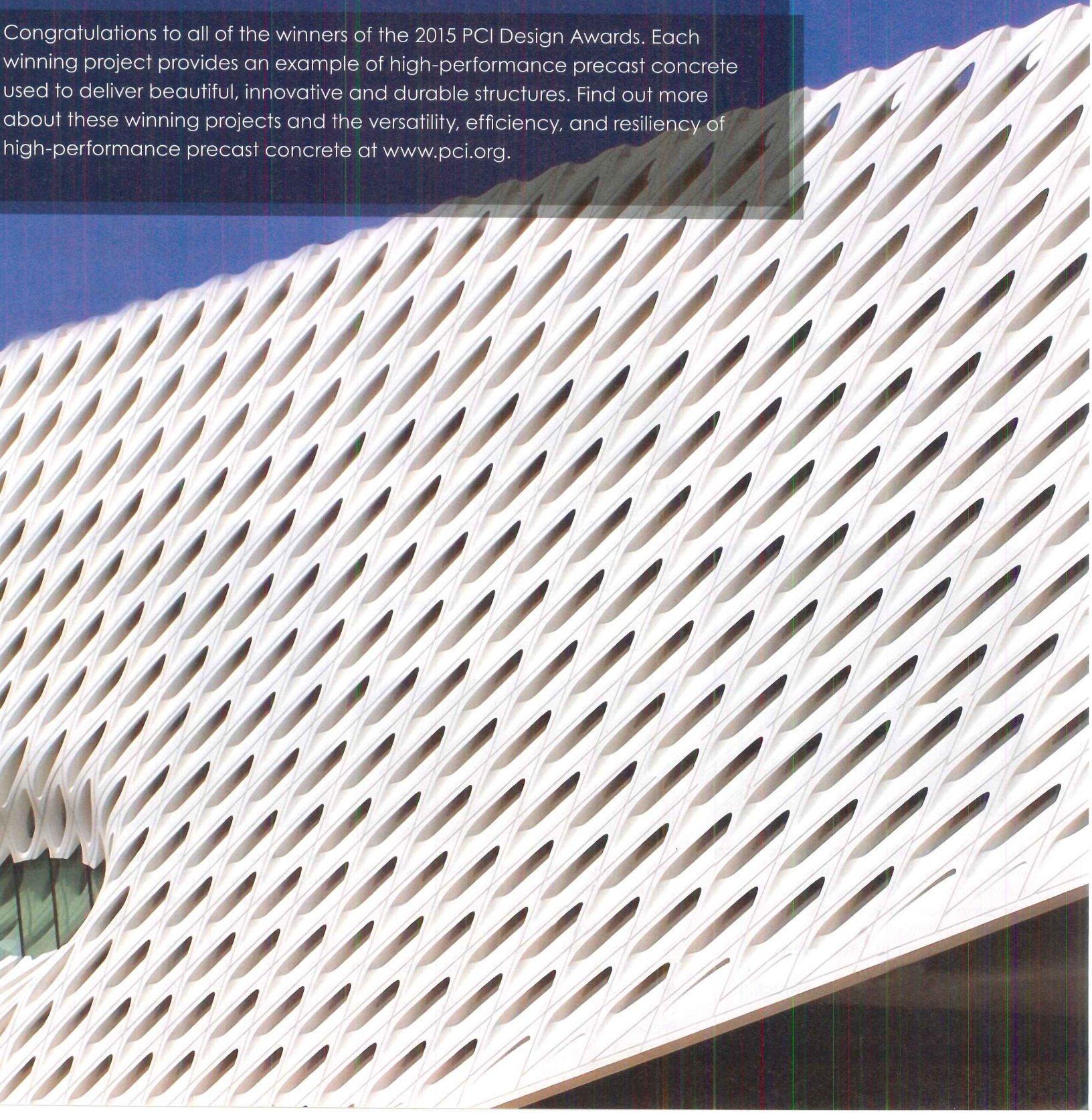
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2015 PCI DESIGN AWARD WINNERS

Congratulations to all of the winners of the 2015 PCI Design Awards. Each winning project provides an example of high-performance precast concrete used to deliver beautiful, innovative and durable structures. Find out more about these winning projects and the versatility, efficiency, and resiliency of high-performance precast concrete at www.pci.org.





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Visit www.pci.org for more details and photos of the winning projects.



The Broad Museum

Category: **Government and Public Buildings**

Location: **Los Angeles, Cal.**

Architect: **Diller Scofidio Renfro**

Executive Architect: **Gensler**

Engineer of Record: **Nabih Youssef & Associates**

Precast Producer: **Willis Construction Company, Inc.**

Photo: **Willis Construction**



University of California at San Francisco

Medical Center at Mission Bay

Category: **Healthcare/Medical**

Location: **San Francisco, Cal.**

Architect: **Stantec**

Engineer of Record: **Rutherford & Chekene**

Precast Producer: **Willis Construction Company, Inc.**

Photo: **Stantec/Rien van Rijthoven**



Toronto Pan Am Sports Centre

Category: **Stadiums and Arenas**

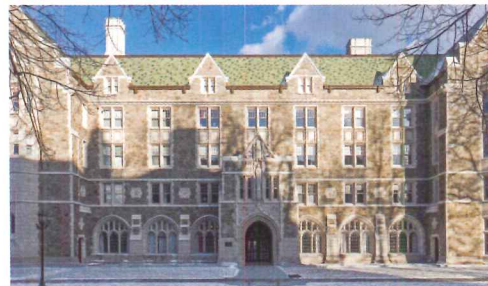
Location: **Toronto, Canada**

Architect: **NORR limited**

Engineer of Record: **Parson Brinckerhoff Halsall Inc.**

Precast Producer: **RES precast**

Photo: **Shai Gil Photography**



St. Mary's Hall, Boston College

Category: **Higher Education/University**

Location: **Chestnut Hill, Mass.**

Architect: **DiMella Shaffer**

Historic Restoration Architect: **McGinley Kalsow Associates, Inc.**

Engineer of Record: **LeMessurier Consultants**

Precast Producer: **BPDL, Inc.**

Photo: **Boston College**



University of California at Davis Medical

Center Parking Structure III

Category: **Parking Structures (Hybrid)**

Location: **Sacramento, Cal.**

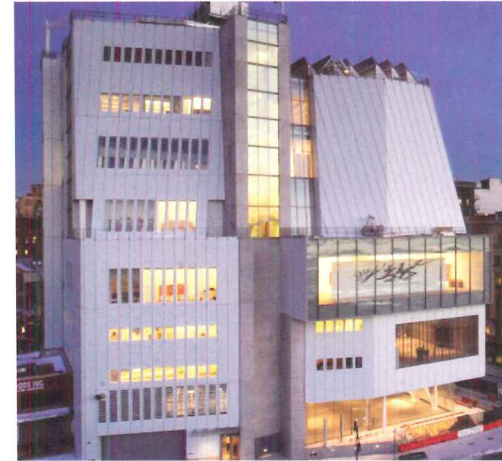
Architect: **Watry Design, Inc.**

Design Architect: **Dreyfuss and Blackford Architects**

Engineer of Record: **Watry Design, Inc.**

Precast Producer: **Clark Pacific**

Photo: **Rien Van Rijthoven Architectural Photography**



Whitney Museum of American Art

Category: **Higher Education/University**

Location: **New York, NY**

Architect: **Cooper Robertson**

Design Architect: **Renzo Piano Building Workshop**

Engineer of Record: **Robert Silman Associates**

Precast Producer: **BPDL Inc.**

Photo: **Nic Lehoux**



John Brooks Williams Natural Science and Technology Center-South Building at St. Edward's University

Category: **Higher Education/University**

Location: **Austin, Tex.**

Architect: **STG Design**

Design Architect: **Moore Ruble Yudell**

Engineer of Record: **Datum Engineers**

Precast Producer: **Gate Precast Company**

Photo: **Gate Precast Company**

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St. Mary Catholic Church and School
Category: **Schools (K-12)**
Location: **Joplin, Mis.**
Architect: **RDG Architects**
Engineer of Record: **Thompson, Dressen & Dorner, Inc.**
Precast Producer: **Enterprise Precast, Inc.**
Photo: **Julia Phillips Photography and Enterprise Precast Concrete Inc.**



Pomona College South Campus Parking Structure
Category: **Parking Structures (Facade only)**
Location: **Claremont, Cal.**
Architect: **Watry Design, Inc.**
Engineer of Record: **Watry Design, Inc.**
Precast Producer: **StructureCast**
Photo: **StructureCast**



Bellevue Youth Theatre
Category: **Theaters**
Location: **Bellevue, Wash.**
Architect: **Becker Architects**
Engineer of Record: **CT Engineering Inc.**
Precast Producer: **Oldcastle Precast**
Photo: **Becker Architects for Bellevue Youth Theater**



Massachusetts Bay Transit Authority Salem Intermodal Commuter Rail Station
Category: **Parking Structures (All Precast)**
Location: **Salem, Mass.**
Architect: **Fennick McCredie Architecture**
Engineer of Record: **Desman**
Precast Producer: **Unistress Corporation**
Photo: **William Horne**



Latter Day Saints Tijuana Temple
Category: **International Buildings Structure**
Location: **Tijuana, Mex.**
Architect: **CRSA**
Engineer of Record: **ARW Engineers**
Precast Producer: **Willis Construction Company, Inc.**
Photo: **Roland Byers/Willis Construction Inc.**



Nordstrom, The Woodlands
Category: **Retail**
Location: **The Woodlands, Tex.**
Architect: **Callison**
Engineer of Record: **Coffman Engineers**
Precast Producer: **Gate Precast Company**
Photo: **Connie Zhou/OTTO**

Bridge Section

To view the winners for the Transportation Awards, please visit www.pci.org/design-awards.



2015 PCI DESIGN AWARD WINNERS

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City of Loveland Service Center

Category: **Warehouse/Storage/
Distribution Centers**

Location: **Loveland, Colo.**

Architect: **RNL**

Engineer of Record: **Monroe & Newell**

Precast Producer: **Stresscon**

Photo: **Encon United**



Manhattan West

Category: **Custom Solutions**

Location: **New York, NY**

Architect: **Skidmore Owings & Merrill**

Engineer of Record: **Entuitive**

Precast Producer: **Jersey Precast**

Photo: **Rey Chavez, Jersey Precast**



Comstock Graduate Housing Project

Category: **Harry H Edwards Industry
Advancement Award**

Location: **Stanford, Cal.**

Architect: **Kenneth Rodrigues & Partners, Inc.**

Engineer of Record: **Nakaki Structural
Design, Inc.**

Precast Producer: **Clark Pacific**

Photo: **Bernard Andre Photography**



College of DuPage Campus Maintenance Center

Category: **Warehouse/Storage/
Distribution Centers**

Location: **Glen Ellyn, Ill.**

Architect: **Legat Architects**

Engineer of Record: **Larson Engineering
of Illinois**

Precast Producer: **ATMI Precast**

Photo: **James Steinkamp, Steinkamp
Photography**



Fassler Hall Dust Bowl

Category: **Mixed Use**

Location: **Oklahoma City, Okla.**

Architect: **Fitzsimmons Architects**

Engineer of Record: **Obelisk**

Engineering, Inc.

Precast Producer: **Coreslab Structures
(OKLA), Inc.**

Photo: **Coleman Harrison with Coreslab
Structures (OKLA) Inc.**



Gordon Food Service Home Office

Category: **All Precast Solution Award**

Location: **Wyoming, Mich.**

Architect: **Integrated Architecture**

Engineer of Record: **Integrated Architecture**

Structural Engineer: **JDH Engineering**

Civil Engineer: **Exxel Engineering**

Precast Producer: **Kerkstra Precast**

Precast Producer: **Gate Precast Company**

Photo: **Justin Maconochie Photography**



Gulf Power Douglas A. McCrary Training Center

Category: **Sustainable Design Award**

Location: **Pensacola, Flo.**

Architect: **TOWNES + architects, P.A.**

Engineer of Record: **PTAC Consulting
Engineers**

Precast Producer: **Metromont**

Photo: **TOWNES + architects, P.A.**

CIRCLE 23

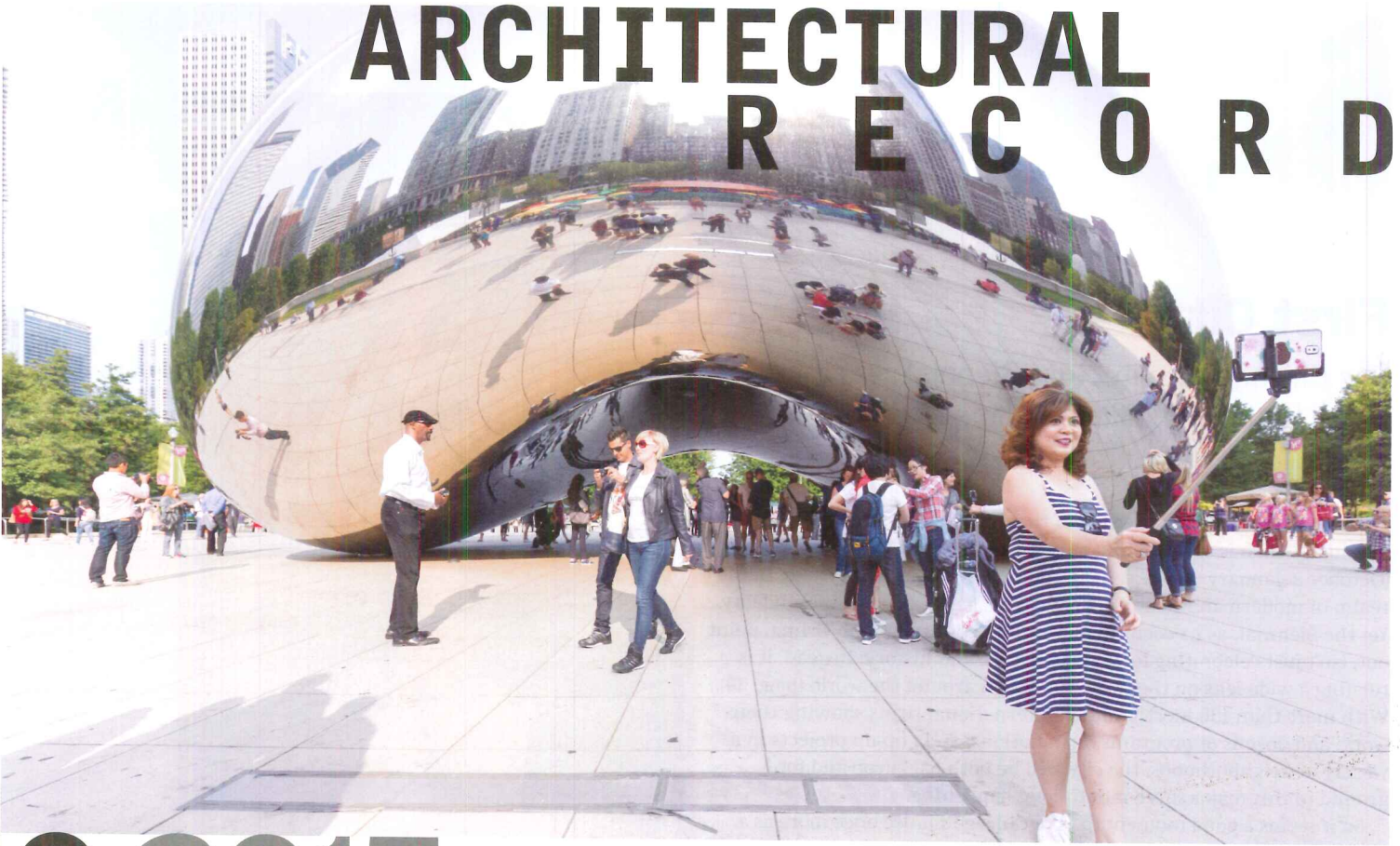


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COVER: CHICAGO AT NIGHT. PHOTO BY IWAN BAAN.

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First City

The Chicago Architecture Biennial sets the stage for both thinking and making.

THIS MONTH marks the opening of the first Chicago Architecture Biennial, which is also the first such event in North America (October 3–January 3). The setting couldn't be more appropriate: in the realm of modern architecture, Chicago has never been the second city. Yet the Biennial, as its cocurators, Sarah Herda and Joseph Grima, point out, isn't just celebrating local architecture and history; instead, it is turning a wide lens on the future of design around the world (page 30). With more than 100 mostly young, international firms showing their work, and dozens of programs, installations, and pop-up projects in a variety of neighborhoods, the city will be both backdrop and foreground to this major three-month-long happening.

So it seems a good moment to take Chicago's pulse once more as a capital of architecture and urbanism, and in the pages ahead, *RECORD* explores the city's past, present, and future. It was the birthplace of the skyscraper—or was it? That depends more on technical innovation than just height (page 87). It was, of course, the city where Mies van der Rohe landed in the U.S. and refined his vastly influential brand of postwar modernism. In an essay, "The Place Between," writer Thomas Dyja extols Mies's 1956 masterpiece, Crown Hall at IIT, while eulogizing the immense 1892 apartment complex, home to generations of African-Americans, that was razed to clear the site (page 74). As Dyja demonstrated in his award-winning book, *The Third Coast: When Chicago Built the American Dream*, the city was a crossroads of migrants, cultures, and aspirations, with a history of racial, social, and economic dissonance still much in evidence. Long after the demolition of the city's infamous housing projects such as Cabrini-Green, for example, the provision of decent dwellings for a diverse, low-income population remains a serious problem (page 92).

But Chicago knows how to put on a beautiful face—thanks in good part to the 1909 Burnham Plan, with its abundance of public spaces, on the shores of Lake Michigan and dotting the neighborhoods. Now even the once-industrial Chicago River, cutting through downtown, boasts the elegant Riverwalk. The greatest ode to the idea of the urban park may be Seurat's painting *A Sunday on La Grande Jatte*, which hangs serenely in the Art Institute of Chicago—and just beyond the museum's doors is the best contemporary urban space in America, Millennium Park; its expansive new neighbor, Maggie Daley Park, stretches to the lakefront. *RECORD* contributing editor Blair Kamin, the Pulitzer Prize-winning critic of *The Chicago Tribune*, explores these public places, including the decidedly unglamorous 606 elevated trail, as significant works of contemporary design (page 78).

As a new generation of gifted Chicago architects, including Jeanne Gang and John Ronan, is building in the city and beyond, up-and-comers are finding a congenial environment for experimentation. We look at some emerging local designers, who were chosen to be in the



Biennial and whose work lies as much in the realm of ideas as in bricks and mortar (page 102).

Conceptual thinking has never been a big part of Chicago's architectural scene, notes Mr. Chicago himself, Stanley Tigerman, in a conversation with *RECORD* (page 99). Mies's alleged admonition "build, don't talk" fits perfectly with the city's pragmatic, anti-intellectual stance as a hub of commerce. Now the Biennial is poised to be an enormous and provocative laboratory of both thinking and making.

When Nelson Algren wrote, "Chicago is an October sort of city even in spring," he wasn't talking about the seasons. The year was 1951, and the renowned chronicler of the down-and-out saw decline in the city's pervasive grittiness and inequities. That was before Mies built Crown Hall, before Skidmore, Owings & Merrill built Inland Steel, before Bertrand Goldberg built Marina City—and well before Ronan built the Poetry Foundation. And while great architecture can't solve all the city's problems, it can help create a place of promise. This month, Chicago is an October city of a very vibrant sort. ■

Cathleen McGuigan

Cathleen McGuigan, Editor in Chief

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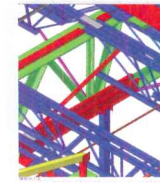
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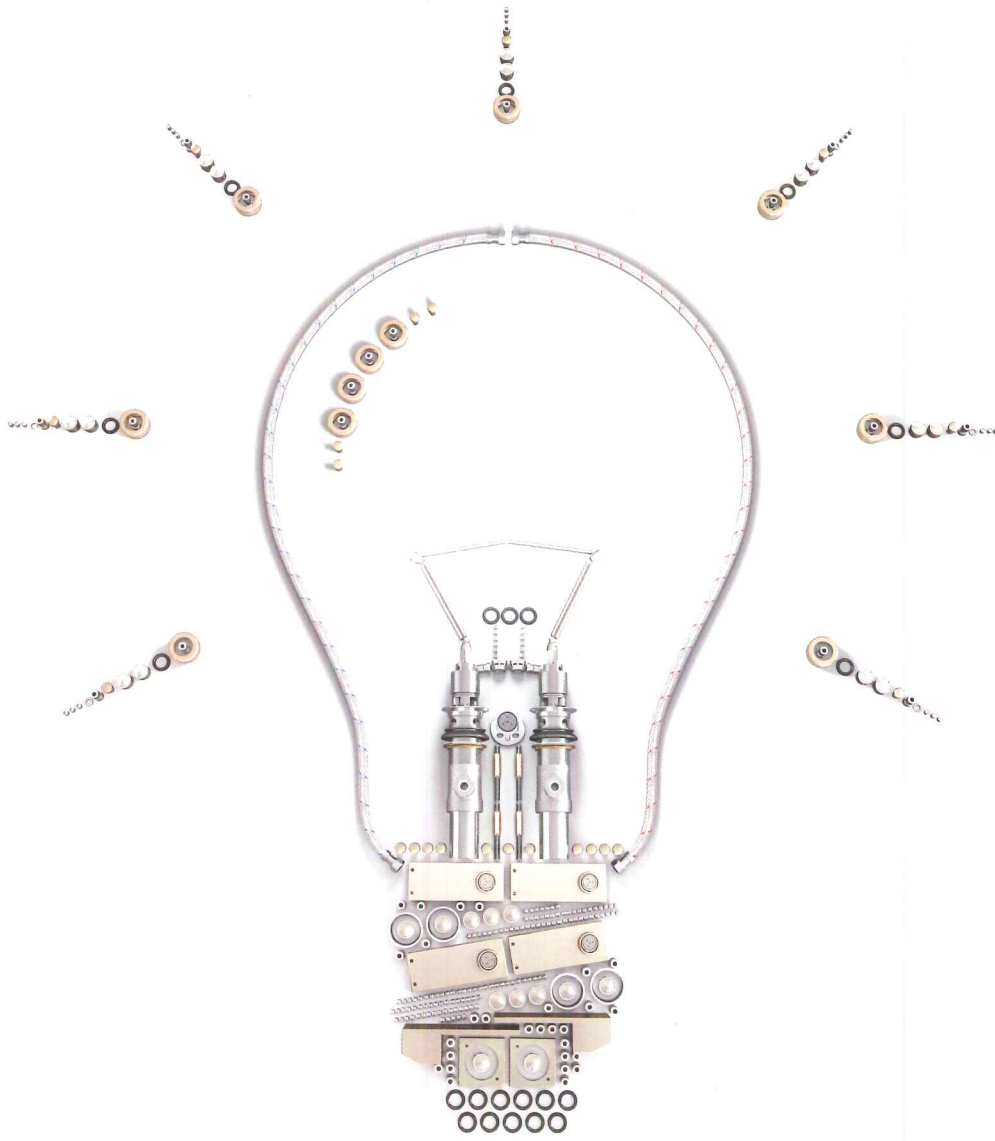


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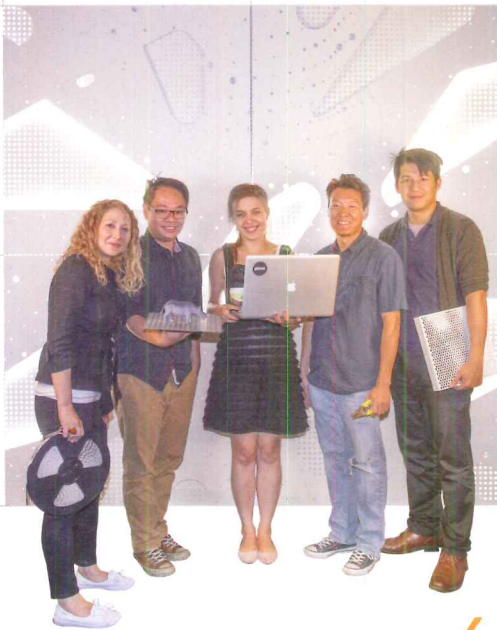
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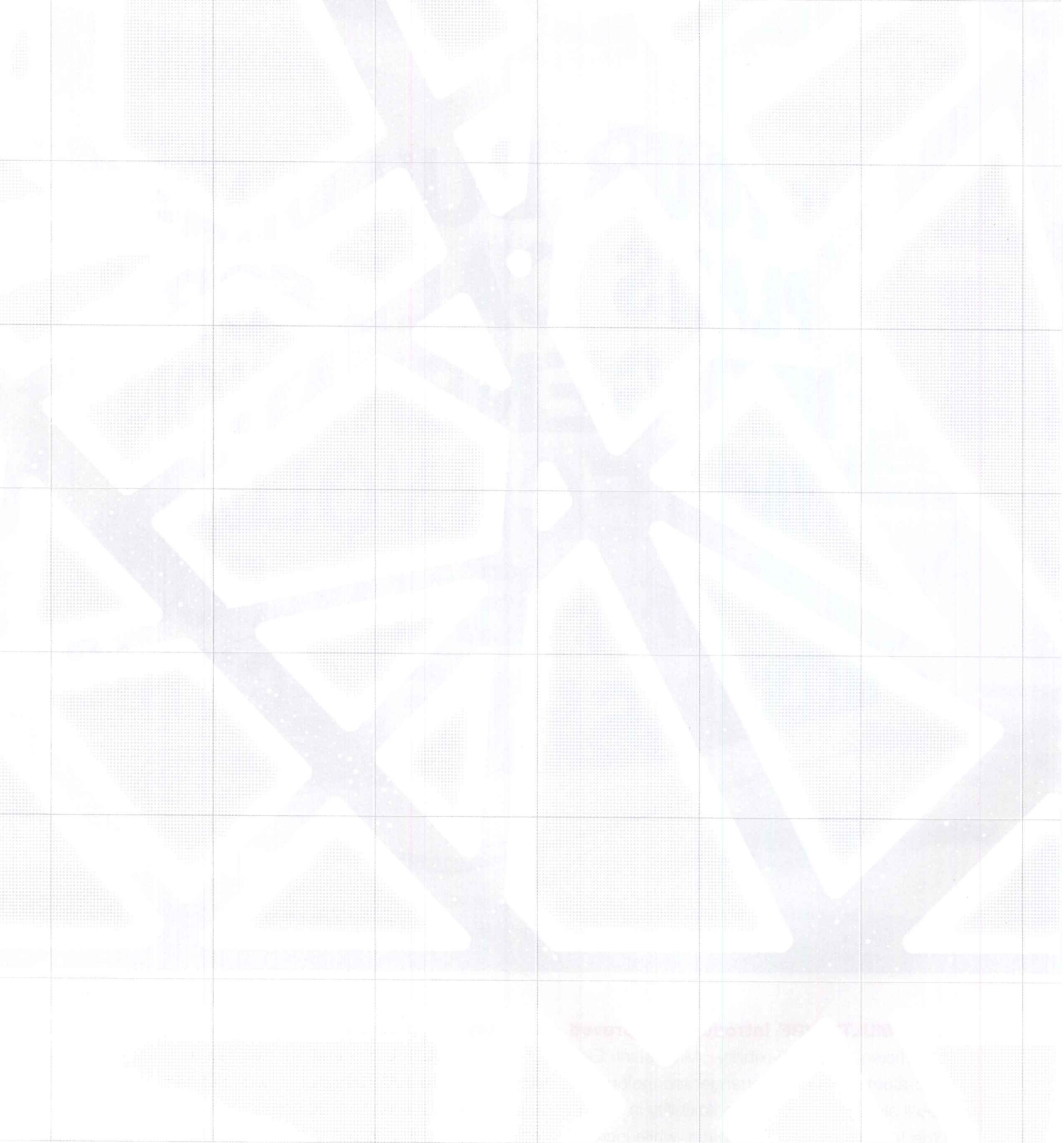

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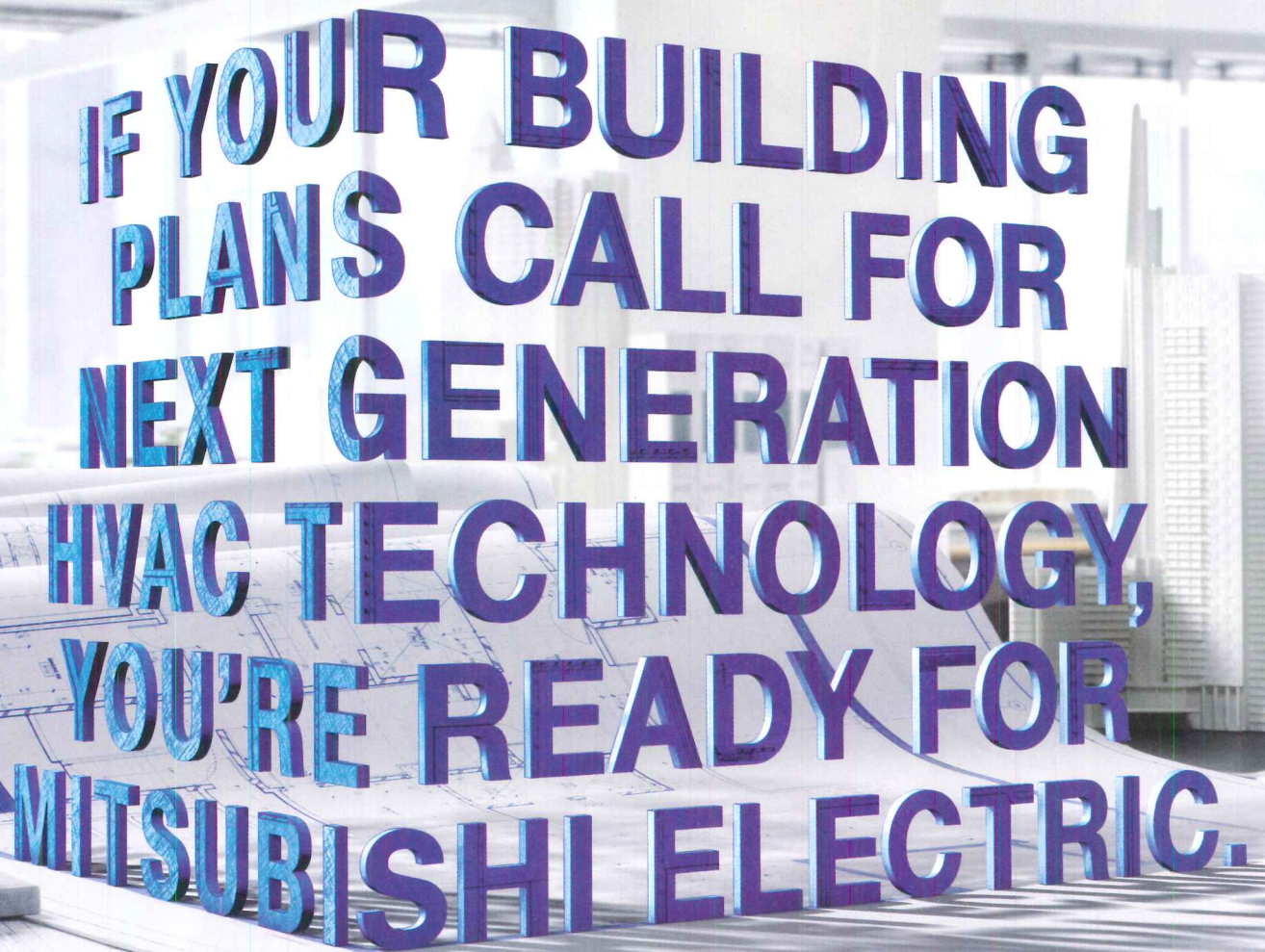
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perspective

I seriously think this building should be done away with . . . the Walkie-Talkie, let's face it, is just the most risible of the plague of big, bad buildings eating up the capital's sky.

—Guardian art critic **Jonathan Jones** on the news that Rafael Viñoly's 20 Fenchurch Street, nicknamed the Walkie-Talkie, was awarded Building Design magazine's "Carbuncle Cup," an annual designation given to the ugliest building in the United Kingdom.

ISIS Continues Destruction at Palmyra

BY BEN LYNFIELD

The United Nations confirmed the destruction of Palmyra's ancient Temple of Bel last month via satellite imagery, pictured here before the attack.



THE MAGNIFICENT archeological ruins of Palmyra, Syria—whose rediscovery by travelers in the 17th century contributed to the revival of Greco-Roman architecture in the West—are being systematically destroyed by Islamic State militants. The group has already obliterated some of the site's most significant buildings.

In detonating the treasures at the site northeast of Damascus, the Islamic State of Iraq and Syria (ISIS) is targeting the antithesis of its purist identity as the self-designated restorer of the caliphate: an ancient city that during the first to third centuries CE was a multicultural, multiethnic, multireligious, and multilingual society whose architecture uniquely fused classical with Persian and Mesopotamian influences.

"What we've lost is one of the best-preserved Greco-Roman sites in the eastern part

of the Roman Empire," says Michael Danti, academic director of the Syrian Heritage Initiative of the American Schools of Oriental Research (ASOR). "It's a hybrid site—a rare example of fusion of multiple cultural influences, and it was literally the site where for centuries east met west on the great Silk Road. That's why it was so important to Greece and Rome, and to the people of Persia, Iraq, and Syria."

The style of the monuments and tombs of Palmyra was widely imitated during the classical revival primarily in 18th-century Britain, but also the rest of Europe, Danti says.

ISIS, seeking to demonstrate its power and win recruits, has not only destroyed the architecture of this UNESCO World Heritage site, it murdered its Syrian curator, 82-year-old Khaled al-Asaad, who had devoted his life to the study of Palmyra. According to relatives,

his corpse was mutilated. ISIS also transformed Palmyra's second-century Roman amphitheater into a showcase for its cruelty by publicly executing 25 regime soldiers and allied fighters there.

The destruction of what scholars consider to be Palmyra's most significant building, the Temple of Bel (confirmed by satellite imagery on September 2), was immense: only the front gateway of the inner cella was left standing. The temple, which dates to the first century CE, was termed by UNESCO "a remarkable fusion of the architectural styles of the ancient Near East and the Greco-Roman tradition, visible in its sculptured ceilings, monumental podium and friezes, which told the story of the city and featured camel caravans and the constellations."

Ross Burns, adjunct professor of ancient history at Macquarie University in Sydney,

adds that its intact condition, size, and sheer beauty made it the most important Roman structure in Syria. "It's exemplary of Roman building of large temple complexes on the scale of the Jerusalem temple," he told RECORD. "We don't have any remains of the Jerusalem temple shrine itself, but we did of the Palmyra one."

Danti says Bel embodied all that was precious about Palmyra. "It is laid out like a Syrian or Mesopotamian temple—the plan goes back to much earlier temples from the Middle East. It's a Semitic plan, but the style is Greco-Roman in terms of its colonnades, its entablature, and the carvings."

Bel's destruction followed the obliteration of the first classical target in Palmyra (ISIS has also destroyed Shiite and Sufi Muslim shrines and, in a neighboring village, the remains of a Byzantine monastery still used for prayer), a temple to a different god, Baalshamin, the



ISIS released video footage in late August of blasts destroying ancient monuments, including the Temple of Baalshamin.

lord of the heavens in the Canaanite pantheon. An ASOR report shows satellite imagery from August 27 confirming the destruction. According to Burns, the earliest remains dated to 17 CE, though the majority of the structure dated to the early second century CE. The Temple of Baalshamin was a blend of Roman and ancient Syrian styles with Egyptian influences, something that in ASOR's view made it unique in Syria. In his book *Monuments of*

Syria: an Historical Guide, Burns describes the style of the central exedra as "almost fanciful or baroque." The cella, he noted, was preceded by a six-columned vestibule and the side walls decorated with Corinthian-order pilasters.

Between the end of June and the beginning of September, ISIS also severely damaged or destroyed seven of Palmyra's famous tower tombs, tall multistory sandstone buildings used for burial by the city's richest families. Prominent among those destroyed was the Tower of Elahbel, whose front had an arch with a sarcophagus that had supported a reclining statue and whose rooms were divided by colorful bays of niches.

Disturbing though the destruction of the world's architectural heritage is, the danger to human lives is worse. Danti says, "The people trapped in Palmyra, that's what's really on my mind. I do my job as a heritage expert and remain objective," he says. "But I worked for 20 years in Syria, and my mind is on my friends and colleagues who were so welcoming and kind to us and are now at the mercy of the Islamic State and other organizations." ■

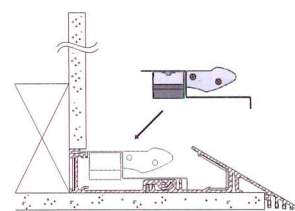
Ben Lynfield is a freelance journalist based in Jerusalem.



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Record Announces Winners of Women in Architecture Awards

BY MIRIAM SITZ

THIS MONTH, RECORD honors five leading female architects and designers with its second annual Women in Architecture Awards. “We aim to push the conversation about women in architecture forward with this forum, to spotlight their accomplishments and encourage firms to promote women architects and their work,” says editor in chief Cathleen McGuigan. “There’s more work to be done, especially in terms of increasing women principals and partners, but the number of women in the field is growing,” says McGuigan. “We’re pleased to recognize a few of the many impressive professionals with these awards each year.”

While a 2014 report by the National Architectural Accrediting Board found that women comprised 43 percent of students enrolled in accredited architecture programs and 42 percent of those awarded degrees, the American Institute of Architects’ 2014 firm survey found that just 26 percent of licensed architects are women.

Meejin Yoon, winner of RECORD’s New Generation Leader award and a professor of architecture at M.I.T., sees those numbers play out in the classroom. “In schools, there’s a good balance between male and female students,” she says. “But if you look at women in the profession, you see that the numbers really change. It’s a challenge to find women in positions of leadership to mentor others in the field.” Yoon points to Design Leader award recipient Billie Tsien as one of her mentors, adding that supporters “across generations are really important for the future of the profession.”

The recipients of the five awards are Billie Tsien, Meejin Yoon (as above), Anna Dyson, Pat Sapinsley, and Marilyn Jordan Taylor.

Tsien, winner of the Design Leader award honoring an architect with significant built work and influence, is a founding partner of Tod Williams Billie Tsien, New York. Her practice is known for major institutional and cultural projects, such as the Barnes Foundation in Philadelphia.

Yoon received the New Generation Leader award honoring an architect who is rising in the profession. She is principal and cofounder of Howeler + Yoon Architecture in Boston and also head of the department of architecture at the Massachusetts Institute of Technology (M.I.T.). Her work explores material in architecture at a variety of scales, most recently in the Sean Collier Memorial at M.I.T.

Dyson, winner of the Innovator award honoring an architect who has made a mark



Design Leader Billie Tsien (above), New Generation Leader Meejin Yoon (top, center), Innovator Anna Dyson (top, right), Activist Pat Sapinsley (bottom, right), Educator Marilyn Jordan Taylor (right).



in innovative design and building technology, is professor of design, technology, and theory at the School of Architecture at Rensselaer Polytechnic Institute and founding director of the Center for Architecture, Science and Ecology (CASE). Her work centers on collaborative research among diverse disciplines to develop new systems for building and energy generation.

Sapinsley is winner of the Activist award, which honors an architect who has used her skills for effecting change in the public realm. Managing director of Cleantech Initiatives at New York University’s Urban Future Lab, Sapinsley brings together green technology and entrepreneurship to create a stronger marketplace for sustainable solutions.

Taylor won as Educator, the award that honors a professional who has helped the advancement of women. Taylor is dean of the School of Design at the University of Pennsylvania. An architect and planner, she was the first female chairperson of Skidmore, Owings & Merrill (SOM) before bringing her vast experience—particularly in large-scale urban and transportation projects—to her role leading PennDesign.

These winners were selected after deliberation by an independent jury that included Rosalie Genevro, executive director of the Architectural League; critic Sarah Williams Goldhagen; Jill Lerner, principal of KPF; Mark Lamster, architecture critic for *The Dallas Morning News*; and Mark Regulinski, managing director of SOM.

On October 6, just one day before RECORD’s 2015 Innovation Conference, a morning symposium followed by a luncheon honoring the winners will take place at the Time & Life Building in New York. At the symposium, Sylvia Smith, principal and senior partner of FX Fowle, and Julia Murphy, associate with SOM, will speak about the challenges women face as design leaders in large firms. For more information on how to attend, visit arwomeninarchitecture.com. ■



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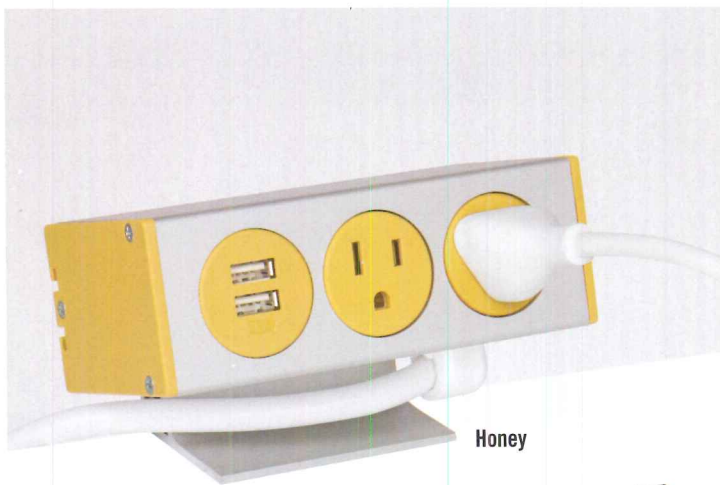
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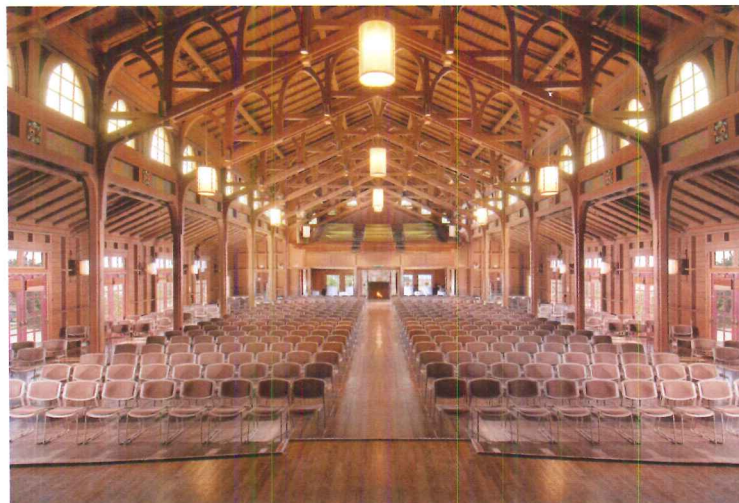
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Monterey Design Conference Returns this October

BY ANNA FIXSEN



The conference will be held in the Julia Morgan-designed Merrill Hall (above) and feature keynote lectures by well-known architects, including Bernard Tschumi (below).

SUMMER may be over, but architects, students, and design devotees can look forward to a camplike weekend of professional development, networking, and the great outdoors during this year's Monterey Design Conference, to take place October 16 through 18 in Pacific Grove, California. ARCHITECTURAL RECORD is a media sponsor.

Since 1979, this biennial conference, organized by the American Institute of Architects, California Council, has given attendees the opportunity to dine together, discuss issues, and rub shoulders with prominent architects at the rustic Julia Morgan-designed Asilomar campus overlooking a beautiful stretch of the Monterey Peninsula.

This year's lineup features an array of international, national, and local speakers including Paris and New York-based architect Bernard Tschumi, Tokyo-based architect Junya Ishigami, Rand Elliott of Oklahoma, and Clive Wilkinson from California. Lectures and panel discussions will cover topics of both regional and national significance, including designing for arid climates, workplace trends, and the intersection of art and architecture.

To offset the intellectual stimulation, there will be special social gatherings (including an opening-night fete with s'mores and bluegrass music by architect Michael Holliday), behind-the-scenes architecture tours, and opportunities to explore 107 acres of beachfront dunes and pine forests.

"In my opinion, this is the preeminent design conference in the country, because of its location, the speakers, and the environment it all occurs in," says William Leddy, principal at San Francisco-based firm Leddy Maytum Stacy Architects, who has been attending the conference for more than a decade. "It just has this level of intimacy that you can't get at other conferences."

The one downside? "It's getting harder to get a seat," he says. ■



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[NEWSMAKER]

Sarah Herda + Joseph Grima

BY MIRIAM SITZ

THE 2015 Chicago Architecture Biennial purports to be the largest survey of contemporary architecture to hit North America to date, and leading the monumental effort as its artistic directors are Sarah Herda and Joseph Grima. Herda has served as the director of the Graham Foundation for Advanced Studies in the Fine Arts, a project-based grant-making organization, since 2006. Grima, based in Genoa, Italy, was the editor of the design magazine *Domus* from 2011 to 2013. Prior to *Domus*, Grima directed New York's Storefront for Art and Architecture from 2007 to 2011, succeeding Herda's tenure in the same role from 1998 to 2006. Drawing on their shared experience at Storefront and their overlapping networks, Herda and Grima together curated the Chicago Biennial, titled *The State of the Art of Architecture*, with an eye to innovation, ideation, and global dialogue.

What themes were most salient as you began thinking about the biennial?

Sarah Herda: When Joseph and I began working on the biennial, we were very conscious that this is the first one—it's laying the groundwork for future biennials—so instead of focusing on one specific theme or issue or asset, we wanted to capture the diversity of practices and different ways in which architects are practicing today. We did that by casting a wide net around the world.

Joseph Grima: Our idea was to take this opportunity to step back and create an exhibition that was a roundtable of sorts that invites a number of divergent positions from many different backgrounds. By bringing them together and putting them in dialogue with one another, we can look as much for the points of divergence and tension as for the points of convergence or consensus.

How important was it to spotlight Chicago-based firms and practitioners within such a diverse show?

JG: It was very important to us that the city of Chicago be strongly represented in the exhibition because the city occupies a very specific position within the history of architec-

ture. Chicago has been so influential on so many other cities. In many ways, Chicago would have been lingering in the background wherever this exhibition had been.

SH: It makes so much sense to have this global convening in Chicago, because the city's been a laboratory for ideas for well over 100 years. That sense of experimentation is a perfect backdrop to talk about what's possible now and what we want and need from architecture in the future.

The biennial's title—*The State of the Art of Architecture*—refers to architecture as an art, not a craft, not something utilitarian. How does the exhibition reflect this?

JG: We really like that this title refers to the idea of “state of the art”—the most advanced, the exemplification of modern architecture. But it also indicates that architecture is not simply a utilitarian practice that provides shelter but is also an art—a form of cultural expression. This is an extraordinary opportunity to demonstrate how architecture responds to so many different questions on the spectrum of human need, which is something that's not always completely clear in the mind of the public.

SH: Everybody interacts with architecture every day, but often the public interacts with architectural ideas only once they're actualized. We're highlighting ideas that shape buildings, and we want to put people in contact with these ideas. We really worked with participants to explore the ways in which they represent their ideas, so a lot of the show is devoted to hand-drawing and experimenting with other mediums to express architectural ideas.

JG: Ultimately we were more interested in the ideas embedded in the projects—whether they were built or unbuilt, realized or unrealized, or simply represented through paintings or drawings.

What outcomes do you hope to see?

JG: It's really important that, in the longer term, this exhibition generates debate. Inevitably, amazing collaborations will be born out of this. Opportunities for people to converge and experiment are incredibly important for fostering innovation and improving the general quality of architecture. I hope it's something that will be imitated by other cities, and I'm really excited to see in 10 or 20 years what the effects will be.



noted

David Adjaye Awarded M.I.T. Eugene McDermott Award

The Massachusetts Institute of Technology named architect David Adjaye as recipient of its 2016 Eugene McDermott Award in the Arts. The \$100,000 prize includes a residency at M.I.T. in which Adjaye will conduct symposia on museum and campus design, as well as on his own work.

Thornton Tomasetti and Weidlinger Merge

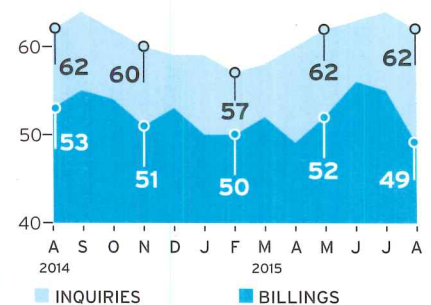
New York-based engineering firms Thornton Tomasetti and Weidlinger Associates announced a merger on September 8. While terms of the deal were not disclosed, *Engineering News Record* reports that the two companies have a combined annual revenue of \$240 million. The firms will operate under the Thornton Tomasetti name.

Zaha Hadid Teams up with Nikken Sekkei for Tokyo Stadium

Zaha Hadid Architects announced it has teamed up with major Japanese engineering and design firm Nikken Sekkei for the redesign of the Tokyo National Stadium. Since ZHA's initial design was ousted in July, the two firms hope to reclaim it with a tighter budget and rapid construction schedule.

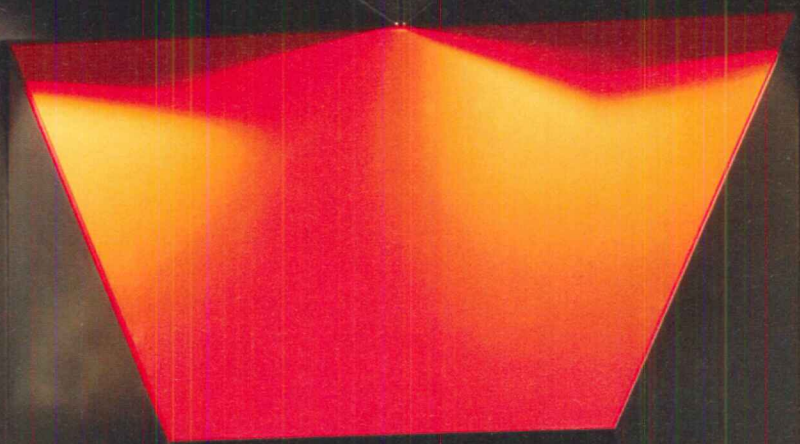
Surgeon General Calls for Walkable Communities

On September 9, U.S. Surgeon General Vivek Murthy launched a campaign to promote the health benefits of walking. The Step it Up! call to action challenges planners to build safer, more accessible places to walk. AIA CEO Robert Ivy said that members of the organization will work with the surgeon general one-on-one “to make his Call to Action a reality.”



ABI Slips in August

The monthly Architectural Billings Index (BI) for August dipped slightly to 49.1, down 5.6 points from July's score. Any score above 50 indicates an increase in billings. The AIA's chief economist assures architects that this is standard after periods of steady growth: “This should not be a cause for concern throughout the design and construction industry.” The Projects Inquiry index stood at 61.8.



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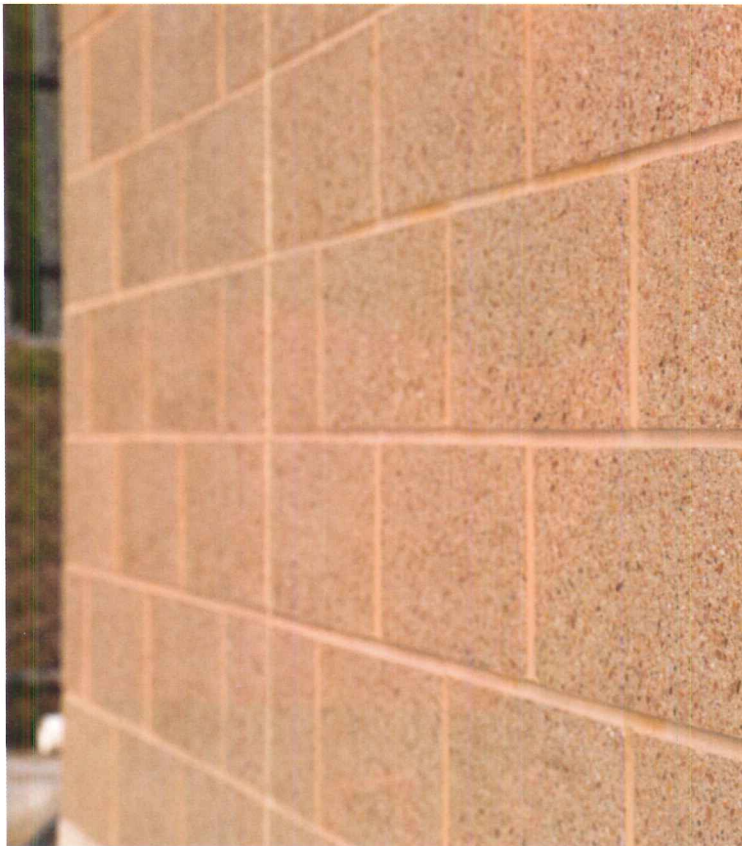
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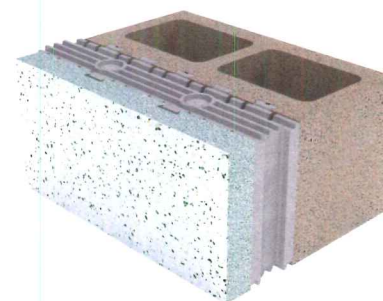
MANUFACTURER: Northfield an Oldcastle® Company, Morris, IL

ARCHITECT: Brad Kwasny, AIA, Bray Architects, Sheboygan, WI

GENERAL CONTRACTOR/MASON: Boldt Construction, Appleton, WI

PROJECT MANAGER: Rettler Corporation, Stevens Point, WI

ENGINEER: Rick Zahn PE



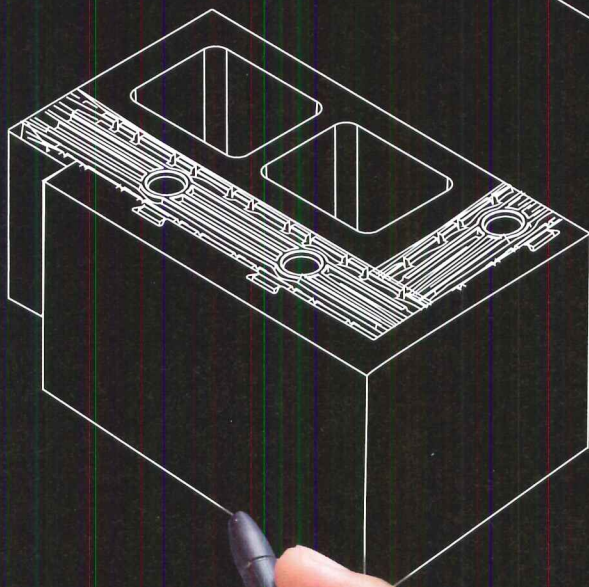
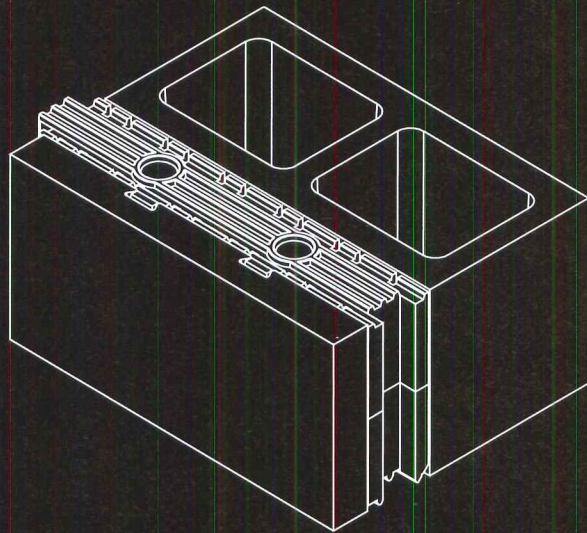
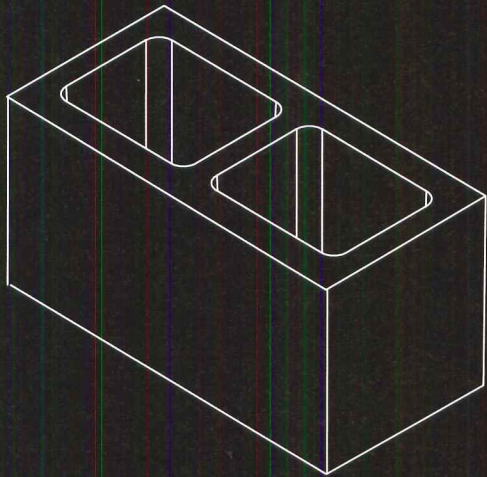
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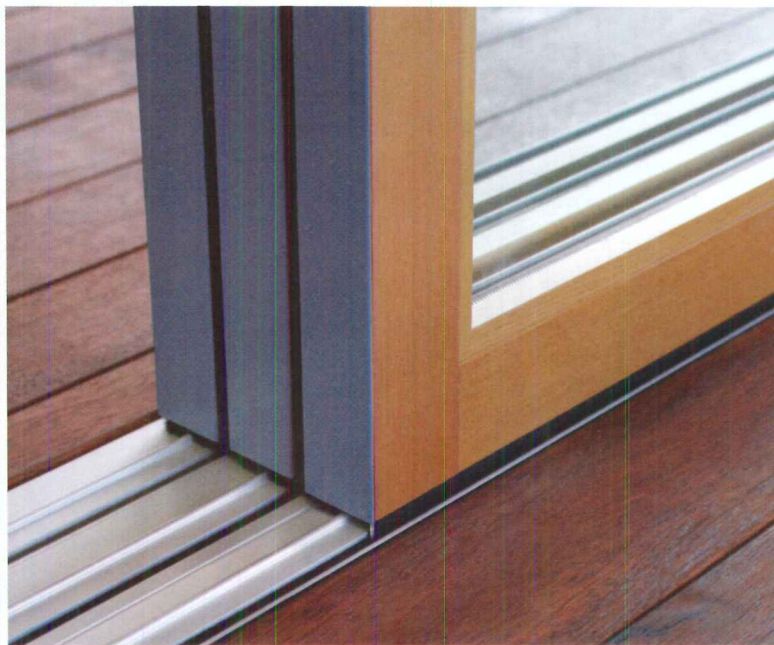
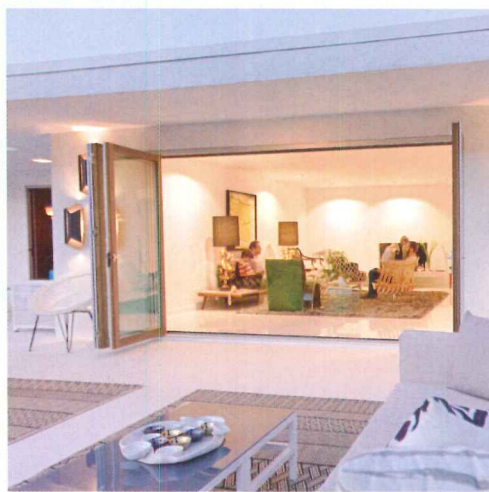
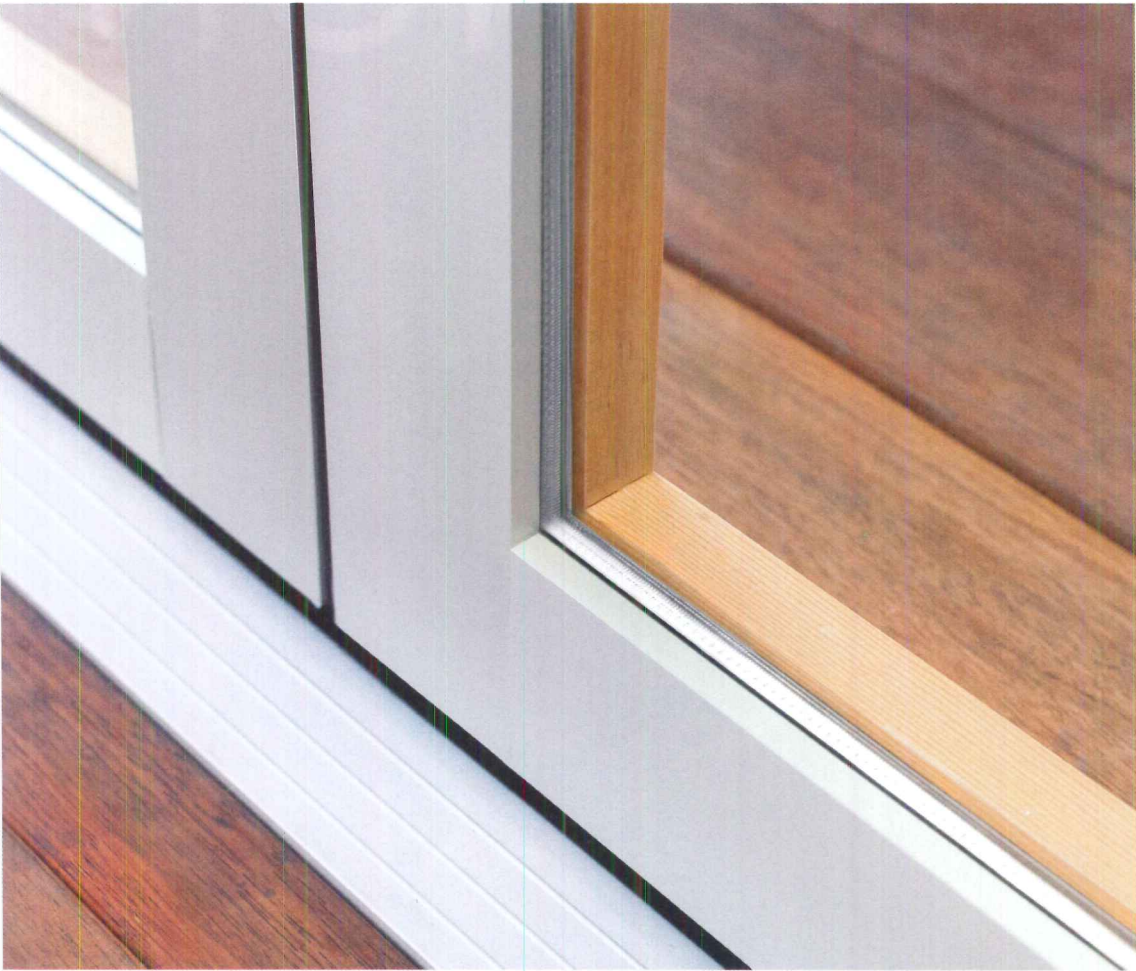
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perspective **house of the month**

TOSHIKO MORI DESIGNS A MODERNIST HOUSE IN PICTURESQUE CAMDEN, MAINE, THAT IS EMBEDDED IN THE EARTH BUT OPENS OUT TO THE VIEW.
BY SUZANNE STEPHENS



The team designed a house so that the living-dining area and the master bedroom overlook the water (left). A lap pool in the zigzag plan connects the main house to the guest quarters at the top of the slope (bottom, left). The architect's choice of Scandinavian-modern furnishings (below) appealed to both the original and new owners.



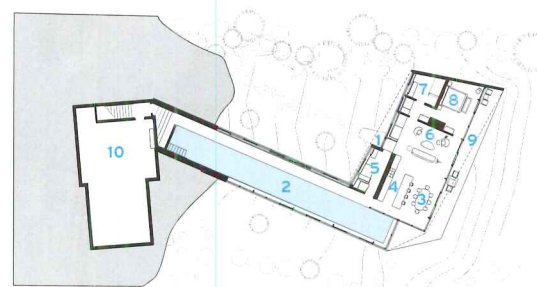
THE CLIENT wanted a low-key, modern two-bedroom house with an indoor lap pool. True, his surname makes you think he might veer toward something grander and more traditional, but O. Stillman Rockefeller has an experimental streak and so spurned “the tyranny of the Shingle Style” prevalent in coastal Maine. His site of less than an acre, however, presented a challenge: a narrow, sloping parcel in Camden, overlooking West Penobscot Bay. But Rockefeller found New York-based architect Toshiko Mori to solve the problem. “We had to provide maximum views of the water without the owner being able to see neighboring houses,” she says. “It had to be strictly framed.”

Bringing in Michael Van Valkenburgh Associates to compose the landscaping artfully, the client and architect decided to place the guest quarters and garage at the top of the hill, on the foundations of a former house. Mori came up with a Z-shaped

plan that descends the slope so that the main house is at the lower end. An enclosed 82-foot-long lap pool links the two volumes of the 5,400-square-foot complex.

Mori, who had worked for Edward Larrabee Barnes, particularly admired that architect’s strategy for the Haystack Mountain School in Deer Isle, Maine (1962), where a cluster of wood pavilions spills down a forested hillside to Jericho Bay. “Ed broke up the program into a series of volumes connected by a deck,” notes Mori. “Here, the pool is the connector.”

Her zigzag steel-and-wood frame building, with a sedum roof, is clad in white Atlantic cedar, alternating with large expanses of low-E glass. An overhang shades the living-dining area and the master bedroom on the east, and the house employs geothermal heat pumps and other features to lower energy use. But despite Rockefeller’s love for the house, he had a big problem



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|------------|---------------------|---------------------|
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| 2 POOL | 6 LIVING | 10 GARAGE/
GUEST |
| 3 DINING | 7 MASTER BATH | |
| 4 KITCHEN | 8 MASTER
BEDROOM | |

with the outdoor lighting from a neighbor’s cottage and nearby lighthouse and so sold his only 1-year-old home last year. Still, he says, “I’m so proud of building this house. It’s Toshiko’s signature work.” ■

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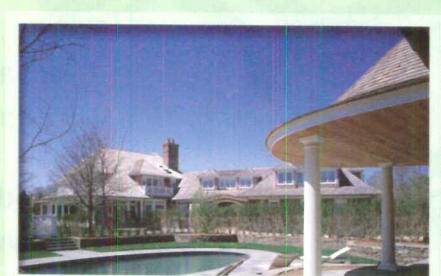
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CIRCLE 214

EDITS: Smiros & Smiros Architects, LLP
Lower photos from left to right: Photographer: Mario Novak, Architect: Bob Ortmann; Zwirko & Ortmann Architects, P.C., Builder: Telemark Inc. | Olson Photographic, LLC | RW Mulligan Co., Inc.



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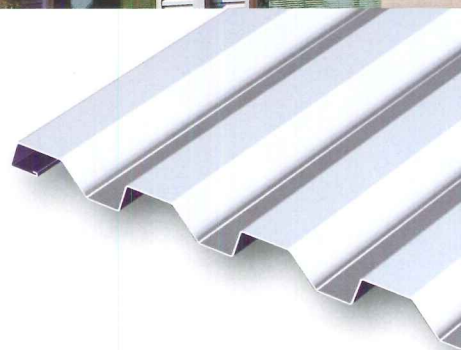
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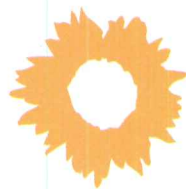
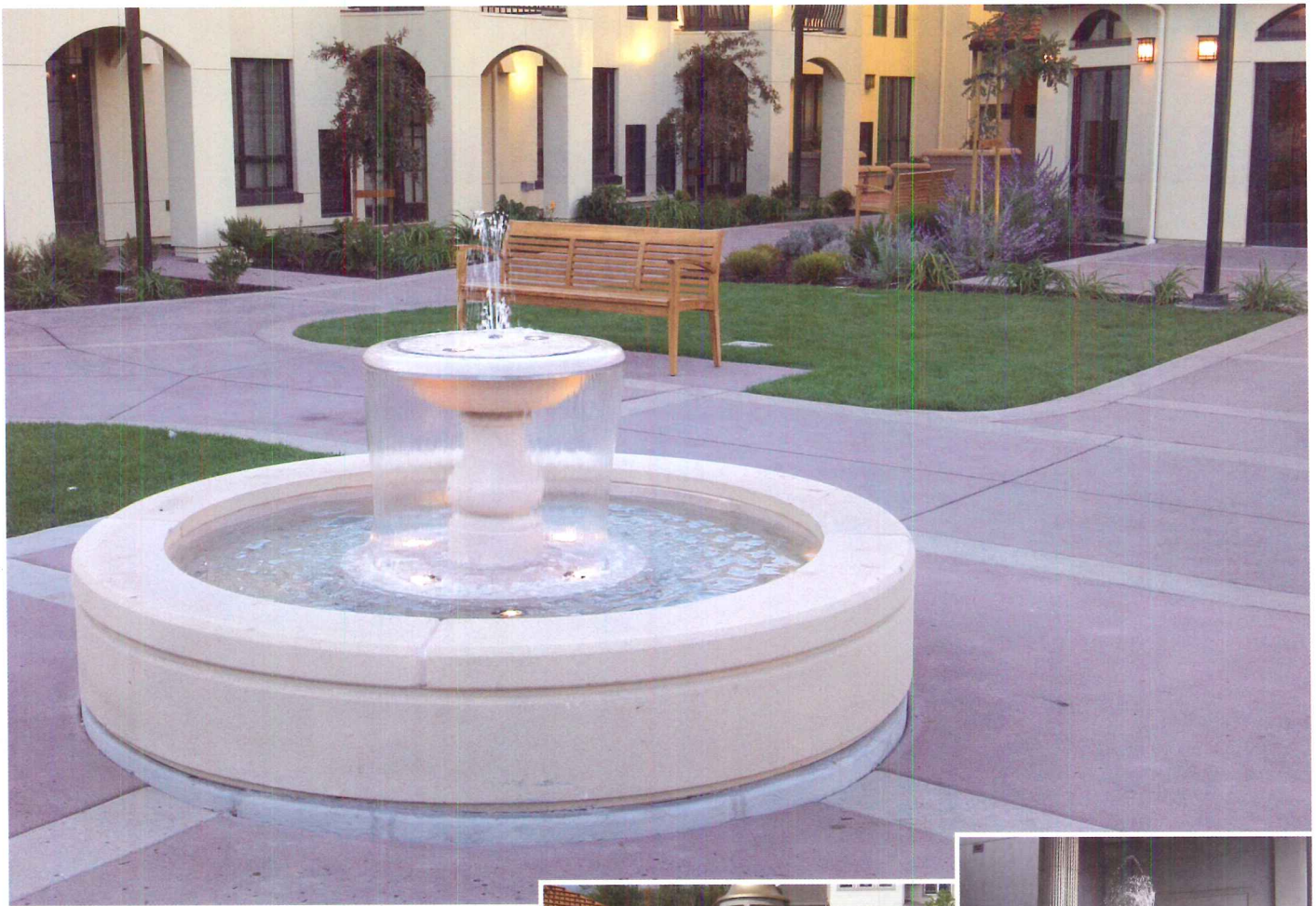
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The answer to the September issue's Guess the Architect is **HANS SCHAROUN**. His design for the Chamber Music Hall (1987) was carried out by Edgar Wisniewski, after Scharoun's death. The more intimate hall is next to Scharoun's earlier Berliner Philharmonie (1963) in Berlin's Kulturforum.

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Main image: Merrill Gardens, San Jose, CA; Secondary Images Left to Right: 1) Varenna Villetta, Santa Rosa, CA; 2) Four Seasons, Bridgewater, NJ; 3) Wyndham Waterfront, New Orleans, LA.

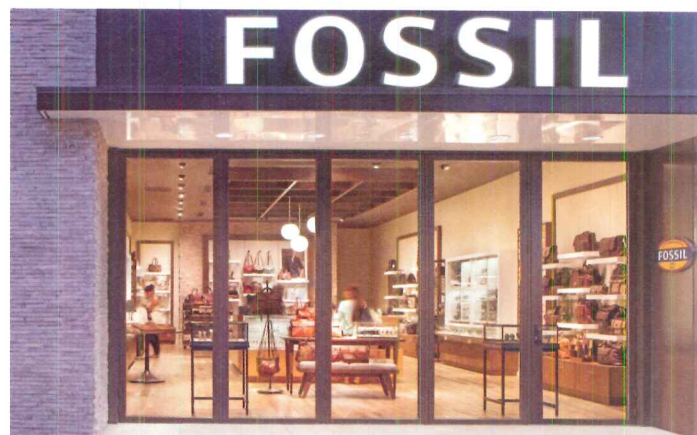
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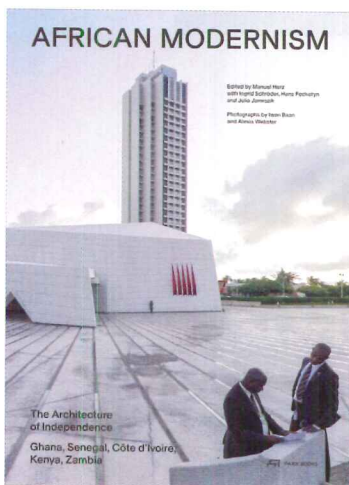
A Legacy Revealed

African Modernism—the Architecture of Independence: Ghana, Senegal, Ivory Coast, Kenya, Zambia, edited by Manuel Herz with Ingrid Schröder, Hans Focketyn, and Julia Jamrozik; photographs by Iwan Baan and Alexia Webster. Park Books, August 2015, 640 pages, \$79 (paper).

Reviewed by David Adjaye

The dearth of literature on African architecture has long been a source of frustration for the continent's design community. The last decade, however, has seen a gradual change, as young designers witness the stunning rise of African metropolitan centers like Lagos, which has now surpassed Cairo as Africa's largest city, and have become eager to engage with narratives of post-colonialism. These days, investors are directing enormous resources to the continent's development, energizing its cities and opening up a new era in its urbanization. A similar wave of hope during the era of African independence in the 1950s and '60s inspired the continent's leaders to commission ambitious and extraordinary buildings that might elevate their nations to the world stage. The architects who designed these works were, in large part, imported from Europe, North America, and Israel, and they came with their own ideologies and biases, modulating them—genuinely or otherwise—to suit the local climates, cultures, and conditions.

A half-century later, a great many of these buildings have been neglected and fallen into disrepair, serving as a poignant reminder that the relationship among African aspirations, identity, and history is still fraught with unresolved questions and tensions. Manuel Herz's *African Modernism* endeavours to draw



attention to this plight in a series of profiles, essays, and photographs of modernist architecture throughout the continent. The care that Herz and his fellow editors, Ingrid Schröder, Hans Focketyn, and Julia Jamrozik, have taken to provide a balanced and comprehensive discussion of the origins of modernism in Africa will make this a seminal work in the discourse of African architecture. Herz—a Swiss architect who has devoted much of his career to humanitarian-oriented architectural research, largely related to Africa—has leveraged his experience into a potent critical awareness.

More than anything else, *African Modernism* is an exercise in documentation. The lack of prior archival work on the subject made this a daunting task, but it also compelled the editors to conduct thorough original research based on their own travels. For practical reasons, the editors have limited the scope of analysis to just five countries: Ghana, Senegal, Kenya, Ivory Coast, and Zambia. Of course, for those of us who are familiar with African architecture and the continent itself, this leaves many of its richest offerings sorely missed. The editors state emphatically, however, that *African*



Modernist trailblazers: Karl Henrik Nostvik's 1973 Kenyatta International Conference Center in Nairobi (top) and James Cubitt's 1956 School of Engineering at KNUT in Kumasi, Ghana (above). The book's cover shows the Hotel Ivoire in Abidjan, Ivory Coast.

Modernism is just the start of a much larger undertaking, and they encourage the wider design community to assist with the effort through further study. In this respect, they have set the bar high.

The book examines more than 100 architectural works and presents them in sumptuous detail. The editors walk the reader through the basic information on each building and its design, and match the text with site plans and the breathtaking photography of Iwan Baan and

Alexia Webster. Each main chapter is devoted to one country and prefaced with a helpful set of social, political, and economic timelines to give a sense of the broader post-independence context. These chapters are book-ended by a diverse array of well-written essays that zero in on particular themes ranging from debates on emergent civic identity to settlement patterns across time. The essays are thoughtful and thought-provoking; they boldly confront the thornier issues surrounding the idea of

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At the University of Zambia UNZA in Lusaka, designed by Julian Elliott, a student bar (1965-70) occupies a covered space open to light and air.

“independence architecture.” Particularly interesting is Zvi Efrat’s “Proxy Colonialism,” which details how the newly independent state of Israel employed an intentional strategy of exporting its particular blend of Western architecture to African states as a way of exerting influence.

The obvious intention of *African Modernism* is to subvert the negative impressions that many people—including Africans themselves—carry about modernist architecture in the post-colonial context. In so doing, the book may engender rethinking about the value of these works. “To document also means to preserve,” writes Herz. This is both admirable and necessary, though I feel it is hampered by the book’s backward-looking approach. It is clear that the editors are reluctant to stray from the confines of historical analysis, preferring to leave engagement with contemporary criticisms of Africa’s modernist relics to others. But such an engagement would have been appropriate, and even better if it involved the perspectives of African architects and thinkers. Herz’s explicit statement in his introductory text of his intention to use *African Modernism* as a tool for “normalizing Africa” is problematic. While he is correct that Africa is too often orientalized and relegated to a lesser place in the human story, with its problems distorted into

blinding caricatures, the readers of *African Modernism* are forced to contend with the uncomfortable irony that the book’s editors and contributors themselves—like the independence architects of the ’60s—are drawn almost entirely from Europe, North America, and Israel. The single exception is photographer Alexia Webster, who is from South Africa, which is not one of the book’s focus countries. One wonders whether the “normalization” of Africa can really be achieved, even by those with the best of intentions, if it is done in the glaring ab-

sence of African perspectives.

Nonetheless, *African Modernism* is a truly remarkable book. It offers intellectual rigor, fascinating insights, and marvelous visuals in equal measure. No book collection on African architecture would be complete without it. ■



David Adjaye is the founding principal of Adjaye Associates and the author of African Metropolitan Architecture, published in 2011. An exhibition about his work is at the Art Institute of Chicago through January 3, 2016.

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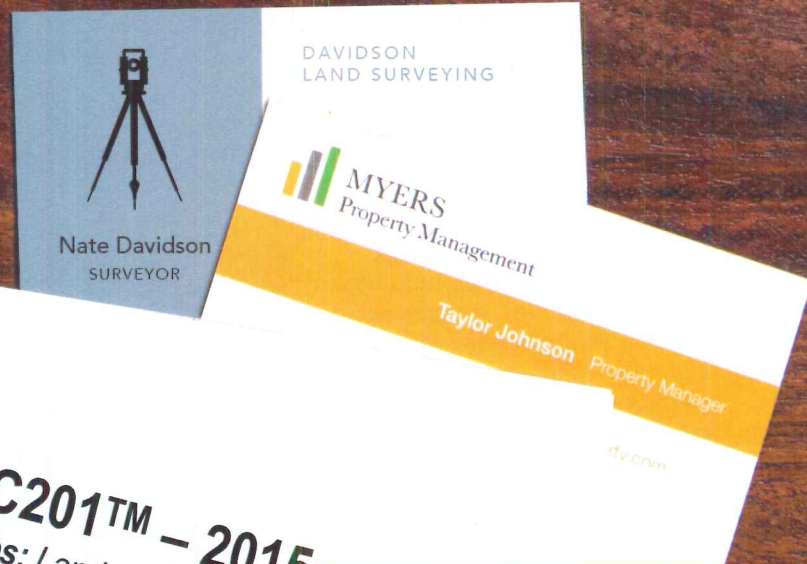
 

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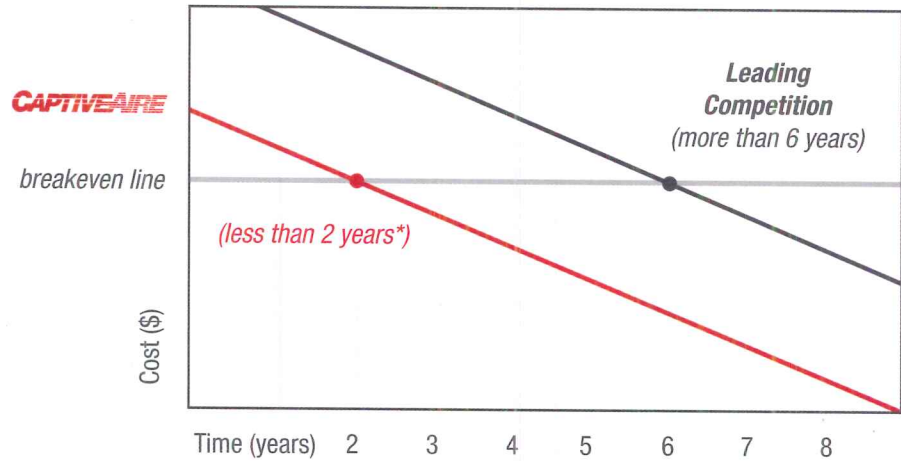
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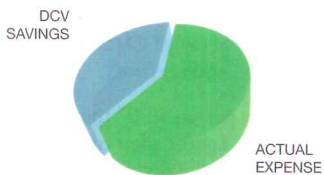
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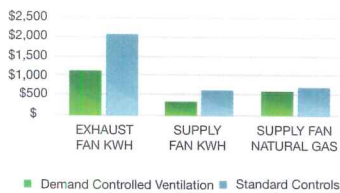
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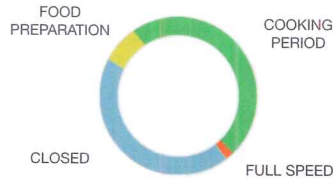
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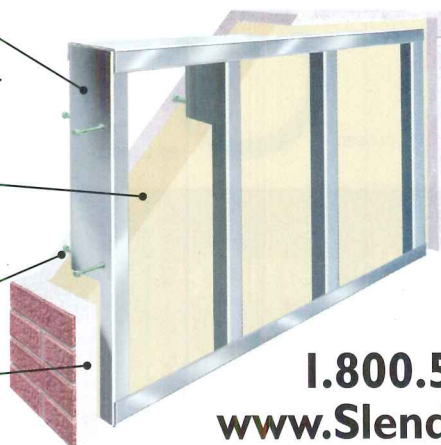
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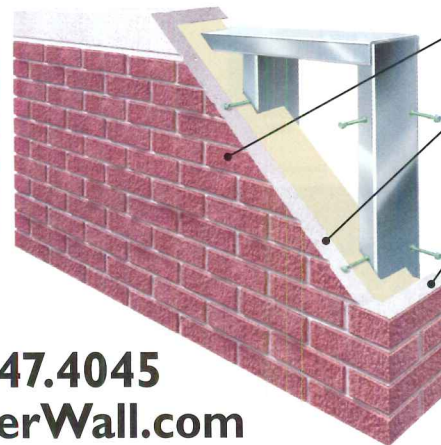
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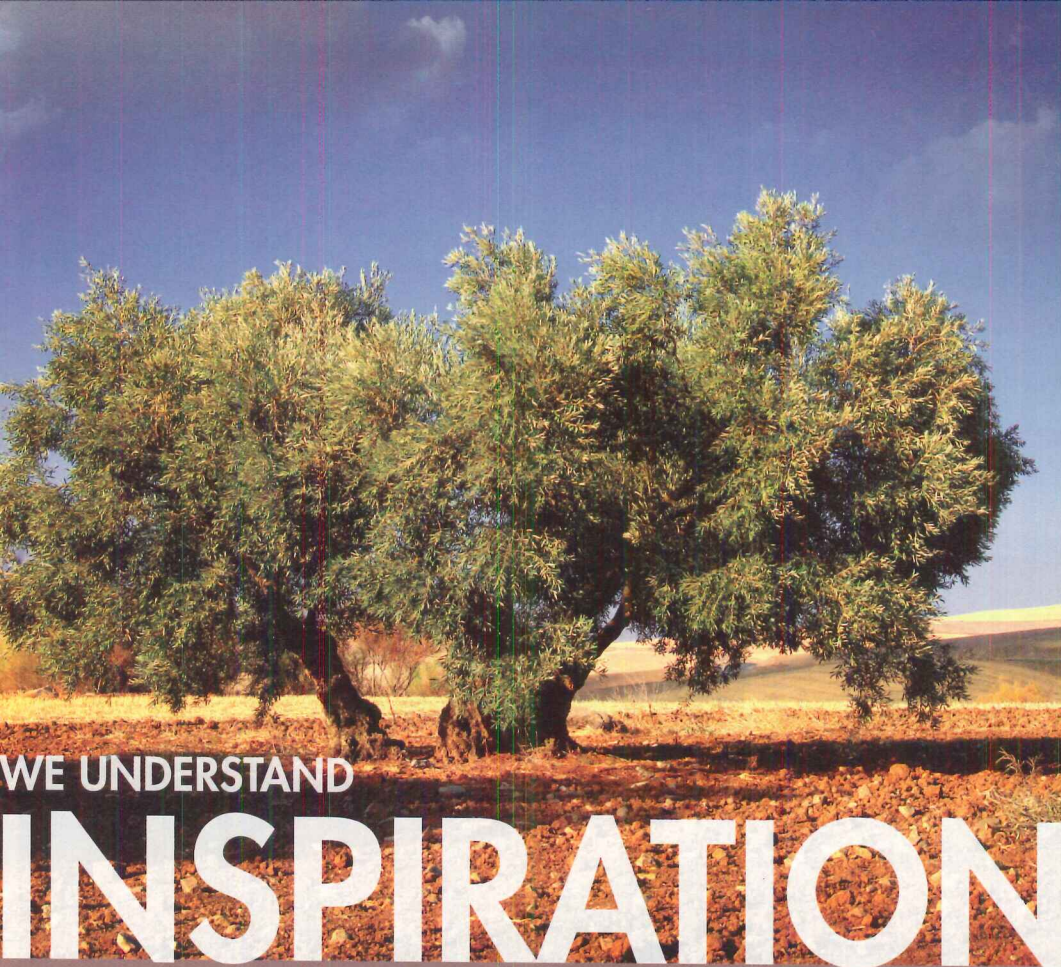
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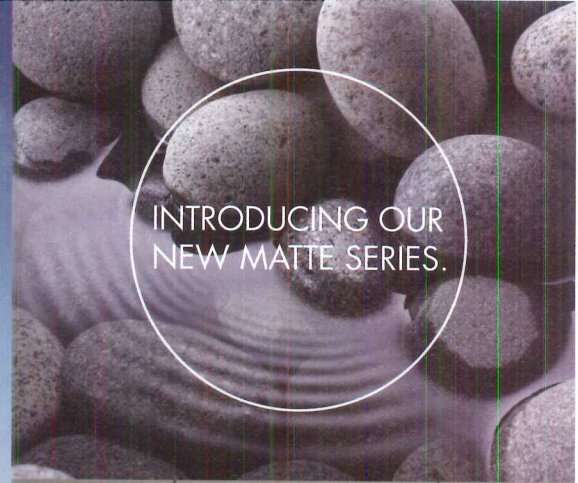
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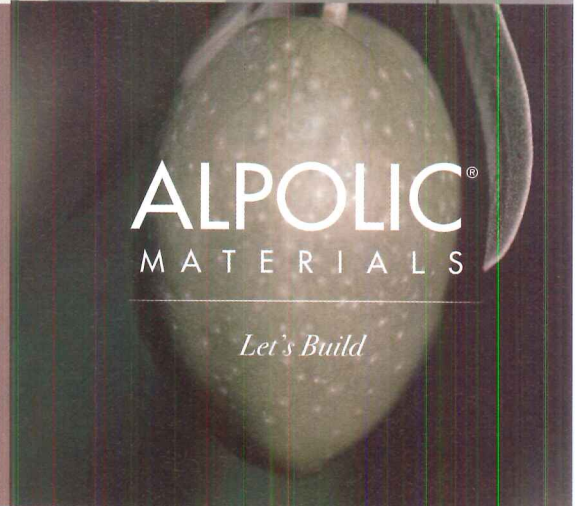
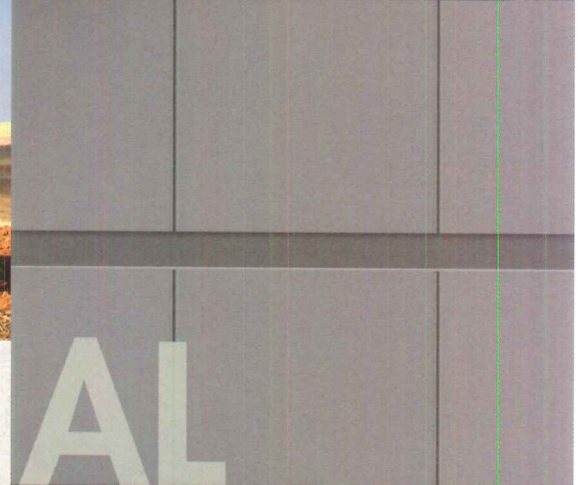
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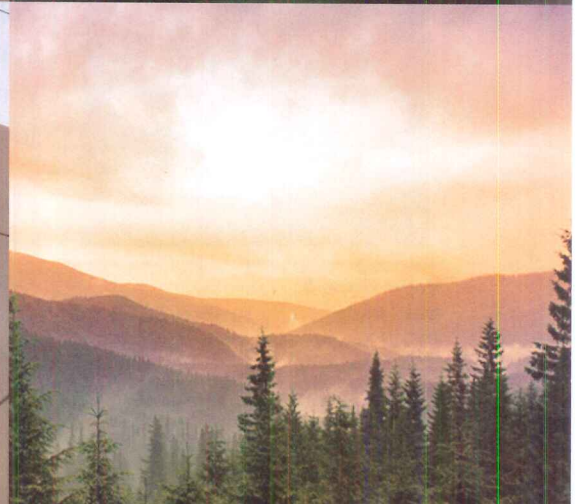
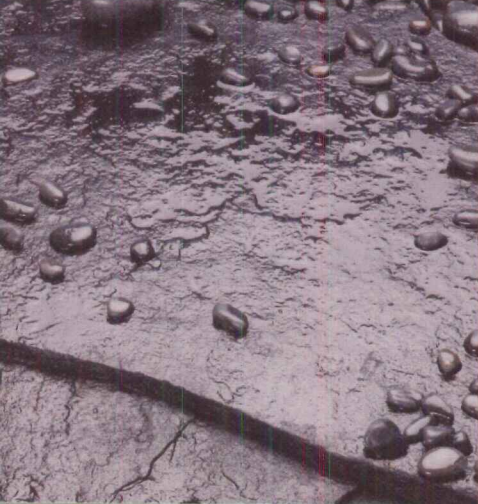


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CIRCLE 42

Thoroughly Modern Classics

Historically accurate replacement windows benefit from 21st-century materials and glazing.

By Julie Taraska

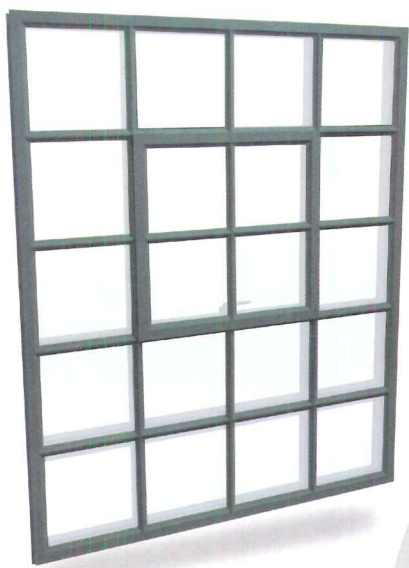
WHEN IT comes to the windows of historic buildings, both the National Park Service and the National Trust for Historic Preservation agree: it's better to repair original casements than replace them with updated copies. But when the windows are beyond salvageable or for a new building in a landmarked district, "the challenge is replicating the existing historic fabric while meeting performance and operational needs," says Matt Kraus, vice president of Skyline Windows. In 1990, the company introduced its first casement designed in accordance with the New York City Landmark Preservation Commission's guidelines. Skyline's latest option, the Series 97 multilock with pull handle, features a grip at the bottom that allows the window to be opened from a wheelchair.

Another modern-day interpretation is Graham Architectural Products' SR6700 series of steel-replication windows. These aluminum-extruded models, which feature traditional concave muntins and applied grids, are available in fixed or projected styles.

Increased thermal and acoustic requirements also have made creating quality replacement windows trickier. However, the historically accurate Custom Window 8300 from Wausau Window and Wall Systems may be specified with high-performance glass, sound-reducing glazings, and a polyurethane thermal barrier "capable of achieving a U-factor as low as 0.38 BTU/hr. per square foot," according to Steve Fronек, PE, vice president of technical services at Wausau.

The windows, which have been approved for use in buildings on the National Register of Historic Places, also may be customized with rebates that match frames of old.

"Historically accurate replication is about the entire opening, not just the window," says Fronек. **CIRCLE 246**



Clockwise, from above: Skyline's Series 97 multilock with pull-handle detail; Custom Window 8300 from Wausau; and the SR6700 series steel replication window from Graham Architectural Products.



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PROJECT: Experience Life Church
LOCATION: Lubbock, Texas
ARCHITECT: ADC Inc.
CONTRACTOR: Dane Construction
PANEL PROFILE: 7.2, FW-120 (Silver Metallic)

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CIRCLE 11

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Location:
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Architect:
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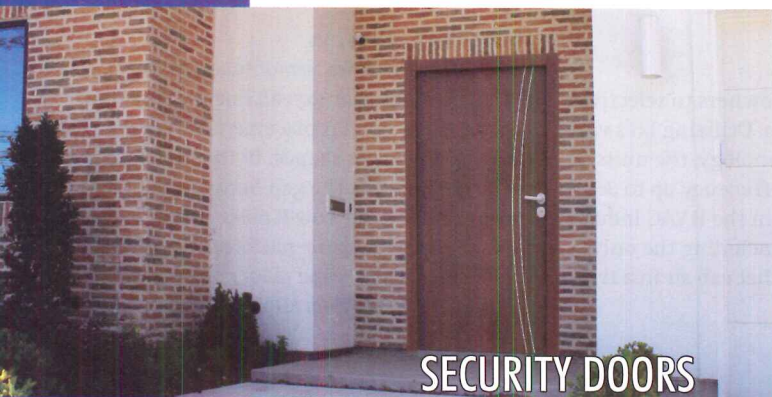
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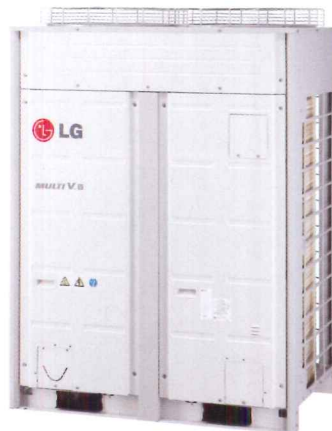
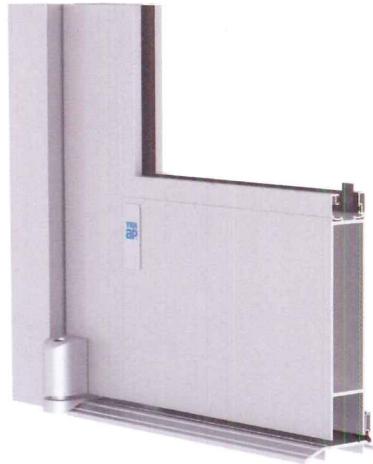


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BY JULIE TARASKA

**487 Series Integrated Slider****C.R. Laurence** crlaurence.com

This partition's integrated top-hung sliding system maximizes floor space, requiring far less room than a pivoting model. The frame can accommodate up to 200 pounds and be used with wood, aluminum, and all-glass doors. When paired with the latter, the partitions qualify for LEED credit, as the minimal hardware and 1" face trim promote daylight diffusion.

CIRCLE 240

Slido Design 80-M Door**Häfele** hafele.com

With hidden tracks and fittings, the wall-mounted 80-M slider seems to float along surfaces. The top track can be recessed for a wall-to-door clearance of as little as ½", or face-fixed to allow for a 1¼" clearance for baseboards. The design supports wooden doors that weigh up to 175 pounds and are 30" to 70" wide.

CIRCLE 243

ProTek 35HL/50HL Doors**YKK AP** commercial.ykkap.com

Designed for high-traffic storefronts and low-profile buildings, these medium- and wide-stile impact-resistant doors withstand large and small missile impact up to 50 PSF, as well as meet Florida's High Velocity Hurricane Zone standards. Each door has a single-point hook lock, reinforced tubular frame, and ADA-compliant air threshold.

CIRCLE 241

Multi V IV Heat Pump**LG** lg-vrf.com

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CIRCLE 244

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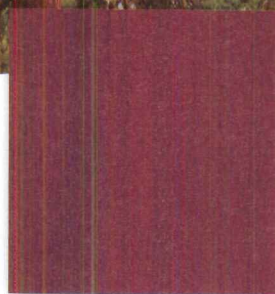
CIRCLE 242

Madeira Collection**Simonton Windows** simonton.com

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CIRCLE 245

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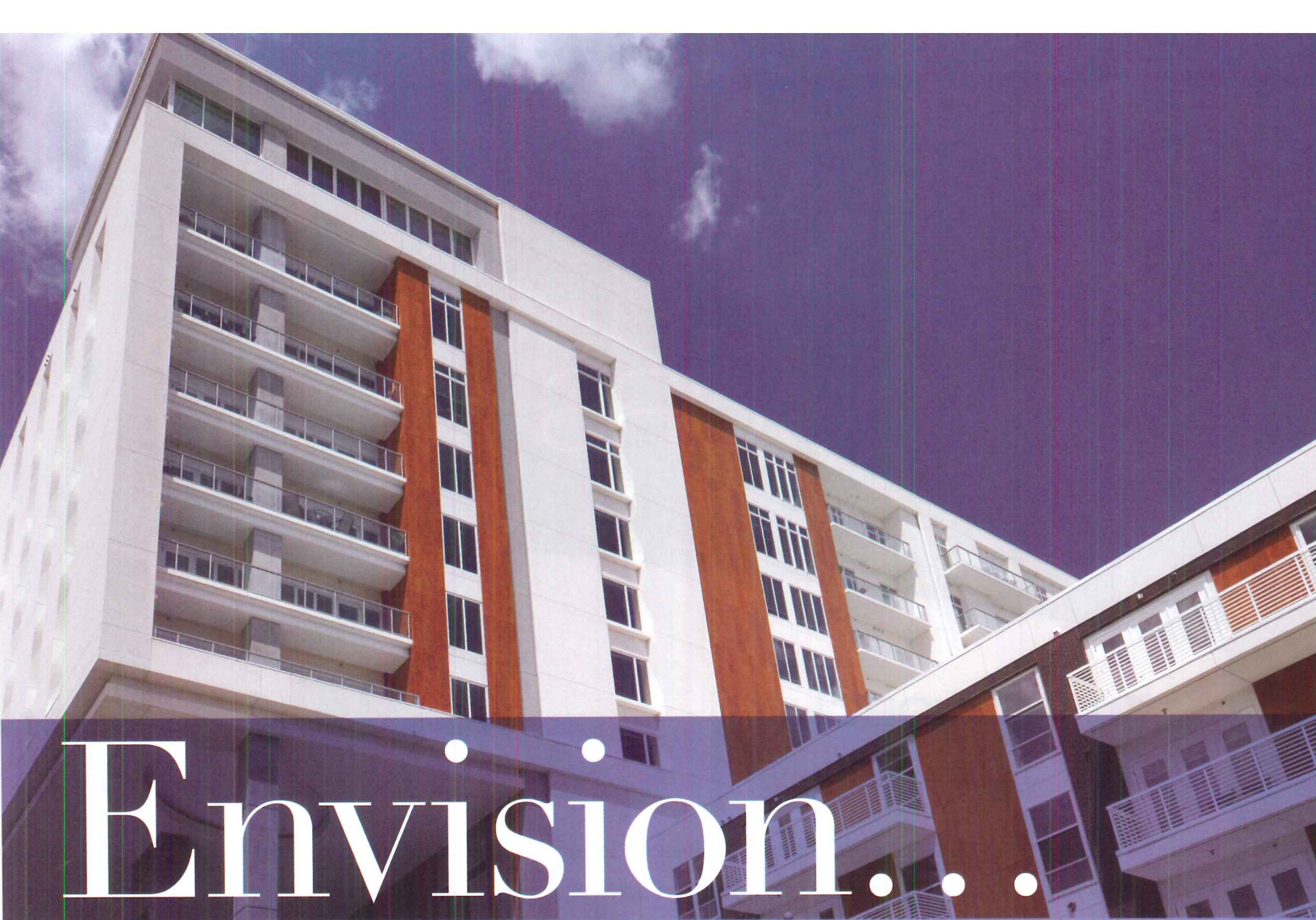


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- Gabriel Keller, Assoc. AIA and Lars Peterssen, AIA
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Twist and Shout

China's tallest building puts a new spin on high-rise design and asserts itself in a cluster of giants.

BY CLIFFORD A. PEARSON

PHOTOGRAPHY BY BLACKSTATION



An aerial photograph of the Shanghai skyline at dusk. The Shanghai Tower, a tall, spiraling skyscraper, dominates the left side of the frame. To its right stands the Jin Mao Tower, a pagoda-like structure with a tiered top. Further right is the World Financial Center, a tall, slender tower with a distinctive trapezoidal top. The background is filled with other skyscrapers and residential buildings, with the Huangpu River visible in the distance. The sky is a mix of blue and orange, suggesting sunset or sunrise.

LEADER OF THE PACK At 2,073 feet, the Shanghai Tower rises above SOM's pagoda-like Jin Mao Tower (1,381 feet) and KPF's World Financial Center (1,615 feet) with its cutout top. The three supertalls anchor the Lujiazui business district in Pudong, the sprawling area on the east side of the Huangpu River.

LOOKING UP A V-shaped cutout called a strake slides up the tower, reducing wind loads and accentuating the building's iconic twist (this page). A conference center and retail complex sit at the base of the tower (opposite, left) and can be accessed by an escalator from the city's subway system (opposite, right).





In their race to the top, supertall buildings are always in competition with each other. At 2,717 feet, the Burj Khalifa in Dubai reigns supreme but will fall to second place when the 3,281-foot Kingdom Tower, now under construction in Jeddah, Saudi Arabia, is completed in 2018. Adrian Smith designed both buildings while a design partner at Skidmore, Owings & Merrill (SOM). In Shanghai, a different kind of challenge has emerged as a trio of supertalls has risen during the past 16 years in Lujiazui, the booming financial core of the city's Pudong district. Huddled close together, the three structures offer a lesson in recent high-rise design and demonstrate distinct approaches to grabbing attention on the skyline.

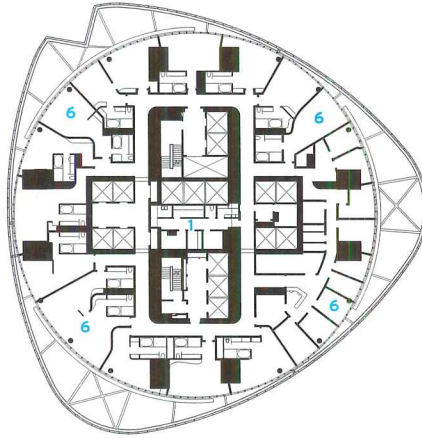
First out of the gate was SOM's Jin Mao Tower, which rises to 1,381 feet as a glass-and-metal pagoda, a last gasp of postmodernism when it opened in 1999. Next door, Kohn Pedersen Fox sculpted a 1,615-foot-tall prism with a cutout at the top, turning its 2008 World Financial Center (WFC) into an elegant but cool abstraction that reminds some people of a giant bottle opener.

The last of the towering troika officially opens this fall even though few of its tenants will be moving in before next year. At 2,073 feet, the Shanghai Tower is the tallest building in China and the second-highest in the world. Designed by Gensler, with Tongji University's Architectural Design & Research Institute as the local design institute, the building tapers and seems to wiggle as it rises—adding welcome animation to the Pudong cluster. The asymmetrical form evolved from the



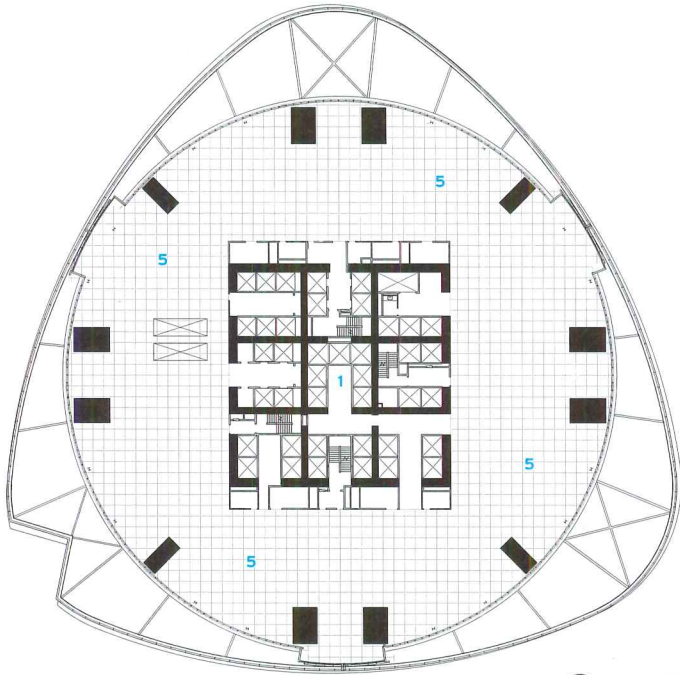
architects' decision to organize the building as a set of nine zones or "neighborhoods" stacked on top of each other with gradually smaller diameters. After testing various geometries to reduce wind loads, the design team—including structural engineers at Thornton Thomasetti—carved the tower so it twists 120 degrees as it rises. A V-shaped indent called a strake soars up the side of the tower, further reducing the impact of winds and accentuating the twist in the form. According to Gensler, the building's shape reduces wind loads by 24 percent compared with a standard rectangular tower, which allowed for a lighter structure and saved \$58 million in materials.

The project team also wanted to make the building as environmentally responsible as possible, so it developed a double-skin design. Twenty-one atria act as climatic buffers between a cylindrical structure in the center, which contains all of the fully conditioned spaces, and an irregular outer glass envelope. The atria, ranging from 10 to 14 stories

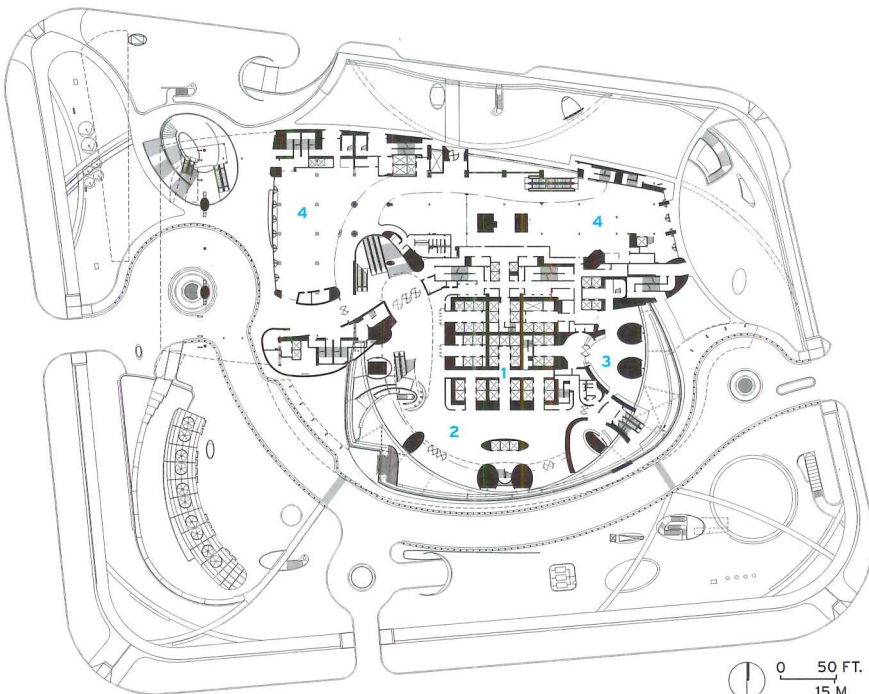
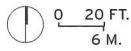


LEVEL NINETY-EIGHT

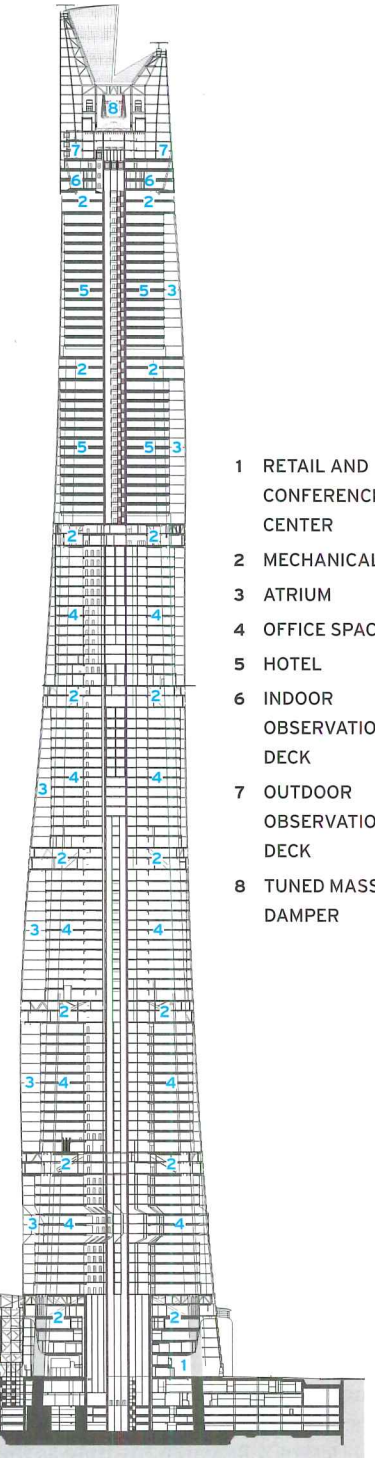
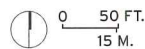
- 1 CORE
- 2 OFFICE LOBBY
- 3 HOTEL LOBBY
- 4 RETAIL
- 5 OFFICE SPACE
- 6 HOTEL ROOM



LEVEL NINE

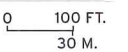


GROUND FLOOR



- 1 RETAIL AND CONFERENCE CENTER
- 2 MECHANICAL
- 3 ATRIUM
- 4 OFFICE SPACE
- 5 HOTEL
- 6 INDOOR OBSERVATION DECK
- 7 OUTDOOR OBSERVATION DECK
- 8 TUNED MASS DAMPER

SECTION





ATRIUM SECTION-PERSPECTIVE

- 1 CIRCULAR FLOOR SLAB
- 2 OUTER SKIN
- 3 INNER SKIN
- 4 TRIANGULAR MECHANICAL FLOOR
- 5 CIRCULAR GIRT
- 6 RADIAL STRUT

high, serve as “sky gardens” that spiral up as the tower rises. Near the top of the tower, 270 wind turbines have been installed in the facade to generate energy for powering exterior lighting. These strategies—along with sophisticated water-conservation practices, high-efficiency mechanical systems, landscaped areas covering one-third of the site, and extensive daylighting due to the clear glass—will reduce the building’s carbon footprint by 34,000 metric tons each year compared to conventional projects, according to Gensler.

To meet Chinese codes for tall buildings, the architects separated each “neighborhood” with a pair of stacked triangular-shaped floors—one for refuge in emergencies and the other for mechanical equipment—that extend beyond the cylindrical structure containing conditioned spaces (see drawing above). Insulated glass units are attached to the circular floor slabs of the cylinder, while an outer skin of laminated glass within aluminum extrusions is suspended from large cantilevered trusses and stabilized by hoop rings and angled struts. The network of steel cables and supports allows the outer curtain wall to move independently of the rest of the building. The design team used parametric software to develop the complex system of more than 20,000 curtain wall panels—made of more than 7,000 unique shapes—and then employed lasers set at 30 locations in Pudong to precisely position all the panels.

credits

ARCHITECT: Gensler – Art Gensler, Ben Tranel, Chris Chan, Dan Winey, David Glover, Dick Fencil, Fred Liu, Grant Uhler, Hui Ling Hsieh, Jun Xia, Marshall Strabala, Michael Peng, Robert Price, Tanja Speckmann, Sasha Zeljik, Steve Weindel, Xiaomei Lee, project team

ARCHITECT OF RECORD: Architectural Design & Research Institute of Tongji University

ENGINEERS: Thornton Tomasetti (structural); Cosentini (m/e/p); Rowan Williams Davies & Irwin (wind-tunnel testing)

CONSULTANTS: Edgett Williams Consulting (vertical transportation); RJA Fire Protection Technology Consulting (fp, life safety); Aurecon Engineer Consulting; SWA (landscape); PHA (tower lighting); BPI (podium, crown, and interior lighting); SM&W (acoustical)

GENERAL CONTRACTOR: Shanghai Construction Group

STEEL-STRUCTURE CONTRACTOR: Shanghai Mechanized Construction

CURTAIN WALL CONTRACTORS: Yuanda (exterior); Jiangho (interior); Lingyun (podium)

CLIENT: Shanghai Tower Construction & Development

SIZE: 6.2 million square feet (4.1 million above grade; 2.1 million below grade)

CONSTRUCTION COST: \$1.54 billion

PROJECT COST: \$2.2 billion

COMPLETION DATE: December 2015

SOURCES

STRUCTURAL STEEL: Baoshan Iron & Steel

LAMINATED GLASS PANELS: Shanghai Yaohua Pilkington Glass Group

SELF-LUBRICATING BEARINGS: Lubrite

ELEVATORS: Mitsubishi

ESCALATORS: Schindler

WIND TURBINES: Windpods

EXTERIOR LIGHTING: Pana LED

ACOUSTICAL CEILINGS: Ecophon

LOCKSETS AND CLOSERS: Dorma

CARPET: TaiPing

WALL COVERINGS: Kvadrat

The building’s structure is fairly conventional, relying on a concrete core surrounded by eight “super columns” made of steel on the inside and concrete on the outside. A 1,000-metric-ton tuned mass damper near the top of the tower counteracts swaying to make occupants more comfortable.

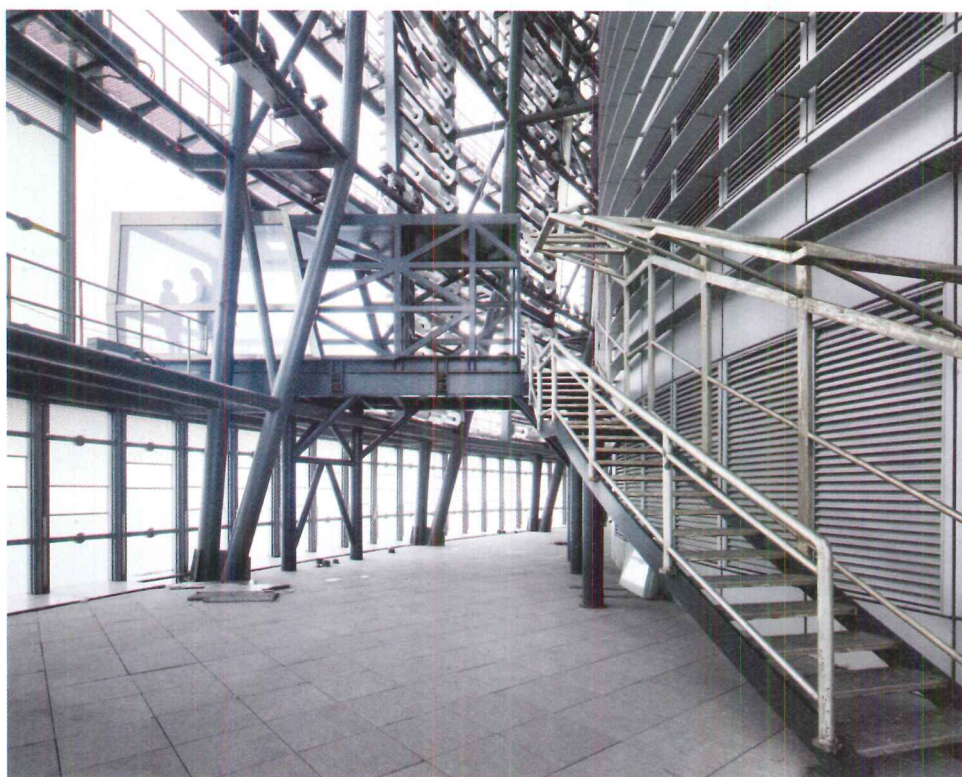
By sorting conference facilities, retail, offices, hotel, and an observation deck into separate stacked zones, the architects aim to create a “vertical urbanism,” says Dan Winey, a Gensler partner. “Shanghai is a city of small parks that help define neighborhoods,” says Jun Xia, a Gensler partner who grew up there. “We created the atria as interior parks and placed them vertically in the tower.” Each of the building’s nine zones provides about 400,000 square feet of space devoted mostly to one or two types of functions—retail and conference facilities at the bottom, offices in Zones 2 through 6, a hotel in Zones 7 and 8, and observation levels at the top. But the base of each atrium has restaurants and shops, so workers don’t need to leave the tower for lunch and overburden the elevator system. To whisk visitors to the observation deck on the 119th floor, the building has three express elevators that can go faster than 40 miles an hour, top in the world for speed. Eleven other elevators go 22 miles an hour, while 29 go 11 to 22 miles per hour.

In its effort to stand out from the more opaque or reflective buildings around it, the Shanghai Tower uses low-iron glass that expresses



a sense of transparency from the outside. This clear glass also reduces the need for electric lighting inside the building, saving energy. During the day, and especially at night, pedestrians can see the Shanghai Tower's key organizing elements, the atria, spiraling toward the sky. The glass wrapping serves as a "silk dress showing off the curves inside," says Xia.

Shanghai lacks a main axis or street grid to stamp a strong organizing image in people's minds. Instead, it has the Huangpu River, winding its way through the city and separating the new Pudong district on the east from the older Puxi on the west. The Shanghai Tower takes its cues from the river, using curves, not right angles, to imprint its form on the skyline. With its sheath of clear glass, the spiraling structure adds a softer, more sensual architectural note to those of its harder-edged neighbors. Smart and sexy, it does more than rise above the rest of the pack; its ambitious design and well-funded construction may serve as a final exclamation point to an era that saw China rise to the status of world power. ■



VIEW FROM THE TOP The outdoor observation deck features a protruding glass box with a glass floor (top). Wind turbines (right and visible in photo top) generate energy for exterior lighting. The building has 21 atria, which act as climatic buffers between indoors and out and provide soaring spaces in which to relax (opposite).



photography: nachiro tsukada design: omdr



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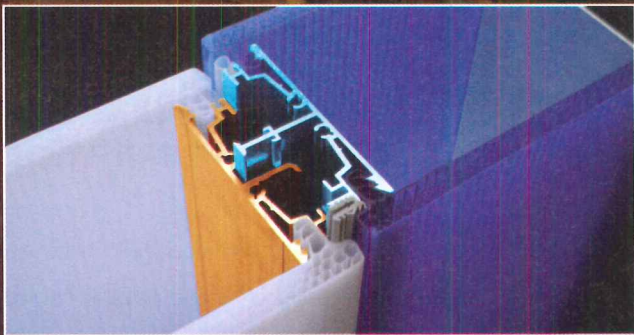
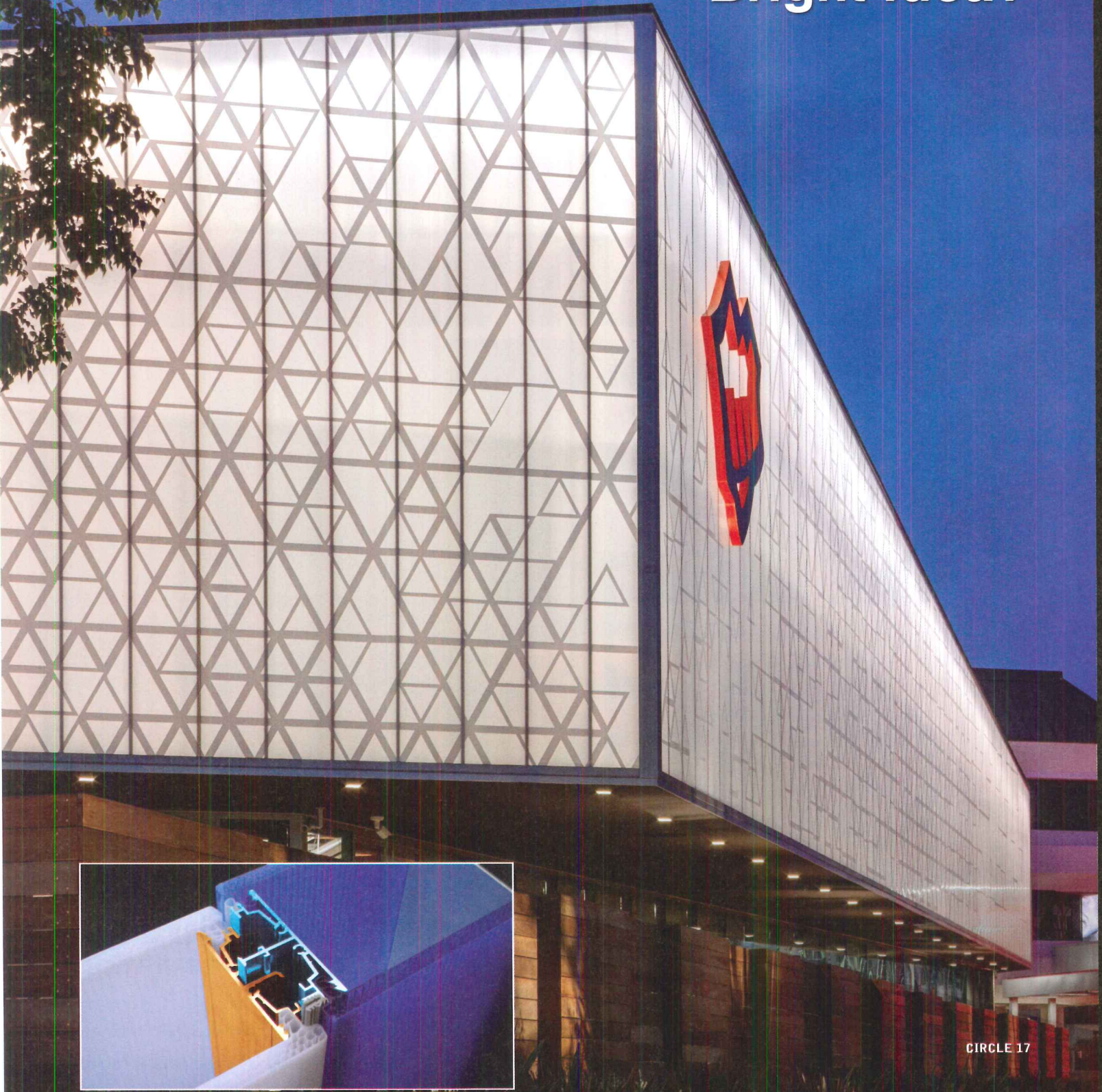
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An aerial photograph of Chicago, Illinois, showing the Chicago River flowing through the city. Several bridges cross the river, including the State Street Bridge and the Washington Bridge. The State Capitol building is visible in the lower-left corner. A yellow boat is on the river. The text 'CHICAGO' is in large white letters, and 'Past Present Future' is in orange letters below it.

CHICAGO

Past Present Future

CHICAGO IS used to throwing big architecture parties—the World's Columbian Exposition in 1893 and the Century of Progress in 1933. It's high time for another. The Chicago Architecture Biennial, which opens this month, will celebrate visions of the future by showcasing more than 90 young international firms. On the following pages, *RECORD* explores the built environment and the cultural and social context for this major convocation, including a commentary on the city's contribution to the skyscraper, an analysis of public housing today, and a look at the new parks and public spaces animating urban life.

The Place Between

A modern masterpiece collides with a literary gem—that's Chicago.

BY THOMAS DYJA



At its dedication in April 1956, Eero Saarinen called Ludwig Mies van der Rohe's crisp, exquisite S.R. Crown Hall "a serene temple of the present." Said Mies, employing the royal pronoun, "It's the clearest structure we have done . . . the best to express our philosophy." Slightly smaller in scale than his other buildings on the campus of IIT, Crown Hall also has a more graceful rhythm, but it's the roof that creates the wonder. My own crazed imagination sees a bat or a ray lifting forward, those four plate girders along the width of the building seeming to pull it up out of the ground. That's just a visual trick, though; the vertical beams are the ones really doing the work.

Like those Gothic cathedral builders who created the illusion of heaven, Mies expressed his own ultimate truth here: monastic and modern, wide like the Illinois prairie, made of hard Chicago steel. I am struck silent in its presence. It is glorious, utterly in

THE TEMPLE

Crown Hall, with two of its four plate girders visible.





ERASED

The atrium of the block-long, block-wide Mecca in 1944.

repose, essential to itself—essential, it seems, to the collection of transcendent things we humans have created.

For all the tall buildings in Chicago (skyscrapers were born here, after all—don't you dare forget it!), the city's modern history is best expressed by this one-story building at 34th and State.

Crown Hall represents a battle. It stands where an apartment building called the Mecca once anchored Bronzeville, the heart of black Chicago and prime destination of the Great Migration north. Louis Armstrong first improvised on his horn in Bronzeville; its sharp, ambitious men and women, like Jesse Binga, John Johnson, and Ida B. Wells, established Chicago as the nation's center of black business and journalism. The teeming Mecca, with its soaring atriums and intricate ironwork, was central to the scene. "To touch every note in the life of this block-long block-wide building," wrote the poet Gwendolyn Brooks, "would be to

capsulize the gist of black humanity in general."

But it was also right in the middle of Mies's plan for the new IIT campus. The school took ownership of the building in 1938. For the next 13 years, while much of the surrounding Near South Side was bulldozed and remade, residents fought IIT's efforts to evict them until the wrecking ball finally struck on the last day of 1951. Brooks saw the grand new structure that rose on the site as an "erasure." Her epic 1968 poem "In the Mecca," arguably her masterpiece, recalls the building she had known:

*firm arms surround
disorders, bruising ruses and small hells,
small semiheavens: hug barbarous rhetoric
built of buzz, coma and petite pell mells.*

All buried now under tons of steel.

If Crown Hall is indeed a temple, as Saarinen said, it's the sort Romans built in conquered territory, a statement that civilization as *they* knew it had finally taken control.

Chicago is the city America built when it turned away from Europe and asked itself what it really wanted to be. Through the days of Manifest Destiny and into the American Century, this was the national crossroads and meeting place. Between 1932 and 1960, nine out of 16 political conventions were held in Chicago; freight, people, and ideas all came through on their way east and west, north and south, bumping shoulders hard and often drawing blood. Big labor battled big business at Haymarket Square and Republic Steel; cops bludgeoned hippies on Michigan Avenue. The city's wealth came from agriculture as much as industry, but the stockyards are gone and the smokestacks are mostly cold. Poverty sprawls in sight of opulence, suburban Babbitts still tumble through the aisles of Orchestra Hall, elementary schools fail minutes away from world-class universities. Barack Obama and Hillary Clinton came out of Chicago; so did Donald Rumsfeld and Milton Friedman. It could be priggish—the art students here rioted against the Armory Show in 1913—and it could be raw. Both the striptease and Hugh Hefner's *Playboy* magazine are Chicago inventions.

But every city has rich and poor, light and dark. Chicago is at its best when it's in the middle, bridging contrasts, as



concerned with the value of every person—their stories, their talents, their dreams—continues to show the battered American soul its dignity and its potential.

But in 1956, S.R. Crown Hall landed like a spaceship on that weary African-American community that was being demolished to make way for a future they were not invited to share. As the factories closed, the jobs seeped away, and the whites raced to the suburbs, Mayor Richard J. Daley broke ground on the vast complex of public housing that would institutionalize segregation in Chicago and warehouse thousands of African-Americans. In the 1990s, his son Richard M., then mayor, tore them down in what seemed at first an act of liberation, until the empty lots left behind grew over with ragweed, and those who'd survived the Robert Taylor Homes and Cabrini-Green found neighborhoods like Austin and Grand Crossing just as hopeless as the projects. Meanwhile, the gorgeous lakefront became even more gorgeous. Frank Gehry's bandshell and Anish Kapoor's iconic Bean shone in the sun. The same Clinton-era Empowerment Zones that in Harlem drew billions of dollars withered up on the streets of Bronzeville.

We were left with something unique at State and 34th. Two geniuses created masterpieces in a sort of opposition, but today Crown Hall and "In the Mecca" need each other to fully express their aspirations. I can't see the building without hearing the words of Brooks, or read the poem without picturing the glory of Crown Hall. And this, I think, is how it *should* be. Time and the city have turned that half block into a single work of art, an unconscious, unwilling collaboration between two brilliant people who together commemorate and transcend what Chicago was, while teaching—in the most cautionary terms—that sharing space and resources, sharing beauty, sharing lives, is the key to Chicago's future. ■

Thomas Dyja is the author of the award-winning *The Third Coast: When Chicago Built the American Dream*, *this year's title in the Chicago Public Library's One Book, One Chicago program.*

Chicago is the city America built when it turned away from Europe and asked itself what it really wanted to be.

Louis Sullivan's massive, delicate buildings do, winding tendrils around sharp corners, mediating between man's need to build and the natural world. Nelson Algren turned the shattered glass of vacant lots into diamonds with his prose, the pain of tired losers into drama, while a blacklisted radio-show host and a high diva of the church—Studs Terkel and Mahalia Jackson—brought gospel music into the mainstream. When Muddy Waters plugged his guitar into an amp, he shot electricity through the old country blues (though they really weren't that old—Robert Johnson recorded "Sweet Home Chicago" in 1937, the same year that László Moholy-Nagy, with Walter Gropius's blessing, restarted the Bauhaus in the Field family mansion).

Chicago's arts have a tradition of putting people ahead of theories. Realism and the individual voice have been central, from Terkel's oral histories and the poems of Carl Sandburg, the plays of Lorraine Hansberry, David Mamet, and Tracy Letts to the fiction of Sandra Cisneros, Aleksandar Hemon, and Stuart Dybek, and the comedy of Second City. Its approach to television in the '50s stressed intimacy and improvisation, a style compared to "fresh bread out of the oven" just when Jackie Gleason was threatening to knock Alice to the moon. Visit the Bungalow Districts to see how the Arts and Crafts movement here went beyond tiles and vases and became a part of daily life. *That* Chicago, the city of Jane Addams, Clarence Darrow, and Saul Alinsky—plainspoken, deeply



Making Places

Reclaiming defunct infrastructure, a series of new public paths and parks invite locals and visitors to gather, play, or simply enjoy navigating the city's neighborhoods.

BY BLAIR KAMIN

PHOTOGRAPHY
BY IWAN BAAN

Every night, as I walk along the Chicago Riverwalk to my commuter train, I witness scenes that were unthinkable a year ago: young office workers sipping drinks at a packed wine bar, big powerboats tied up at dockside, clusters of kayaks scooting along the water. Some of the paddlers are on floating architecture tours, taking in everything from the corncob-shaped twin towers of Bertrand Goldberg's Marina City to the eclectic wedding cake that is the clock-towered Wrigley Building.

These vignettes exemplify a new burst of place-making in Chicago. As if in anticipation of the crowds that are expect-

ed to descend upon the city for the Chicago Architectural Biennial, Mayor Rahm Emanuel has recently dedicated four signature public spaces: the Riverwalk, a sleekly modern addition to the Beaux Arts retaining wall along the Chicago River; the 606, a winningly un-slick 2.7-mile bike trail and chain of narrow parks that slices through four neighborhoods on the city's Northwest Side; Maggie Daley Park, a kid-centric pleasure ground of more than 25 acres just east of the wildly popular Millennium Park; and the southern part of Northerly Island, a 40-acre ecological showcase of man-made hills, a lagoon, and campgrounds that's a short cab ride away from the Loop.



These diverse projects have something in common: the transformation of outmoded transportation infrastructure into prime public space. The Riverwalk replaces decrepit docks. The 606 supplants a defunct elevated railroad freight line. Maggie Daley Park supersedes a dull 1970s park that was built atop a lakefront parking garage. Northerly Island was a small shoreline airport, mostly used by politicians shuttling between Chicago and the state capital in Springfield, until one night in 2003 when former Chicago Mayor Richard M. Daley, in a Robert Moses moment, sent out city backhoes that carved giant X's into its runway and shut it down.

As Emanuel told me, not without reason, when he showed off Northerly Island, “We are at the epicenter of taking old transportation platforms and turning [them] into public spaces.”

The new spaces build upon physical and conceptual foundations laid in the early 20th century, when architect and planner Daniel Burnham articulated a vision that led to Chicago’s nearly continuous 26-mile chain of parks along the shore of Lake Michigan. But, to their credit, the designers of the new spaces are creatively adapting Burnham’s industrial-age ethic to the digital age, forging stiff European-inspired formality and the banal “mow, blow,

RIVERWALK

Designed and built by Sasaki Associates, Ross Barney Architects, and Alfred Benesch engineers, the Riverwalk will stretch 1¼ miles to Lake Michigan upon completion.

and go” aesthetic of suburban office parks. Their looser arrangements foster new forms of interactivity. Whether these pleasure grounds are tightly confined linear spaces, like the Riverwalk and the 606, or broader plots, like Maggie Daley Park and Northerly Island, they reflect the increasingly prominent role of landscape architects, who are turning once-marginal areas of cities and regions into new centers of civic life.

The three-block-long, \$110 million extension of the Riverwalk is the most prominent—and, to date, the most successful—example of this trend. Set on the lower level of double-deck Wacker Drive, an urban ring road inspired by Burnham’s 1909 Chicago Plan, the hardscrabble docks

along the Chicago River’s south bank resembled a scene from the 1954 movie *On the Waterfront*. The absence of a walking path beneath the river’s bascule bridges rendered the riverfront even less appealing, forcing strollers to climb stairs to the upper-level of Wacker Drive, cross a city street, and then descend in order to get from one section of the waterfront to another.

To create continuity and bring pedestrians close to the water, the team of Sasaki Associates, Ross Barney Architects, and Alfred Benesch engineers lowered the decades-old dock platforms by several feet, extended the shoreline 25 feet into the river’s roughly 200-foot-wide channel, and built pedestrian pathways beneath the bridges. The bridges effectively



delineate three vibrant, roomlike outdoor spaces: the Marina Plaza, whose high-backed teak benches offer dazzling views of Marina City; the Cove, where people sprawl on low-slung benches, resembling seals on rocks baking themselves in the sun; and the River Theater, a monumental flight of steps that is equally suited to lunchtime brown-baggers and crowds gathered to hear music.

The design achieves a compelling synthesis of consistency and variety, and an equally effective counterpoint of tradition and modernity. Another three-block extension, now under construction, will join with this and earlier sections of the Riverwalk to create a continuous 1¼-mile pedestrian and bike path reaching from Lake Michigan to the meeting

of the Chicago River's north and south branches. Along with smartly designed riverfront boathouses in outlying neighborhoods by Jeanne Gang and Chris Lee, the Riverwalk reveals how Emanuel is turning the river into the city's "second waterfront." The change is gathering momentum, even though the river's still-polluted waters contain levels of disease-causing bacteria that routinely exceed state standards for recreational waterways. Emanuel's public works are bringing Chicagoans to the edge of, as well as onto, the once-neglected body of water.

While the 606 isn't as camera-ready as the Riverwalk, it is having an equally transformative impact, bringing open space to off-lakefront neighborhoods that desperately needed it.



THE 606

A local oasis, this 2.7-mile trail lifts commuters, cyclists, and joggers above urban congestion, offering a practical, landscaped route for running errands and getting around.



MAGGIE DALEY PARK

Michael Van Valkenburgh Associates transformed the space east of Millennium Park into a vibrant haven for recreation. Designed with intersecting areas for passive recreation and active play, the park features a rock-climbing wall (top, right) and a swirling ice-skating ribbon, as well as ample space for picnics (above).



Designed by the team of Collins Engineers, Michael Van Valkenburgh Associates, and artist Frances Whitehead, the 606 is, in many respects, the anti-High Line of New York: more earthbound than ethereal, more geared to locals than tourists, and more utilitarian than uber-chic. In all that, it is quintessentially Chicago. As the design blogger Matt Hickman wrote when the 606 opened, “Whereas the High Line is the high-end cocktail lounge where one might take fancy out-of-town cousins to show off, the 606 promises to be more of a comfortable dive bar—a real neighborhood joint.”

His forecast was on target. Named for Chicago’s zip code prefix and built atop a concrete-framed earthen embankment rather than a skeletal elevated line, the \$95 million 606 consists of a central concrete trail for bikes, and rubberized shoulders for joggers and strollers. The trail itself is called the Bloomingdale Trail in acknowledgment of the city street that runs parallel to it. Access ramps link the path to street level, and a chain of four parks has been built at ground level, because there wasn’t enough room atop the embank-

ment. Today, the landscaping is underwhelming. But once an “arcade” of grasses, plants, and trees matures—it will include evergreens, paperbark maples, and sumacs—it should create an almost-cinematic montage of greenery for cyclists zipping down the trail.

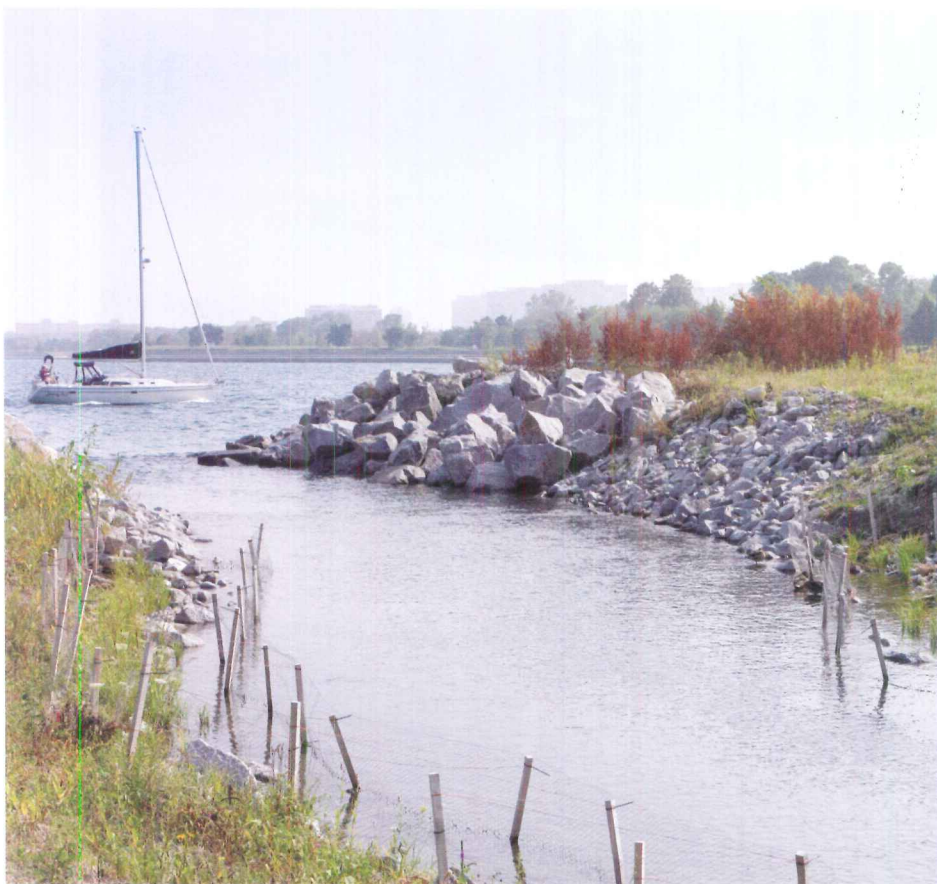
On weekends, to be sure, the 606 gets crowded. Most of the time, though, it’s soothing and expansive. While the Riverwalk brings people below street level to a cool and quiet realm, the trail lifts them above urban congestion. Sharpening the 606’s contrast with the Riverwalk’s urbane downtown milieu, the elevated perspective allows trailgoers to peek (almost literally, at second-story levels) at the way people live in residential neighborhoods. And there are myriad practical benefits. Residents of the heavily Latino neighborhoods that adjoin the trail use it not just to walk, jog, or ride bikes, but to get to the grocery store, the doctor, or their jobs. Yet in correcting long-term inequities in the provision of open space, the 606 has brought rising real-estate values and the threat of gentrification. How sad it would be if, as the 606’s landscape grows in, the very people it was built to serve are priced out.

Because the \$60 million Maggie Daley Park and the \$9.7 million southern stretch of Northerly Island occupy Chicago’s already spectacular lakefront, they can’t match the



NORTHERLY ISLAND

SmithGroupJJR, Studio Gang Architects, and the U.S. Army Corps of Engineers have recreated natural habitats to welcome wildlife on a site once occupied by a small airport. This newly opened outdoor space, in view of McCormick Place and Soldier Field, is an escape from Chicago’s mainland rush.



NORTHERLY ISLAND

A mile-long path winds around the park for bikers, bird watchers, and other explorers to experience the island's serene stretches of lakefront.

transformative impact of the Riverwalk and the 606. Nonetheless, they are altering the shoreline and pushing the conceptual envelope of public space.

Renzo Piano once cracked that the snaking Frank Gehry-designed overpass that leads eastward from Millennium Park to the land now occupied by Maggie Daley Park was a “somewhere to nowhere bridge.” That was right. The park that used to be there was so ordinary that people simply stopped at the end of Gehry’s span and turned around. But that park sat atop an underground garage. And when the membrane that protected the garage from groundwater deteriorated, it was ripped off like a bad toupee. That opened the door for Maggie Daley Park, which is named for Chicago’s late longtime first lady, wife of former Mayor Daley.

With its climbing walls and an ice-skating ribbon that wends its way around them and evergreen trees, the park has been an instant hit with the public. Hives of kids run, climb, slide, holler, and laugh as they enjoy colorful play equipment with skyline views that no suburban playground can match. Another Van Valkenburgh creation, the park effectively mixes the recreational with the pastoral; its diagram is an X consisting of intersecting areas for passive recreation and active play. While its play spaces pick up on the interactivity of Millennium Park’s Cloud Gate sculpture and Crown Fountain, gently sloping lawns, perfect for picnicking, form a welcome respite from the joyful frenzy of the children’s play zones. Unfortunately, the lawns are lined with clunky, tripod-shaped light masts that resemble giant praying mantises.

The just-opened Northerly Island promises to be far more serene. In place of the airport and its pancake-flat landscape, SmithGroupJJR, Studio Gang Architects, and the U.S. Army Corps of Engineers have shaped man-made hills, a five-acre lagoon, and a winding mile-long path for bikes, strollers, and bird watchers. The design, which Jeanne Gang has compared to a “Millennium Park of nature,” recreates habitats, from ponds and marshes to prairie and savannas, that existed before development overran Chicago. It sounds like an eco-Disneyland, but the result has the feel of authenticity and the urban wild. Fish already are spawning in the wetlands. Great blue herons alight there too. City kids will be able to camp in the park. They’ll see stars in the dark night sky, hear the roar of the waves on Lake Michigan, and emerge, it is hoped, with a sense of wonder.

In his great 1909 Plan of Chicago, Burnham wrote, “the lakefront by right belongs to the people.” It is remarkable, more than a century later, that his democratic axiom still resounds and even more remarkable that his words continue to inform and inspire Chicago’s latest crop of public spaces—though these pleasure grounds possess a geographic scope and creative spark that Burnham himself never imagined. ■

RECORD contributing editor Blair Kamin is The Chicago Tribune’s architecture critic and the editor of Gates of Harvard Yard, to be published in spring 2016 by Princeton Architectural Press.



STREET WISE

Since entering office, Chicago Mayor Rahm Emanuel (third from right) has stepped into a surge of public-space revivals, including the opening of the 606 trail in June.

Take It from the Top

Mayor Rahm Emanuel reinforces a legacy for the built environment.

BY BLAIR KAMIN

CHICAGO'S RAHM EMANUEL had big—no, huge—shoes to fill when he took office in 2011. His predecessor, Richard M. Daley, was straight out of central casting—scion of a legendary Chicago mayor, more street-smart than book-smart, but nonetheless a visionary who vowed to make his once-polluted Rust Belt burg “the greenest city in America.” Daley was boss and builder, a democratically elected king who ruled with an iron fist and a green thumb. He often used the power of the former to carry out the agenda of the latter. During his 21-year reign, Chicago planted more than 600,000 trees, constructed more than 85 miles of landscaped medians, and built more than 7 million square feet of planted roofs—which, at the time, was more than any other city in America.

Daley oversaw the building of Millennium Park, ordered Donald Trump to put a spire on his Chicago megatower, and lined city streets with imitation wrought-iron fences that fit his traditional taste. In speeches to architects and planners, he would mangle the English language but invariably earn a standing ovation, owing to his passion for Chicago and his rock-star stature. Daley was, in short, a very hard act to follow, even after it became clear upon his departure from

City Hall that his rampant overspending had left the city drowning in red ink.

Though Emanuel is no shrinking violet—he’s famous for dropping f-bombs and once mailed a dead fish to a pollster who ticked him off—the mayor at first neither wowed nor wooed the city’s architects. He kicked two of them—even the venerable Ben Weese—off the city’s landmarks commission and installed a celebrity chef and the obstetrician who delivered Barack Obama’s daughters. Huh? While there were some early good moves, such as installing protected bike lanes, architecture and urban design didn’t seem to be high on Emanuel’s agenda.

They are now. The mayor isn’t just presiding over the inaugural Chicago Architectural Biennial, which runs from October 3 to January 3 and is billed as North America’s largest survey of contemporary architecture. He is backing the exhibition enthusiastically. If nothing else, it offers relief from a drumbeat of bad news, from rising homicides to underfunded pensions. The biennial, he told me in a recent interview, aims to brand Chicago as “the place, as it always has been, of modern architecture.” With people around the world flocking to cities, he explained, there’s fresh urgency to making them livable and sustainable: “I think the conference is going to be an important part of that conversation, and I want Chicago dead center in the middle of it.”

The biennial’s leaders insist Emanuel’s passion for the event is genuine, not simply born of a boosterish desire to lure tourist dollars. According to biennial vice chair Jack Guthman, a Chicago zoning lawyer, the mayor’s involvement stems from Emanuel’s desire “to have Chicago again



WINNING STROKE

Mayor Emanuel spearheaded an initiative to transform the long-neglected Chicago River into a public asset. Studio Gang designed the WMS Boathouse at Clark Park (2013), one of a set of riverfront boathouses, as part of this mission.

on the international stage, not just as a center where great buildings are built but also as a place where architectural ideas are being considered.”

Whatever the biennial’s outcome, the fiercely competitive, frequently wisecracking Emanuel is relishing not just new architecture but a wave of well-received public spaces, from the 606, a recently opened 2.7-mile trail and park system that is Chicago’s neighborhood-centric answer to New York’s tourist-mobbed High Line, to the extended downtown Riverwalk, where he drops by every so often for lunch. Because Emanuel grew up in the Chicago area—he and brothers Ezekiel, an esteemed bioethicist, and Ari, a powerhouse Hollywood agent, were raised in an affluent suburb—the river’s improbable transformation from toxic industrial waterway to postindustrial (albeit still-polluted) recreational amenity is particularly gratifying. When he was growing up, he said, no one would have believed that, one day, people would be going out to the river and “enjoying nature, eating lunch, having a drink, [and] listening to music.”

Asked if he’s relieved to be free from Washington’s political gridlock, the former Congressman and chief of staff in the Obama White House channels Edvard Munch’s Expressionist painting *The Scream*, clamping his hands on the sides of his head and shaping his lips to form an O. (When I compliment him on using an artistic allusion, Emanuel replies, “My parents paid for Sarah Lawrence. I’ve got to use that liberal-arts degree.”) To him, Washington is the land of political posturing, removed from gritty, everyday reality. “D.C. is Disneyland on the Potomac,” he said. “Here, you make a decision . . . see it through, and have an impact on the quality of life and the way you live your life.”

Yet building new public works is proving far easier for the mayor than solving Chicago’s most pressing problems, among them a credit rating reduced to junk status and shootings that continue to roil impoverished African-American neighborhoods. But Emanuel considers public works to be an important way to address Chicago’s fiscal woes, not a bread-and-circuses distraction from them. Since his 2011 pledge to

turn the Chicago River into a “second waterfront,” on a par with Chicago’s celebrated lakefront, he claims that developers have committed to invest \$8 billion in new riverfront buildings. To be sure, some of the projects would have happened anyway. Yet the forest of construction cranes along the river—symbols of both prosperity and Chicago’s capacity to reinvent itself—is nonetheless impressive.

Now in the fifth year of his mayoralty, Emanuel has emerged as both a “pick-up-the-baton” figure who has found ways to realize Daley-initiated projects like the 606, and one who is intent upon charting his own course. New riverfront boathouses, the Divvy bike-sharing network, and some 100 miles of new bike lanes are his initiatives, and he’s already built more of the downtown Riverwalk than Daley, with another extension still to come. As head of the city’s Public Building Commission, which erects libraries and other public buildings, Emanuel is forging alternatives to the cookie-cutter “prototypes” Daley backed on grounds of efficiency. “Public buildings don’t have to be just brick and mortar,” he said as his intense brown eyes took in the light-filled interior of the Chicago Public Library’s new Chinatown branch, an elegantly transparent rounded triangle by Brian Lee of the Chicago office of Skidmore, Owings & Merrill. “They can be real, great artworks.”

The library reveals another difference from Daley: Emanuel’s openness to modern architecture, a taste it took his predecessor years to cultivate. Asked to name his favorite Chicago architecture, the mayor lists Kohn Pedersen Fox’s 333 West Wacker, the exquisite contextual skyscraper that marks a bend in the Chicago River, and Frank Gehry’s Pritzker Pavilion in Millennium Park. “One of the things I constantly hear [from visitors],” Emanuel said, “is this: ‘What an incredibly beautiful city’ . . . And when they say it’s really beautiful, there’s two things they put side by side: one, they’re in awe of the size, scope, and scale of nature on [Lake Michigan]; and then, this incredibly human space, our architecture, and the way the city just looks and feels. The beauty of our architecture is one of a kind.” ■



STEELING FOR HEIGHT

William LeBaron Jenney's Home Insurance Building (1884) is often called the world's first skyscraper (left) by those who consider a metal-frame structure the qualifying condition. It was demolished in 1931. The steel-frame Masonic Temple of Burnham & Root (below) climbed to 302 feet in 1892, briefly becoming the world's tallest tower. It was demolished in 1939.



High Time

Skyscrapers have figured dramatically in Chicago's architectural reputation—and will play a big part in the city's future.

BY SUZANNE STEPHENS

Everyone knows that Chicago is the birthplace of the skyscraper.

And it is true—depending on how you define the building type. As Carol Willis points out in *Form Follows Finance: Skyscrapers and Skylines in New York and Chicago*, if you go by the technological innovations of the elevator and the metal frame, then Chicago was first, but if height matters most, it was New York. Chicago produced the first metal-frame structure, crucial to the development of the tall tower: the Home Insurance Building, designed by William LeBaron

Jenney in 1884. Its cast-iron columns with wrought-iron beams, plus newly developed rolled-steel beams, made history. Then the first all-steel-frame skyscraper—Burnham and Root's second Rand McNally Building—debuted in 1890, called by many the first true skyscraper because of that all-steel frame. These "skyscraping" structures with their "skyscraperly" tactics—as *The Chicago Daily Tribune* characterized them in 1884, essentially coining the term—were made possible by such frames, along with the invention of the elevator.



NEW RECORDS

The Wrigley Building (left in photo above) by Graham, Anderson, Probst & White (1921) and the Tribune Tower (at right) by Howells & Hood (1925) loom over the Chicago River. When they were first constructed, they briefly broke height records at 425 and 462 feet.

But these buildings only reached 130 feet for Home Insurance (with a later expansion to 180 feet) and 120 feet for Rand McNally. New York already had taller buildings: the 230-foot-tall Western Union Telegraph Building, designed by George Post (1875), and the 260-foot-tall Tribune Building, by Richard Morris Hunt (1876), which towered over lower Manhattan.

Yet, since New York's were hybrid, mostly bearing-wall construction, Chicago's technical achievements promised even greater heights. But two problems held back the otherwise adventurous plainmen: mushy soil (as opposed to Manhattan's rocky schist) and an 1893 city ordinance that imposed a height limit of 130 feet. Before the limit was imposed, however, Burnham & Root's steel-framed Masonic Temple building, completed in 1892, held the tallest-in-the-world title at 302 feet. (The firm's solidly massed Monadnock Building, of the same year, was said to be the tallest commercial structure in the world that had load-bearing masonry walls, topping off at 215 feet.)

New York began making these records look paltry with a cluster of ever-taller buildings, including Ernest Flagg's

612-foot-high Singer Tower in 1908 and Cass Gilbert's 792-foot-high Woolworth Building in 1913. Even though Louis Sullivan had theorized about the design for this new type in his essay "The Tall Office Building Artistically Considered" of 1896, his own application of his form-follows-function dictum came out short: New York's Bayard-Condict Building (1897) was only 13 stories.

Chicago lifted its height limits in 1920, allowing the 425-foot-tall Wrigley Building, designed by Graham, Anderson, Probst & White (1921) to anchor downtown, across Michigan Avenue from the 462-foot Tribune Tower by the New York firm of Howells & Hood (1925). But those were soon left behind by the Chrysler Building (1930), by William Van Alen, at 1,050 feet, and the Empire State Building (1931), by Shreve, Lamb & Harmon, which, at 1,250 feet, held the title for decades as the world's tallest skyscraper.

Not surprisingly, the race for even taller buildings slowed during the Depression, but Chicago came alive after World War II. Ludwig Mies van der Rohe had arrived from Germany in 1938, and, while height didn't seem part of his agenda, his refinements to the Chicago frame and its application to

residential construction at 860-880 Lake Shore Drive (1951) and 900-910 North Lake Shore Drive (1955) refocused attention on the city as a capital of innovative high-rise design. With the growth of Skidmore, Owings & Merrill (SOM) and a cohort of Mies-minded architects, the Second Chicago School was launched.

There was one significant exception to the prevalence of the Chicago steel frame: Bertrand Goldberg's radical Marina City (1964), with its two 587-foot-high cylinders and curvilinear balconies, was the tallest reinforced-concrete structure in the world at that time. In 1970, SOM's steel-frame Hancock Tower climbed to 1,095 feet; then, in 1974, the firm's steel-frame Sears Tower, (now Willis) became, at 1,450 feet, the tallest building in the world, grabbing the title from the World Trade Center's Twin Towers. Chicago was at its pinnacle in advancing the skyscraper.

Now the height obsession is being played out globally, with Chicago architects leading the way. The Burj Khalifa in Dubai, currently the world's tallest at 2,722 feet, was designed by Adrian Smith of the Chicago office of SOM. When he left to start his own firm, Adrian Smith + Gordon Gill Architecture, he was commissioned to design Kingdom Tower in Jeddah, which will surpass the Burj for the top title at 3,280 feet when it opens in 2017. On the home turf, Smith + Gill has only ascended to 1,116 feet, with its Trump International Hotel.



DOUBLE DYNAMIC

In 1951, Ludwig Mies van der Rohe refined the Chicago steel frame in the elegant 860-880 Lake Shore Drive (left), followed by 900-910 North Lake Shore Drive in 1955. But Bertrand Goldberg Associates brought in a height record with Marina City (below) in 1964. A stark departure from steel, its rounded, reinforced-concrete towers climbed to 587 feet—the tallest concrete towers in the world at the time.



BACK ON TOP

Skidmore, Owings & Merrill's Willis Tower (originally Sears Tower), completed in 1970, snatched the record for tallest building in the world at 1,454 feet (1,730 feet to the tip of its antennae) and 108 stories. It held that title for almost 25 years but is now the twelfth-tallest in the world—and second-tallest in the U.S.





Meanwhile, the Willis Tower lost its status as America's tallest skyscraper two years ago, after a nasty skirmish with New York, when the Council on Tall Buildings ruled that One World Trade Center could count its spire as part of its 1,776-foot height. "Chicago seems to be in a midlife crisis," says Alexander Eisenschmidt, coeditor of *Chicagoisms: The City as Catalyst for Architectural Speculation*. "Chicago is in a more reflective age."

Yet a new generation of Chicago architects is rising to design skyscrapers for their hometown that emphasize sensuous form along with accomplished technique. Just look at the poured-concrete curves of the 82-story, 859-foot-high Aqua apartments by Studio Gang (2010) or the firm's scheme for the slightly billowing, slender, strandlike shafts of the 1,100-foot-high Wanda Vista, to be completed by 2019. Other Chicago architects are creating supple, shimmering glass towers with frames almost undetectable to the eye: Krueck + Sexton just won approval for a 752-foot-high skyscraper at 130 North Franklin Street; John Ronan Architects is designing a 36-story high-rise nearby, which appears in seductive renderings as evanescent, also almost invisible.

So is Chicago morally superior—or do economic and political forces make it less concerned with height today than Manhattan is? Maybe Chicago's approach to innovative form and technique will prove that height isn't everything. It's up to the third Chicago school to show us. ■

SHAPING THE FUTURE

The billowing edges of Studio Gang's Aqua Tower of 2010 (left) point to the beginning of a new age for Chicago's skyscrapers. Renderings of Studio Gang's Wanda Vista (bottom, left); Krueck + Sexton's 130 North Franklin Street (bottom, center); and John Ronan Architects' 151 North Franklin Street (below) promise more evanescent additions to the skyline, but not at record-breaking heights.





Sheltering Chicago

The changing face of the city's public housing

BY ANNA FIXSEN

In 1993, 12-year-old Rachella Thompson and 13-year-old Kimberly Davis sat down with a fistful of Magic Markers to reimagine where they lived—a 10-story high-rise in the Cabrini-Green Homes, one of Chicago's most troubled housing projects. In their version of Cabrini-Green, kids wouldn't have to keep a mental checklist of which corners were gang territory and which were neutral, which stores were safe, and who might be lurking as they ventured into a stairwell. Kimberly and Rachella's brightly colored proposal recommended toppling one 15-story tower—"A very bad drug building," they wrote and drew a stick of dynamite on top—and replacing it with low-rise townhouses, a community center, and a clock tower.

The drawing received an honorable mention in a competition sponsored by *The Chicago Tribune* to envision the future of the city's public housing. The girls' plan was surprisingly prescient: beginning in the mid-1990s, the city began demolishing nearly 19,000 derelict housing units, including the "very bad drug building" and the high-rise where Rachella and Kimberly lived. Under the \$1.6 billion Plan for Transformation, officially inaugurated in 2000 under Mayor Richard M. Daley and U.S. Department of Housing and Urban Development (HUD) secretary Andrew Cuomo, the Chicago Housing Authority (CHA) promised to return 25,000 units of rehabilitated or new housing to the city, most in the form of low-rise and low-density development, much of it mixed-income. In place of towers at the Cabrini-Green site on the Near North Side, not far from the affluent Gold Coast, there are now neat rows of two-story attached houses. In place of corner grocers and liquor stores, the neighborhood boasts a Target and a Starbucks. It even has a clock tower.

But despite these signs of success, the Plan for Transformation has been far from flawless. Although the CHA is 88 percent of the way to its goal of 25,000 housing units, implementation has dragged on for 15 years, with no clear end in sight. The mixed-income model backed by the plan also has achieved varied success and has left many

HOUSE DIVIDED

Chicago's Cabrini-Green Homes, located on the city's Near North Side, had a combination of towers and low-rise townhouses. At its peak, the complex housed nearly 15,000 residents.





SWEET HOME CHICAGO

The Robert Taylor Homes occupied a 2-mile stretch on Chicago's South Side (top). In spite of their troubles, the city's housing projects fostered a tight-knit community, as seen here in the 1970s on the basketball courts.



residents confined to racially and economically segregated parts of the city. And even if the agency completes the remaining housing units, it will still have to contend with the increasingly urgent need for low-income and affordable housing in the city: last year the CHA's wait list for housing assistance was the longest in history—within the four-week application window, 282,000 Chicagoans applied, including nearly 16,000 homeless residents.

Chicago's infamous high-rises, built from the 1940s through the '60s, had optimistic beginnings, reflecting modernist idealism and the national trend of urban renewal. Later, clustered as forests of desolate high-rises on the fringes of the city's more prosperous core, places like Cabrini-Green and the Robert Taylor Homes came to symbolize gross economic and racial inequities, and the failure of government to provide for society's most needy. By the 1990s, Chicago's public housing contained 11 of the nation's 15 poorest census tracts, the overwhelming majority of their residents African-American. In 1987, *The New York Times* published an op-ed piece about the West Side's Henry Horner Homes, called "What It's Like to Be in Hell."

But some former residents remember Chicago's projects from their brighter days. When Crystal Palmer moved into the Henry Horner Homes as a 9-year-old in 1968, she recalls, "It was beautiful." The 19 brick apartment buildings, constructed between 1957 and 1961, were still fairly new. "There were grass, flowers, and respect for the development," says Palmer, who now works for the CHA as a resident liaison. "We scrubbed our porches. We hung out on the breezeways as a family and watched the kids play and the young men on the basketball courts."

Yet as the Henry Horner Homes, like so many Chicago projects, deteriorated, out of mismanagement and a lack of

essential services, violence became a constant threat. A 1994 study revealed that 40 percent of residents in one Henry Horner building had had a bullet enter their apartment in the previous 12 months. So badly managed was public housing in Chicago that in May 1995, the entire CHA board resigned and HUD stepped in, the largest federal takeover of its kind.

The Plan for Transformation was intended as a clean slate for the CHA, after HUD handed control back to the reformed agency in 1999. The housing authority razed the notorious high-rises and created master plans with swaths of low-rise buildings on the projects' footprints. Even the old names were erased: Henry Horner Homes became West Haven; Cabrini-Green became Parkside of Old Town; Robert Taylor Homes, Legends South.

Private developers built the new communities, incentivized by tax credits, on CHA property, through 99-year leases or land purchases. The developments were planned as mixed-income, which typically means one-third public housing (for those earning less than 30 percent of the area median income [AMI], or about \$26,600 for an individual), one-third affordable (for residents who earn less than 80 percent of the AMI), and one-third market-rate.

The idea has been to foster diverse, safe neighborhoods with improved access to services, and to integrate the housing into the city fabric. Planners got rid of the superblocs where the isolated towers once stood and reintroduced the street grid.

But the new housing model is far from perfect. For some residents returning to these neighborhoods, the mixed-income ideal doesn't foster the kind of tight-knit community they once knew, and they are not treated the same way as many of their new neighbors. Former public-housing resi-

BORDERLINES

The Robert Taylor Homes were bordered by the Dan Ryan Expressway to the west and State Street to the east in Chicago's Bronzeville neighborhood, pictured here in the mid-1990s.



SQUARE ONE

Cabrini-Green's last tower was demolished in 2011 (above) under the CHA's Plan for Transformation to make room for low-rise residential communities. Today, neat lines of rowhouses, such as this complex designed by Pappageorge Haymes Partners (opposite, bottom), occupy the project's site. Called Basecamp River North, this development includes 48 market-rate rowhouses plus two condos (not pictured), which, when completed later this year, will have a mix of CHA housing and for-sale units as a part of the Chicago Community Land Trust, a city-run affordable-home-ownership program.

dents who exercise a CHA-granted Right of Return, choosing to live in mixed-income communities, must undergo annual drug tests and abide by strict rules—including limits on where they can socialize—restrictions that do not apply to residents in higher income brackets. “People want to be treated with respect,” says Peter Landon, of Landon Bone Baker Architects, who has worked on new mixed-income housing and will soon begin to rehab a historic structure for the new National Public Housing Museum. “The CHA says ‘no hanging out on the front stoop.’ That’s crazy. It’s the culture of the neighborhood.”

Using private developers has also had an impact on the supply of public housing. When the recession hit in 2007, construction of the promised units stalled. “When we’ve shifted our public policies toward a market-based model, and those markets fluctuate, it puts at risk the provision of housing and the capacity for community and economic development, especially where urban poverty remains a reality,” says Amy Khare, a Ph.D. candidate at the University of Chicago School of Social Service Administration who is studying these issues.

Nowhere is the reality of economic development’s limits more apparent than at the former site of the Robert Taylor Homes, in the South Side neighborhood of Bronzeville, where 28 16-story towers once stood along the Dan Ryan Expressway. Frank Christopher Lee, principal at Johnson & Lee Architects—who grew up nearby and will correct you if you enunciate the term South Side (“it’s Sousside,” he says)—is teaming up with Landon Bone Baker Architects for the third phase of the redevelopment of Robert Taylor, the first phase of which was completed in 2007. On a recent afternoon, he drove past clusters of new mixed-income apartment buildings with manicured lawns, green saplings, and smooth sidewalks, and pointed out that his firm tries “to make the housing look like an established Chicago neighborhood.”

Yet these pleasant residential enclaves are punctuated by vacant lots, like gaps in a row of teeth. Behind one group of townhouses, kids kicked up dust on a baseball diamond in the middle of an otherwise barren tract. According to Khare, because so much of CHA’s land is in long-segregated neighborhoods that seem less economically favorable, it has been harder to attract the private developers on whom the authority now depends.

When CHA-owned land failed to attract the market-rate residential development that is underpinning new public housing, the agency modified its original strategy. Now, under the Plan Forward to create “communities that work,” the CHA has increased the disposition of its land (through sales or land swaps) to private developers for nonresidential commercial purposes. In June, Mayor Rahm Emanuel broke ground for a \$9.8 million tennis complex on former CHA land on the South Side.

Despite its earlier management reforms, the CHA still has internal difficulties that have created distrust among many Chicagoans. A 2014 report by the Center for Tax and Budget Accountability, a nonprofit think tank, revealed that be-



PHOTOGRAPHY: © RICHIE DIESERHEFT, FLICKR (TOP); ANNA FIXSEN (OPPOSITE, 2)



GOOD STANDING

The last of the Jane Addams Homes (left), one of Chicago's first public-housing projects and part of the larger ABLA homes on the city's Near West Side, was spared, and it will be transformed into the new National Public Housing Museum, to preserve the memory of the destroyed buildings and serve as a monument to those who lived there.





BRINGING IT HOME

Chicago firm Landon Bone Baker Architects has designed mixed-income projects for the former Cabrini-Green site, now called Parkside of Old Town (above), and for the Robert Taylor Homes former site, now called Legends South. Legend South's third phase takes cues from the traditional six-flat homes of the South Side (right).

tween fiscal years 2008 and 2012, the agency built up a total \$432 million in reserves by not spending federal dollars on its housing voucher program. The CHA disputes these findings, claiming their reserves are a mere \$220 million. Its interim chief executive officer, Eugene Jones Jr. (the agency has had five CEOs in the last four years), came under fire last month for dismissing the need for increased organizational transparency as “a waste of time.”

Today the future of the Cabrini-Green site is clear from the sounds of saws and hammering in the air, constructing new rentals and condos. The once-notorious area now blends into the surrounding neighborhoods. There's an urban garden and maintenance crews with leaf blowers tending to the lawns and shrubbery. Only a few remaining vacant lots and a line of derelict rowhouses, part of the original complex, hint at its past. Last month, the CHA settled a 2013 federal lawsuit with the Cabrini-Green Local Advisory Council. Under the terms of the settlement, the rowhouses will be rehabbed, with no less than 40 percent of the total of 440 units devoted to public housing. Overall, the housing authority is obliged to raise the percentage of public housing from 30 to 33 percent for the greater redevelopment of Cabrini-Green.

Kimberly Davis, who reimagined Cabrini-Green with her best friend in 1993, now lives on the South Side, far from where she grew up. After attending St. Mary's College, she started her own catering business. Not long ago, she explored the market-rate housing in one of the new Cabrini-Green developments. “I couldn't afford to live there if I wanted to,” says Davis. “And when I applied for low-income housing, they said I was too successful.” Still, she says, “I would love to move back over there. Even after all of the hurt, Cabrini-Green made me all that I am today.”



Nearly 17,000 households were uprooted when the old projects came down, and the whereabouts of nearly 20 percent of these former residents is unknown. The CHA is still trying to track them down. In the August 31 edition of *The Chicago Tribune*, an advertisement appeared, with a blank box for former residents to fill in their Social Security numbers, in hopes that the agency can update its list of residents who lived in the projects until October 1, 1999. Residents have until December 6 to respond to the notice. After that, they will lose their Right of Return. ■

Mr. Chicago

Stanley Tigerman talks about his hometown and its place in architectural culture.

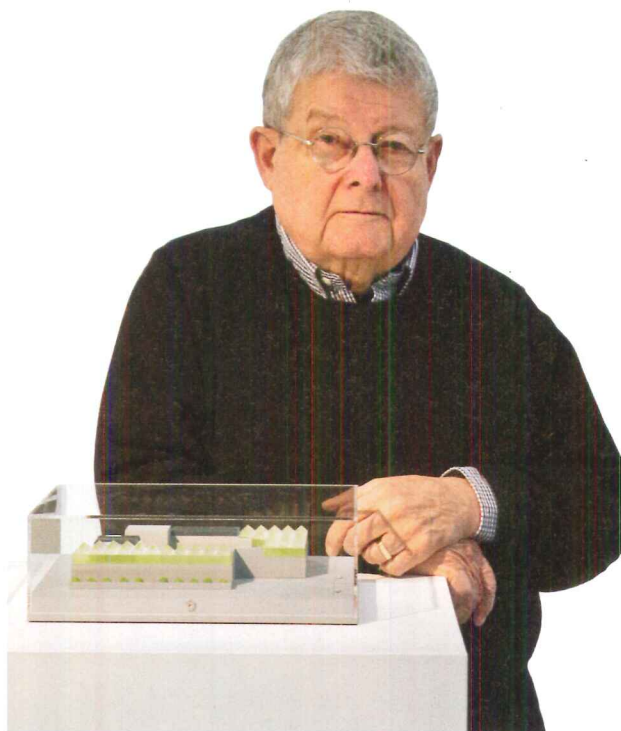
BY CATHLEEN MCGUIGAN
AND SUZANNE STEPHENS

THE GODFATHER of the Chicago architectural community, Stanley Tigerman, 85, has long played a historic role in the city's practice, education, and culture. Although he went east to Yale University for his B.Arch (1960) and M.Arch (1961), Tigerman returned to his hometown in 1962 and established his office. In 1982, he and his wife, Margaret McCurry, merged their offices and renamed the firm Tigerman McCurry Architects. Through the years, Tigerman has helped connect Chicago to the architectural debates occurring in other parts of the country and internationally. In the 1970s, he began arranging exhibitions and conferences aimed at getting Chicago's younger architects recognized in a city entrenched in the modernist legacy of Mies van der Rohe. He served as the director of the School of Architecture at the University of Illinois at Chicago from 1985 to '93, and cofounded Archeworks in 1994, a student design program with a public service mission. Tigerman's own architecture has been characterized by a belief in technique, the role of humor and allegory, and a commitment to social concern. Now, with the Chicago Architecture Biennial 2015, organized by the city and the Graham Foundation for Advanced Studies in the Fine Arts, opening this month, Tigerman is getting renewed attention. An exhibition of his drawings, *821 Stanley Tigerman Sketches 821*, is on view at the Volume Gallery from October 24 to December 5. Last month, the architect was one of five Chicagoans in the arts singled out to receive the Fifth Star Awards from the city. Tigerman talked to ARCHITECTURAL RECORD's editor in chief, Cathleen McGuigan, and deputy editor Suzanne Stephens about his favorite subject: Chicago.

ARCHITECTURAL RECORD You've often said that you believed in Chicago and that it was important to have roots there, even though you've designed buildings elsewhere. What gave you that sense of commitment to Chicago?

STANLEY TIGERMAN: I was born here. I'm of an age when very young architects sometimes ask me, "When do you go out and open your own practice? And where do you practice?" My answer is, when you're no longer capable of taking instructions from another architect, you should open your own office. And where? You should go home. Now, I suppose that sounds simplistic, since Chicago is just a great city of modernism—yet it is my home.

It's not important where you're from, but you need to go home. Going home shows an allegiance that will be returned in kind by your city, by the city government, by the powers that be. My coming home after Yale has long since paid off. I wasn't born on the right side of the tracks, but it doesn't make any difference. You show your loyalty to your place of birth, and it will pay you back in spades.



STAN THE MAN

Stanley Tigerman shows his model for the Pacific Garden Mission, Chicago's oldest rescue center for the homeless, in 2006, a year before it opened.

But why, when you studied architecture, did you go east?

I had no choice. IIT was a monastery, a seminary for seminarians who were believers in the Mies idiom and his way of doing things. It was not open to people like me.

I started at M.I.T., flunked out after one year and spent the next 10 years in the wilderness, working for any number of architects, good, bad, and indifferent, and then finally found my way to Yale, where I thrived. I was older and less willful, less spoiled. Paul Rudolph [then chair of the department of architecture] practically invented me out of whole cloth.

I'm a Chicago booster, like Saul Bellow. You show your loyalty to your place of birth, and it will pay you back in spades.

When I got my master's, Rudolph asked me to stay and work in his office in New Haven. I said, "Mr. Rudolph, do you see that tan Ford Falcon station wagon with smoke belching from its exhaust pipe? I have to get in that car and head back to Chicago right now, or I'm going to be physically ill."

I would not have thrived in Paul's office or on the east coast. You know, I don't give a shit about New York. I'm a Chicago booster, like Saul Bellow or Nelson Algren.

So when Chicago shines, in terms of the Biennial now, with [curators] Sarah Herda and Joe Grima getting 100 or so firms from six continents here for it, that's pretty fantastic. They're very young. Many of them are frankly brilliant and are doing things that I think are pretty terrific. So I'm thrilled.



METAPHOR MAVEN

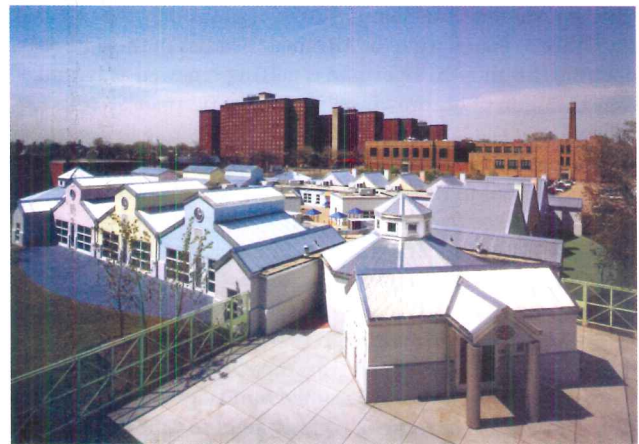
Symbolism permeates Tigerman's Illinois Holocaust Museum and Education Center (above) in Skokie (2009). The Educare Center in Chicago (right), built adjacent to the Robert Taylor Homes (2000), reflects Tigerman's interest in a playful vernacular.

The Biennial gives credit to the attention you focused on Chicago in 1977 with a conference at the Graham Foundation called the State of the Art of Architecture. The year before, you formed a group of architects, "the Chicago Seven," that included Tom Beeby, Ben Weese, Jim Freed, and Stuart Cohen, and mounted a show of your and their work to protest the *100 Years of Architecture in Chicago* exhibition at the Museum of Contemporary Art. What was all this about?

After we did the Chicago Seven exhibition, we had the mosh pit [the 1977 conference] with all these architects from New York, Los Angeles, and here. We had the Whites, the Grays, the Silvers, and the Chicago Seven. There was a lot of antagonism from the Miesians in Chicago, of course—this was a challenge to them. We, the Chicago Seven, didn't have much in common, and we didn't even like each other. But what we wanted was a place at the table.

As the impresario for both the show and the conference, you focused on all the design ferment going on nationwide. Did it bring enough attention to design innovation in Chicago, versus the east and west coast?

Yes and no. What did happen is that we started speaking to each other across the country. Bob Stern, Peter Eisenman, and Frank Gehry and I talked and became really good friends as a result of these events. Paul Rudolph did this at Yale by inviting people that he couldn't care less about—Gordon Bunshaft, Mies, and Craig Elwood. I mean, he hated all those people, with the exception of Mies, of course. But having them in New Haven was a way of confronting his own beliefs, in a way.



You have been Mr. Chicago—the glue bringing all these ideas and architects together. And it's still true. Is this because of your particular personality and sensibility or something about being from Chicago, or both?

Well, it's actually both. It's in my nature to pass the baton. So you'll find that the youngest generation—the generation behind Jeanne Gang and John Ronan, but including them as well—is very supportive of me, as I am of them, because I feel that part of our obligation is to pass the baton. But it is also about Chicago. I've always said New York is a place of perpetual intellectual foreplay—they never get it on; they just talk. I believe in acting. Archeworks, which [designer] Eva Maddox and I started in 1994, could only have happened in Chicago at that time.



At Archeworks, with students working on pro bono projects, you were really ahead of your time—you started it long before Architecture for Humanity, for example. And though you're no longer with Archeworks, you have brought that ethical sensibility from your office to such projects as the Educare day-care center at the Robert Taylor Homes (2000).

And there's my Pacific Garden Mission for the Homeless [Chicago, 2007]. Also, I love all the symbolism I did at the Holocaust Museum [Skokie, Illinois, 2009]. You know, I am of an age where, if you don't give back, you have to ask, what is the purpose of it all?

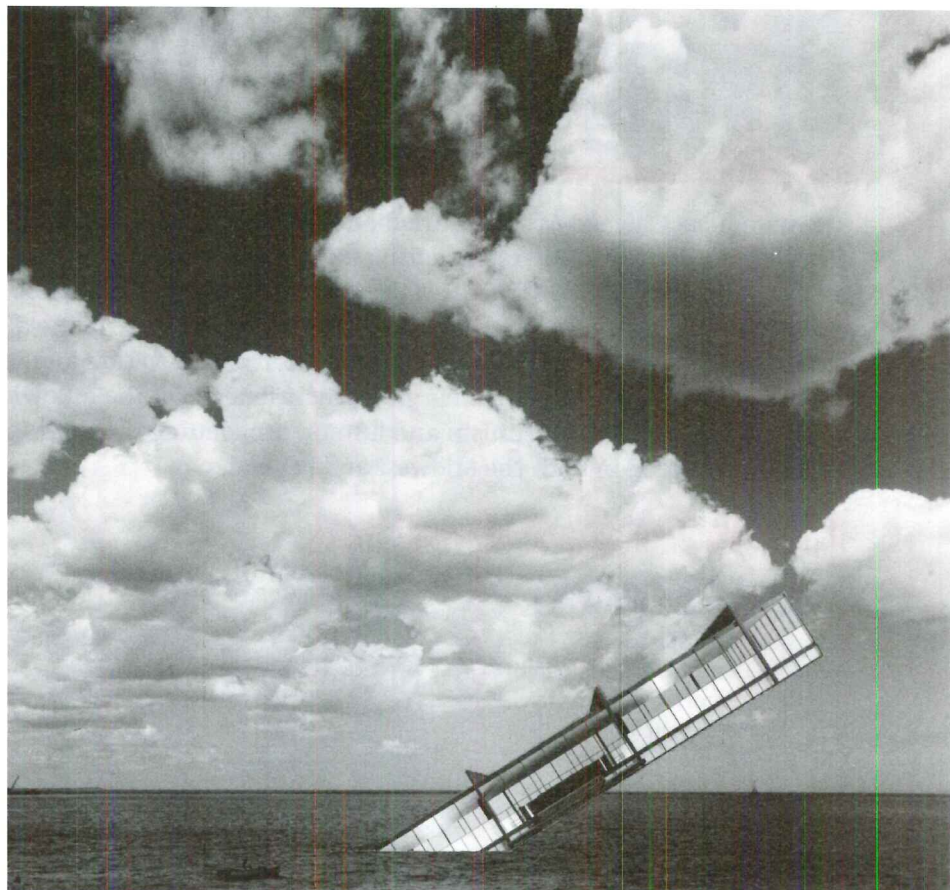
Let's go back to Mies. You knew him, and, despite your different ideas about architecture, you liked him.

I admired him like crazy. OK, I'm Jewish, but architecturally he was my Abraham. And he had a fabulous sense of humor. And he was also a very human guy—a mensch. Yes, but unlike Isaac, you tried, figuratively, to deep-six Abraham—or at least his influence. Your move into postmodernism was epitomized by your famous *Titanic* collage showing Mies's Crown Hall sinking into Lake Michigan (1978).

It's interesting that you bring that up, because the Chicago Architectural Club for years has put on a Burnham Prize Competition. This year they're asking young people to come up with an iconic image much like the one I did then. And they've asked me to also do a post-*Titanic* collage.

What do you think about some of the Chicago architects active today, such as Adrian Smith and Gordon Gill?

They're terrific. Whatever one's feelings about supertall buildings, there's no question [Smith and Gill] do incredibly



innovative work with tall buildings, as does Jeanne Gang. Jeanne's doing a fabulous building [Wanda Vista, page 91], for this Chinese developer. It's a beautiful, conceptually brilliant thing, in the way that John Ronan's Poetry Foundation is. You've talked about how great you think this next generation of young architects is. What characterizes them and who are some you really like?

When you pass the baton in some serious way, it's the right thing—you assure your own continuity.

One young woman from Yale who used to be in our office, Erin Beslar—I called her Spike because she had this spiky red hair—is really interested in making things. There's a firm in Chicago called PORT Urbanism [page 106], which has done a scheme for reimagining the lakefront here.

And for drawing, look at Jimenez Lai [founder of Bureau Spectacular]. But this youngest generation is no longer becoming registered and joining the AIA. They need to find their own ways to build. Ultimately you want building.

Yes. You have said Chicago is more interested in building than in ideas.

When Mies was credited as saying build, don't talk, it endeared him to anti-intellectuals in Chicago. Having this Biennial, where over 120 mostly young architects come to Chicago, actually goes against the grain of the spirit of build, don't talk. In the late 1970s, we felt that when we challenged the Miesian hegemony. Chicago is antagonistic to intellectualism. But life is much more complex than pragmatism permits. Life is about symbolism and ideas as well as building. The problem is that ideas and the making of things have been separated for much too long. ■

BACK THEN

In 1977, the State of the Art of Architecture conference at the Graham Foundation brought together such young renegades as Charles Jencks, Margaret McCurry, and Stanley Tigerman (left to right in photo top, left) as well as Robert Stern and Richard Meier (bottom, left). In 1978, Tigerman created his iconic collage showing Mies's Crown Hall sinking like the *Titanic* into Lake Michigan (above).

Chicago's Next Generation

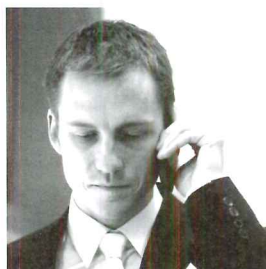
BY LAURA RASKIN
AND MIRIAM SITZ

The inaugural Chicago Architecture Biennial (October 3, 2015 through January 3, 2016) is a global event. With over 60 firms or studios featured—representing more than 30 countries across six continents—it is also drawing attendees from all over the world. Titled *The State of the Art of Architecture*, the exhibition, curated by Sarah Herda and Joseph Grima (see page 30), reaches beyond the national conversation to generate a larger discussion about the future of the built environment. But, given Chicago's long tradition of innovation and innovators, from Louis Sullivan to SOM, we decided to look at some of the city's own emerging practitioners. On the following pages, we highlight a handful of designers in the Biennial who are, with optimism and humor, broadening the definition of the practice of architecture and what it means to be an architect, in both the Midwest and beyond.

Allison Newmeyer and Stewart Hicks,

Design With Company

For its contribution to the Biennial, Design With Company (Dw/Co.) is entering its own late—very late—scheme for Chicago's Harold Washington Library Competition, which was held in 1987. At that time, Thomas Beeby, with his Postmodern design, beat out four other finalists: Dirk Lohan; Skidmore, Owings & Merrill; Helmut Jahn; and Arthur Erickson. In 2009, when the library was added to a list of the "world's ugliest buildings," *Chicago Tribune* architecture critic Blair Kamin described its neoclassic facade as "leaden" and its rooftop ornament as "cartoonish."



Allison Newmeyer and Stewart Hicks.

Though 35-year-old Dw/Co. cofounder Stewart Hicks says that the jury "got it wrong" when they selected Beeby's design, he emphasizes that the "entry" he and his 36-year-old wife and partner Allison Newmeyer are submitting—a play on scale that would combine two dozen small buildings to form a "layer cake"—is not about righting that wrong. "We want to use it as a tool for thinking about issues that are at stake, such as the role of libraries in the city and the use of history as a design element. We are not saying that we have the solution."

Founded in 2010, Dw/Co. is drawing from an even deeper well of architecture-competition precedents with its installation. Its "late entry" also riffs on another group of Chicago architects and their belated exercise, Ben Weese, Stuart Cohen, and Stanley Tigerman's *The Late Entries to the Chicago Tribune Competition*. It was an invitation-only exhibition in 1980 that reexamined the seminal 1922 Chicago Tribune Tower competition and the tower typology in general.

For another Biennial program, Hicks and Newmeyer are partnering with a chef to create a culinary event still in the



The firm's 2011 speculative project *Farmland World* is a chain of agro-resorts-cum-theme parks that allow guests to work on a real farm.

planning stages at the time of this writing. They will also be screening a film (to be determined) that inspires them and having a discussion with its director. All three activities are very much in line with the firm's playful approach to the serious challenges of the built environment. Most of its projects are deeply rooted in physical place, particularly the Midwest, and are defined by elements of the surreal—"fantastic elements treated as if they really exist," says Hicks. The firm's recent book, *Misguided Tactics for Propriety Calibration*, funded by a grant from the Graham Foundation, is like a *Delirious New York* of the Midwest, analyzing and documenting, with drawings and collages, the region's often dreamlike architecture, such as South Dakota's Corn Palace and Wisconsin's giant fish-shaped Fresh Water Fishing Hall of Fame.

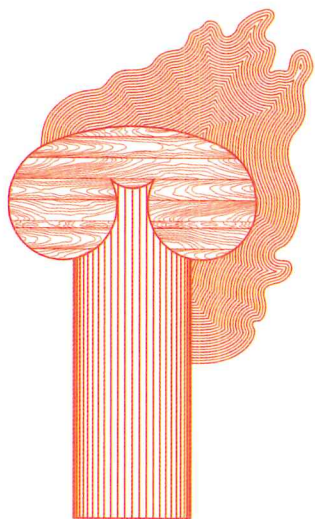
Ania Jaworska

A show of Polish-born architect Ania Jaworska's work is currently on view at the Museum of Contemporary Art Chicago (MCA), running in tangent with the Biennial through January 31, 2016. It's a coup for 36-year-old Jaworska—this is the first time that the MCA has exhibited a solo show by an architect as part of its Chicago Works series, which showcases local artists' work. It is also clear that the museum is tiptoeing into the practice, because Jaworska's work blurs the line between architecture and art.



At the MCA, she presents two projects that propose would-be structures. The first is a series of all-black sculptures that incorporate elements of signage, monuments, and common architectural forms like arches and obelisks. Jaworska is interested in the invisible boundaries communicated by the built

world, and these pieces “comment on how architecture restricts or invites,” she says. The second part of the show is a series of screen-printed posters of fantastical columns—some are loopy, some are organic and tree-like, while others borrow from pop art. None of them look as if they could provide structural support, but Jaworska works them into a proposal



for a pavilion. The forms are from her Subjective Catalogue of Columns, an exercise that uses humor to poke at the long history of such iconic elements. (In 2014, Jaworska brought some of these ideas to life in her design for the interior of the Graham Foundation's bookstore in Chicago—miniature arches, towers, columns, and staircases in expanded metal mesh became the shelving and organizational elements of the shop.)

She is also participating in a group show at the Chicago Cultural Center, a Biennial venue, which asks local architects to imagine alternative development scenarios for the city. “There is a lot of work that happened in Chicago that had an impact on architecture across the United States and beyond,” says Jaworska, a visiting assistant professor at the University of Illinois at Chicago (UIC) architecture school. The Biennial, she notes, is a forum for the city's youngest crop of architects to “propose new approaches to the practice.”

Through Wooden Column on Fire (left) and two sculptures spelling out “Here” and “Hi” (above), Jaworska explores the communicative aspects of iconic and monumental architectural elements.

Paul Preissner

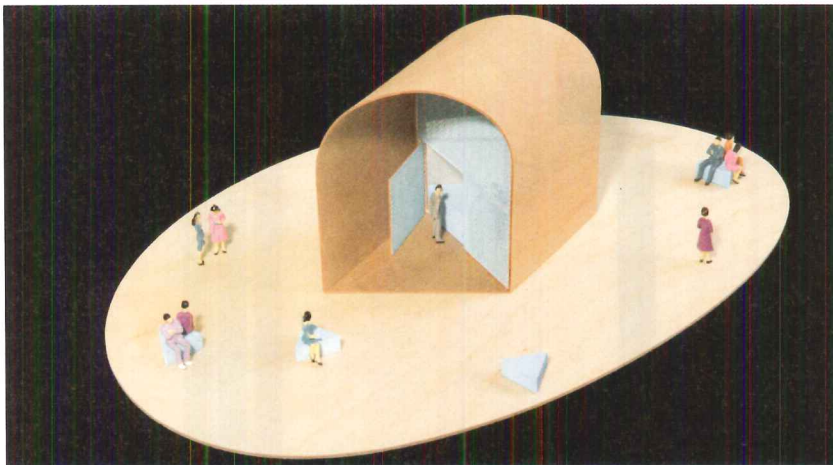
Paul Preissner, 41, recently made a couple of round, flat-pack tables out of mint-colored Corian. “It was the cheapest way of producing furniture with one of the most expensive materials,” says the architect, who was experimenting with the process to help out a friend who runs MakeTime, a company that lets designers share time on computer numerical control (CNC) machines. But the one-off project is also emblematic of Preissner's interest in the unexpected. “There is something kind of funny and disrespectful with the endeavor, but it produces something deeply interesting,” he says, noting his use of a luxurious material for a simple table made in one of the least expensive, “dumbest” ways.

Preissner, who has worked for Peter Eisenman, Philip Johnson, and Skidmore, Owings & Merrill, was once a big believer in software and computation for problem-solving and form-finding. But, in recent years, his interest in parametric design took a dive. “It was so utterly conservative. People

pretend the stakes are so high,” he says. “I wanted architecture that seemed more insignificant and stupid.” Preissner also wanted to start building things, so he took on smaller jobs. Two residential projects, for example—an apartment renovation and a modest house for a family of six, both in Chicago—fit the architect's desire to go in the opposite direction of the enormous projects he used to manage.



For the Biennial, Preissner worked with some of his students from UIC as well as his sometime collaborator Paul Anderson, a Denver-based architect who runs the firm Independent Architecture. The team was commissioned to design a new kiosk on Lake Michigan, which is already dotted with a motley



Preissner's model of *Summer Vault*, designed for the shore of Lake Michigan, depicts one of a handful of kiosks commissioned by the Biennial.

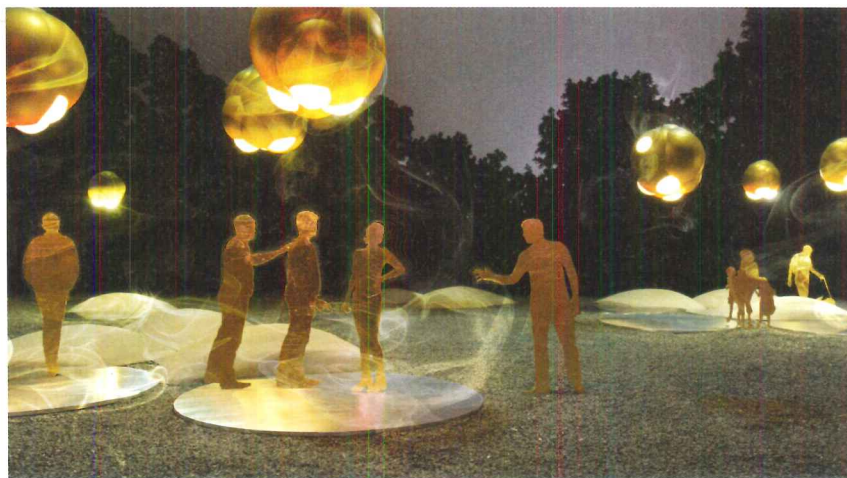
assortment of simple structures selling snacks and merchandise. Preissner says that the market-based program “both-ered us a little bit.” So, in response, they conceived of a form that could be a public shelter when it wasn’t serving as a store. A single steel vault, skewed in plan, and with a blue powder coating, “looks like a weird pop-up book,” says

Preissner. Its interior is divided into two triangles; one is enclosed by expanded metal screens and doors, and the other is open but still protected by the vault overhead. During the off-season, the screened portion’s doors can be pinned open to create a gathering spot. For Preissner, this collaboration was like indulging in a hobby, he says. “We hung out and made a bunch of weird models.”

Sean Lally, Weathers

Like many architects, Sean Lally is concerned about climate change and how his profession can help address the immense environmental pressures bearing down on the globe—he just has a very singular vision for the solution. With a background in landscape architecture, Lally, 41, is pursuing a field of design in which steel, wood, and concrete are replaced by energy: electromagnetic, thermodynamic, acoustic, chemical. Rather than simply seeing energy as fuel, he treats it as the next inevitable building material, “the 21st-century version of steel and iron.” As a simple example, Lally, who founded his firm, Weathers, in 2006 and is an associate professor at UIC’s School of Architecture, likes to point to the streetlamp, an important if banal piece of street and park life, safety, and commerce. But the cone of light from a streetlamp is its own architecture, he says. It has a shape with definite borders, an aesthetic, and an interior. It also controls activity, by dictating what can be done and seen when it shines in the dark.

“My interest is looking into outdoor space with energy as the material,” says the architect, who published a book in 2014, with Lars Müller, dedicated to his philosophy, *The Air*



From Other Planets: A Brief History of Architecture to Come. To that end, Lally has conceived a number of conceptual projects, such as EOS (2014), in which—combined with advancements in bioengineering and wearable technology—human beings would be able to inhabit spaces made of cones of light and walls of energy. For the Biennial, Lally expands on this idea, exhibiting models, energy-simulation drawings, and photographs. “I don’t have any question or doubt that this is where architecture needs to go,” says the architect. “And we can actually inform the direction it’s going in.”

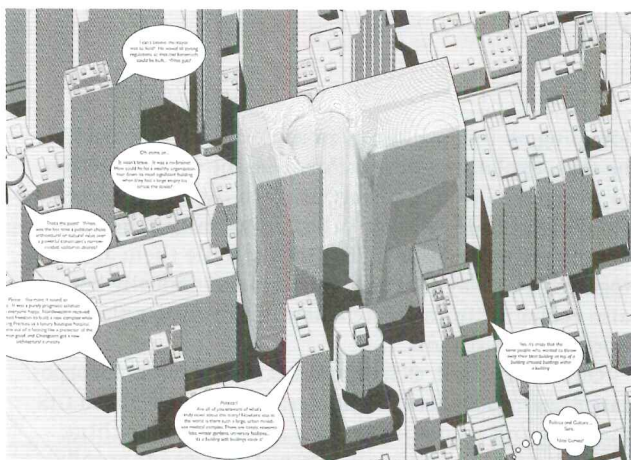
Lally's composite image shows how energy might create and define physical spaces.

Grant Gibson, GAMESgibson, Inc.

“We tend to relate and connect to other people through stories. We can find ways of using narrative to help us empathize with one another,” says architect and UIC instructor Grant Gibson. “I thought my firm needed to be rooted in a premise that understood and advocated for that.” In establishing GAMESgibson, 31-year-old Gibson proved his own dedication to and appreciation of a good narrative: T.E. Comes, the firm’s half-namesake, is a fictitious person with an elaborate life story that Gibson invented. This unusual creation serves as something of a litmus test for how well-matched the firm is with potential clients. “It drives some people away, but others gravitate toward it,” the architect

says. “I’d rather know up front if someone’s got the interest and earnestness to dive into bigger questions of historical and cultural context.”

A few years ago, as part of an exhibition protesting the demolition of Bertrand Goldberg’s Prentice Women’s Hospital, the firm developed a conceptual design for a mammoth building on the adjacent plot. Through drawings reminiscent of those from a graphic novel, Gibson proposed a greenhouse-like exoskeleton that could house future academic and research buildings for the University of Chicago. “We tend to produce things that have layers to them,” Gibson says. The theoretical construction also had a



"It's a building with buildings inside it!" says one structure to another in Gibson's comic representation of his scheme to save Prentice Women's Hospital.

cloverleaf-shaped void through its core that riffed on the Goldberg building's form.

For the Biennial, CAMESgibson, along with Skidmore, Owings & Merrill, has designed a high-rise that aims to house middle-class people.

"Many of the current methods of producing multifamily housing result in super-high-end units or mass-produced towers for the working poor. We want to develop a prototype with a flexible design that would allow residents to live there for their entire lives," says Gibson. The building's core would be publicly owned and maintained rather than considered a part of the building. "Our thought is that if we turn the core over to municipalities, privatization will take place only at the unit level, allowing owners the freedom to customize their spaces as they please."

With a rotating cast of interns, CAMESgibson also undertakes built work, including a new wing for the Hyde Park Art Center that contains shared studio suites, with event spaces at either end. "The center is amping up its commitment to local up-and-coming artists," notes Gibson.



Kelly Bair, Central Standard Office of Design

After spending more than a decade in L.A. working for boutique design firms, on projects ranging from set design to start-up offices, Kelly Bair, 38, moved to Chicago four years ago to take a tenure-track teaching position at UIC. "Toward the latter part of my time in L.A., I had started my own practice, doing a lot of typical modern residential work," she says, "but I found it hard to combine my earlier interests in digital fabrication and speculative-research projects with these single-client jobs. Teaching allowed me to have that outlet."



With one foot in academia, she founded Central Standard Office of Design (CSOD). Since then, she says, "very little work I've done involves the traditional, client-based mode of practice." Her firm is research-oriented and conceptual, with installations often commissioned by gallery curators and sometimes supported by grants. UIC recently funded her research project *Ancient Nouveau*, which looks at applications of a low-tech vernacular construction method, rammed earth, in modern architecture.

Bair's newest work, for the Chicago Biennial, flows in that same vein. Titled *Cut/Fill*, it reimagines multifamily housing, maximizing both urban density and public space on vacant city blocks. Her design, which creates eight housing units on a 125-foot-square Chicago lot, where a typical developer would place just five units, relies on significant excavation and uses the displaced earth to construct walls, floors, and roofs. "With both landscape and building elements," she says, "I thought of it as being an earth-moving project as much as an architectural project."

Next year, for the Venice Biennale, Bair will team up with Kristy Balliet, with whom she founded Possible Mediums (along with two other partners), a collaborative of Midwestern architects and educators that organizes symposia and conferences.



Bair's design for a residential block, as outlined in *Cut/Fill*, creates multiple corner-lot conditions and reorganizes building adjacencies.

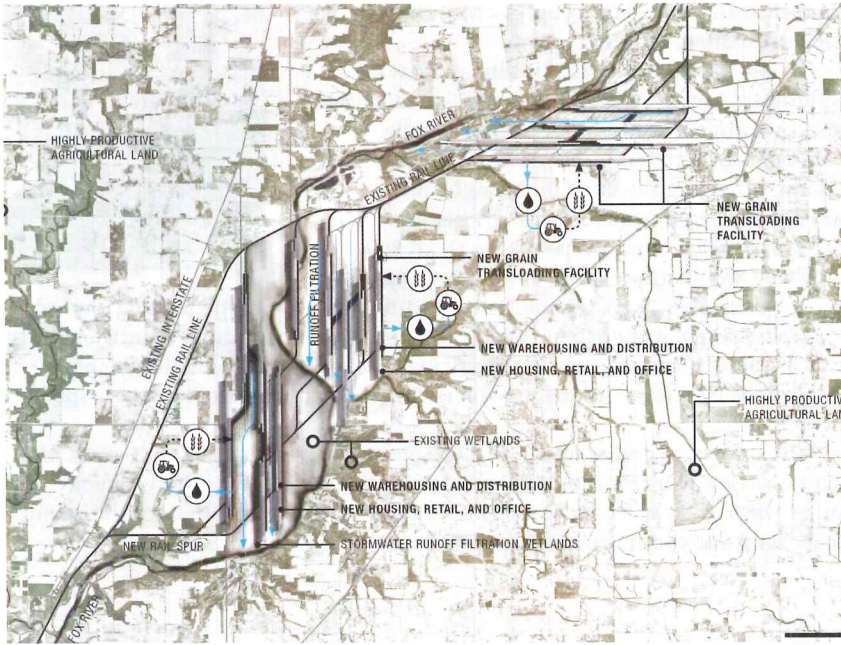
Conor O'Shea, Hinterlands Urbanism and Landscape

Operating on the fringes of architecture, landscape design, and planning, Conor O'Shea's firm, Hinterlands Urbanism and Landscape, takes a high-level look at exurban areas surrounding cities. Founded in January, the one-man-shop's work focuses on these hinterlands—places just beyond the borders of major urban centers like Chicago—and is almost entirely speculative. "It would be great to have built work," says the 30-year-old, "but I hope I'm still always also conceptual. I want to make sure the ideology stays pure."

For the Biennial, O'Shea is pushing the envelope on research he started while at Harvard's GSD. The project

Logistical Ecologies examines transportation infrastructure and the movement of goods, considering how these respond to and interact with the existing infrastructure and ecology of an area. O'Shea's calculus for this and any project takes into account biodiversity, agricultural production, and hydrological events. "There's a





O'Shea considers the links among commerce, agriculture, infrastructure, and the environment in schemes for developing the city fringes.

lot going on independently in those three categories,” he says, explaining how factors like the reintroduction of American bison into Northeastern Illinois or increased flooding in the Fox River Valley affect infrastructure and planning decisions. “The idea is to tie them all together in a way that’s productive economically but also ecologically, to create a new urbanization plan for northeastern Illinois.”

On a single wall, O'Shea and his collaborators incorporate drawings and aerial photography with advanced GIS mapping and animation to present a new way to think about the future of the region. The Hinterlands founder teaches at the Illinois Institute of Technology (IIT) in the Master of Landscape Architecture program and often finds his work in academia complementary to his firm's research. “We're using both platforms to push dialogue about urbanism forward,” he says, “and to test and challenge the existing frameworks that we use to think about cities.”

Christopher Marcinkoski and Andrew Moddrell, PORT Urbanism

Two time zones and 700 miles may separate Christopher Marcinkoski and Andrew Moddrell, but that doesn't prevent the founders of PORT Urbanism from collaborating on research and large-scale public projects. Thirty-eight-year-old Marcinkoski, based in Philadelphia, where he teaches in the University of Pennsylvania Department of Landscape Architecture, and 36-year-old Chicago-based Moddrell, who teaches at UIC's architecture school and at the University of Michigan, are both licensed architects—“but we don't do buildings,” says Marcinkoski. “Our work tends to be in the public realm: infrastructure, parks, waterfronts. We're interested in using civic space as a medium for negotiating broader urban issues that are related to environmental, social, and economic concerns.”

In Chicago, the eight-person firm undertook a study for Goose Island, a landmass in the Chicago River on the city's Near North Side. “It's a fascinating place to us, because it's so central but also isolated,” says Marcinkoski. The team's plan, which reimagined this manufacturing zone as a sustainable mixed-use district, was speculative, aiming to start a conversation about the island. But PORT is also involved in wide-ranging built work. Current projects beyond Chicago's limits include the 13-acre Paco Sanchez Park in Denver, which will



Christopher Macinkoski (top) and Andrew Moddrell.



break ground next spring. Meanwhile, the firm has its plate full with projects in Chicago, including a pavilion for the fifth annual Chicago Ideas Week (CIW) in mid-October. Recently named CIW's artist-in-residence, PORT will construct a temporary pavilion at the base of the Tribune Tower (in addition to another pavilion elsewhere, now in construction, that they designed for the University of Chicago's Place Lab). For the Biennial, the firm's installation *The Big Shift* illustrates how Lake Michigan's boundaries have changed over time, while also exploring how the reconfiguration of the body of water and addition of a new lakefront district could expand the public realm. ■

Made from stratified layers of different foams, PORT's CIW pavilion calls attention to the “constructedness” of the city, areas that have been artificially built up over time.

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MULTIFAMILY HOUSING

Architects often look to the surrounding context for design inspiration, with remarkable results, as the array of residential buildings here demonstrates. The polygon-shaped blocks of a condominium in Salzburg, Austria, echo the craggy natural setting in a former stone quarry, while the slate-clad, curvaceous, stepped form of an apartment house in Monterrey, Mexico, mimics the mountainous terrain nearby. In downtown Los Angeles, an industrial landscape of rail tracks and freight trains helped dictate the quarter-mile-long form of a new residential complex. In some cases, history provides a stimulus: a condominium frankly reveals its steel-frame structure in the city—Chicago—that gave rise to this technology. An apartment complex in New York has an exoskeleton reminiscent of the famed Hancock Tower in Chicago, and a condominium in Winnipeg, Manitoba, inhabits an eroded box that acknowledges the existing idiosyncratic neighborhood. In all these instances, the impulse is not to strictly copy but to draw on the physical or historic context as a point of departure for the imagination.



A development overlooking Salzburg connects residents to nature and carves out a public space in an abandoned quarry.

BY MARY PEPCHINSKI

An abandoned sandstone quarry on Rainberg Mountain, above the historic city of Salzburg, Austria, is hardly the place one would expect to find a desirable urban neighborhood. But, nevertheless, that's where developer Asset One decided to build 100 units of housing.

When New York-based architects Gisue and Mojgan Hariri first visited in 2006 in response to an invited competition, they found the site "derelict and magical." Known as the Sternbrauerei, the quarter was dominated by the quarry's soaring rock face to the west but also contained a defunct landmarked brewery and its storage vaults. Nineteenth-century villas and more recent low-rise apartment buildings border the northern edge, while a forest rises to the south.

The jury selected the Hariris' scheme because it sensitively integrated new buildings into the spectacular topography. "We realized immediately that we had to respect the rock," says Gisue Hariri. They designed six blocks ranging from three to six stories in height, containing units that vary from 650 to 3,000 square feet. Each building has a distinct crystalline form, like giant stones that were hewn from the mountain. Completed late last year for developer UBM, which took over the project in 2010, the complex allows residents to bask in nature and experience an unusual public space.

The Hariris arranged their faceted structures to create two courtyards linked by an elongated plaza and built over two levels of underground parking. To the east, to enclose a grass-covered courtyard, two of the blocks join the old brewery, which has been converted to residences as part of the project. Apartments and offices occupy the storage vaults, which lie below the courtyard. To the west, four more blocks surround the second courtyard, which is landscaped with beds of perennials and opens to the rock face and a creek constructed as a water feature. An adjacent street and a mountain path provide



PHOTOGRAPHY: © BRYAN REINHART, EXCEPT AS NOTED

Sternbrauerei | Salzburg, Austria
Hariri & Hariri Architecture

MAGIC MOUNTAIN



CLIFF DWELLERS For their site below the rock face of the defunct quarry (opposite), the Hariris designed six faceted housing blocks containing 100 apartments. The buildings' hallmark feature is a limestone-clad concrete plane that folds and bends to wrap the upper stories (above).



access to the plaza, and from there anyone can wander through. “We wanted to make a real neighborhood and not a gated community,” says Gisue Hariri.

The individual buildings differ slightly in size and shape, but share a formal language. Each includes a continuous folded plane of reinforced concrete clad in limestone, which has an affinity with the quarry face even though it is not the same type of rock. (Sandstone was originally selected, but its high absorption rate would have necessitated much thicker veneer panels.) The plane covers the roof and bends to form both vertical walls and floor decks, wrapping the upper portion of the building. This dynamic element cantilevers over a mostly glass-enclosed base shielded with a delicate screen of vertical larch strips.

The apartment units feature an array of layouts in response to the developer’s request for three housing types—small ateliers for artists,

single people, and couples; one- to three-bedroom apartments for families; and spacious penthouses intended to appeal to both local and international buyers.

Duplex, studio, and one-bedroom atelier units, with 16-foot-high interiors, occupy the ground floor and are accessed directly from the courtyards. Entrances at the courtyard and street, and from the garage, lead to vertical circulation cores that serve the midsection units and penthouses. These generally have more typical floor-to-ceiling heights.

While their size and configuration vary, most of the units at the buildings’ ground and middle floors have open kitchen-living-dining areas with floor-to-ceiling glazed facades, and terraces with glass balustrades that permit seamless views to a courtyard, the forest, or the rock. In the middle floors, hallways, baths, and bedrooms are placed along a concrete wall with punched windows that face either north or

east and provide framed views of the environs. Clear and translucent glass panels sheathe this concrete wall on the exterior, completing the blocks' vitreous appearance.

The one- and two-story penthouses also have continuous, but much more expansive, living-dining-kitchen spaces. Floor-to-ceiling glass and deep wraparound terraces open the apartments to panoramas of the city and the mountain. To maintain comfort throughout the long alpine winter, all units have triple-glazed facades and an under-floor heating system.

Just as each apartment presents residents with a slice of nature, the Steinbrauerei offers all an uncommon oasis, even though it is now a dense urban quarter with about 250 residents, 90 percent of whom live there full-time. On a recent visit, their



VARIED VIEWS Floor-to-ceiling glass and generous terraces with glass balustrades (this picture) provide views of the rock face and the courtyards (opposite), as well as an adjacent forest. Penthouse units, like one with interiors designed by the German firm spacesmunic (above), enjoy panoramic views over Salzburg.

**RESTORED STORAGE**

As part of the project, the Hariris transformed the former brewery's storage vaults into apartments and offices. In the vaults' corridor, they added a polished limestone floor, white plaster walls, and lighting that accents the historic construction.

belongings—bicycles, furniture, and greenery on the terraces—were in evidence. But despite this clutter, the complex provides a sanctuary, with the silence of the mountain giving way to the sound of birdcalls and the rushing water, with perennials blooming and moss creeping along the creek. In this setting, the rock-inspired buildings seem more like a part of the landscape than a piece of the city.

As a response to this unique context, the architecture invites associations: the larch strips resemble forest saplings, and the irregular glazed blocks recall not only the site's stone but the translucent, jewel-like quartz that is common in this region. "The challenge," reflects Gisue Hariri, "was to make it cost-effective and sufficiently unconventional without creating an unwarranted intervention in this magical setting." The Hariris have succeeded with skill and imagination; here one truly leaves the city and makes the transition to nature. ■

Berlin-based Mary Pepchinski is an author and architect who teaches at the University of Applied Sciences in Dresden, Germany.

credits

ARCHITECT: Hariri & Hariri Architecture – Mojgan Hariri, Gisue Hariri, principals; Markus Randler, project manager; Jenny Shoukimas, Liv Marit Naess, Marlene Kwee, Neda Pourshakouri, design team

ARCHITECT OF RECORD: arinco planungs+consulting

ENGINEERS: Schindelar ZT, Petschnigg ZT (structural); TB Heiling (mechanical); TB Herbst (electrical); TAS Bauphysik (building physics)

CONSULTANT: Karin Standler (landscape)

GENERAL CONTRACTOR: Porr

OWNER: UBM Realitätenentwicklung

SIZE: 95,000 square feet

COST: withheld

COMPLETION DATE: September 2014

SOURCES

JURA LIMESTONE: Steinprojekt, F.X. Rauch

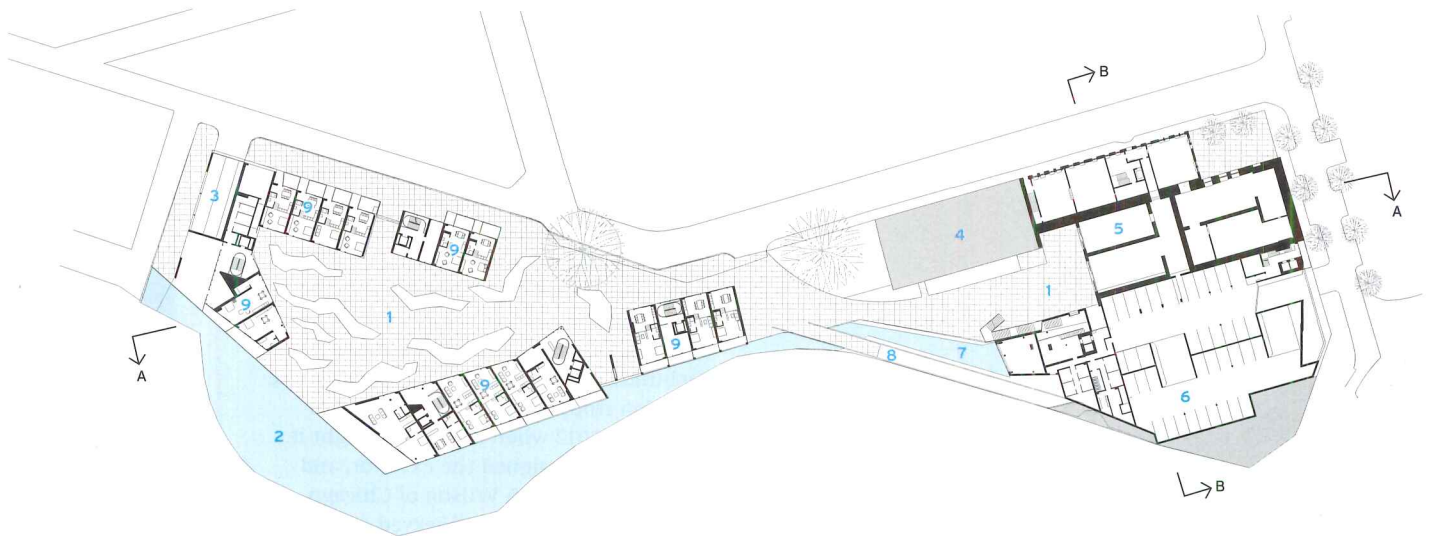
METAL/GLASS CURTAIN WALL: Schüco

LARCH SCREEN: Karo Metall, ALU-SOMMER

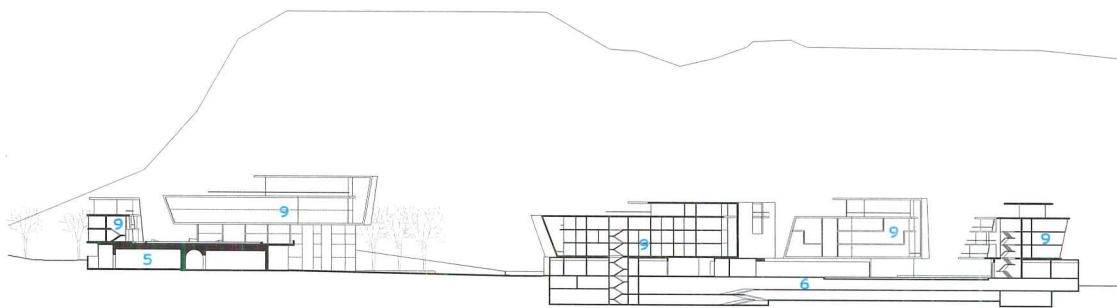
ELEVATORS: ThyssenKrupp



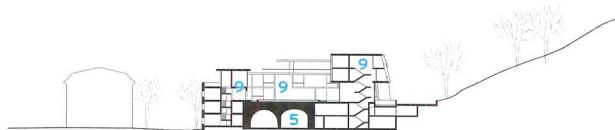
SECOND FLOOR PLAN



GROUND FLOOR PLAN



SECTION A - A



SECTION B - B



- 1 ENTRY COURT
- 2 CREEK
- 3 PARKING ACCESS
- 4 EXISTING BUILDING
- 5 RENOVATED HISTORIC BUILDING
- 6 PARKING
- 7 REFLECTING POOL
- 8 RAMP
- 9 RESIDENCES

747 North Clark Street | Chicago | The Miller Hull Partnership

FRAME FOR LIVING

A Seattle firm adheres to Miesian history in renovating a building in the master's adopted hometown.

BY JAMES GAUER

PHOTOGRAPHY BY MARTY PETERS

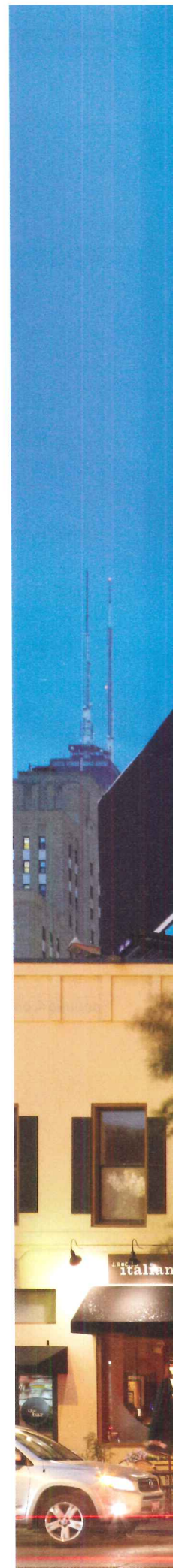


Chicago's gentrifying River North neighborhood is a gritty mix of older commercial and newer residential buildings. Among these is 747 North Clark Street, a 22,000-square-foot condominium completed last year. The seven-story structure fills a midblock lot only 40 feet wide by 100 feet deep, with its lot-line walls, flanked by buildings of only two stories, mostly blank. But its facade is an eye-catcher: glass in a black-steel frame whose elegant proportions recall Mies van der Rohe's archetypal Lake Shore Drive apartment towers. It pays fitting homage to Chicago's modernist heritage.

And yet this building's design architect, The Miller Hull Partnership, is from . . . Seattle. Why, in a city with no shortage of architectural talent, did developer Bob Ranquist look so far afield? "I saw their work in a magazine," he said. "I liked it, so I called them." (The magazine was ARCHITECTURAL RECORD, October 2002, page 228; the project was 1310 East Union, a live-work loft building in Seattle). Since then, Miller Hull has executed six projects for Ranquist. "While Chicago has tremendous architects," adds Ranquist's associate Zev Salomon, "the general direction of design at the multifamily level has not trended toward modern in the last 20 years."

747 had an unpromising start. The existing building, 80 percent finished when the recession stopped its construction, was derelict in 2012 when Ranquist bought it. Miller Hull redesigned the exterior, and Sullivan, Goulette & Wilson of Chicago designed the interior and served as architect of record. While the turnaround from design to finish took about a year and a half, at a total construction cost of \$143 per square foot, the challenges were many. According to Miller Hull partner Brian Court, "The previous design was underwhelming. It had a steel frame but was conceived as a neotraditional building with Georgian-style window proportions. Still, it had potential." The foundation, the masonry bearing walls, and the floor and roof structure were the only elements to be reused.

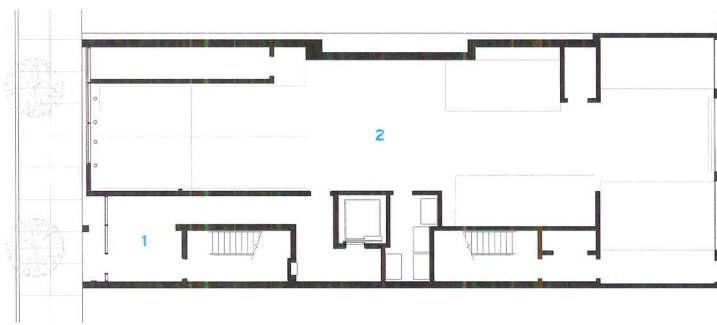
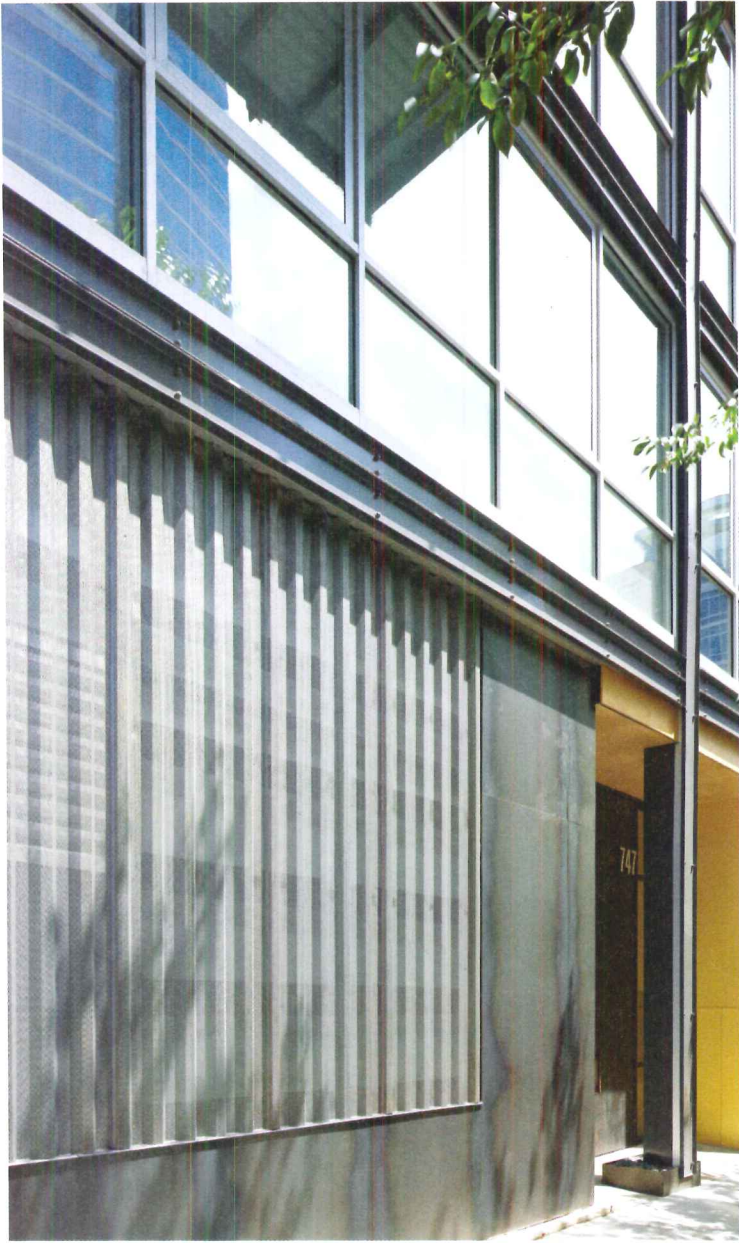
Concrete masonry stairs, elevator, and party walls account for lateral loads and fire protection, but steel is ubiquitous—as both the frame for gravity loads and on the facade, extending into a seventh-floor pergola. Steel channels clad the ends of the party walls, hot-rolled plate defines the entry, and a screen of corrugated perforated steel conceals the garage.



LEAN MACHINE

The seven-story condominium building rises above its neighbors (opposite) in a gentrifying area not far from Water Tower Place. The facade's elegantly proportioned black-steel frame (left) evokes Chicago's Miesian tradition and turns into a pergola on the top floor.





FIRST FLOOR PLAN



TYPICAL FLOOR PLAN

- | | |
|------------------|------------------|
| 1 ENTRANCE | 5 MEDIA |
| 2 CAR ACCESS | 6 MASTER BEDROOM |
| 3 LIVING AREA | 7 BEDROOM |
| 4 DINING/KITCHEN | |

SPATIAL INFILTRATION

A screen of corrugated perforated steel conceals the garage (opposite, left). At the entrance, hot-rolled steel plate connects the interior and exterior (opposite, right). Each unit has 10-foot ceilings and walls of glass opening onto a balcony.



In counterpoint to all that steel, a charred-oak front door and a clear-finished-wood ceiling with a splash of bright yellow enamel mark the entry. The monochromatic interiors of the apartments are more restrained and refined: a structure free of internal columns or shear walls allows the plans to be open and flexible, with unobstructed vistas through the 100-foot length of each of the six full-floor, three-bedroom condos. All have 10-foot ceilings, walls entirely of glass at both the front and the rear, and private decks. “The high-end residential buyer in Chicago is pretty design-savvy,” notes Chris Michalek, senior project architect at Sullivan, Goulette & Wilson. “We always keep this in mind when laying out a unit plan. Simple elegance and efficient use of space are key here.” It’s an approach well suited to a city whose architecture is firmly rooted in the tradition of “less is more.” ■

James Gauer, based in Victoria, B.C., and Chicago, is an architect and the author of The New American Dream: Living Well in Small Homes (2004).

credits

DESIGN ARCHITECT: The Miller Hull Partnership – David Miller, Brian Court, partners

ARCHITECT OF RECORD: Sullivan, Goulette & Wilson

ENGINEERS: SP Engineers (structural)

GENERAL CONTRACTOR: Maris Construction

CLIENT: Ranquist Development Group

SIZE: 22,000 square feet

COST: \$2.5 million

COMPLETION DATE: May 2014

SOURCES

GLASS: Tru-Lite

WINDOW FRAMES: Pittco Architectural Metals

STEEL: American Steel Fabricators (facade)

ROOFING SYSTEM: CertainTeed

HARDWARE: Emtek, Häfele, Unison Hardware (INOX)

FLOOR AND WALL TILE: Transceramica, Iris Ceramica, Ariosteia, Fiandre, Ann Sacks

One Santa Fe | Los Angeles | Michael Maltzan Architecture

TRAINSPOTTING

An enormous mixed-use building energizes a site along a major rail artery, contributing to an urban transformation.

BY RUSSELL FORTMEYER

PHOTOGRAPHY BY IWAN BAAN



PUBLIC ACCESS Near the southern end of the site, the building splits into two wings that wrap around a landscaped plaza. The quarter-mile-long structure contains 438 rental apartments, some with their own recessed balconies.

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The revitalization of Downtown Los Angeles remains a work in progress, with the area still a patchwork of commercial and residential towers, government and cultural facilities, light manufacturing, and parking lots. Lately, its momentum has turned to its eastern fringe, a once-industrial area now dubbed the Arts District.

Lodged between Downtown's high-rise core and the Los Angeles River, the neighborhood started establishing a new identity in 2001 when the Southern California Institute of Architecture (SCI-Arc, where this author teaches) left its West L.A. home and reopened in a former Santa Fe Railroad freight depot. In June, the perpetually homeless Architecture and Design Museum (A+D) opened just south of SCI-Arc in a converted warehouse surrounded by hip restaurants, coffee bars, and lofts.

Imbued with this institutional credibility and growing market demand, the Arts District now enjoys the attention of the city's real-

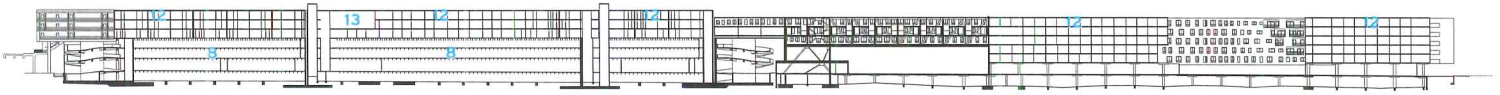
estate developers, as demonstrated by the arrival of One Santa Fe, Michael Maltzan's residential-commercial-retail colossus that is more than a quarter-mile long and, almost single-handedly, frames the neighborhood's eastern edge. One Santa Fe, named for its street address, encompasses 510,000 square feet of space, spread over six levels containing 438 rental apartments (studios, one-bedrooms, two-bedrooms, and townhouses), as well as a ground floor with restaurants, offices, and shops surrounding that L.A. rarity—a public square.

"I think of the building's context almost topographically," says Maltzan, alluding to how the linear building slices its way through the four-acre site. "The first layer of the building relates to the open, accessible ground plane that connects retail and infrastructure. Then a stratum or belt line of parking on the north and apartments on the south takes the scale of the building up to that of the rest of the neighborhood," he explains. The shops help animate a formerly lifeless street, while the architecture's nod to multiple scales adds

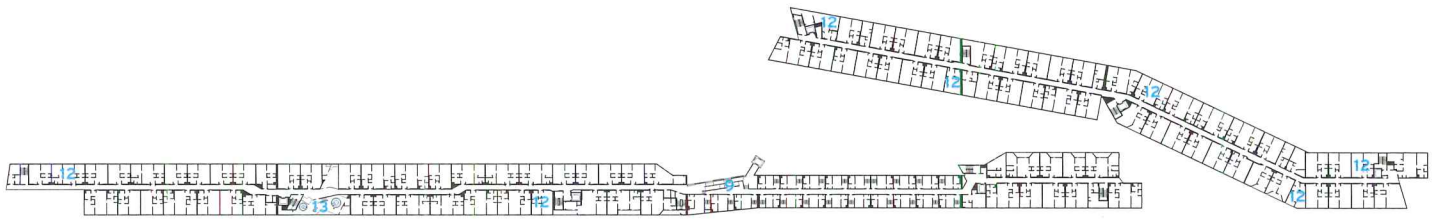


THE LONG VIEW The building bridges over a three-story opening on Santa Fe Avenue (this page), ushering cars and pedestrians toward a retail block and surface parking. Public open space is a rarity in Los Angeles (opposite).

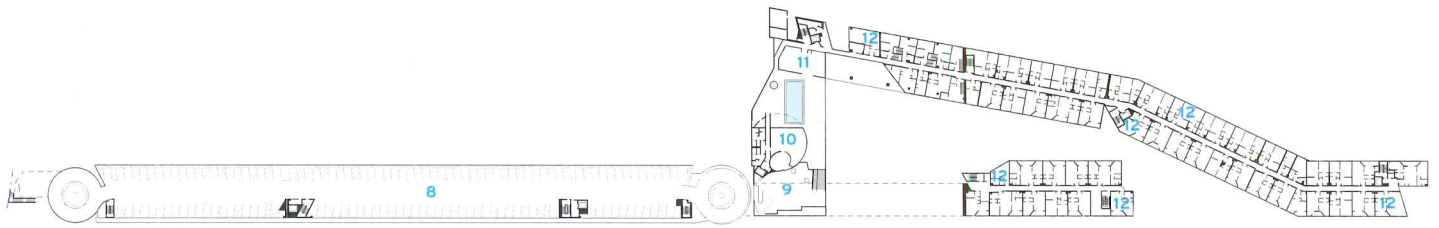




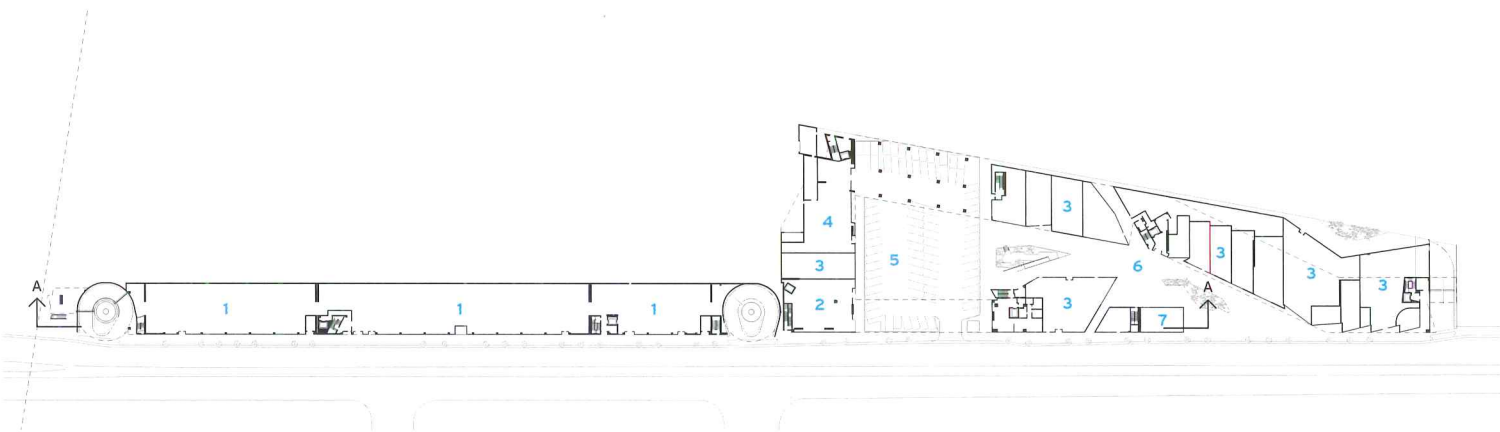
SECTION A - A



FIFTH FLOOR PLAN



SECOND FLOOR PLAN



GROUND FLOOR PLAN



- | | | | |
|----------------------|-------------------|-------------|-----------------------|
| 1 COMMERCIAL OFFICES | 5 SURFACE PARKING | 8 PARKING | 11 COMMUNITY ROOM |
| 2 CAFÉ | 6 COURTYARD | 9 TERRACE | 12 APARTMENT |
| 3 RETAIL | 7 RESTAURANT | 10 EXERCISE | 13 TERRACE WITH POOLS |
| 4 GROCERY | | | |

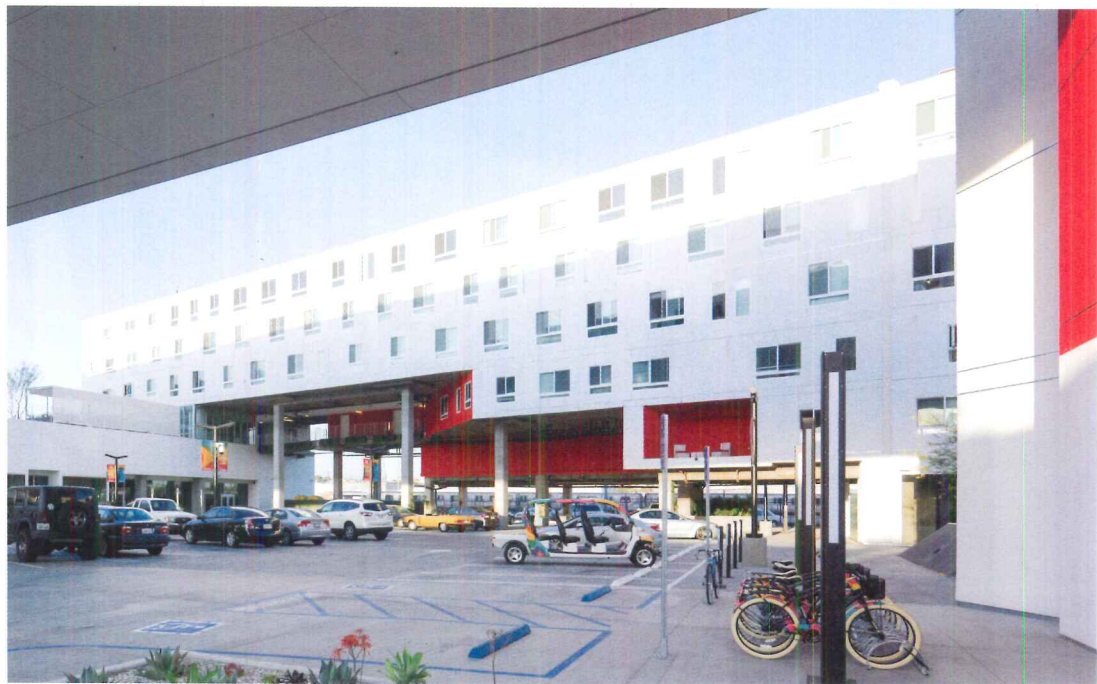


horizontal density without overwhelming the surrounding low-rise sprawl. The architect says the higher residential floors of the building offer “a whole other stratum for living on top of the city.”

Los Angeles urbanism has often been considered in linear terms (think Wilshire Boulevard). One Santa Fe deftly captures this essence, running parallel to SCI-Arc’s long building and responding to the series of railroad tracks on its eastern edge that separate the city from its contested river (currently being replanned by Frank Gehry). From a Downtown skyscraper, One Santa Fe appears as a superblock. But Maltzan undermines that impression up close with a series of design choices that reflect what he calls an “anticipatory urbanism”—the idea that L.A. is still in a state of becoming.

“One Santa Fe is a seam between the east and west sides of the city, a threshold that acts as a middle-ground landscape,” he says. “It doesn’t perform at the level of the city today, but it welcomes and insinuates an urbanism that will continue to develop as things like a future subway station or a bridge to the river get built.”

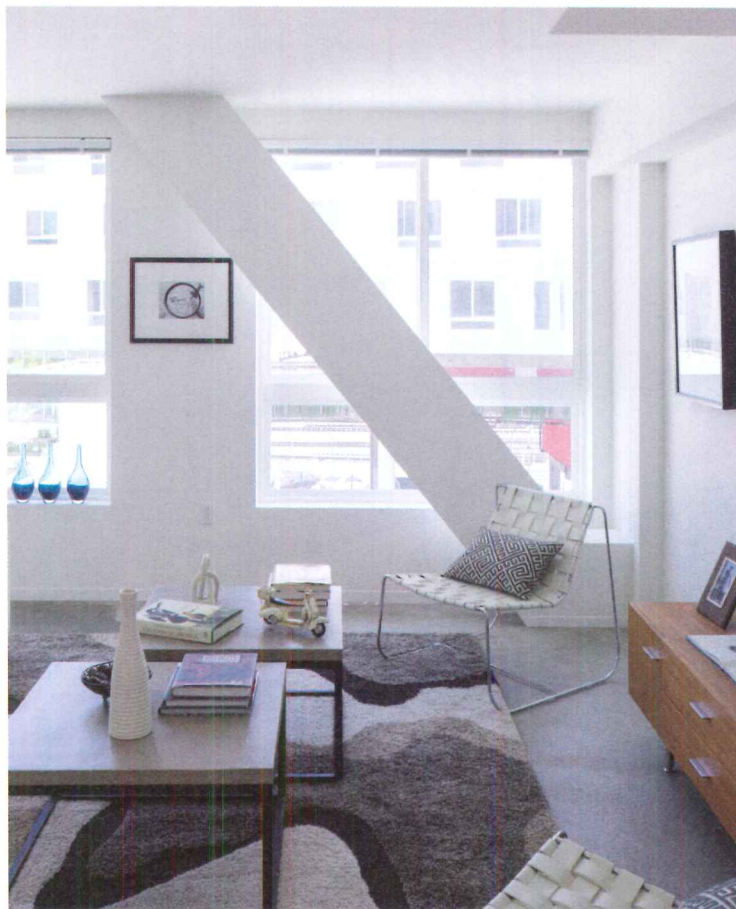
As an urban gesture, Maltzan cut out a large opening along Santa Fe Avenue and



TRANSIT POLICY The building channels the spirit of its industrial site with train tracks and the Los Angeles River on one side and the long, repurposed rail depot that serves as SCI-Arc’s home on the other (top). Stores and open space help activate the center of the project (above).

CALIFORNIA LIVING

In some apartments, the building's structural elements help shape interior spaces (right). The complex includes studios, one- and two-bedroom apartments, and townhouses. A variety of outdoor spaces, including a covered terrace (below) and a roof deck (opposite) help create the sense of a community.



bridged the building's two wings with a clear-span structure at the fourth floor, framing a view east and helping to define a parking lot for retail tenants and a wedge-shaped public space. The roof of the one-story retail plinth serves as an outdoor deck for amenities such as a pool, open-air movie theater, and yoga studio.

Bill McGregor, a partner with McGregor-Brown Company, one of the many developers involved in One Santa Fe, says the voids, while a significant budget item, were critical to the success of the project. "We didn't want a building that had residential on top and then leftover ground-floor space for retail," he says. "It was a passion of Michael's, and of ours, that the clear span of the bridge create a grand doorway to make the retail space and pedestrian plaza work."

In terms of finishes, the building relies on the contrast between a vibrant red-orange color, partly inspired by the district's many brick buildings, and classic white for the basic stucco exterior of the residential units. An irregular grid of conventional windows along the residential layers adds a punch card-like rhythm, complemented by the steady punctuation of aluminum shading devices that break down the building's long form. The apartment





interiors, by other designers, are unremarkable except for the diversity of floor plans, including the two-story townhouses occupying the bridge section. About 20 percent of the dwelling units are affordable; the rest are market-rate. Structurally, the building follows standard L.A. residential construction methods—concrete base supporting timber framing—everywhere except for the steel in the bridge.

In recent projects like the nearby Star Apartments (RECORD, June 2015, page 88) and now One Santa Fe, Michael Maltzan Architecture has shown it can create innovative solutions for starkly different populations—the formerly homeless at Star and mostly upscale professionals here—finding the sweet spot for extracting a vital architecture from the city's otherwise humdrum multifamily residential design palette. Well beyond the tired clichés of indoor-outdoor living and insipid midcentury-modern riffs, Maltzan's work explores the complicated history of L.A. while setting high expectations for a future in progress. ■

Russell Fortmeyer leads sustainable design for Arup's Los Angeles office and teaches at SCI-Arc.

credits

ARCHITECT: Michael Maltzan Architecture – Michael Maltzan, design principal; Tim Williams, principal in charge; Michael Striegel, Wil Carson, Edward Tung, Brian Cavanaugh, Tomer Diamant, Melanie Freeland, Thomas Hansen, Adela Ho, Steven Lee, Yan Wang, Joseph Saccomanno

EXECUTIVE ARCHITECT: KTG Architecture + Planning

INTERIOR DESIGNERS: Gensler; KTG

ENGINEERS: Weidlinger (structural); KPFF (civil); Green MEP Engineering (m/e/p)

GENERAL CONTRACTOR: Bernards

CLIENT: Joint venture between One Santa Fe PMC and Canyon Capital Realty Advisors

SIZE: 510,000 square feet (excluding parking)

PROJECT COST: \$165 million

COMPLETION DATE: March 2015

SOURCES

CURTAIN WALL: Arcadia

VINYL WINDOWS AND SLIDING DOORS: Milgard

PRECAST CONCRETE: Hanson Structural Precast

BUILT-UP ROOFING: Manville Roofing Systems

MOISTURE BARRIER: W.R. Grace

LOW-FLOW FAUCETS: Bodhi Kitchen & Bath Works

OZ Condominiums | Winnipeg, Manitoba
5468796

NO PLACE LIKE HOME

A distinctive new building fosters community and honors the local mood.

BY ADELE WEDER

The Winnipeg neighborhood known as Osborne Village boasts a marvelous elixir of mixed demographics, indie businesses, hipster “speakeasies,” walkability, and that elusive attribute that can be described as an edgy vibe. All of this compelled the Canadian Institute of Planners to dub it “Canada’s Greatest Neighbourhood” in 2012. The irony of enclaves like these, though, is that they attract homogeneous new developments that threaten to snuff out the charm that made them desirable in the first place—over the past few years, a smattering of suburban-looking shoebox buildings have crept into this zone of artists’ studios and tattoo parlors. But with the new OZ condominium project, the local firm 5468796 offers an alternative response.

On the corner of River Avenue—the area’s main thoroughfare—and a quieter side street, OZ enriches the densely textured urban fabric with its distinctive, asymmetrically fenestrated form and outdoor spaces carved out of the building’s mass. Named for both the utopian land in the century-old children’s novel as well as its own neighborhood, it is a building that aspires to link its residents to street life and each other.

“With our work, there’s always this social agenda to create buildings that are not purely inward looking,” says 5468796’s lead architect Sasa Radulovic. “We tried to do this through ‘erosion’—by biting away at the black box with white space, connecting balconies and patios through the building.” The team further broke up the massing by creating what are essentially two discrete boxes, linked artfully by a multi-height glazed transition that serves as the building’s main entrance. The material palette is emphatically modern: white cement board and corrugated black metal cladding, aluminum window framing, and perforated metal screening over the smaller windows. OZ offers a sleek counterpoint to the texture of clapboard and brick elsewhere on the street, yet honors the liberated spirit of the community.

LEANING IN Assertive stepbacks animate the facade and create appealing outdoor spaces. The ground floor is zoned for retail as well as residential use, in the hopes that future commercial activity will further enliven the street.







SIDE NOTE The north facade (opposite) fronts the local main artery and is built right to the property line. Scrims of perforated corrugated metal over windows offer privacy. More than half of the 25 units have mezzanine lofts, whose slender floors allowed the architects to fit in seven levels while keeping within the regulated total height.



Led by Radulovic in collaboration with coprincipals Johanna Hurme and Colin Neufeld, the project marks a new level of sophistication for this young firm, whose unusual name is taken from its business incorporation number. Its earlier residential projects, like *The Avenue on Portage* (RECORD, February 2013, page 100) and *Stradbrook Avenue* apartments, have been more notable for street-front animation than for spatial imagination. Their recent *Block_10*, a three-story, 10-unit condo building composed of linked elements, can be read as a pilot project for OZ. But now the design team has ramped up both volumetric complexity and scale.

The project began with a design brief to transform three standard house lots into a 25-unit condominium building. Two previous architectural firms had already tried and failed, finding the task impossible within the existing building-height and floor-space restrictions. The 5468796 team rose to the challenge by designing most of the condos as bi-level interlocking units with lofts, so that they fit

together within the mass like Tetris blocks. The architects finessed a reduction in the floor-to-floor height requirement from 12 feet to 10 feet for the single-level units. Compensating for the compression created by the lofts, they incorporated 16-foot living spaces into the bi-level units, most of which have two bedrooms. In this way, the design team was able to create a total of seven levels—including mezzanine levels—within the prescribed 60-foot height limit. (Or close, anyway: they negotiated an extra 2 feet of height in order to realize their design.)

The architects created yet more living area with the patios and balconies. Most of the outdoor space is configured in a way that allows residents the option of some privacy, but more often it is open, clearly intended to activate neighborly interaction. (On a rainy end-of-summer afternoon, residents sat on their patio, sheltered from the drizzle above while still able to exchange pleasantries with passersby on the street below.) It's a European approach, imported by Radulovic (who emigrat-



SECTION A - A

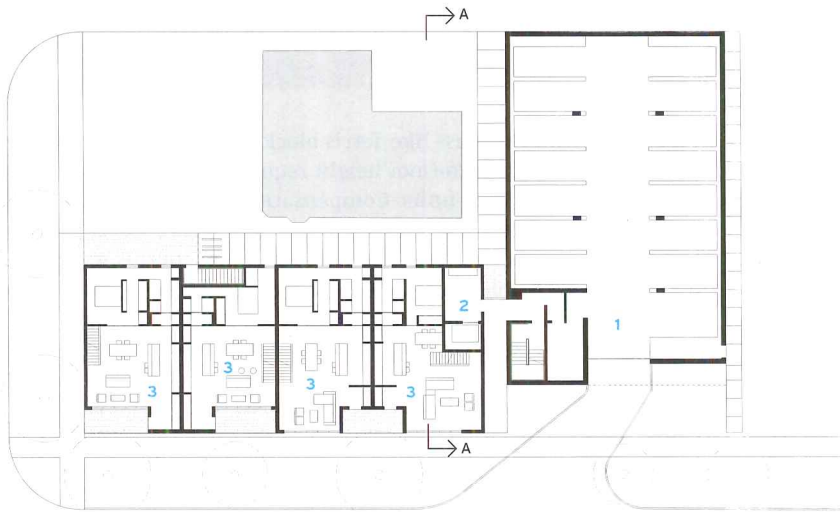
0 10 FT.
3 M.



LEVEL 3 PLAN



LEVEL 3M PLAN



LEVEL 1 PLAN

- 1 PARKING
- 2 LOBBY
- 3 TOWNHOUSE
- 4 LOFT UNIT
- 5 PENTHOUSE
- 6 STORAGE

0 16 FT.
5 M.



SPATIAL MOMENTS

The design team focused on finding “architecture in the leftover spaces.” Features such as open-tread staircases, double-height ceilings, and generous glazing enhance the spatial experience.

ed from the former Yugoslavia) and Hurme (from Finland). The openness seems natural to them, but North American sensibilities are not quite there yet—hence two of the project’s shared interior patio spaces, cut through the building like the hole in a doughnut, now read as dark caves since the two adjacent condo owners segregated their common space with a solid wall. The architects only shrug. “I’m flabbergasted by the way we treat space here,” says Radulovic. “There’s so much fear of rubbing shoulders with your neighbor.”

People often end up living in formulaic boxes because both residential builders and buyers are afraid of what they don’t know, suggests Radulovic. “We’ve always been interested in breaking out of that. The question is, how do you do it on a budget? I think we’re proving now that you can, on a growing scale.” ■

Adele Weder is a Vancouver, British Columbia–based architectural writer and curator.

credits

ARCHITECT: 5468796 Architecture

ENGINEERS: LDA Structural Engineers, Ekistics Mechanical Engineers

GENERAL CONTRACTOR: Westland Construction

CLIENT: withheld

SIZE: 38,000 square feet

COST: withheld

COMPLETION DATE: October 2014

SOURCES

CLADDING: JamesHardie

WINDOWS: Durabuilt Windows

CURTAIN WALL: Alumicor

LIGHTING: Maxilite, Blu Dot, Progress Lighting, RAB

CONVEYANCE: Kone

HARDWARE: Taymor, Schlage, Von Duprin

ON A SLANT

170 Amsterdam's concrete exoskeleton (this page and opposite)—the first such structure in New York—has column intersections occurring only once per floor for each facade, so that the points where columns crisscross march up the elevations on a diagonal.



170 Amsterdam Avenue | New York
Handel Architects

A WEST SIDE STORY

A market-rate residential tower in Manhattan makes the most of its unusual structural system.

BY JOANN GONCHAR, AIA

PHOTOGRAPHY BY BRUCE DAMONTE

A ficionados of the musical *West Side Story* will know the New York neighborhood Lincoln Square, once called San Juan Hill, as the backdrop for the clashes between the Jets and the Sharks. But in real life, this is the part of Manhattan's West Side that was bulldozed in the 1960s to make way for the performing-arts complex Lincoln Center.

In the decades since the neighborhood's tenements were leveled, the area has experienced successive waves of gentrification. But the influx of money doesn't guarantee architecture of distinction, as the most recent crop of residential towers attests. One exception is Handel Architects' 170 Amsterdam Avenue, a 20-story, 236-unit market-rate building, which developer Equity Residential started leasing in April. The nearly block-long tower, which offers studios, one- to three-bedroom apartments, and ground-floor retail space, is supported by a deceptively delicate-looking exoskeleton in reinforced concrete. According to its designers, it is the first such structure in New York City.

The exoskeleton was conceived, at least in part, to satisfy the client's desire to differentiate the building from its competition. "We didn't want to be like the Aire next door," says Equity first vice president George Kruse, referring to a recently completed 42-story glass rental tower (also designed by Handel but for another developer) one block south. Although 170 Amsterdam is also clad almost entirely in glass, with floor-to-ceiling window walls, the concrete diagrid provides a depth that is similar to that found on the facades of classic Upper West Side apartment buildings, says Frank Fusaro, a Handel partner. He points in particular to the Dorilton, a circa-1900 apartment block with elaborately carved limestone cornices and balustrades.



Behind 170 Amsterdam's elegant exoskeleton are compact apartments (a typical one-bedroom is about 625 square feet) that feel fresh, airy, and open. This effect is due in no small part to the expansive window walls and light finishes like white oak flooring, but it also owes a huge debt to the near absence of interior structure—a feat made possible by the crisscrossing lattice. Because the diagrid is extremely rigid, shear walls are unnecessary and only a few interior columns are required.

And it looks good from within the apartments: the exoskeleton's columns sit about 6 inches in front of the glass. They seem to slide by the windows and add a layer of visual interest to the views of the surroundings, which are made up mostly of other residential buildings.

Pushing the structure to the exterior helped the architects get the most rentable space out of the constrained site, which allowed a building footprint that is more than 200 feet long but only about 65 feet wide. In addition to



BREATHING ROOM At about 420 square feet for a typical studio (below), the apartments are compact but feel spacious due to the expansive window walls and the near absence of interior structure. A path from the building's main entry through the double-story lobby (opposite) leads to a garden space—one of the building's many shared amenities.

these odd proportions, the project team had to contend with zoning regulations that capped 170 Amsterdam's height at 185 feet and mandated several setbacks. The restriction made the top floors especially narrow, necessitating a shift from a double-loaded corridor to a single-loaded one. These upper levels in particular would have suffered a significant space penalty had shear walls been needed, points out Stephen DeSimone, president and chief executive of DeSimone, the project's structural engineer.

In order to achieve a skeleton pristine enough to be exposed, contractors used fiberglass forms and connected the frame's reinforcing bars with couplers, instead of tying them together, the more typical practice. This approach, which reduced the material inside the formwork that might obstruct the flow of concrete, together

with using what Fusaro calls a "soupy" mix containing about 40 percent slag and only small and evenly graded aggregate, produced a smooth and consistent finish.

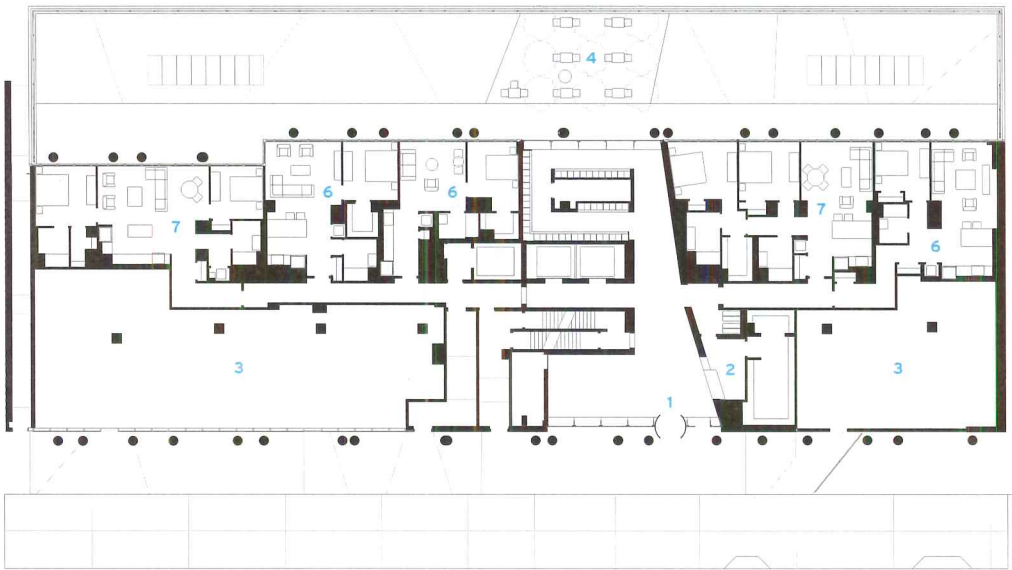
Controlling the cost of the custom formwork was a concern. "At the end of the day, it is still a rental building," says DeSimone. So, to ensure that the formwork would be economical, designers opted not to taper the columns, maintaining their diameter at 24 inches throughout. They also limited the points where columns intersect to one per floor for each facade. This reduced the number of the most complex, and therefore the most expensive, forms needed for each concrete pour. As a bonus, the approach created a facade with a subtle rhythm, with the crisscrosses appearing to march up the building's face on a diagonal. Unfortunately, the pattern falls apart at the top of the structure, where the columns



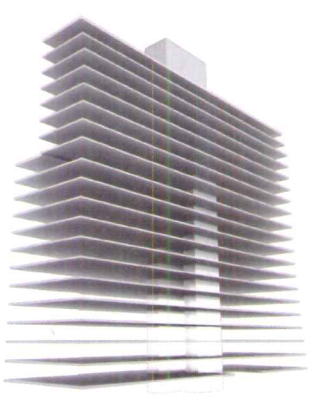
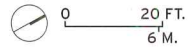


- 1 LOBBY
- 2 RECEPTION
- 3 RETAIL
- 4 GARDEN
- 5 STUDIO
- 6 ONE-BEDROOM
- 7 TWO-BEDROOM

TENTH FLOOR



GROUND FLOOR



CORE & SLAB STRUCTURE



GLAZING

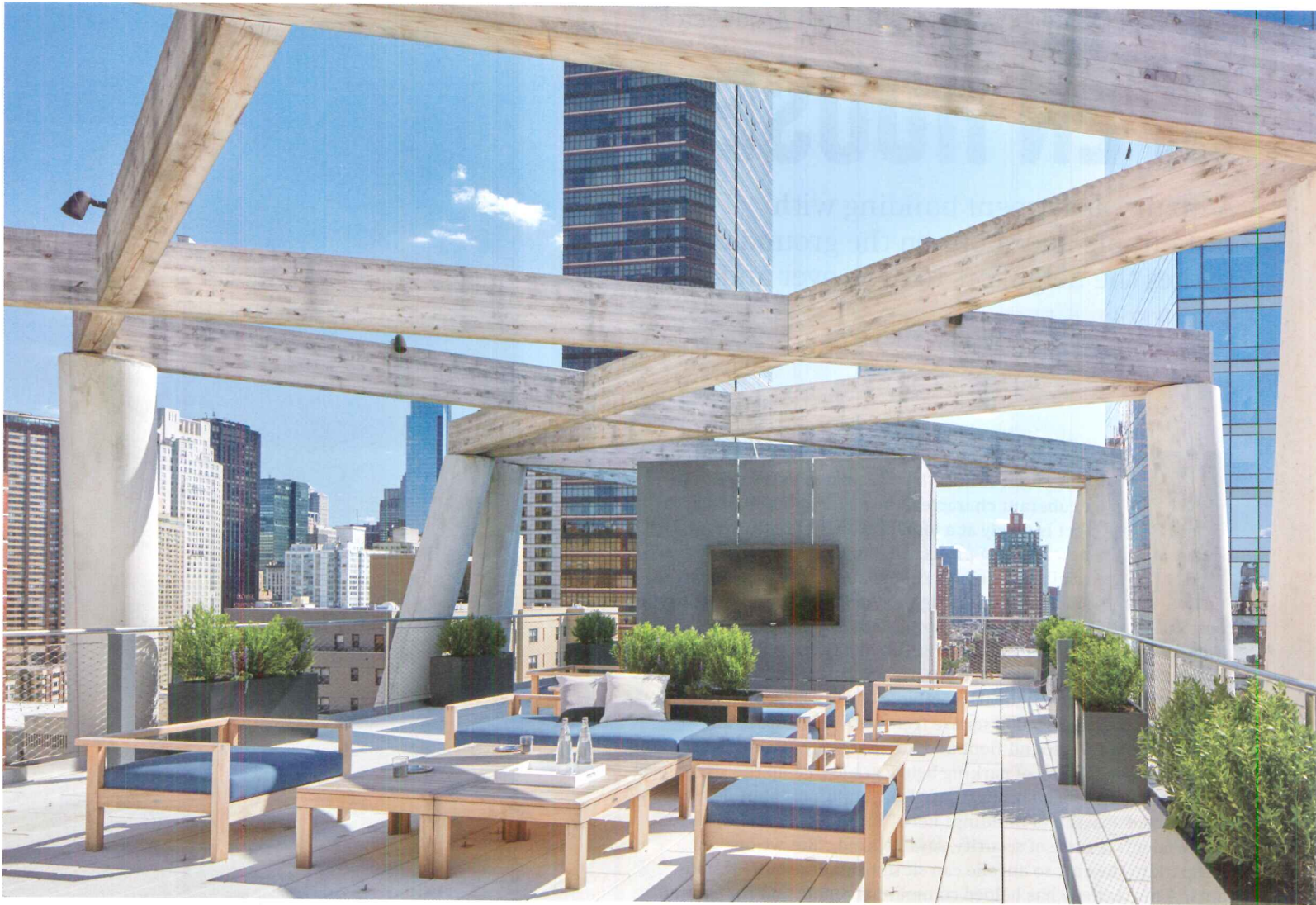


COLUMN STRUCTURE



EXOSKELETON

PARTS AND PIECES 170 Amsterdam's floor slabs project beyond the window-wall glazing to engage the exoskeleton columns—an approach that gives the facades depth.



extend above the roof slab and somewhat awkwardly end in midair. Although the tops of the columns are tied together with glue-laminated wood beams that form a decorative pergola over a shared roof deck, the building's crown feels unresolved. But this is a quibble. On the whole, the exposed frame is quite refined.

Since the developer hopes that 170 Amsterdam will be attractive to tenants with ties to Lincoln Center, the building has soundproof basement rehearsal rooms. Other amenities include a yoga studio and a children's playroom, as well as the rooftop deck with Wi-Fi access, a built-in grill, and a screen for movie nights.

As of early September, all of the building's retail space and about 55 percent of the residential units had been rented—a leasing rate that Kruse terms as “right on target.” So far, the tenants are students, businesspeople, and longtime West Side residents, as well as newcomers—“a conglomeration of all kinds of New Yorkers,” he says. Besides the array of facilities, 170 Amsterdam's occupants get inventive architecture as part of the deal. Let's hope it sets an example and raises the bar for market-rate rental towers on the Upper West Side and in other design-challenged neighborhoods in high-priced Manhattan. ■

credits

ARCHITECT: Handel Architects
– Frank Fusaro, partner in charge; Honyi Wang, project manager; Alan Noah-Navarro, senior designer; Elga Killinger, Shridhuli Solanki, Rinaldo Perez, Ren Zhong Huang, Jessica Kuo, Jordan Young, Shujian Jian, Hong Min Kim, Evelina Averyanova, Ade Herkarisma, Nasiq Khan, Lucas Chung, Chris Deegan, Ana Untiveros-Ferrel, Malachi Connolly, Jason Hill, Stephanie Harroch, design team

ENGINEERS: DeSimone Consulting Engineers (structure); ADS Consulting Engineers (m/e/p, FP, sustainability)

CONSULTANTS: Reginald Hough Associates (concrete); Clinard Design Studio (lighting); Shen Milsom Wilke (acoustical);

Development Consulting Services (zoning); Milrose Consultants (code)

CONSTRUCTION MANAGER: Ryder Construction

CLIENT: Equity Residential

SIZE: 229,000 square feet

COST: withheld

COMPLETION DATE: May 2015

SOURCES

CONCRETE FORMS: Molded Fiberglass Construction Products

WINDOWS: Skyline Windows

RETAIL STOREFRONT: YKK

GLAZING: PPG

CEMENT BOARD: Rieder, Eternit

WOOD TRELLIS: Structurlam

PLUMBING FIXTURES: Kohler

PLUMBING FITTINGS: Moen

ORNAMENTAL CROWN

The diagrid's columns extend above the roof deck and are connected with glue-laminated beams to form a decorative pergola. The space includes grilling facilities and a TV screen for showing movies.

Highpark | Monterrey, Mexico | Rojkind Arquitectos

OPEN HOUSE

A luxury apartment building with restaurants and shops on the ground floor invites the neighbors to drop over and relax.

BY CLIFFORD A. PEARSON

When Michel Rojkind calls Highpark “extroverted,” you might think, “It takes one to know one.” An exuberant character, the Mexico City–based architect is rarely at a loss for words or enthusiasm. His new housing project in Monterrey, a major industrial and business center in northeast Mexico, shares his outgoing personality—engaging its urban context and striking an animated profile on the street.

Set in the upscale San Pedro Garza García area on the outskirts of Monterrey, where the Sierra Madre Oriental mountain range serves as a dramatic backdrop, Highpark combines 31 very large luxury apartments—some as big as 7,000 square feet—with retail space and restaurants on the ground floor and offices on the second floor. Three and a half floors of parking below grade free up the street level for a generous public plaza in front of the building. “Most developers put up gated apartment buildings here,” using fences and walls to give residents a sense of security, says Rojkind. “But we opened Highpark to the city, so anyone can sit in front or use the restaurants.” This strategy has helped commercial tenants on the ground floor. A café called Mofin just opened, before the first residents are set to move in, and is already doing a brisk business with people in the neighborhood, some with babies in strollers and others tapping at laptops. Four restaurants are under construction, as is a tailor shop that will also serve drinks. The complex uses the active presence of visitors and residents—as well as closed-circuit cameras—to deal with security concerns.

Highpark’s curving floor plates, which recall topographic lines on a map, wrap around the front plaza in a welcoming embrace. Trees, benches, and tables beckon visitors to come and hang out, and only a few broad steps separate the project from the adjacent street. To further a sense of connection, Rojkind even proposed to city officials that the street be treated as an extension of the landscaped open space, but was rebuffed.

Wanting to tie the building visually to the mountains behind it, the architect used a dark slate-like stone installed in panels. Arranged in vertical strips that protrude at slightly different depths, the cladding catches sunlight and creates slivers of shadows that add texture to the facades. While many new buildings, with their smooth glass skins, can seem thin, Highpark tries to impress us with a depth and weight that are almost geological in character.

Rojkind’s design provides multiple outdoor spaces for most apartments. On the north facade, every other floor is pushed out, creating balconies and shading the apartments below. On the west, the building



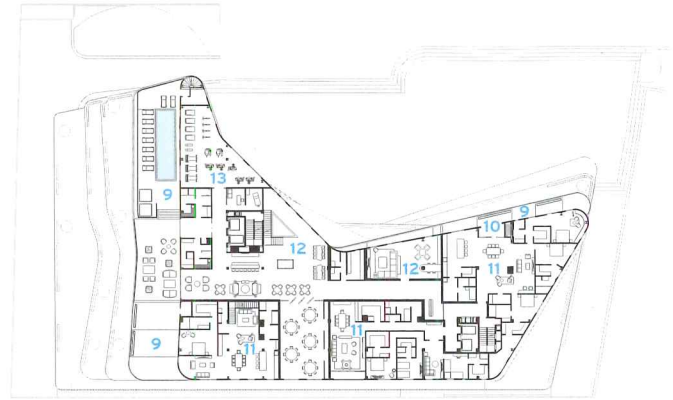
PHOTOGRAPHY: © ADRIAN LLAGUNO



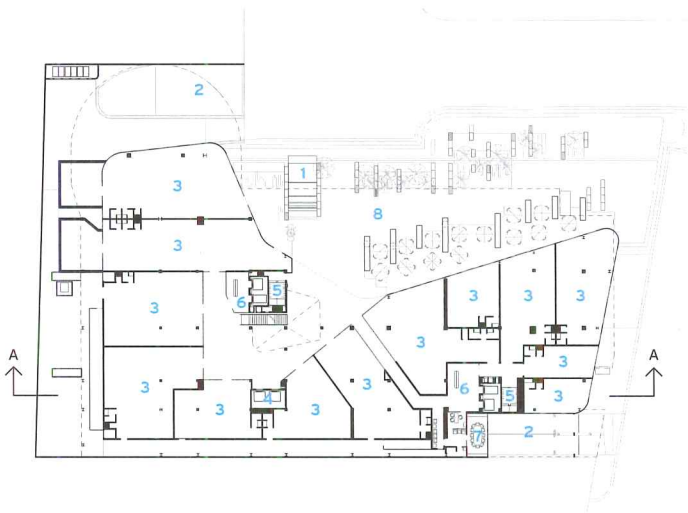
WELCOME HOME The north-facing entry facade (above) curves around a public plaza landscaped by Entorno Taller de Paisaje, a firm based in Puebla, Mexico. With its stepped massing and rugged stone facades, the building alludes to the Sierra Madre Oriental mountains behind it.



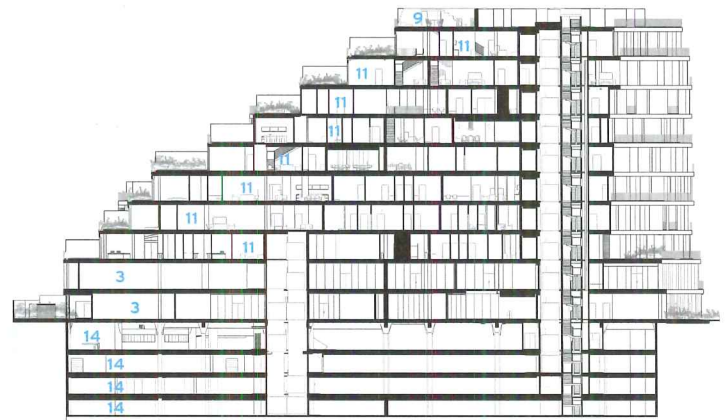
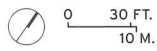
FIFTH-FLOOR PLAN



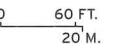
SIXTH-FLOOR PLAN



GROUND-FLOOR PLAN



SECTION A - A



- 1 ENTRY
- 2 PARKING RAMP
- 3 RETAIL
- 4 OFFICE ELEVATORS
- 5 RESIDENTIAL CIRCULATION
- 6 LOBBY
- 7 ADMINISTRATION
- 8 PLAZA
- 9 TERRACE
- 10 INTERIOR TERRACE
- 11 APARTMENT
- 12 AMENITIES
- 13 GYM
- 14 PARKING





steps back as it goes up, producing more terraces. Living walls, sprouting native plants, separate some of these outdoor rooms, and most are landscaped with species appropriate for the semi-arid climate.

Understanding that the climate here can be both enticing and harsh, Rojkind used a range of devices to connect residents to the outdoors. At the ground level, he decided not to enclose the lobby, instead carving out a shaded space in the middle of the building that flows directly from the front plaza. A shaded balcony on the second level provides access to offices, while on upper floors, some apartments have recessed terraces to serve as cool transitions between indoors and out.

Like most luxury-housing complexes, Highpark offers a package of amenities—swimming pool, meeting rooms, and gym—but complements them with communal decks that are landscaped and designed so that they are more than just throwaway spaces. Located on the sixth and seventh floors, these indoor and outdoor facilities serve as hubs for shared activities.

A steel-frame structure with lightweight-concrete floor slabs, Highpark offers apartments ranging in size from 1,950 square feet to 7,000, none with the same layout and some sprawling across two levels. Marketed as an alternative to single-family houses, the units need to be big enough to convince people to make the move. More than half of the residences have been sold so far, mostly to young professionals and empty-nesters, reports Monica Villatoro, a devel-

NO GATES HERE Tables and benches on the plaza, along with stores and restaurants on the ground floor, invite everyone to come (above). The building rises in an affluent neighborhood (top, left). Four different local firms were invited to design the apartment interiors, including one by Mauricio de la Garza (opposite).

HANGING OUT
The variety of outdoor spaces, including balconies and terraces, allows residents to see and be seen. The hope is to engender a sense of connection and community.

opment executive with Orange Investments, which serves as the owner's representative for the project. A few buyers are from Mexico City and Guadalajara, but most are from Monterrey, says Villatoro. "This isn't an investment; it's for themselves," she explains. The company invited four local designers—Mauricio Lobeira, Edmundo Salinas, Ernesto Vela, and Mauricio de la Garza—to create the apartment interiors.

Although not envisioned as a "green" building, Highpark employs a number of sustainable-design strategies, such as recycling rainwater and using graywater for irrigation. Its stone exterior and overhanging terraces reduce solar loads, and more than two-thirds of interior spaces have multiple exposures so they can be cross ventilated. Rojkind admits, though, that most people in Monterrey love their air-conditioning and may not open their windows to take advantage of cooling breezes.

Bucking the trend of thin-skinned apartment towers hermetically sealed against the elements, Highpark engages in a lively back-and-forth between inside and out. In form and in spirit, the building reaches out to its surroundings and invites the neighbors inside. ■

credits

ARCHITECT: Rojkind Arquitectos – Michel Rojkind, Gerardo Salinas, principals; Agustín Pereyra, Carlos Alberto Ríos, Alonso de la Fuente, Paulina Goycoolea, Michelle López, Yasser Salomón, Carlo María Ciampoli, Rafael Cedillo, Gad Peralta, Jennifer Thies, Felip Navarro, Alejandro Argumedo, Hazael Ortiz, Andrea León Tere Levy, Monique Rojkind, Rosalba Rojas, Melisa Peña, Lorena García Cordero S., project team

ASSOCIATE ARCHITECT: Cuatro44

ENGINEERS: Studio NYL, González Loya, Bauen (structural); Quantum (m/e/p)

INTERIOR DESIGNERS FOR APARTMENTS: Mauricio Lobeira, Edmundo Salinas, Ernesto Vela, Mauricio de la Garza

CONSULTANTS: Entorno Taller de Paisaje (landscape); Grupo Lite (lighting)

PRINCIPAL CONTRACTOR: Maiz Mier

CLIENT: Auria Capital

SIZE: 375,000 square feet

COST: withheld

COMPLETION DATE: June 2015

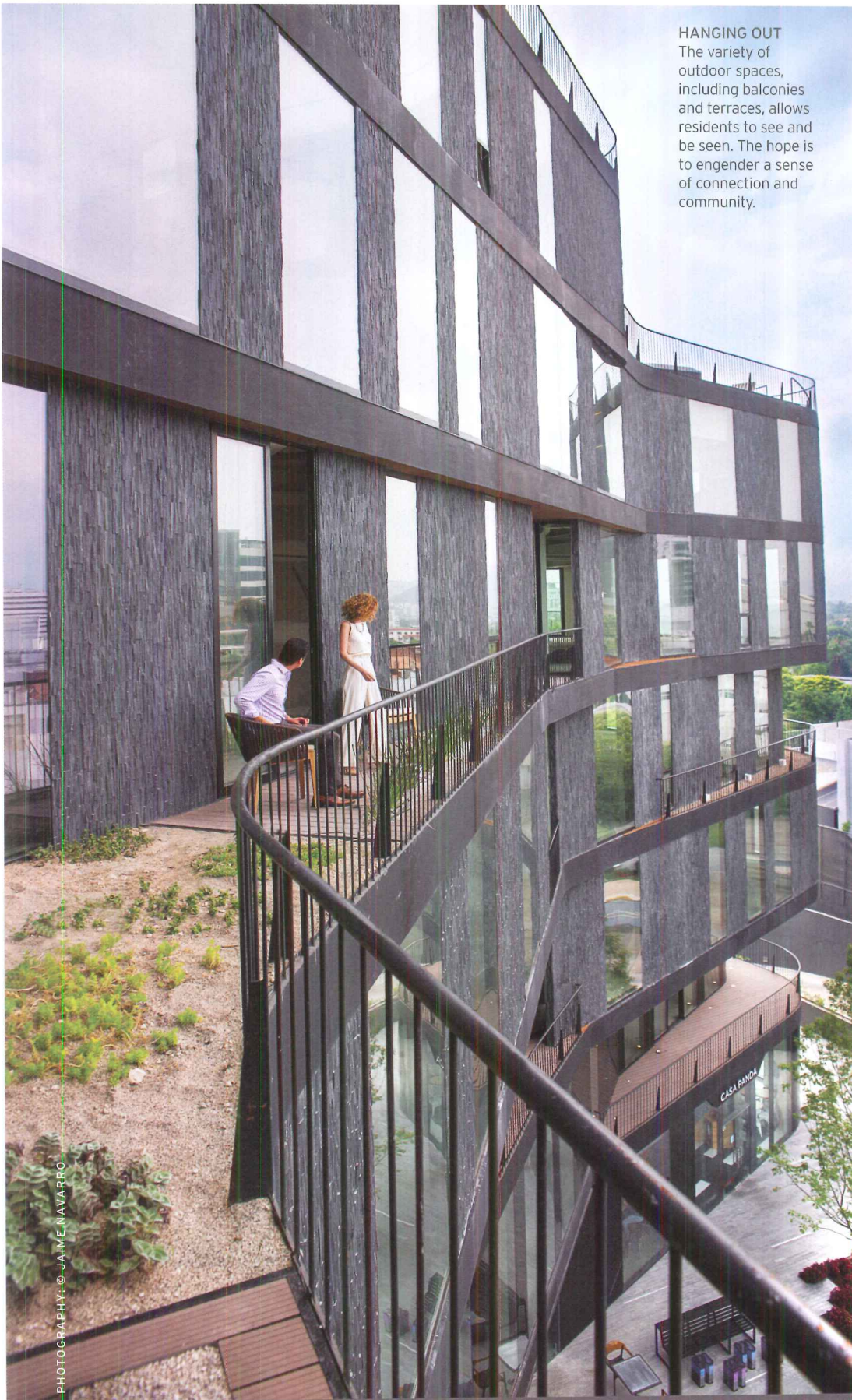
SOURCES

CONCRETE: Cementos Tepeyac

GREEN ROOFS: Jardines Orcotec

GLASS: VITRO

ALUMINUM FOR WINDOWS: CUPRUM



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BY RIEDER

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For the Birds

Three projects demonstrate how glass buildings can be designed to protect our feathered friends from deadly collisions.

By Katharine Logan



EVERYONE HAS heard the thunk of a bird hitting a window. It's startling, and then it's sad. But what few of us realize is just how widespread the problem is. Across North America, buildings account for hundreds of millions of bird deaths annually—perhaps more, according to the nonprofit group the American Bird Conservancy. A running estimate of North America's collision-killed birds—posted online by another nonprofit organization, Toronto's Fatal Light Awareness Program—ticks along at roughly 30 bird deaths per second. After habitat destruction, collisions with buildings are the single biggest killer of birds.

If birds are plummeting to the ground in such mind-boggling numbers, why aren't the

streets littered with their carcasses? Scavengers, such as gulls and raccoons, get to them, quickly learning which buildings yield the most pickings. Maintenance workers dispose of them. And, in some cities, conservation groups collect them as part of their efforts to promote awareness and push for change, and for research.

Buildings kill birds in three primary ways. The greatest daytime hazard is glazing that reflects habitat or sky. Transparent glazing is also a significant hazard when it offers a view of plants or appears to offer an unobstructed passage through the building. In both cases, birds try to fly through the glass. At night, migratory birds navigate in part by starlight. Light-emitting buildings act as

beacons, luring birds and causing them to collide with the facades.

The good news is that, with awareness and know-how, a building can be designed or retrofitted to pose almost no hazard to birds at all. "You don't have to compromise aesthetics or functionality, as long as you've got imagination," says Christine Sheppard, an ornithologist who heads the American Bird Conservancy's collision-reduction program. "You don't really have to compromise anything."

One project that illustrates Sheppard's point is New York's Javits Center, a 1.8 million-square-foot convention center designed by Pei Cobb Freed & Partners and first opened in 1986. A recent renovation by



CLEAR THINKING As part of their renovation of New York's Javits Center, FXFOWLE and Epstein replaced the building's dark, reflective curtain wall with transparent glazing. The new cladding incorporates a frit pattern that helps birds perceive the glass.

aspect in. If I'd had to get extra money for it, I'm not sure I could have done it," says Fowle.

To make the Javits Center more expressive, the redesign assigned glazing to the public areas and clad the remainder in stainless-steel panels, shrinking the scale of the bird-hazard, which is mainly a function of glass area. To make the building more transparent, the design team specified glazing that would lower the building's reflectance from 35 percent to 8 (less than 15 percent is generally better for birds, notes Fowle). The architects then worked with the glass manufacturer's paint shop to develop a frit tint

To make a building bird-friendly, "you don't have to compromise aesthetics or functionality as long as you've got imagination," says ornithologist Christine Sheppard.

and pattern that would provide the overall look and level of glare reduction and solar shading desired.

The design team also made sure the pattern complied with the "2-by-4 rule" which is derived from research showing that most birds won't try to fly through horizontal spaces less than 2 inches high or vertical spaces less than 4 inches wide. Using this rule, a pattern covering as little as 5 percent of the glass surface can deter 90 percent of strikes, according to tests conducted by Austrian researcher Martin Rössler.

The Javits Center's dot-pattern frit is located on the insulated glazing unit's number-two surface—the cavity-facing side of the exterior lite. The frit would be more readily perceived by birds, and therefore more effective, explains Fowle, had it been on the first surface—the outside of the exterior lite. However, the team opted for a second-surface frit due to concerns about durability (few manufacturers offer or warranty first-surface frits). Nonetheless, a study conducted by New York City Audubon and Fordham University found a 90 percent reduction in the number of birds killed on the Javits Center since the renovation. (The only post-renovation strikes have occurred on an area near the entrance where the frit was not used.)

The new Javits goes beyond hazard reduction and now serves as a bird refuge. The building boasts the second-largest green

roof in the country, with almost seven acres of mixed-sedum plantings that decrease stormwater runoff, mitigate heat island effect, and improve energy performance. The vegetation also provides a welcome urban habitat for native and migratory birds. Hundreds of birds, of a dozen or so species—including swallows, starlings, geese, gulls, and even some juvenile kestrels—have been spotted there.

Besides fritting, strategies for reducing the hazard factor of glass include energy-performance options such as exterior screens, grilles, shutters, and blinds, and aesthetic and privacy options such as etching, sandblasting, or texturing. Patterned films can be used to help make transparent site elements more evident to birds or to economically retrofit reflective windows.

For the new U.S. Embassy in London, designed by KieranTimberlake and scheduled for completion in 2017, a 12-story glass cube will be wrapped in an outer envelope of translucent white kite-like components, linked to form a ridged lattice of four-point stars. The lattice, made of ethylene tetrafluoroethylene (ETFE) film, projects from the building's curtain wall to reduce solar gain, cut glare, and admit an even, diffuse daylight, while still allowing occupants generous views of London. Photovoltaic cells on skyward surfaces of the ETFE elements will harvest solar energy, and the entire assembly will interrupt downdrafts for more comfortable outdoor spaces below. Not least, the outer envelope is intended to deter bird strikes.

London's amateur ornithologists have inventoried a surprisingly large population of migratory and resident birds in the vicinity of the new embassy; there are even endangered redstarts nesting nearby. So birds will certainly be making themselves at home in the embassy's OLIN-designed park, with its pond, gardens, shrubs, and trees.

"If you're creating an attractant, you have to be very certain that you're not also creating a hazard," says Roderick Bates, a KieranTimberlake associate and author of the firm's study on bird-strike deterrence.

In any bird-strike deterrent strategy, the height of the adjacent habitat defines the critical zone. As a general rule, that's often a

FXFOWLE and Epstein not only redeems the dark glass building—infamous for its visual kinship with Darth Vader's helmet—it transforms one of the city's worst bird killers into a bird sanctuary.

The Javits, which was originally clad entirely in a thermally unbroken gray-bronze-glass curtain wall, was a reflective box and leaked from the start. In order to make the building more transparent and improve its energy and weather performance, the architects decided to reclad it. The strategy also allowed FXFOWLE to make the glazing more bird-safe, a priority for the firm's founding principal, Bruce Fowle, who has been incorporating bird safety into his work for more than a decade. "We kind of slipped the bird-safe



building's lower three stories, or 40 feet above grade. The embassy's approach to bird-friendly design, as well as its security strategy, keeps shrubs and trees away from the face of the building. A colonnade wrapping all four sides of the structure shades the upper portion of the ground-floor glass, thereby reducing reflections. By recessing the glass, the colonnade restricts the vantage points from which birds can see reflected habitat.

Above the ground floor, the ETFE lattice breaks up reflections on three sides of the building. On the north side, which has no outer envelope, a star-patterned frit generates the visual noise birds need to perceive the glass. The density of the frit is designed so that spaces between pattern elements are no bigger than "about the palm of a hand," says Bates, which compares to the 2-by-4 rule's 4-inch width for vertical spaces.

Although bird-safe design can successfully slip along in the wake of other priorities, some projects put bird safety front and center, treating it as an opportunity for architectural expression. For the Integrated

HAZARD TO HAVEN The Javits's new green roof (above), the second-largest in the country, with almost seven acres of mixed-sedum plantings, attracts birds from a number of species, including herring gulls (right).

Science Center (ISC) at Vassar College in Poughkeepsie, New York, the client "wanted us to use every [bird-friendly] trick in our bag," says Guy Maxwell, a partner at Ennead, the firm designing the 157,000-square-foot facility slated to open later this year.

The ISC brings Vassar's science departments together in a two-story structure that spans a small ravine and creek. The building, arched in plan, provides views into a wooded landscape and enables the students to use the surroundings as an outdoor lab.

From the perspective of bird safety, the arboretum setting means that any glass on the building's facade will reflect attractive habitat and entice birds. To reduce the risk, the design team deployed bird-friendly strategies for each facade.

On the narrow southwest end of the building, a dense pattern of shading devices works to cut off the sky, providing elements that birds can see in front of the glass. On the



convex southeast face of the building's curved plan, a fully glazed corridor runs the length of the building at ground level. However, the overhang of the upper level recesses the glazing, limiting reflections of sky and narrowing the angle from which birds can see habitat reflections. On the upper levels, vertical shading fins similarly reduce reflections and birds' angle of view to the glass.

"But that's not enough," says Maxwell. For the project's southeast and north-facing

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glass, where views out to the landscape were especially desirable, the design team selected a glass treatment that takes advantage of birds' ability to see ultraviolet (UV) light. The glazing includes a patterned 2-by-4-compliant UV-reflective coating on its number-two surface, so it's visible to birds while remaining virtually invisible to humans.

The concave northwest face of the building is composed of alternating vertical slices of cementitious panel-clad wall and glass. For this glazing, designers wanted a frit that would provide contrast no matter how the sunlight varied over the course of a day or a season. Their solution is an innovative dual frit: on the glazing unit's number-two surface, light-gray broken horizontal lines at 2 inches on center; on the number-three surface (the cavity-facing side of the interior lite), dark-gray continuous horizontal lines at 5/8 of an inch on center. The two patterns, separated by the depth of the glazing-unit cavity, create an impression of movement, like a

LAYERED LATTICE

Three facades of KieranTimberlake's U.S. Embassy in London (above and here) are covered with an ETFE lattice that breaks up reflections of the surrounding park. The fourth, north-facing elevation includes a star-patterned frit.



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moiré. “Whatever the light,” says Maxwell, “at least one of these patterns will show up.”

The shared bird-safe priority of the ISC’s architects and clients affects more than the building’s facades: whether deliberately or not, the smooth arc of the building’s form, its slender hollow structural elements suspended

from an overhead truss, and the lightness with which it touches the earth express an underlying affinity for the birds, who make their home in the site surrounding the ISC.

While daytime bird-friendly strategies offer scope for enriching a work of architecture, nighttime strategies are more simply a matter of preventing light pollution. At the ISC, for example, exterior uplighting is avoided altogether: shielded fixtures are used instead. LED downlights are embedded in entry-ramp handrails, safely lighting the path without spilling light into the environment. To minimize light trespass from the building’s windows, the main corridor will be illuminated at low levels, while occupancy sensors will shut off lighting in classrooms, labs, and offices when they’re not in use.

Light pollution’s greatest danger is to migrating birds, especially on overcast nights, when the birds descend to lower altitudes. The lights of tall buildings and brightly lit shorter buildings can draw birds in among the glass walls of a city, where trees and plants in illuminated interiors present a fatal attraction.

As awareness of this issue grows, jurisdictions across North America are increasingly adopting lights-out programs, design guidelines, and regulations to reduce bird strikes. LEED’s bird-strike deterrence pilot credit, rolled out in 2011, has proven to be the rating system’s most popular pilot ever.

These efforts acknowledge the tremendous value of birds. They pollinate plants, disperse seeds, and keep insects in check. They create flashes of experience for city dwellers that



FINS AND FRITS Among the bird-friendly strategies deployed by Ennead at Vassar College’s Integrated Science Center are vertical shading fins (top) and glass with a dual frit that combines patterns on the glazing unit’s number-two and -three surfaces (above).

reconnect them to nature. They enliven the built environment with their flight, color, and song. And they’re entitled to life in their own right. Whatever goes into making a more bird-safe building, says Sheppard, they’re worth it. ■

Katharine Logan is an architectural designer and writer focusing on sustainability and wellbeing in the built environment.

Continuing Education



To earn one AIA learning unit (LU), including one hour of health, safety, and welfare (HSW) credit, read “For the Birds,” review the supplemental material at architecturalrecord.com,

and complete the online test. Upon passing the test, you will receive a certificate of completion, and your credit will be automatically reported to the AIA. Additional information regarding credit-reporting and continuing-education requirements can be found online at ce.construction.com.

Learning Objectives

- 1 Describe the factors that often make building glazing deadly for birds.
- 2 Outline some of the measures that can be implemented in new construction projects to prevent birds from colliding with buildings during daytime hours.
- 3 Describe bird-friendly measures that can be easily implemented on existing buildings.
- 4 Outline strategies for protecting migratory birds from nighttime building-related hazards.

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The Architecture & Design Film Festival (ADFF) — the nation's largest film festival devoted to the subject of architecture and design, returns to NYC from October 13-18 for the seventh edition. This year the festival will take place at the newly renovated Bow Tie Cinemas in Chelsea. Opening night will be at SVA Theatre featuring the New York premiere of *The Infinite Happiness* — a film about Bjarke Ingels' radical 8 House in Copenhagen.

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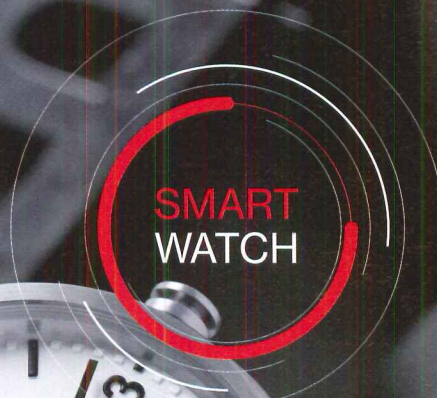
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Sculpting the Skyline

FROM ARCHITECTURAL RECORD

By Joann Gonchar, AIA

The article explores the architectural concepts and structural strategies behind Kuwait City's tallest building and discusses the construction methods used to build it.

LEARNING OBJECTIVES

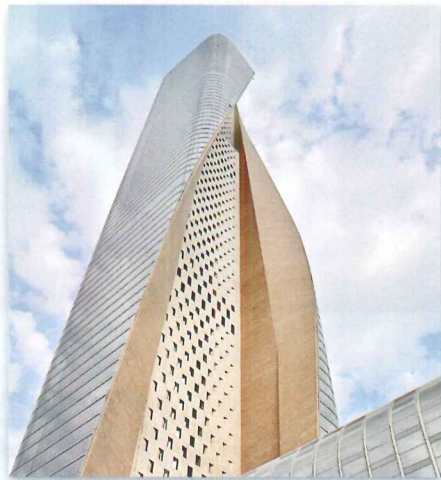
- 1 Explain how evaluation of programmatic requirements and environmental conditions helped designers generate the form of Kuwait City's Al Hamra Firdous Tower.
- 2 Describe the key structural elements of the tower and its foundations.
- 3 Explain the structural and construction challenges presented by the tower's geometry.
- 4 Describe how construction methods were adapted for the harsh desert environment.

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Photo courtesy of Otis Elevator Company

Destination Dispatch Elevator Systems Benefit Passengers, Building Owners, and Design Professionals

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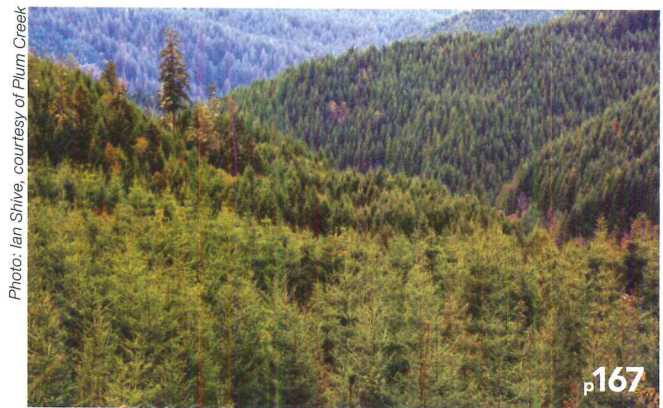


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Destination Dispatch Elevator Systems Benefit Passengers, Building Owners, and Design Professionals

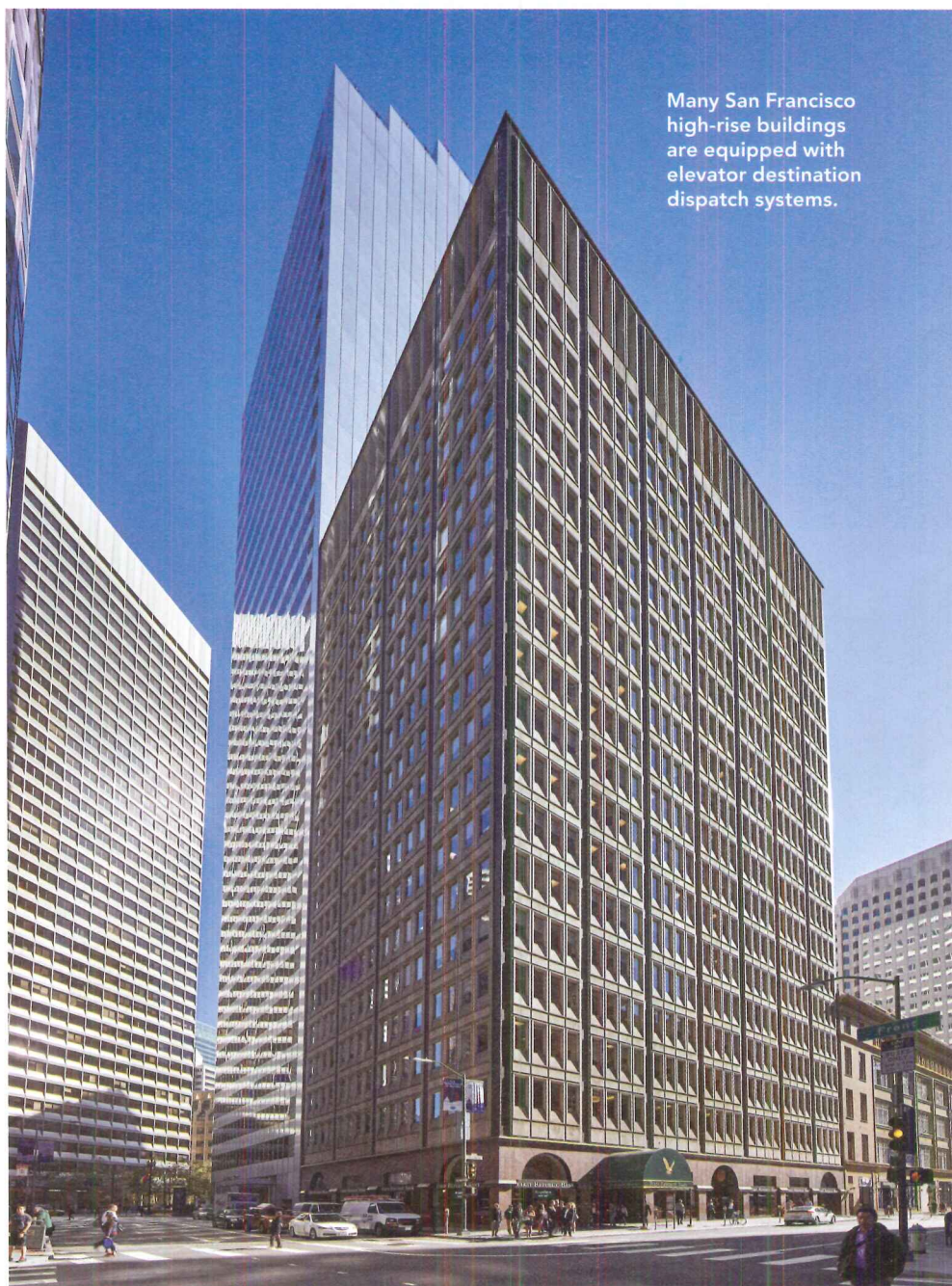
Increased elevator handling capacity, enhanced tenant satisfaction, and improved energy efficiencies are among the many advantages of elevator destination dispatch management.

Sponsored by Otis Elevator Company | By Karin Tetlow

Elevators play an increasingly significant role in today's smart buildings. Their capacity for communication and integration with other building systems—such as heating, ventilation and air conditioning (HVAC), security and fire safety—improves building performance, sustainability, and efficiency. Developments in elevator technology, namely destination dispatching systems that load passengers according to their destination, move people faster, reduce energy consumption, and are customizable in terms of security, function, and aesthetics. Moreover, they have added a unique feature to the smart building—that of enhancing the customer's direct experience by offering intuitive controls that users of mobile technology have come to expect.

Another significant feature is that because destination dispatch systems use advanced

Many San Francisco high-rise buildings are equipped with elevator destination dispatch systems.



CONTINUING EDUCATION

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Learning Objectives

After reading this article, you should be able to:

1. Explain how energy-saving elevator destination dispatching works.
2. Identify the environmental advantages of destination dispatch compared with conventional elevator systems.
3. Discuss how design professionals, owners, and tenants can benefit from a destination dispatch elevator system.
4. Explore the safety and efficiency advantages of adopting destination dispatch systems for different building types.

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

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All images courtesy of Otis Elevator Company

BENEFITS OF DESTINATION DISPATCH (DD)

Following are some of the benefits of DD systems currently on the market:

- For new construction, DD elevator management has the potential for more efficiently configured elevator banks. This can result in smaller elevators, fewer elevators, and smaller and fewer elevator lobbies—that translates into a smaller building core and increased tenant capacity.
- For renovation of existing buildings, DD systems may be added to existing elevators, depending on their vintage elevator controller. The resulting increase in handling capacity could be achieved without changing the underlying hardware configuration of elevator size, speed, or number.
- Ability to customize the level of security through the use of different access control systems.
- Improved experience for passengers: Shorter wait time, shorter traveling time, reduced car crowding, and fewer stops—especially for passengers on higher floors, such as penthouses.
- Some manufacturing systems provide the ability to provide custom graphics and messaging on input devices.
- Greater control over inter-floor access for both tenants and building users.
- Tenants have the option of expanding their space anywhere in the building because DD systems can manage restricted access to floors that are not contiguous.
- Can service asymmetric floors in buildings where elevators have an uneven number of stops.
- Advanced systems allow for increased communication for building/tenants/passengers with messages concerning such things as safety, corporate information about meetings, and evening time exit destinations.
- Building owners gain from value-added services for tenants and flexibility in present and future building use.
- Improved information for passengers regarding building entrances and facilities such as food, shopping, spa/fitness, swimming pool.
- Advanced features for people with disabilities.
- Energy savings due to matching elevators to consolidated passenger demand.
- Special features available such as VIP service, pet service, building management, penthouse service, freight/cart service, and swing car.
- Customization for individual passenger preferences.

software, they can potentially be installed on renovation projects without changing existing elevators. In addition, these latest elevator technologies also have the capacity to impact the design of new construction, a feature that is beginning to be appreciated by the architectural and engineering community. Not only do destination management systems enhance elevator handling capacity—defined as serving more people in less time—they offer design professionals and building owners the flexibility to reduce the size of the building core, potentially adding to usable square footage and thus increasing tenant capacity.

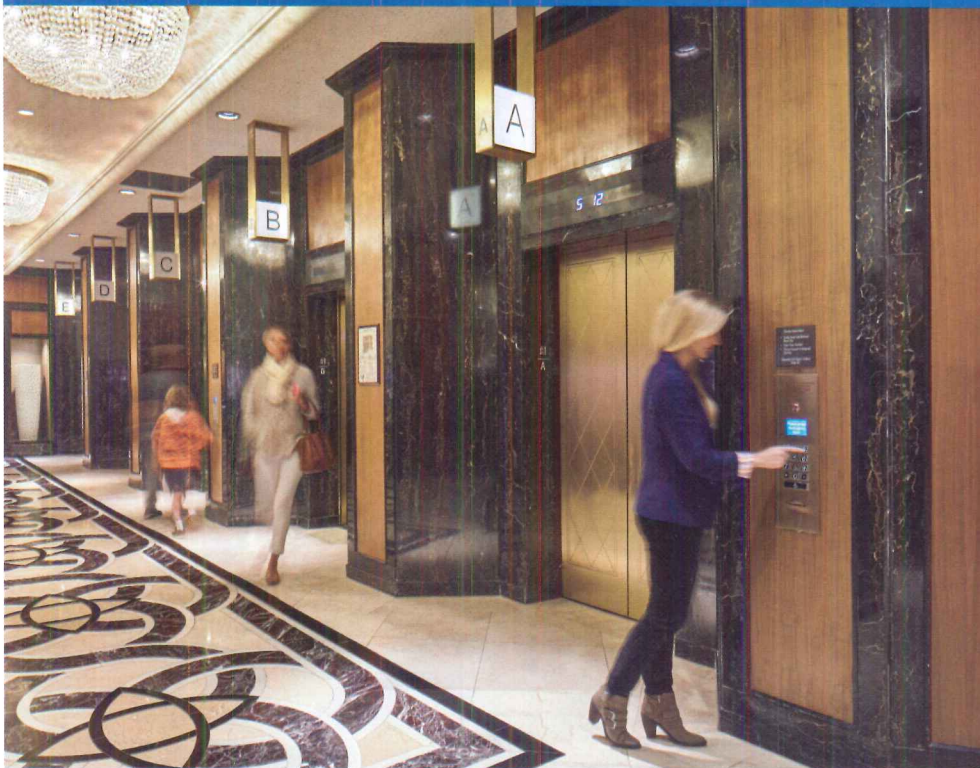
Destination dispatching technology has been the focus of the elevator industry for the past 20 years. First installed in Class A commercial space, it has quickly expanded to residential and mixed-use buildings, especially in urban areas, and has become the standard in most mid-rise and high-rise construction projects. In San Francisco many of the new office high-rise and elevator modernizations employ destination management. All the towers of the World Trade Center in New York City have destination dispatch elevators, a decision made in 2004.

DESTINATION DISPATCH (DD) EXPLAINED

Destination dispatch (DD) or destination management is the most significant advancement for mid- and high-rise elevators since automated operation. DD can minimize the number of stops which in turn could significantly reduce car crowding as well as reducing wait time, time to destination, and the number of intermediate stops while increasing handling capacity. Such impact is subject to building population and number of elevators in the building. Elevator passengers are loaded according to their destination rather than by their random arrival in the lobby. Instead of using standard, two-button hall call systems, passengers input the specific floor they want—before they enter the elevator.

For a typical elevator DD system, passengers enter their destination using mechanical keypads, touch pads, or touch screens provided at each floor. The input devices display each digit of the floor number entered by the passenger. These fixtures are either wall or pedestal mounted as selected by the design professional.

Once a destination floor is entered in a fixture, the system acknowledges the destination floor by displaying the requested floor number in the display immediately above the keypad or touchscreen. When the destination floor is entered, the assigned elevator for the passenger is flashed on the display together with command indicating the direction to the assigned elevator relative to the keypad or touchscreen device. The passenger



After passengers enter their floor destination, the screen will indicate which elevator to take.

can then walk to the correct elevator.

When the assigned car arrives the doors are fully opened and the floor assignments are displayed on the destination indicator (annunciator) inside the car.

The latest systems constantly monitor passenger demand to implement the most effective dispatching algorithm at any given moment. They constantly assess real-time passenger origin and destination data in order to assign cars. The dispatching algorithm continuously monitors the levels of elevator traffic during peak and non-peak hours as well as traffic in between floors throughout the day.

Some DD systems account for the walking distance for the elevator passenger from the input device to the assigned car. This calculation is used in dispatching decisions and also to assure the car does not depart before the passenger has entered the car. The walk rate calculation may be customized to account for geographical preferences. The system provides for an extended walk rate calculation for passengers with disabilities (if the handicapped button is pressed) or a specially designated elevator.

ZONED DESTINATION DISPATCHING

Elevator manufacturers have enhanced DD systems by improving efficiencies and economies of traffic flow and travel time. Zoned destination dispatching (zoned DD), where

elevators are assigned to zones or groupings of floors is one such development. By grouping passengers according to their destination and location of stops requested, zoned DD delivers improved management of peak morning up-traffic and two-way peak lunchtime traffic in addition to other features. For example, a conventional DD might assign passengers going to floors five and nine in the same car and passengers going to floors three and eight in the same car, so that instead of two cars stopping at four floors, each car will only stop at two floors. But with zoned DD where floors are grouped in segments, passengers are assigned according to their destination and their floor segment. Passengers going to floors three and five would be assigned to the same car, while passengers going to eight and nine would be assigned to another car.

“An evaluation of elevator motion dynamics reveals that when an elevator stops for contiguous floors or nearly contiguous floors, it spends less time in acceleration and deceleration states than if it were making the same number of stops separated by a large number of floors,” says Theresa Muenkel Christy, Engineering Fellow, Otis Elevator Company. “Therefore, elevators spend less time cycling between the lobby and floors above. This reduces round-trip time, allows more round trips, and, ultimately, increases the all-

important elevator handling capacity.”

Passengers going to two different segments can be kept separate. This capability could serve two competing companies located in the same building that do not want employees riding together in case sensitive information is discussed.

Zoned DD compared with other elevator systems

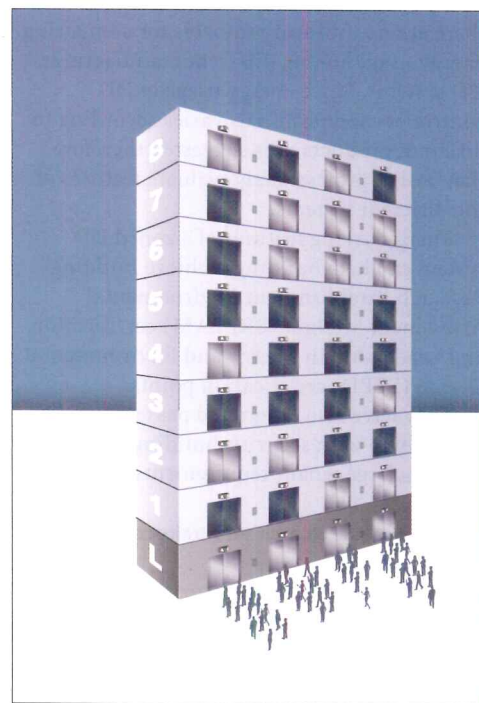
Zoned DD systems have a number of advantages over earlier systems.

Up/down button system

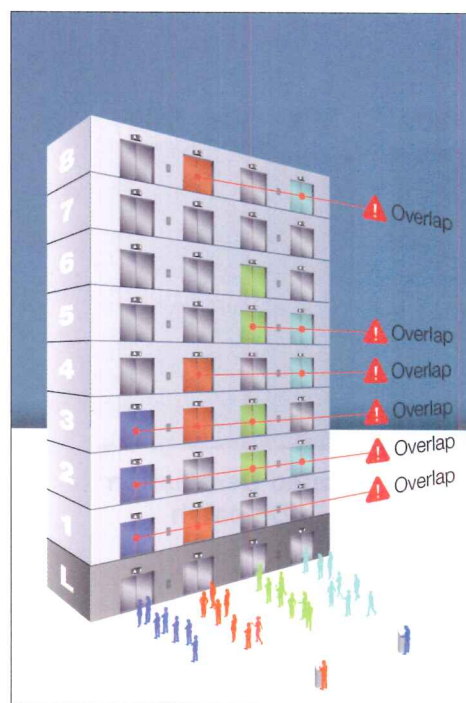
With a traditional up/down button system, elevators are randomly assigned for passengers. This results in disorganized travel paths since passengers are not grouped by floor. Elevators make many stops per trip. One elevator may stop at widely separated floors or multiple elevators might stop at the same floor. Also passengers can wait a long time for elevators.

Conventional DD systems

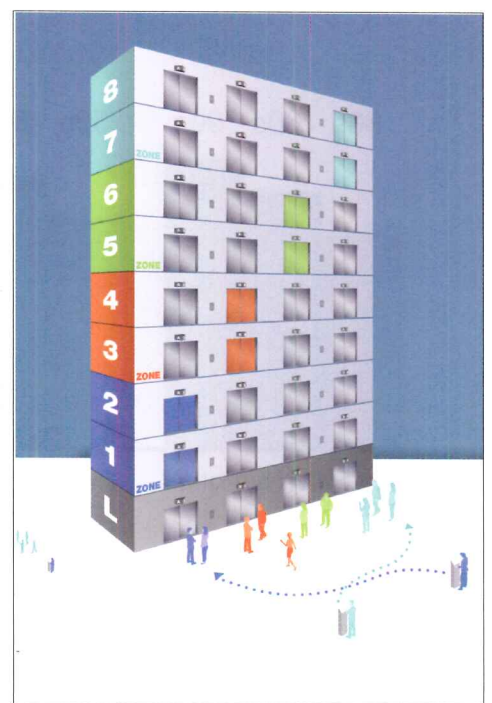
A conventional destination management assigns passengers going to the same destination to the same elevator. Elevators stop at fewer floors, but two elevators may still have overlapping stops. Passengers wait less, but can experience a long wait.



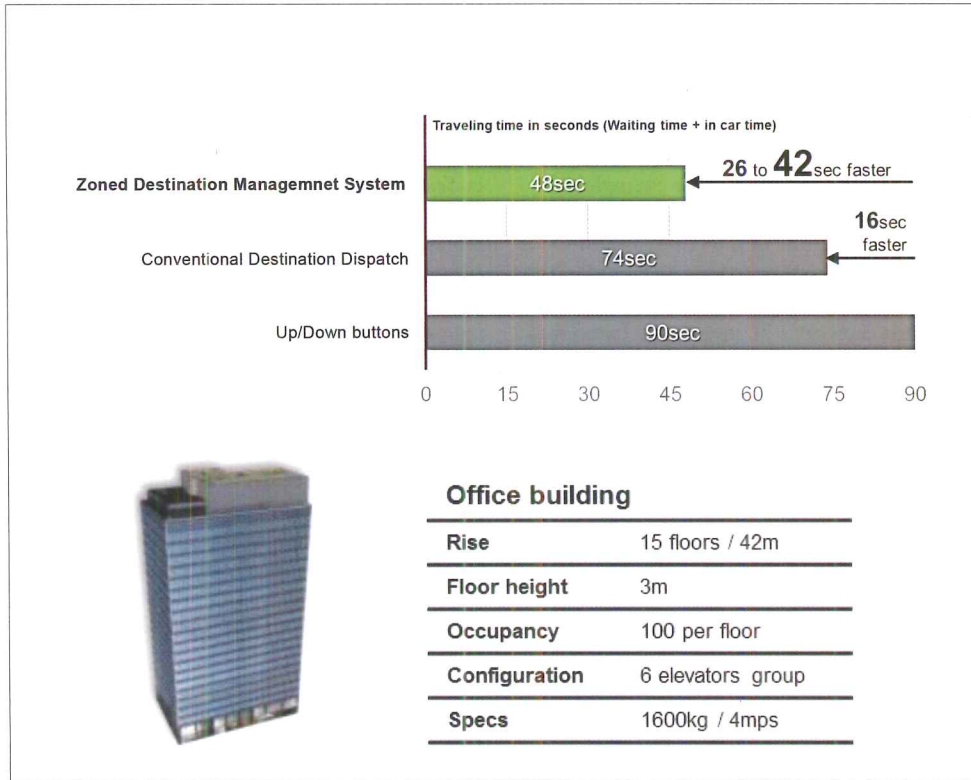
Conventional up/down button systems, which may have five stops per elevator.



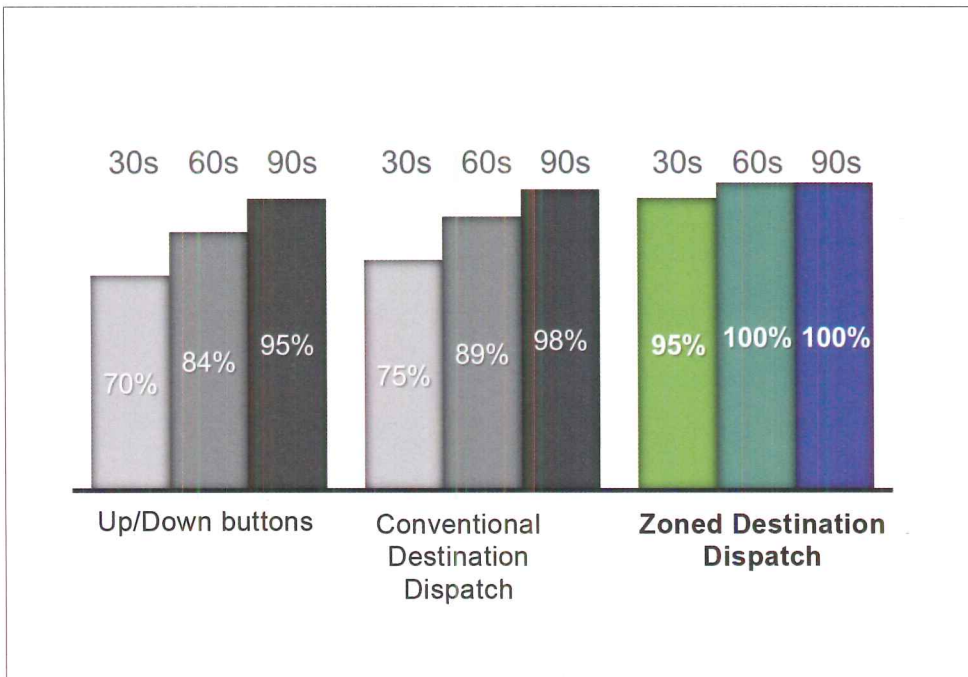
Elevators in conventional destination systems, which may have four stops per elevator, assign passengers with the same destination to the same elevator, but may overlap stops.



In this example of a zoned destination management system, floors are grouped into four contiguous sections. Travel is organized by both passengers' destinations and elevator stops.



An office building case study found that a zoned DD system reduces travel time (wait time plus car time) getting passengers to their destinations faster than conventional DD and up/down systems.



The graph shows the percent of calls answered within 30, 60, and 90 seconds respectively.

Zoned DD

Compared with a conventional DD system, zoned DD systems are faster. One leading elevator manufacturer’s case study found that zoned DD got passengers to their destinations almost 50 percent faster than a conventional DD system.

Reduced wait times

A zoned DD system also improves passenger experience by focusing not only on short wait times, but on reducing long wait times. Typically, the loudest passenger complaints are generated by the small percentage waiting longer than 90 seconds for an elevator.

Reduced energy consumption

Zoned DD systems also reduce energy usage by using heavy and light traffic algorithms and grouping floors so that elevators use the least amount of energy. By matching resources to demand, they avoid wasting energy. When the passenger traffic is light, the zoned DD system automatically moves some elevators to standby. During peak periods the system continuously adapts elevator service zones to traffic demands. Algorithms match “up” and “down” stops, group stops at nearby floors, and create more express runs so that elevators can reach maximum speed and make minimum stops. Fixtures automatically transition to sleep mode when they are not used for a pre-set time interval.

Design professionals should be aware that there are no uniform protocols for comparing energy usage among different manufacturers’ DD systems. Since energy usage of DD controllers and terminals varies according to different products, it is suggested therefore, that design professionals evaluate features of the different systems.

Energy-saving features of a zoned DD system can help buildings achieve Building Research Establishment Environmental Assessment Method (BREEAM) certification and Leadership in Energy and Environmental Design (LEED) certification points.

They have also integrated passenger dispatching with security, building systems and concierge tenant requirements.

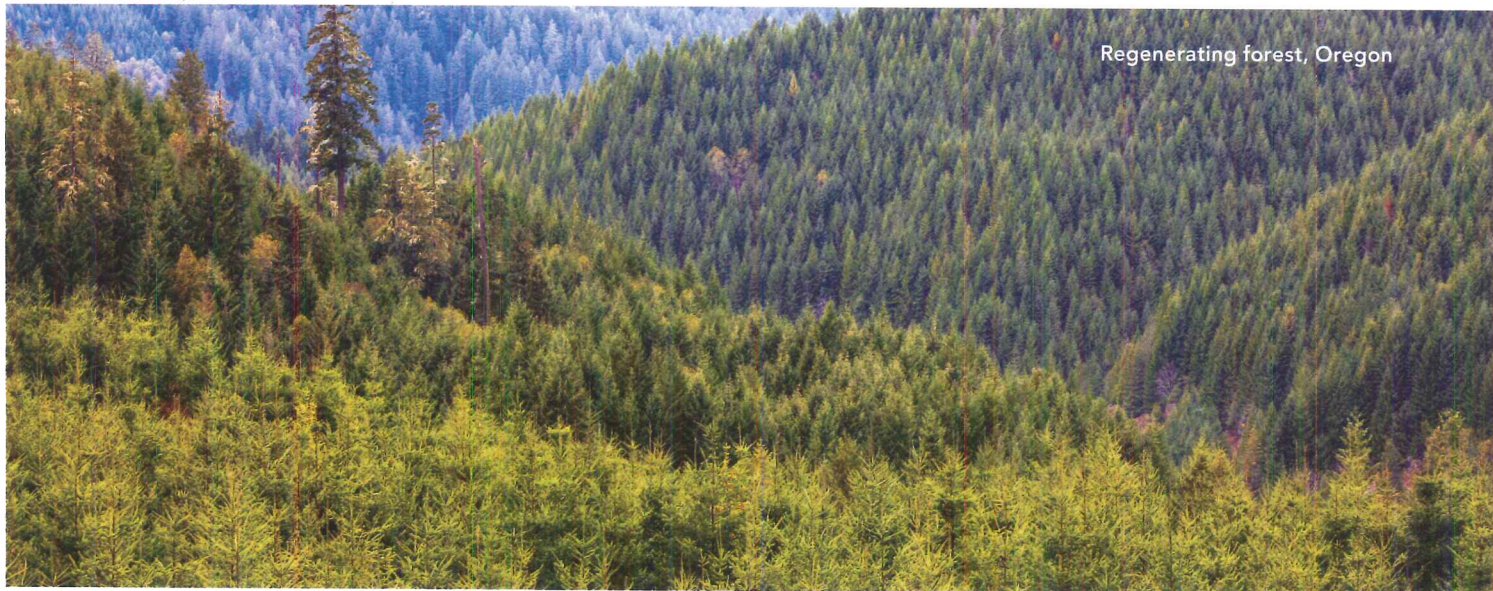
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Karin Tetlow writes for the architectural press with particular focus on construction, accessibility and design research. She can be reached at ktetlow@earthlink.net.



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Photo: Ian Shive, courtesy of Plum Creek



Regenerating forest, Oregon

CONTINUING EDUCATION

The Impact of Wood Use on North American Forests

Can specifying wood for buildings contribute to forest sustainability?

Sponsored by reThink Wood | By Roxane Ward and Dave Patterson, RPF

As green building has evolved beyond its initial emphasis on energy efficiency, greater attention has been given to the choice of structural materials and the degree to which they influence a building's environmental footprint. Increasingly, wood from sustainably managed forests is viewed as a responsible choice—for a number of reasons. Wood grows naturally by harnessing energy from the sun, absorbing carbon dioxide and releasing oxygen. It is renewable and a carbon sink, and outperforms other materials in terms of embodied energy, air and water pollution, and other impact indicators.¹

But what about the forest? The benefits above notwithstanding, how can building designers be sure that specifying wood doesn't negatively impact the North American forest resource?

As this course will demonstrate, the answer to that question has several elements. On one hand, North American forest practices are among the world's best and the amount of forested land, in both the U.S. and Canada, has been stable for decades. On the other, there are threats—such as climate change, increased wildfire, insect infestation and disease,

and deforestation due to urban development—which are broader than the forest industry and must be addressed at a societal level. Drawing from a wide range of research publications, the following pages will examine the current state of North American forests, modern forest practices and criteria for sustainability, and consider some of the challenges that could profoundly impact the future of the forest resource. In this context, the course will also discuss why strong markets for wood products provide an incentive for landowners, not only to invest in forest management, but to keep forested land forested even though greater profit can often be made by converting it to other uses.

IS NORTH AMERICA RUNNING OUT OF FORESTS?

"On the whole, no evidence suggests that we are using up our forests. In fact, the total area of forests has been stable, and the volume of wood on them increasing." — *National Report on Sustainable Forests – 2010*²

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CREDENTIAL MAINTENANCE

Learning Objectives

After reading this article, you should be able to:

1. Evaluate the use of wood as a construction material in the context of long-term forest sustainability as well as attributes such as low embodied energy and light carbon footprint.
2. Discuss forest sustainability measures such as biodiversity, soil and water quality, and harvest vs. net growth.
3. Examine the concept that using wood in buildings provides an incentive to landowners to keep forested lands forested instead of converting them to uses such as urban development.
4. Compare the carbon benefits of an unmanaged forest vs. a managed forest where timber is used for wood buildings.

To receive AIA/CES credit, you are required to read the entire article and pass the test. **Go to ce.architecturalrecord.com** for complete text and to take the test for free. This course may also qualify for one Professional Development Hour (PDH). Most states now accept AIA credits for engineers' requirements. Check your state licensing board for all laws, rules and regulations to confirm.

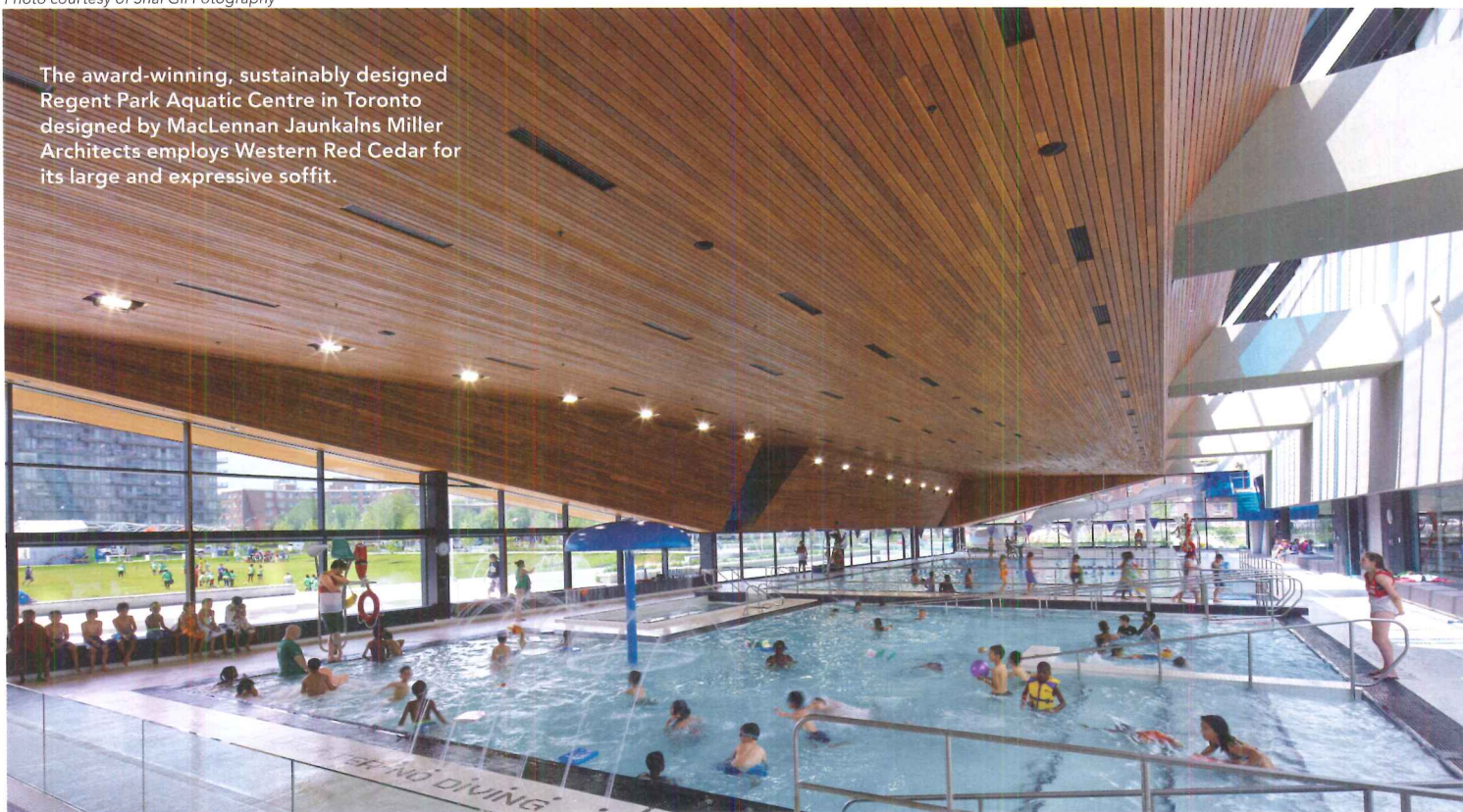
AIA/CES COURSE #K1312B
GBCI COURSE #0090010741



The reThink Wood initiative is a coalition of interests representing North America's wood products industry and related stakeholders. The coalition shares a passion for wood products and the forests they come from. Innovative new technologies and building systems have enabled longer wood spans, taller walls and higher buildings, and continue to expand the possibilities for wood use in construction. www.rethinkwood.com/CEU

Photo courtesy of Shai Gil Photography

The award-winning, sustainably designed Regent Park Aquatic Centre in Toronto designed by MacLennan Jaunkalns Miller Architects employs Western Red Cedar for its large and expressive soffit.



Western Red Cedar: Life-Cycle Sustainability, Indoors & Out

For holistic green building approaches, timber structures and finishes reveal natural benefits

Sponsored by Western Red Cedar Lumber Association | By C.C. Sullivan

Today's overarching design trends have made sustainability a core competency for architects and project teams. No longer content to talk about green building as a special knowledge area, it is viewed more as a core aspect of good design—the “sustainability competence” that Gaia Architects' Sandy Halliday wrote about a few years ago in her book, *Sustainable Construction*. On top of that, sustainability has expanded in its definition and application to include considerations about human health and physiological function as well as psychological wellbeing and social and cultural underpinnings. Indeed, today's green thinking pervades practically every aspect of human experience and certainly every phase of building planning and operations.

For this reason and others, certain areas of building material selection have become highly complex. Issues to consider in the project planning and schematic design phases include:

How durable and resilient is the product? Which, if any, health issues are raised in its use, including material toxicity? What goes into the product's extraction and manufacture? Are there tradeoffs between local supplies and regional transportation or imported goods? Is the product innately appealing, and are there other similar humanistic considerations? How is it cleaned? What options are available for disposal at end of life?

The list goes on. Answering these questions has led architects to the use of certain materials that are either highly novel—electrochromic glazing, for example—or long-established and conventional, such as masonry and wood. In this latter category, the more traditional products are often deployed as part of innovative assemblies that enhance their value and positive attributes. Architects working with Western Red Cedar, for example, have recently begun exploring new aesthetic territory by

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LEARNING UNIT (LU)

Learning Objectives

After reading this article, you should be able to:

1. Describe the benefits of using Western Red Cedar in terms of healthy, green building, and life-cycle analysis.
2. List the main performance attributes of Western Red Cedar and how they differ from other forestry products and comparable construction materials.
3. Explain how Western Red Cedar performs in terms of energy efficiency, dimensional stability, durability and resilience, as well as health and wellness considerations such as biophilia.
4. Discuss the kinds of Western Red Cedar applications including the use of knotty grades and charred finishes, with attention to their environmental benefits.

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AIA/CES #K1509E

combining various patterns and sizes as well as by employing knotty grades, which can project a rustic or graphic appearance, as opposed to the cleaner look of clear grades. Other novel directions include the use of a charred finish, which renders a sleek, slate-gray hue or a deeper char with patterns resembling alligator skin.

In spite of their associations with residential vernacular, Western Red Cedar and other natural materials are increasingly specified for commercial and institutional facilities. Examples include retail and hospitality buildings as well as new educational structures around the country. Toronto's award-winning, super-modern natatorium by MacLennan Jaunkalns Miller Architects presents an undulating zinc facade connecting to a monumental soffit of Western Red Cedar, applied as a tongue-and-groove system outside and as interior slats with an acoustical underlay. Other approaches have included the decorative weave applications by Urban Arts Architecture for the expressive and sprawling T'it'q'et Community Hall + Health Centre, or the mast-supported overhang protecting a branch of the Salmon Arm Savings & Credit Union by RATIO

Architecture Interior Design + Planning Inc., both in British Columbia.

These projects are not only acclaimed for their formal and material innovation. They are also sustainable, resilient long-term solutions for their clients. To study the green potential of any method or material, an essential part of green building today is the life-cycle assessment (LCA), a detailed analysis that allows for "the most environmentally friendly decisions throughout product design," according to Dassault Systèmes, which makes automated LCA tools. "The analysis looks at a product's entire life, which encompasses extraction, material production, manufacturing, product use, end-of-life disposal, and all of the transportation that occurs between these stages."

Recent LCA studies have helped compare multiple material types. Among the most compelling is one analysis by the research laboratory FPInnovations-Forintek demonstrating the benefits of the wood species *Thuja plicata* (commonly called Western Red Cedar) against non-wood building materials used for residential siding and decking. The studied materials ranged from relatively novel

products such as wood-plastic composite (WPC) to fiber-cement materials to extruded vinyl.

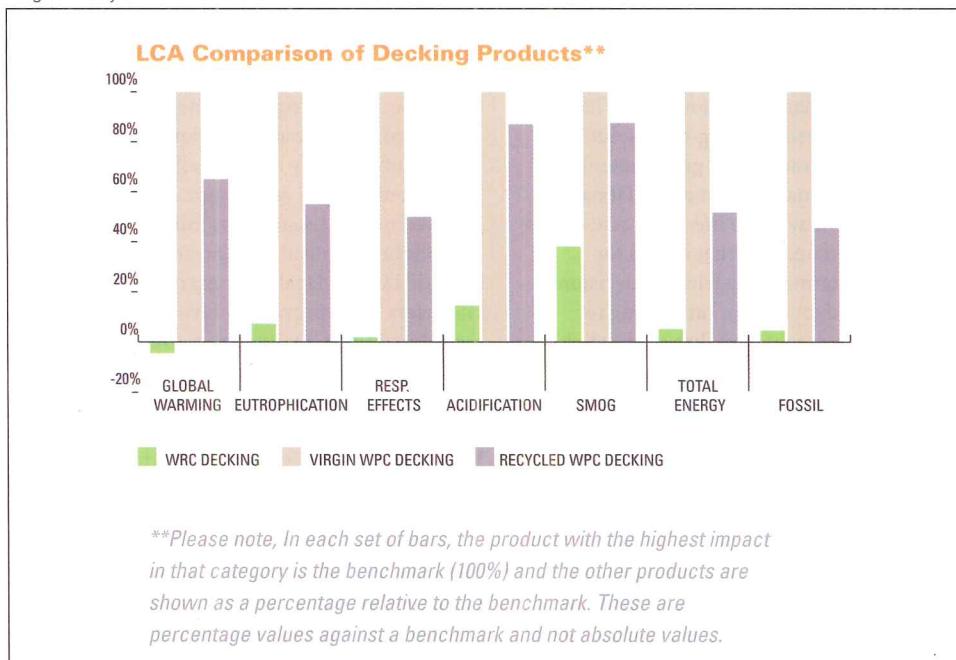
In measurable areas such as resource and water use, energy requirements, transportation implications, and waste creation, the natural wood found mainly in the Pacific Northwest showed substantial advantages for sustainable design. For this reason, says John Wagner, a sustainability consultant and cofounder of the Certified Green Dealer Program, architects and end-users "who previously favored what they considered to be 'maintenance-free' materials need to consider this natural alternative, which will help lessen their environmental footprint." Wagner acknowledges that the LCA showed *Western Red Cedar* as the least environmentally burdensome and the lowest consumer of nonrenewable resources, such as fossil fuel.

Lauded for years in certain circles for the material's durability, beauty and value, Western Red Cedar earned a comparative and scientifically reasoned grounding for its environmental benefits. A look at its history, cultivation, building uses, and human factors adds even more weight to what Wagner and others already see as a compelling answer to

More projects today use Western Red Cedar on both exterior and interior surfaces, such as the Brady Lane Residence in Texas by Webber + Studio Architects, unifying the composition and exploiting the material's green attributes.



Image courtesy of Western Red Cedar Lumber Association



A recent life-cycle assessment or LCA study comparing Western Red Cedar (WRC) to Wood Plastic Composite (WPC) decking products indicates the low total energy requirements for producing WRC, which helps explain its low impacts for smog and global warming.

today's toughest questions about the core design competency of sustainable design.

HIGH PERFORMANCE, HUMAN APPEAL

LCAs are only a part of the multifaceted analysis conducted by architects and project teams in settling on the best materials for a given application. Another consideration has been called simply *humanism* by architects like Barry Svigals, FAIA, or "humanistic factors" that have "gradually become an important factor in green building design," as China's materials scientist Li Ting Jiang wrote in the journal *Advanced Materials Research* last year. The combination of spatial and environmental strategies "encourage green creativity, pay more attention to the interests of the body, strengthen the architect's responsibility and social orientation, [and] is an effective way to achieve green building goals," says LT Jiang, who calls for "incorporating humanistic factors into evaluation standards for green building as soon as possible."

Humanism extends from the aesthetic response to clinically proven health outcomes, and everything between. At the most analytical, the incorporation of *evidence-based design* (EBD) into the architecture of hospital environments, for example, shows how built environment variables are linked directly to health outcomes. By 1996, the Center for Health Design had identified 84 studies showing proof of the effectiveness of EBD. Biophilia, a scientific term for the human response to naturally occurring forms such as plants or

wood grain, has been described by social ecologist Stephen R. Kellert, author of *Biophilic Design*, who lists 75 attributes of what he calls "restorative environmental design." These biophilic elements include natural materials, natural shapes and forms, and natural patterns and processes.

The exposed grain and knots in wood species such as Western Red Cedar, for example, are effective biophilic design elements. Knotty grades, which are always provided in flat-grain constructions so that the knots appear as round shapes, offer especially dynamic natural motifs ranging in tone from light to dark with varied biomorphic markings. A survey of recent projects shows more use of knotty Western Red Cedar, which adds texture and character to surfaces. As seen on the award-winning Minton Hill House in Québec by the firm Affleck + de la Riva Architects, the knotty grades add visual contrast to stone and glass surfaces. In others, like the bayside Lobster Boat Residence in Seattle, Chadbourne + Doss Architects use this memorable knotty wood on exterior surfaces and other design elements, even pairing it with similarly knotty stair treads—illuminating its suitability for salty coastal air as much as its evocative appeal, both indoors and out.

In addition to using knotty grades, some architects integrate cuts of clear grades with flat grain and vertical grain for visual effect, or they employ a random mixture of various-width boards for additional variety in appearance.

Regardless of the grade specified, Western Red Cedar and other wood species have been

shown to provide measurable effects on various subjective measures, including "warmth, softness, and a calming effect," according to Michelle Kam-Biron, S.E., of the trade group WoodWorks. "Principles of evidence-based design show that occupants respond positively to wood," says Kam-Biron in a recent talk, adding that schools in Japan are built with wood specifically because students respond well to the finishes. Research shows how biophilia relates to humans' natural predilections for "visual variety, natural irregularity and expressiveness." This helps explain why architects are applying Western Red Cedar for more indoor and outdoor uses, often in the same building.

DEEPLY ROOTED IN CULTURE, PLACE

The beneficial effects and attractions of wood appears to be a deeply embedded part of the cultural aspect of architecture, not just pure aesthetics. For example, unlike many construction materials, Western Red Cedar is an intrinsic part of North America's cultural and environmental heritage. Native Americans in the Pacific Northwest—who commonly referred to themselves as "People of the Cedar"—used two names for this revered tree, which translate as "dry underneath" and "long life maker," according to nonprofit conservation group American Forests. Also, the Latin name for this type of conifer, *arborvitae*, means *tree of life*.

These monikers are more than descriptive. In fact, they signify both spirituality and practical uses, an association that anthropologists describe as arising naturally. For example, on the islands known as Haida Gwaii along British Columbia's north coast, Western Red Cedar trees have been honored for their age and size, living for more than 1,000 years and growing to 200 feet tall with trunk diameters up to 16 feet, says Paul Mackie, a technical specialist and field representative for the Western Red Cedar Lumber Association (WRCLA). "Even then, the top of the tree continues to grow and is perpetually young, whereas the bottom of the tree is older," he explains.

After it is harvested, the trees are fragrant, easily worked, and surprisingly light yet stable. Western Red Cedar also has properties to repel moths and insects, and the same natural preservatives are toxic to fungi, yet another benefit for longevity and durability. With such stability and preservative qualities, Western Red Cedar is one of the most resilient materials in the world, according to forestry experts. Pacific Northwest natives—in Canada referred to as *First Nations*—have used the wood for indoor and outdoor uses including canoes, dance masks, totem poles, and relatively large post-and-beam houses. The knotty imperfections found in many woods, including Western

Photos courtesy of Shai Gil Photography



Some architects are using knotty grades of Western Red Cedar and employing the wood species both indoors and outdoors, as at the Stealth Cabin project near Bracebridge, Ontario, by Toronto-based firm superkül.

Red Cedar, have figured prominently in their aesthetics. These First Nations have also turned the bark into rope, mats, and clothing, and parts of some Western Red Cedar trees are used for religious and medicinal purposes.

In fact, the tree is still revered, as tribes gather around groves for ceremonies, meditation, and retreat, often conducted before trees are felled by some native groups. Downed trees may be mourned with prayers and offerings in some cases. This reverence for sustainability has not been forgotten: Current forest management practices require that if a tree is *culturally modified*—for example, marked using methods known to be typical of the First Nations—lumber producers will not harvest the tree. Other kinds of reverence figure into

the forest management practices of companies harvesting Western Red Cedar, a tightly standardized supplier group. The core reasoning is that—because Western Red Cedar is integral to air and water quality, climate, biodiversity, health and medicine, and recreation—the forests where Western Red Cedar grows must be carefully managed to ensure the success of future generations.

Continues at ce.architecturalrecord.com

Chris Sullivan is an author and principal of C.C. Sullivan (www.ccsullivan.com), a marketing agency focused on architecture, construction, and building products.



The Western Red Cedar Lumber Association represents quality “Real Cedar” producers, distributors and retailers throughout North America. Founded in 1954 and known as “the voice of the cedar industry,” WRCLA offers extensive resources to assist with selection, specification, application and quality standards. RealCedar.com

Smarter, Safer Hot Water: Digital Thermostatic Mixing Stations

Specifying digital mixing and recirculation stations provide a sustainable measurement and verification system that conserves water, saves energy, protects users from hot water burns, and helps minimize the occurrence of Legionella in tempered water delivery systems.

Sponsored by Powers | *By Celeste Allen Novak, FAIA, LEED AP BD+C*

Arise in the number of people scalded in public buildings from hot water, the increase in Legionnaires' disease and the demands for water conservation are challenges that designers face when specifying water mixing and circulation systems. The plumbing system is the one component of buildings that directly affects public health. There are many challenges when considering the overall integration of internal systems in sustainable high-performance buildings. Today, engineers, designers, and facility managers have new tools to directly measure, monitor, and deliver safer hot water systems due to new digital advances in hot water mixing and recirculation systems in commercial and institutional buildings.

The health statistics are alarming. According to the American Society of Sanitary Engineering (ASSE), burn injuries can occur at temperatures above 120 degrees F. Most codes *recommend* that all of the components of a hot water delivery system be set at temperatures that prevent hot water burns. However, the codes *do not require* consistent hot water temperatures throughout building water systems. There can be wide fluctuations in hot water temperatures supplied to any plumbing fixture, such as a shower or handwashing faucet, resulting in unsafe conditions and potential liabilities. Entire systems are engineered with a complex system of pipes, valves, and thermostats which until recently were based on analog, not digital, elements.

Hot water temperatures can vary widely throughout most building plumbing systems causing uneven and dangerous temperature swings. As one example, a survey of major hotel chains was conducted to review the temperatures in their hot water system at

showerheads and faucets. Very hot water was found in 91 percent of the first 100 rooms tested even though the design of these systems met current codes and used the latest in pressure-balanced valves. These hotel rooms delivered maximum hot water temperatures for showers in excess of 115 degrees F while 78 percent provided water in excess of 120 degrees F. At 120 degrees F, it takes more than five minutes to produce a first-degree burn. At 140 degrees F, it takes approximately five seconds to sustain a first-degree burn, creating an enormous safety and liability problem for owners and operators. The thermal shock of a rapid and uncomfortable change in shower temperature can cause a fall or serious injury. For hotel owners, maximizing temperature controls and temperature swings will decrease their liability.

In addition, the temperatures in 62 percent of the surveyed rooms had hot water that was set at the prime temperature for the growth of the bacteria Legionella Pneumonia. According to the Centers for Disease Control (CDC), an estimated 8,000 to 18,000 people are hospitalized with Legionnaires' disease each year in the U.S. Inhalation of aerosols or mists containing the bacterium is presumed to be the primary means of acquiring legionellosis. Aerosolized waters from cooling towers, evaporative condensers, showers, and humidifiers have been identified as sources of infection.

The ideal temperature for the growth of Legionella is between 95 and 115 degrees F, the same temperatures that are safest to prevent scalding from hot water. In order to safeguard the public from this deadly bacteria, water temperatures must be high enough at the point of source to prevent bacterial growth and low enough to prevent scalding at point-of-use.

"When it comes to Legionella bacteria,

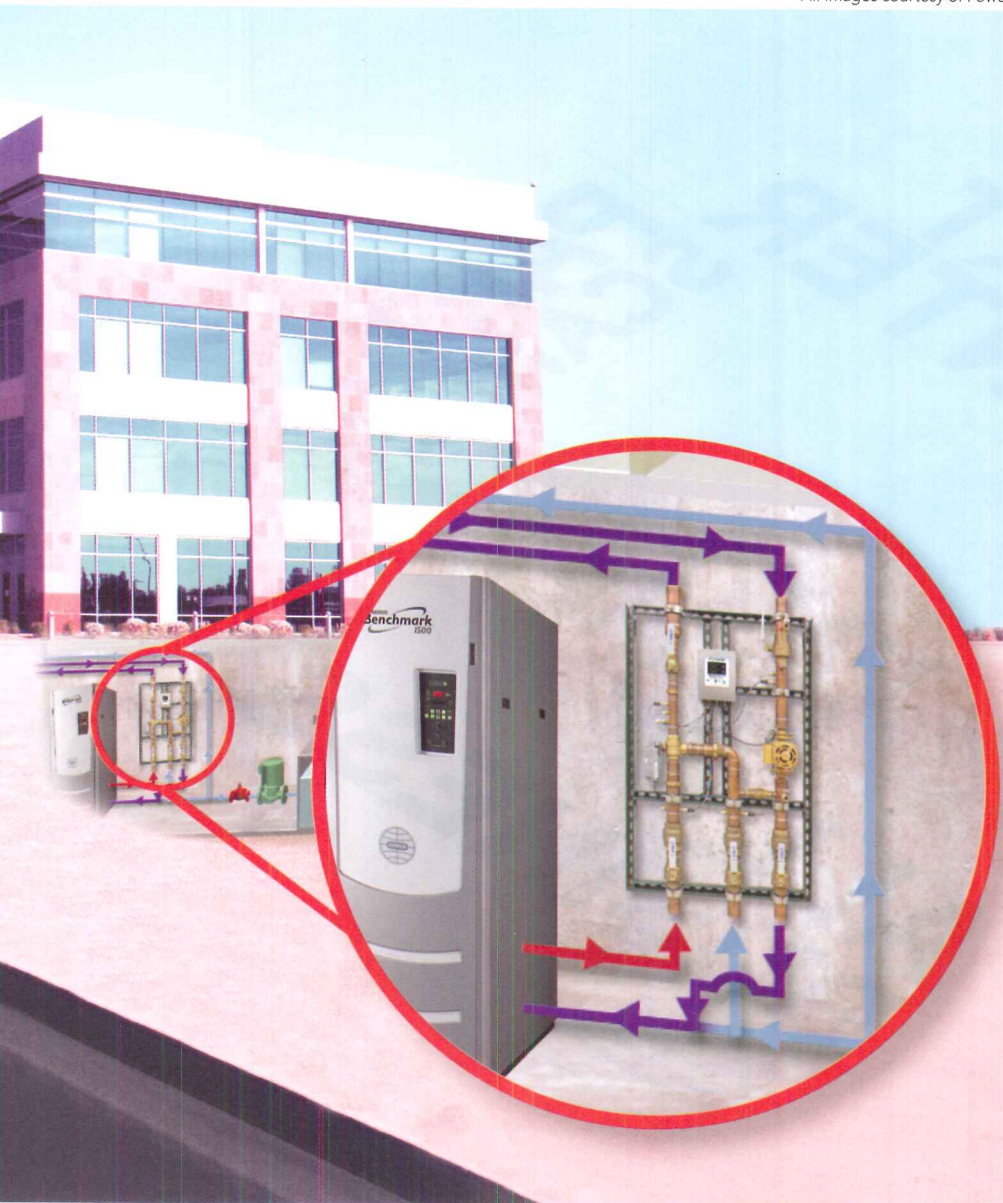


A digital mixing and recirculation station provides safer hot water delivery in commercial and institutional buildings.

outbreaks occur when two or more people become ill in the same place at about the same time, such as patients in hospitals. Hospital buildings have complex water systems, and many people in hospitals already have illnesses that increase their risk for Legionella infection. Other outbreaks have been linked to aerosol (mist) sources in the community or with cruise ships and hotels, with the most likely sources being hot tubs, cooling towers (air-conditioning units from large buildings), and water used for drinking and showering." To prevent the build up of the Legionella bacteria, Occupational Safety & Health Administration (OSHA) recommends that water systems be properly inspected and maintained with frequent flushing of domestic water systems at very high temperatures.

Along with medical professionals, the design profession is committed to ethically protect

All images courtesy of Powers



These new mixing stations control the entire tempered water recirculation loop at safe temperatures using electronic mixing valves, fast response sensors, and high-speed actuation. They can limit temperature regulation to exceed the requirements of the American Society of Inspectors of Plumbing and Sanitary Engineers, ASSE 1017. This standard allows mixed outlet temperature swings within +/- 7 degrees F (for valves > 40 gpm) throughout a hot water system. Using high-performance digital valves, the new systems can reduce that temperature swing within +/- 2 degrees F. This provides a control measure as well as energy savings that are difficult, if not impossible, to meet in mechanical systems.

► Continues at ce.architecturalrecord.com

Celeste Allen Novak, FAIA, LEED AP BD+C, is an Ann Arbor, Mich.,-architect who specializes in sustainable design and planning. She is the author of "Designing Rainwater Harvesting Systems: Integrating Rainwater Into Building Systems."

CONTINUING EDUCATION



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Learning Objectives

After reading this article, you should be able to:

1. Identify the challenges and dangers inherent to hot water delivery systems in buildings.
2. Discuss digital advances in water mixing and recirculation stations that maximize scald protection while minimizing the health risks for waterborne bacteria in high-performance commercial and institutional facilities.
3. Review components and codes that determine performance standards for a safe and efficient hot water delivery system.
4. Specify an integrated hot water delivery system that can be tied into a building automation system to meet green codes for measurement and verification.

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AIA/CES #K1510D

the health, safety, and welfare of the public. Designing buildings that heal, not harm, is an ethical mandate for all building professionals. The challenge to designers is that the control of both the prevention of scalding as well as the control of bacteria requires mechanical precision within a water distribution system. However, until recently, hot water delivery systems have been engineered using twentieth century components and engineering. New digital mixing and recirculation systems are smart water delivery solutions for mixing domestic water in a hot water recirculation loop. These systems are used in commercial and institutional facilities and can be integrated into

a building automation system (BAS).

The digital revolution in building systems has created numerous new products that provide energy savings for high-performance building materials. BAS systems commonly control heating, ventilation, and air-conditioning systems (HVAC) and some larger equipment such as chillers and boilers. The latest in plumbing system design provides an opportunity for digital controls that can communicate to BAS programs. New digital mixing and recirculation stations allow for the integration of hot water delivery systems into automated program controls. A change from mechanical to digital equipment is a welcome advance in technology.

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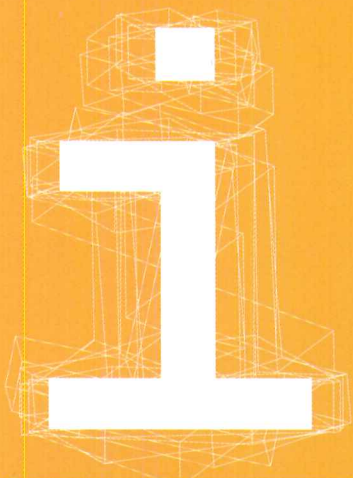
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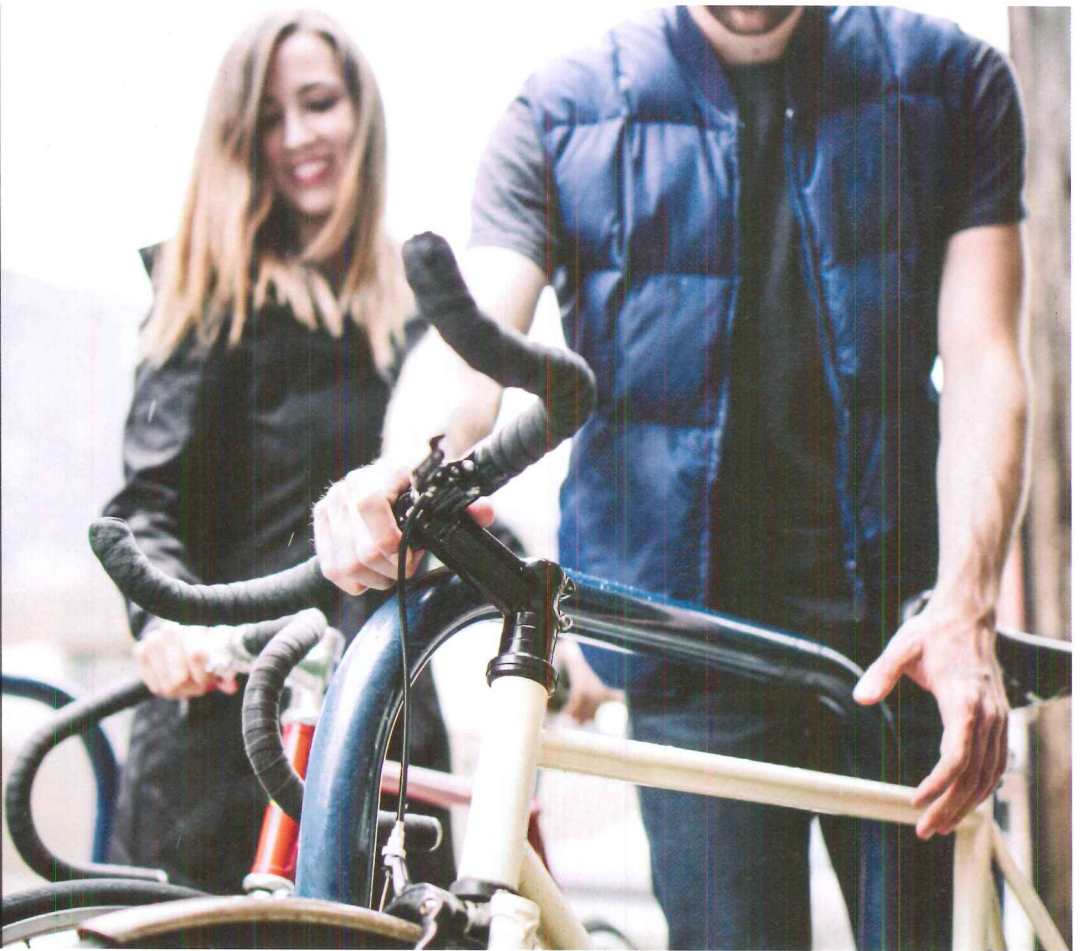
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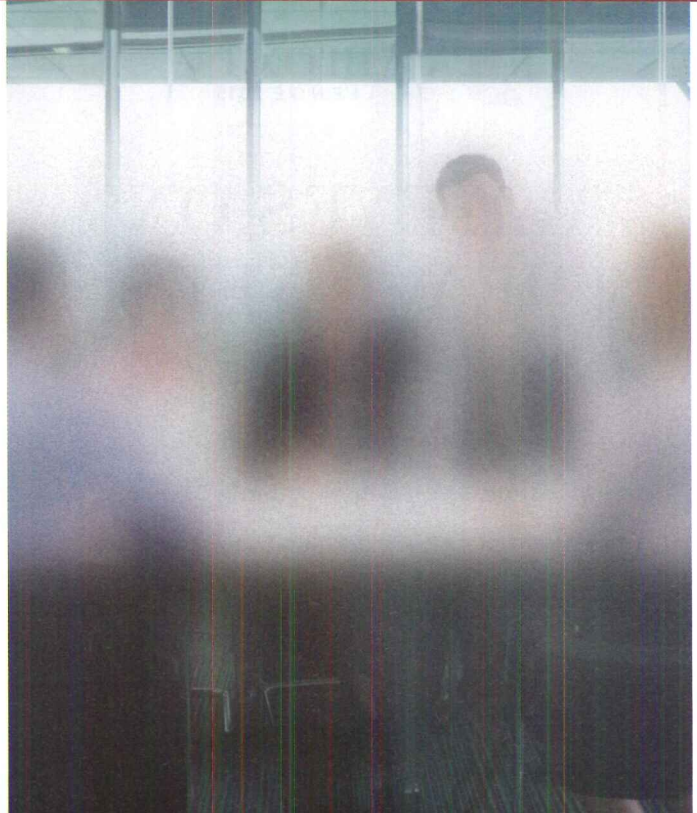


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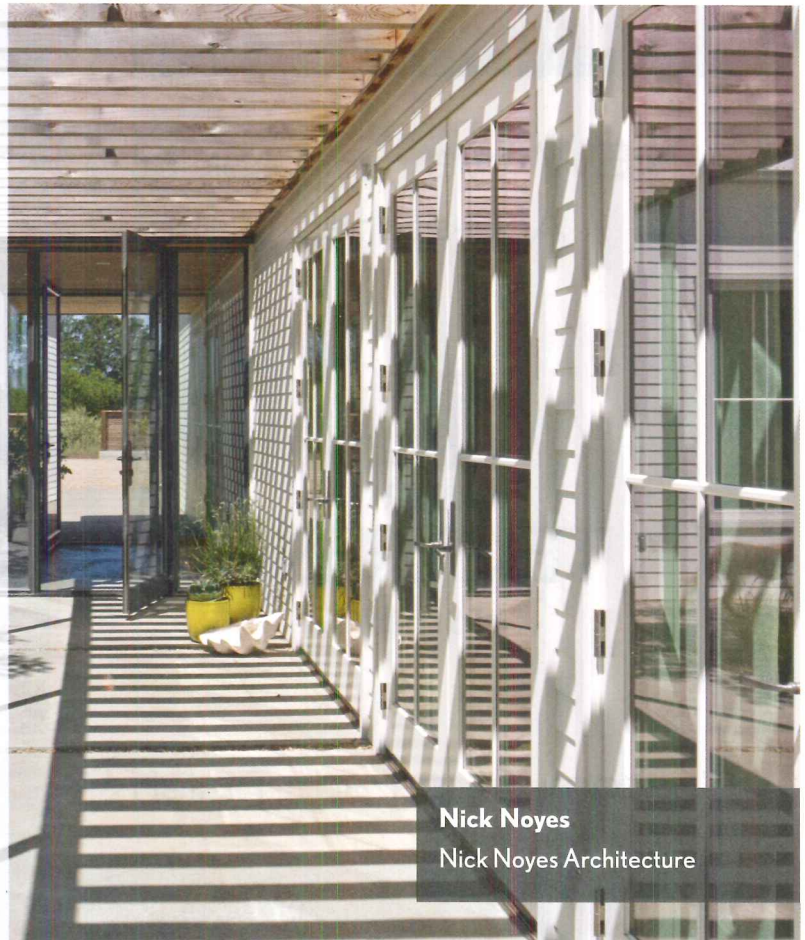
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October 21, 2015
5:00PM—8:00PM
Chicago, IL



In this symposium, *Architectural Record* has gathered a panel of experts to examine trends in the design of a variety of healthcare facilities, from academic and research centers to hospitals, outpatient clinics, and assisted living housing. Opportunity to earn Continuing Education Units will be available.

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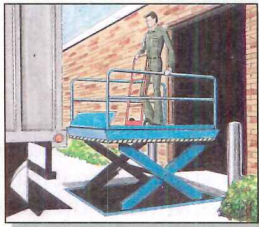


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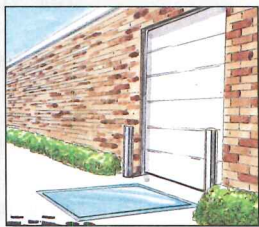
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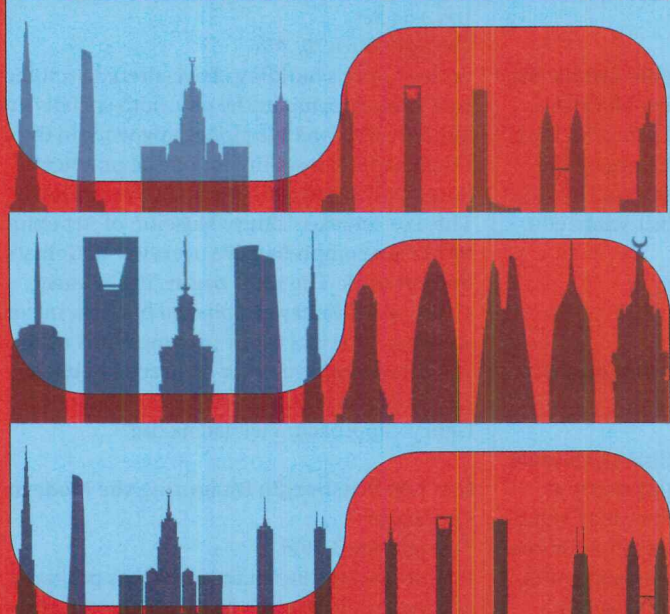


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New and Upcoming Exhibitions

Archtober

New York City

October 2015

New York City's fifth annual monthlong celebration of architecture and design highlights architecture activities, programs, and exhibitions throughout the city. Archtober events such as special tours, lectures, films, and exhibitions focus on the importance of architecture and design in everyday life.

Participating organizations include area American Institute of Architects chapters, the Judd Foundation, the Museum of Modern Art, and the National September 11 Memorial and Museum, among others. Visit archtober.org.

The Inaugural Chicago Architecture Biennial

Chicago

October 3, 2015–January 3, 2016

The Chicago Architecture Biennial provides a platform for groundbreaking architectural projects and spatial experiments that demonstrate how creativity and innovation can radically transform our lived experience. Through its constellation of exhibitions, full-scale installations, and program of events, it will invite the public to engage with and think about architecture in new and unexpected ways and to take part in a global discussion about the future of the field. At the Chicago Cultural Center and throughout the city. Visit chicagoarchitecturebiennial.org.

SCI-Arc Gallery: Two Strips

Los Angeles

October 9–November 29, 2015

Architect Zvi Hecker's site-specific installation will consist of two strips running along the gallery's walls, ceiling, and floor on which will be displayed drawings and paintings by the architect, as well as materials selected by students from his body of work. Visit sciarc.edu.

Ongoing Exhibitions

Africa: Architecture, Culture, and Identity

Humblebæk, Denmark

Through October 25, 2015

This major exhibition at the Louisiana Museum of Modern Art focuses on new architectural projects from a range of locations across Africa. These buildings are proposed so as to accommodate local traditions, strengthen existing ones, and create solutions for the future. Architec-

tural scenography and installations allow visitors to experience forms and spaces at full scale. Visit louisiana.dk.

Expo Milano 2015

Milan

Through October 31, 2015

During this exposition, the city of Milan becomes a global showcase where more than 140 participating countries will show the best of their technology aiming to answer a vital question: how to guarantee healthy, safe, and sufficient food for everyone while respecting the planet and its equilibrium. The Expo expects to welcome more than 20 million visitors to its 1.1 million square meters of exhibition area. Visit expo2015.org.

Provocations: The Architecture and Design of Heatherwick Studio

New York City

Through January 3, 2016

Provocations is the first museum exhibition to introduce the imaginative work of British designer Thomas Heatherwick and his London-based studio to an American audience. Heatherwick is known for his unique design concepts ranging from products, infrastructure, and temporary structures to large-scale architecture projects around the world. Highlights of the work on view include the Learning Hub at Singapore's Nanyang Technological University; the 2014 Bombay Sapphire Distillery in Laverstoke, England; and the 2012 redesign of London's double-decker bus, known as the New Routemaster. At Cooper Hewitt, Smithsonian Design Museum. Visit cooperhewitt.org.

Frank Gehry

Los Angeles

Through March 20, 2016

Frank Gehry's buildings have altered architecture's relationship to the city, both socially and aesthetically, and his pioneering work in digital technologies set in motion the practices employed by the construction industry today. This Los Angeles County Museum of Art exhibition is a comprehensive overview of Gehry's body of work. The show begins in the early 1960s, when Gehry established his firm in Los Angeles, and runs to the present. Many of the 200 drawings have never been seen publicly, and 65 models illuminate the evolution of Gehry's approach. Visit lacma.org.

HACLab Pittsburgh: Imagining the Modern

Pittsburgh

Through May 2, 2016

Pittsburgh underwent an ambitious program of urban revitalization in the 1950s and '60s.

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CIRCLE 56

dates&events

This experimental presentation at Carnegie Museum of Art's Heinz Architectural Center untangles the city's complicated relationship with modern architecture and urban planning at that time, unearthing layers of history and a range of perspectives through archival materials, an active architecture studio on-site, and a salon-style discussion space. Visit cmoa.org.

David Adjaye: Architecture for Social Change

Chicago

Through January 3, 2016

With more than 50 projects constructed across the world, David Adjaye is rapidly emerging as a major figure in architecture and design. This first-ever retrospective, at the Art Institute of Chicago, spans from furniture and housing to public buildings and master plans; it features drawings, sketches, and building mock-ups. The exhibition also immerses viewers in Adjaye's distinct approach and visual language through a dynamic installation conceived by his eponymous studio. Visit artic.edu.

Lectures, Conferences, and Symposia

Architectural Record Women in Architecture Forum & Awards

New York City

October 6, 2015

The magazine's second annual awards program recognizes and promotes women's design leadership and contributions to the field. Join RECORD staff and contributors at the Time-Life Building for a morning symposium followed by a luncheon ceremony honoring this year's five award winners.

Visit arwomeninarchitecture.com.

Architectural Record Innovation Conference

New York City

October 7, 2015

Innovative architecture requires expanding the boundaries of the discipline by spurring creativity through design and technology. At this year's conference at the Time-Life Building, RECORD brings together key figures who have generated a range of imaginative solutions for the built environment. From architects practicing on the outskirts of the discipline and principals of large firms to materials experts and graphic designers, the event's participants represent different approaches to original problem-solving in a rapidly changing world.

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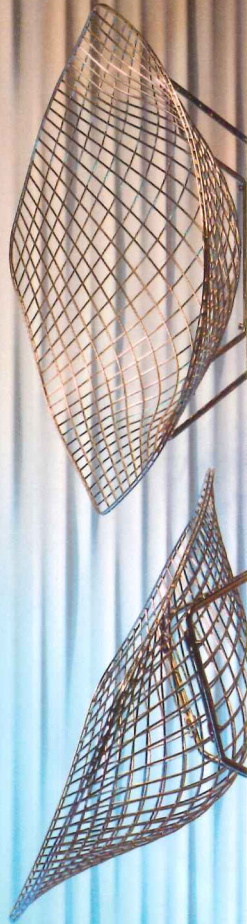
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dates&events

World Architecture Festival
Marina Bay Sands, Singapore
November 4–6, 2015

The gateway to global recognition, the World Architecture Festival (WAF) is where the world architecture community meets to celebrate, learn, exchange ideas, and be inspired. The largest international architectural event extant, WAF has the most extensive architectural awards program. More than 2,000 architects from 60 countries attend the annual Festival. Visit worldarchitecturefestival.com.

Competitions

Tile Spain Awards
New York City

Registration deadline: October 28, 2015

The competition for the Tile of Spain Awards of Architecture and Interior Design is organized and promoted by ASCER, the Spanish Ceramic Tile Manufacturers' Association. The prizes aim to promote awareness, understanding, and use of ceramic tiles made in Spain, among architects and interior designers. Entries from applicants worldwide must make significant use of Spanish ceramic floor and/or wall tiles in their buildings. Visit premiosceramica.com.

The Negro Building Remembrance Competition

Submission deadline: November 1, 2015

The Negro Building Remembrance Competition aims to bring the Negro Building, a forgotten landmark of the 1895 Cotton States and International Exposition in Atlanta, into public memory. The competition invites architects, landscape architects, artists, poets, playwrights, musicians, and writers from every discipline—as individuals, teams, students, or professionals—to propose imaginative, bold, and provocative ways to honor the Negro Building. Visit negrobldgcompetition.com.

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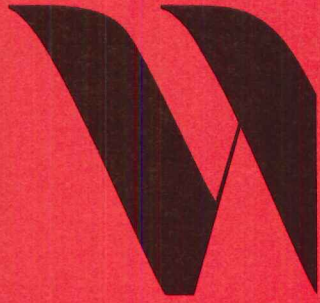


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IN THE MIDDLE of the desert in Qatar, four enormous steel plates rise from the bleak landscape, oriented along an east-west axis over a half-mile stretch. The monolithic structures comprise Richard Serra's sculpture *East-West/West-East*—the artist's second public commission from the Qatar Museums Authority. Several years ago, while in Doha for the first commission (the 80-foot-high sculpture 7, which stands in the city's harbor near the I.M. Pei-designed Museum of Islamic Art), Serra visited the Brouq Nature Reserve. "I was drawn to that desert because of its topography," he says. "The site is rugged and craggy, with shell underfoot, very arid and windy." He noted the distinctive gypsum plateaus, "shaped like oversized mushrooms," which, at around 50 feet high, defined *East-West/West-East's* scale. Informed by the site's incline, the installation's four imposing pieces vary in height from 48 to 55 feet, level with the tops of the plateaus. Initially bluish-gray in color, the half-inch-thick plates will develop a patina as they oxidize and weather, transitioning to orange, brown, and finally a dark brown-black. "Working in the desert is something I hadn't thought I'd do," says Serra, "and it ended up being one of the better experiences of my life. I'd never spent that much time in that vast a space, and there's something very humbling about it."

Miriam Sitz

