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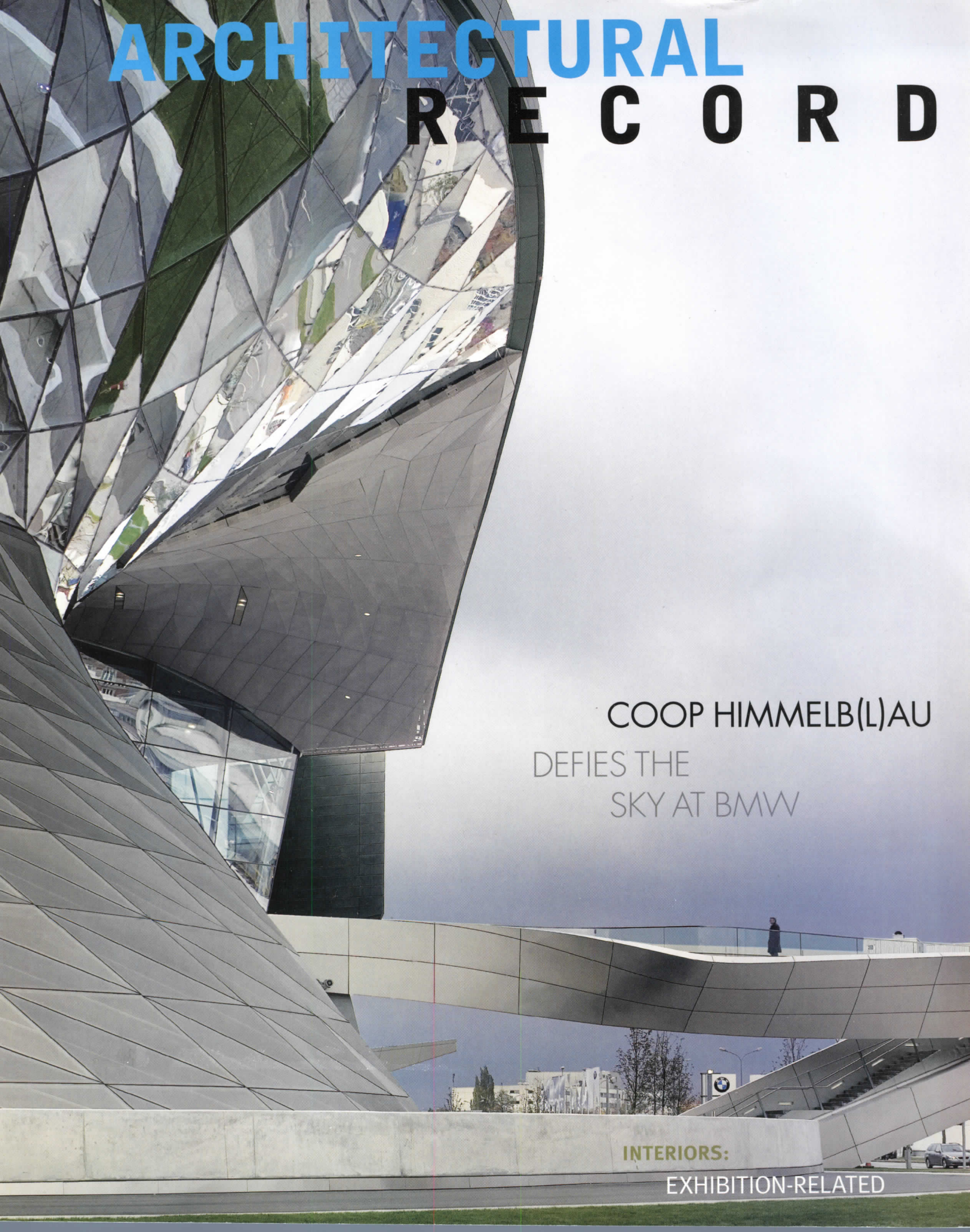

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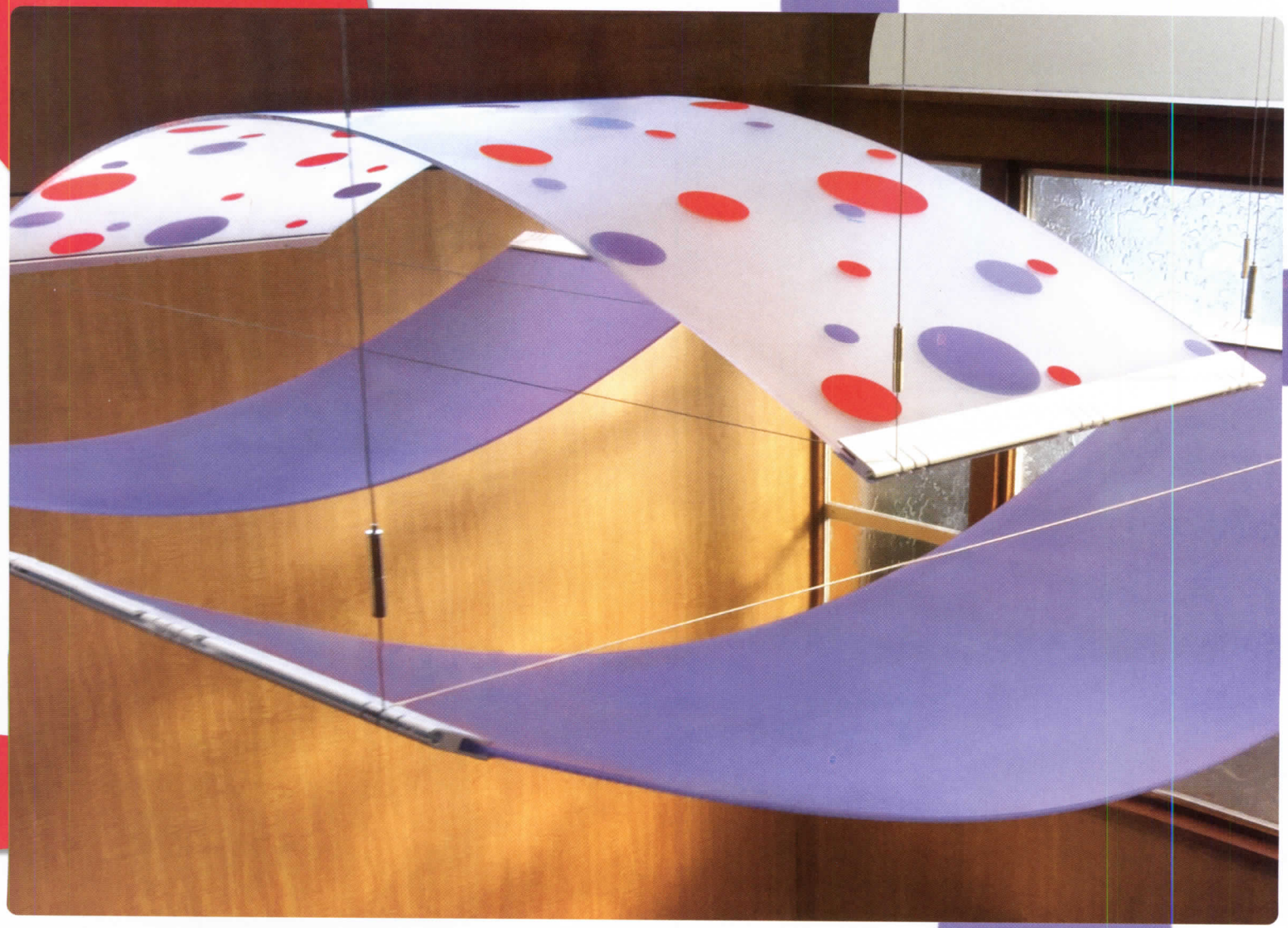

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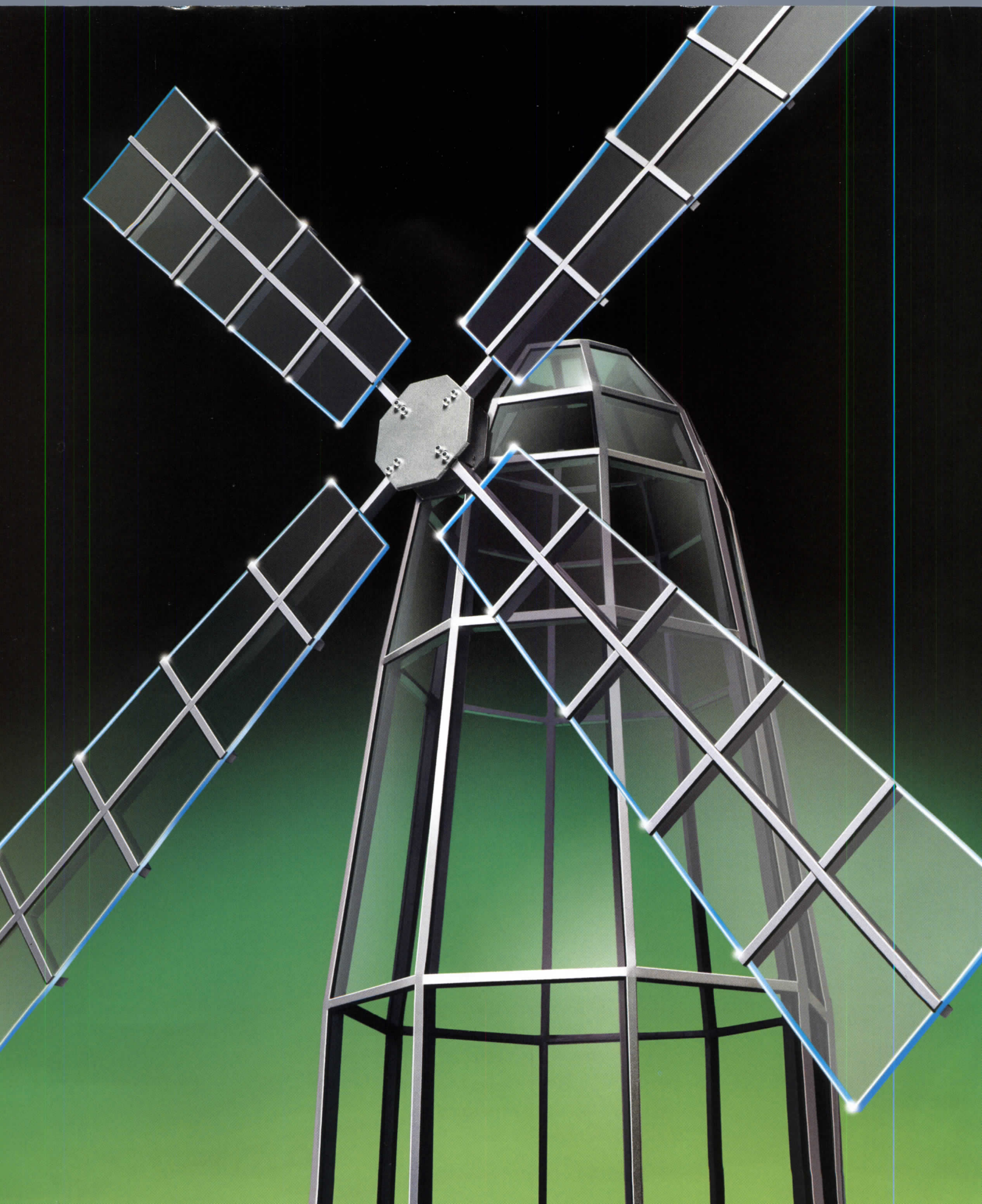

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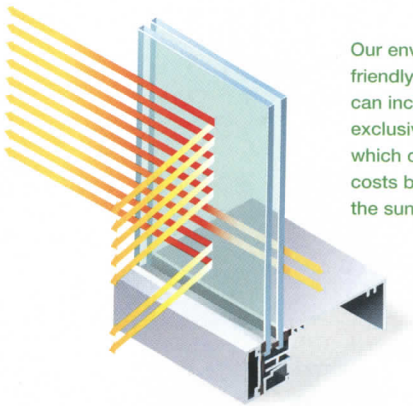

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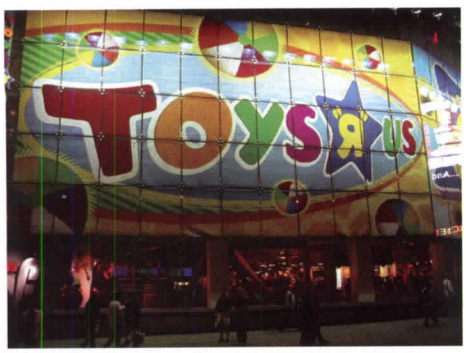

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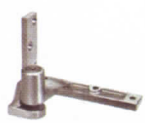

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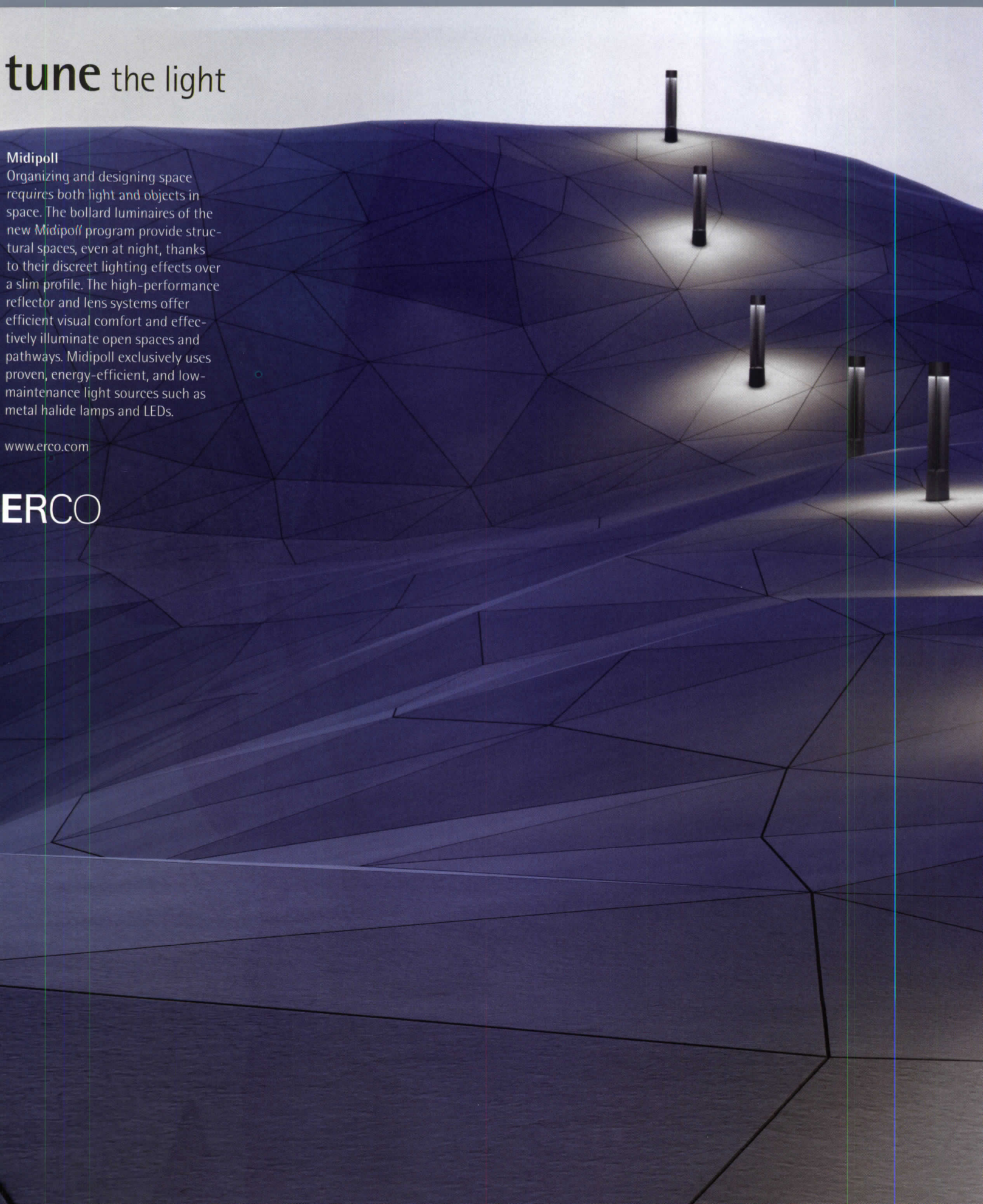

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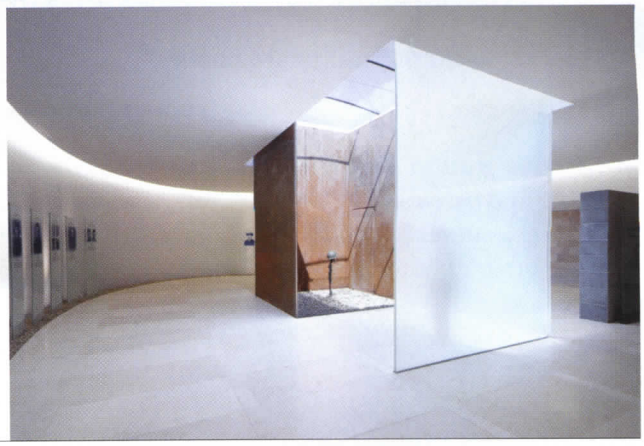

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museums

This month, we offer dynamic online coverage of extraordinary museums across the globe. View slide shows of nine Web-exclusive projects, in addition to the seven projects featured in print, such as Foster+Partners' new courtyard for two Smithsonian museums (left). Plus, read product information, rate the buildings, and share your comments.

the new york times building

Visit us online to learn more about The New York Times Building (left), published in our February print issue. View a slide show and read Web-only stories about the $1 billion project, designed by Renzo Piano and FXFOWLE. We also present three videos, one of which features an interview with Piano.

multimedia

Check out our growing list of multimedia offerings, from slide shows to audio interviews to videos. Recent additions to our video library include an interview with sculptor Dennis Oppenheim, who comments on his favorite New York City structures, including the Ziggurat Building (left).

community

photo gallery

View thousands of images submitted by readers from all over the world in 10 categories, such as the Architectural Photographers Showcase (above). You can also send us your own photos at construction.com/community/gallerylist.aspx.

blogs

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forums

Your voice matters—and we have provided you with the ideal forum to express your ideas, suggestions, and gripes. Our discussion forums include such topics as Green Building Projects, Virtual Design, Practice Matters, and a forum for younger architects. You can also create your own discussion threads.

comments

"One can justify a design all day long, but at the end of the day, you have to ask: Do I like it? This one is definitely hard to like, even if it may serve the functional needs of its occupants."

and more ...

residential: house of the month

Designed for grandparents, parents, and three children—and a caregiver and her husband—the Ravine Residence (below) in Toronto, by Cindy Rendely Architexture, pulls off comfort, privacy, and community, while reflecting the Modern design aesthetic of the owners.

archrecord2

View Web-exclusive slide shows featuring the work of two emerging firms. Architect Matthew Bremer is completing sophisticated commercial and residential projects on the East Coast, while the five-member Situ Studio (below) is mixing architecture with geology, biology, and more.

continuing education

Visit our Continuing Education center, where you can read articles and take tests online to earn credits. This month, learn about projects (such as the Solar Decathlon House, below) that integrate renewable-energy strategies without compromising design.

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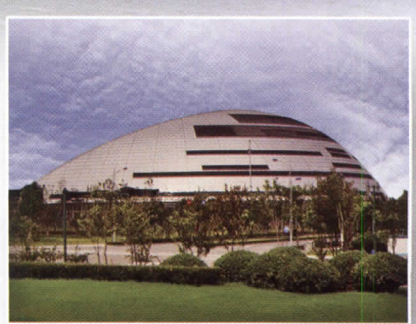

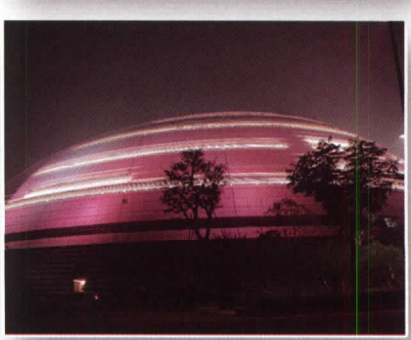

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What is your perception?

Editorial

By Robert Ivy, FAIA

At a time in which hard news has been taken over by reality shows and the E! mentality, why should you care how your architectural journalists conduct themselves? If, however, you've been assaulted by public relations cleverly masquerading as real content, or found that a user-rating Web site had been cleverly sabotaged by competitors, or gotten hooked by a blogger who turned out to be a nutburger, you might assume a more critical view of the state of the media. In the wide-open millennium, who can you trust?

ARCHITECTURAL RECORD *does not say, "Trust me." We are not that naive. However, we, like our sister McGraw-Hill publications, subscribe to trusted principles that govern our behavior for our print publications, our Web sites, and our journalists, wherever they appear. Not foolproof (remember* The New York Times*'s reporter Jayson Blair, whose journalistic sleights of hand almost single-handedly reduced the public's perception of journalism to rubble, despite stringent codes of ethics), nevertheless, the ethical framework established by organizations that we subscribe to broadly agree on the underlying rationale and behaviors that create believability for you, the reader.*

As trite or downright corny as it might sound, journalism in this shared family of specific values seeks to get at and present the truth as closely and clearly as humanly possible. Overall, we subscribe to the "separation of Church and State," a widely accepted set of practices that keeps the commercial interests of our publications separate from, or in healthy tension with, our journalistic efforts. We editors retain editorial autonomy, despite our friendly affiliations and healthy relationships with associations, advertisers, and trade groups. That leaves us free to tell you what we know and what we think. When you pick up this magazine or fire up our Web site, here's what you can expect:

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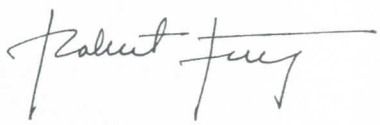


Letters

Save the spiral

There are some significant layers of irony associated with Pearl Montana Exploration and Production's plan to drill for oil within threatening distance of Robert Smithson's iconic *Spiral Jetty* [Record News online, February 12, 2008, "Oil Drilling Threatens Smithson's Spiral Jetty"]. Smithson was deeply concerned with the theory of entropy—referring to the degradation of matter and energy in the universe. In the early 1970s, he felt that one of the aesthetic missions of art was to be reclaimed by the earth—listing the *Spiral Jetty* as among those works conceived with this inevitable fate in mind.

Yet, as many believe [see story on page 34], this magnificent example of environmental art should surely be preserved as a beacon in a world where denial of the environment has accelerated the doom of the entire planet.

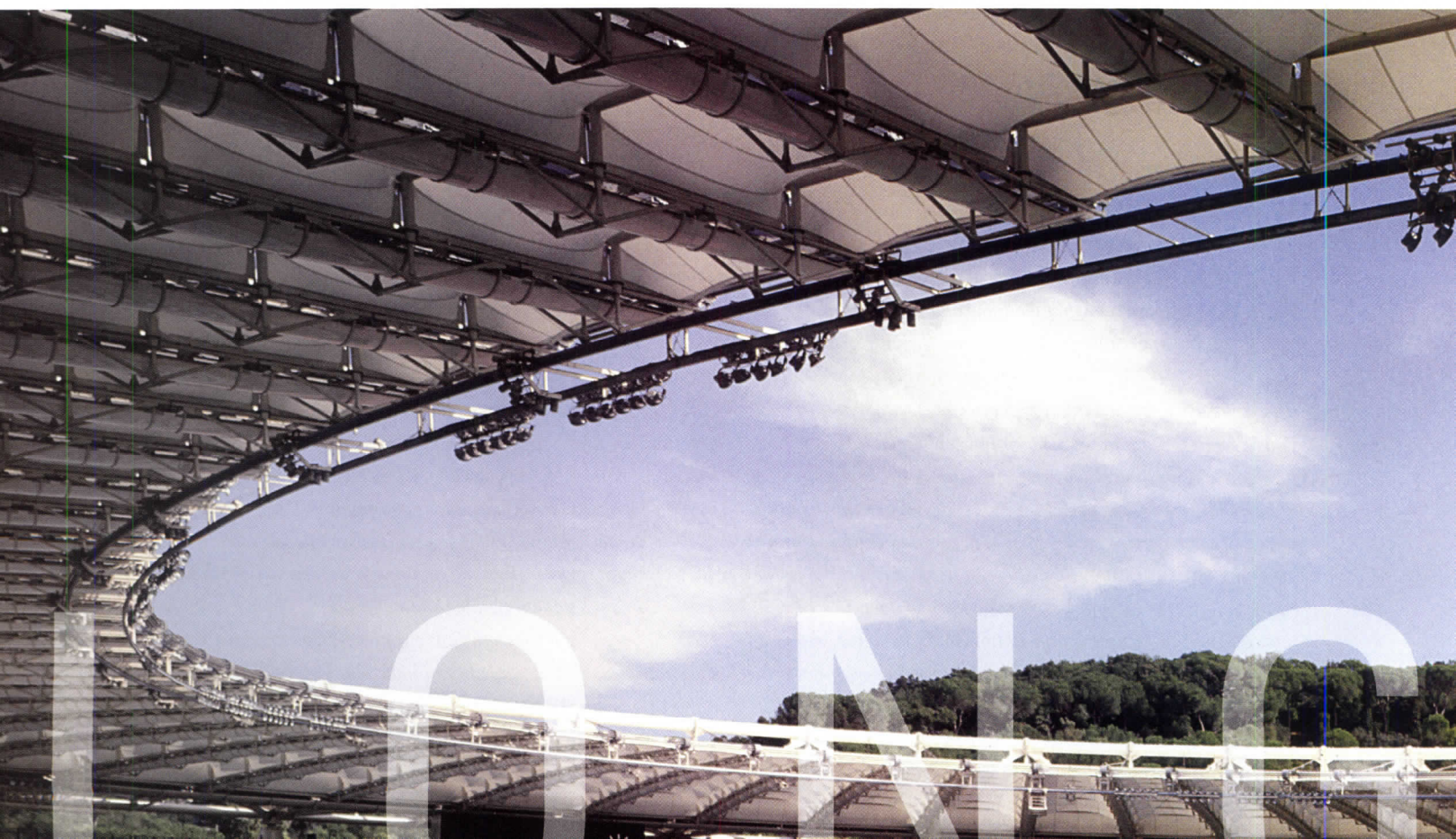
But another reason to protect the *Spiral Jetty* is its educational value to architects. In a profession where inflated budgets, profligate consumption of resources, and the malaise of commodity thinking are endemic, there is much to be gained from Smithson's ethically and aesthetically profound commitment to minimalism. Also, as an intellectually hermetic profession, architecture needs to expand its sources of content to absorb ideas from all of the arts, sciences, and humanities—as the inclusive quality of Smithson's art so eloquently attests. Finally, the *Spiral Jetty* should be preserved, studied, and revered simply because it is one of the few great works of public art in the American landscape.
—James Wines
Manhattan

Towers of wisdom

Thanks once again to Robert Ivy for writing an editorial of clarity, intelligence, and strength. His recent celebration of Renzo Piano's New York Times building [January 2008, "Piano Nobile," page 21] was spot on. Interestingly, Robert Campbell's critique of the Hearst Tower in the same issue [page 47] is a telling counterpoint to Ivy's.

What these two critiques point out is that style is less important than architectural qualities of proportion, scale, beauty and, dare I say it, respect for context. The unfortunate rift between extreme stylistic factions who debate whether the most important thing a building can denote is where it is built ("traditionalists") versus when it is built ("zeitgeist-ists") misses the point of what makes good places. Like extreme religious groups, these hardcore traditionalists or hardcore zeitgeist-ists can't seem to see that there can be a middle ground of excellence that is both respectful and inventive.
—Adam A. Gross, FAIA
Baltimore, M.D.

I found Robert Campbell's critique on Foster's Hearst Tower to be spot on. He eloquently conveyed my impressions on the edifice, and his "straight-from-the-sketchbook" suspicions were nothing short of clairvoyant. I consider the current emphasis on artistic signature (by Gehry, et al) over more germane sensibilities rather



tragic. A complete disregard for immediate environment, in this case the six-story base of Hearst Tower (a new form of Brutalism perhaps?), suggests, to my mind, superciliousness. One wonders whether our planet's delicate ecosystem can afford such luxuries as unbridled ego? Let's spare a thought. I believe Foster + Partners has successfully composed architecture's latest rhapsody (or cacophony, if you must). As for a nickname, how about "Corkscrew"?
—Claude Opara
Lagos, Nigeria

By Robert Campbell's own admission, he has "no real idea how Foster works." He should have bothered to find out from the man himself, or from the many publications of interviews with Lord Foster. Campbell's so-called "Critique" conveys second-guessing and a taste of pickles with little intellectual significance.
—Peter T. Kou
Via e-mail

More on the war

I would like to compliment Charles Linn, FAIA, and thank him for the excellent piece on the Liberty Memorial and World War I Museum [February 2008, page 106]. It is truly a remarkable project, and it is good to see it receiving the recognition and publication it so deserves. I have seen ASAI Architecture's Steve Abend speak several times on this project; he has encyclopedic knowledge about it and its history and significance. Furthermore, he has an equally intense passion for the project's legacy, for Kansas City, and our country. His keen interest is apparent in the quality, creativity, and flawless detail of the project.
Charles S. Cassias, Jr., FAIA
Kansas City, Mo.

Quonset memories

Your article on the Quonset hut office project I read in my husband's latest copy of RECORD [February 2008, "El dorado Architects rethink the Quonset hut to enliven simple, new offices for the Hodgdon Powder Company in rural Kansas," page 134] brought back old memories for me. The Quonset hut in the magazine is a far cry from the one I lived in for a few months when I was a child. My father was in the Navy, stationed at Long Beach, back in the early '50s. I remember very cramped and dismal quarters. Once, when it rained really hard, the water poured in the vent over the door. My mother likes to tell the story of the time she saw a number of us children lying on the ground watching something under one of the huts. When she investigated, she discovered we were engrossed in the activities of the rats living there! Ah, those were the days. The office complex in the article is indeed lovely and looks very comfortable and airy. I guess a good designer can make just about anything livable. Thanks for the trip down memory lane.
Suzanne Seaman
Sacramento

Corrections:

In a February 2008 story on the Cesar Chavez Library [page 152], the photo on page 152 was by Johnny Birkinbine, while the photos on page 153 were by Bill Timmerman. The photo of the Bowdoin Museum of Art [February 2008, page 124, top right] was by Dan Gair/Blind Dog Photo. In the credits list for the project story about the Gary Comer Youth Center in Chicago [February 2008, page 114], the name of Brian Malady, one of the project architects, was misspelled. Information on one of the charts included in the story about postoccupancy evaluations [February 2008, page 161] was incorrect. In the graph showing satisfaction with thermal comfort, the mean scores for LEED buildings and noncertified buildings were swapped. LEED buildings actually received a mean satisfaction score of 0.96, while that for noncertified buildings was 0.43.

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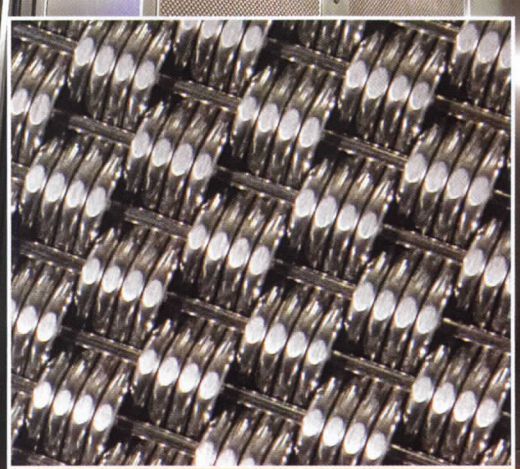

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MoMA to get towering neighbor

The Museum of Modern Art (MoMA), in New York City, is getting a surprisingly tall and stunningly slender neighbor. Real estate developer Hines is planning a 75-story tower designed by Ateliers Jean Nouvel for a narrow, 17,000-square-foot site just west of the museum. When complete, the building is expected to rise nearly as high as the 1,047-foot-tall Chrysler Building.

Hines purchased the land parcel from MoMA for $125 million in January 2007. As part of a complicated deal, the museum will be allowed to expand into the second, fourth, and fifth floors of the new building, giving it an additional 50,000 square feet of exhibition space to add to its existing 125,000 square feet. Construction could start in mid-2009 and finish in 2012.

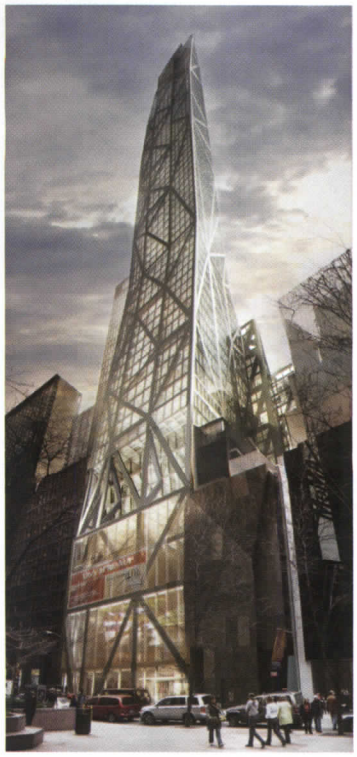
Nouvel proposes a glass-clad tower exuberantly crisscrossed with steel framing. The structure slopes gradually away from 53rd and 54th Streets as it rises. To generate this irregular shape, the design team essentially extruded the entire site but lopped off tall, triangular wedges on each side to comply with parcel limits and setbacks. The steel follows "the simplest and most economical geometry," according to the design proposal, while the glazing respects standard glass dimensions. The proposal also calls for solar panels and wind turbines to fill the top of the spire; no word yet, though, on whether Hines will pursue a LEED rating for the project.

Inside, the building will feature a sunken restaurant as well as a bridge connecting entrances on 53rd Street and 54th Street. In addition to MoMA's stake, Hines has earmarked space for a 100-room luxury hotel and 120 high-end condominiums.

Hines reviewed proposals from a handful of architects before awarding the commission to Nouvel in November. The developer has also worked with him on the 40 Mercer condos in SoHo and the C1 Tower in Paris. "Jean's general direction was the most compelling," says David Penick, Hines's managing partner for the project. "We also feel that there's a good story about his design idea, which will support the approval process. That story is basically that the form of the building is inspired by the allowable zoning."

So far the tower has met with mixed public reactions. While some observers, such as *The New York Times*'s Nicolai Ouroussoff, welcome its addition to the Manhattan skyline, others, including Bloomberg's James S. Russell, suggest that the building is too big for its site—even if it conforms to zoning.

According to Penick, the tower "is consistent with the underlying zoning of the block. We're not creating any new bonus or any new source of air rights." In any case, suggesting a tall building doesn't belong in Midtown is a difficult argument. "It's certainly a big building in the context of neighboring buildings—some are larger, some are smaller—but in the overall scheme of things, it seems appropriate." *Tim McKeough*



Nouvel's novel Midtown tower.

Stern's 99 Church Street to soar near WTC site

Robert A.M. Stern Architects and Silverstein Properties unveiled plans in January for what could be New York City's tallest residential building: an 80-story, 912-foot-tall tower at 99 Church Street, one block east of the World Trade Center site. A 175-room Four Seasons hotel will occupy the lower 22 stories with 143 luxury condominiums in the upper floors.

In a statement released by Silverstein's office, Stern said that his tower will "counterpoint the glass-and-steel office towers that Larry Silverstein and his organization are building along Greenwich Street." His own high-rise will be clad in limestone and cast-stone panels, lending it an appearance similar to that of the landmark Woolworth Building, designed by Cass Gilbert that opened in 1913, one block west. But some observers worry that 99 Church Street might overshadow its historic neighbor. Sharing this concern, *New York Times* reporter David W. Dunlap wrote in a January 29 blog that the 792-foot-tall Woolworth "will never soar the same."

Silverstein expects to begin construction on the tower this June and finish by 2011. He has expressed his hope that 99 Church Street will boost the ongoing recovery of Lower Manhattan, where he is developing four other skyscrapers, including the Freedom Tower.

Stern shares this sentiment, but he seems to favor an odd choice of metaphors. "I never thought when I was growing up in New York that I'd get to design a building taller than the Woolworth Building," Stern told *New York* magazine in January. "That makes for sleepless nights and exciting mornings—I'm like a guy on the Titanic, and I just hope we don't crash." *James Murdock*

Will 99 Church St. (center) overshadow the Woolworth Building (far left)?

IMAGES: COURTESY ATELIERS JEAN NOUVEL (TOP TWO); DBOX/SILVERSTEIN PROPERTIES (BOTTOM)

Changes requested as cries against PGCC grow

Critics say this is how PGCC might look when built. Asymptote's towers are at the top left.

As public opposition mounts against the Penang Global City Complex (PGCC), a massive redevelopment scheme in Malaysia, chief minister Dr. Koh Tsu Koon, head of the state of Penang, has requested revisions from the developer, Equine Capital subsidiary Abad Naluri.

PGCC will be located on the former Penang Turf Club site, an open greenfield once popular for horse racing and golf. At issue is a dense urban component of the 256-acre mixed-use project: some 36 towers, each rising 40 stories, at a proposed densities of 36 units per acre and 54 units per acre. Currently the site is zoned for only 6 units per acre. Ateliers Seraji Architects & Associates, a Paris-based firm, is the master planner for the development, which it describes as a metropolitan-garden city.

The $7 billion project is expected to be a catalyst for a multi-billion-dollar government initiative, the Northern Corridor Economic Region, which aims to heighten Penang's role in the global economy. But according to Nicholas Risteen, a designer with Seraji, the controversial 36 towers were not a part of the original plan. "The developers needed to meet the bottom line," he says.

Many Penangites are apprehensive about the impact that the large-scale development might have on an already troublesome traffic problem. The developer claims the PGCC will be carbon neutral, but an Environmental Impact Assessment has not been completed, and members of the Anti-PGCC Campaign express concern over losing one of the last open spaces in Penang to this massive project. The current proposal also falls short of meeting affordable-housing requirements. A dozen nongovernmental organizations have joined forces as the "Anti-PGCC Campaign" to oppose the project. In addition to holding rallies, the groups led an effort that resulted in more than 2,500 postcards being sent to Dr. Koh.

In response, Dr. Koh has requested that developer Abad Naluri revise the PGCC plans to meet the zoning and affordable-housing allotments, and address public concerns of traffic and pollution. Ahmad Chik, a councilmember of the Penang Heritage Trust, one of the leading organizations in the Anti-PGCC Campaign, says that his group will continue its efforts against the project even in light of the chief minister's actions. "The general elections will be held (soon), and Dr. Koh is having to answer for some very bad development decisions. We certainly do not intend to stop here," he says.

Calls to the developer were not returned. But Equine Capital's executive chairman, Patrick Lim, told *The Edge Daily*, a Malaysian business publication, that he remains committed to the development: "It is our intention that the project not only complies fully with all statutory requirements, but that it is also beneficial to all stakeholders."

One element of the PGCC that does not appear to be in flux now is the project's centerpiece, designed by the New York–based firm Asymptote [RECORD, December 2007, page 32]. Renderings released last year showed two sinuous, 60-story steel-and-glass-clad towers encompassing 11 million square feet of luxury residences, hotels, a performing arts center, a convention center, offices, and shops. "I understand the master plan is going through many changes in response to the questions raised," says Hani Rashid, a principal of Asymptote. "Nothing on our project has been deemed controversial. Therefore, no changes have been asked of us."

The Anti-PGCC Campaign had hoped that Dr. Koh would request that the current greenfield be left open as a public space. "Sadly, that is not likely to happen," Chik says. "There is a wide gulf between our expectations and that of the developer. We expect a tough fight." *Rebecca Ward*

Rogers treading water on N.Y.C. riverfronts

Frank Gehry has one, so do Jean Nouvel and Norman Foster. Renzo Piano has two. But in January, when New York's governor scrapped a convention-center expansion project, Richard Rogers—who joined Piano in electrifying Paris with the Pompidou Center during the early 1970s—remained a Pritzker Prize winner who has worked in New York City without a finished project to show for it.

The project was an expansion of I.M. Pei's 1986 Jacob K. Javits Convention Center, nearly doubling its 790,000 square feet of exhibition space and creating a promenade along the Hudson River. Since Rogers's scheme was unveiled in

ballooned twofold to $3.2 billion—prompting Governor Eliot Spitzer to cancel it in favor of a more modest 100,000-square-foot addition that will stay within the original budget.

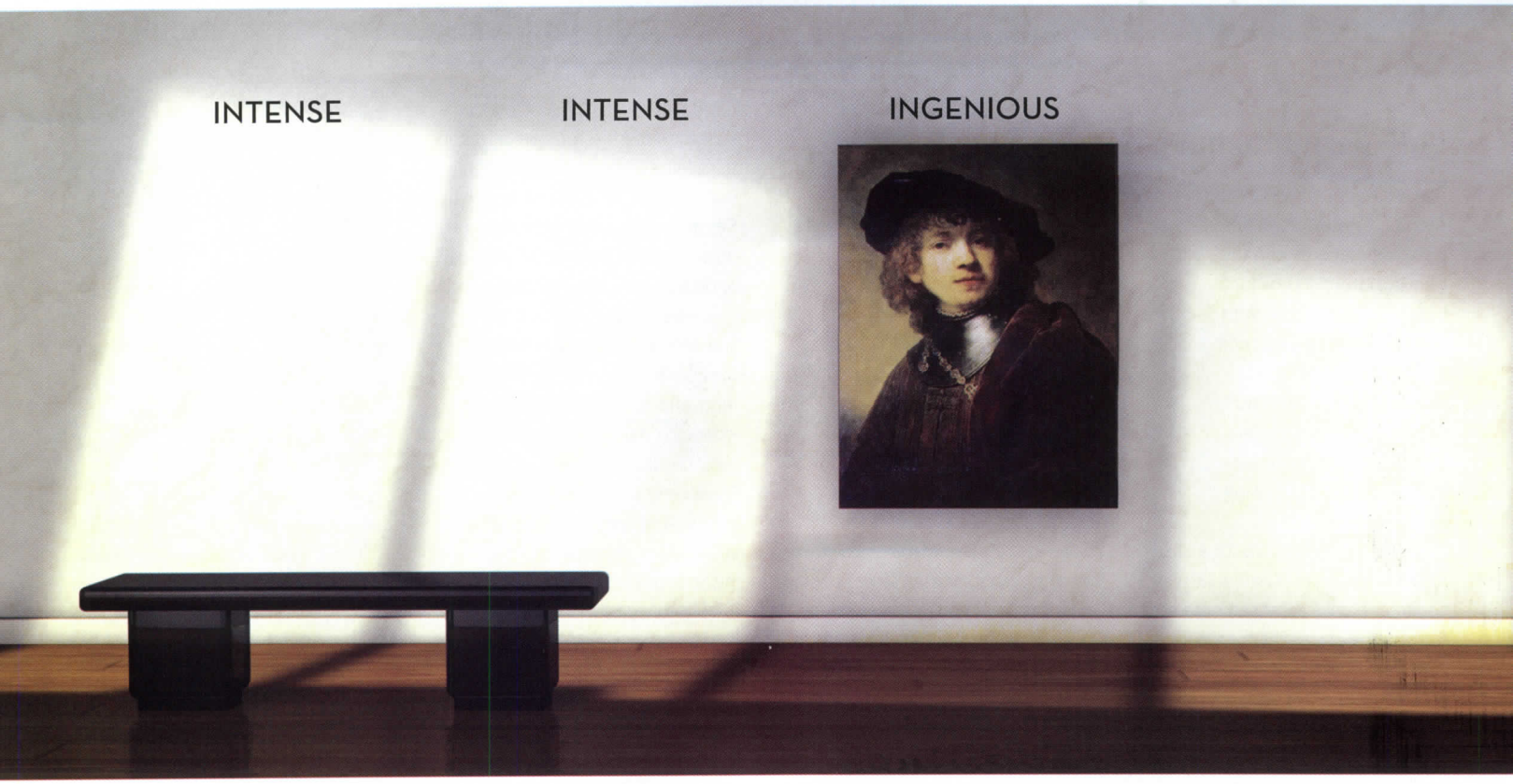
The Javits expansion was one of three long-gestating developments that would have brought Rogers's grand waterfront promenades to the Big Apple's skuzzy edges. In 2005, he co-led a study for a city-sponsored project to liven downtown Manhattan's South Street waterfront on the East River. And in 2006, the city approved his design for residences, retail, and film-production facilities at Silvercup Studios on the river's opposite bank, in Queens.

could still happen—some day, in some form. At Javits, Rogers and FXFOWLE will remain at work on the smaller expansion under an amended contract, according to an Empire State Development Corporation spokesperson. At South Street, meanwhile, Rogers decided against bidding to work on the actual design of the $150 million project, which local partner SHoP Architects and Ken Smith Landscape Architects are executing this year. "I don't think it was a very large project for them," says SHoP partner Gregg Pasquarelli. And in Queens, Silvercup still champions Rogers' plan for a new district called Silvercup West—but the project was delayed a year while the studio waited to test the soil under-

Should Rogers feel accursed? Not necessarily. Pasquarelli says that fits and starts come with the territory for anyone who works at such a large scale. "That's the nature of design at the highest level. A lot of projects don't move forward. You only notice because Rogers is at such a high caliber and everyone was excited about what he was going to do."

As it happens, Rogers may get a gleaming tower before any of his waterfront esplanades open: he is one of three architects, along with Norman Foster and Fumihiko Maki, who have designed towers for the World Trade Center site. Developer Larry Silverstein has promised that excavation work will begin this winter, keeping pace for a 2012

IMAGE: COURTESY ANTI-PGCC CAMPAIGN



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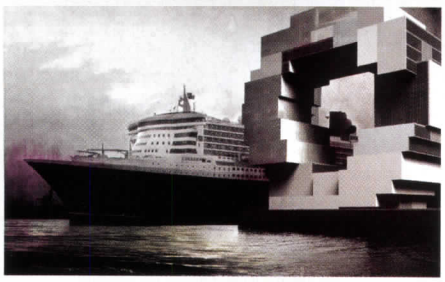
OMA design to buoy Hamburg's waterfront

The Office for Metropolitan Architecture (OMA) has unveiled plans to cap the reinvention of a German industrial waterfront with an aquarium and science center. The project in Hamburg's new HafenCity district aims to elevate street life while addressing the prospect of rising sea levels.

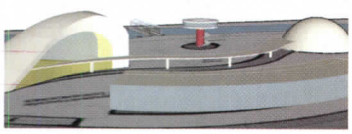


Does the *O* stand for OMA, perhaps?

OMA's design calls for a structure composed of 10 modular concrete blocks arranged on a slip to resemble a colossal but motionless wheel—or a life preserver. The 253,000-square-foot building will contain an aquarium and water-themed exhibitions as well as research labs. Its concrete skin will be covered in a glaze, the details of which are being fine-tuned, to catch reflections of sunlight off the water. "The idea was not to have an enclosed glass box," says project architect Marc Paulin. "This big stone arch doesn't have to show off." A grand stair will provide access from a public plaza in the arch down to the waterline, 20 feet below—a distance meant to safeguard against flooding.

Construction is expected to begin in 2009 and finish by 2011. Neither the architect nor the developer is disclosing project costs. A public/private partnership chose OMA to master plan the 383-acre HafenCity site in 2004. The aquarium and science center will occupy a cultural district that includes a concert hall by Herzog & de Meuron and a hotel and cruise ship terminal by Massimiliano Fuksas. HafenCity's other key elements include office space and 5,500 new residential units. *Alec Appelbaum*

Work to begin on Niemeyer's newest building



Design that's a century in the making.

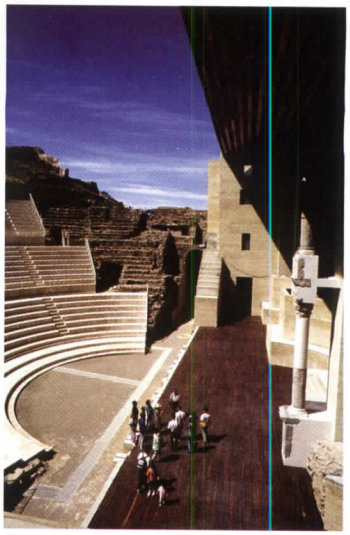
Legendary Brazilian architect Oscar Niemeyer, who celebrated his 100th birthday in December, is still hard at work. This month he hopes to travel to Spain's northern coast to see the first brick laid at the Centro Cultural de Aviles, a $45 million arts center. Niemeyer says that the design, which includes his trademark curves, will be one of his most beautiful yet.

The complex includes two buildings surrounded by an outdoor plaza. One structure will house a museum and meeting facilities; it will be formed of a serpentine-shaped concrete structure housing a 1,000-seat conference hall as well as an art gallery with 65.5-foot-tall ceilings. The second building will include smaller galleries, a movie theater, restaurant, observatory tower, and additional meeting rooms.

The complex is located in a 1950s industrial port that has since fallen into decay. Supporters hope that, when finished in 2010, it will produce a "Bilbao Effect" that raises Aviles' international profile. Niemeyer began working on the project pro bono as a gift to the city in 2005, the 25th anniversary of his receiving the Prince of Asturias Prize in Aviles. *Dianna Dilworth*

Case tests limit of Spanish preservation law

Spain's highest court has upheld the decision in a 17-year-old case that requires the removal of a controversial 1993 restoration of a Roman theater in the coastal city of Sagunto. The ruling establishes the outer limits of that country's flexible approach to historic preservation.



It's curtains for this theater revamp.

The theater was built during the first century A.D. on a hillside that overlooks the modern town. During renovations, which were commissioned by the regional government of Valencia, Italian architect Giorgio Grassi and local architect Manuel Portaceli covered the worn local stone of the *cavaea*, or theater seating, in a shell of marble. They also rebuilt the *scanea*, or stage house, based on archaeological conjectures about its original form, incorporating fragments of its moldings and columns into the brick fabric.

In 1990, while the $4.7 million project was under construction, Juan Marco Molines, a member of what was then the opposition party of the regional government, filed a case against it. Molines claimed that he was acting on behalf the public interest, but many observers suspected that his move was politically motivated. A local court ruled in 1993 that the project violated Spain's Law of Historic Patrimony, which forbids the reconstruction of listed structures except to assure their stability and maintenance. A second decision in 2003, ruling that the restoration should be removed within 18 months, was appealed by the City of Sagunto. The latest verdict upholds the earlier decision. Demolition is estimated to cost between $4.5 million and $9 million.

Grassi and Portaceli, in 1993, defended their design as a restoration not of the theater itself but of its original space, primarily the relationship between the *cavea* and *scaena*. They said that previous interventions had distorted this relationship by bringing the stage closer to Greek models—and that earlier restorations, which date as far back as the third century A.D., were cent of the theater's extant remains. By contrast, their design clearly distinguished new elements from old, as required by law, and was reversible: The *cavea*, for instance, was coved with a plastic net to protect it from full adhesion to the mortar of the new seating.

Monuments in Spain are frequently adapted for new uses by architects with no special training in the field of preservation, but instruction in conservation techniques and education about the different degrees of intervention permitted by law are basic to every architect's training. As a result, Spanish architects generally demonstrate sensitivity and respect for their country's cultural heritage—even when adding contemporary elements onto historic structures.

Spain's liberal approach to preservation has great advantages, allowing projects such as Rafael Moneo's incorporation of a ruined 17th century cloister into his extension of Madrid's Prado Museum (page 118). But the law establishes clear limits to the degree to which monuments can be adapted for new uses, depending on their importance, state of conservation, and suitability. According to the latest court case regarding the Roman theater in Sagunto, Grassi and Portaceli upset this careful balance.

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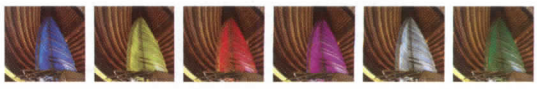

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Ride over for Houston's Carousel House

The Cohen residence, shortly before demolition.

In the early 1960s, as NASA opened its Spacecraft Center and the Astros constructed the Astrodome, Houston experienced a building boom with Mies van der Rohe and Phillip Johnson producing rigorously Modern structures. But innovative design wasn't the exclusive purview of world-famous architects. A store designer and shipbuilder created the Carousel House, which combined the era's exuberance with the aesthetic of Modernism.

"It was his dream," says Jean Cohen of the 1963 residence designed by her husband, Bob. Its most distinctive feature was a circular living room with a pleated roof and round central skylight. Although it became known as a Mod marvel, the house no longer exists: A new owner demolished it this winter.

The fate of the Carousel House is hardly unique in Houston. Historic preservationists say that Modern masterpieces are at risk in a town more concerned with land values than legacy, while developers claim the city is championing individual property rights. Houston is the largest city in the U.S. without any zoning. Residents have repeatedly voted down such measures in the belief they might stifle growth.

After 40 years in their house, the Cohens moved to an apartment in 2003. Attorney John O'Quinn purchased the property to be inhabited by Zev Isgur, an ex-con who was in charge of managing his classic car collection. But Isgur played fast and loose with his boss's money—29 cars and $1.3 million went missing—and in 2005, he was sentenced to 25 years in prison. The Carousel House, meanwhile, sat vacant and soon became full of mold.

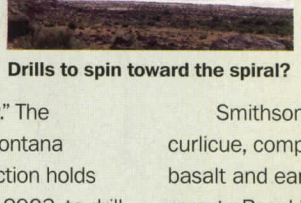
Enter Marvin Granit, who bought the property in September 2007. Word quickly circulated that he intended to demolish it. The house's admirers were horrified, but there was little that they could do since the residence was not a designated landmark, nor was it located in a historic district. Besides, many preservationists consider the city's preservation ordinance to be weak because it rarely prevents demolition. "It's the state of mind in Houston: People don't respect anything that's there," says Stephen Fox, a local architectural historian.

Granit went ahead with demolition. "This is not a socialist country where someone can come in and say, this is what you do with your house," he explains.

Preservationists are saddened but resigned. Although they can point to some successes—a 1950 house designed by Hugo Neuhaus was recently restored by former U.S. secretary of energy Robert Mosbacher and his wife—more common is the fate of the Carousel House, which is "just one in a parade of houses that have been destroyed," says Houston Mod president Ben Koush.

Granit counters that most of Houston's Modern residences are located in increasingly valuable central neighborhoods. "From a builder's point of view, by buying these expensive lots and building new, you're improving the tax base," he says. At the end of the day, it seems that the argument reflects the character of the city. Houston was focused on the future in 1963 and it maintains that focus today. *Elizabeth Lunday*

Oil drilling might threaten Smithson's Jetty



Drills to spin toward the spiral?

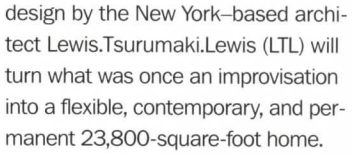
A proposal to drill for oil in Utah's Great Salt Lake could threaten artist Robert Smithson's monumental 1970 earthwork "Spiral Jetty." The Canadian firm Pearl Montana Exploration and Production holds three leases, dating to 2003, to drill exploratory boreholes near the iconic sculpture. At press time, the state was evaluating an application Pearl submitted in January to drill two wells from floating barges anchored to the lakebed. The state must honor mineral rights; drilling, if it's approved, could begin in months.

The move caught artists and conservationists off guard. The 1,500-foot-long Spiral Jetty was supposedly safeguarded under a 19-month-old settlement. In May 2006, preservation groups including Western Resource Advocates, the Sierra Club's Utah chapter, Friends of Great Salt Lake, and Great Salt Lake Audubon reached an agreement with the state that pulled back oil and gas leases in the northwest arm of the lake. The pact covered 116,000 acres, but left out 55,000 acres; Little Valley Harbor, five miles southwest of the Jetty, falls within the exempted area.

Smithson's 15-foot-wide curlicue, composed of 6,650 tons of basalt and earth, is located at the remote Rozel Point in Box Elder County. Rising water levels submerged the work in the 1980s, but it resurfaced in 1999. That same year the New York-based Dia Art Foundation acquired the Jetty as a gift from the artist's estate.

The sculpture embodies Smithson's exploration of entropy—a theme shared by James Wines and other architects during the 1970s. Although Wines admits to a certain irony that the work is now at risk, he wants it left alone: "Entropic inevitability and the author's purpose notwithstanding, this magnificent example of environmental art should be preserved as a beacon of culture and civilized values in a world where 200 years of industrialized denial of the environment has accelerated the doom of the entire planet." *Tony Illia*

LTL gets creative with Arthouse in Austin



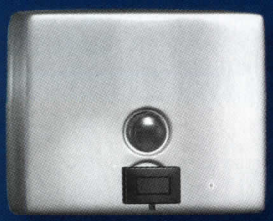
Shop windows to showcase art.

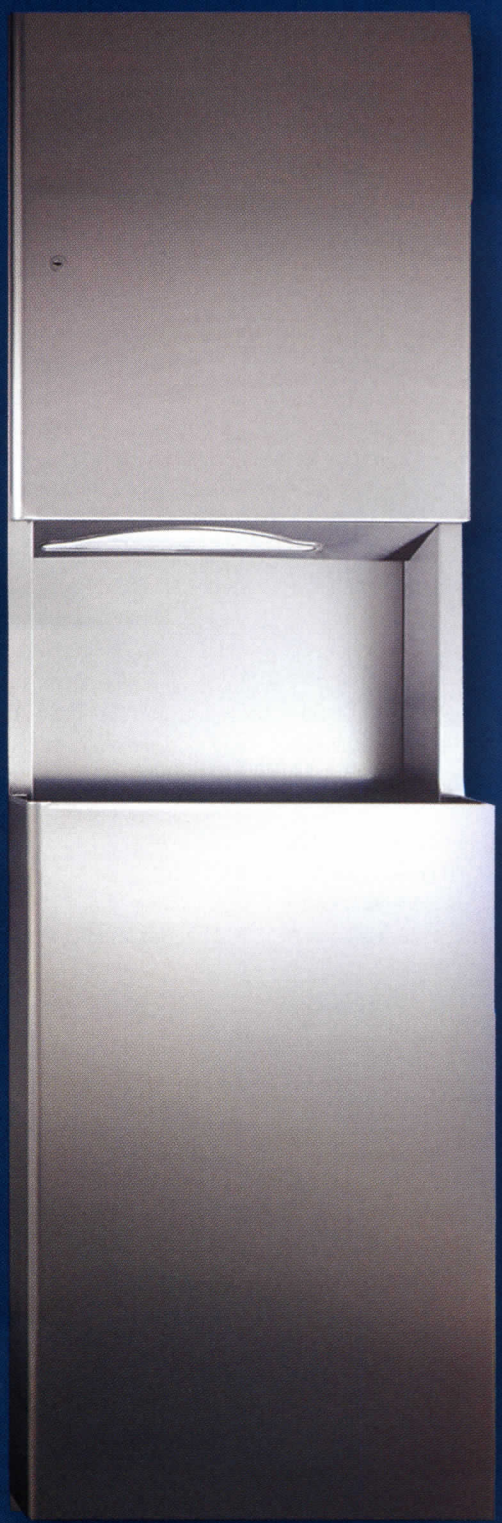
Arthouse, an organization based in Austin, Texas, that supports and exhibits contemporary Texan art, has been confined, since 1995, to a single-story space that was most recently a department store. But a design by the New York–based architect Lewis.Tsurumaki.Lewis (LTL) will turn what was once an improvisation into a flexible, contemporary, and permanent 23,800-square-foot home.

Constructed in the late 19th century, the Arthouse building was converted into a theater before becoming a Lerner's Department Store and finally the art center. LTL's design acknowledges the historical accretions. "It has gone through many changes, so rather than covering them up to start over, we wanted to make tactical additions to the building in order to amplify those changes," says Marc Tsurumaki.

Traces of the past will remain, including ornamental plaster and remnants of the theater balcony. The store display window will be enlarged and double as a projection screen visible from outside, and a stucco awning will be elongated. A new stair will provide access to a previously unused second floor, which will contain galleries, a screening room, studios, and offices. A new roof deck will allow for outdoor events. *John Gendall*

IMAGES: © BEN HILL (TOP LEFT); GIANFRANCO GORGONI/COLLECTION DIA ART FOUNDATION (TOP RIGHT); COURTESY LEWIS.TSURUMAKI.LEWIS (BOTTOM)





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Landscape and architecture firms grow closer

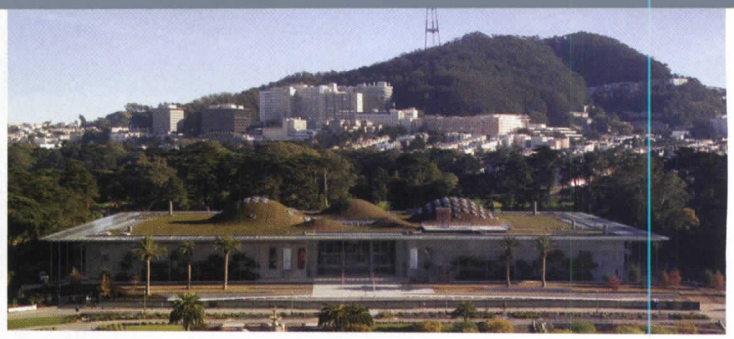
When SWA Group was brought in as the landscape architect for the California Academy of Sciences, located in San Francisco's Golden Gate Park, the challenge was to create one of the most efficient and sustainable buildings in the Bay Area. Renzo Piano's design called for a green roof that would essentially lift a piece of the park and place it atop the building: Seven earth mounds serving as a research facility.

"Implementing the architect's conceptual plan for the roof mounds was initially seen as a significant technical challenge because the planting surface was steeper than had been attempted before, almost 55 degrees at certain points," says John Loomis, a principal of SWA.

As architects attempt ever more ambitious feats with green projects, the collaborative relationship between members of a design team is becoming more important. Landscape architects, in particular, are taking on additional responsibilities. "It is not about just dressing something that the architect gives us," Loomis says. "We would always like to be in there right at the same time the architect starts on the project, if possible."

At the California Academy of Sciences, one of SWA's early ideas called for concentric earth rings that stepped down from the slopes. But these circular patterns ran counter to Piano's intent to maintain the grid of the building structure as an exposed reflection of the ceiling plan. SWA solved the problem by designing a semi-rigid framework that is laid across the roof to hold the sections of soil systems in place. It consists of a 24-foot grid of gabion curbs, which are linked wire baskets filled with volcanic scoria rock, and an interconnecting subsystem of epoxy-coated rebar, bound by reinforced-nylon strapping that maintains their alignment. "We had a lot of meetings about how to make that roof work," Lawrence Reed, a principal of SWA, says of the collaboration with Piano.

SWA also worked closely with BAR Architects at the National Audio-Visual Conservation Center, a former Federal Reserve System bunker in Culpepper, Virginia, that underwent a $155 million transformation into a 400,000-square-foot archive for the Library of Congress. BAR's design required two types of green roofs: a deeper one for the existing bunker, and a more conventional, shallow one for a new addition partially inserted into the hillside site. The 5.5-acre property harnesses the region's native plants and is insulated with 23 varieties of sedum to reduce HVAC usage and provide storm-water management. "We spent a lot of time refining plant lists and making sure we have the right material for the individual circumstance," Reed says.



Piano and SWA came together on the roof of California's Academy of Sciences.

Green roofs also require collaboration when it comes to drainage systems and repurposing storm water. Landscape firm Michael Van Valkenburgh Associates recently worked with Steven Holl Architects on the Whitney Water Treatment facility, in New Haven, to design a green roof that is as complex as the water-treatment center itself in its repurposing of storm water.

Holl's intention was to have a roof that collects rainwater, which could be routed back into the landscapes and planted area, as opposed to being directed into the piping and going into the storm drainage. "We would create the details that we thought would make the building more sustainable and present them to the architects," says Robert Rock, an associate at Van Valkenburgh, adding that the architects in turn presented the designs to structural and mechanical engineers.

Rock's design called for a roofing slab that acts like a shallow bathtub. On top of the slab is waterproofing, insulation, and a drainage mat that covers the structure and drains out to the roof's edges. Covering all of this is the drainage medium, a 4-inch layer of ⅜-inch pea gravel. As water trickles through the surface soil, it passes into the granular layer that has larger pore spaces between the particles, where it can be stored until it is absorbed by the plants. Above the gravel are six to 8 inches of soil mixed with vermiculite and Perelite, which helps lighten its load. Water trickles through the roof then drains to the perimeter, where it is reintegrated into the site.

As the environmental details of sites become more integrated into architectural design, be it to store water or to absorb the impact of a large building, landscapes are becoming a major part of architecture. And as green roofs continue to blossom, the relationship between architect and landscape architect is sure to do the same. *Dianna Dilworth*

3XN turns a brownfield into a green roof

A brownfield in Norway will be going green, literally, thanks to a new master plan that calls for a rolling green roof to shelter a new cultural center. The Danish architecture firm 3XN beat out Henning Larsen Architects, Niels Torp, L2 Arkitekter, and IN'BY LPO Arlitektur and Design in an invited competition to redevelop a former industrial waterfront known as Nedre Malmø, in the town of Mandal.

The $30 million complex, developed by a municipal organization, will stand on the eastern bank of the River Mandal. The 3XN designers divided the 6-acre site into sections containing a cultural hall, housing, and a hotel. In plan, the dividing lines produce a shape that resembles "a flower coming out toward the water," says Kim Herforth Nielsen, 3XN's founding architect. "We cut up the first lines for the cultural building, and moved it up like a carpet, and created this space [underneath]."

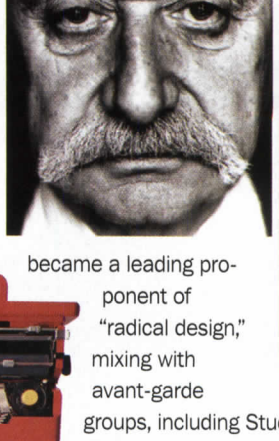
Called Buen, or "The Arch," the cultural center creates a rise in the landscape that reaches 46 feet at its highest point. The two-story, 48,500-square-foot building includes a public library, concert and theater halls, cinema, gallery, and a music school. Compared to the curvier, more sensuously designed exterior, the interior layout will be rectilinear.

Mandal's Buen cultural center building, with its rolling green roof, will be flanked by row houses.

The master plan also includes 80 housing units in rows of four-story buildings, a 150-room luxury hotel, and a pedestrian and bike-friendly road system. A new 525-foot-long bridge, also designed by 3XN, will link the redevelopment site to the town center on the opposite river bank. Construction is expected to begin in early 2009 and finish by 2011. *Robert Such*

IMAGES: COURTESY SWA GROUP (TOP); 3XN (BOTTOM)

Sottsass, 90, elder statesman of Italian design

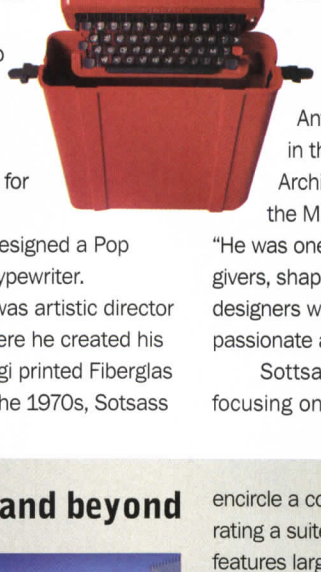


Ettore Sottsass (left) leaves a legacy including the Valentine typewriter (below left), designed for Olivetti in 1969, and the Carlton Bookcase, designed for Memphis Group in 1981 (below).

In a career that spanned seven decades, product designer and architect Ettore Sottsass inspired, provoked, surprised, and amused with his pioneering ideas and quirky objects. His death on December 31, 2007, at the age of 90, marked the loss of a truly original force.

Sottsass is often credited with helping make Italy the center of the design world during the second half of the 20th century. He was part of a generation that included Achille Castiglioni and Vico Magistretti, who transformed the design of everyday objects from an anonymous endeavor into something joyous. When Sottsass cofounded Memphis in 1981, the group for which he is probably best known today, he secured a place in history as a Postmodernist. The group created a stir with colorful, unconventional, and unapologetic design that combined high cultural references with both cheap and expensive materials across a broad spectrum of objects, including Sottsass's Carlton Bookcase.

Born in Innsbruck to an Austrian mother and an Italian father, Sottsass took his first job in his father's studio. The elder Sottsass, also named Ettore, was an architect in the Rationalist mold. Yet the younger Sottsass would go on to reject this mindset. In 1958, he became head design consultant for Olivetti, where a decade later he designed a Pop Art–inspired red typewriter. Concurrently, he was artistic director at Poltronova, where he created his famous Mobili Grigi printed Fiberglas furniture. During the 1970s, Sotsass became a leading proponent of "radical design," mixing with avant-garde groups, including Studio Alchimia and Archizoom.



"Sottsass was what I like to call a universal donor," says Paola Antonelli, senior curator in the Department of Architecture and Design at the Museum of Modern Art. "He was one of the design world's big givers, shaping a new generation of designers with both his style and his passionate approach to life."

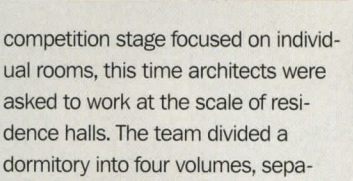
Sottsass spent his later years focusing on architectural projects, founding Sottsass Associati at the age of 64. He designed 20 or so eccentric private residences from Maui to Silicon Valley, and in 2000, he offered visitors an unexpected welcome to his own adopted city of Milan with his decidedly unairportlike interiors at Malpensa International Airport.

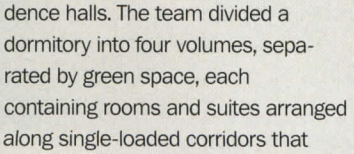
"Most architects and designers spend their lives becoming more and more rigid and closing themselves into a box within which they are secure of their identity," says James Irvine, who worked for Sottsass during the 1990s. "Ettore never took anything for granted, and above all never sold out. He was a true libertine." *Josephine Minutillo*

Housing the YouTube generation and beyond

College students socialize, shop, and learn in ways unimaginable less than a generation ago. Although they are increasingly connected via social networking Web sites such as Facebook, many students live in residence halls that predate the personal computer. The Association of College & University Housing Officers-International (ACUHO-I) held the second stage of its "21st Century Project" ideas competition on February 1, asking designers to envision housing that satisfies the needs not of today's students but those 25 years in the future. A team of young interns and architects bested four other finalists—and took home $25,000—with its scheme "net+work+camp+us."

The winning team includes Yang Tian, Suping Li, Yuzhu Zheng, and Nathan Herold. All are with Hanbury Evans Wright Vlattas + Company, of Norfolk, Virginia. While last year's competition stage focused on individual rooms, this time architects were asked to work at the scale of residence halls. The team divided a dormitory into four volumes, separated by green space, each containing rooms and suites arranged along single-loaded corridors that encircle a courtyard. The wall separating a suite from the public corridor features large, operable shutters. Dubbed a "café wall," the bottom edge of this window doubles as a bench, providing space for interaction between residents and passersby.





LEDs for custom facades (above), café walls for socializing (below).

The team also considered the role of technology. LED panels on exterior walls of student rooms would allow occupants to customize portions of the building facades. In the courtyard, an oversize LED monitor displays student announcements, class schedules, and even the whereabouts of individuals. "Normally, security cameras feed images to a small TV screen that no one ever sees," says team advisor Rob Reis, AIA, a partner at Hanbury Evans. "We take the videos of who is coming and who is going and display them on the screen for everyone to see."

This monitoring, and the customizable LED facade panels, could be the logical outgrowth of a youth culture accustomed to displaying personal information on MySpace, YouTube, and other Internet sites. "This is the ultimate see-and-be-seen experience," observes Michael Coakley, who co-founded the 21st Century Project and is the associate dean of student affairs at Arizona State University.

The other finalists in this competition stage were MGA Partners, Little Diversified Architectural Consulting, and a team from Mackey Mitchell Architects and the Southern Illinois University at Edwardsville. Ayers/Saint/Gross received a jury commendation for "applying technology to community." [RECORD's news editor, James Murdock, was one of nine jurors.]

The next phase of the 21st Century Project will consider actual sites at three academic institutions. ACUHO-I hopes to issue RFPs in late 2009, with the competition tentatively scheduled for 2010. It then plans to building a prototype of the winning design. *John Gendall*

IMAGES: COURTESY MOHAWK GROUP AND SOTTSASS ASSOCIATI (TOP CENTER); SOTTSASS ASSOCIATI (TOP LEFT AND RIGHT); COURTESY ACUHO-I/NET+WORK+CAMP+US (BOTTOM TWO)

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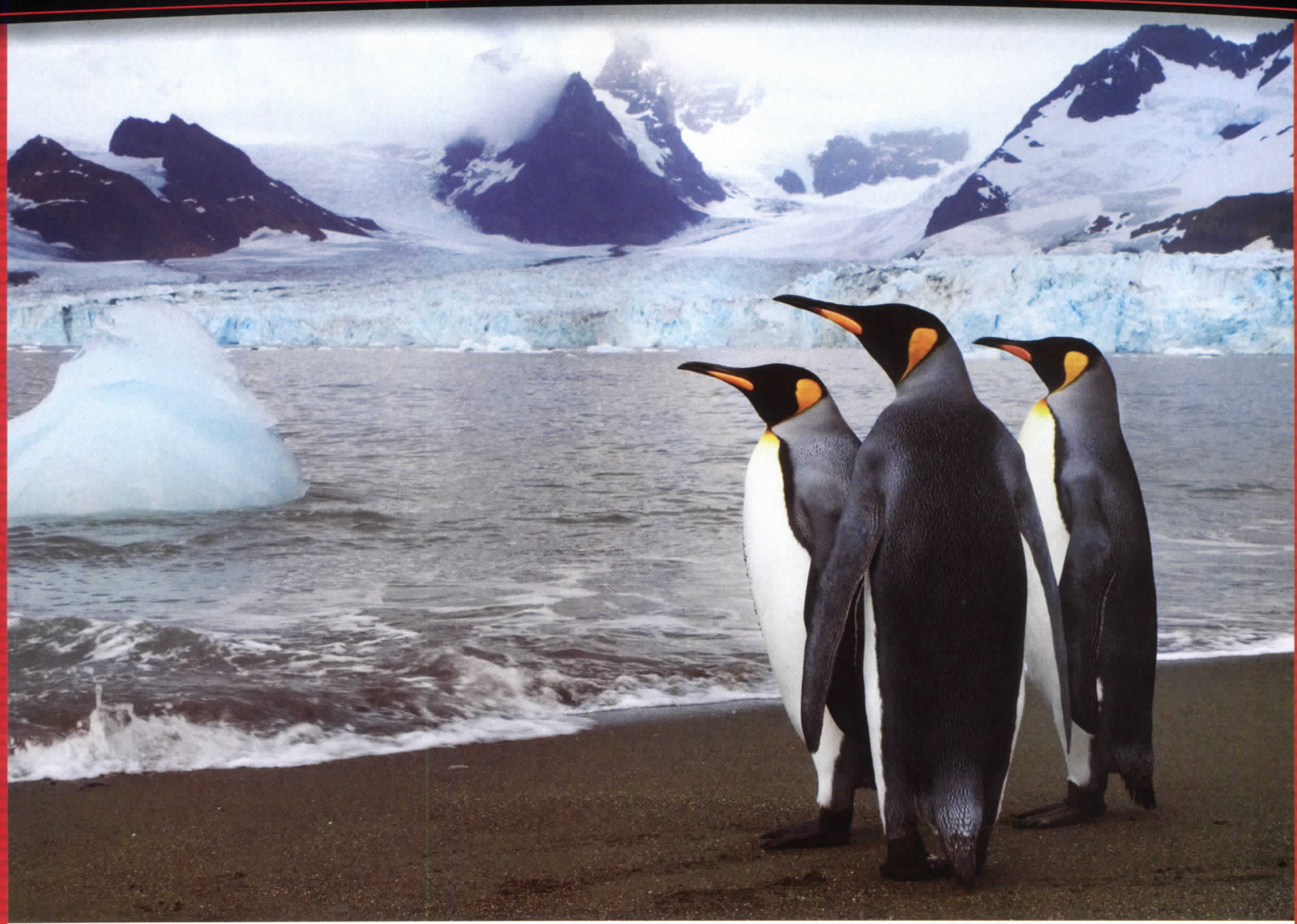

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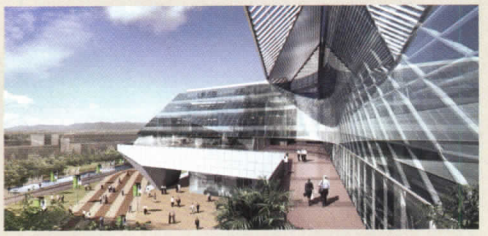
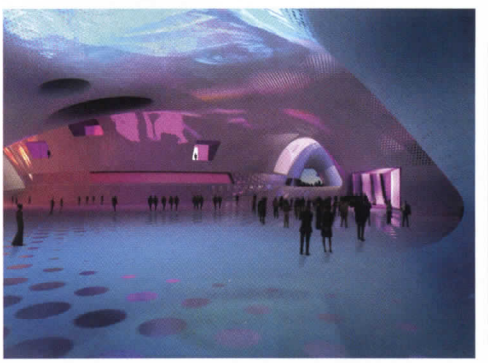


Seongnam, a satellite city southeast of Seoul, South Korea, recently broke ground on a city hall that it hopes will symbolize the young community's aspirations at a pivotal point in its growth. Chief among this building's concerns is to sit lightly in its environment. "Government buildings are so often heavy-handed, saying, 'Here I am. Everyone get out of the way,' " observes Ryan Stevens, a principal of KMD Architects, which won an international competition to design the structure. "We thought of the analogy of a bird landing gingerly in the landscape." Ordinarily, it's difficult for an 800,000-square-foot, 130-foot-high, nine-story building to express lightness. KMD achieved that quality in this faceted, gem-like structure by lofting the building's bulk on piers above the landscape, allowing for a glazed curtain wall to enclose a ground floor. This strategy opens the municipal experience to visitors. Heightening the sense of transparency, expansive glazed walls on the north and south facade, and green garden atria throughout the interior, brighten and ventilate workspaces. Two triangular sunscreens, fitted with photovoltaic panels, span the length of the south facade and reduce the building's energy consumption. These sunscreens also allude to the image of a bird with its wings outspread. *Henry Ng*



Taiwan's largest performing arts facility, the 1-million-square-foot **National Performing Arts Center**, is taking shape in Wei-Wu-Ying Metropolitan Park, a former military base in the city of Kaohsiung. It will contain a concert hall, opera house, and three theaters—all incorporated within a flowing, undulating topographical roof structure. Francine Houben, a principal of the Dutch firm Mecanoo, says that the design was inspired by the form of the banyan, a subtropical tree distinguished by thick, above-ground roots. Many of the arts center's spaces, including some performance halls, will be open to the outdoors. An open-air theater will be located where the roof dips and meets the ground, providing a gently sloping surface that visitors can use to access a landscaped green roof. "We are most happy about that space because that's where the client is thinking of making the performing arts stage," Houben says. "We kind of make it a people's palace, so it's not a closed box where you have to pay to enter." Construction is expected to finish by 2012. *Andrew Yang*

The new $220 million **Miami Art Museum**, in Florida, due to open in 2011, promises to transform a four-acre plot in a neglected park on the city's downtown waterfront. "We tried to create a seamless indoor/outdoor experience, an architectural answer to the climatic conditions, and a project that integrally includes vegetation and architecture," says Christine Binswanger, a partner at the Swiss firm Herzog & de Meuron. A broad roof of perforated slabs will shade an elevated, open-air terrace; hanging gardens will literally be rooted into the structure of columns and brace frames. The museum building itself, totaling 120,000 square feet, will be located amid a series of gardens on the terrace. A nonlinear sequence of galleries will allow visitors to walk through the museum in multiple directions, stepping freely into and out of the various kinds of aesthetic encounters, rather than being led through a sequence of standardized white cubes. *Jennifer LeClaire*

IMAGES (FROM TOP): COURTESY KMD ARCHITECTS; MECANOO; MIAMI ART MUSEUM

News Briefs

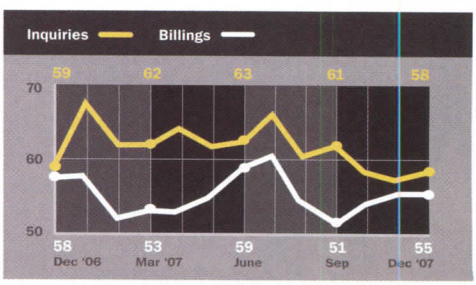
architecturalrecord.com/news/

The American Institute of Architects named the recipients of its 2008 Young Architects Award, which goes to architects who have made significant contributions to the profession early in their careers. The winners are Victoria Beach, of Harvard University; David Gamble, of Chan Krieger Sieniewicz; Emily A. Grandstaff-Rice, of Cambridge Seven Associates; Kelly Hayes-McAlonie, of Cannon Design; Grace H. Kim, of Schemata Workshop; Samuel Lasky, of William Rawn Associates Architects; Michael J. Meehan, of BWBR Architects; David Montalba, cochair of the LA/AIA Academic Outreach Committee; Robert Pasersky, of Payette; and Tim Schroeder, of Neumann Monson Architects. The awards will be bestowed in Boston this May. *James Murdock*

The National Museum for American Jewish History is building a new 100,000-square-foot complex, designed by Polshek Partnership, on Philadelphia's Independence Mall. The Smithsonian affiliate hopes that when the $150 million space opens in 2010, it will help quintuple attendance to 250,000 visitors a year. Two four-story, box-shaped volumes will sit atop a pedestal of granite: one clad in terra-cotta, symbolizing permanence and protection, the other in glass, conveying a more subtle message of impermanence and fragility. The wings create a dialogue between past and present, says James S. Polshek, FAIA, "a reconciliation between people through the clarity of intersecting and interacting volumes, through a conversation between the transparent and the solid." *Joseph Dennis Kelly*

It's natural for skiers to embrace the environmental movement: A rise in global temperatures could dwindle vital snowpack. In Snowmass Village, Colorado, Related WestPac has completed the first phase of its Base Village. All 19 buildings in the $1 billion project—designed by 4240 Architecture and Denniston International, among others—will meet LEED's basic certification standards, with the signature 236-unit Viceroy Resort Residences aiming for Silver. The 80-acre project is also the largest of its kind in the LEED for Neighborhood Development pilot program. Microturbines will be installed, and geothermal heating is under consideration. Construction crews are carpooling, limiting vehicle idling times, and using prefabricated parts to minimize trips. *David Sokol*

The Architectural Billings Index improved slightly in December, adding 0.1 points for a score of 55.4, extending its gains to three months after a sharp drop earlier in 2007. The American Institute of Architects, which compiles the index based on surveys of mainly commercial firms, notes that December marked the 34th month in a row the ABI has boasted a score above 50 points—which indicates growth—its best run since 2000. The index of new business inquiries, meanwhile, gained 1.5 points in December for a score of 58.1, regaining some of the ground it had lost after falling nearly 10 points since July. *James Murdock*



ENDNOTES

- RK Stewart, FAIA, left Gensler after 20 years to become an associate principal at Perkins+Will.
- Andrés Duany and Elizabeth Plater-Zyberk will receive the 2008 Driehaus Prize on March 29.
- John Newcomb left KMD Architects to become chief executive officer of TEN Arquitectos.

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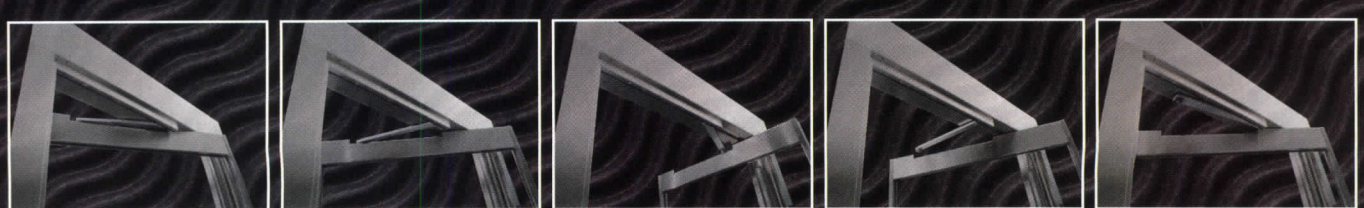

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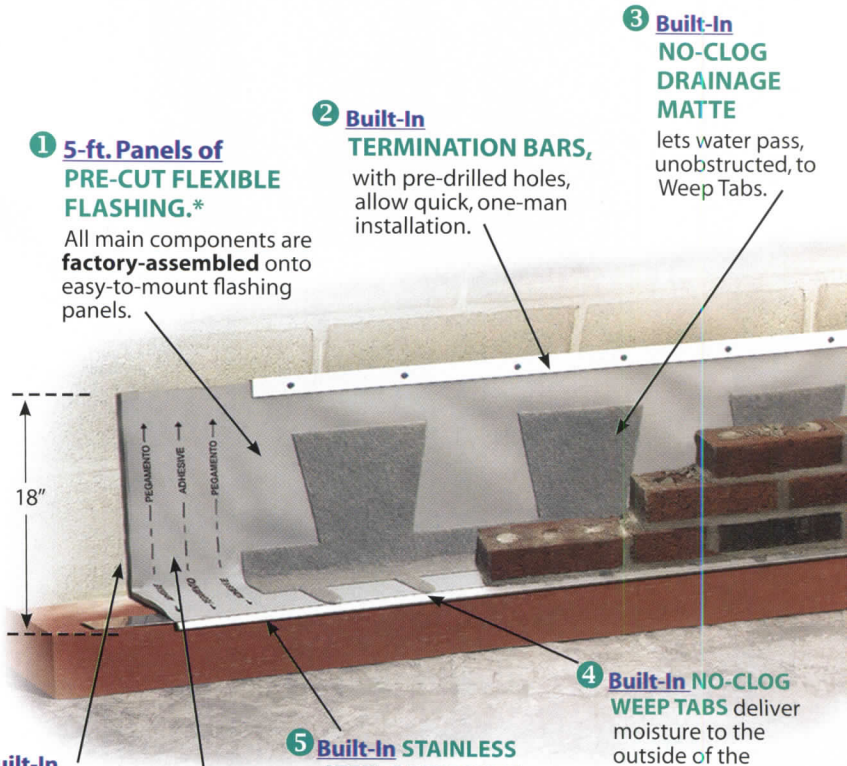

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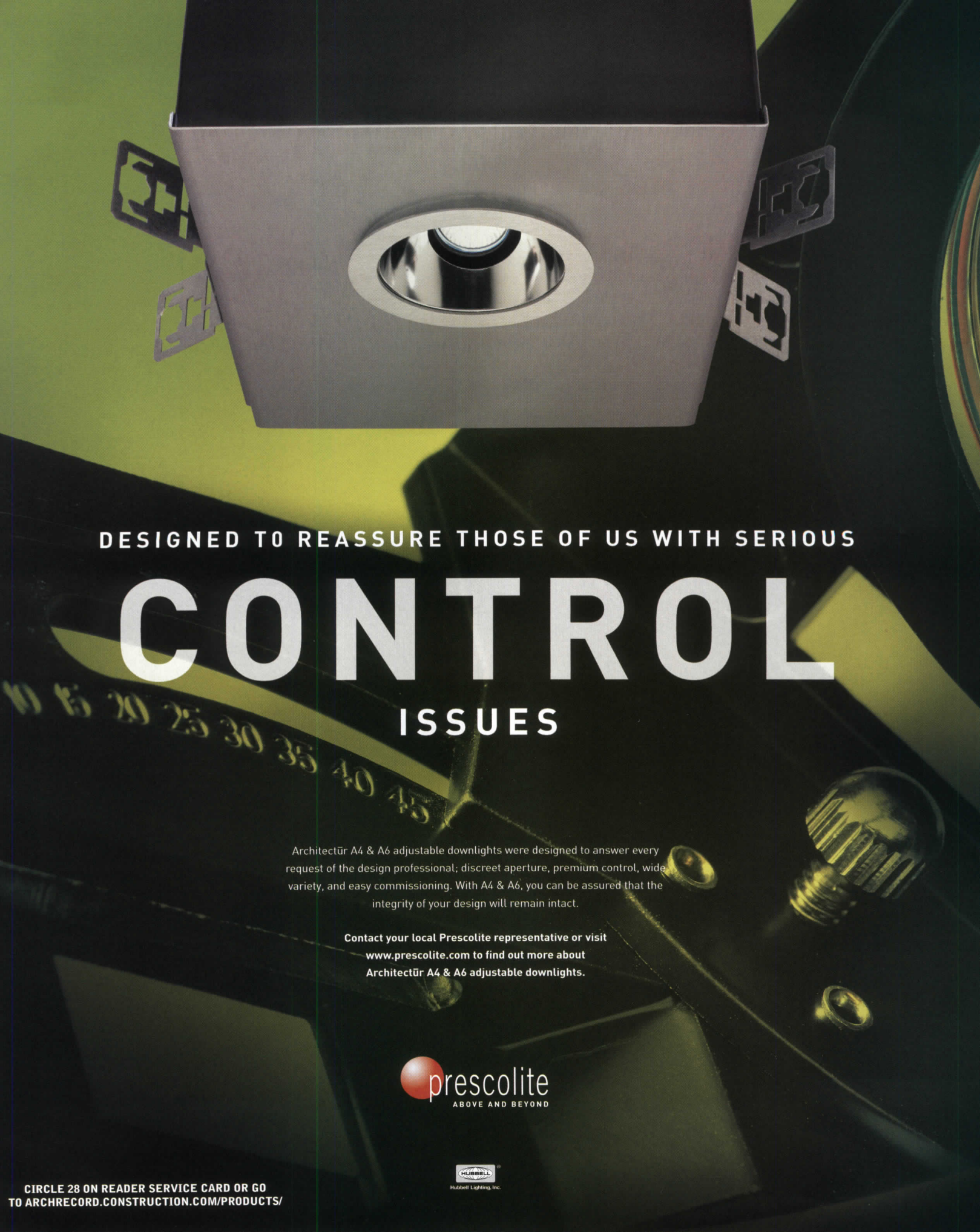
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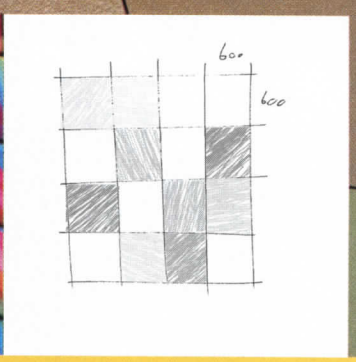

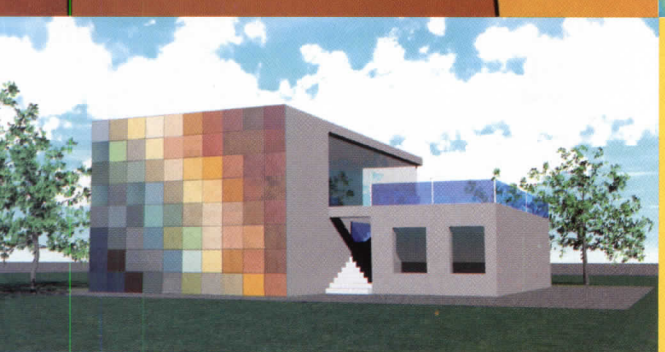

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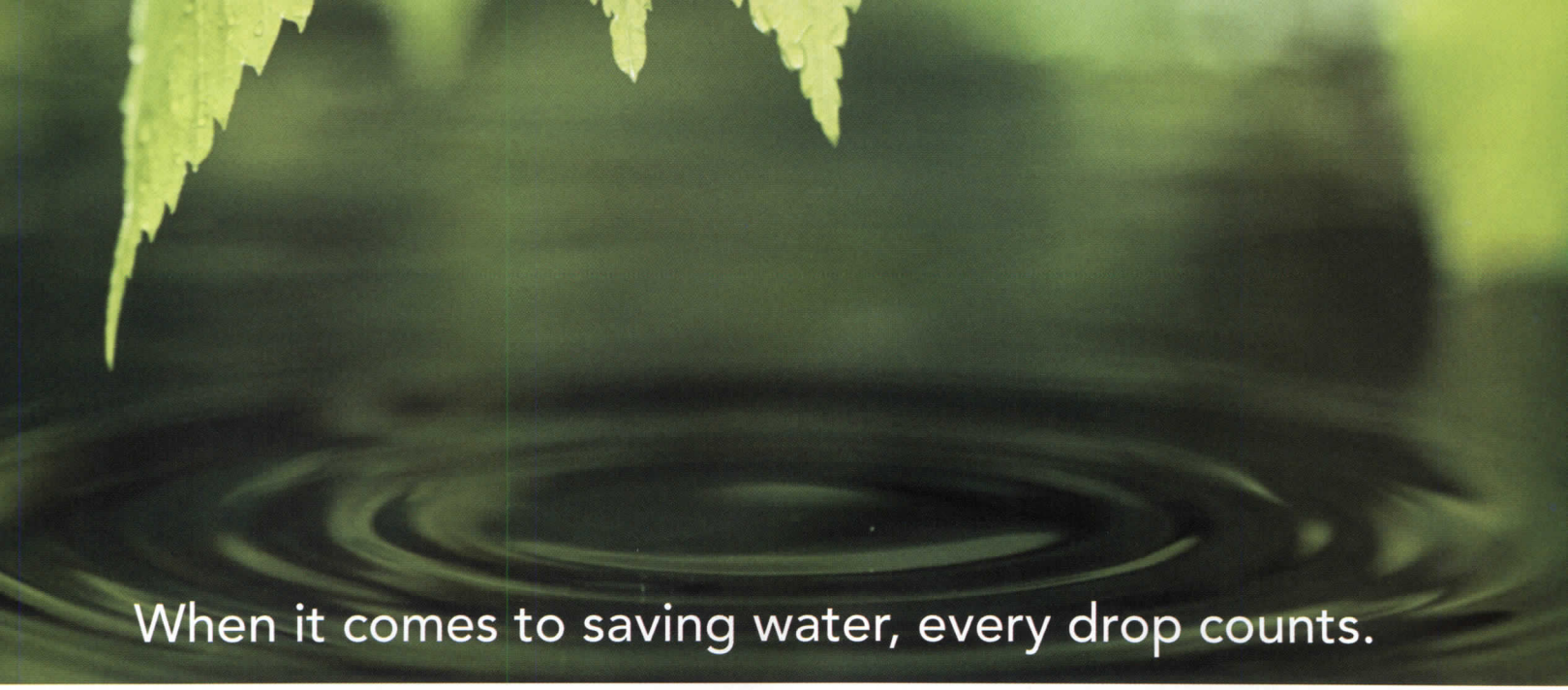

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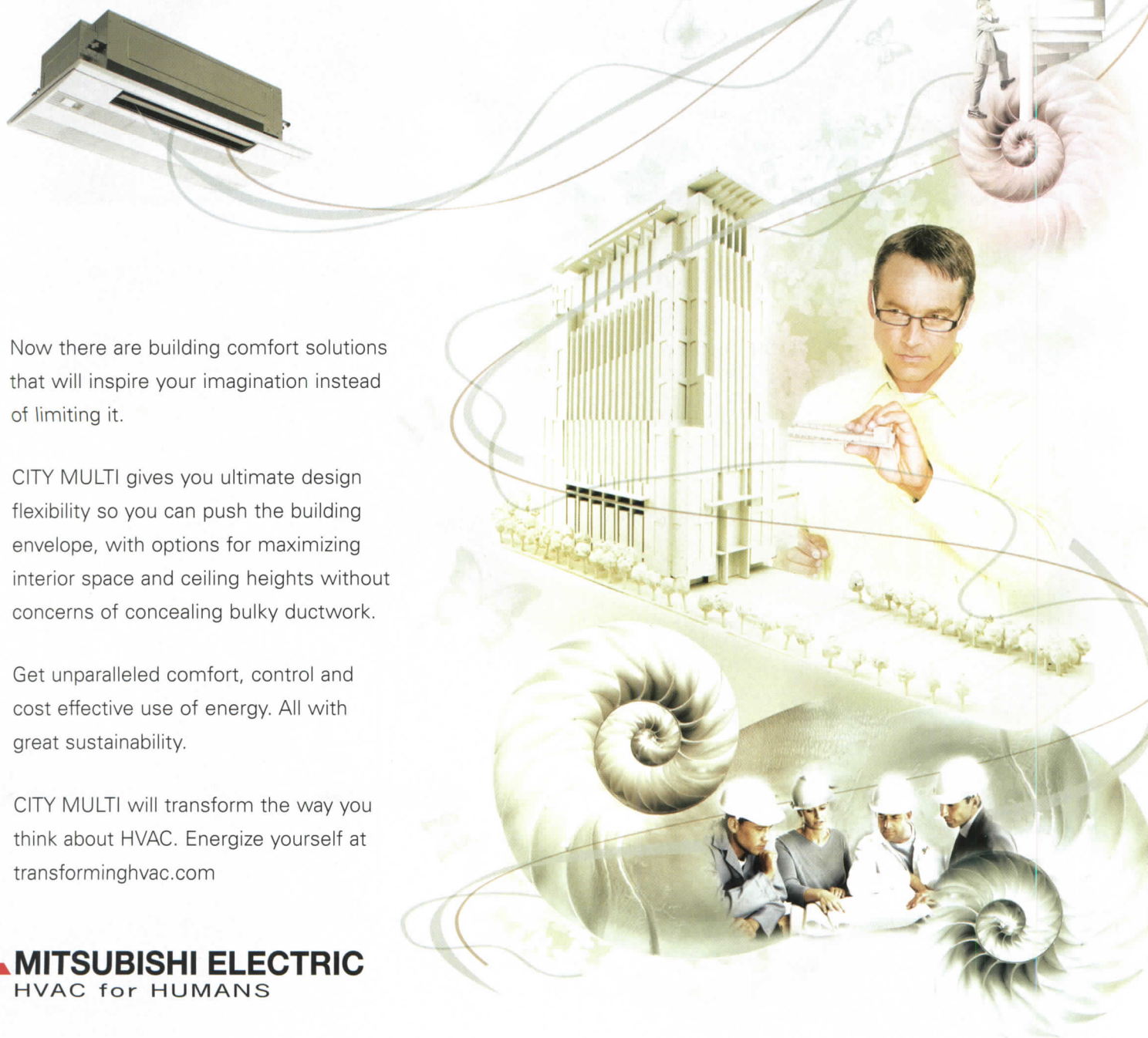

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For and about the emerging architect

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For young designers, New York City is full of ideas, connections, and possibilities. Cases in point: Architecture in Formation's principal honed his design hand in New York City and is ready to share those ideas back home in Texas. And "architectural clubhouse" Situ Studio connects surprising dots to create inspiring spaces. See more of these talented designers' work online. ONLINE: *What unlikely connection inspires your work? Respond at* ***construction.com/community/forums.aspx.***

Design

Architecture in Formation: Dream projects, all real

When architect Matthew Bremer, AIA, isn't busy designing cool projects like a VIP lounge in New York's JFK Airport, a showroom for an upscale purveyor of Brazilian design, Manhattan apartments, or the redevelopment of a 103,000-square-foot former prison site in Brooklyn, New York, he's working on his dream project—developing his family's ranch land in Bulverde, Texas, into a walkable, modern, mixed-use community. "It doesn't matter where you are," says Bremer, "the Texas creeps back into your blood."

But it wasn't always like that for Bremer. His love of drawing, building, and "the idea of how people interact in intimate spaces," led him to get his undergraduate degree in architecture from Rice University, in Houston. But he says at that point he couldn't wait to get out of Texas, moving east to get his master's in architecture from Yale, then living in New York and Italy, where he worked for esteemed firms such as Pei Cobb Freed and Tsao & McKown Architects in New York City, and Studio Citterio Dwan in Milan. He started Architecture in Formation in 2001 because, he says, he found that most of his friends had more disposable income than he did, and they wanted his help. "It was a very conventional transition into starting a firm," he says. "We had very small projects at first, but they were real, not paper, architecture. I respect the blob-flower guy, but that isn't me."

Bremer's very real clients have grown from friends to include the New York City Department of Housing Preservation and Development. Brooklyn's Navy Brig prison was built in the early 1940s and closed in 1994. As part of Mayor Bloomberg's 10-year plan to create new housing, the development, called The Navy Green, will comprise 434 residential units, commercial and open space, and a new community center. In collaboration with FXFOWLE and Curtis Ginsberg Architects, Architecture in Formation designed the master plan. "Polshek just finished a project like this in Brooklyn," says Bremer, "and Helmut Jahn did one in Chicago. These types of projects prove that Modernism is not inherently hostile."

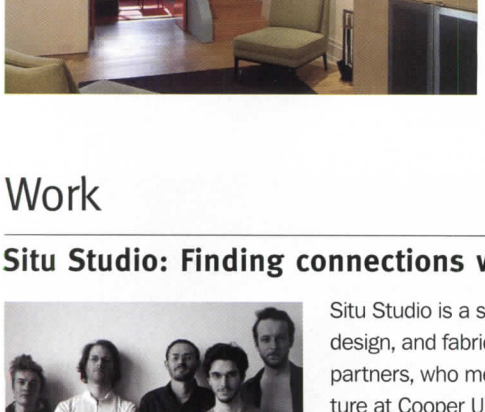
ProHouse for a Butcher and an Art Denizen, Syosset, N.Y., 2006
On 2 acres on Long Island's North Shore, the architects partially kept the private areas of this reconceived 1970s ranch burger and added a new public wing, framed in steel and clad in glass, cypress, and mahogany.

Espasso New York, New York City, 2006
This U.S. liaison to Brazilian design asked the architects to convert a 10,000-square-foot former ground-floor-and-basement garment factory into the company's flagship showroom.

PHOTOGRAPHY: COURTESY ARCHITECTURE IN FORMATION

The Navy Green: Supportive Housing, Brooklyn, unbuilt

In schematic design, this 97-bed supportive community for people with AIDS is part of the Navy Green master plan.



Midtown Manhattan Duplex, New York City, 2005

Two floors with three dark apartments in an existing brownstone were combined into a single residence, linked by light and space.

And it's that rich and habitable side of Modernism that Bremer hopes to bring to his Texas project. "It's New Urbanism with the cute kicked out of it," says Bremer about his plans for the land, some 150 acres that has been in his family for seven generations. "I'm so emotionally tied to this project—selling the family farm with their encouragement. I'm working on the design and the business plan now, and trying to deal with Texas politics, which is all about water rights. I love the Texas vernacular—the old dance halls and ranch architecture—and I want to create a mixed-use development honoring that without resorting to pastiche." But with a full plate in New York, Bremer is finding it hard to resolve the commitment it might take to complete his dream. "When I'm working on projects here, I'm completely subsumed," he says. "Still, doing this right might mean moving back to Texas. The developer as bad guy and the architect as savior doesn't hold up anymore. For me, it's the next step, and it's long-term." Luckily for Bremer, the Texas in him understands the meaning of slow and easy. *Ingrid Spencer*

For additional photos and projects by Architecture In Formation, go to **architecturalrecord.com/archrecord2/**.

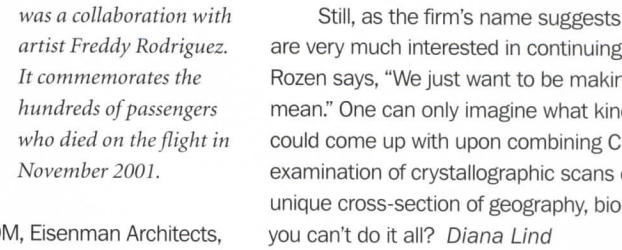
Work

Situ Studio: Finding connections without limits

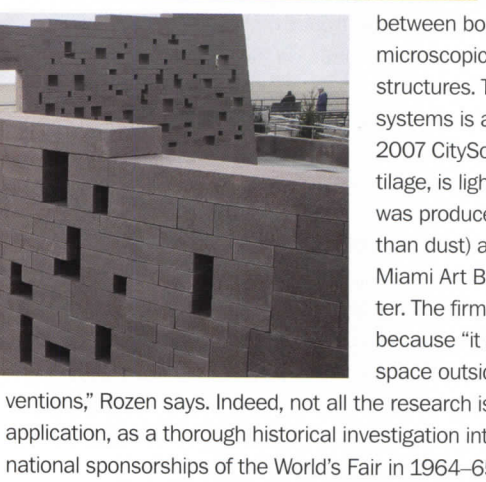
Situ Studio is a self-described "research, design, and fabrication firm," and its five partners, who met while studying architecture at Cooper Union in New York City, emphasize the variety of their work. "We offer a full menu," Bradley Samuels, one of Situ Studio's partners says while sitting at the firm's light-filled studio in a Dumbo, Brooklyn, building. "We wear many hats," Wes Rozen, another partner chimes in. This approach allows the firm to work on diverse projects, such as analyzing the topography of a crater in India while fabricating a lobby installation for Kohn Pedersen Fox. But Situ Studio sometimes wonders if such a breadth of services could pose a problem when marketing itself as a firm—that, to use yet another metaphor, they could be seen as jacks of all trades, but masters of none?

Luckily that hasn't been the case. The five men, who bring international backgrounds to the practice, coalesced into an architectural "clubhouse" before calling themselves a firm in 2005. Since then, some of Situ Studio's built projects include a granite memorial in Far Rockaway, New York, for Flight 587, which crashed there in 2001, and an ongoing commission to produce eco-friendly pavilions for New York's Solar One summer festival, CitySol.

At the same time as the firm put their CNC mill to good use by building models and consulting for A-List architects, such as Polshek Partnership, SOM, Eisenman Architects, among others, they have been able to conduct less-lucrative, self-motivated research. Not just a side project, the research has proven to be a core source of inspiration for the firm. In just one example, they discovered connections between bone tomography at the microscopic scale and architectural structures. The influence of natural systems is apparent in their free-form 2007 CitySol pavilion, which, like cartilage, is lightweight and flexible. It was produced with no waste (other than dust) and was redeployed at the Miami Art Basel fair that same winter. The firm has focused on research because "it allows us to think about space outside of architectural conventions," Rozen says. Indeed, not all the research is explicitly intended for application, as a thorough historical investigation into the corporate and national sponsorships of the World's Fair in 1964–65 proves.



The Flight 587 Memorial, completed in 2006, in Far Rockaway, Queens, was a collaboration with artist Freddy Rodriguez. It commemorates the hundreds of passengers who died on the flight in November 2001.



Situ Studio's 3Solar Pavilion 2, shown here at Scope Art Fair in Miami, 2007, is made of plywood and was produced with no waste. The installation was first deployed during Solar One's 2007 CitySol Festival.

Still, as the firm's name suggests (*situ* is Latin for "place" or "site"), they are very much interested in continuing to produce site-specific, built work. As Rozen says, "We just want to be making architecture, whatever that may mean." One can only imagine what kinds of beautiful abstractions the team could come up with upon combining CNC technologies with their current examination of crystallographic scans of the SARS disease. Given the firm's unique cross-section of geography, biology, architecture, and more—who says you can't do it all? *Diana Lind*

For additional photos and projects by Situ Studio, go to

IMAGES: COURTESY OF ARCHITECTURE IN FORMATION (TOP TWO); SITU STUDIO (PORTRAIT); JAMES BEVAN (MIDDLE); FREDDY RODRIGUEZ/SITU STUDIO (BOTTOM)

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Debunking a myth about museums that pay for themselves

Critique

By Martin Filler

It may not have been cause and effect, but the 10th anniversary of the Guggenheim Museum Bilbao late last year coincided with the opening of several new museums that seem intent on being everything Frank Gehry's Basque bombshell is not. Let's call it the rise of the Quiet Museum. Among them is Rafael Moneo's low-key addition to the Prado (page 118), which has earned praise for giving precedence to the works on display rather than upstaging them with architectural bravura. But one man's deferential is another man's dull. Art critics seem to like the Moneo wing more than their architectural counterparts, some of whom have deemed the expansion deficient in duende. It's not that Moneo is incapable of the grand gesture, as proven by his majestic National Museum of Roman Art (1986) in Merida, Spain. But as his countrymen say, "*Otros tiempos, otros gustos.*" Other times, other tastes.

Another recent anti-Bilbao is Gluckman Mayner Architects' Perelman Building at the Philadelphia Museum of Art. This meticulous conversion of a landmark 1927 office building into galleries for modern sculpture, photography, and design epitomizes the firm's preeminence in creating what art-world consensus deems the most consistently effective contemporary display environments. Perversely, Gluckman Mayner's self-effacing approach has lost the firm at least one job, as I can attest from unhappy first-hand experience.

Several years ago, I served on the architectural advisory committee for the new Parrish Art Museum in Southampton, New York. We had been asked to provide a short list of six firms, the winner to be chosen by the Parrish board. Given the small-town context, intimate character of the original building, and smallish budget, we urged the client to avoid trendy names and focus instead on aspiring firms more likely to give this $50 million job their undivided attention.

Although our roster included one Pritzker Prize winner (Alvaro Siza, still a cult figure despite that coveted accolade), the rest were little known in the U.S., save for Gluckman Mayner. Thus I was stunned by the cool response of several trustees to Richard Gluckman's presentation.

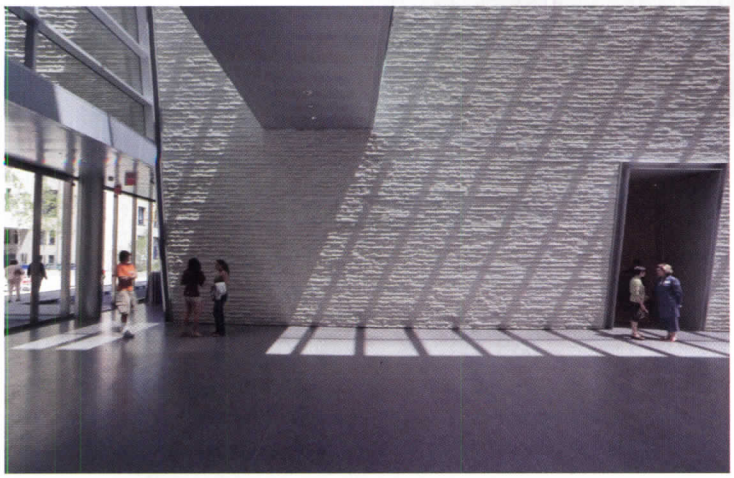
Although I reminded them that he was the one architect on our list whose work they had all surely experienced, and no doubt favorably—at New York's Dia Art Center, the Warhol Museum in Pittsburgh, and commercial galleries too numerous to mention—they remained unmoved.

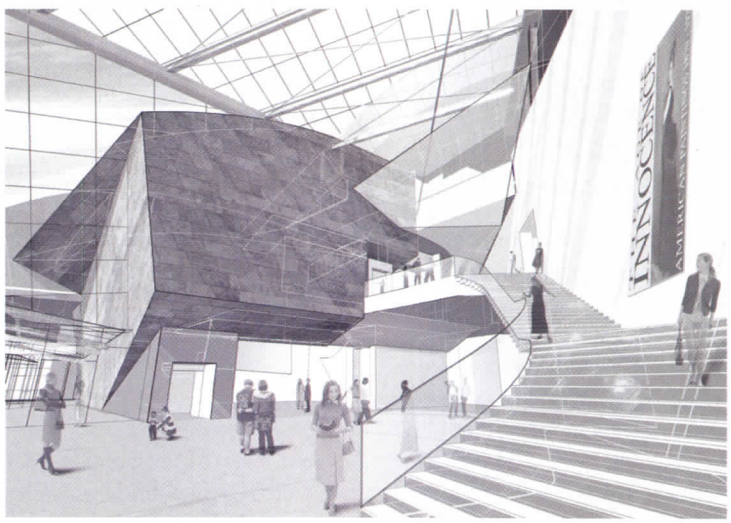
After Gluckman left the room, one trustee opined, "He can't design a building from scratch." Forget his firm's unquestioned skill in making difficult art look great, whether in the recycled structures that have made up the bulk of its practice, or in its several new museums. In the end, the board rejected our recommendations and hired Herzog & de Meuron, whose de Young Museum in San Francisco had just opened to well-deserved acclaim. When I lamented to Trudy Kramer (the longtime Parrish director who retired at the end of 2007) that the board had done pre-

Randall Stout's museum in Roanoke, Virginia (top), and Richard Gluckman's Perelman wing in Philadelphia (below) take different approaches to design.

Martin Filler, author of Makers of Modern Architecture *(New York Review Books), will write the Critique column four times a year.*

PHOTOGRAPHY: © RANDALL STOUT ARCHITECTS (TOP); DAVID S. ALLEE (BOTTOM)





The lobby of the Perelman building (above) connects old and new structures, while the Roanoke museum's lobby (right) revels in the new.

cisely what we warned them not to, she replied resignedly, "They want a Bilbao, and it's hard to raise money if you don't give them one."

Herzog & de Meuron's first Parrish proposal, with a costly parti of clustered pavilions, priced out at almost double the budget. In response, the client eliminated half the galleries, the money-spinning café and gift shop, and much-needed on-site storage. The pared-down second version, now pegged at $63 million, is no Bilbao.

Today's architectural post-traumatic-stress syndrome—call it Bilbao Fatigue—was brought on by a glut of increasingly outré museums calculated to attract media attention, rather than enhance understanding of art. Copious evidence confirms the folly of overspending spurred by the premise that extravagant museum expansions will pay for themselves with increased attendance and tourism revenues. It took years for the Basque government to recoup its enormous investment in the Bilbao Guggenheim, because the museum's director, Thomas Krens, off-loaded almost all up-front expenses on the overeager franchisee.

Several institutions that have had rude awakenings. Santiago Calatrava's bird-shaped Quadracci Wing for the Milwaukee Museum of Art so exceeded cost estimates that municipal authorities were forced to bail out the city's foundering cultural system. Big budget overruns have compelled the Denver Art Museum and the Royal Ontario Museum in Toronto—both designed by Studio Daniel Libeskind—to lay off large numbers of employees.

I got a sinking feeling when I read a recent *New York Times* dispatch on the Art Museum of Western Virginia, in Roanoke, designed by Randall Stout Architects and scheduled to open in November. This $66 million, kind-of-Libeskind crystalline composition will cost at least $20 million more than initial projections.

mists "are betting that the museum will be an economic engine for the city." I wish them all the luck that has eluded their counterparts in Milwaukee, Denver, and Toronto.

I applaud cities that subsidize museums rather than stadiums, but officials should just level with taxpayers, admit that spending on culture is a noble thing, and forget the sham rationale of financial return from what ought not to be touted as an "investment." Before today's casinolike art market, principled dealers and auctioneers used to discourage the notion of collecting as speculation. Buy what you love, they used to advise, and if you make a profit, good for you. If not, good for you, too, because you'll have been enriched by living with a thing of beauty. The same caveat applies to the sponsorship of cultural architecture.

Fortunately, not every museum official today believes that extravaganza architecture is imperative for institutional survival. Lisa Phillips, director of the recently completed New Museum of Contemporary Art in New York City (page 132), wanted a building that would signify her institution's sensitivity to pathbreaking developments in architecture commensurate with its impressive track record in identifying the best new art. Phillips looked beyond the profession's most sought-after museum designers, hired the then-little-known Tokyo firm SANAA, and wound up with the sleeper museum hit of recent million (a modest figure for New York City), this hypnotic structure is a multiple revelation, striking an enviable balance between economy and elegance, architecture and art.

Apart from the New Museum's self-evident beauty and ingenious urbanism (which works wonders with an unpromising site), this instructive scheme offers a new paradigm for a building type that has lost its way in mad pursuit of expensive thrills and cheap sensations. The widespread apprehension that the Bilbao Effect has mutated into the Bilbao Plague is reflected in Renzo Piano's flourishing museum practice. I'm convinced that many of Piano's patrons admire this indubitable master for all the wrong reasons: not so much for what they think he can do, but for what they're certain he won't do—saddle them with an eccentric building unlikely to pass the test of time.

The museum's overall influence on contemporary architecture has been enormous, especially when one looks at unrelated building types. Frank Gehry's Stata Center at MIT in Cambridge, Massachusetts, may nominally be an information-technology facility, but its organizational conception stems directly from his revolutionary rethinking of the museum. Coop Himmelb(l)au's BMW Welt (page 86) in Munich might seem incongruous in a survey of current museum design, but this Bavarian Bilbao suggests there is indeed little difference anymore between marketing art and marketing cars, as the boundaries between culture and commerce become blurrier than ever.

A museum dramatizes and reaffirms, as civic architecture always has and always will, the values of those who build it. A sobering thought often occurs to me these days: How will future generations interpret these architectural signs of our times? I imagine our descendants looking back in bewilderment at many of the museums built around the turn of the millennium and asking, "What could they have been thinking?" ■

ONLINE: What's your favorite "quiet" museum? Respond at ***architectural***

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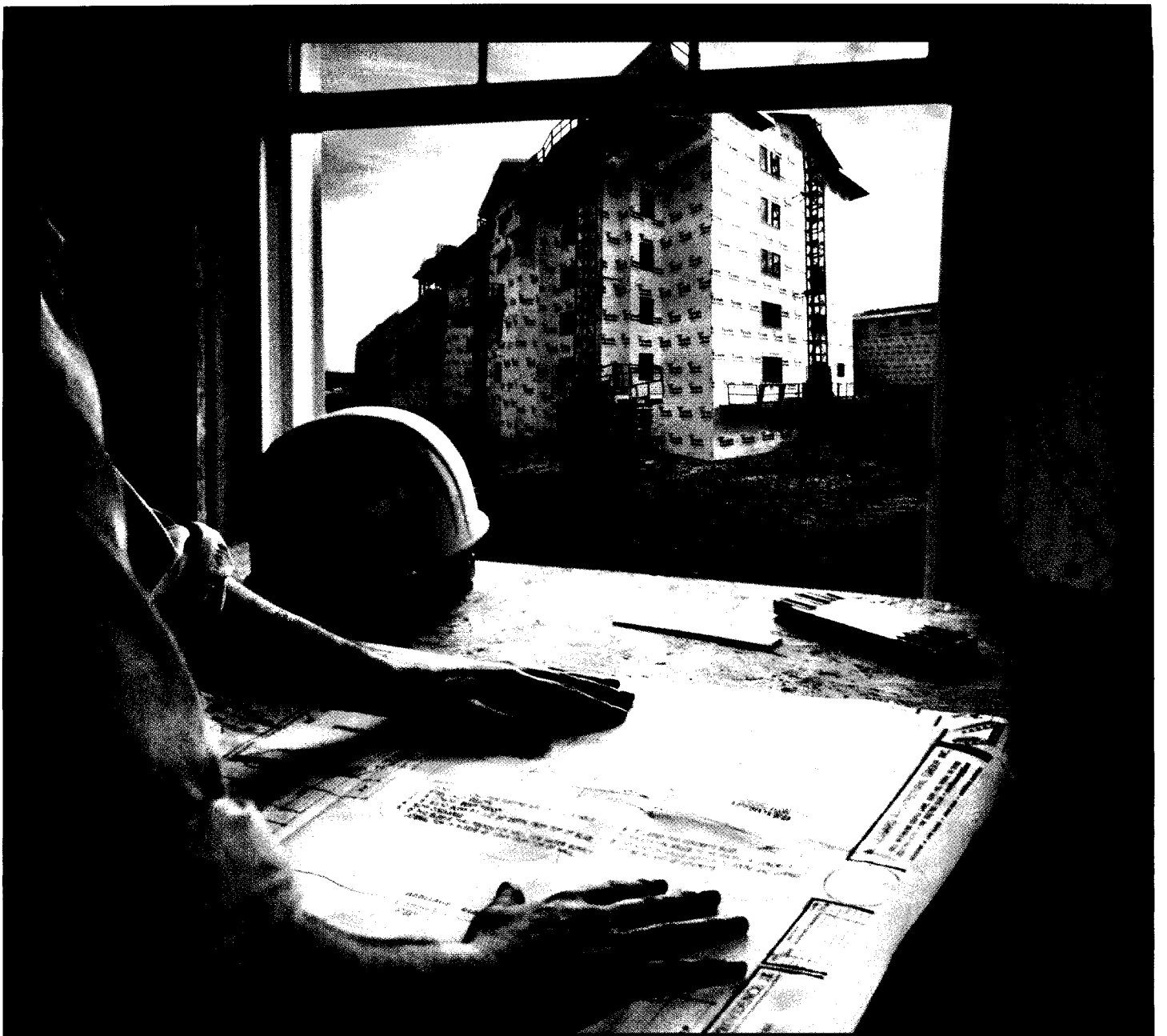

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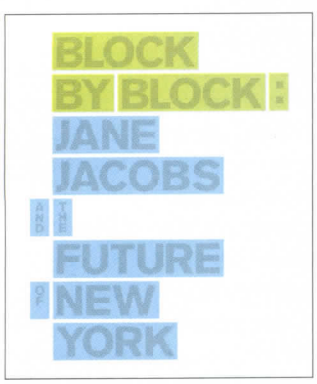
What makes cities (real and imagined) work or falter

Books

Block by Block: Jane Jacobs and the Future of New York, *edited by Timothy Mennel, Jo Steffens and Christopher Klemek. New York: Princeton Architectural Press, 2007, 64 pages, $18.*



In this catalog for an exhibition at New York's Municipal Arts Society, which closed in January, a star-studded roster of 39 authors (journalists, planners, sociologists, architects, critics, preservationists, community activists, even a poet or two) grapple with the question, "How are Jane Jacobs's observations relevant (or not) to our time?"

Historian Christopher Klemek, a curator of the show, clears up some misconceptions about Jacobs's role as "the great nemesis of Robert Moses," pointing out that though she protested some of his proposals and preferred the small-scale to the large, "their personal trajectories barely intersected." Also, "Jacobs was never opposed to vigorous government authority per se…. She advocated a democratically responsive balance of private and public interests." He notes that though New York's problems today (too much growth and desirability, not enough affordability and sustainability) are very different from 1961 when *The Death and Life of Great American Cities* was published, Jacobs proposed "the synthesis we now seek."

Numerous authors tout Jacobs's powers of observation and ability to see even simple things such as city blocks in all their complexity. *Toronto Globe and Mail* architecture critic Lisa Rochon describes the role Jacobs played in Toronto, where she moved in 1974, and shows how her ideas about using old buildings led to an abandoned brickworks becoming "a critical incubator of creative ideas." But architectural journalist Andrew Blum wonders whether Jacobs's activism on behalf of neighborhoods in Toronto may have "shunted new development to the suburbs."

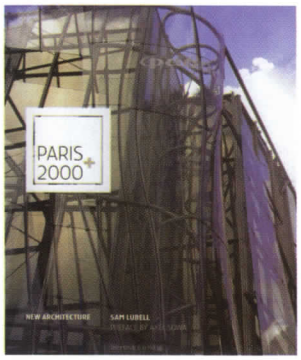
Provocateur Malcolm Gladwell observes that "most developers don't want to build" Jacobs's West Village block "and most Americans don't want to live in one." But enlightened employers today believe "an office space must have a diversity of uses … the workplace equivalent of houses and apartments and shops and industry" that she championed.

Not all the writers praise Jacobs. Tom Wolfe glibly attributes the urban vitality usually credited to Jacobs's influence simply to the presence of "artists." And sociologist Nathan Glazer observes that "Jane Jacobs wrote the second-most-important book on city planning of the 20th century. By the 21st century, her work had put *Garden Cities of Tomorrow* completely in the shade…. But as we look at what is happening—the West Side redevelopment in Manhattan, … in Shanghai and Beijing, New Delhi and Mumbai—we fear that the prophet of the future city may turn out … to be not Ebenezer Howard or Jane Jacobs, but Le Corbusier." *Jayne Merkel*

Paris 2000+: New Architecture, *by Sam Lubell, with forward by Axel Sowa. New York: Monacelli Press, 2007, 240 pages, $50.*

One of the things drilled into architecture students is the difference between school and practice. In school, students are encouraged to think outside their limits. Reinventing the program and site? Is it clever? Carry on. Throwing out what was a given? Great. It can be fun, and freeing, but what Sam Lubell's new book picks up on, and so perfectly renders, is that sometimes it is just as much fun—if not more—to build something when you're struggling against just about everything.

Paris 2000+ is a polemic about the possibilities of architecture when it has been so limited, Lubell writes, by "conservative officials, change-wary neighbors, stringent urban regulations, and a legendary bureaucracy" that it comes full circle and once again opens up. In 30 short descriptions of projects ranging from Shigeru Ban's intra-Pompidou Center workshop to an architect couple's house suspended above their studio, Lubell gets into the tiniest details, all the while showing that there is much about 21st-century Parisian architecture worth finding.



This book is not a sweeping historical epic, nor a thrilling architectural narrative. A reader looking for a gestalt vision of "Paris Today!" will not receive that, but neither would a visitor to Paris. Instead, Lubell perfectly exemplifies the problems with Parisian architecture. Some of it is a bit boring. So is some of his book—many of the descriptions read as if he might have been doing it with one hand (unwillingly?) tied behind his back—but if we look at *Paris 2000+* in the same way that the author looks at Paris after 2000, and begin to celebrate its limitations, and to see just how much Lubell has done with such a standard format (large book, nice pictures, probably not to be read end-to-end, more about the coffee table than the library), we begin to encounter the same moments of fine-grained pleasure that Lubell finds in Paris. *Eva Hagberg*

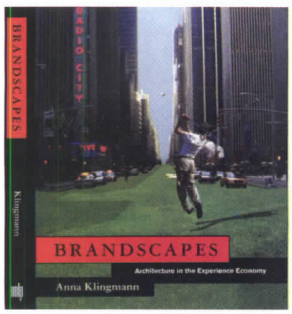
Brandscapes: Architecture in the Experience Economy, *by Anna Klingmann, Cambridge: MIT Press, 2007, 378 pages, $30.*

Anna Klingmann believes architecture has lost its connection to the "people

Books

and places that are the most important inspiration for everything that is done in design." Most designers think experientially, aiming to transform the everyday, but architects hold themselves apart, says Klingmann, seeing their work as abstracted from the people and places it affects.

Best read as a polemic, *Brandscapes* surveys a century's worth of urban development from the standpoint of how it relates to



and supports the people who live and work in it. It's a singular rereading that, while moving at a gallop, misses almost nothing. There are few heroes in her narrative, although her critiques are nuanced rather than dismissive, always noting what the architect, theory, or movement got right from her perspective.

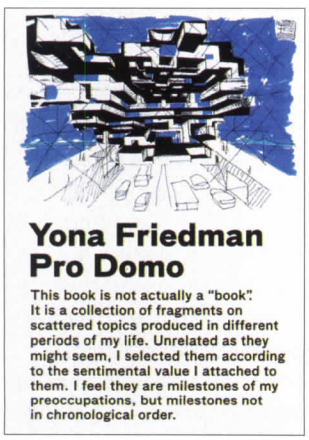
Her one real hero among architects, living or dead, is Louis Kahn—admired for restoring "two vital qualities of experience that were expurgated by the Modern movement, 'being and context.' " (She's quoting from John Lobell's February 1978 *Artforum* article on Kahn and Venturi.) She doesn't shy away from themed environments—devoting an interesting chapter to explaining how Las Vegas's mega-casinos use the methods of filmmaking, building on Jon Jerde—or from current efforts to make architecture experientially vital by generating it from a mixed program or an algorithm. All of this strikes her as too reductive, often, and occasionally almost autistic in its determination to isolate the design process from human engagement.

Klingmann is stronger on diag-

her prescription is for architects to take the everyday seriously by drawing closer to the people who experience their work and the places that form its context. She points to the research that drives other types of design, contrasting this curiosity about end users with architecture's hermetic stance. Missing in her critique are those who really call the shots in cities—political leaders—with their arbitrary power and frequent neglect of urbanity. When politicians see the "brand value" of an experientially richer, place-redolent architecture, we may see some demand for it. *John Parman*

Yona Friedman Pro Domo, *by Yona Friedman. New York and Barcelona: Actar Publishers, 2007, 150 pages, $38.*

Today, we take the idea of megastructures for granted, but during much of the 20th century they remained a hotly debated subject. Their proponents were mostly provocateurs whose designs remained unrealized. Among the strongest advocates was Yona Friedman. Born



in Budapest in 1923, Friedman emigrated to Israel in 1948 and has lived in Paris since 1954. His career has focused on adapting the city to modern life via superstructures. His imagined "Spatial Tunis," "Spatial Paris," and, "Monegasque Venice"

Archigram and Japan's Metabolist projects of the '60s. During the '70s, Friedman concentrated on housing for developing countries. His published work for UNESCO and the U.N., consisting often of pictograms, offered survival techniques for the poorest populations.

Friedman's fragmentary account of his career in *Pro Domo* offers a window onto his ideas and methods via text, comics, drawings, and models. "My goal since 1945 has been to conceive a work of architecture without a plan," he writes. Improvisation, however, is hard work, and this book illuminates the difficult process of adapting a set of ideas about the city over a 62-year period. In his "Interview With Myself," Friedman co-opts the Socratic dialogue from Louis Sullivan's *Kindergarten Chats*, but with more poignancy and verve.

The meat of Friedman's book is its images. His bold drawings of space frames for Paris, New York, Brussels, and Shanghai allow us to connect some of the dots in this so-called "architecture without a plan." Although the images are small, they are handsomely reproduced and show us what has been so compelling for so long about megastructures. The real core of the book is the "stuff" of the urban experience: its systems, overviews, and experiential moments. A rich and engrossing survey, Friedman's book also offers a still-visionary view of the city, including a modular museum and a "mosquito net" for tall buildings that could thwart attacking planes. *William Richards*

Exit to Tomorrow: World's Fair Architecture, Design, Fashion 1933–2005, *by Paolo Antonelli, Udo Kultermann, and Andrew Garn. New York: Universe, 2007, 244 pages, $45.*

In more ways than one, World's Fairs of the past have been all over the map: innovative and hackneyed, creative and corporate, venues for political theater and innocent fun. Too fittingly, that's also the case

For starters, there's no reason why the survey starts with Chicago's Century of Progress in 1933—especially since a thorough introductory essay by Udo Kultermann rolls the clock back to France's "industrial fairs" of the early 19th century. For groundbreaking architecture, the Crystal Palace of London's 1851 "peace festival" casts a longer shadow; for cultural imprint, the 1893 Columbian Exhibition in Chicago is the one that brought the City Beautiful movement to the fore.

Which means that *Exit to Tomorrow* functions as a compact but scattershot survey that, at its best, gives us a taste of what we missed during the past 75 years. The 1933 *Century of Progress* glows with sybaritic defiance of the Depression, including the 400-foot-long Hiram Walker Pavilion, a pier shaped like a streamlined liquor bottle. Three years later in Paris, a hammer and sickle tops the Soviet Pavilion—directly across from the swastika-adorned German Pavilion.

By the 1960s the architecture has been reduced to strained attempts at wonder; the real show being the gadgets within. The lone exception is a pavilion designed by Le Corbusier for Expo '58 in Brussels, a collage of 12 parabolas that could be an origami vision of Alpine peaks. And for the last few fairs, *Exit to Tomorrow* is less interested in the buildings than in the color-saturated outfits worn by the hostesses.

The images are a treat, and it's intriguing that the exuberance of the best architecture still seems fresh. Don't count on *Exit to Tomorrow* for insight, though. The book is fun as far as it goes, but it doesn't go

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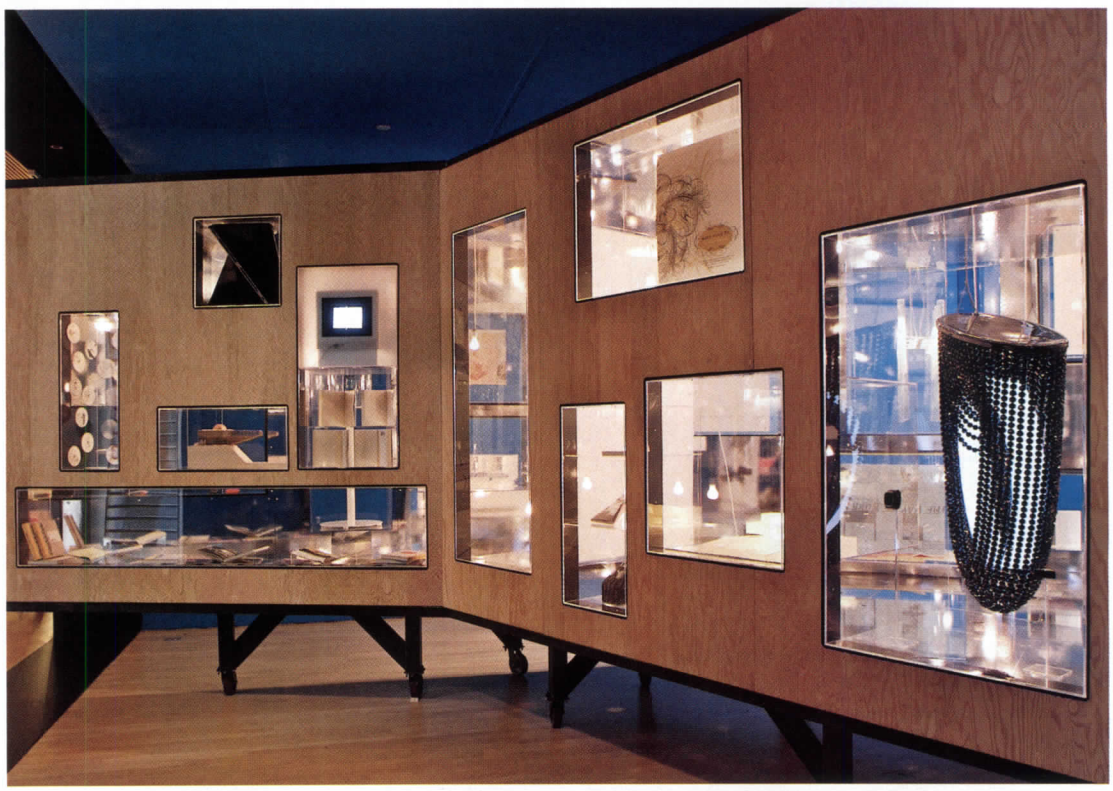
Shaping the Show: Architectural interventions in museums and galleries

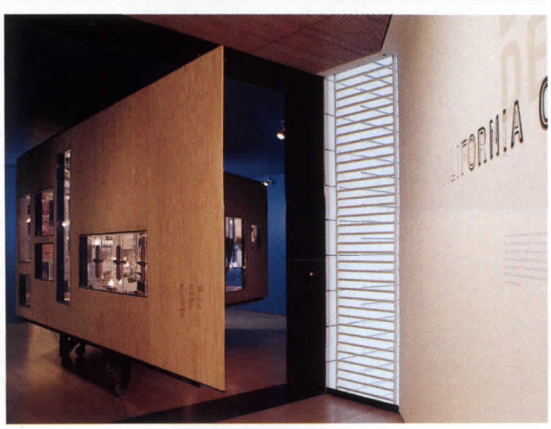
Exhibition Design

By Sarah Amelar

Whether the content of an exhibition is as ethereal as digital sound pieces or as concretely grounded as full-scale model houses, whether it draws on art, architecture, written documents, household objects, anthropological artifacts, or any other collection of information, the perennial conundrum is how to render the immaterial spatial—how to give the show's concept impact and three-dimensional meaning for visitors moving through it. As artist Marcel Duchamp made abundantly clear when he signed a urinal for display in an art exhibition, the immediate surroundings can influence the perception, if not the experience, of the work presented. After all, even the convention of the pure white gallery with pedestals is hardly neutral, conveying, however tacitly, a particular narrative and character traits of the venue.

"In inviting someone to design an exhibition," says Henry Urbach, curator of architecture at the San Francisco Museum of Modern Art (SFMOMA), "I'm not just bringing in a person to carry out my vision; it's a way of making the interpretation and the conversation about a show's form and content richer and more complex." Independent curator Donald Albrecht, who has staged major shows in such places as the National Building Museum, in Washington, D.C., and the Museum of the City of New York, agrees. He welcomes an inspiring counterproposal to his ideas, a truly three-dimensional vision that may not have crossed his mind, he says, "rather than a matter of merely picking wall colors and typefaces."

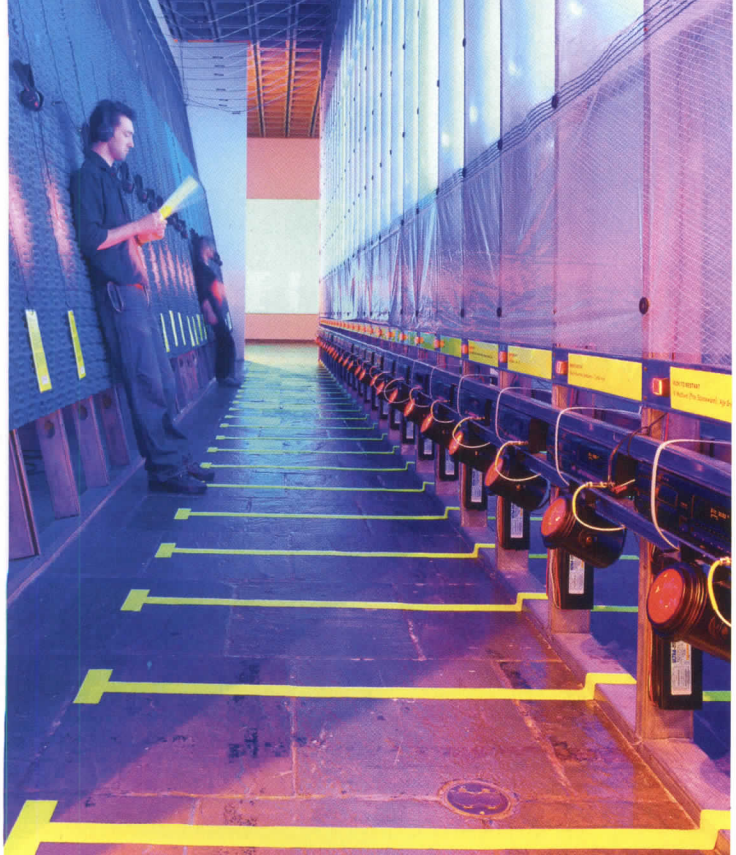


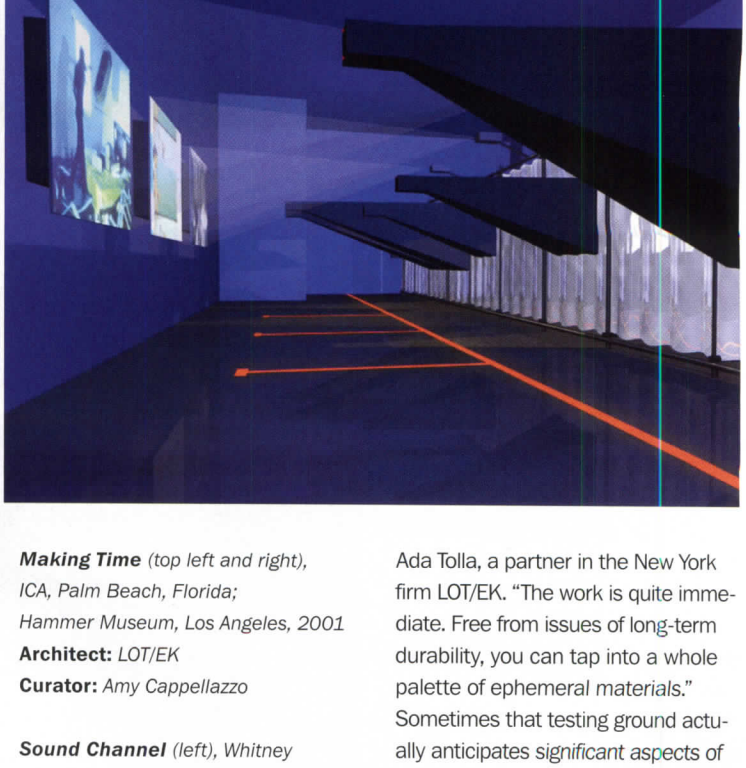


California College of the Arts at 100: Innovation by Design,
San Francisco Museum of Modern Art, 2007
Architect: *envelopeA+D*
Curator: *Henry Urbach*

PHOTOGRAPHY: © IAN REEVES

Exhibition Design





Making Time *(top left and right), ICA, Palm Beach, Florida; Hammer Museum, Los Angeles, 2001*
Architect: *LOT/EK*
Curator: *Amy Cappellazzo*

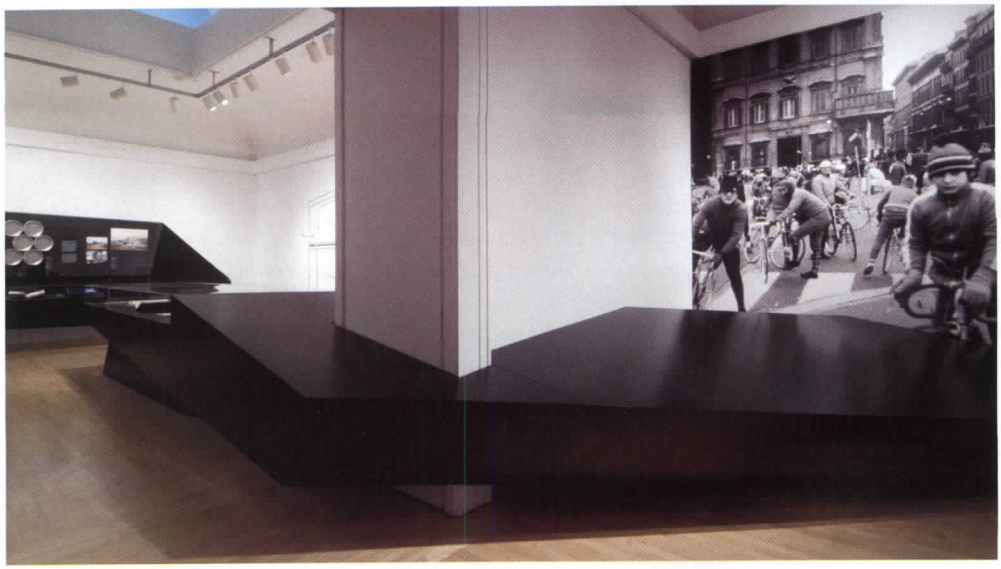
Sound Channel *(left), Whitney Museum of American Art, N.Y.C., 2001*
Architect: *LOT/EK*
Curators: *Larry Rinder, Debra Singer*

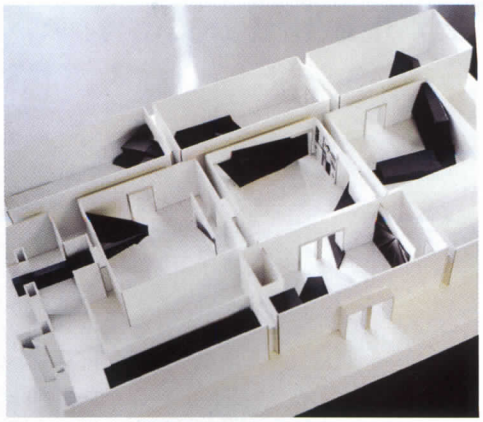
While the creators of gallery or museum installations have successfully included graphic and interior designers, an imaginative architect, attuned to the potential of both space and materials, is sometimes particularly well suited to take the curatorial content to a higher level. The history of architects shaping the spatial flow and surface play of temporary exhibitions is a long one, threading its course through the ephemeral interventions of Mies van der Rohe, in the 1920s and '30s, and the work of Carlo Scarpa and Franco Albini in the mid-20th century, all the way to the present. Sometimes collaborating with graphic designers, many architects, from well-established celebrities to young upstarts, have had a hand in exhibition design—Frank Gehry, Hans Hollein, Venturi, Scott Brown, Zaha Hadid, Shigeru Ban, Coop Himmelb(l)au, Lewis.Tsurumaki.Lewis, and Escher GuneWardena among them.

"For us, exhibition design is exciting, a chance to test architecture Ada Tolla, a partner in the New York firm LOT/EK. "The work is quite immediate. Free from issues of long-term durability, you can tap into a whole palette of ephemeral materials." Sometimes that testing ground actually anticipates significant aspects of an architect's later, permanent work. (In conjunction with his design of the 1986 Alvar Aalto show in Tokyo early in his career, for example, Ban made the serendipitous yet seminal discovery of discarded cardboard tubes as a viable architectural material. He has gone on to feature them in many permanent structures, including his Paper House and Paper Church.)

Highly experimental installations, however, are not the goal of every venue. "Some museums want a consistent look and identity for all their shows (as at, say, the Museum of Modern Art or the Metropolitan Museum of Art—each has its own 'house style,' produced by a permanent staff)," says Albrecht. But then there are places, usually smaller institutions, that try to give each exhibition "its own identity and appearance. Of course," he adds, "certain museums also acquire a 'quasi-in-house look' (whether by intent or not) through working with the same outside teams over and over again."

Often curators bring in architects when the spatial challenges are particularly complex. For the exhibition *California College of the*





1973: Sorry, Out of Gas, *November 7, 2007–April 20, 2008, Canadian Centre for Architecture, Montreal*

Architect: *Saucier + Perrotte Architectes*
Curators: *Mirko Zardini, Giovanna Borasi*

at SFMOMA (2007), Urbach curated a show celebrating the centennial of the California College of the Arts (CCA) with work by the school's faculty, students, and alumni. But he was concerned that the vast range of objects—everything from posters and architectural models to cutlery, a water cooler, a chandelier, and a sandal—would come off as a "grab bag." So he decided to "up the stakes," as he puts it, and bring in an architect from CCA's faculty.

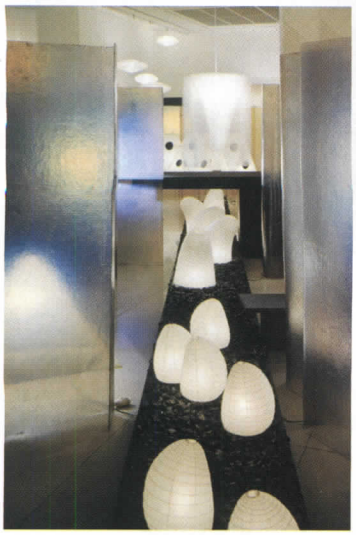
Intuitively matching the commission with an architect, he chose Douglas Burnham of envelopeA+D, who unified the show's 40 objects into a single plywood case on wheels. A sort of bent "ark," as Burnham describes it, the vessel had a strong sculptural presence, with each of its "prows" projecting into a doorway, purposefully splitting circulation through the space. The container, with variously sized windows at different levels, also recalled a giant, compartmentalized salesman's suitcase, displaying merchandise. Here, each two- or three-dimensional object appeared behind its own window in an individual acrylic vitrine (recycled from previous exhibitions), lined in shiny, translucent Mylar. Through these sheer internal partitions, you could see myriad reflections and oblique, veiled views of neighboring objects—a kaleidoscopic effect that heightened the sense of multiplicity, while keeping the single object in the foreground in focus.

An equally tricky, but entirely different, set of spatial and perceptual issues has cropped up as sound and video pieces infiltrate museums and galleries. For *Making Time* (2001), *Sound Channel* (2001), and *X_Static Process* (2003–07), LOT/EK needed to define palpable space for such ethereal work. With *Making Time* (at the ICA in Palm Beach, Florida, and later, the Hammer Museum in Los Angeles), Tolla recalls, "The curator called us and said, 'I've selected the work—it's all about exploring time in video—but I'm not sure what to do with it next.' "

To organize and display this collection of video pieces, each with its own presentation requirements (including wall projection, monitors, and/or enclosure), the architects installed steel-pipe scaffolding that became the armature for the entire exhibition, defining separate spaces, holding monitors, and so on. Applying fluorescent gaffer's tape in bands on the floor, LOT/EK created graphics that were visually compelling, but primarily instructional, guiding you through. To darken the space adequately but not excessively, the architects bathed it in blue light, which gave the fluorescent tape a magical Day-Glo quality, luminously evoking the moving image.

Also in 2001, LOT/EK designed *Sound Channel* for New York's

Exhibition Design

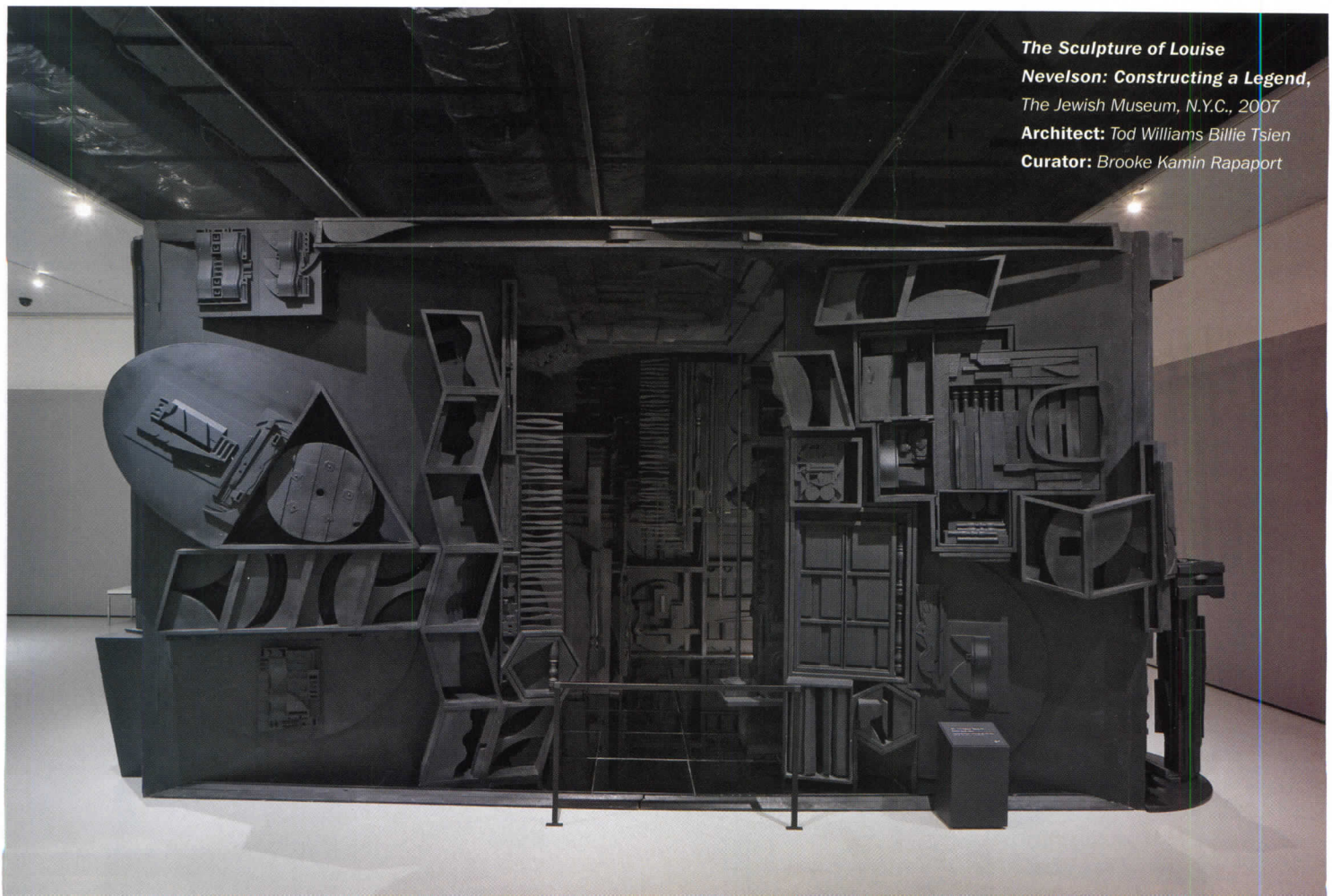


Quiet Light, *The Gallery at Takashimaya, N.Y.C. (1994–2001)*
Architect: *Tod Williams Billie Tsien*
Curator: *Lynn Gumpert, TWBTA*

Whitney Museum. Tolla notes, "It was one of the first museum displays of sound pieces—and we definitely didn't want to just put out headsets and chairs with a little list on the wall next to them." Instead, the architects created an interactive, all-immersive corridor, also illuminated in blue. Here, "live walls," activated by sensors, lit specific spots that corresponded to the 25 separate sound works, indicating which were in use. Highly visual and experiential, this solution connected the show's content directly with the spatial configuration, as well as the actions of the visitors.

But the dialogue between a successful exhibition design and the existing space—as well as the work on display—can also be extremely subtle. And though the architect's hand may sometimes seem all but invisible, it may have accomplished a great deal in giving a show's content and concept both clarity and emphasis. For *Extreme Textiles: Design for High Performance* (2005) at New York City's Cooper-Hewitt Museum, for example, curator Matilda McQuaid was concerned that the elaborate architectural ornamentation of the museum's Carnegie mansion might compete visually with the textiles. "I wanted the work to be the first thing you saw when you walked in." In response, architect Toshiko Mori designed an installation with central platforms and lighting that allowed the gallery edges to fade away into darkness, bringing into focus the grain and textures of the materials on display.

With textiles as the backdrop and visual filter, rather than the subject, Tod Williams Billie Tsien Architects (TWBTA) recently lined a series of galleries for a show of Louise Nevelson's sculpture at the Jewish Museum in New York with a pale-gray spandex scrim that, in some places, wrapped the interior's perimeter and, in others, stretched across the space. The idea for this 2007 installation, says Tsien, was to "calm the surroundings," a former mansion with a warren of irregular interior spaces and complicated architectural articulations that threatened to distract from the intensity and power of Nevelson's work (which, of course, draws on its own vocabulary of fragmented architectural ornamentation). The fabric liner over simple wood frames—a solution that respected tight budgetary and time constraints—not only receded quietly, though luminously, behind the mostly white or black sculptures, but also mediated viewer perception. At the show's entrance, for example, visitors got a physically inaccessible but enticingly veiled view of a key sculpture, appearing



The Sculpture of Louise Nevelson: Constructing a Legend, *The Jewish Museum, N.Y.C., 2007*
Architect: *Tod Williams Billie Tsien*
Curator: *Brooke Kamin Rapaport*

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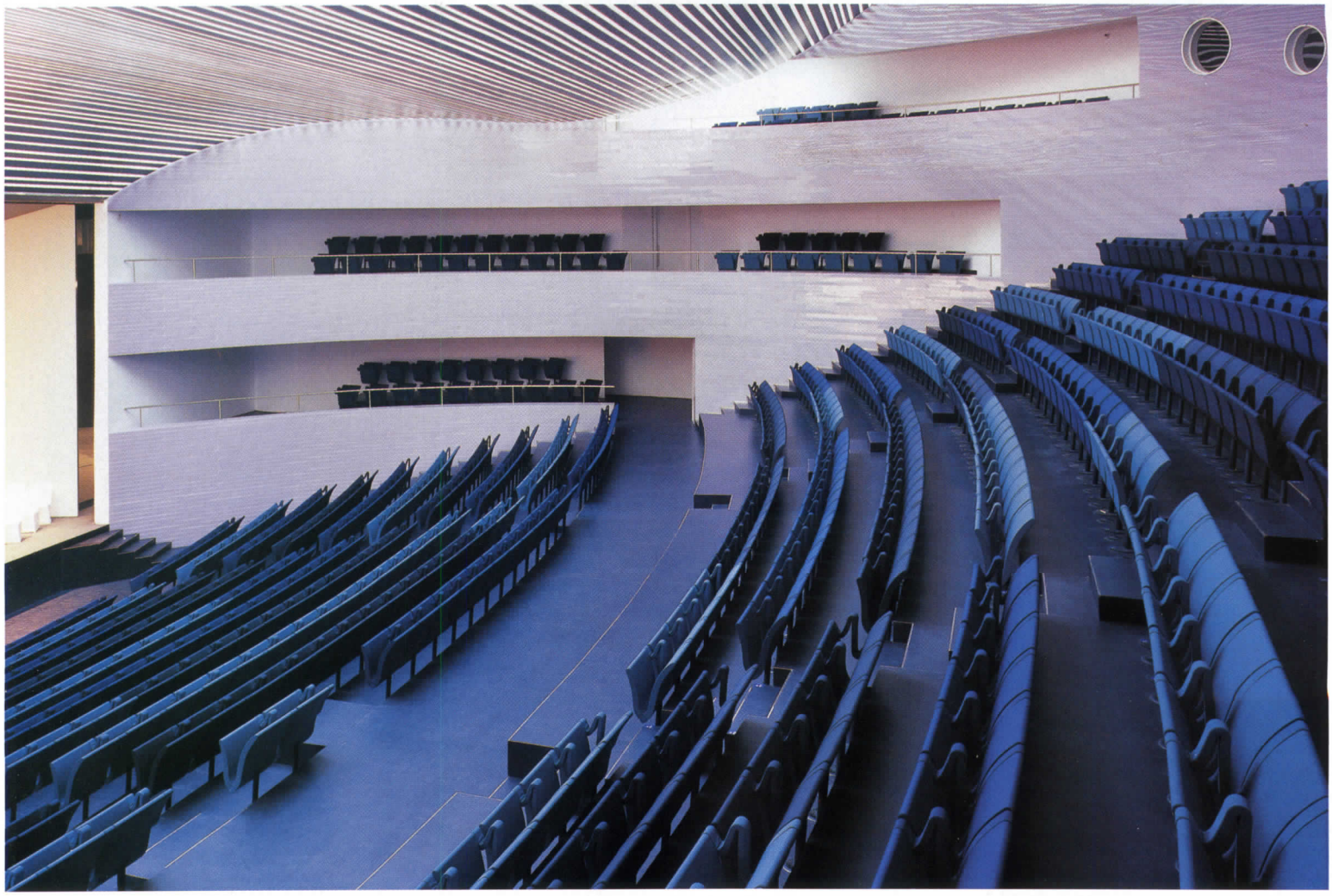

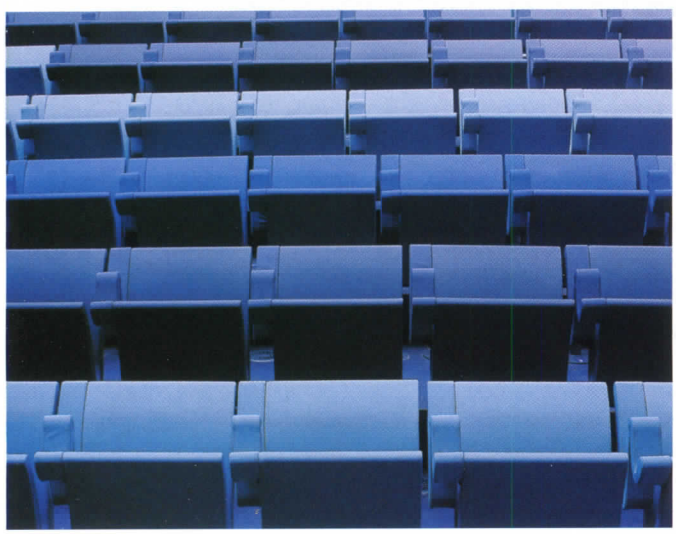

Palacio de Congresos, Badajoz - Project **Josè Selgas and Lucia Cano Architects**
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Exhibition Design

The Architecture of R.M. Schindler,
Museum of Contemporary Art, L.A., 2001
Architect: *Chu+Gooding*
Curators: *Elizabeth Smith, Michael Darling*

through a gauzy "window" within an otherwise opaque fabric wall. With the placement of the largely seamless spandex establishing the circulation route, the path culminated with *Mrs. N's Palace*, a towering 11-foot-tall piece. Over it, TWBTA removed an area of the existing 12-foot-high dropped ceiling and inserted a black scrim well above it. This move gave the large and visually complex work vertical breathing room, as well as a subtle interaction with its architectural container.

While some exhibition designs provide a modestly contrasting backdrop, others intentionally evoke the sensibility of the work on display. At its best, this approach veers away from literal pastiche in favor of abstract interpretation. Ban, at the 1986 Alvar Aalto show in Tokyo, for example, created an undulant ceiling of cardboard tubes that conveyed an affinity with the Finnish architect's work without mimicking or upstaging it. In that spirit, TWBTA designed *Quiet Light* (1994–2001), a traveling installation of Isamu Noguchi's Akari light sculptures. There, the architects inserted low, easily transportable fiberglass partitions that recalled the luminous translucency of Japanese paper screens, while subtly echoing Noguchi's lanternlike forms.

Similarly, Chu + Gooding's design of *The Architecture of R.M. Schindler* (2001), at the Los Angeles Museum of Contemporary Art, resonated with Schindler's architectonics, but through a current-day industrial material: horizontal strata of exposed Homasote board.

Giving tactile immediacy to a museum exhibition about architecture is, of course, notoriously difficult, particularly if the display relies on documentary photographs of buildings: objects-once-removed. (Architectural shows tend to have greatest impact when they focus more on authentic drawings, as in the Schindler display, or on original, site-specific 1:1 installations by the architects.)

But whether an exhibition concentrates on architecture or not, its content may be almost purely informational, rather than a collection of individual works of art or otherwise rare and valuable objects. That was a big part of the challenge for Saucier + Perrotte in designing *1973: Sorry, Out of Gas*, currently on view at The Canadian Center for Architecture (CCA) through April 20, 2008.

Surveying architectural and urbanistic responses to the 1973 oil crisis, implicitly in light of their relevance today, the show presents mostly documentation: photographs (with subject matter ranging from endless lines at gas pumps to energy-saving innovations in architecture and engineering), pamphlets, how-to manuals, news footage, books, clipped articles, and other artifacts. Though much of the material is compelling and, at times, amusing, it can't claim the visual power of, say, a great work of art. So Saucier+Perrotte set out to give the journey through the exhibition strong spatial continuity and dynamism.

The architects created a black, prismatic object, more than 325 feet long, that snakes its way in and out of the show's six galleries. Conceptually, "a deformed black cube—an elemental form," as Saucier + Perrotte partner Gilles Saucier puts it, the twisting and turning object transforms itself. Starting out as a tunnel that engulfs viewers, the form becomes alternately horizontal and vertical, morphing into display shelves or vitrines, wrapping around existing partitions, and occasionally appearing to penetrate the white gallery walls, "as if plunging down into the CCA archive," says the architect, "only to reemerge, displaying what has been found." The black surface evokes a "dark and oily" quality. With constant shifts in scale, the form animates the space, addressing the overall exhibition, as well as the individual items on display. The design team further influenced the show's character by suggesting, says Saucier, that certain images become huge wall murals and by proposing, for example, the coy grouping of vintage board games, all with oil-crisis themes, directly opposite monitors airing energy-related statements by political leaders.

Just as Saucier + Perrotte played a key role in modulating the impact of the work on display, so too did envelopeA+D, LOT/EK, Tod Williams Billie Tsien, and Chu+Gooding, each in different ways, with their respective exhibitions. Though, on occasion, an architect has performed simultaneously as the installation designer, curator, subject of the show, and creator of its content, clearly the role of exhibition designer alone can become remarkably varied and expansive.

Behind the scenes, however, exhibition design is, like most other architectural projects, strapped with pragmatic underpinnings. Regulating codes and restrictions are all at play—including fire and safety rules, minimum viewer distances from objects and other presentation requirements (sometimes stipulated by lending institutions and art insurers), lighting parameters, and the laws of gravity. Most of all, the raw content rarely fits readily into an existing venue, or the individual works with the other items on display. But just as the most inventive architecture transcends such seeming limitations, so, too, does stellar exhibition design. ■

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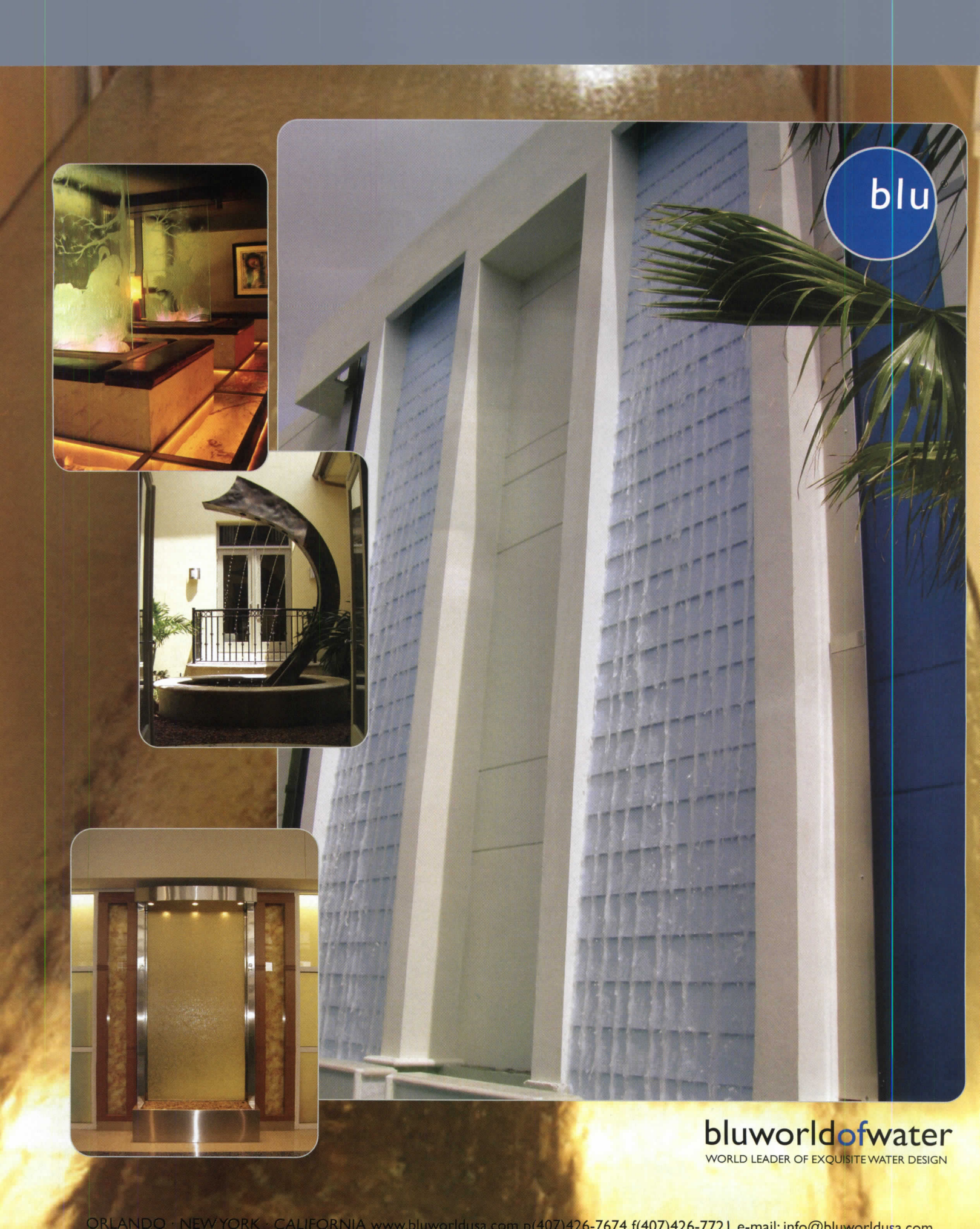

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Trade Show Review Valencia • Valencia Furniture Fair

From September 24 to 29, 2007, Habitat Valencia Forward showed off products that were as lively and colorful as the Spanish port city that played host. Local designers were among the top talents and emerging stars, as were neighbors from Barcelona and the Basque provinces. *Josephine Minutillo*

1 Write on The Bulego writing desk, designed by Abad Diseño, is set off by the scissor shape of its steel-and-wood legs. Materials for the desk structure and optional trays include wenge, oak, teak, or walnut, and an extensive range of lacquers. Nueva Línea, Azpeitia, Spain. www.nuevalinea.es **CIRCLE 200**

2 A perfect perch A lightweight stool, Flod is made from sturdy and resilient rotation-molded polyethylene for use indoors or out. The integrated footrest is ergonomically positioned for comfortable sitting and easier carrying. Flod is available in five vibrant colors. Mobles 114, Barcelona. www.mobles114.com **CIRCLE 201**

3 It's showtime Jaime Hayon's lively Showtime seating for Bd Ediciones features a backrest in a high or low version, a four-legged or sled base, and an optional armrest. Finishes include varnished wood, lacquers in a variety of colors, and upholstery in four different fabric types. Bd Ediciones, Barcelona. www.bdbarcelona.com **CIRCLE 202**

4 Tip-top shape Young English designer Marc Krusin has created several rugs for the Spanish company Gandia Blasco. His Tip Top rug is made from 100 percent virgin wool on cotton backing. It measures 5.6' x 7.9'. Tip Top is part of Gandia Blasco's extensive collection of hand-tufted rugs made in India. Gandia Blasco, Valencia, Spain. www.gandiablasco.com **CIRCLE 203**

5 Shiny happy seating Jorge Pensi, one of Spain's leading architects and designers, created the kdms modular sofa together with Daniel Abate for the Spanish company Kanaba. The design, which includes cushions made of high-density polyurethane foam, offers a range of seating and lounging possibilities that come together from five base pieces. Several upholstery options are available, from soft velvet to a shiny finish. Kanaba, Yecla, Spain. www.kanaba.es **CIRCLE 204**

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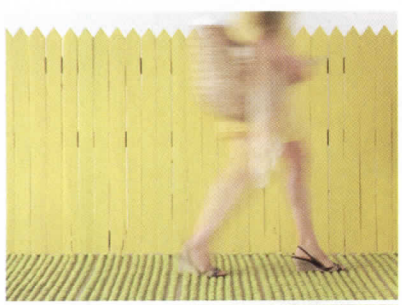

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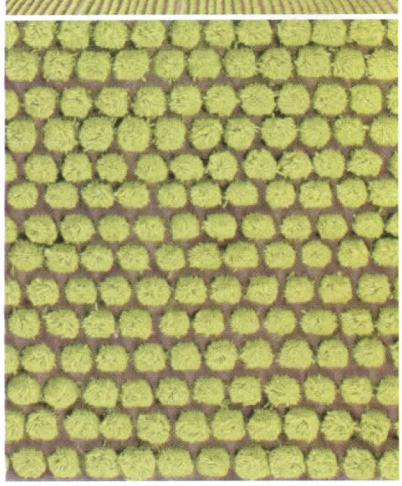

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Opportunity is the key to hiring and retaining talented staff

Practice Matters

By B.J. Novitski

As long as the U.S. construction boom remains strong, there will be stiff competition among architecture firms for talented, experienced employees. Pay and bonuses are rising to attract architects away from rival firms. And yet many firms are neglecting a gold mine of talent—right in their own backyards. By developing and promoting their existing staff, and by nurturing a culture that encourages staff loyalty, firms can better manage growth at less expense than by seeking outside talent. Indeed, firms may discover that strengthening firm culture brings additional benefits.

According to Justin Roy, a retention specialist with SullivanKreiss, an AEC executive search firm, competition is particularly fierce now for architects with 10 to 20 years of experience. "Salaries are skyrocketing," he says, and firms are offering extra vacation, more 401K funding, or fully subsidized medical insurance. Consulting firm ZweigWhite reports this competition has pushed the median pay plus bonuses for project managers in engineering, planning, and environmental consulting firms over six figures for the past three years. Moreover, the surveyed firms predict a 10 percent increase in incentive compensation (bonuses and profit sharing) in the course of the coming year.

Nevertheless, ZweigWhite statistics say, median staff-turnover rate has held steady at nearly 15 percent (12 percent voluntary) for the past four years, fueling recruitment competition and pay inflation. An alternative would be to lower the turnover rate, but according to ZweigWhite consultant Derwin Irvine, retention initiatives are getting short shrift. "The principals I talk to recognize turnover as a big problem, but when there's a time crunch, they'll focus on projects and clients rather than on their own staff," he says.

Though good pay is important, it's not everything. A ZweigWhite survey found the three top factors in attracting and retaining staff are challenging work, advancement opportunities, and educational growth. It's all about respect: firms helping lower-ranking staff in their professional growth and making sure the projects themselves inspire pride, whether through environmental leadership, social responsibility, or design excellence. And a firm's search for cultural identity and morale boosting can be laced with creativity and fun. The final evaluation about whether a firm is a good place to work or a hive filled with worker bees depends on many intangibles.

Offices that lack advancement opportunities, creative work, and chances for educational growth may not be able to retain employees, even if they pay well.

Career development

One effective way to acquire talent is to develop it from within. Firms often fund employee's licensure expenses, and travel to conferences, for instance. Many bring continuing education in-house. Cannon Design, a firm that has won awards for providing a positive work environment, has created the "Cannon Design Academy," which provides in-house and online training and education to the firm's 700+ employees. The academy has provided over 6,000 AIA learning units and offers over 30 seminars and forums firmwide, many designed as tutorials for the registration exam. The course subjects range widely, including ADA requirements, building codes, telemetry in health care, seismic design, fast tracking, lighting design, and team building.

Roy suggests a still more intensive educational opportunity for selected junior staff. "Why not pay them to get a master's degree while continuing to work part- or full-time?" He explains, "You can write it off; you can make them sign something that says they have to stay for a certain number of years after they graduate. What a great way to hold on to your people!"

In parallel with course offerings, Cannon Design is also active in promoting explicit mentoring programs in which senior staff take younger architects under their wing. Senior leaders participate in formal "train-the-trainer" sessions to learn how to mentor effectively. They then assist junior employees in obtaining professional registration through the Intern Development Program.

One key to success for mentoring programs is good management. Lori Oakes-Coyne, principal with ZweigWhite's Human Resources Advisory Services group, says programs should be clearly structured and aligned with the firm's strategic plan. Firms should designate a facilitator to monitor and evaluate the program and to stay in touch with both mentors and mentees. Crucial to the program's success, says Oakes-Coyne, is the selection of experienced managers as mentors. Equally important is pairing mentors and mentees who have *compatible* personalities, professional backgrounds, and career ambitions. Program evaluation is important to determine where improvements can be made.

Perkins+Will has developed a

B.J. Novitski writes about architectural practice and sustainability. She was formerly managing editor of ArchitectureWeek *and can be reached at bjn@efn.org.*

program to identify and promote young talent within the large firm. Since 2003, the firm has held a design competition for its junior staff. The winning team or individual, selected by outside jurors, is given a cash award and an invitation to present their work to the firm's design leaders and board members. The winners are also invited to participate in leadership meetings for a year. The competition process also internally reinforces the firm's values of sustainable design and social responsibility.

Benefits

To demonstrate financial dedication to staff, firms are coming up with novel twists to pay and benefits. Some degree of health insurance subsidy and 401K contributions are now commonplace. Employee stock options and profit-sharing are gaining popularity because a sense of ownership motivates employees to work harder toward profitability. Fully funded health insurance has a higher value, as do options for dental, vision, and life insurance. Roy, having observed much staff discontent with rigid benefit offerings, advises his clients to exercise more flexibility. Employees with working spouses may not need health insurance, for instance. Entry-level staff may have no interest in life insurance but prefer a higher salary to help pay off student loans. "Why not have a buffet of benefit options?" Roy suggests. "People could pick what they want and really be happy because they picked it. Maybe firms could offer the option of switching packages every year as family situations change. A lot of turnover wouldn't happen if firms had better options."

Another opportunity for flexibility is in employee work hours. The 360-employee architecture firm Anshen+Allen has 9-hour workdays, with alternating Fridays off. For employees like mothers of

ble work schedules, telecommuting options, and less-than-full-time work. Roy points out that firms sensitive to flexible scheduling are more likely to attract and keep talented women of child-bearing age. Not only are they benefiting from this labor pool, they're also enhancing internal diversity. Anshen+Allen (A+A) has clearly learned this lesson. The firm's staff is 34 percent female, including 25 percent of upper management. This success contrasts starkly with the AIA's female membership of only 13 percent. In part as recognition for family-friendly policies, A+A recently won an award that honored it as one of the profession's most worker-friendly firms.

Creating culture

In showing employees they're valued, firms further enhance their corporate culture, demonstrating what the firm stands for and why staff should be proud to work there. "Culture," of course, is different for every firm. Timothy Haahs and Associates focuses explicitly on "doing well by doing good" and fostering a family-friendly atmosphere. Haahs himself developed a service approach to life after surviving a life-threatening illness. Haahs applies his good will to his projects and staff, and they respond by serving others, donating time and money to local charities. He supports staff education, both internal and external, subsidizes day care, and trains young architects in leadership in a "pathway to principal" program. As a result, the employees feel good about themselves and their employer, and turnover is low.

Perkins+Will has long held annual retreats to promote firm cohesiveness, but this year there was a twist. The four-day event was in New Orleans, where staff donated their time and energy to recovery planning, design charrettes, tree planting, and house construction. Staff participant Leigh Christy declared this a personally rewarding and uncomfortably eye-opening event. I highly recommend it to anyone who cares about society and the built environment." The firm's social responsibility is also reflected in their participation in "1%," a program of Public Architecture, which connects nonprofit organizations in need of design assistance with architecture and design firms willing to work pro bono.

Some firms offer free trips to staff as a reward for special service. California-based HMC takes the idea further and invites all staff, including nonprofessionals, to compete for travel grants as a means to define firm culture. Principal Kevin V. O'Brien, AIA, LEED, explains the idea's genesis: "There are a lot of people in our firm who collaborate to make things happen. So we tried to think about how to improve the culture without having it be all about architecture all the time. It's great to go someplace and be inspired by an experience that can influence your work." One of this year's two winners is visiting an Italian preschool to study a program that emphasizes the physical environment as a place to enhance learning, creativity, and community interaction. The other award winner will photograph "Things That Disappear" at Glacier National Park, at Yankee Stadium, and in Cuba. Both travelers are required to present their findings to the entire firm. They are subsidized with a travel stipend and an extra week of paid vacation. O'Brien reports the enthusiasm for the competition was so inspiring that several entrants decided to go on their proposed trip despite not receiving the award. HMC invites its clients to serve as jurors. Public relations was not the motivation, O'Brien says, but he learned that "if you can demonstrate that you care about the people who are working with you, of course that's going to be important to clients."

SmithGroup defines its firm culture, in part, by its commitment to sustainability. Its Philip Merrill Environmental Center in Annapolis, Platinum designation, and since then the firm has worked on more than 60 projects that have received or are expecting LEED status. As more architects become LEED practitioners, firms that don't actively pursue sustainability may find it difficult to retain skilled staff.

A strong firm culture depends on diverse staff working together. To this end, Gensler commissioned a study reported in *Strategies for the Inter-Generational Workplace*. The authors examined characteristics and motivations of several age groups. Older architects tend to be more hierarchical and technology-averse, while younger workers are more collaborative and techno-savvy. Gensler responds by providing flexible settings so each individual can seek out the work space that makes them most productive. The study notes that "learning and interaction among different people is really the best way to bridge the technology gap. By making older workers more comfortable with asking for assistance, by encouraging younger workers to share their expertise, and by facilitating that important sense of shared purpose and value, the technology barrier can be reduced."

What does it take to make your staff happy? There are as many answers as there are firms. Once a firm understands what makes their staff "tick," there are unlimited ways to create a supportive, appropriate culture. One firm has a house on a tropical island available to high achievers; another has a skateboard luge in the lunchroom. Firms hold parties, picnics, and holiday events for staff children. They subsidize fitness programs, tuition for higher education, pro bono work, and in-house sports teams. According to Justin Roy, even small gestures can go far to cement staff loyalty. He recommends that every firm conduct an annual confidential survey to assess staff morale and to generate ideas for improving it. There may be some expense involved, but how will it compare to the

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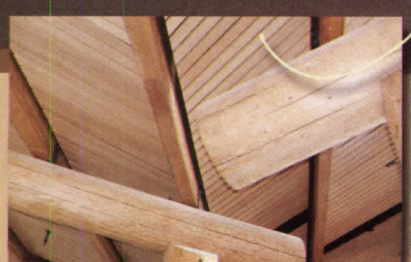

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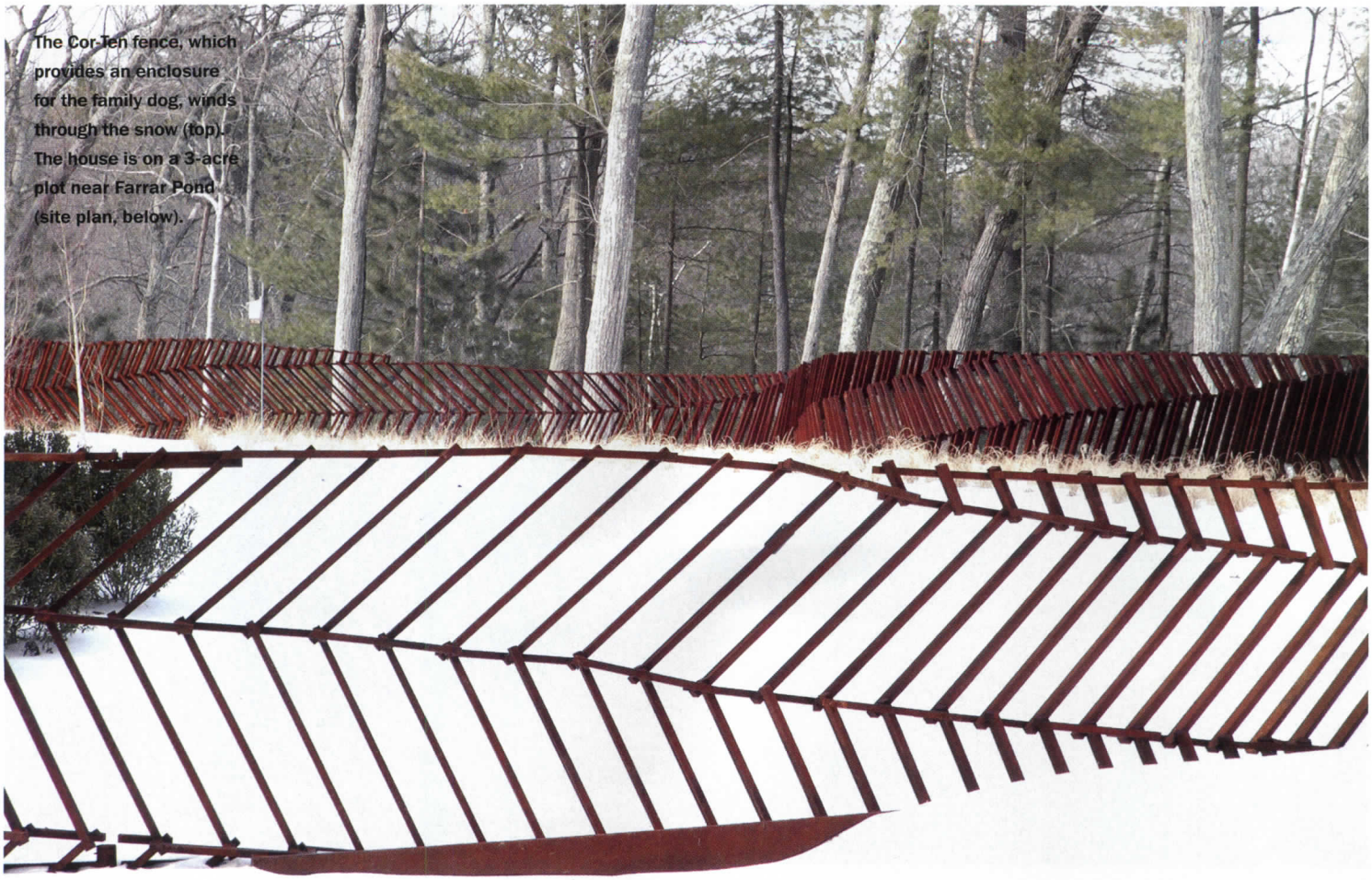

The Cor-Ten fence, which provides an enclosure for the family dog, winds through the snow (top). The house is on a 3-acre plot near Farrar Pond (site plan, below).

A fence wraps the forest in the sound of music

By Beth Broome

At once brash and subdued, the Cor-Ten-steel FLEXfence snakes over the contours of a hardwood forest, creating an energetic musical score across the seasons for its quintessential New England setting.

The work of Brookline, Massachusetts–based landscape architect and environmental artist Mikyoung Kim, the fence is one element of a larger landscape design for a couple's private residence in the bucolic Boston suburb of Lincoln. Situated on a 3-acre plot of kame-and-kettle topography overlooking Farrar Pond (a close neighbor of Thoreau's Walden Pond), Kim envisioned the fence, like her larger scheme for the house, as being stitched or woven into the landscape. While the programmatic demand was straightforward—a mechanism was needed to contain the couple's German Shepherd—the solution was anything but. Rather than designing a barrier in the traditional sense—a rigid structure dividing one property line from another—Kim was interested in creating a fluid and dynamic condition that flowed across the forest floor.

Because the focus of Kim's work is on urban parks and planning, she hesitated when the clients, who are highly active in the local arts community, approached her with a proposal for their private residence. But something about them intrigued her. At their initial meeting, the conversation between Kim (who once had ambitions to become a concert pianist) and the husband (a venture capitalist and blues guitarist) quickly turned

Snapshot

Flexible joints enable the fence to follow the earth's contours and facilitated the temporary compressing of the sections, which eased transport to the site.

to music. "We talked about Glenn Gould for the entire interview," says Kim. The two later talked at length about contrapuntal music, which, Kim notes, "takes a simple unit, like a cellular voice, and layers or repeats that." As they spoke, the idea for the fence took shape.

The modules, in the case of the fence, are the Cor-Ten rods, which are cut in seven different lengths and layered four deep to make a 12-inch-wide structure that ranges from 4 to 6 feet in height. The individual bars are fastened together with an intricate flexible-joint system, which enables the fence to expand and contract like an accordion. The whole thing, which is 825 linear feet, was fabricated off-site and brought to the residence in 55 15-foot-long units, scrunched into their most contracted position. The pieces were then craned into place, unfurled, and each of the joints was welded. Below-grade concrete footings every 10 feet anchor the segments to the ground. The flexible nature of the fence means that its form is in part dictated by the undulations of the topography. It is a gesture that emphasizes the interplay between the fluidity of the fence and the solidity of the ground.

While the FLEXfence serves its duty well as a physical barrier for the clients' dog, it also boasts higher accomplishments: Through sculpture, it registers the movement of the landscape and, almost literally, imposes a soundtrack on the natural environment. Indeed, in plan, says Kim, "it

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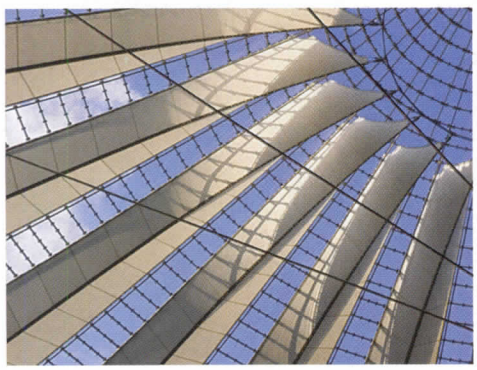

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Ace Glass built a mock-up system for review by the design team. ***"The 1" deep reveals throw a nice shadow line that creates a great look," according to Young.***

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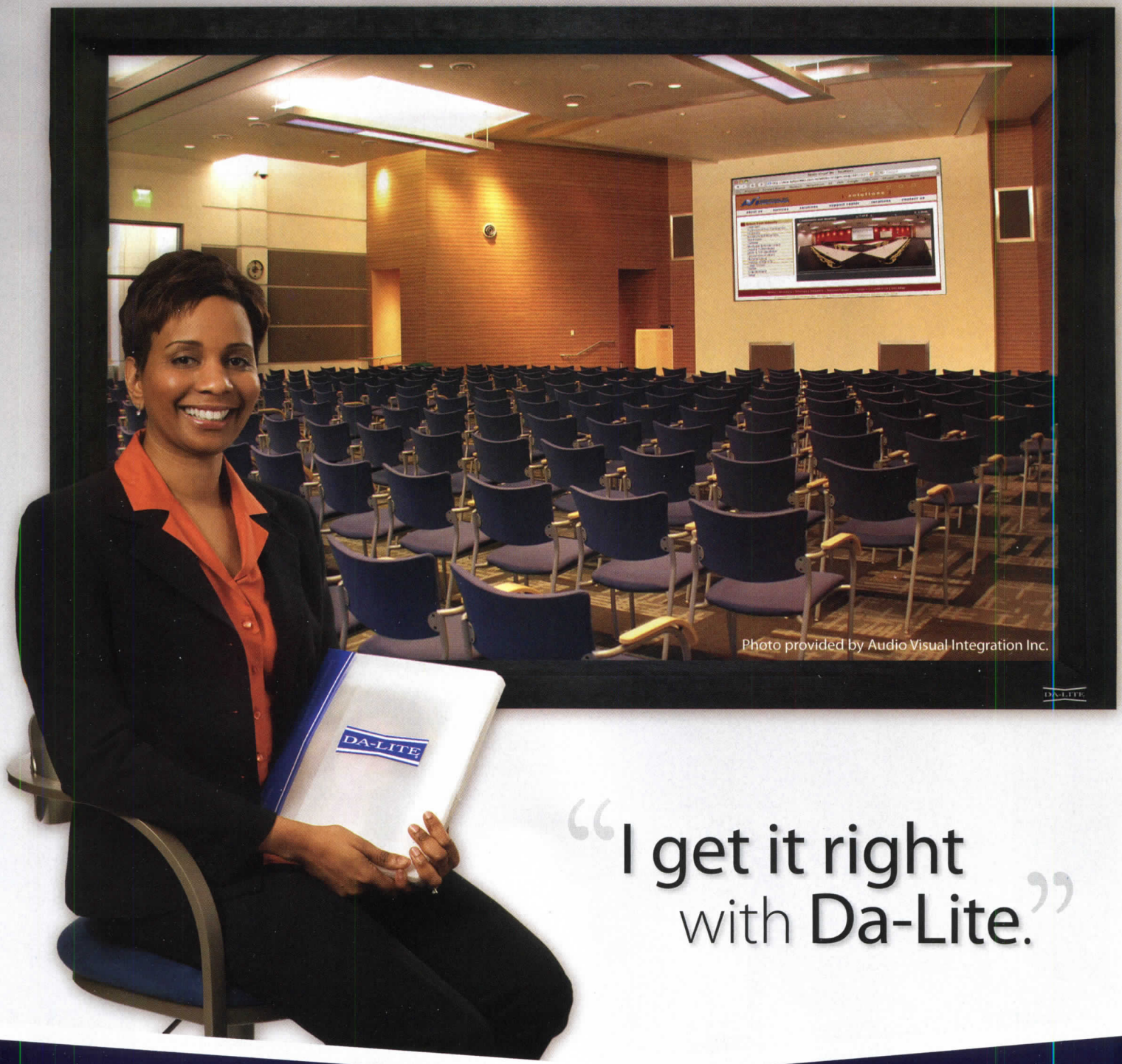

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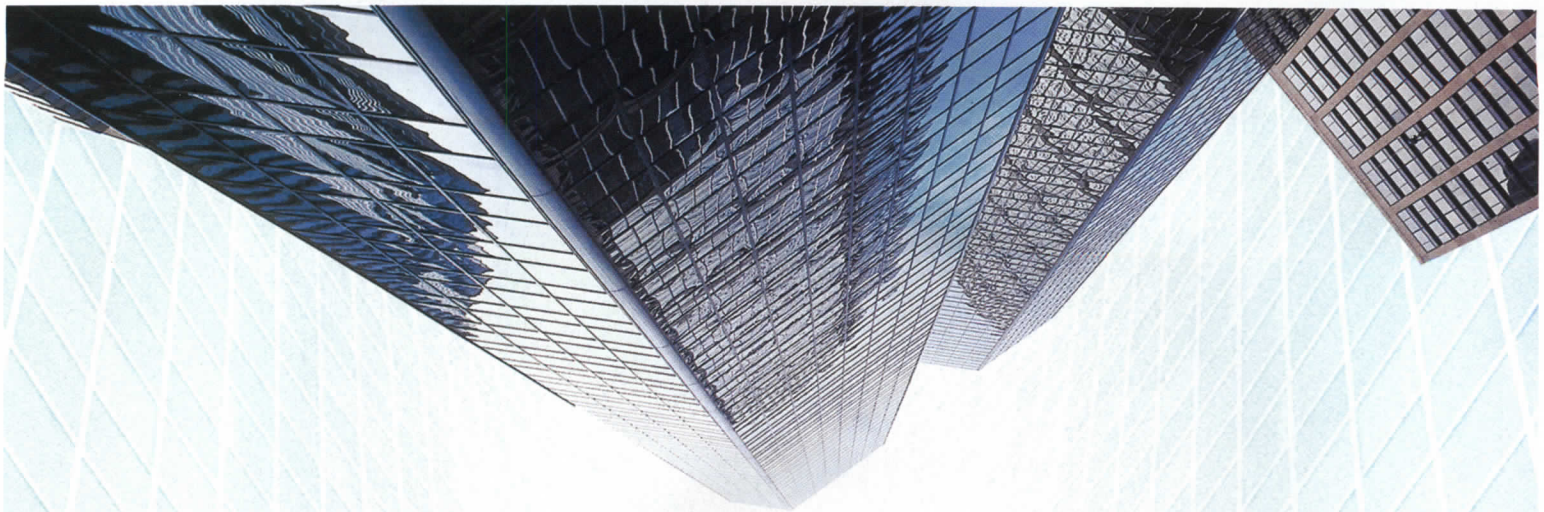

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Subject and Object:

Museums After Bilbao

By Joseph Giovannini

In museum architecture, there is before Bilbao and after Bilbao—a divide as abrupt as b.c. and a.d. After Bilbao, dozens of small and provincial cities hired renowned architects to design museums intended to put unlikely places on the international cultural map.

Typical of this cultural moment is Roanoke, Virginia, where hopes for urban transformation are riding on the tumultuous, billowing forms of the Art Museum of Western Virginia, designed by Los Angeles architect Randall Stout. Erupting within an otherwise bland neighborhood, this new architectural spectacle is giving the city energy, cultural focus, and an image for a postcard. However, in *The New York Times*, the designer recently cautioned, "I hate to think one building takes the heat for transforming an entire city, but I think it's a contributing factor to the cultural richness."

Architecture can perhaps define an institution, and it might spur local redevelopment, but expecting design to single-handedly spark the Cinderella transformation of a city is naive.

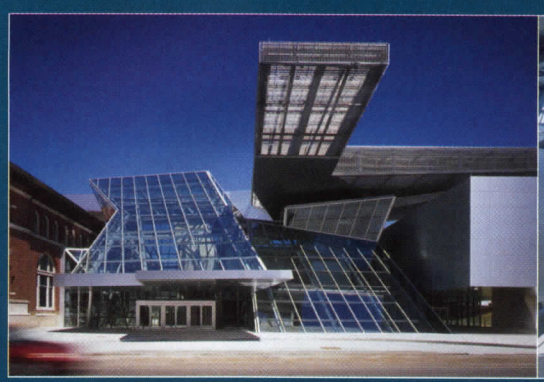
Size matters. It takes the critical mass of a Bilbao Guggenheim, coupled with a collection of recognized stature, to bring on wholesale urban change. A few medium-size museums, like Daniel Libeskind's feverishly angled Denver Art Museum and Richard Meier's classically composed Barcelona Museum of Contemporary Art in Spain, have indeed recast neighborhoods. The intensity of iconic design can stake out cultural space for a museum and energize the economy of the immediate neighborhood.

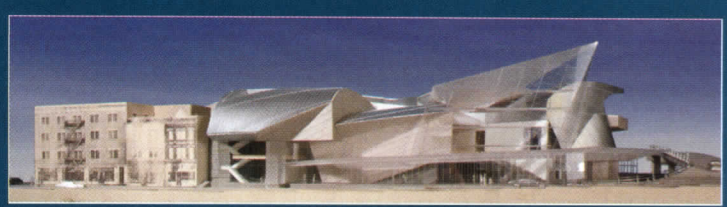
To impact urban space, the footprint needn't be large if the figure is strong. The spectacular kinetic roof of Calatrava's Quadracci Pavilion at the Milwaukee Art Museum, which unfolds like a bird taking flight, consummates a major thoroughfare in the city with a figural shape—the urban equivalent of the *Winged Victory of Samothrace* in the Louvre. Calatrava inserted a needle at a sensitive urban acupuncture point.

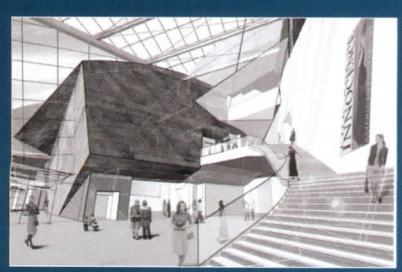
Some museums are transformative as urban design despite their boutique scale. Coop Himmelb(l)au designed a stunning glass pavilion in fractal geometries for the newly reopened Akron Art Museum in Ohio, and the radiant presence of the iconic structure gives new life to a bleak downtown deeply vitiated by urban exodus. The firm's Wolf Prix posits the lesson of many Neoclassical structures: A building need not be large to be grand. The architects sustain the exterior's charisma and grandeur with a faceted atrium lobby—an iconic interior—where a heroic staircase leads to the contemporary art collection. The architects have re-created in contemporary language the Beaux-Arts ceremonial procession of the Metropolitan Museum of Art, from its templelike front and grand staircase inside to the treasure chambers beyond.

Iconic success outside does not guarantee successful interiors. In its addition to the Walker Art Center in Minneapolis, Herzog & de Meuron stacked an auditorium, restaurant, and party space over the bookstore and ground-floor galleries to give the addition mass and presence. But the resulting verticalized parti makes little programmatic sense, and its confusing circulation thwarts the brilliant spiral progression in the squared galleries of Edward Larrabee Barnes's original structure.

A sine qua non of museum interiors is the promenade, and the



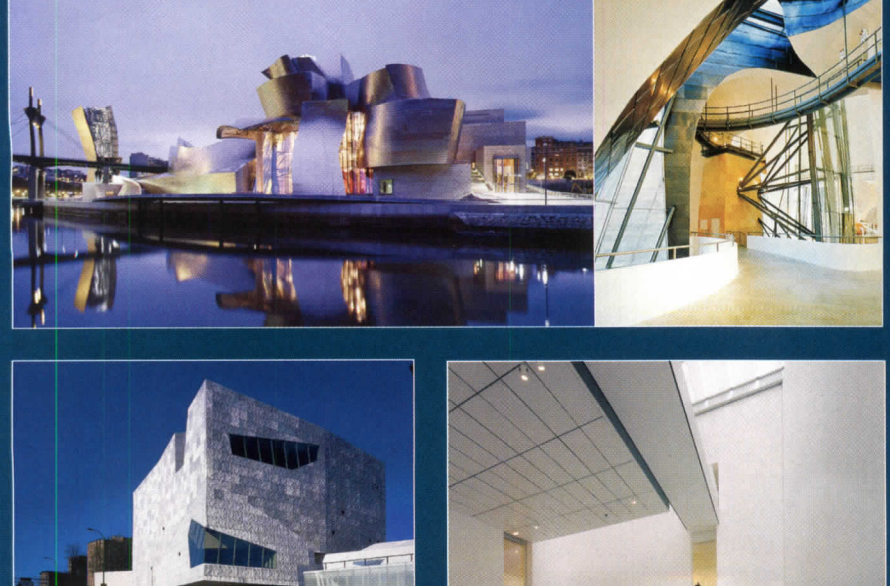


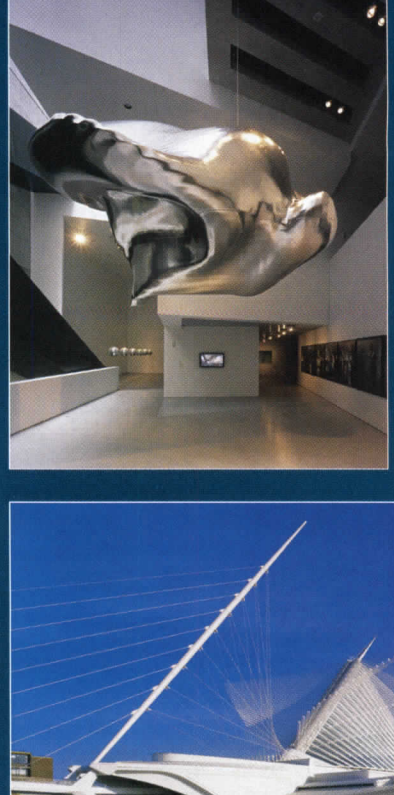


The Akron Art Museum, by Coop Himmelb(l)au (2007) is grand without being large (top two). Randall Stout's Art Museum of Western Virginia (2008) hopes to rejuvenate Roanake, West VIrginia, with architectural spectacle (middle and far right). The New Museum, by SANAA (2007), provides iconic architecture, but at the expense of pleasant interior spaces (right).

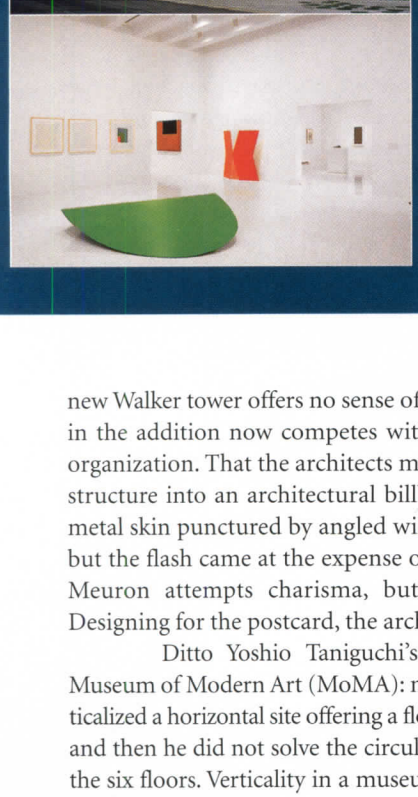
RENDERINGS: COURTESY RANDALL STOUT ARCHITECTS (MIDDLE AND BOTTOM RIGHT)

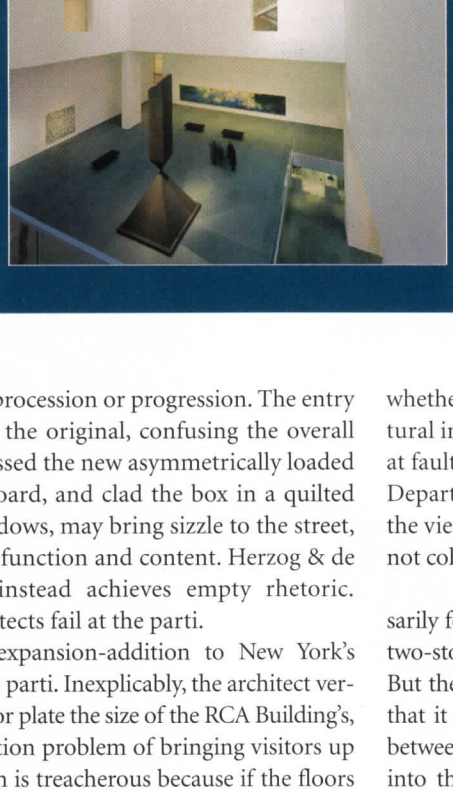
Joseph Giovannini is a critic and architectural designer who practices in Los Angeles and New York.

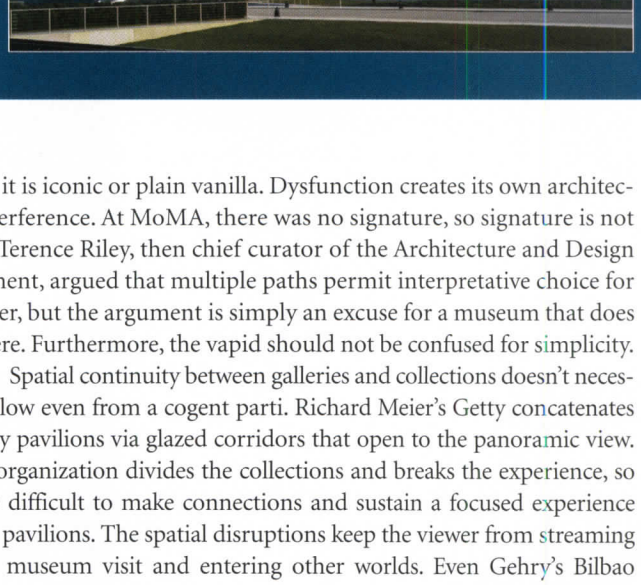




Clockwise from top left: Frank Gehry's Guggenheim Bilbao, (1997), exterior and interior. Zaha Hadid's Rosenthal Center for Contemporary Art (2003). Santiago Calatrava's Milwaukee Art Museum Expansion (2001). Yoshio Taniguchi's redesign of MoMA (2004). Herzog & de Meuron's expansion of the Walker Art Center (2005).







new Walker tower offers no sense of procession or progression. The entry in the addition now competes with the original, confusing the overall organization. That the architects massed the new asymmetrically loaded structure into an architectural billboard, and clad the box in a quilted metal skin punctured by angled windows, may bring sizzle to the street, but the flash came at the expense of function and content. Herzog & de Meuron attempts charisma, but instead achieves empty rhetoric. Designing for the postcard, the architects fail at the parti.

Ditto Yoshio Taniguchi's expansion-addition to New York's Museum of Modern Art (MoMA): no parti. Inexplicably, the architect verticalized a horizontal site offering a floor plate the size of the RCA Building's, and then he did not solve the circulation problem of bringing visitors up the six floors. Verticality in a museum is treacherous because if the floors are stacked, the architect must invent a path that unites the galleries in a smooth flow. Despite their commercial connotation, Taniguchi depended on disruptive escalators, creating the ambience of a department store.

The museum did not want, or need, a "signature" building (after all, it is MoMA), and indeed the museum does not have an iconic presence. However Taniguchi's putative neutrality did not guarantee a functional interior. The boxy galleries and distinct floors of the striated section create a space that separates the collection from itself. The lack of a parti with a unifying promenade and organization undermines the role of a museum to explain work.

The party line on signature buildings and architects is that the architectural spectacle competes with the art, but a bad plan fails the art whether it is iconic or plain vanilla. Dysfunction creates its own architectural interference. At MoMA, there was no signature, so signature is not at fault. Terence Riley, then chief curator of the Architecture and Design Department, argued that multiple paths permit interpretative choice for the viewer, but the argument is simply an excuse for a museum that does not cohere. Furthermore, the vapid should not be confused for simplicity.

Spatial continuity between galleries and collections doesn't necessarily follow even from a cogent parti. Richard Meier's Getty concatenates two-story pavilions via glazed corridors that open to the panoramic view. But the organization divides the collections and breaks the experience, so that it is difficult to make connections and sustain a focused experience between pavilions. The spatial disruptions keep the viewer from streaming into the museum visit and entering other worlds. Even Gehry's Bilbao Guggenheim, divided into three wings on three floors—as in a classical Beaux-Arts parti—creates a discontinuous experience. Despite decades of criticism, Frank Lloyd Wright's six-story Guggenheim offers cohesive shows: The ramp is a single street in a one-story building.

Since its construction in 1939, MoMA has championed the white box, that chamber of supposed neutrality in which objects float in a cool Newtonian world. By the time of its original design, architects had internalized notions of clinical hygiene and industrial production, and progressive design in museums implied galleries for the objective display of artistic specimens serially presented in uniform conditions.

By design, the environment was subtracted from the context so that viewers could study each work objectively in the unchanging circum-

PHOTOGRAPHY (CLOCKWISE FROM TOP LEFT): COURTESY GUGGENHEIM BILBAO

stances of a controlled world. Of course, Wright's Guggenheim famously posited a countervailing paradigm that admitted the environment—and implicitly subjectivity—into the equation. But MoMA has long prevailed as the museum model, and the Guggenheim has been the charming eccentric in the family, tolerated but not emulated—and rejected outright by the scolds. The respective positions of the museums have been distilled into the perennial question about whether architecture that is Architecture aggresses on the art.

The majority of museums of the past decade have taken the MoMA position, including MoMA itself. However, the most extreme example of the gallery as a white box is the new New Museum in Manhattan, by the Japanese firm SANAA. The exterior, a stack of displaced cubes stepped like an asymmetrical skyscraper, gives the museum all the advantages that an icon can confer on institutional identity. But the three floors of galleries inside, each a self-contained cube, are so reductive in their simplicity and geometric purity, and so disconnected from each other, that they become relentless voids that diminish the experience of the visitor.

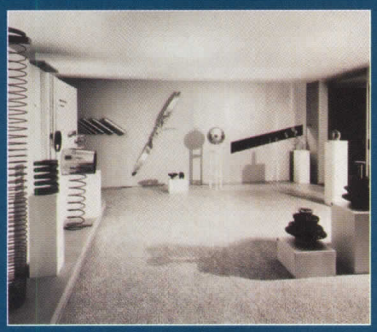
Objects in the New Museum do in fact look handsome, and most were probably created to bask in this kind of environment. But pity the viewer. In that great philosophical opposition between the object and the subject, between the thing and the sentient viewer, the object in the gallery has won so completely that visitors are mostly ignored, physically and psychologically. Windows are banished; kick-out spaces are few; natural light from skylights is faint; and forget creature comforts such as chairs or sofas. The wisdom that Carlo Scarpa designed into exquisite museums and installations that merged the space around the object into the space of the viewer, bonding them in experience, have been either lost, forgotten, or never learned in the recent generation of museums. When Scarpa hung a tableau perpendicular to a wall, he created an eddy of space that slows and captures the viewer. When he grouped a set of three statues on pedestals, or portraits on easels, the works spoke to each other in a conversation the viewer could enter. Their setting engaged the viewers, embracing them in a warm universe that addressed their sensibilities with a respect equal to the respect paid the object. Scarpa understood that objects cannot be successfully appreciated without cultivating, warming, and piquing the perception of the viewer.

Victoria Newhouse, in her recent book *Art and the Power of Placement*, noted that some artworks, such as the *Laocoon Group* now in the Vatican, have migrated through many settings that framed the work—and the experience of the work—differently. Interpretation is relative, and depends on the environment: There is no one interpretation. In her design for the Rosenthal Center for Contemporary Art in Cincinnati, Zaha Hadid created differentiated viewing environments at different scales in a series of interconnected spaces brilliantly linked by a vertiginous and iconic promenade of angled ramps.

In their design for the American Folk Art Museum in New York City, ironically right next to the new MoMA, New York architects Billie Tsien and Tod Williams cultivate many intimate viewing moments in spaces colored with shadow. Pieces acquire and enjoy a life of their own in niche environments. The architects sequence six stories of gallery spaces along an episodic circulation path that leads visitors by their curiosity up the entire height of the six-story building. Poured-in-place-concrete walls lend texture, gravity, and a tactile materiality.

As in Wolf Prix's Akron Museum, where the facade, entrance, and grand staircase raise the expectation of the experience to come, the cubistic facade of Hadid's Rosenthal Center and the fragmented face of Tsien and Williams's Folk Art Museum announce in advance that whatever these buildings contain is going to be different from anything in the prosaic world outside. The iconic object continues inside as an iconic environment. The aura of the architecture consistently conditions the visitor and heightens anticipation. Demonstrating that the best museum design is holistic—an integrated development of concept and execution inside and out—the architects further condition the viewer through an intriguing interior promenade and a changing sequence of differentiated spaces along a path of discovery. The galleries treat each object with great respect, but they also cultivate the viewing process so that the objects are sited within the experience and perception of the viewer, not just in a white void.

These designs tilt museums and their galleries toward subjectivity by cultivating an individual's perception, and although the examples are few and run against the grain of the mainstream, they are potent models for pointing toward promising areas of research in museum design. These spaces accept emotional content and integrate subjectivity and objectivity within a fuller museum experience. They shift the paradigm. ■

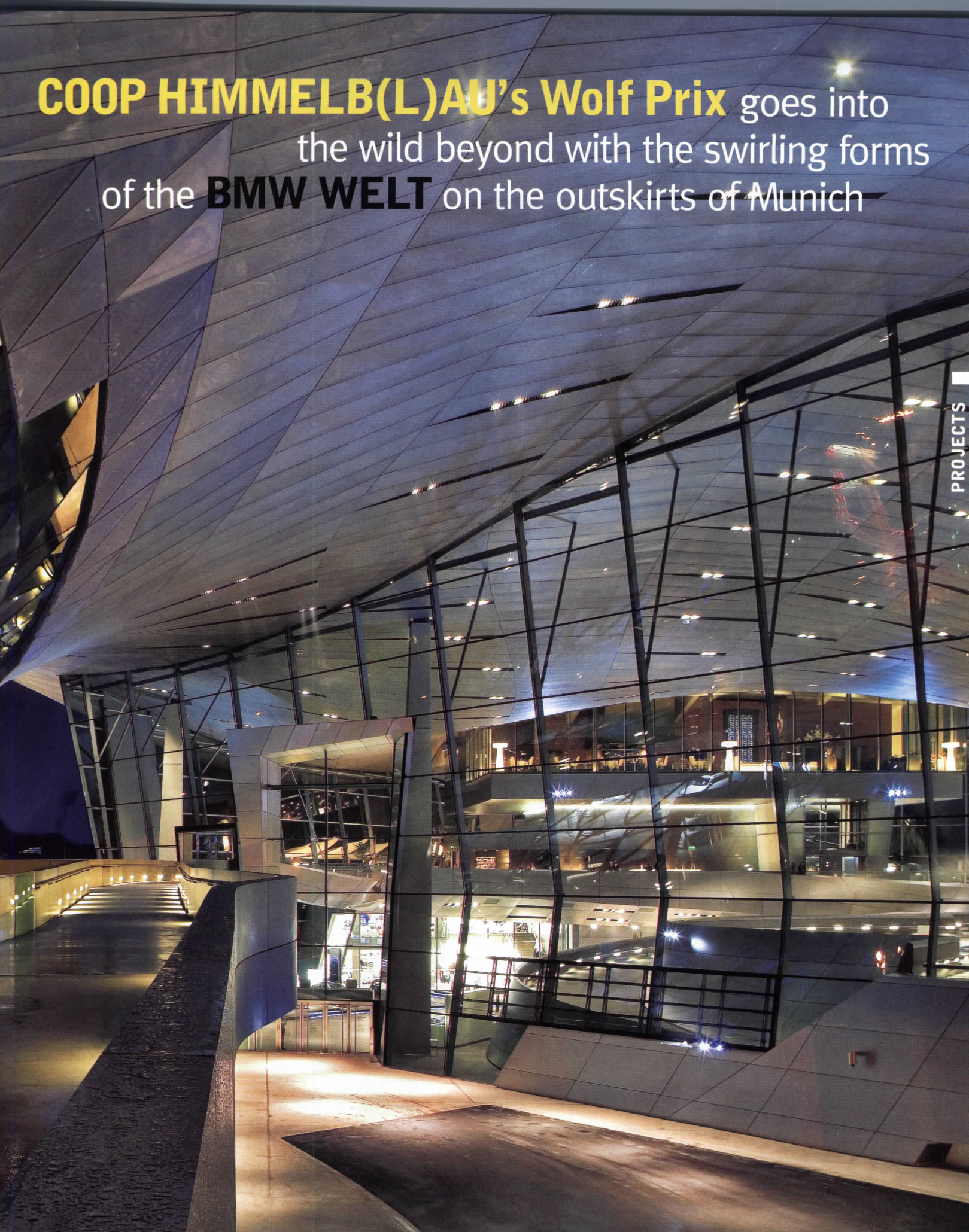


Clockwise from top left: The original MoMA (1939) exemplified the white-box approach to museum design (top two). Carlo Scarpa's restoration of the Museo di Castelvecchio in Verona, Italy (1954–67), values the museum visitor. The design of Frank Lloyd Wright's iconic Solomon R. Guggenheim Museum in New York City (1956–59) allows for cohesive exhibitions.

GUGGENHEIM MUSEUM (BOTTOM); © VACLAV SEDY/CISA-A. PALLADIO (MIDDLE)

A pedestrian bridge over Lerchenauerstrasse leads into the second level of the south entrance of BMW Welt, skimming past the whirlng-dervishlike Double Cone

COOP HIMMELB(L)AU's Wolf Prix goes into the wild beyond with the swirling forms of the **BMW WELT** on the outskirts of Munich



By Suzanne Stephens

BMW Welt (BMW World), which opened in Munich last fall, is not a building for the unreconstructed functionalist. While its bold, brazen form embraces a host of explicit functions (a delivery center for cars, exhibition space for the latest BMW designs, plus restaurants, shops, and even a business center), its architecture would horrify the Modernist problem solver. Its intentions ignore providing serviceable square footage for a given program: This is about branding.

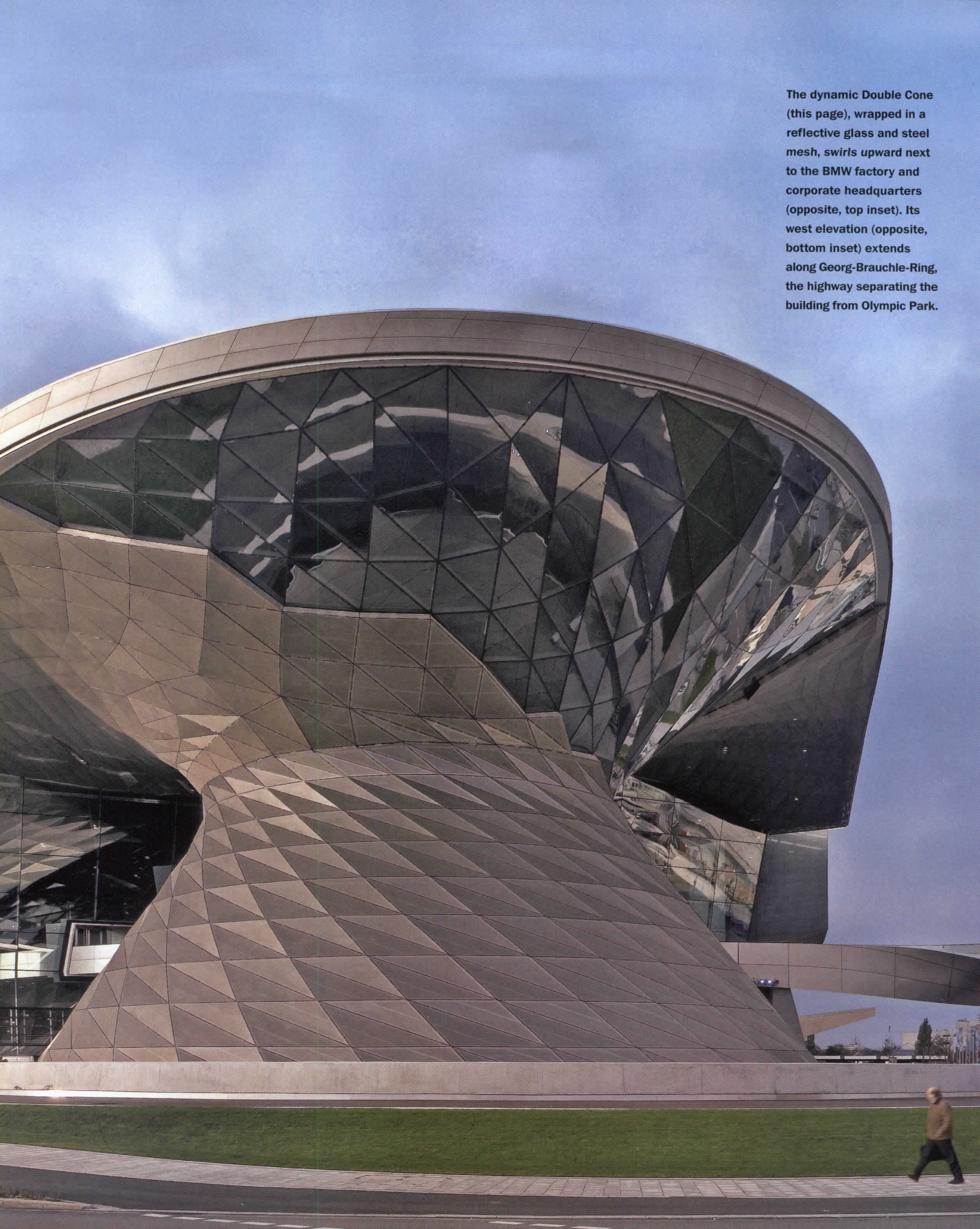
While *branding* is an overused word for a typically baggy concept, in this case it makes sense. You may not necessarily know the building's use just by looking at it, but you do want to find out. And, furthermore, you are going to remember it. Even if the branding rationale for extravagant design may weaken due to the economy going south, not to mention worries over carbon footprints, the phenomenon has allowed architects in the past decade to unleash their imaginations on a grand scale. It's been a wild ride.

BMW Welt's muscular, stainless-steel-clad body, designed by Coop Himmelb(l)au, rises with the energy and force of a giant version of Umberto Boccioni's *Unique Forms of Continuity in Space*. Poised by the side of a highway on the edge of Munich, it is stunning: not only because it got built, but because it is so well crafted. This jawdropper is a milestone in the career of Wolf Prix, who, with Helmut Swiczinsky and Michael Holzer, founded Coop Himmelb(l)au in Vienna in 1968. (Holzer left the firm in 1971, and Swiczinsky retired in 2006.)

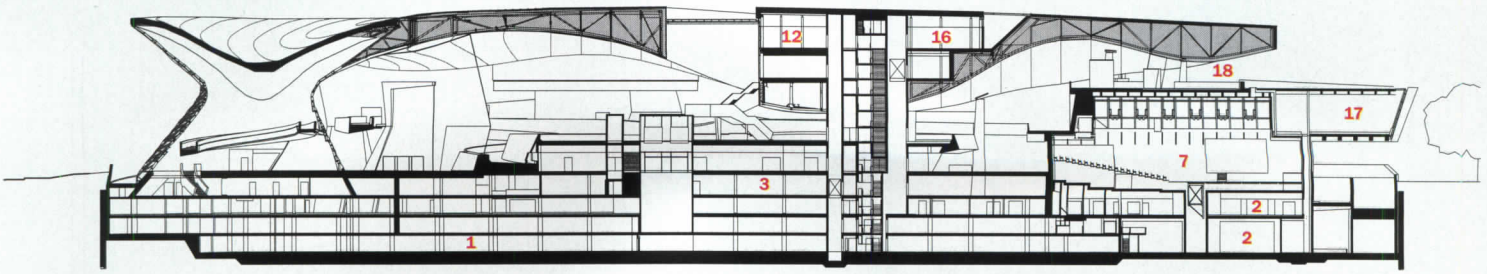
Despite BMW Welt's architectural weirdness, it links an ensemble of buildings around it into an urbanistic gestalt. These include BMW's corporate headquarters—a "four-cylinder" high-rise worthy of Bertrand Goldberg, which was designed in 1972 by Karl Schwanzer, Prix's former professor at Vienna University of Technology. Next to the headquarters sits Schwanzer's 1973 BMW Museum, a Niemeyeresque bowl-shaped building, now being renovated for a June opening. These structures, as well as the Olympiaturm (Olympics Tower) and the tentlike Munich Olympic Stadium that Frei Otto and Gunter Behnisch executed for the 1972 Olympics on the other side of Georg-Brauchle-Ring, form a compelling sci-fi cluster. Indeed, Prix designed his building to frame views of each of these bold, late-20th-century structures, and extended a pedestrian bridge from his building across Lerchenauerstrasse to link to the BMW campus.

Project: *BMW Welt, Munich*
Architect: *Coop Himmelb(l)au (Wolf D. Prix/Wolfdieter Dreibholz & Partner)—Wolf D. Prix, principal in charge; Paul Kath, project architect; Tom Wiscombe, Waltraut Hohenender, Mona Marbach, design team; Günther Weber, project director roof and facade*
Engineers: *Bollinger und Grohmann (structural); Kuehn Bauer Partner (mechanical)*
Consultants: *Schmitt, Stumpf; Frühauf +Partner (c.d. concrete work, interior fittings, bidding, construction administration); Lang & Burkhardt (traffic); AG-Licht (lighting)*

PHOTOGRAPHY: © DUCCIO MALAGAMBA (PRIOR SPREAD AND OPPOSITE); ROLAND HALBE (THIS PAGE INSET, TOP AND BOTTOM)



The dynamic Double Cone (this page), wrapped in a reflective glass and steel mesh, *swirls* upward next to the BMW factory and corporate headquarters (opposite, top inset). Its west elevation (opposite, bottom inset) extends along Georg-Brauchle-Ring, the highway separating the building from Olympic Park.



SECTION A-A

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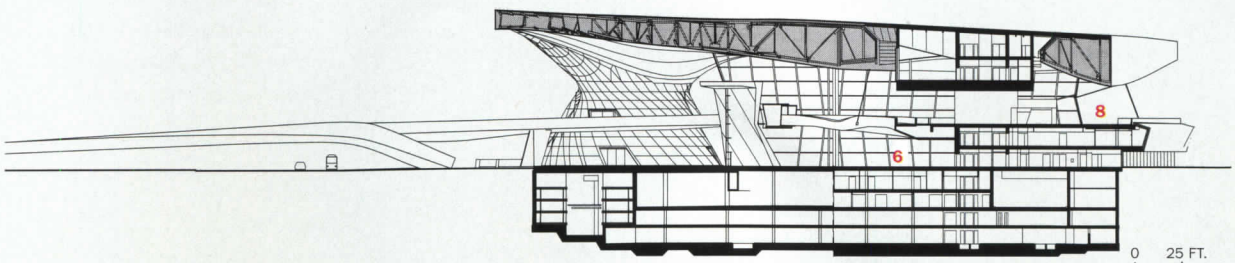
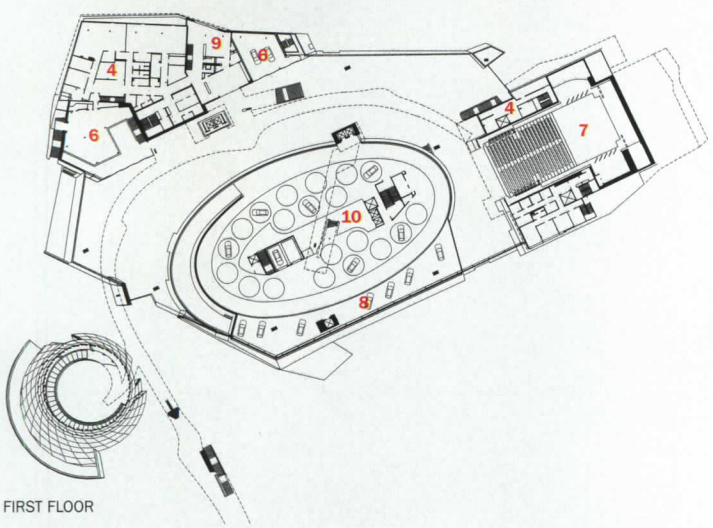
9 M.



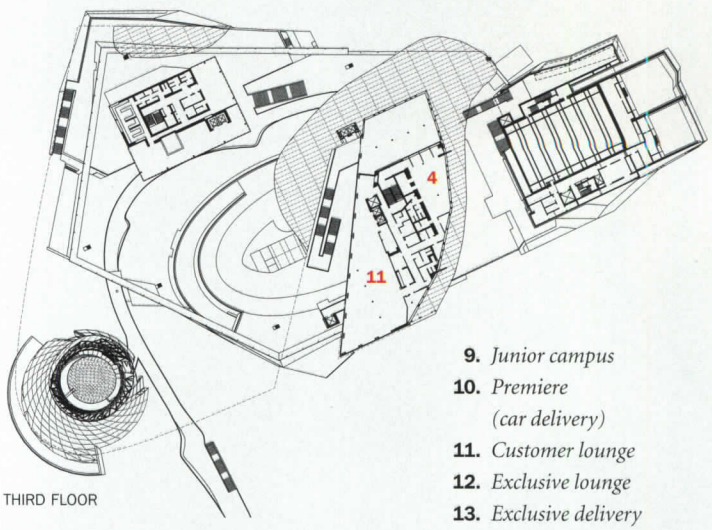
SECTION B-B

0 25 FT.
8 M.

1. *Parking*
2. *Technology*
3. *Daily car storage*
4. *Shop/offices*
5. *Vehicular preparation*
6. *Exhibition/assembly*
7. *Forum/auditorium*
8. *Restaurant*

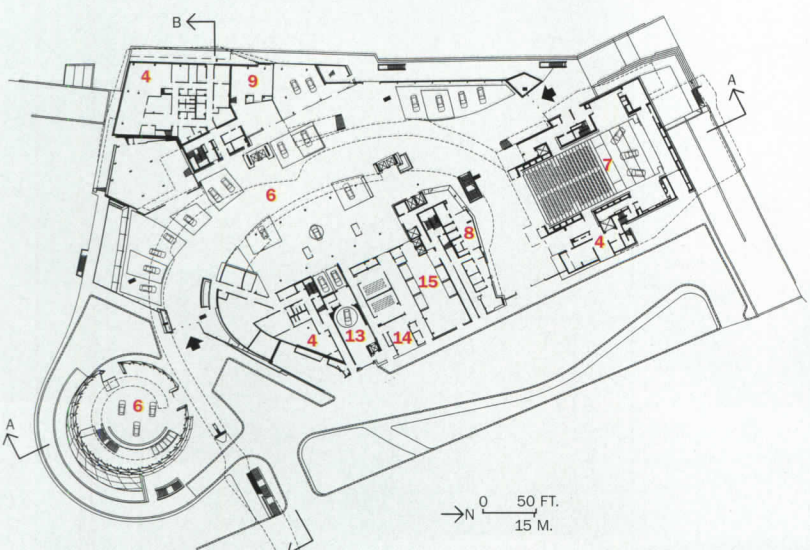


FIRST FLOOR



THIRD FLOOR

9. *Junior campus*
10. *Premiere (car delivery)*
11. *Customer lounge*
12. *Exclusive lounge*
13. *Exclusive delivery*
14. *Group center*



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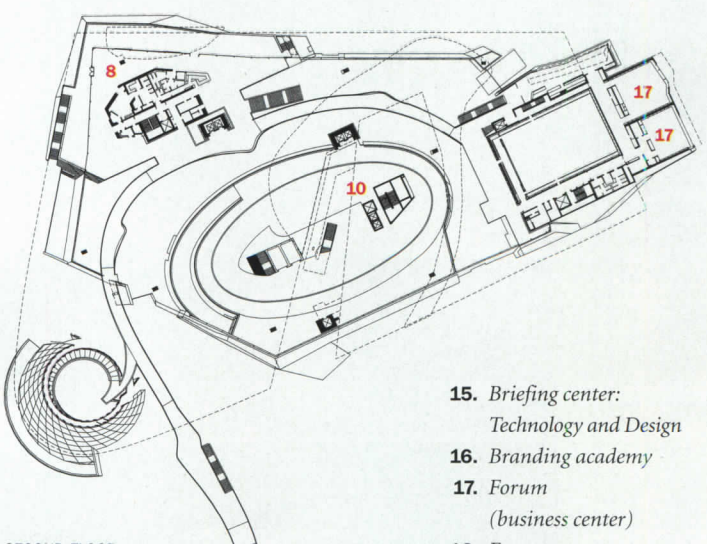
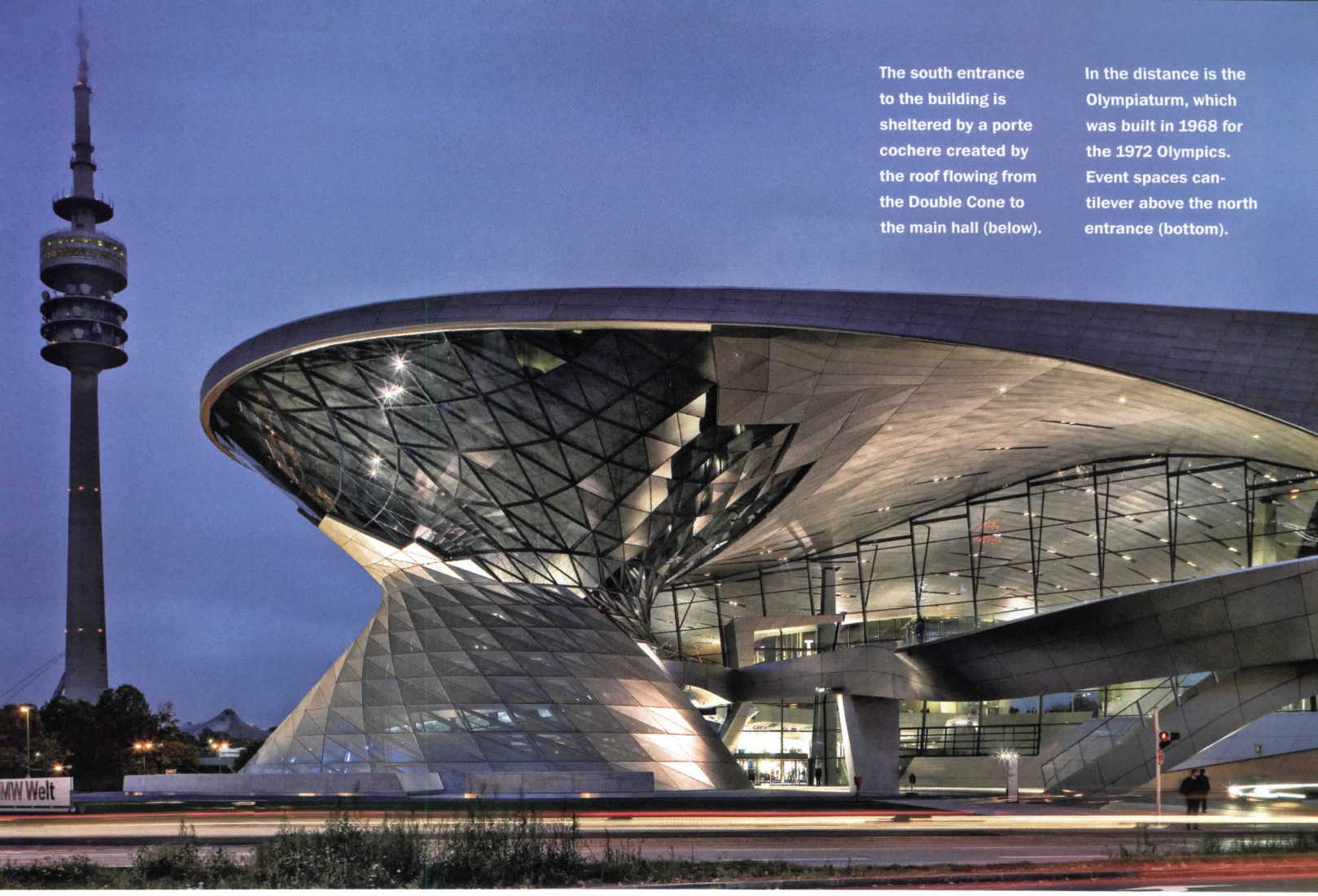
15 M.



15. *Briefing center: Technology and Design*
16. *Branding academy*
17. *Forum (business center)*

The south entrance to the building is sheltered by a porte cochere created by the roof flowing from the Double Cone to the main hall (below).

In the distance is the Olympiaturm, which was built in 1968 for the 1972 Olympics. Event spaces cantilever above the north entrance (bottom).



As a branding instrument for the company based around the ritual of delivering cars to their owners, as well as introducing new designs, BMW Welt packs a lot of power. This memorable walk-through advertisement is worth every euro the company has spent (it acknowledges that the building cost more than 200 euros, or $297 million, but bets have it at twice that). Yet the major irony about the architecture is it leaves in the dust the actual BMW car designs. Although BMW's luxury line sells extremely well, the cars on display look so very "safe" in comparison with their 1,200-horse-power architectural container.

The Double Cone, a whirling dervish in steel mesh and reflective glass, creates a splendid three-dimensional sign for the hall. It appears programmatically a bit superfluous (it is an event space in a building that is essentially an event space), but nevertheless can house car exhibitions, art shows, films, and cultural and sports events for up to 300 people. From its top emanates a roof that flows capelike over the main structure, giving a new meaning to the notion of shelter.

The actual program for the 753,473-square-foot structure seems quirky: BMW Welt is neither a museum nor a fancy car dealership where dazed and covetous throngs staggering through its gleaming innards can buy cars. Rather, it is designed to celebrate the ritual of picking up cars that have already been purchased at local car dealers. The new owner actually pays 457 euros, or $630, for the privilege of going to Munich.

Inside the main hall, this ritual is celebrated at the heart of the structure, called the Premiere, where spiraling ramps contain the cars for the transfer to their purchasers. The new owners take a translucent glass-enclosed elevator to a lounge at the top of the building, where they are greeted by BMW personnel and conducted to an interactive-media area to learn more about the particular car. From on high, they watch the vehicles being delivered (45,000 cars a year) to the 20 turntables on the traylike concrete floors below. At a certain moment, the owner descends a staircase to hop into his or her own BMW, driving down the spiraling ramps and out an exit on the east side of the building.

The normal folk traipsing through the building can voyeuristically watch the new owner getting into the car but cannot actually enter the exclusive areas themselves. Not to worry: For the everyday spectator, the Tower awaits, containing shops (with BMW Lifestyle goods, in case you can't afford the car), restaurants, (see page 172), a bookstore/newsstand, and a car exhibition (Junior Campus) for children.

On the north end, a conference center, called the Forum, comprising an auditorium, meeting rooms, and upper-level reception area, provides outside businesses with venues to hold conferences in spaces that cantilever in a cubistic cascade over a plaza.

The ground floor is largely devoted to the display of cars, with car-related exhibitions in the Technology and Design section. Sitting areas and café tables help turn the BMW Welt's plaza into a giant schmoozing lounge for its visitors. A physical thread of continuity is provided by a concrete pedestrian bridge that unfurls through the approximately 80-foot-high space. Visitors can ascend this pedestrian bridge outside the

Inside the main hall, the pedestrian bridge winds through the cavernous space at the second level (left). In the center of the ground floor, a Technology and Design section demonstrates new developments. Those who are picking up cars take a translucent glass elevator to the upper-level lounge. Across the way, the Tower (opposite) contains restaurants on the upper levels, with more cars displayed on the plaza level.

building, on the other side of the Lerchenauerstrasse, then skitter over the street, moving past the Double Cone into the main hall. Then they glide past the restaurant Tower, while staring at the cars being delivered on the Premiere. Finally, where the bridge terminates at the Forum, visitors descend to the north entrance, exiting out to the plaza and a transit stop.

The three reinforced-concrete buildings-within-a-building—the Tower, the Premiere, and the Forum—plus 11 reinforced-concrete columns, help buttress the steel space-frame roof (for structural description, see page 96) from which the pedestrian bridge is suspended. The design team did not stint on steel: The roof, the facades, and all surfaces (except for columns) were clad in a glass-bead-blasted stainless steel with a matte finish, emphasizing the sleek, sinuous lines and surfaces of the cars themselves.

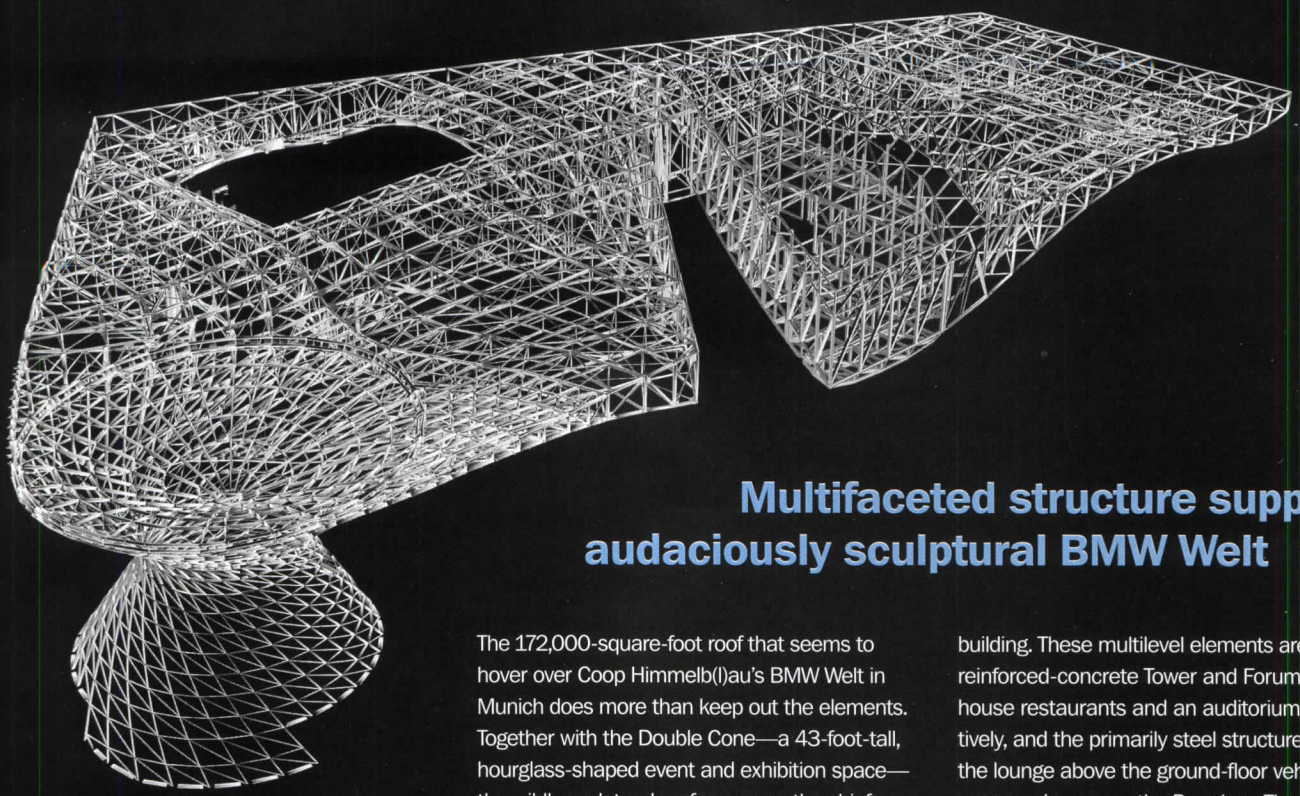
It does look as if the Double Cone and the roof used up all the steel in China (4,409 tons). Which may be why an efficient air system for heating and cooling became very important. According to Michael Kuehn, Jr., of Kuehn Bauer Partner, wind-tunnel tests were conducted to make full use of wind pressure and take advantage of natural ventilation, with a louver system regulating air pressure on the facade. The west facade louvers open to admit cool air from Olympic Park, and as the air is warmed, it is exhausted through louvers on the roof. Radiant heating and cooling in the floors answer additional temperature needs, and vertical profiles in the facade contain heated water to prevent condensation. While the team fitted the roof with photovoltaic cells with a peak output of 810 kilowatts, that energy is put back into the city's electrical grid, owing to the daily variation between solar supply and building demand. Venting exhaust from the cars in this indoor space posed its own challenge: The engineers designed the ventilating system with a certain air volume, adding local exhausts to take fumes from the cars.

The sheer effort, money, and number of consultants is extraordinary for BMW Welt. Twenty years ago, it would have been destined to remain a phantasmagorical scheme in the sketch pad of the architect. Fortunately for Prix and his cohorts, the time was right—or at least until yesterday: The economy was booming, the clients were game, computer software had advanced, and engineers were willing to take on preposterously difficult problems. The development of the phenomenon of branding has helped immensely to generate cravings among clients and the public for an architecture of spectacle. Interestingly, branding's involvement with cars and event spaces has its own particular history. Toyota Mega Web, a car theme park in Toyota City, Japan, kicked off the trend in 1999. By 2000, Volkswagen had opened up its Autostadt (*Car City*) *in* Wolfsburg, Germany. Designed by architect Gunner Henn, the complex includes a museum, factory, and delivery center, so the public can become fully immersed in car culture. The Henn-designed Glass Factory for VW in Dresden, built in 2002, encourages

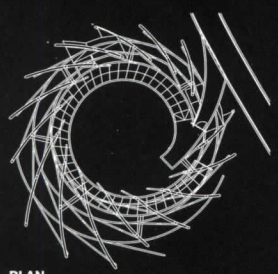
BMW IS NOT ALONE IN GERMANY'S CREATION OF CITYLIKE ENCLAVES DEVOTED TO ITS CAR CULTURE.

From the second-level pedestrian bridge, visitors can glimpse the Premiere area where the purchased cars are transferred to their owners. Additional cars are on display on the plaza level.

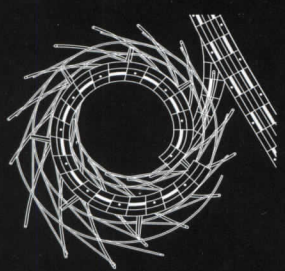

BMW Welt
Willkommen
Information. Tickets.



Multifaceted structure supports audaciously sculptural BMW Welt



PLAN



SOFFIT SPIRAL STAIRCASE

PERSPECTIVE SPIRAL STAIRCASE DOUBLE CONE

The 172,000-square-foot roof that seems to hover over Coop Himmelb(l)au's BMW Welt in Munich does more than keep out the elements. Together with the Double Cone—a 43-foot-tall, hourglass-shaped event and exhibition space—the wildly sculptural roof serves as the chief expressive element for the building, which functions as part automobile distribution center, part conference center, and part marketing tool.

The undulating, stainless-steel-clad roof is like a tornado with the glass-and-metal-mesh-enclosed Double Cone as its vortex. To achieve this effect, the designers conceived the enclosure of the event space as a framework shell made of horizontal rings, curved ascending profiles, and diagonals. All are steel tubes, rectangular in section. "A typical structure would have horizontal elements, vertical elements, and diagonals to brace it," says Klaus Bollinger, principal of Bollinger+Grohmann Engineers, the project's structural consultant. "But we only have horizontals and diagonals. Then we twisted them so the structure would seem dynamic," he says.

Designers sized the spacing between the structural elements so that the Double Cone's glazing would not require a secondary structure. The nearly 900 triangular pieces all have different profiles. "This is not so difficult to organize by means of the computer," remarks Bollinger.

The undulating roof is composed of two spatially distorted girder-grid layers, diagonal trusses, and vertical posts at selected points. This enormous steel space frame, with trusses as deep as 50 feet, makes possible the almost column-free hall within which individual programmatic elements are arranged like buildings within a building. These multilevel elements are the largely reinforced-concrete Tower and Forum, which house restaurants and an auditorium, respectively, and the primarily steel structure containing the lounge above the ground-floor vehicle delivery area, known as the Premiere. Though the lounge is supported through its vertical core and at several other points, it is almost enveloped in the roof cloud and appears to float. The roof is coupled with the structure of the Tower, Forum, and lounge, as well as that of the Double Cone, and is additionally supported with 11 columns.

Since the roof works as a complete structural entity, it could only bear loads after being almost entirely assembled. Contractors built the roof in two sections, first constructing the southern portion surrounding the Double Cone and the Tower. They assembled the two halves on temporary support towers, and then lowered them, via hydraulic jacks, to link with the permanent supports. They planned the sequence of assembly and load transfer carefully to avoid an uneven distribution of loads.

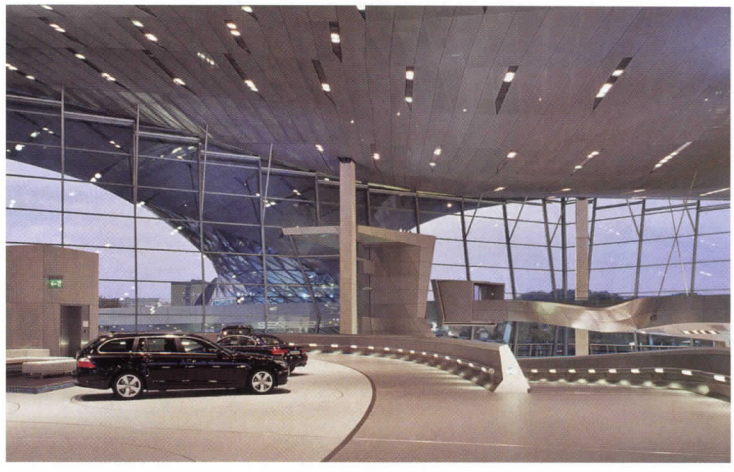
Not so surprisingly, the complex project involved intense collaboration and coordination among the various design disciplines and continuous updating of a shared three-dimensional model. Working in this way is by now old hat to Bollinger, whose firm was structural engineer on such sculptural projects as Peter Cook and Colin Fournier's Kunsthaus in Graz [RECORD, January 2004, page 92], and Zaha Hadid's recently completed Nordpark cable railway stations in Innsbruck. "One 3D model for everyone is how we work," says Bollinger. "That is how we realize such free-form buildings." *Joann Gonchar, AIA*

The spiraling ramps of the Double Cone (right) allow visitors to view cars and exhibitions, and attend functions on two levels. From the Premiere (car delivery area), guests can glimpse the Double Cone (below right).

the public to see cars put together in a museumlike setting. By 2006, Mercedes-Benz had opened its monumental spiraling concrete museum outside Stuttgart, designed by UN Studio [RECORD, November 2006, page 126]. Meanwhile, BMW had already completed Zaha Hadid's zoomy central building for its factory in Leipzig [RECORD, August, 2005, page 82]. When the company inaugurated Coop Himmelb(l)au's BMW Welt at its corporate headquarters in Munich in the fall of 2007, Germany was already familiar with this building type. (More to come: In 2009, Porsche is opening a museum in Stuttgart, designed by Delugan Meissl Associated Architects.)

With his design for BMW Welt, Wolf Prix wanted a building to mushroom up to the sky, defying all gravity. Frank Lloyd Wright, watching from a cloud on high, would be gratified. Both BMW Welt and UN Studio's Mercedes-Benz Museum put cars and people on swirling concrete ramps in a way Wright had only imagined when he began designing his spiraling parking structures in 1924–25. Wright's concrete-ramps-for-cars concept was only realized as a showroom for Jaguar (then Mercedes) at 430 Park Avenue in New York City in 1955, just before he put people on ramps to view art in his Guggenheim Museum in 1959.

It is ironic that it took Germany's current car culture to advance Wright's historic motifs. (Prix also acknowledges the influence of Le Corbusier's Church at Firminy, France [RECORD, June 2007, page 108]). *Sehr gut.* But while this exuberant artifact succeeds in creating a seductive symbol for the brand, we know at heart that it is like a high-calorie fudge cake: not nourishing, but oh so alluring. ■



Sources

Glass facade, skylights, entrances, raised stainless roof: *ARGE Josef-Gartner; Maurer-Söhne (with Lumml GmbH for roof)*

Concrete floors: *Walo Bertschiner (Surfaplan)*

Glass: *Eckelt Glass*

Aluminum windows: *Frener & Reifer; Metallbau*

Solar plant: *Sun Strom*

Office furniture, chairs, tables: *Vitra; Kusch + Co. Sitzmöbelwerke; Poltrona Frau; Sedus Stoll; Walter Knoll*

Reception furniture: *Team Concept*

AND TOP); ROLAND HALBE (BOTTOM)

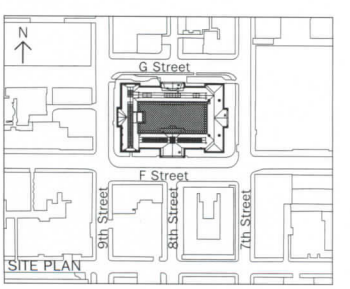
The landscape of the courtyard includes tall ficuses and smaller "Shady Lady" trees. The landscape architect tried to avoid exotic "mall" plants.

Foster + Partners shroud a courtyard with a quiet, ethereal glass canopy for two museums at the **SMITHSONIAN INSTITUTION**

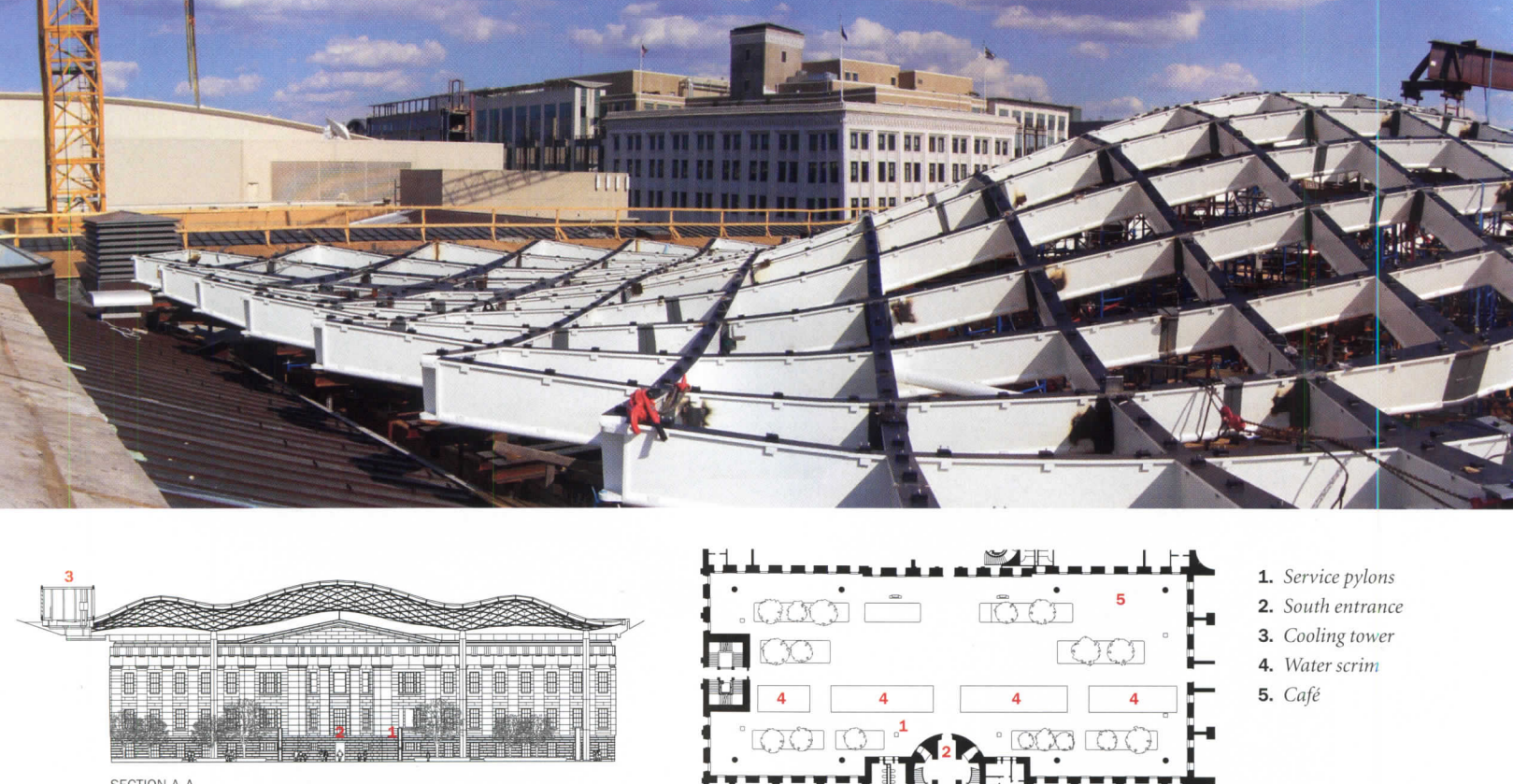
By Russell Fortmeyer

On March 4, 1865, Abraham Lincoln took the second oath of office on the East Portico of the Capitol, returned to the White House, and then greeted guests that night at his second—and, sadly, last—inaugural ball in the Great Hall of the Old Patent Office Building. It was the first time an inaugural ball had been celebrated at a government building, let alone in one that contained what many argued at the time to be one of the finest rooms in Washington, D.C., designed by the well-known 19th-century architect John Mills, refinished in 1881 by Aldolf Cluss in dizzying Victorian patterns of marble.

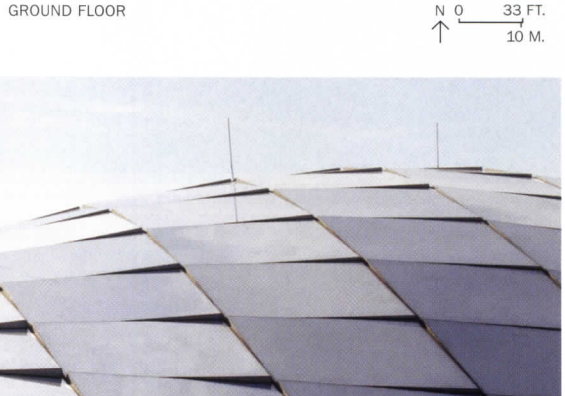
The Great Hall is still gloriously there, some 143 years later as of this month, and it was joined in November 2007 by what many will agree is one of the finest *new* rooms in Washington in years—the Robert and Arlene Kogod Courtyard in the center of the Smithsonian Institution's renovated National Portrait Gallery and American Art Museum, which have filled the Old Patent Office Building since 1968 (see related story, page 178). It would certainly not be surprising if the next president deems the new courtyard worthy of an inaugural ball come January. Designed by the prolific London office of Foster+Partners, along with SmithGroup's Washington office, the three interconnected vaults of the 27,000-square-foot Kogod Courtyard bears a striking resemblance to the soaring glass atrium design of Foster's exceptional Great Court of the British Museum [RECORD, March 2001, page 114], in London. But a comparison of the two would be a gross oversimplification, if not downright disingenuous.



For starters, the Smithsonian wanted the courtyard to fulfill several competing programmatic needs—including museum circulation, café space, and event space for concerts, dinners, and parties—while also preserving to some degree the idea of the space as a garden. The British Museum's program focused more on providing a new entrance and gathering area for its massive crowds of visitors. Foster+Partners, which won a competition for the project in 2004, proposed an undulating, deep-coffered glass roof in a diagrid steel structure that to all appearances looks like a greenhouse but acts more like a conventional ceiling. Working with London-based acousticians at Sandy Brown Associates, the glass roof has a reverberation time of about 3 seconds, compared to 9 to 11 seconds for conventional glass construction.



SECTION A-A



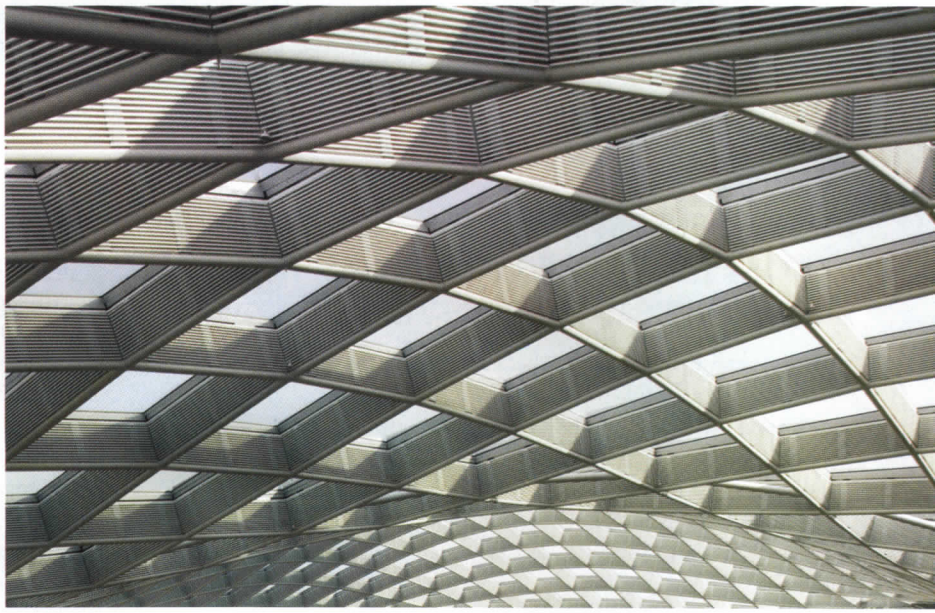
GROUND FLOOR

N 0 33 FT.
10 M.

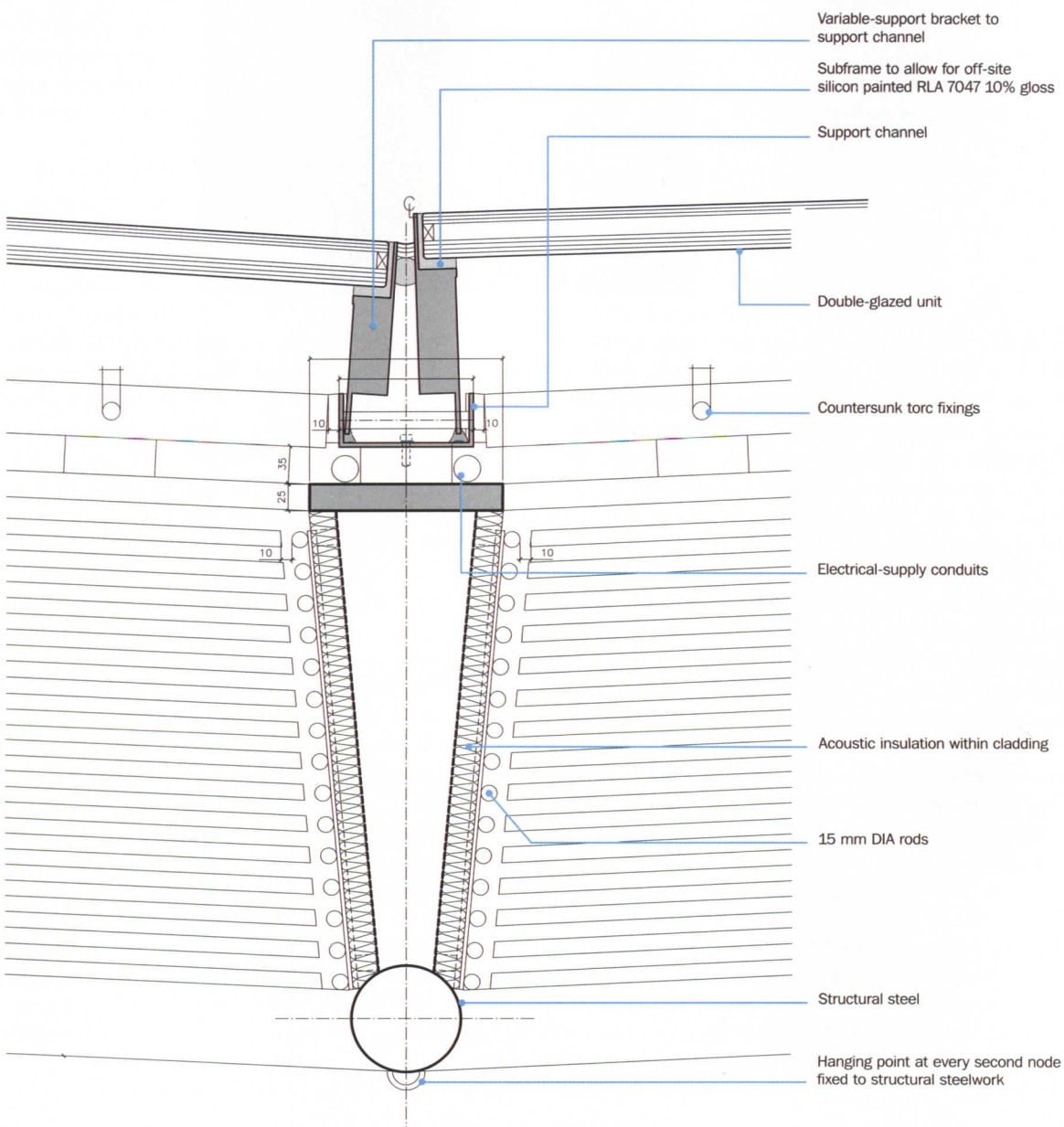
1. *Service pylons*
2. *South entrance*
3. *Cooling tower*
4. *Water scrim*
5. *Café*

From beneath the canopy, the flat glass panels appear to curve with the structure (left). To cut down on internal heat gain, the fabricator applied a 65-percent-opacity frit to the surface of the glass.

PHOTOGRAPHY: © NIGEL YOUNG/FOSTER+PARTNERS (THIS PAGE, BOTTOM, AND



The taper at the bottom of the diagrid makes the structure appear much thinner and ethereal from below (right and top right). The vertical height of the diagrid was based on surface area needed for acoustical reasons.

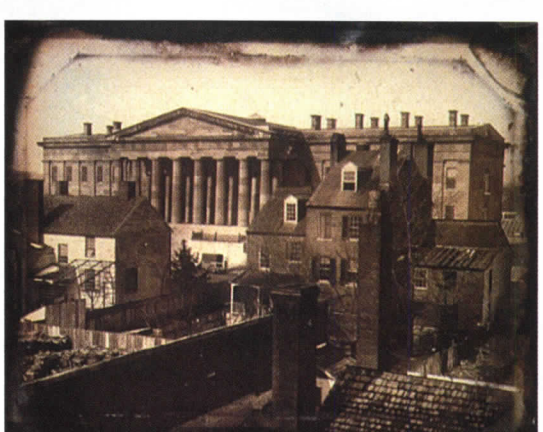


"We couldn't acoustically treat the historic walls of the existing structure, nor could we do anything 'soft' on the floor, so that left us with one surface, the roof," says Spencer de Grey, the cohead of design at Foster. "When you look up at the roof, you will see a series of horizontal aluminum rods, and behind those rods are 9,000 pairs of blue jeans that have been shredded to make an acoustically absorbent surface." The resulting

OF THE COURTYARD, GUSTAFSON SAYS, "IT'S ALMOST LIKE A THEATER WHERE THE SANDSTONE FACADE BECOMES THE STAGE."

hushed, serene effect is exactly what you wouldn't expect in a space consisting of marble and sandstone walls; granite floors with radiant heating and cooling and perimeter ventilation; and that high-tech, rolling glass ceiling. If anything, the courtyard is really a study of the twin architectural conceits of atmosphere and mood, in this case created out of air, light, and flora.

Foster asked the landscape architect Kathryn Gustafson, with Seattle-based Gustafson Guthrie Nichol, to design the interiors. She proposed a series of planter boxes that double as benches, smoothly constructed of the same white marble used on floors elsewhere in the historic building. A subgrade linear light along the perimeter of the benches makes them seem to float. The dark gray granite floor, which creates what Gustafson considers a historically relevant Greek Revival black-and-white color scheme with the benches, also incorporates four water scrims. Her solution depressed the floor ¼-inch for the scrims and sloped it down toward the middle of the room, allowing a thin film of water to cascade across the floor. The effect is that of a mirror you can walk across, designed so your feet dry off before you reach the museums' doors. "I wanted it to reflect the beauty of the facade, so you would see the historic architecture and the Foster roof in the ground plane," says Gustafson.



A daguerreotype of the Old Patent Office Building from 1846 (above). The theatrical lighting design, by George Sexton Associates, allows the courtyard to change moods at will (opposite).

Mills designed the original building—now called the south wing—in a Greek Revival style. The Doric columns of the south portico drew inspiration from the Parthenon. Construction lasted from 1836 to 1842. The building has the reliably weighty appearance of true 19th-century masonry construction, in this case sand-colored Virginia freestone that supports three elegant stories stacked on top of a rusticated ground floor. Mills began the east and west wings, built in gray marble quarried in Maryland, but turned the projects over to Thomas U. Walter in 1851. With some help from others, Walter finished both the east, west, and the north wing by 1868.

Incidentally, the freestone—historically known as Aquia Creek sandstone and easily obtainable near the city—was also used for the White House and the Mills-designed Treasury Building, in spite of the fact that its softness meant it performed poorly as a building material. Mills had wanted granite, but Congress deemed it too expensive. Sometimes cost-cutting measures have unintended effects—the warm hues of the north elevation of Mills's building, now the south wall of Foster's courtyard, have never looked better and delightfully contrast with

"It's almost like a theater where the sandstone facade becomes the stage."

But all this heavy stone concealed the fact the original building stood on a poor foundation (Washington was built on a swamp, after all), which meant the structural engineers at Buro Happold in London and New York could not expect to rest the glass canopy on the courtyard's perimeter walls as they had done with the lightweight ceiling at the British Museum. Greg Otto, a principal with Happold who is now based in Los Angeles, says that's when they decided to install eight columns, with spans from 119 to 95 feet, to support the roof. Ties through the diagrid structure, which is consistently 22 inches deep even though the steel underneath varies, connect the columns together to prevent them from splaying out.

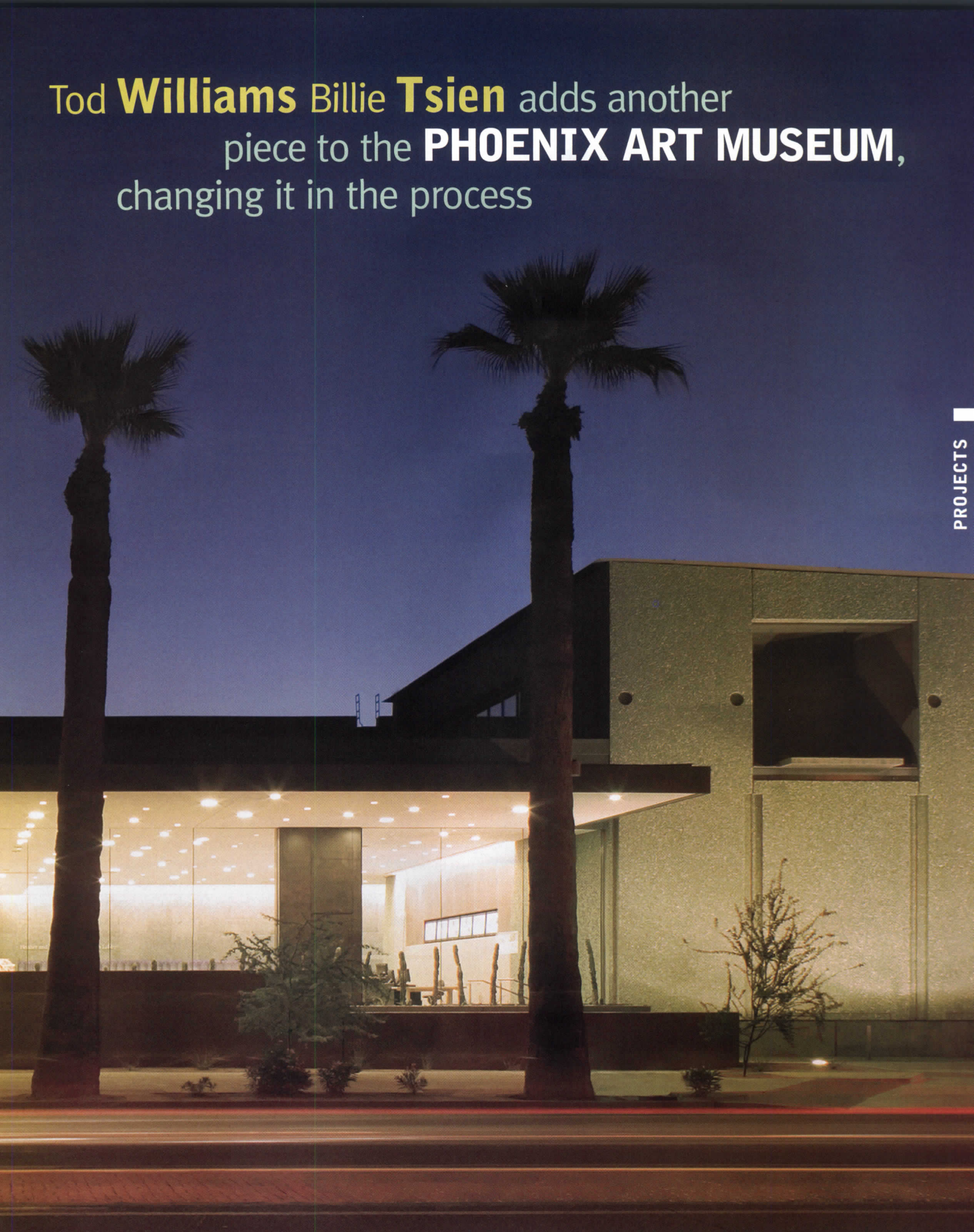
The columns along the south side rest on spread footings, while those on the north connect to the courtyard's slab and to that of the basement auditorium—in both instances the overturning load on the columns far exceeds the vertical loads from the roof's weight. Snow was a major problem, as was the federal government's blast requirements, but Otto says the roof has great flexibility (Happold worked with Weidlinger Associates in New York on deformation analysis). Furthermore, the 864 glass panels—each one sized differently, with only 92 that are actually triangular—were designed so that the "bite," that is, the amount of glass surface still contained within the supporting mechanism after a blast, is never less than 30 percent of the normal design.

The tolerances for the structural system were low—within millimeters, Otto says—which was difficult since the German-based ceiling fabricator, Josef Gartner USA, had to follow three separate design geometries from digital models: Foster had two, for the underside and top of the roof, while Happold's design had references to the midpoint of the beams concealed in the diagrid's cladding. "Gartner was surveying the top surface of the roof constantly," says Otto. "Contractors could add heat by torches and adjust the geometry in order to get back on point."

Was all of this structural engineering and intense coordination necessary or, like so much contemporary architecture, is the canopy of the Kogod Courtyard a solution to a nonexistent problem? "A flat roof would have been deeper and would not have responded to the historic architecture," notes de Grey. "With curved forms, not only do you have the benefit of arches, which are more structurally efficient, but we could lift the canopy up over the central bay window of the Mills facade." Perhaps not surprisingly, Foster's proposal originally elicited an outcry from historic preservationists, but when considering the rest of Washington's dreadful contemporary architecture while sipping coffee in the hushed solemnity of the courtyard, you have to wonder what on earth they were fussing over. Now, bring on the inaugural ball. ■

Project: *Robert and Arlene Kogod Courtyard at the Smithsonian Institution's National Portrait Gallery and American Art Museum, Washington, D.C.*
Architect: *Foster+Partners—Norman Foster, Spencer de Grey, Grant Brooker, Dan Sibert*
Architect of record: *SmithGroup*
Landscape architect: *Gustafson Guthrie Nichol*
Engineers: *Buro Happold (structural); URS Corporation (m/e/p); Battle McCarthy (environmental)*
Lighting: *George Sexton Associates*
General contractor: *Hensel Phelps*

Tod **Williams** Billie **Tsien** adds another piece to the **PHOENIX ART MUSEUM**, changing it in the process



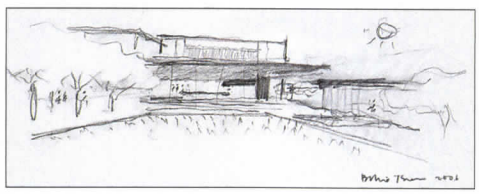
By Clifford A. Pearson

Growth has been a mantra in Phoenix since the advent of air-conditioning. More people, more sprawl. From a population of 105,000 in 1950 to more than 1.5 million in 2006, from 17.1 square miles to 515 square miles of mostly low-density, commercial-strip-and-ranch-burger developments. Sunshine, cheap land, and a taste of the American frontier—no matter how ersatz or commercialized—have turned Phoenix into the fifth-largest city in the country. But that growth is starting to change. Inventive local architects such as Will Bruder and Studio Ma are designing hip condos, people are moving back downtown, and the city is weaving a new light-rail system into a street grid once dominated by cars.

Steady growth has defined the Phoenix Art Museum, as well. Part of a downtown civic center that originally included the city's main library and the Phoenix Little Theater, the museum opened in 1959, expanded in 1965, then grew again in 1996 when the library moved down the road to a building Bruder created for it. Alden Dow and Blaine Drake, who had both studied with Frank Lloyd Wright, designed all of the pieces of the original civic center, as well as the 1965 museum addition. For its 1996 expansion, though, the museum looked for a new vision and hired the New York architects Tod Williams and Billie Tsien. Strengthening the museum's street presence, Williams and Tsien turned their building to Central Avenue, the city's main artery, and created a new entrance there [RECORD, January 1997, page 84]. Their plan also envisioned future gallery expansion on the southeast corner of the site.

With Phoenix booming in the late 1990s and early 21st century, the museum moved forward with the new gallery addition. But it also wanted to fix some missteps taken in the past. Although well intentioned as an urban gesture, the entrance on Central Avenue never really worked, since most visitors arrived by car, parked on the northeast part of the site, then had to walk past the mechanical plant and enter the building from the back. The museum also wanted to turn its undeveloped central courtyard into a sculpture garden. For the new architecture, the museum went back to Williams and Tsien, while it hired landscape designer Reed Hilderbrand for the sculpture garden. "We wanted to give Tod and Billie the chance to finish what they had started," explains James Ballinger, the museum's long-time director. "We also saved about a year by not having to look for new architects and getting them up to speed."

Williams and Tsien approached both their recent project and the earlier one as steps in a process of organic growth and ways of advancing Phoenix's cultural infrastructure to catch up with its physical expansion. "Our work wasn't about making a big statement," says Williams. "It was about accretion." Tsien adds, "This is a museum that has grown up with its city, becoming more sophisticated along the way. Phoenix has grown too much at its edges, but that's all the more reason to emphasize places at its center." Talking about Ballinger, Williams recalls, "He resisted pressure to build a monument."



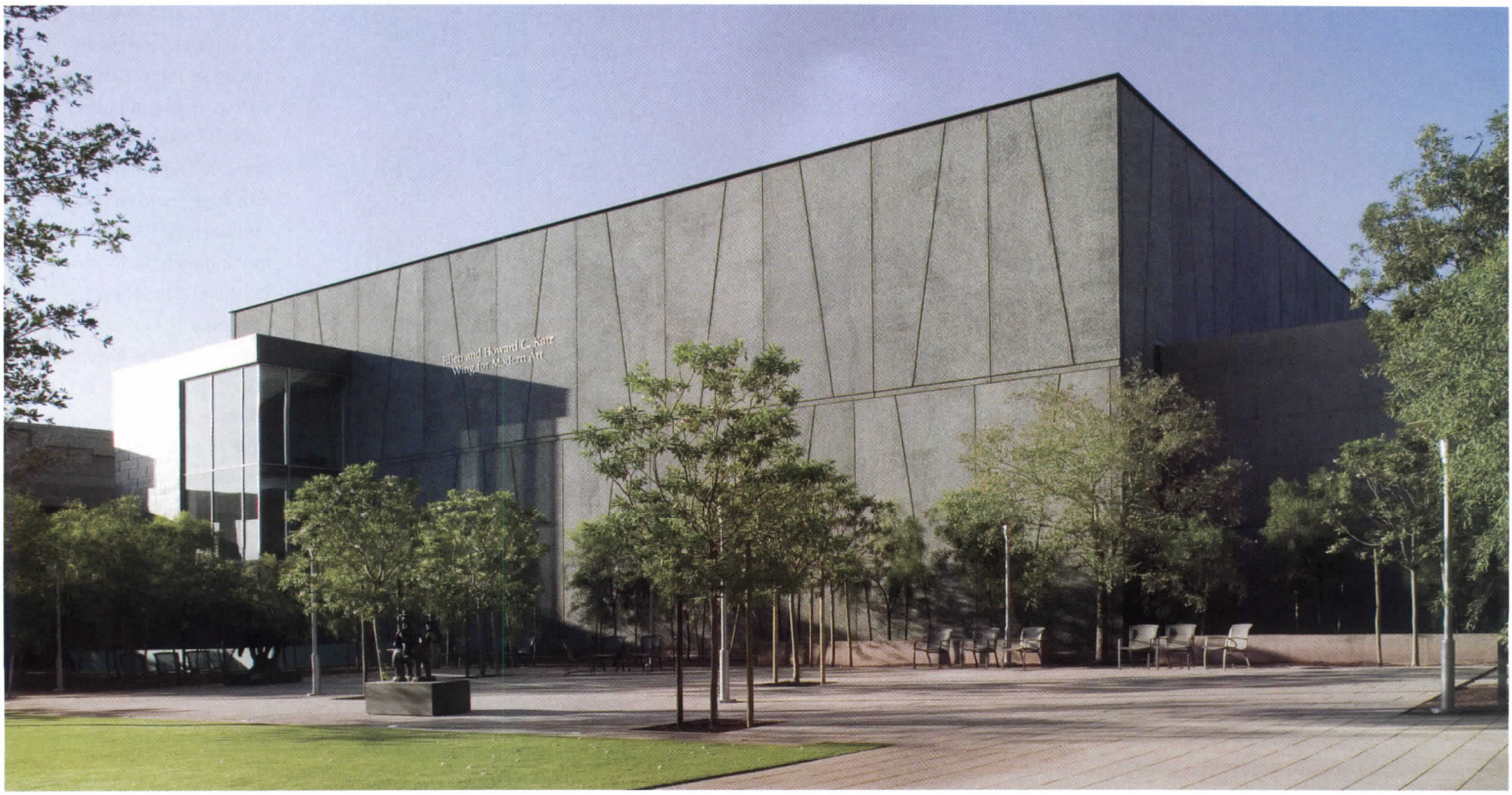
The $21 million expansion included a new entry pavilion (right) and lobby (below), and a four-level wing with 25,000 square feet of new gallery space (opposite, bottom).

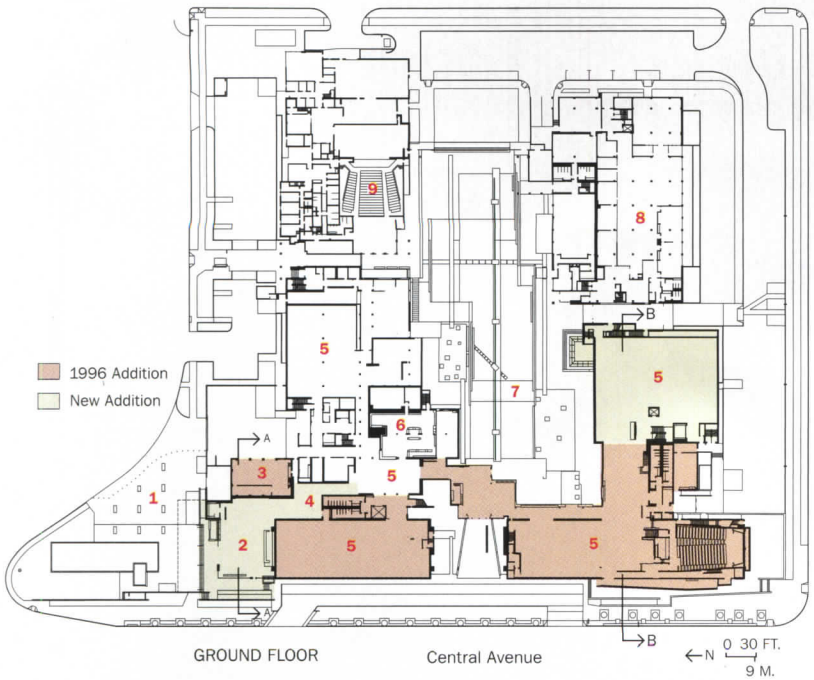
Improving the arrival experience for visitors was the architects' first task. When the museum acquired a small parcel just north of its building, Williams and Tsien realized they could use this land to create a courtyard and lawn facing a new entry wing. But this meant putting the institution's new front door next to its mechanical plant (which was too expensive to move). So the architects screened the plant with precast-concrete walls and extended the precast facade of the earlier addition along Central Avenue to form a protected outdoor room. Landscape architect Christine Ten Eyck used palo brea trees and other native species here, and sculptor Dan Euser contributed a "rain curtain" that helps mask the sound of cars rushing along Central Avenue.

To grab attention along the avenue (something the windowless

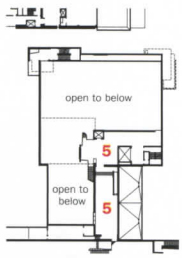
Project: *Phoenix Art Museum Expansion, Phoenix, Arizona*
Architect: *Tod Williams Billie Tsien Architects— Tod Williams, Billie Tsien, partners in charge; Felix Ade, Kyra Clarkson (schematics), project architects; James Chavel, Robin Blodgett, Lauren Schlesinger, Martina Bendel, Johnny Cho, project team*
Associate architect: *Mark Ryan Studio*
Engineers: *Severud Associates (structural); Ambrosino, DePinto & Schmieder (m/e/p)*
Landscape architect: *Ten Eyck Landscape Architects*
General contractor: *Kitchell*

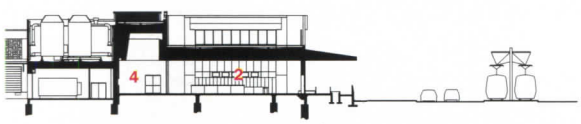
PHOTOGRAPHY: © BILL TIMMERMAN

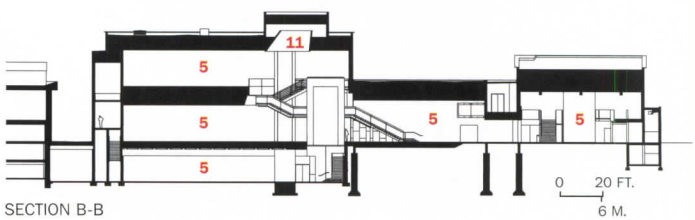

Ellen and Howard C. Katz
Wing for Modern Art



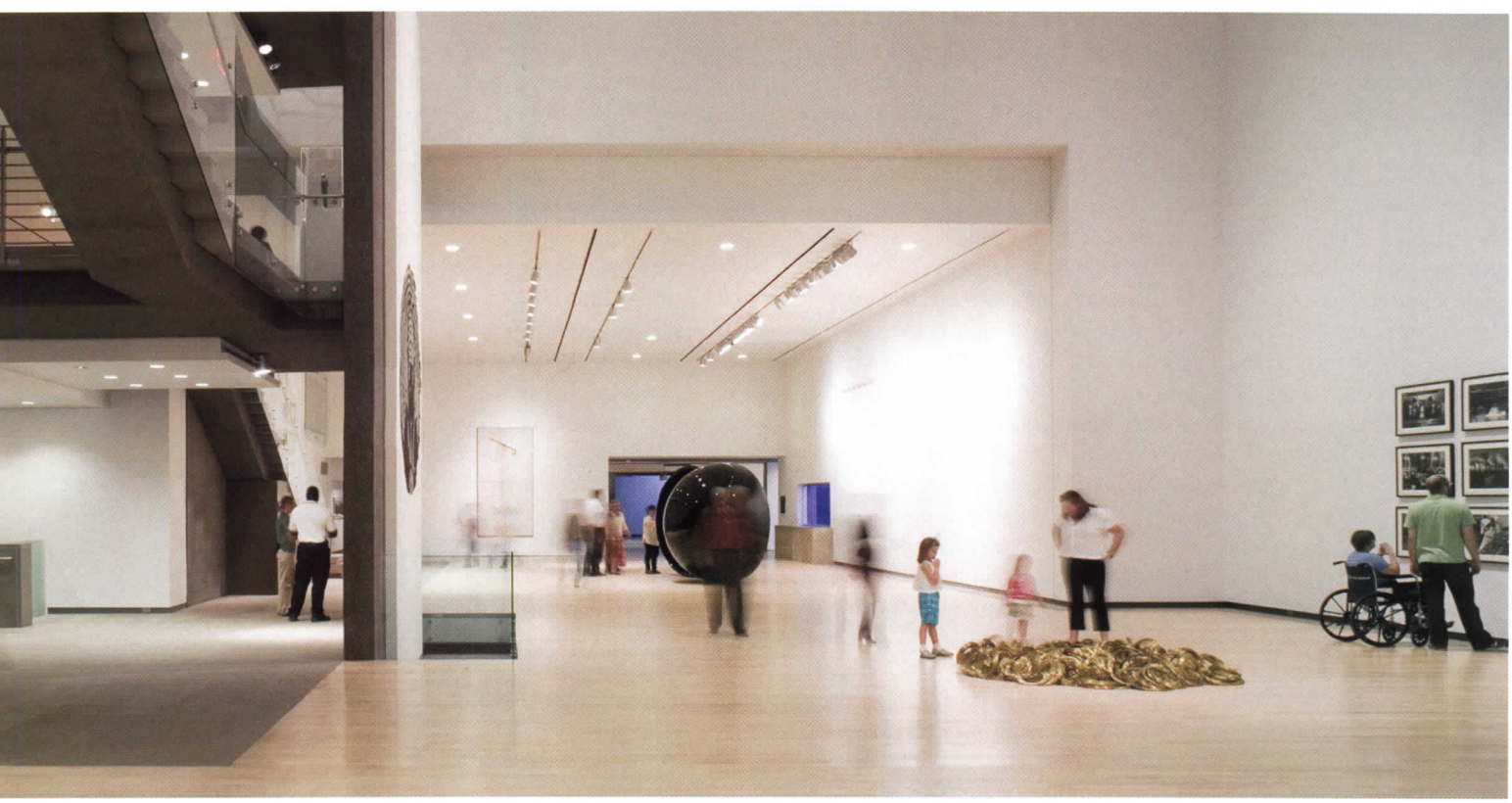
1. *Entry court*
2. *Lobby*
3. *Central plant*
4. *Canyon*
5. *Gallery*
6. *Store*
7. *Sculpture garden*
8. *Administration*
9. *Phoenix Little Theater*
10. *Overlook*
11. *Clerestory*







The architects created a sequence of events, taking visitors from the entry court and lobby pavilion (previous spread), through a 26-foot-high "canyon" (left), into parts of the original museum and the 1996 addition (not shown), then finally to a new gallery wing for Modern and Contemporary art, where a poured-concrete stair slices through the space (opposite, top and bottom).



facade of the original building never quite did) and welcome visitors after they park, Williams and Tsien designed a glass entry pavilion with an enormous cantilevered roof that combines the simplicity and elegance of Mies with the bold horizontal thrust of the desert. Extending 40 feet beyond ethereal planes of mullionless, low-iron glass, the roof shelters an outdoor plaza that works as a seamless continuation of the new lobby.

The second big challenge was moving visitors from what had been the back of the museum, through parts of Dow and Drake's building, then into the 1996 addition and the new 25,000-square-foot gallery wing on the opposite side of the site. Luckily, procession has been an important theme animating Williams and Tsien's best work, such as the Folk Art Museum in New York City [RECORD, May 2002, page 202], so the architects were up to the task. From the expansive lobby, they bring visitors into a 26-foot-high "canyon" lit from above by a frameless opening that recalls a James Turrell sky window. To help orient you as you continue on this path, they cut openings in various walls, offering glimpses of the sculpture garden and the 1996 entry on Central Avenue and to second-floor galleries that had previously been sealed off. Compressing space, then expanding it, providing views inside, then out, Williams and Tsien turn a path that might have seemed convoluted into one that's engaging.

The architects housed the new galleries for Modern and Contemporary art in a mostly precast-concrete box that rises three stories above ground and descends one below. Precast wall panels and precast floor beams work as parts of the structural system, along with a 75-foot-long steel girder, to create free-span galleries. A poured-concrete stair with steel-and-glass railings slices back and forth as it rises through a 46-foot-high atrium in the center of the new gallery wing. A clerestory-ringed lantern at the top of the atrium colors daylight as it bounces off green walls, providing a mysterious source of slowly changing illumination. A tight, almost claustrophobic stair at the northeast corner of the gallery wing takes visitors down to a below-grade level, where a large window looks out to a sunken reflecting pool. On the top floor, the architects provided a different kind of relief from the windowless galleries: a pair of lookouts that serve as light-filled, indoor balconies offering, from one, views to the sculpture court, and from the other, to the city and mountains.

Daylight enters the new gallery wing indirectly, through clerestories wrapping around the top of a lantern (opposite and above). The main stair is suspended from floor slabs and stabilized by precast walls on either side of it.

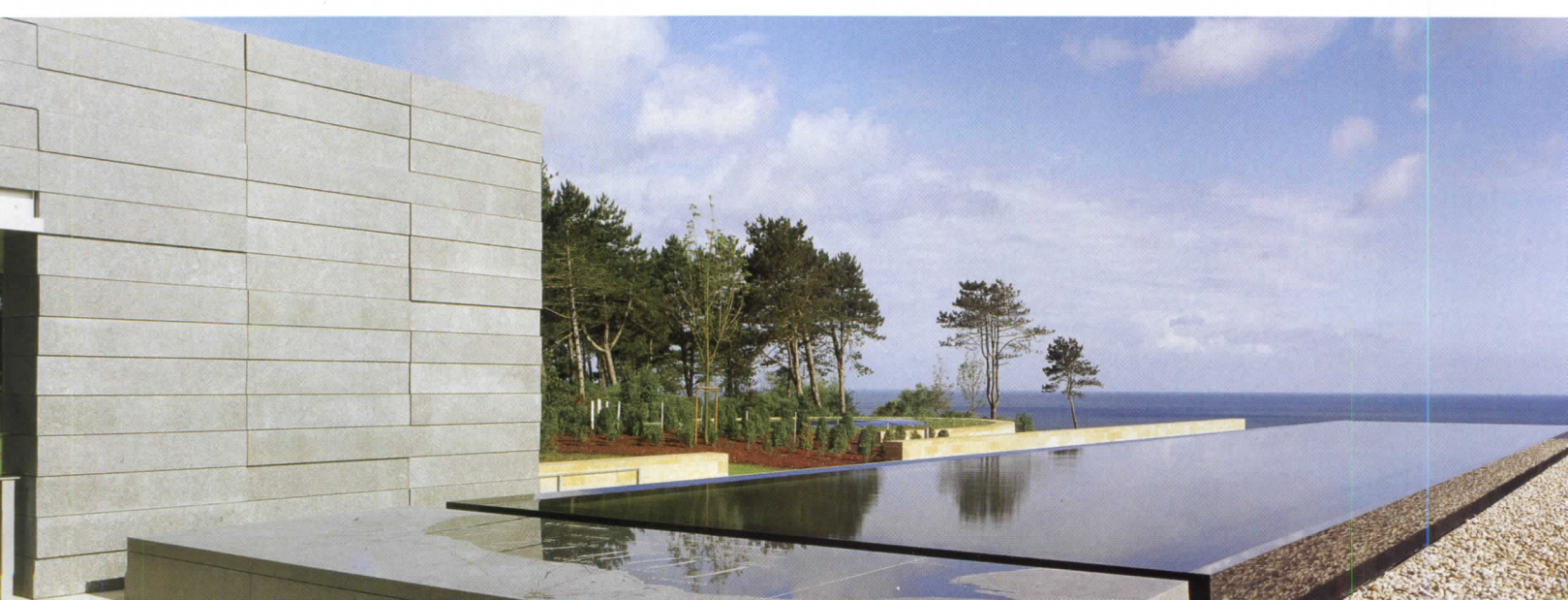
One piece at a time, Williams and Tsien have assembled a new Phoenix Art Museum that looks both backward and forward, much as the city around it has experienced both centripetal and centrifugal growth. ■

Sources

Precast concrete: *Coreslab Structures*
Zinc cladding: *Rhenzink America*
Aluminum curtain wall: *Kawneer*
Entry glass curtain wall: *Oldcastle; B+B Glass (fabricator)*
Entry glass doors: *Blumcraft*
Maple flooring: *Robbins Floor*
Acoustic ceiling tiles: *Armstrong*
Exterior uplights: *KIM Lighting*
Gallery track lights: *LSI Lighting*

SMITHGROUP combines serenity and savoir faire in its design for the **NORMANDY AMERICAN CEMETERY VISITOR CENTER** overlooking Omaha Beach

An orientation pavilion with a map signals the entry to the visitor center (opposite). The flame-finished granite cladding of the structure has a craggy relief, while the reflecting pool at the rear (below) is set in a honed-and-polished granite podium.



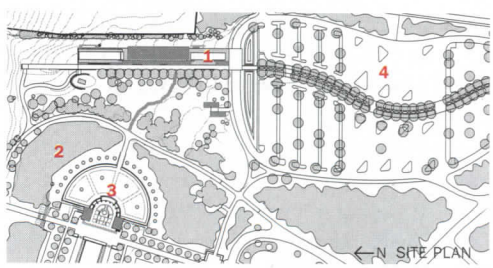
PHOTOGRAPHY: © ROLAND HALBE, EXCEPT AS NOTED

By Suzanne Stephens

At a time when few know how well the design for the memorial to 9/11 in Lower Manhattan will survive various demands from separate interest groups, it might be a good idea for those involved to visit Normandy. Far above Omaha Beach at Colleville-sur-Mer, in northern France, a distinctively handsome two-level visitor center now honors those who died as a result of the allies storming the German-occupied territory on D-Day, June 6, 1944. Dedicated in 2007, the center extends along the eastern edge of the 172.5-acre American Cemetery where 9,387 soldiers are buried. The long, attenuated structure, partially submerged into a verdant landscape, is striking for its use of granite, limestone, and wood, as well as its elegant proportions and craftsmanship. Indeed, the staggered, high-relief, dark-gray granite walls recall Mies van der Rohe's demolished Monument to Karl Liebnecht and Rosa Luxemburg in Berlin (1926), while its rectilinear plan brings to mind Mies's house for the German Building Exhibition of 1931 in Berlin. Parts of the massing even evoke Frank Lloyd Wright's second Herbert Jacobs House in Madison, Wisconsin, completed in 1948.

Responsible for the project was the "culture studio" in the 215-person Washington, D.C., office of the SmithGroup, a 155-year-old firm that originated in Detroit. Although it now has 10 offices and more than 800 people, SmithGroup went after a commission only 30,000 square feet in size. This might seem a tad small-scale for the plus-size firm. But the high-design architects considered for the job—I.M. Pei, Michael Graves, and Hugh Hardy's firm, H3—indicate the significance of this first of many such visitor centers being planned by the American Battle Monuments Commission (ABMC). SmithGroup's David Greenbaum, FAIA, notes that his office probably benefited by going into the interviews with a full team in place, including an associate architect from Paris, John Lampros.

1. *Visitor center*
2. *Garden of the Missing*
3. *Memorial*
4. *Parking*



The new center occupies a 20-acre site overlooking the beach, in a more prominent location than that of the former visitor center, a small rubble-stone bungalow near the parking area. The architects deliberately gave

The dark granite walls of the lobby contrast with the white granite floor (above). From the north lobby, visitors see the reflecting pool, whose surface seems to merge with the water of the English Channel (opposite, top). Stairs from the main level (opposite, bottom right) lead to the below-grade exhibitions and elliptical gallery from which visitors exit (opposite, bottom left).

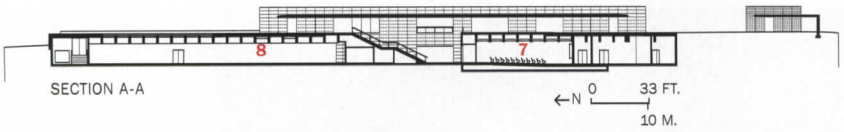
the new $30 million structure a massing and scale that does not overwhelm the cemetery's earlier commemorative architecture dating to the mid-1950s. There, a memorial comprising a French limestone semicircular colonnade with flanking loggias, and a chapel in the form of a circular limestone tempietto, were designed by the Philadelphia firm Harbeson Hough Livingston and Larson (H2L2) in a style evocative of the stripped Classicism of the 1940s. These quietly arresting structures evocatively punctuate the gridded field of white marble grave markers, but definitely speak of another time.

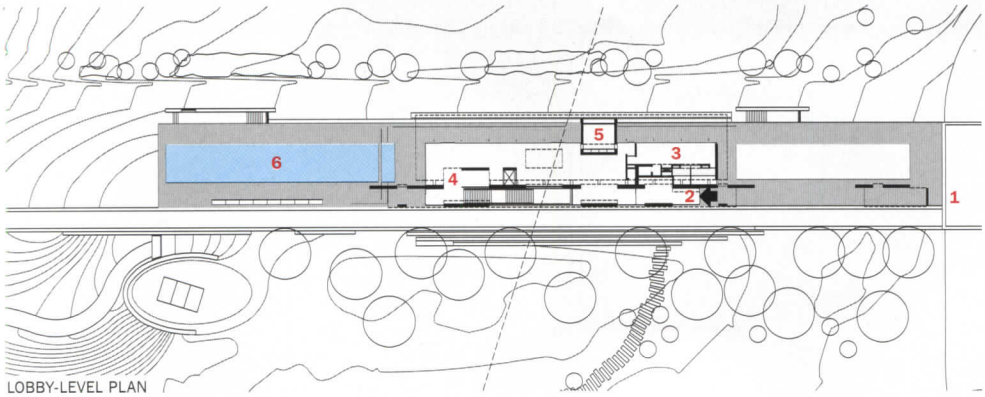
With the new visitor center, the design team wanted to be referential, but not imitative: For inspiration, the architects looked at the war structures, bunkers, and surrounding granite walls on the property, as well as the hedgerows crossing the Norman terrain. The result is a steel-framed pavilion with granite walls that sits atop a poured-in-place-concrete base structure submerged in the ground.

On the lobby level, the ABMC galleries open out to the view of the English Channel to the north through expansive glass walls overlooking a reflecting pool. The main exhibition spaces devoted to D-Day are inserted underground, where spaces are darker and more enclosed. The setting, with its exposed-concrete walls, a dropped ceiling of dark stainless steel mesh, and oak plank floors and walls, evokes the raw character of bunkers, without the grittiness. At the same time, daylight softly filters through clerestories and skylights in the exhibition area, where freestanding display partitions loom up like rows of ancient Greek steles.

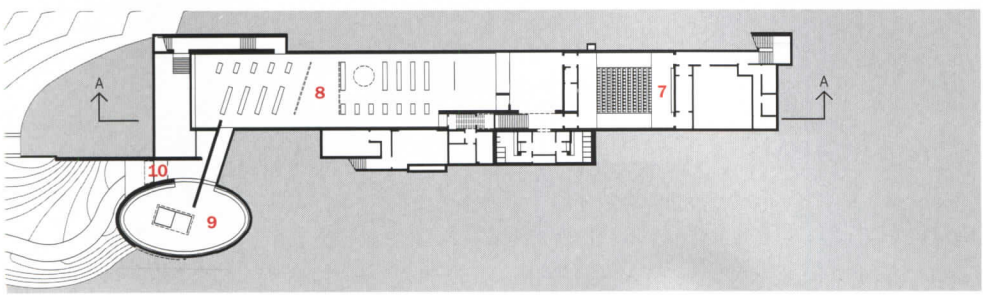
Although the exhibition is divided into three thematic sections—"competence," "courage," and "sacrifice"—its designers, Gallagher & Associates, mounted the material devoted to the history of the invasion without a hint of kitsch sentimentality. The "sacrifice" portion occupies a luminously elliptical gallery that projects from of the west wall. Acoustically treated white plaster walls keep hushed the space devoted to the memory of those who died. In the middle of the room is a skylighted meditation space, where twin cubes, composed of planes of Cor-Ten and sandblasted glass, partially enclose a helmut mounted on a rifle, a familiar grave marker during the war. The rusty steel and translucent glass indicate "a separation," says project principal Elsa Santoyo, "both wound and absence, in which the glass separates people in this meditation chamber from those in the gallery itself. Those within the chamber look ghostly," she adds. "It sets up a series of disconnections."

Visitors exit the rear of this space and follow a red asphalt path to the cemetery. Here on the exterior, the curved wall of the gallery, clad in



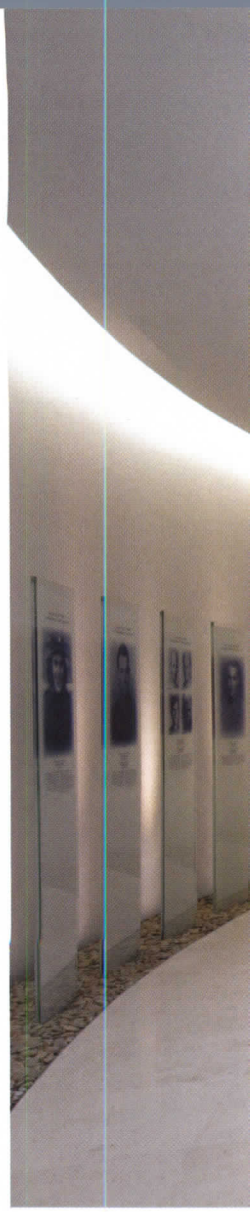


LOBBY-LEVEL PLAN



EXHIBITION-LEVEL PLAN

1. *Drop-off and orientation*
2. *Entrance*
3. *Offices*
4. *ABMC gallery*
5. *Next of Kin Suite*
6. *Reflecting pool*
7. *Theater*
8. *Courage and Competence Galleries*
9. *Sacrifice Gallery*
10. *Exit to cemetery*



The straightforward rigor of the lower-level installation (below left), designed by Gallagher & Associates, complements the architecture, with its metal-mesh dropped ceilings and concrete walls. From the main exhibition hall, a tunnel (below right) takes visitors to a skylit elliptical gallery with white plaster walls and a white limestone floor (opposite). Within the gallery, Cor-Ten steel and sandblasted-glass partitions form a meditation space.

PHOTOGRAPHY: © PRAKESH PATEL (THIS PAGE)

The masterful play of materials selected for their referential qualities heightens the experience of moving through the spaces. While the architects chose a dark-gray granite cladding for its similarity to the granite used on the cemetery's perimeter, this particular stone comes from South Africa: Its warmer tone was preferred to that of the blueish Brittany granite. A flamed-finish Kashmere white granite with warm rusty veining and garnet occlusions, Santoya explains, surfaces for much of the exterior plinth, the stairs, and the main floor. "It emphasizes the horizontal framing of the views," she notes, much like those seen from the German bunkers in 1944. The floor of the Sacrifice Gallery is white limestone rather than granite, since the architects wanted to make a transition to the material used for the cemetery's memorial and chapel. Oak was favored in the lower level, owing to its longtime symbolic association with strength and endurance. The lobby and offices upstairs feature a figured makore veneer, whose watery pattern seems to echo that of the pond and channel outside. The landscaping, designed by the U.S. firm Michael Vergason Landscape Architects and D.Paysage in Paris, helps immensely to relate the structure to its coastal setting.

The integration of indoor and outdoor spaces, plus the dramatic use of daylight and views, all combine to create a particularly poetic ambience that successfully sets up the sequence in which to enter the cemetery proper. This unified experience, incorporating history and nature, offers a serious contribution to the architecture of memorials. ■

Project: *Normandy American Visitor Center, Colleville-sur-Mer, France*
Client: *American Battle Monuments Commission*
Architects: *SmithGroup—Colden Florance, FAIA, principal in charge; David Greenbaum, FAIA, Elsa Santoyo, project principals; Bettina Neudert-Brown, Franck Le Bousse, Su Sie Lim, AIA, design architects*
Associate architect: *John Lampros Architecte, Paris*
Exhibition designer: *Gallagher & Associates*

Sources
Frameless insulated-glass panels and glazing: *Saint Gobain*
Copper standing-seam roof: *TECU Zinn*
Tile carpet: *Interface*
Metal panel ceiling: *Alucobond*
Stainless-steel mesh: *Gontois*
Oak and makore veneer: *La Fraternelle*
Lighting: *ERCO (track and downlights); Bega (uplighting on stone walls)*
Acoustical plaster: *BASWAphon*

ONLINE: To rate this project, go to **architecturalrecord.com/projects/**.

Rafael **Moneo's** expansion and restoration of Spain's renowned **PRADO MUSEUM** is simultaneously profound and respectful

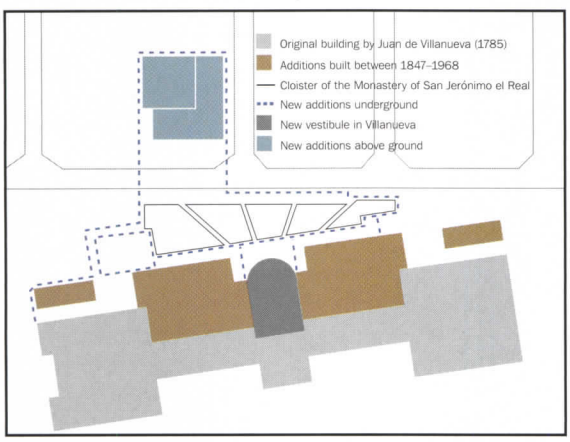
Moneo's brick-and-bronze addition sits next to an existing church that was once connected to the Jerónimos Cloister.

By David Cohn

The strength of Spanish architect Rafael Moneo's new addition to the Prado Museum in Madrid lies in his ability to analyze and resolve the conflicting layers of history that literally stratify the hillside site behind the museum's original building. With the compact jewel box of brick-and-bronze fenestration, together with a more discrete connecting element that he has folded into the slope beneath it, Moneo has created a work that functions in a respectful but contemporary dialogue with the existing 1785 Neoclassical structure designed by royal architect Juan de Villanueva and the surviving remnants of the Royal Monastery of San Jerónimo. The monastery ruins include a 17th-century cloister, which Moneo has dramatically incorporated into the heart of his addition, and its Gothic church, still in use, which stands somewhat uneasily beside it.

For Spaniards, the Prado is hallowed ground, with its unmatched collections of works by Velázquez, Goya, El Greco, and other European masters, accumulated over five centuries by two royal dynasties. The need to update and enlarge the Prado's ancillary services required an unusual alliance between Spain's two opposing political parties, which have alternated in power during the 12-year span of the museum's expansion. The project was entrusted to Moneo, who at 70 is the country's most respected architect, after a circuitous process that began with an inconclusive open international competition in 1995. Ten finalists were selected from 483 entries and invited to participate in a second competition in 1998 with a more defined program, after which Moneo was awarded the commission.

Currently receiving two million visitors a year, the Villanueva building required new space for entry vestibules, ticketing, cloakrooms, group tours, and educational facilities, as well as a larger shop, cafeteria, and auditorium, all of which Moneo accommodated in the partially underground visitors center he added to the back of the building. The addition is organized longitudinally along a continuous line of clerestory glass that inundates the space with light, setting off its limestone floors and its bronze ceiling strips, windows, and custom chandeliers.



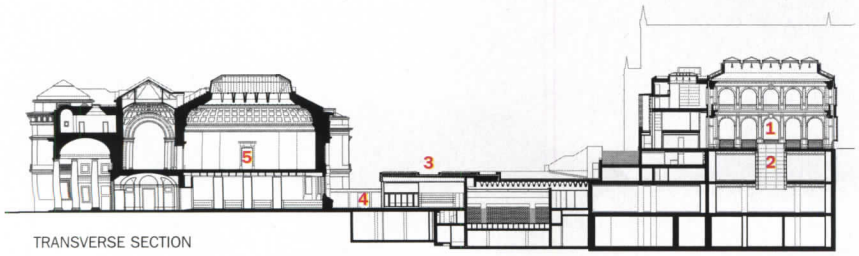
The visitors center (below), partially underground, connects the original Villanueva museum building to the Jerónimos building addition. A parterre of miniature boxwoods (above) covers the new underground link and mediates between the old and the new.

In addition to new entries at either end of this zone, Moneo created additional access by reopening the museum's central porticoed entrance, previously used only for official occasions, and taking over the ground floor of the apse-shaped hall behind it—occupied since 1984 by an auditorium—as a new center of circulation for both the existing building and the addition. This strategy develops what Moneo calls a "transversal axis" latent in Villanueva's original plan, although at the cost of breaking the continuity of the main circulation axis on the ground floor. The walls of the apse are finished in hot-pressed stucco in shocking red, a color taken from the royal sash in one of Goya's portraits of King Carlos IV, which adds a slash of Warholian Pop contemporaneity to the subdued enfilade of the original galleries.

David Cohn is RECORD*'s Madrid-based correspondent.*

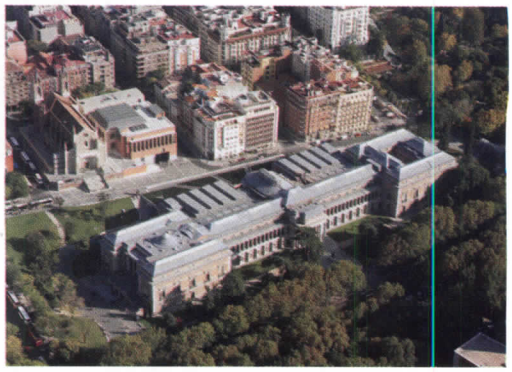
Project: *Prado Museum Expansion, Madrid, Spain*
Client: *Ministry of Culture*
Architect: *Jose Rafael Moneo, Arquitecto—Jose Rafael Moneo, Christoph Schmid, Carmen Díez, Marano Molina, Jacobo García Germán, Borja Peña, design team*
Engineers: *NB 35 Ingenieros (structural); Urculo Ingenieros Consultores*

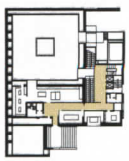
Stairs and escalators (above) in front of the entrance to the visitors center give gallery-goers access to the Jerónimos building and the parterre. By reclaiming the apse-shaped hall (right) on the ground floor, Moneo established a space in which the activities of the existing Prado and the extension overlap.



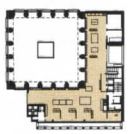
TRANSVERSE SECTION

1. *Jerónimos Cloister*
2. *Glazed lantern*
3. *Parterre*
4. *Courtyard*
5. *Apse-shaped hall*





LEVEL 4



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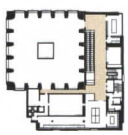

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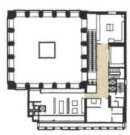
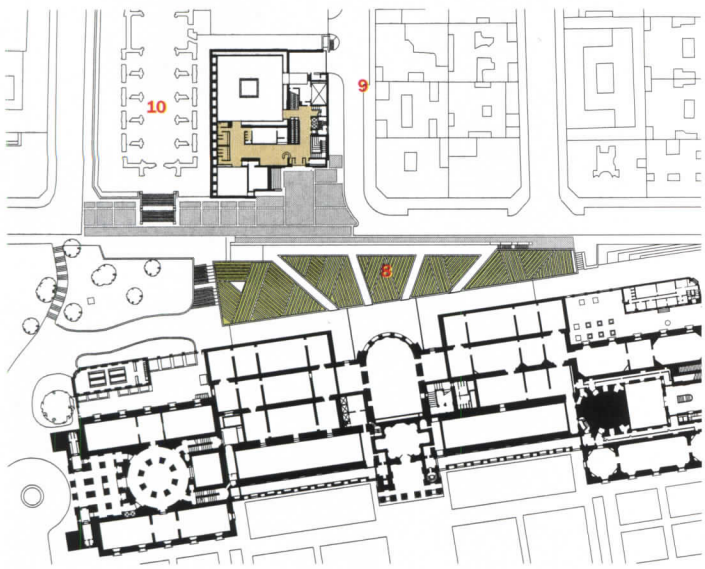
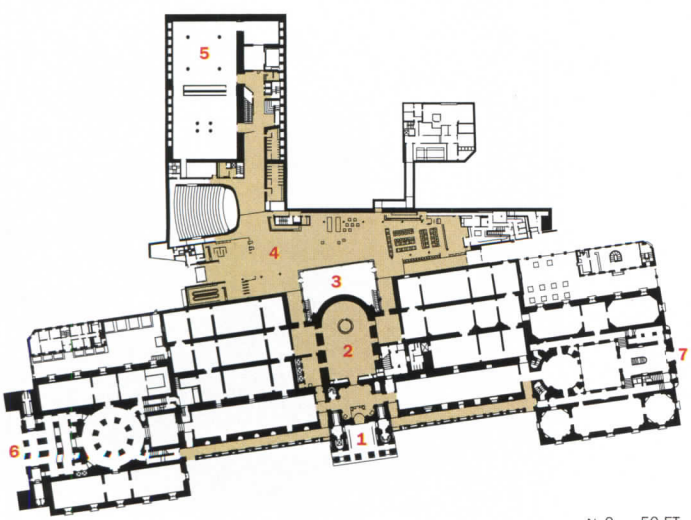


LEVEL 7



PARTERRE LEVEL



N 0 50 FT.

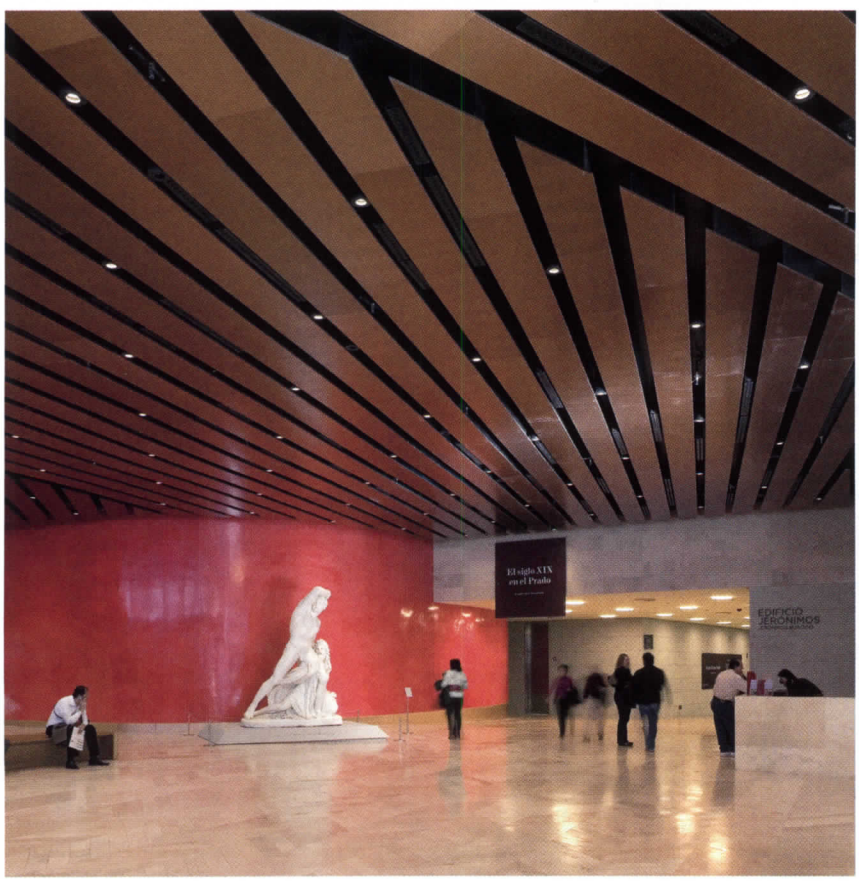
1. *Velázquez entrance*
2. *Apse-shaped hall*
3. *Courtyard*
4. *New foyer/visitor center*
5. *Gallery beneath lantern*
6. *Puerta de Goya*
7. *Puerta de Murillo*
8. *Parterre*
9. *Jerónimos Cloister*
10. *Existing church*

From windows in the back of the apse, visitors can see the main block of Moneo's intervention, the so-called Jerónimos building, on the hillside beyond, which is reached via escalators situated at the rear of the new visitors center.

The Jerónimos building envelopes the skylight-covered cloister remains of the monastery. Inside this carefully contrived volume, the cloister's worn granite blocks, restored and rebuilt in their original position, stand independently of the concrete jacket that encloses them; Moneo has even raised their piers slightly from the floor in an ironic gesture of respect. With its openings backed by uninterrupted sheets of glass, and missing the softening shadows of the long-demolished galleries behind them, the cloister is a bright but ghostly space, with no exterior views but the sky. For the museum, it represents a link to its origins, dating to a time when the monastery was part of the Royal Palace of El Buen Retiro, built by Velázquez's patron, King Felipe IV, and demolished by French invaders under Napoleon. A few blocks away, two other surviving elements of the palace are currently being restored for the Prado, including the former Throne Room as originally decorated by

The visitors center (opposite, top and left) is a trapezoidal space that embraces the apse-shaped hall, giving the old museum prominence in the new space. The gently sloping floor mediates between different access levels. The lantern (light well) descends from the top of the Jerónimos building and passes through an intermediate level, pouring light into the Temporary Exhibitions gallery (opposite, right), which is accessible from the visitors center.

Two entrances are located on the north and south sides of the main foyer of the visitors center.



which will house the museum's library and school.

A glass lantern descends from the center of the cloister through the floor below to bring natural light into the two levels of galleries created for temporary exhibitions, effectively situating the cloister as the termination of the new transverse axis. In addition to the 15,000 square feet of galleries and the Prints and Drawings Department, the building houses modern technical facilities, including art storage areas, the museum's first loading dock, a large-scale freight elevator, and modern restoration laboratories on the floors around the cloister. The 237,000 square feet of new construction, built at a cost of $157 million, allow the museum to dedicate the entire Villanueva building to the permanent collections, freeing 3,000 square feet for its galleries.

The exterior configuration of Moneo's design seeks to reinforce the transverse axis between the Villanueva and Jerónimos buildings. Successive additions to the back of the museum during the 20th century had cut into the natural slope of the terrain, leaving a sunken service court at its back. The roof of Moneo's underground addition, covered with a parterre of miniature boxwood hedges, reestablishes this missing ground plane. A pattern of radiating paths on the parterre come to focus on the exposed zz of the Villanueva building, converging in the upper gallery, occupied, as every Spaniard knows, by Velázquez's *Las Meninas*, the museum's most celebrated painting.

Perhaps the most difficult problem Moneo faced was establishing a cordial relation with the adjacent church, which stands on a platform 20 feet above the street, and which had once been attached directly to the cloister. In a series of carefully calibrated formal gestures, Moneo has pulled the brick block of his building away from one bay of the cloister to give the church breathing room. He establishes the ground plane of his building at the lower street level, with a modest entry set off by contemporary Spanish artist Cristina Iglesias's cast-bronze doors. The main feature of his facade is a brick loggia, with fluted brick columns, a cast bronze wall behind them, and crowned by a marble lintel, a purely decorative gesture, somewhat retro-Deco in style, that establishes a secondary, stabilizing horizontal element above the level of the church's eroded platform and creates a dialogue with the portico of the Academy of Letters on the other side of the church. Moneo comments, "The building seeks to escort the church, just as it is escorted by the academy." His method, here as elsewhere, is to find harmony through contrast.

Moneo sees his work for the Prado as essentially a public service. "This wasn't the occasion to celebrate an architect's personal expression," he emphasizes. He distinguishes his approach from the additions of I.M. Pei to the Louvre or Venturi, Scott Brown for London's National Gallery, where "the structure and organization of the museums were completely transformed. The Prado has been spared," he asserts. "The identity and character of the original museum have been maintained." At the same time, however, he has integrated the original building with its surroundings, introducing both the contemporary voice of his intervention and the more fragile presence of the cloister, which opens a new window on the history and significance of the museum and its collections. ■

Ceramic tile: *Agrob Büchtal*
Glass: *Cristalería Soler Hermanos*
Zinc covering: *Cubiertas Muñoz*
Lighting: *Louis Poulsen*

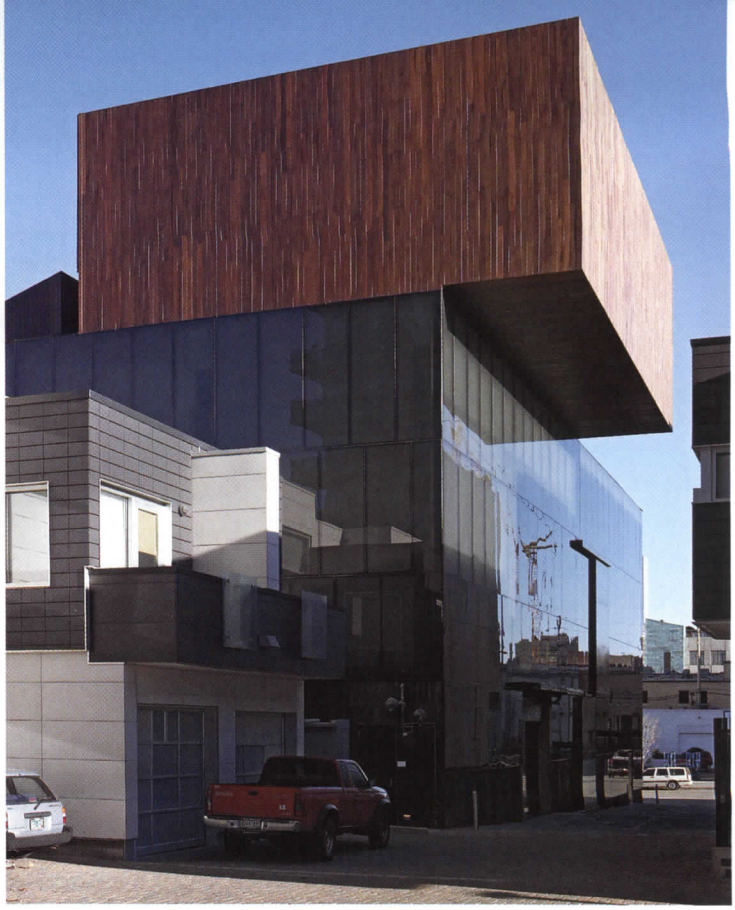
Beginning in the floor of the skylit cloister (above and opposite), the lantern (light well), glazed and inaccessible, descends through an intermediate level (left and below), thereby connecting all levels of the Jerónimos building with a shaft of light.

PHOTOGRAPHY: © ROLAND HALBE (TOP)

David **Adjaye** contains a miniature city of art, learning, and social experiences inside the **MUSEUM OF CONTEMPORARY ART DENVER'S** enigmatic walls

The monolithic facade of the MCA Denver is punctuated by an entrance in its northeast corner and a Brazilian redwood–clad rooftop (left) supporting several volumes, including a children's room, which cantilevers over the rear elevation (right).

PHOTOGRAPHY: © ED REEVE



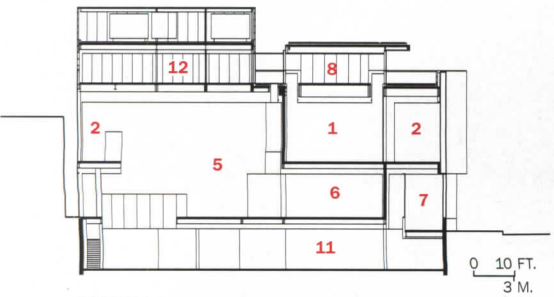
By David Sokol

Cabbies' ignorance is David Adjaye's bliss. During the construction of the Museum of Contemporary Art Denver (MCA), whenever Adjaye took a taxi to the construction site, "the drivers would fly past it," the London-based architect recalls. To be sure, the confusion had something to do with the MCA's promontorylike spot in the new neighborhood Commons Park: The depression of adjacent 15th Street makes this three-story building difficult to spot. But equally important, Adjaye had intended his design to nestle into Commons Park rather than stand out. "I thought it was the best kind of compliment, because I wanted the building to be an urban experience," he says of the U-turning drivers.

The museum represents the first public commission in the U.S. for Adjaye, the 41-year-old phenom who already has amassed a portfolio of projects for high-profile clients ranging from actor Ewan McGregor to the Nobel Foundation. As one of Britain's only prominent black architects, Adjaye also has been the subject of endemic debate pitting tokenism against architectural skill. The MCA, which opened in October 2007, will expose his talents to a wider audience and may help settle the discussion of whether Adjaye has ascended the meritocracy.

Clearly, Adjaye does not equate the top of the pyramid with icon-making. Recalling positions taken by peers like Foreign Office Architects and Allied Works, Adjaye conjectures that the fad of over-the-top museums is over. "The one-liner lacks depth and criticism," he says. "It's utterly easy,

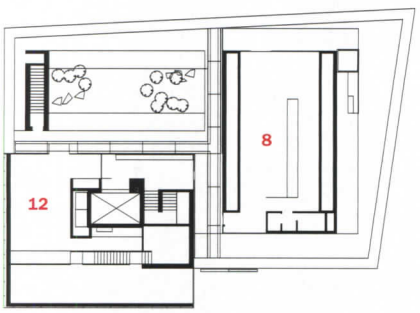
David Sokol is a regular contributor to ARCHITECTURAL RECORD.



SECTION A-A

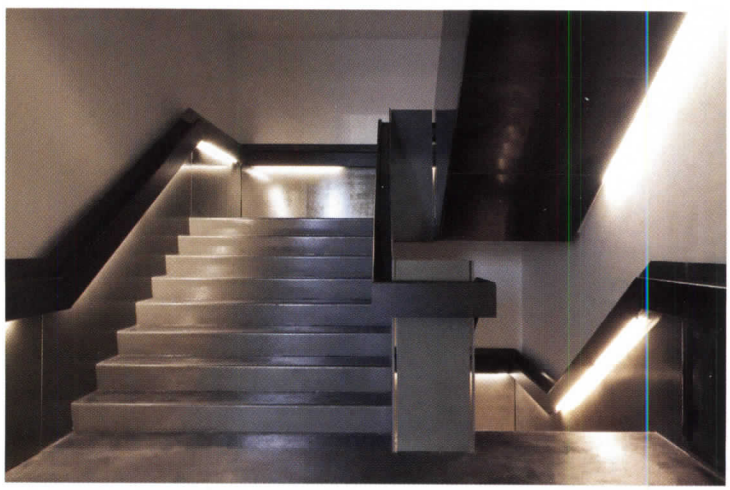
SECTION B-B

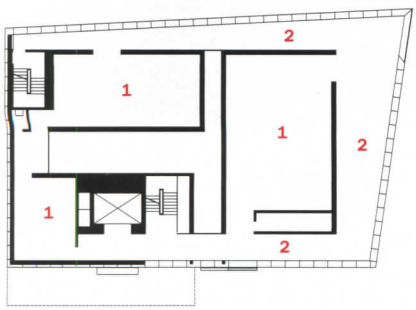
1. *Gallery*
2. *Promenade/ informal gallery*
3. *Education area*
4. *Library*
5. *Internal street/ atrium*
6. *Reception*
7. *Entrance ramp*
8. *Restaurant*
9. *Kitchen*
10. *Office*
11. *Art storage*
12. *Children's room*



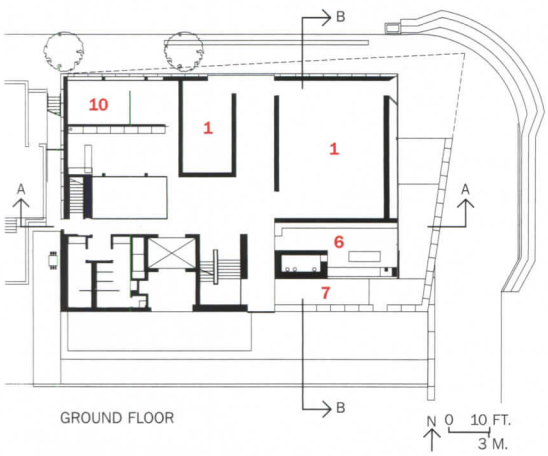
ROOF

In the MCA galleries, lighting is carefully hidden and reflected to give the appearance of daylight, but in the main stairwell (right), lamps tucked beneath handrails enhance the stair's dynamic form, contrasting it with the neutral viewing spaces.

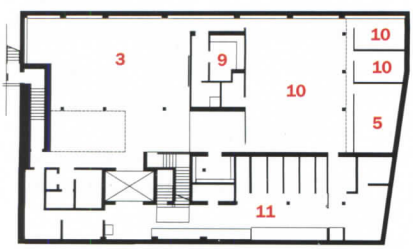




FIRST FLOOR



GROUND FLOOR



LOWER FLOOR

making any crazy form you want. I think the test is to try to find new programs and new scenarios that can be carried in content-led forms."

His attitude is realized in a subdued, enigmatic exterior. Smoky tinted glass reflects the surroundings, and only the stray transparent window reveals museumgoers. Adjaye also eliminated overt signifiers. Instead of tacking a monumental front door to the building, for example, the architect tapered the corner of the ground floor from the plate above it and shrouded it in the building's glass-and-MonoPan double skin, creating a procession mostly hidden from view. "I wanted to try setting up a new way of engaging entry [as] a performative element that initiates a trajectory into the building," Adjaye says of this corner. The prolonged welcome is a technique previously attempted in Adjaye's Idea Store Whitechapel, in London.

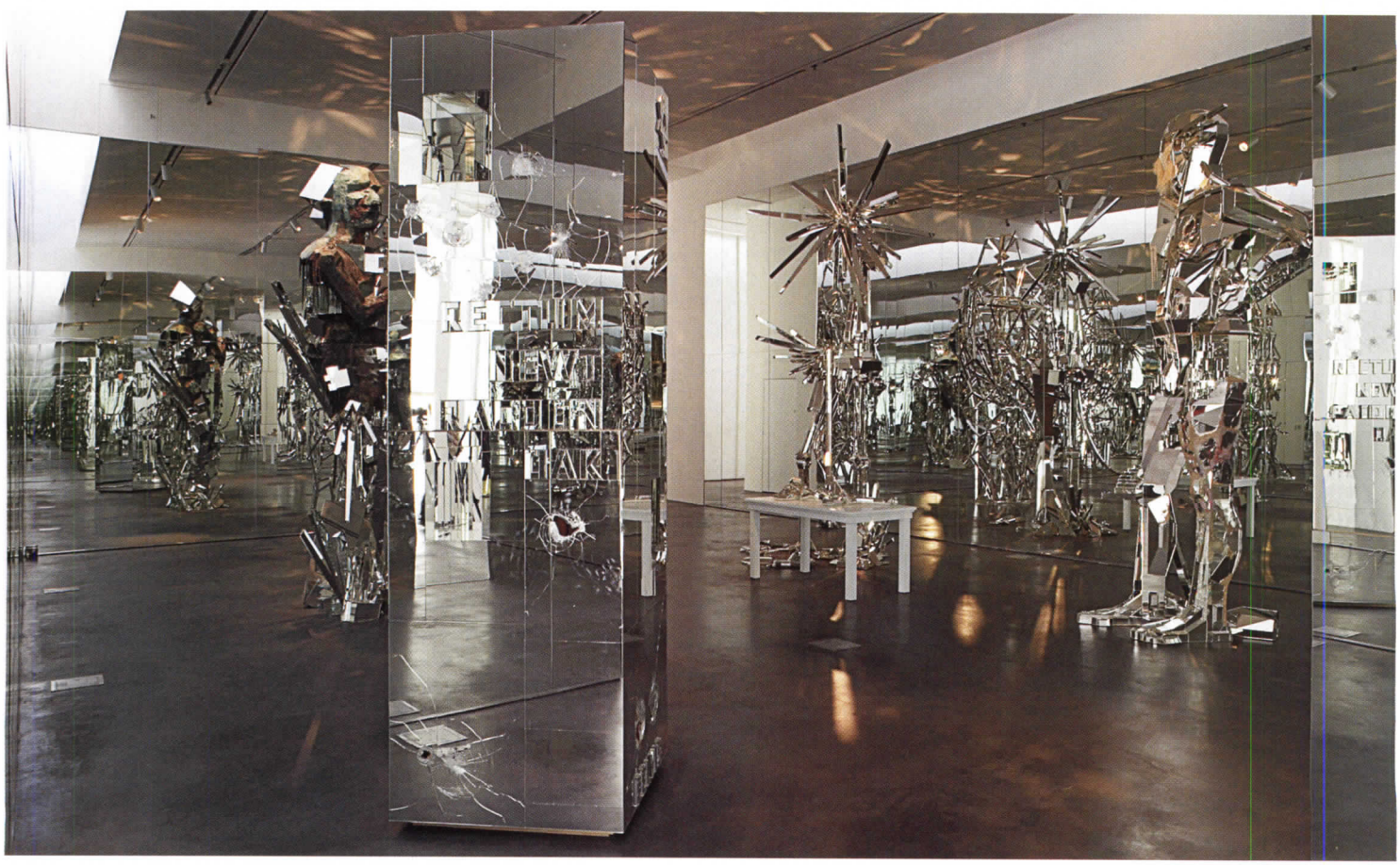
Similarly, the treatment of the MCA roof as a landscape of Brazilian-redwood-clad volumes pulls the viewer's attention away from the building front. A children's room cantilevers from the rear elevation and suggests a proscenium for the installations and events that will be staged in the fire lane. Meanwhile, the neighboring house, a sliver of blackened steel that Adjaye designed for museum land donors Mark Falcone and Ellen Bruss, completes the ensemble of the charcoal crystal and its cantilevered crown.

MCA executive director and chief curator Cydney Payton echoes many of Adjaye's opinions about the museum as icon, perhaps even more pointedly. "It's wonderful that a mythology can be developed from person to person, as opposed to it being so institutionally branded and packaged that the reality of a building may not meet your expectations," she says. "Spectacle jeopardizes everything that is substantive about the making of art."

Sympathy between architect and client reveals itself in the myriad ways in which the MCA design responds to the museum's primary mission. The MCA commissions mostly site-specific work from contemporary

Visitors enter the MCA via an L-shaped ramp (below), whose reflective, black stainless-steel ceiling and board-formed concrete wall creates a cavernous feeling. Visitors proceed into a narrow atrium—illuminated by a T-shaped skylight (below right)—around which three two-story, freestanding volumes are arranged. One such space contains the library, on the ground floor, clad in tigerwood and stocked by MCA artists (right). A void (not visible) in the floor in front of the library conveys daylight to the lower-level education room.

The MCA galleries, devoted to large works, new media, photography, and works on paper, are often turned over to single artists, such as Chris Ofili (left) and David Altmejd (below). The galleries are wrapped in a promenade that shades them from the diffuse daylight entering through the building's tinted glass-and-MonoPan double skin.



On the rooftop level are a children's room (left), a café (right), and a garden (not shown)—projections of the interior gallery volumes.

cites a MacArthur Foundation study that found that museum audiences "are no longer passive. They believe deeply in their own creative ideals, and that their creative process and output is substantial." By turning over its spaces to artists, the MCA minimizes the curator's presence, facilitating a direct relationship between viewers and makers. (Appropriately, artists are invited to stock the MCA library with materials that inspired or informed their installations.) "Without this invisible autocratic voice coming at the consumer, there's a more active platform to engage with the ideas," she says.

That approach is reinforced by the pragmatic findings of another report, this one from the Australian Museum, in Sydney. In 2002, researchers from the museum determined that exhibition visits usually clock in at fewer than 20 minutes. In addition, guests frequently skip over explanatory text, determine their own routes regardless of signage or other cues, and ignore half of exhibition components in general.

Adjaye's interior solution—what Payton calls "a whole explosion of experience" that is in contrast to the restrained shell—broaches both the MCA program and trends in museum visitation. Once visitors have traveled the long entry, they arrive at an atrium around which galleries devoted to photography, new media, works on paper, large works, and related projects, as well as a library area, are assembled in a trio of two-story volumes. These self-contained "villas" are ringed by a promenade that can be partly turned over to extra exhibition space. This perimeter walkway, set between the outer walls and interior units, also allows Adjaye to insert daylight into the nongallery areas while protecting artwork from direct exposure—one of many sustainable features that promise to gain LEED Gold status for the building.

The arrangement accomplishes a threefold task. The galleries, featuring different dimensions, orientations, and relationships to views and daylight, encourages precise, yet different responses from artists. The separation of the volumes from one another also allows Payton's team to stagger the exhibition schedule, closing a gallery without shuttering what is otherwise, at 27,000 square feet, a small museum.

Most significantly, Adjaye's composition plays on the theme of urbanism. In a continuation of it, additional "neighborhoods," such as the library, museum shop, and children's room, are located in nonhierarchical areas demarcated only by various material palettes—tigerwood, blue-glass ceiling, and rubber flooring, respectively. In this democratic configuration, viewers can establish their own sequence of movement, and tellingly, Payton reports that the average visit time exceeds an hour and a half.

From its rumination on icons and campuslike interior to its ecologically responsible elements, Adjaye's design for the MCA contains multitudes of meaning. "I'm stimulated by buildings that only suggest possibilities," notes the young architect. And although he also notes, "I'm still crafting my position," that the MCA so cohesively accommodates the client while occasionally referencing Adjaye's past works not only proves the designer's mettle, but suggests his prescient grasp of his own future legacy. ■

Project: *Museum of Contemporary Art Denver, Colorado*
Architect: *Adjaye Associates*
Associate architect: *Davis Partnership Architects—Brit Probst, principal; Steve Haave, project architect; Fred Pax, Maria Cole, Garett Naff, design team*
Engineers: *Martin/Martin Structural Engineers (structural); M+E Engineers (m/e/p)*
Facade consultant: *Dewhurst MacFarlane and Partners*
Landscape design: *Davis Partnership*
Lighting design: *Hefferen Partnership*
General contractor: *MA Mortenson*

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Set between restaurant-supply stores, the New Museum rises 174 feet above the Bowery. The architects suggested placing art on the exterior: *Hell Yes!* by Ugo Rondinone is the first piece to be exhibited on the *facade*, but it will be replaced in the future.

PHOTOGRAPHY: © CHRISTIAN RICHTERS, EXCEPT AS NOTED;

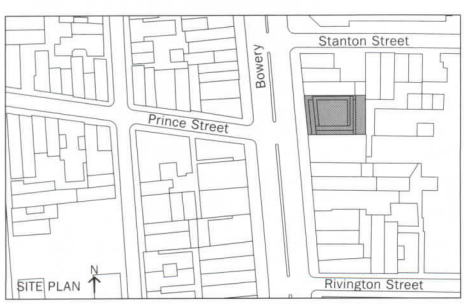
At New York's smart **NEW MUSEUM OF CONTEMPORARY ART**, Tokyo-based **SANAA** creates an ambiguous icon for an area in transition

By Clifford A. Pearson

Having developed a reputation for precisely detailed, exquisitely refined buildings, the Tokyo-based firm SANAA faced a very different kind of challenge with the New Museum in Lower Manhattan: Design a building for an anti-establishment museum in a scruffy-but-gentrifying part of town. Do it on a tight budget. And be careful, because the critics are weary of museums that are either formal extravagances or dull containers.

Against the odds, SANAA, headed by Kazuyo Sejima and Ryue Nishizawa, has delivered a building that pleases both the critics and the public. Its New Museum, which rises seven stories on the Bowery, points the neighborhood in a new direction—out of a previous era of flophouses and gin mills and toward a time of creative engagement. Whether by design or coincidence, its off-kilter arrangement of stacked boxes alludes to a moment of instability—in New York's cultural scene, economic future, and demographic mix. Instead of glossing over the city's reckoning with unsettling forces, the New Museum brings it front and center—an attitude that seems just right for an organization founded in 1977 by a curator, Marcia Tucker, the day after she was fired by the Whitney Museum of American Art. For the next three decades, the New Museum bounced around Lower Manhattan, carrying out its mission to show provocative contemporary artwork.

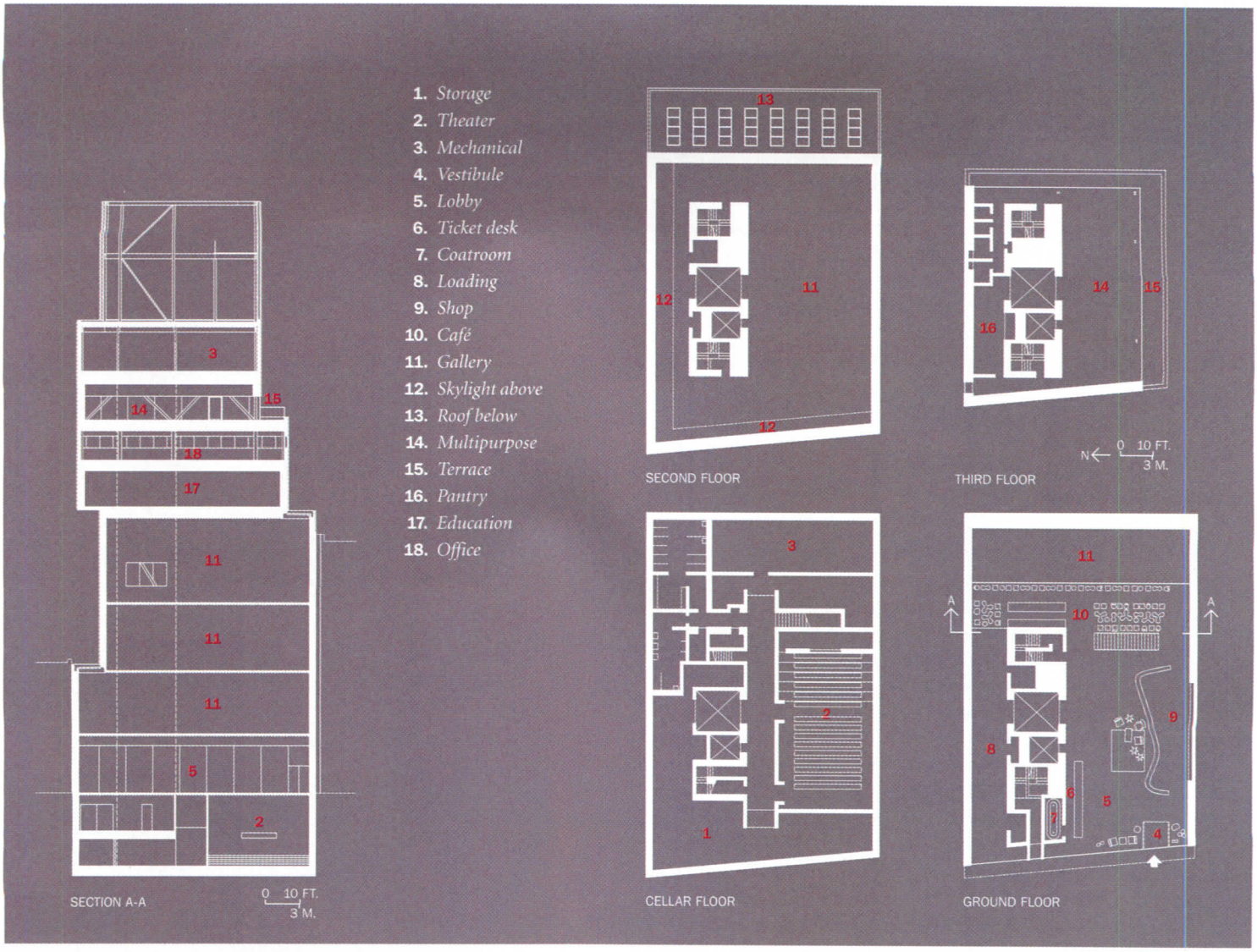
Seen from Prince Street, the building has a blurry presence (right) helping it fit in with its setting (below).



SANAA won the commission in an invited competition in 2002 (beating out David Adjaye, Reiser Umemoto, Abalos-Herreros, and Gigon/Guyer) with a scheme that would make any New York City developer blanch—purposefully using less square-footage than allowed by the local zoning ordinance. By pulling back from the zoning envelope in a series of slipped boxes, the design created the opportunity for roof terraces and long skylights along alternating edges. "We could have built another 20,000 square feet," says Lisa Phillips, the current director, who took over the museum from Tucker in 1999. "But in return, we got a [60,000-square-foot] building that's open and has light." While the final building sports only one roof terrace (on the seventh floor), skylights run along at least one side of each of the three gallery floors, bringing filtered daylight into all of the main exhibition spaces.

Best known for buildings with perfectly honed skins—such as the Glass Pavilion at the Toledo Museum of Art, in Ohio [RECORD, January 2007, page 78], and the 21st Century Museum of Contemporary Art, in Kanazawa, Japan [RECORD, February 2005, page 88]—SANAA struggled with the wrapping for the New Museum. Originally, the architects thought they would tightly clad each of the stacked boxes in a different metal with hairline joints in between. But this proved too expensive for the $50 million budget and seemed too elegant for the neighborhood and the client. So they tried an approach at odds with their earlier works, something they called "beautiful rough," says Toshihiro Oki, a project architect for SANAA.

Project: *New Museum, New York City*
Design architect: *SANAA—Kazuyo Sejima, Ryue Nishizawa, principals; Florian Idenburg, Toshihiro Oki, Jonas Elding, project architects*
Executive architect: *Gensler*
Engineers: *Simpson Gumperts & Heger (structural); Guy Nordenson (structural); Arup (mechanical)*
Construction manager: *Sciame*



"We moved away from a flat surface and explored ways of getting a rough, blurry effect," says Oki. Eventually, they developed a skin made of expanded metal mesh set an inch and a half in front of corrugated aluminum panels. Although the aluminum mesh is an industrial standard, the architects expanded its proportions beyond anything commercially available and gave it an anodized finish. To attach it to the corrugated backing, they customized off-the-shelf clips. The result is a building dressed in a metal-mesh stocking, exuding a slightly hazy sexiness that's neither too classy nor too trashy for the new Lower East Side.

A steel-frame structure with concrete slabs on composite-steel decking and concrete foundation walls, the building nonetheless seems to float above the street on a story of glass. "We wanted transparency from the street," explains Phillips, "so people could see the art inside." Low-iron glass rising from floor to ceiling on the entry level creates a Minimalist boundary between outside and in, beckoning visitors to come explore. To keep costs down and maintain quality, the architects worked with a contractor on a design-build basis for the storefront curtain wall, explains Maddy Burke-Vigeland, a principal of Gensler, the associate architect. The ground floor, which is open to the public for free, offers a museum shop, a small café, and a glassed-in gallery in the back. SANAA brought the building's trademark metal mesh inside, using it for ceilings and a curving partition on the ground floor that defines one edge of the shop.

The main galleries occupy the second, third, and fourth floors and offer a range of settings for art, thanks to different ceiling heights (18 feet for the second floor, 19 for the third, and 25 for the fourth) and floor space (4,600 square feet for the second floor, 3,400 for the third, and 2,680 for the fourth). The slipped-box arrangement establishes another set of proportional differences, since the flow of gallery space around the building's core changes with each floor. Just a few extra (or fewer) feet on one side of the core give the space a surprisingly different personality from the one above or below it.

Interior finishes, though, are the same for all galleries: white gypsum-board walls, polished-concrete floors, and metal-mesh ceilings. The museum didn't want expansion-joint lines on the floors because they would imply a certain placement for the art, so the concrete was poured as one slab. As a result, crack lines occur, creating a random imperfection that seems appropriate in this museum. A slender reveal (¾ inch thick and 2 inches deep) separates the concrete from the walls, setting it subtly afloat and creating space to hide electrical outlets for new-media art. Above the mesh ceiling, the architects installed tracks that can accommodate fluorescent and incandescent light fixtures.

Most visitors take a set of no-nonsense stairs housed in the build-

The ground floor is a **free public zone with sinuous shelves defining the museum shop on the south side (left in photo, right) and a café with different colored chairs (below). A gallery with video art sits behind the café and is visible from the street.**

PHOTOGRAPHY: © DEAN KAUFMAN (TOP AND BOTTOM)

Behind SANAA's illusion of weightlessness

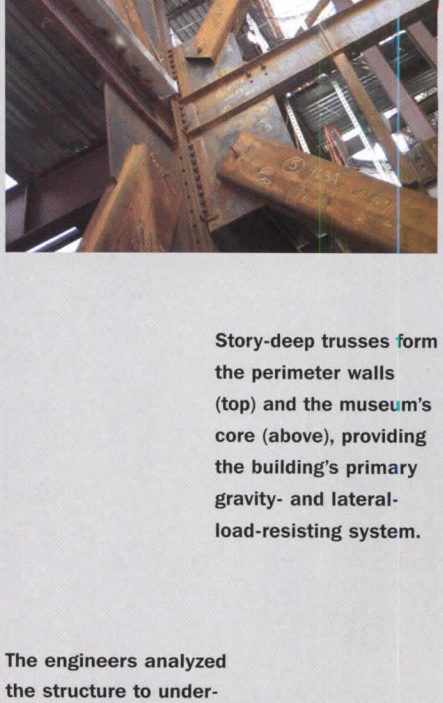
Now that the New Museum on Manhattan's Lower East Side is complete, and its structure enclosed, there is little evidence of the system that supports the seven-story building that seems to be made up of nothing heavier than precariously stacked cardboard boxes. But here and there, through its expanded metal-mesh facade, and from behind windows, architects Kazuyo Sejima and Ryue Nishizawa of Tokyo-based SANAA have provided an occasional glimpse of a diagonal brace.

The diagonals are part of story-deep perimeter trusses devised by engineers Mutsuro Sasaki (see page 156) from Tokyo and New York City–based Guy Nordenson, with the Manhattan office of Simpson Gumpertz & Heger [SGH] as structural engineer of record. These trusses are the primary components of the gravity- and lateral-load-resisting system for the $50 million museum, open since December. By "wrapping forces around corners," explains Nordenson, the trusses permit the museum's volumes to shift relative to one another, allow perimeter skylights at setbacks, and provide column-free galleries spanning up to 40 feet.

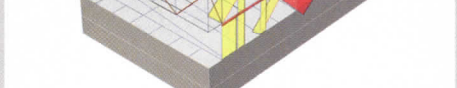
Most of the stacked boxes shift in only one direction relative to the one below. There is an exception, however: The third floor slips diagonally, allowing for skylights at both the west and north edges of the second floor. In the early stages of design, this setback was supported by a truss exposed on the interior that crossed the northwest corner of the gallery. But the condition later seemed out of place to the engineers, so they eliminated the truss and instead used the core and the side truss walls to anchor the cantilevered street-facing wall, creating what Nordenson refers to as the "floating corner."

The team meticulously analyzed the whole structure to understand how to resolve and resist various loads, but this area was particularly challenging. The engineers needed to ensure sufficient strength and stiffness and carefully plan the sequence of construction, says Kevin Poulin, SGH senior project manager.

Two levels above this seemingly floating element, another detail gives the impression that the building is made up of little more than paper. Here, the volume housing the fifth-floor education center slides to the north creating an exterior overhang. This level has a stepped slab and a partial raised floor, providing a very practical cavity for computer terminal cabling. But viewed from the exterior, the underside of the overhang seems to be at exactly the same level as the top of the slab, creating the illusion that the building envelope has no thickness. Of course, Sejima and Nishizawa, the architects of the Glass Pavilion at the Toledo Museum of Art, in Ohio, are known for their fascination with lightness and immateriality. Nordenson, also part of the pavilion's design team, jokes that "Sejima and Nishizawa can never have things too thin." *Joann Gonchar, AIA*



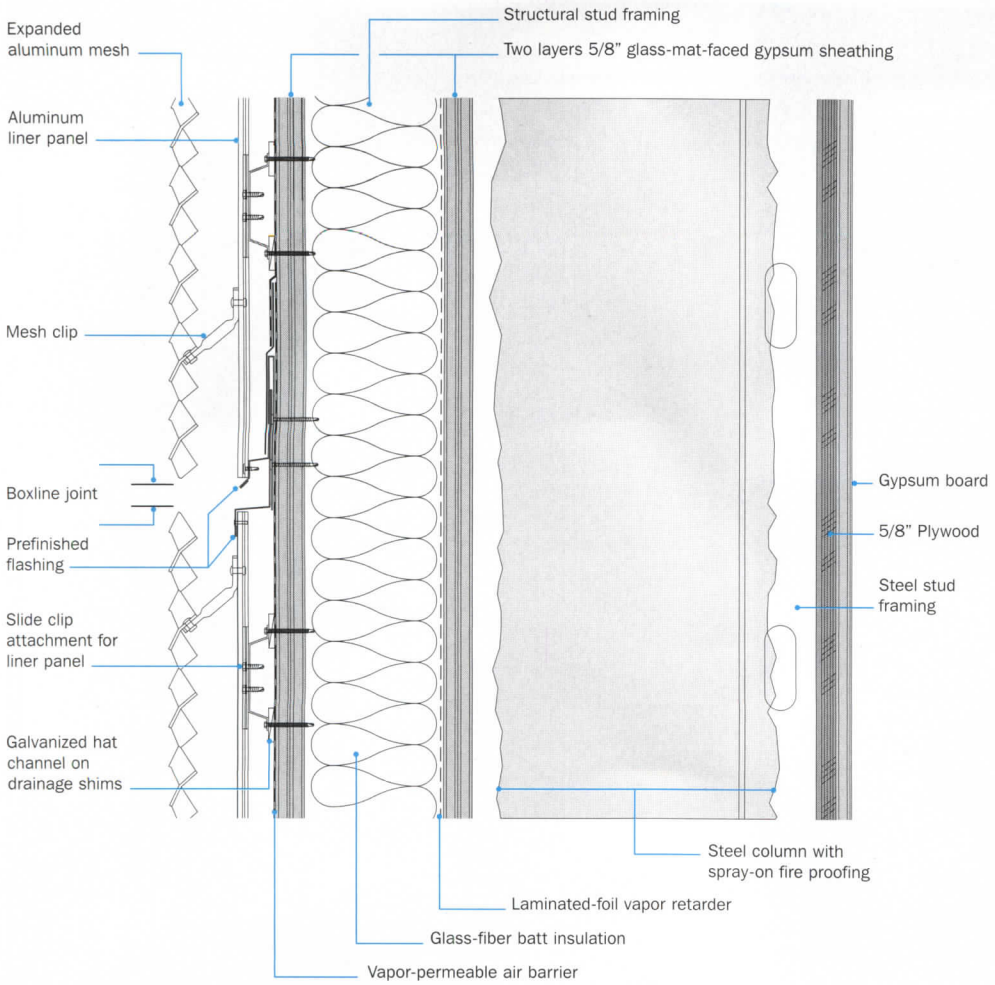
Story-deep trusses form the perimeter walls (top) and the museum's core (above), providing the building's primary gravity- and lateral-load-resisting system.



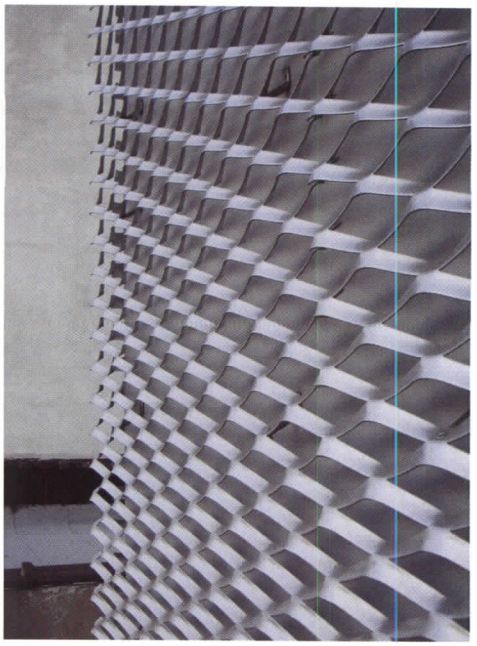
The engineers analyzed the structure to understand how it would react to conditions such as gravity loads (far left), or lateral loads from the east (left). The red members are in compression, while the yellow are in tension.

PHOTOGRAPHY: © DEAN KAUFMAN (OPPOSITE, TOP); COURTESY SGH (RIGHT TWO); COURTESY GUY NORDENSON AND ASSOCIATES (BOTTOM TWO)

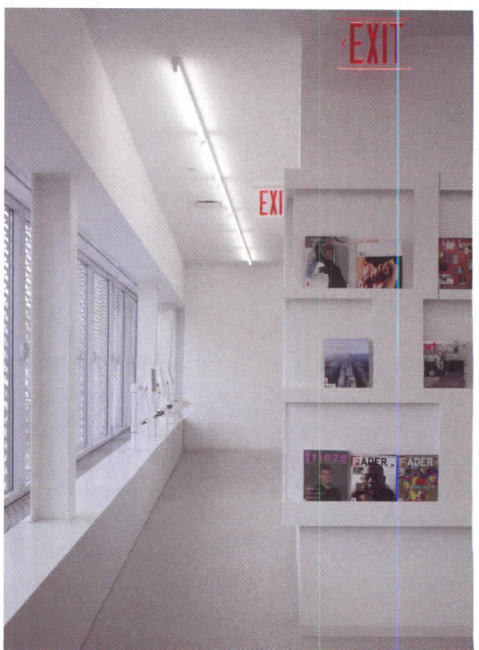
Skylights run along at least one edge of each gallery floor, washing filtered daylight inside (right and top left). The skylights are made of three basic elements: two panes of glass sandwiched between a polycarbonate panel below and metal grating above. The metal grating helps filter the daylight and allows workers to walk above and clean the skylights. A long, narrow stair (top right) connects the third- and fourth-floor art galleries.



EXTERIOR WALL DETAIL



The architects found a manufacturer in the United Kingdom who could produce the anodized, expanded metal mesh (rendering, above, and section, left) that gives the building its distinctive look. A terrace on the seventh floor (opposite, top) offers views to the neighborhood and beyond. On the fifth floor, the firm Christoff-Finio designed interiors for the Museum as Hub, a resource and information center with spaces separated by curtains (below left and right).



ing's core to get from one gallery to another. But between the third and fourth floors, they have a more intriguing option: a 50-foot-long stair just 4 feet wide, a wonderful circulation canyon that compresses space tightly around them. Arriving at the 25-foot-high gallery on the fourth floor after ascending that stair provides a blast of spatial delight. The architects played a similar game of compression and expansion almost halfway up the narrow stair, inserting a quirky 35-foot-high shaft of space that is only 6-by-8-feet in plan. For its opening exhibition, the museum installed a sound sculpture in the odd little gallery, showing it can generate an intriguing dialogue between the strange space and art.

The fifth floor houses the Museum as Hub, a resource center for learning about art and connecting electronically to other places for art. The interiors here, designed by the New York firm Christoff-Finio, feature a system of colored curtains pulled along tracks in the ceiling and reminiscent of the curtains used by SANAA at its Glass Pavilion in Toledo. The sixth floor houses offices for the museum, while the seventh has a multipurpose space wrapped on three sides by a terrace offering views of fire escapes, rooftop water tanks, and nearby buildings—the kind of views that put visitors in the middle of the city, rather than above it. The museum originally planned to use the seventh floor for special events, but the space has proved so popular that it will open it to the public as a lounge on weekends.

SANAA didn't view the building as a green project, but its use of skylights reduces the need for electric lights. Efficient ducting also trims energy usage, while low-emission paints create a healthier environment.

With the recent subprime mortgage crisis setting off financial tremors of unknown magnitude, no one is sure if future generations will see the New Museum as the last gasp of a period of affluence or a precursor of a more diversified cultural expansion. The building's blurry skin of metal mesh and its asymmetrically stacked gallery boxes, though, give it an appropriately ambiguous presence in the cityscape—ghostlike on overcast days, shimmering on others, and off-balance all the time. ■

Sources

Metal mesh: *Expanded Metal Co.*
Stainless-steel mesh clips: *James & Taylor*
Corrugated-aluminum facade panels: *McGrath*
Storefront curtain wall: *Competition Architectural Metals*
Aluminum-frame windows: *Wausau*
Exterior glass: *Viracon*
Skylight system: *Supersky*
Skylight glass: *PPG (Solarban)*
Fluorescent lights: *Bartco Lighting*
Downlights: *Lucifer Lighting*
Gallery busway lights: *LSI*
Gypsum board: *USG*

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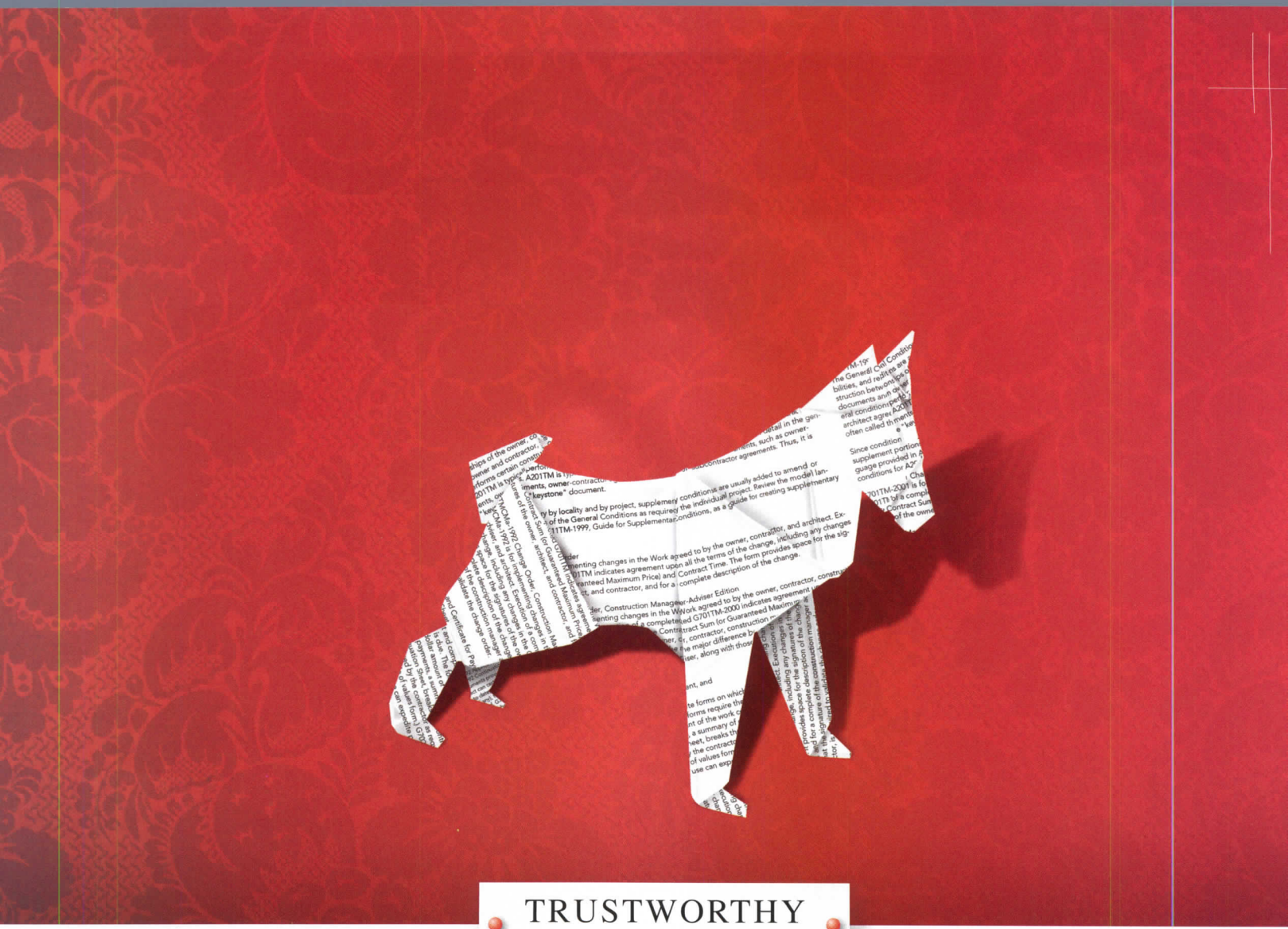

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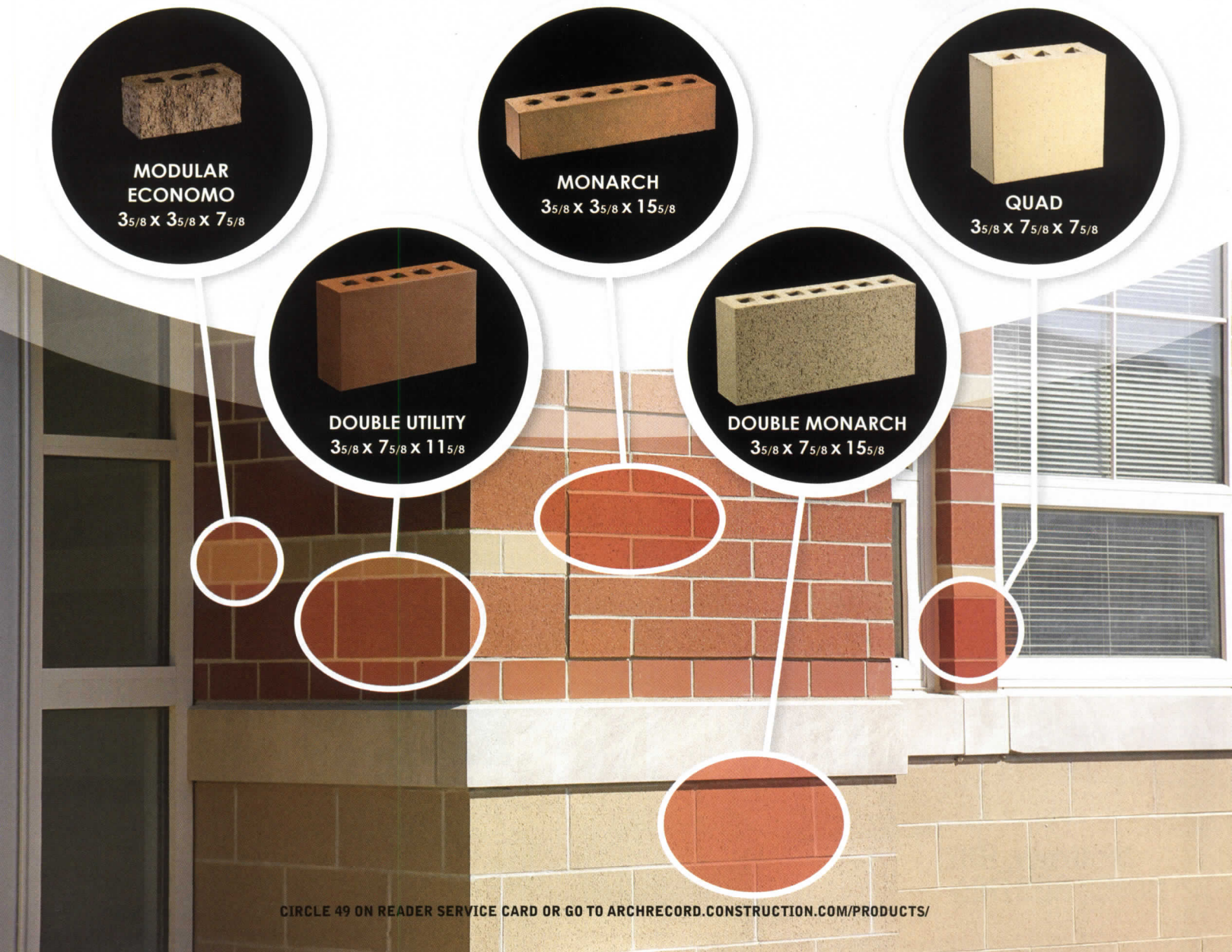

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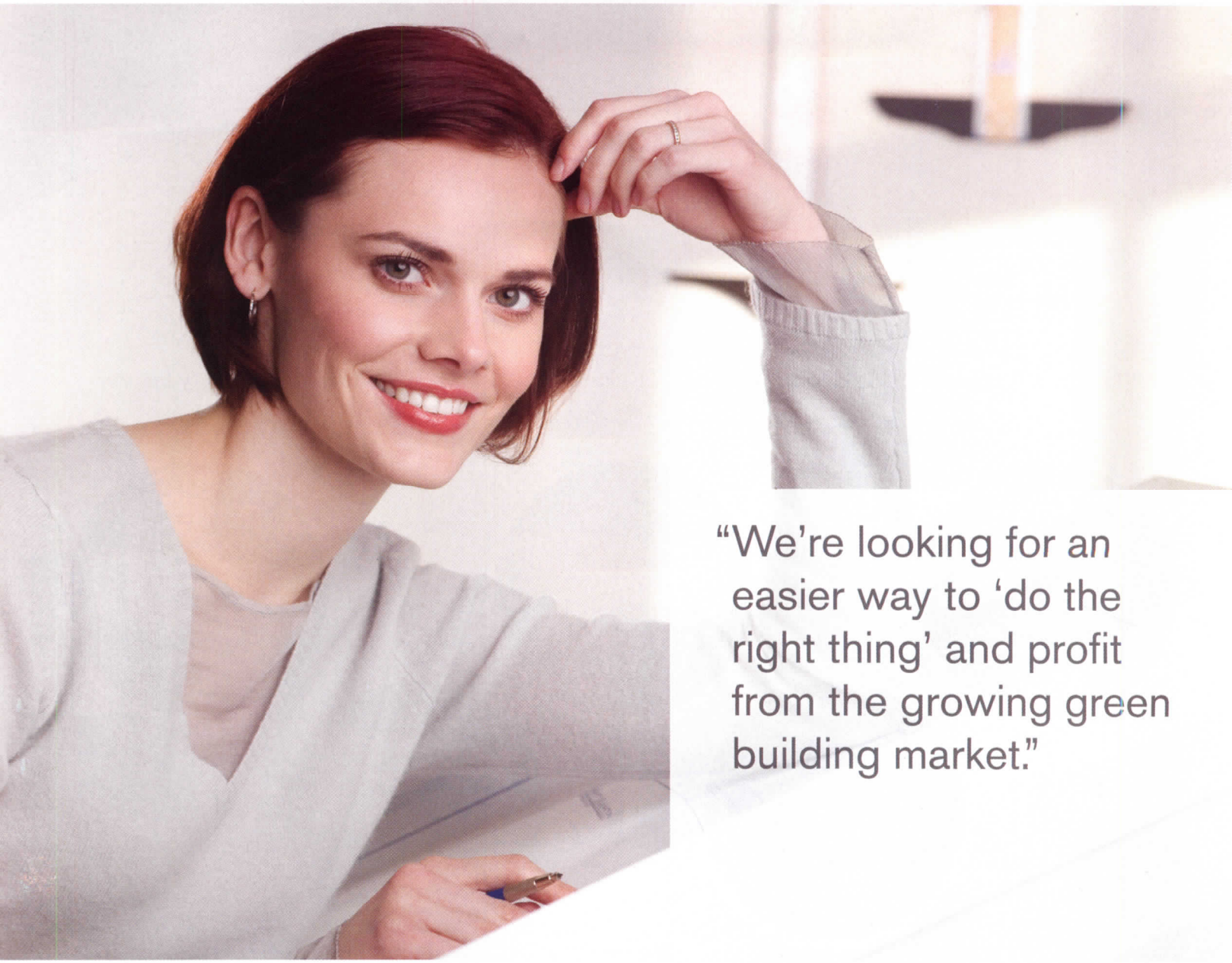

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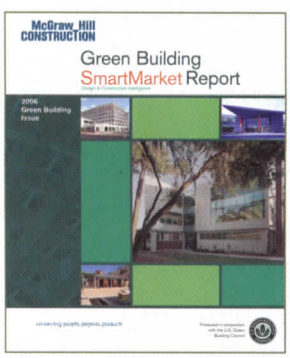

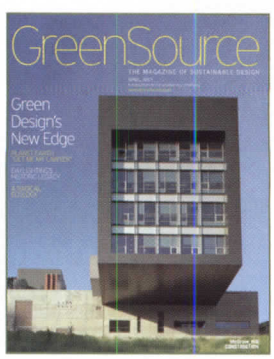

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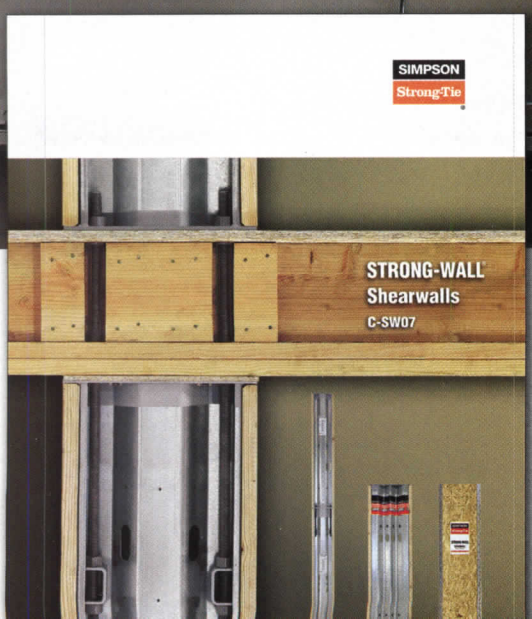

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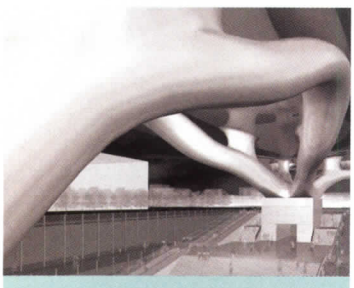


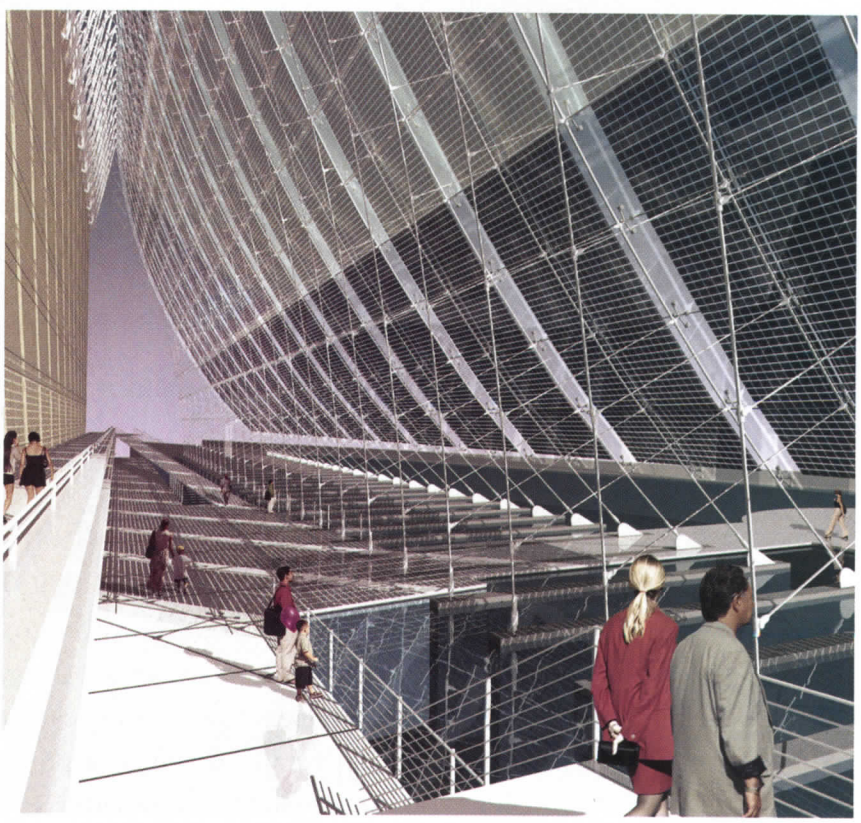
Mutsuro Sasaki's structural design for a train station (page 156).

The wind turbines on the top of Near North in Chicago (page 147).

CONTENTS

Nestled among the hits and misses of the dubiously named Energy Independence and Security Act of 2007, the eight-year-old proposal for the Sun Wall (below) somehow passed through Congress with little attention. The project—a 200-kilowatt solar photovoltaic installation for an exterior facade of the Department of Energy's headquarters in Washington, D.C.—resulted from a competition won by the Chicago architects Solomon Cordwell Buenz. Once construction finishes in 2009, the wall will qualify as the largest building-integrated solar-energy system for a federal government building in the U.S. It's also a highly visible reminder to Washington bureaucrats of the possibilities for alternative energy sources.

In the wake of spiking energy prices, incorporating alternative energy sources in buildings makes more sense now than perhaps at any time since the energy crisis of the Carter administration. Our first feature this month explores three alternative energy options deployed in a variety of building types—a single-room occupancy residence, a single-family prototype house, and a corporate headquarters. The next feature is an interview with the Japanese structural engineer Mutsuro Sasaki, a designer increasingly known for his alternative solutions to complex structures. We conclude with a look at one of the oldest construction techniques known to humanity—compacted earth—which strangely enough counts as an alternative to conventional building methods today. The online "alt." newsgroups of the late 1980s seem as distant as the solar panels of the late 1970s, but both remind us that alternative technologies don't stay that way for long. *Russell Fortmeyer*



PHOTOGRAPHY (FROM TOP LEFT): COURTESY ARATA ISOZAKI AND ASSOCIATES; DOUG SNOWER PHOTOGRAPHY; SCB ARCHITECTS

Learning to Live on Alternative Energy

THREE LANDMARK PROJECTS SHOW US HOW TO INTEGRATE RENEWABLE-ENERGY STRATEGIES INTO ARCHITECTURE, WITHOUT COMPROMISING DESIGN

An alternative can only exist when we have a choice. Architects have that choice now when it comes to energy. We can incorporate alternative energy sources, even electricity generation, into our projects, or we can just hook them up to the grid and let someone else worry about it. There are advantages and disadvantages to both, of course, but soon we may reach the point where we have no choice, and then we will need to find ways to successfully integrate alternative energy strategies into our projects. The three case studies that follow—in Chicago,

Near North Apartments, Chicago, 2007

Near North Apartments, a year-old, 96-unit, single-room occupancy in Chicago, was designed by Murphy/Jahn and developed by the nonprofit organization Mercy Housing Lakefront as a model of sustainability. While most of the building's green technologies, such as a graywater recycling system that flushes toilets and a rainwater cistern for landscape irrigation, are hidden behind the scenes, its most visible ecofriendly feature is also its most experimental: A horizontal-axis wind-turbine system created by Chicagoan Bil Becker forms a lacy crown atop architect Helmut Jahn's streamlined design.

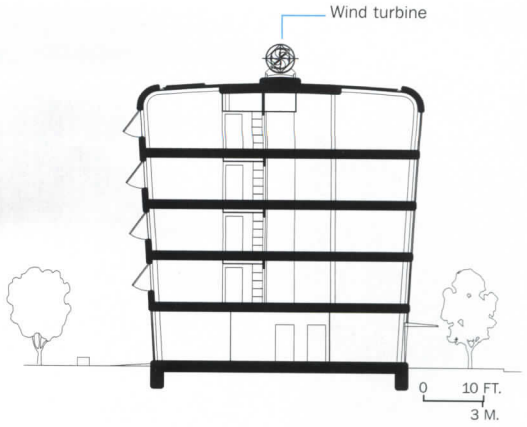
Becker is a professor of industrial design at the University of Illinois and the founder of Aerotecture. Although he first applied for a patent for the Near North installation's technology in 2000, his research dates to the 1970s. Becker, an acolyte of Buckminster Fuller, won in 1979 one of the Carter administration's last research grants devoted to alternative energy.

"Windmills only work out on the farm," Becker says of his first foray into an urban turbine almost three decades ago. But although capturing urban wind offers the opportunity of producing clean energy within cities, the location of the turbines also entails special limitations. Specifically, if a turbine were to display "runaway" behavior, throw ice, or transfer high vibration or sound loads to interior occupants, its chances of gaining a building permit would be slim.

Eight cylindrical, Mylar-finned wind turbines on the roof of Near North take advantage of southwesterly winds (above and opposite).

Four years into his research, Becker realized that traditional propellers were not commensurate with urban needs, and in the following three years, he experimented with helical blades: In wind-tunnel environments, cardboard models of this Savonius rotor did not require much wind speed to start turning. Moreover, "They wouldn't overspin. They would get in their own way rather than fly faster and faster, because it has a limited amount of lift—about 10 percent lift to 90 percent drag, he says."

Becker proceeded to combine the Savonius rotor with a Darrieus rotor, which looks like an oversize whisk and "can bring you to a high rate of speed and power." Thanks to their differing starting torques and speeds, the hybrid rotor can generate power in a variety of wind environments. In fact, the Savonius and Darrieus rotors play off one another's strengths. Comparing the Darrieus to "second gear," Becker explains, "If I didn't have the Savonius blades, the Darrieus might not start. It's like the starter motor in your car. We wouldn't be driving internal combustion engines if we didn't have an electric ignition."



The Near North installation looks remarkably unchanged from Becker's cardboard models. Becker mounted eight 520H turbines—each one featuring Savonius and Darrieus rotors welded onto a central shaft—on the roof in a horizontal axis. A vertical installation could produce 30 percent more energy, but it would have surpassed local height restrictions.

The turbines produce three-phase AC power from ARE 2,500-watt alternators mounted on each module. Each turbine also includes an Aurora 7200 Wind Interface Unit and an Aurora 3,600-watt inverter, manufactured by Magnetek. The interface converts the AC to variable DC and protects downstream inverters from high voltage surges via a diversion load. The inverter then converts that DC power into building-compatible 208-watt, 60-hertz variable amperage power. The project forgoes batteries, Becker explains, in order to minimize on-site toxicity and maintenance, and to assuage fire fears.

In Near North Apartments' first months, the Aerotecture installation was producing a paltry 100 kilowatt-hours per module per month, but Becker has slowly improved average production to 300 kilowatt-hours per module per month. Currently, the 520Hs yield approximately 60 percent energy conversion, producing about 10 percent of the building's power. Becker says his electronics could be optimized even further, although the alternator is proving an obstacle to achieving 80 percent efficiency: Just as the wind interface units were not designed for Savonius rotors, so most alternators are suited for the high rpm of internal combustion engines. Making another comparison to automobiles, Becker describes the disjunction between his rotors and his alternator as "having a car that's too heavy for its engine. It runs, but it's going to be sluggish on the hills." To perfect his invention, Becker continues his search for an alternator suited for lower rpm, or may prototype one himself. *David Sokol*

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ *AIA Continuing Education article. To earn one AIA learning unit, including one hour of health, safety, and welfare credit, turn to page 154 and follow the instructions.*

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Describe building projects that use alternative energy sources.*
2. *Explain how cogeneration works and its benefits.*
3. *Discuss how wind turbines can be used in urban environments.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to **architecturalrecord.com/tech/**.

Unlike other houses in the 2007 Solar Decathlon competition, Darmstadt University's house included porches in its total square footage, allowing for glass canopies for additional photovoltaics. The spaces also modulated outside air for the purposes of natural ventilation.

Solar Decathlon House, Washington, D.C., 2007

"What we teach here is not just about generating energy in a building, but conserving energy within a building," says Barbara Gehrung, an assistant professor in the department of architecture at the Technical University in Darmstadt, Germany. Gehrung was one of the faculty advisers on Darmstadt's winning entry in the third annual Solar Decathlon sponsored by the U.S. Department of Energy in October 2007. The Decathlon program requires university teams to design 800-square-foot prototype houses that rely entirely on solar photovoltaics (PVs) for electricity during the 10-day competition on the National Mall in Washington, D.C.

Darmstadt's wood post-and-beam house incorporates photovoltaics in three ways: on the roof, on skylights, and on louvered doors. The team used Integrated Simulation Environment Language (INSEL) software, developed in Germany, to analyze the potential energy gains active photovoltaic systems on the roof. Since the team wanted a flat roof, they realized they were at a disadvantage when compared to other houses with sloped roofs. This led them to incorporate the louvers on the east, west, and south facades.

The roof consists of a 7.8-kilowatt array of 40 photovoltaic modules provided by Sunpower, as well as exterior canopies consisting of 2 kilowatts worth of translucent thin-film photovoltaics provided by Sunways and sandwiched between plates of glass. The canopies cover porches that counted toward the house's square-footage allotment, but also provided a buffer for ventilation. Schott amorphous silicon photovoltaic cells, generating 2 kilowatts at peak load, clad the louvers, which were designed with automatically actuated controls that would track the sun to increase output throughout the day. Gehrung says these actuators were so difficult to design and install that she doubts the team would use them again.

The PV system feeds four separate electrical bus systems for

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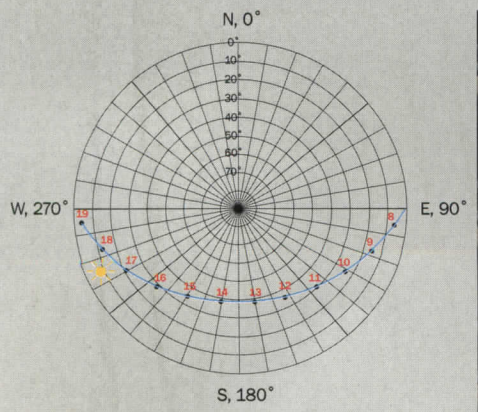
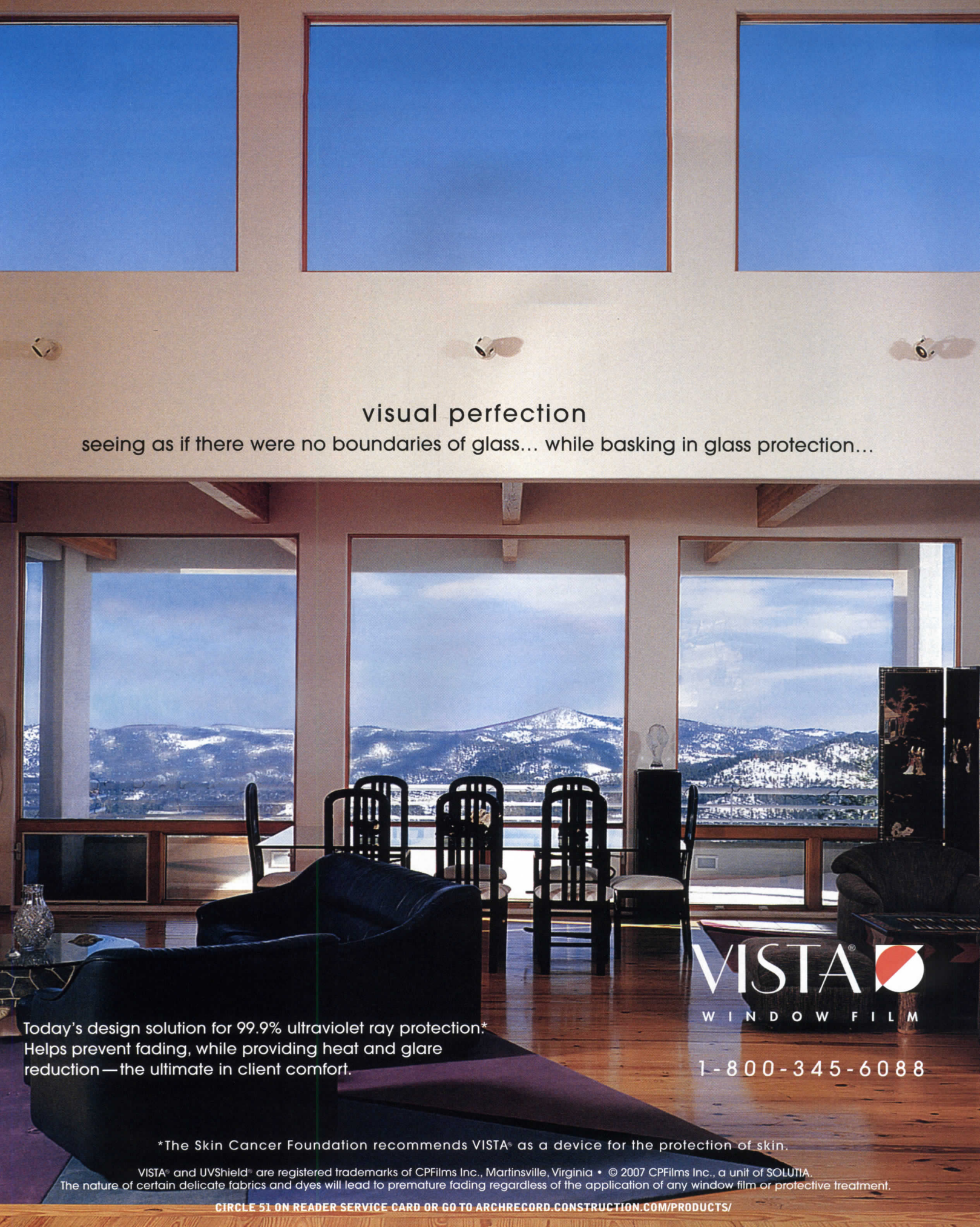


A sun-path diagram generated with INSEL software helped the Darmstadt team understand the site's solar conditions (above), as well as optimum louver positions (above right). The 2007 Decathlon was held October 12–20 on the National Mall in Washingon, D.C. (right).

could document energy production and consumption, as well as indoor air temperature, humidity, and carbon dioxide values through the controls. They used more software programs, such as the Transient Systems Simulation Program (TRNSYS), for analyzing the reversible heat-pump system and the rooftop solar water heaters that helped the project meet its energy goals.

Although each Decathlon project relies on solar photovoltaics for electricity, Gehrung emphasizes her team's energy-efficiency strategies as the primary motivation for design. Germany's "Passivhaus" program, which is similar to the U.S. Environmental Protection Agency's Energy Star rating program, inspired the team to design for local conditions, which in Washington meant a hot and humid subtropical climate. The 19 Darmstadt team members originally wanted to design an all-glass house. Site analysis (the longer sides of the house would face north and south once installed on the mall) indicated the need for less exposure, in order east and west facades are solid panels finished on the interior with gypboard embedded with phase-change materials (PCMs) that increase the insulation values while providing thermal mass. In this case, the PCMs are paraffin microcapsules called Micronal, manufactured by BASF. Once the temperature of the house reaches around 74 degrees F, the capsules melt and absorb the energy, helping to cool the non-air-conditioned house. In the evenings, the capsules harden to release stored heat. "Sometimes this worked too well," says Gehrung. "We had so many visitors and we let them stay in the house too long, so we never had enough time to cool the building the way we wanted."

For a German team designing an American house, some things got lost in translation. For example, the team scored low on the hot-water challenge, since the German showerhead limited the temperature to below the American requirement of 104 degrees F. "In the end, our energy-efficiency strategies helped us win," says Gehrung, who won't be involved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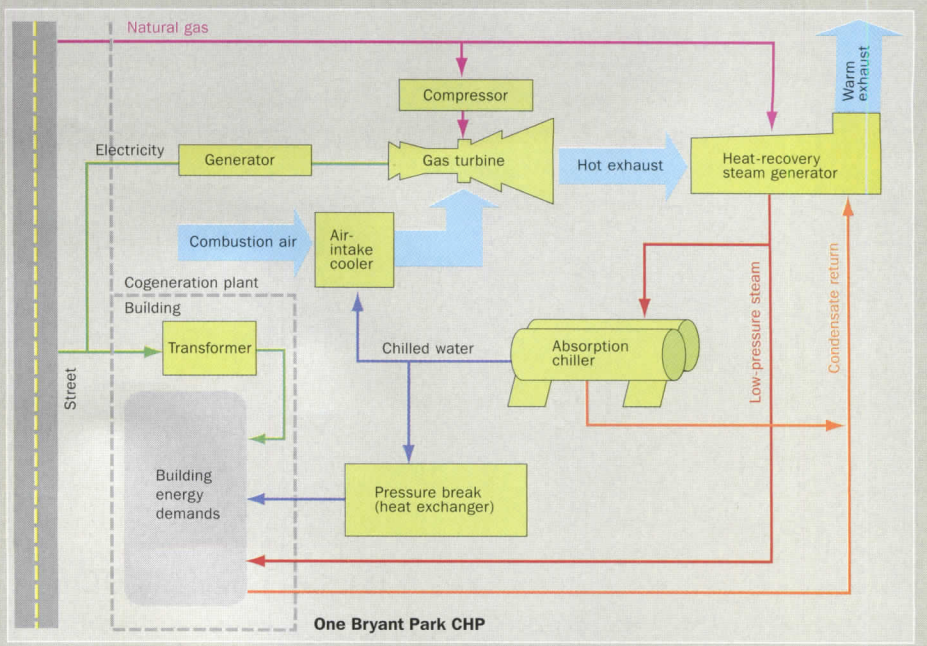
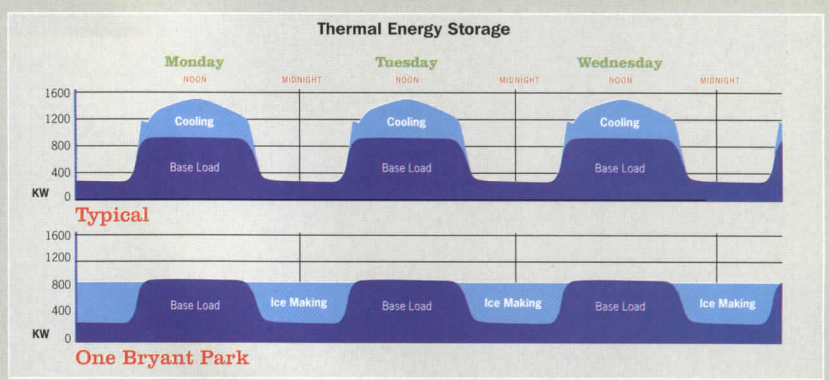


One Bryant Park CHP

The One Bryant Park tower (left) includes a 4.6-mw CHP plant (above). The heat produced as a by-product of electrical generation will be used to make steam for heating the building and the domestic water supply, and to operate an absorption chiller for cooling. A thermal energy storage system (below) will help reduce demand during peak hours.



One Bryant Park, New York City, 2008

Though already common in industrial applications, combined heat and power [CHP] technology is rarely used in buildings in the U.S., even though it can provide a more efficient and lower greenhouse-gas-emitting alternative to traditional grid-supplied power. But one project that is a CHP pioneer is under construction in Midtown Manhattan and is headed for completion later this year.

Designed by Cook+Fox Architects, and jointly owned by the its primary tenant, the Bank of America, and the developer, the Durst Organization, the 55-story One Bryant Park will have a 4.6-megawatt CHP system. The designers and owners say that the building will be the first high-rise commercial office tower in the country to use this technology at such a scale. The CHP plant will satisfy about one third of One Bryant Park's peak power demands and will provide for almost 70

Also known as cogeneration, CHP involves simultaneous production of electricity and useful thermal energy (typically steam) from a single fuel source (often natural gas). At One Bryant Park, the heat produced by its natural-gas-fired turbines will be used to make steam, which in turn will be used to heat the building and the domestic water supply, and to operate an absorption chiller for cooling.

Relying on CHP for much of its energy needs should significantly reduce the carbon emissions of the tower compared to a conventional office building dependent solely on the grid. Part of these savings are due to its distributed energy strategy. The term "distributed energy" refers to a generation source that is an alternative or enhancement of traditional grid-supplied power, located in close proximity to the building it supplies. Such systems can be more efficient than centralized generation since electricity carried over the grid loses 7 to 8 percent of its power in transmission, according to some estimates. However,

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ciency of CHP, since a much larger portion (about two thirds) of the energy generated at traditional power plants escapes through smokestacks. "By preventing transmission loss, CHP does save something on an overall Btu basis," says Don Winston, Durst director of technical services. "But it is the heat recovery that really makes the system work," he says.

About 86 gigawatts of CHP capacity are currently operating in the U.S.; however, the vast majority of these facilities are located at industrial sites rather than in individual buildings, according to Richard Sweetser, president of Exergy Partners, a consulting firm based in Herndon, Virginia. Sources say a number of factors make cogeneration a good choice for industrial applications, including a relatively flat demand for energy over the course of the day and through the various seasons. But in buildings, this demand is generally more variable, creating challenges for making the most of a cogeneration system's thermal output. "If you are sending steam to the roof, CHP doesn't make [economic] sense," says Vinnie Galatro, director of technical services for the Fulcrum Group, commissioning agent for the One Bryant Park project.

In order to avoid wasting valuable thermal energy, One Bryant Park includes a thermal storage system that will produce ice at night from excess steam. Then, during peak daytime hours, the ice will be used for cooling, resulting in "a nice and even load profile 24 hours a day," says Galatro. Other challenges with which the One Bryant Park team had to contend included routing natural gas lines through a densely occupied structure, and the isolation of the CHP equipment for noise and vibration. There were also permitting and regulatory hurdles, though New York City officials are working to reduce such barriers to achieve a goal of 800 megawatts of installed clean distributed energy by 2030.

But impediments aside, CHP proponents say that the technology is an economically and environmentally viable alternative to the construction of additional conventional centralized generation capacity. According to Scott Frank, partner at Jaros Baum & Bolles, the project's mechanical engineer, "generating electricity on-site and using the waste heat just makes sense." *Joann Gonchar, AIA*

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- **Read the article "Learning to Live on Alternative Energy" using the learning objectives provided.**
- **Complete the questions below, then fill in your answers on the next page.**
- **Fill out and submit the AIA/CES education reporting form on the next page or download the form at archrecord.construction.com to receive one AIA learning unit.**

QUESTIONS

1. Which is the most experimental of the ecofriendly features at Near North Apartments?
- **a.** graywater recycling systems for flushing toilets
- **b.** rainwater cistern for landscape irrigation
- **c.** horizontal-axis wind-turbine system
- **d.** Jahn's streamlined design

2. The main benefit of urban wind capture is which?
- **a.** it provides cheap energy
- **b.** it offers the opportunity of producing clean energy within cities
- **c.** it transfers vibration to interior occupants
- **d.** it increases the chances of gaining a building permit

3. The benefits of the Savonius rotor are all except which?
- **a.** it starts easily
- **b.** it does not need brakes
- **c.** it does not require much wind speed
- **d.** it reaches high speeds

4. Turbines were mounted horizontally on the roof of Near North for which reason?
- **a.** to stay within local height restrictions
- **b.** to produce 30 percent more energy
- **c.** to distribute their vibration evenly
- **d.** to distribute their load evenly

5. Which is not one of the places the Darmstadt house used photovoltaics?
- **a.** roof
- **b.** skylights
- **c.** windows
- **d.** louvered doors

6. The Darmstadt house was cooled by which method?
- **a.** air-conditioning
- **b.** wind turbines
- **c.** phase-change materials
- **d.** geothermal heat pumps

7. The original all-glass design of the Darmstadt house was changed chiefly for which reason?
- **a.** to restrict daylight
- **b.** to minimize heat gain
- **c.** to provide more wall space
- **d.** to screen equipment

8. An energy generation source that is an alternative or enhancement of traditional grid-supplied power and is located close to where the power is used is called which?
- **a.** cogeneration
- **b.** a by-product of electrical generation
- **c.** prevented transmission loss
- **d.** distributed energy

9. Cogeneration is commonly used in the U.S. for which application?
- **a.** office buildings
- **b.** industrial buildings
- **c.** single-family houses
- **d.** museums

10. What is the chief advantage of using combined heat and power (CHP) in buildings?
- **a.** CHP increases carbon emissions when compared to traditional centralized generation
- **b.** CHP decreases carbon emissions when compared to traditional centralized generation
- **c.** CHP helps retain the energy normally lost through transmission
- **d.** CHP systems have low first costs

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

Program title: "Learning to Live on Alternative Energy," Architectural Record (03/08, page 146).

038EDIT1

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Mutsuro Sasaki

INTERVIEWED IN HIS TOKYO OFFICE, THE JAPANESE STRUCTURAL ENGINEER REFLECTS ON THE DRAMATIC TURN HIS WORK HAS TAKEN SINCE TOYO ITO'S SENDAI MEDIATHEQUE, NEARLY EIGHT YEARS AGO

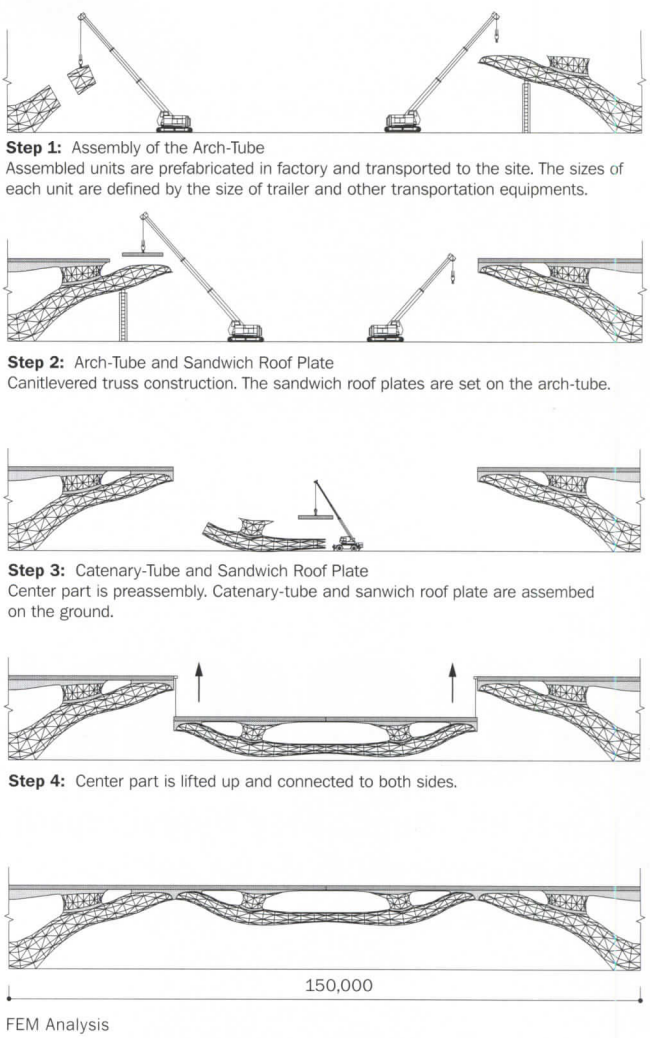
By Russell Fortmeyer

In his collaboration with the architect Arata Isozaki on the 2002 design competition for a new train station for Florence, Italy, the Japanese structural engineer Mutsuro Sasaki reversed his traditional role. He started with what he calls the "target values" for stress and deformation loads, and then worked back to the final structure. Instead of taking a given form and optimizing its structural conditions based on calculated stress loads, Sasaki generated an otherwise unknowable form by applying those "target values" on individual components of the structure. Each application rippled through the structure until a definitive form emerged.

"I like to take a different position for each project," Sasaki says, which rather simplistically summarizes a working process that largely depends on theoretical research he conducts as a professor in the department of architecture at Tokyo's Hosei University. During the interview, Sasaki quietly speaks through the voice of his translator, Hiraiwa Yoshiyuki, one of a few architects in his employ. Meetings like this occur at the small conference table in the surprisingly diminutive offices of his Tokyo firm, Sasaki Structural Consultants, surrounded by books and other publications featuring his work. Fewer than a dozen employees—engineers, architects, and assistants, many of them his former students—sit at workstations and ponder designs for some of the most exciting contemporary buildings in architecture today. Nothing about the fluorescent-lit surroundings suggests this as an office where a structure like that of the Florence station could emerge. "I don't think so much about the future, about some clear idea of what I'm going to do next," he says.

What Sasaki is doing next is surely a question more architects must be asking, as the engineer's hand has been involved in some of the most complex—and extraordinary—new buildings of the past decade. RECORD has featured several of them: In Japan, Sendai Mediatheque [May 2001, page 190] and Tama Art University Library [January 2008, page 88]—both with Toyo Ito—as well as the Louis Vuitton Omotesando store [February 2004, page 145], with Jun Aoki; and the 21st Century Museum of Contemporary Art [February 2005, page 88], and, in Ohio, the Toledo Museum of Art Glass Pavilion [January 2007, page 78], both with SANAA and, in Toledo, Guy Nordenson.

Similar methodologies thread through many of Sasaki's projects, but the turning point in his recent career came with the 2001 completion of the Sendai Mediatheque. In a way, his collaborations with Ito and other leading Japanese architects stem from competing ideas introduced at Sendai. Sasaki divides architecture into two categories: abstract and spatial. For him, an abstract structure is straightforward, like Le Corbusier's Maison Domino—flat Miesian slabs supported by simple columns, repeated as necessary. Yet, a spatial structure, to put it as broadly as possible in terms of Sasaki's work, is anything but straightforward. Sendai represents both of these



Step 1: Assembly of the Arch-Tube
Assembled units are prefabricated in factory and transported to the site. The sizes of each unit are defined by the size of trailer and other transportation equipments.

Step 2: Arch-Tube and Sandwich Roof Plate
Canitlevered truss construction. The sandwich roof plates are set on the arch-tube.

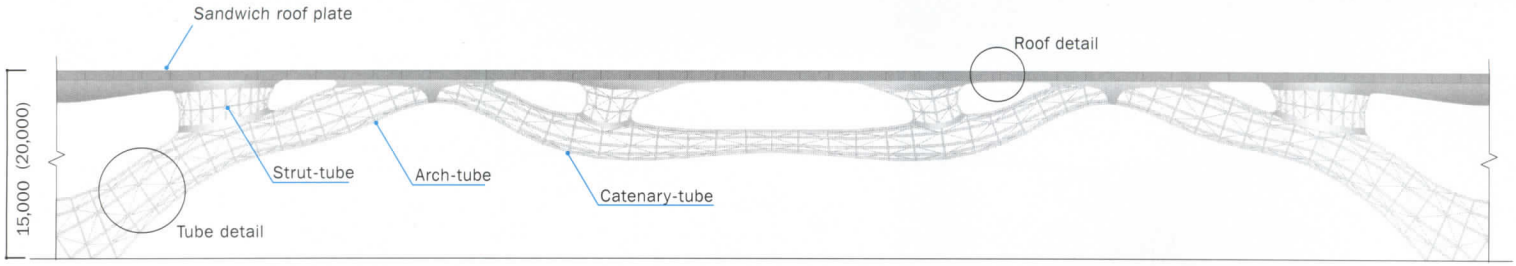
Step 3: Catenary-Tube and Sandwich Roof Plate
Center part is preassembly. Catenary-tube and sanwich roof plate are assembed on the ground.

Step 4: Center part is lifted up and connected to both sides.

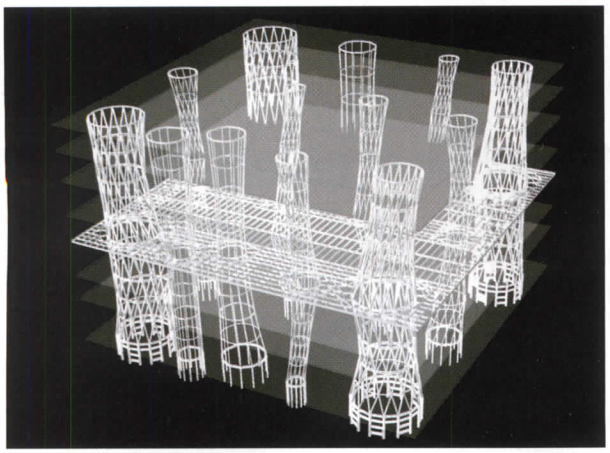
FEM Analysis

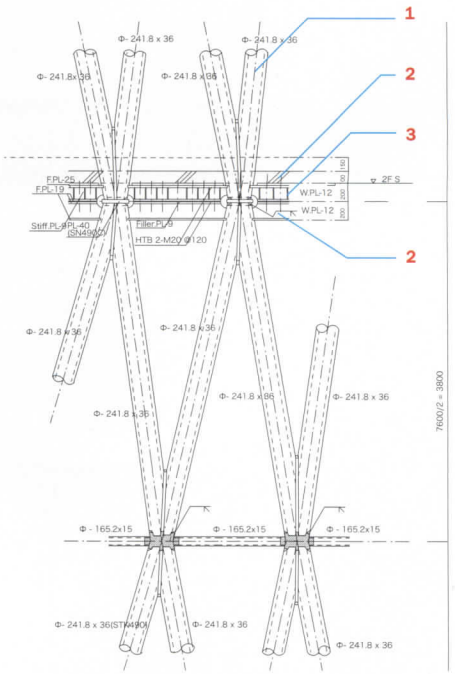
For a competition proposal for a new train station in Florence with the architect Arata Isozaki, Sasaki generated a structure using computer methods rooted in evolutionary biology (opposite, bottom). The webbed "columns" branch across the station depending on how the structure stress and deformation loads for the flat roof in an almost sideways version of what he had designed for Sendai Mediatheque (opposite, top). Sasaki also devised an erection scheme that proposed building out the sides before fabricating the central structure on grade to then lift it

RENDERING: COURTESY ARATA ISOZAKI AND ASSOCIATES (OPPOSITE, BOTTOM)



STRUCTURAL DIAGRAM





1. *Tube steel*
2. *Steel plate*
3. *Steel ribs*

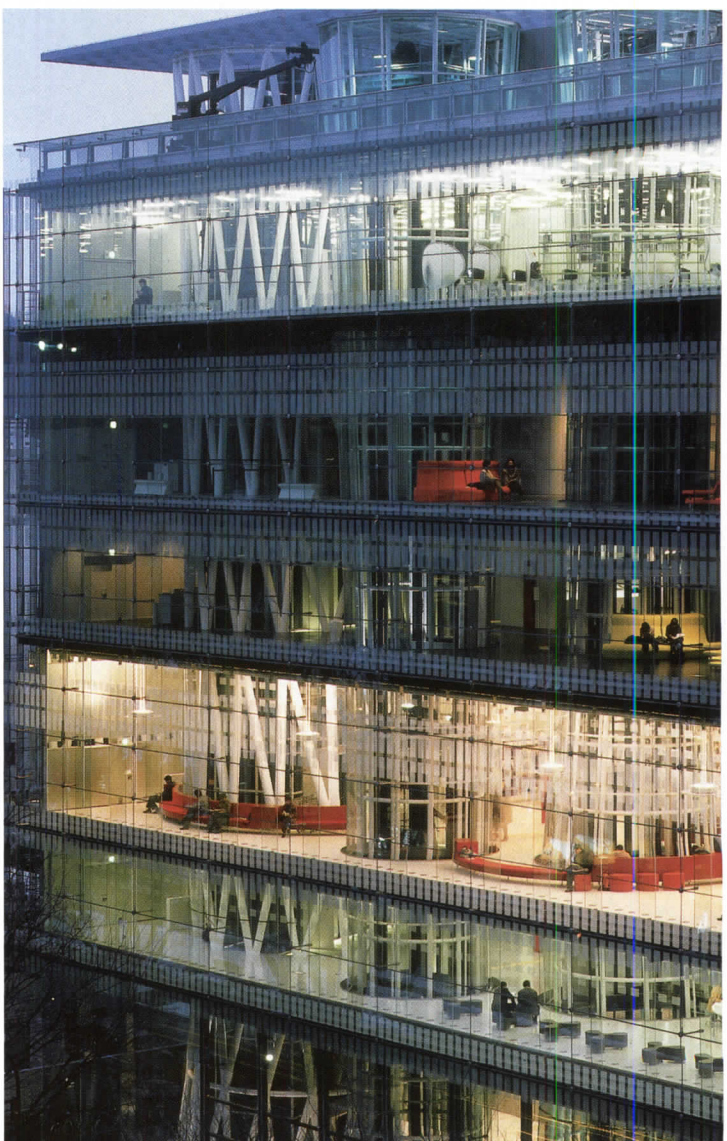
made of thin steel plates with steel ribs sandwiched between, although the vertical structure is a set of connected tubes forming webbed columns that sinuously flow through the building.

Sasaki describes his design for Toyo Ito's celebrated Sendai Mediatheque as a "breakthrough" for his ideas as a structural engineer. The webbed "columns" and steel sandwich-plate slabs are visible through the clear glass curtain wall (right).

The story of the Sendai Mediatheque has the ring of legend, as Sasaki colors it in the way of so much fast-paced, globally connected design. "Ito had faxed me a sketch from Narita (Tokyo's airport), and I responded in a few days with the structural concept," Sasaki says, referring to Ito's drawing, theoretically inspired by the way seaweed sways underwater. "Before that, I had never considered a structure like that." One month later, the two designers had submitted a proposal for the project competition that reflected what was ultimately built: At the corners of the building, Ito and Sasaki arranged four large columns, ranging between 20 and 30 feet in diameter and consisting of tubes that vary from 5 to 10 inches in diameter, to resist the seismic forces of the building. The other remaining columns, which are as small as 7 feet in diameter, simply carry vertical loads. All columns connect to each steel-plate sandwich slab at ring beams, which allows some movement during seismic events.

The seemingly random arrangement of columns at Sendai, as well as the organic inspiration of seaweed transformed digitally into structure, suggests a strong precedent for the so-called "flux structure" that Sasaki designed for Isozaki's Florence train station. He implemented a new shape-analysis approach, broadly described at the beginning of this article, that he calls Extended Evolutionary Structural Optimization (EESO). This is Sasaki's own version of ESO (he added "Extended"), which is a relatively established methodology of efficient structural design in engineering. In a catalog for a 2007 exhibition of his work at London's Architectural Association, Sasaki wrote that, with EESO, he uses "the principles of evolution and self-organization of living creatures, adapted from an engineering standpoint, to generate rational structural shapes within a computer."

The constraints of the Florence station design called for the top roof to remain flat while the underside could fluctuate up to 40 feet below the roof surface for the span of the 1,300-by-130-foot structure. In the digital EESO model, Sasaki tweaked each individual component of a grid structure for the primary form (the flat roof plane) with localized forces until a web of "columns" emerged that not only addressed the targeted structural load profile, but did so with the least amount of materials. If it's not quite turning Sendai on its side, it's close. "We have to make a form that is reasonable," says Sasaki. "And the computer makes that happen."



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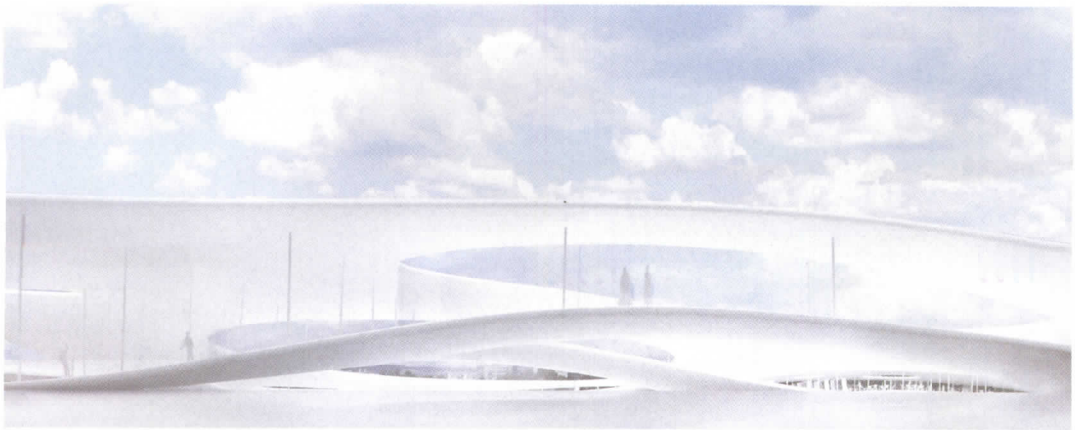
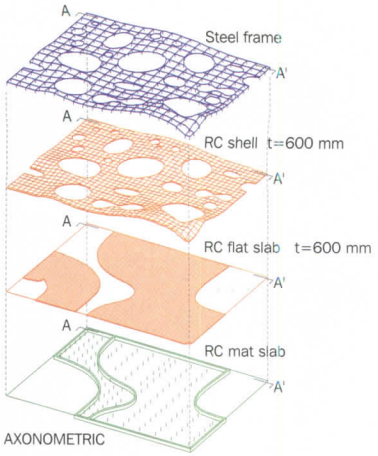
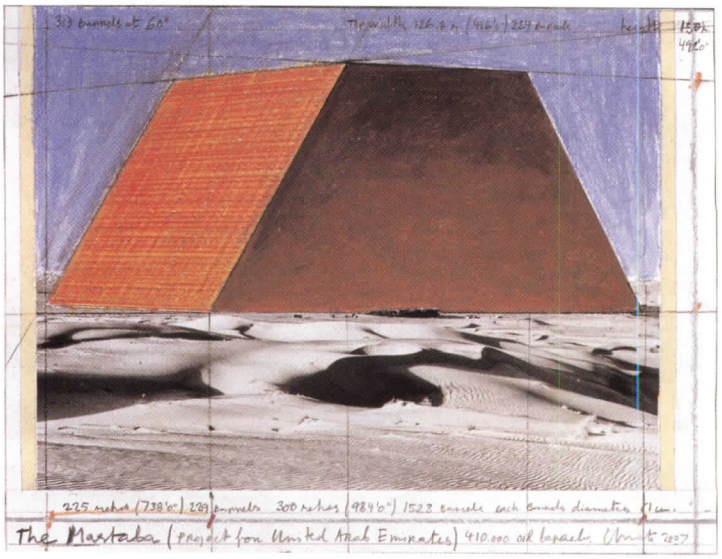




columns, the details of Sendai's steel-plate slabs conceal Sasaki's other main interest: the pursuit of "pure form," or the continuous surface as a structural element. At Sendai, a concrete topping slab hides those steel plates, but the thickness of the steel ribbing between each plate varies depending on shifting load conditions (thicker near the tube columns, thinner elsewhere). Sasaki implemented this "pure form" approach on a 2003 house in Tokyo, designed with Kazuyo Sejima (of SANAA), where the single structural and architectural surface consisted of 2-inch-thick steel plates. He laughs when he says the doors were thicker than the walls, but he's not joking. The house exists as somewhat of a one-off model, but the approach has proved quite successful when transposed to concrete.

Sasaki's latest projects include a school, with SANAA, in Switzerland (above and above right), as well as Christo's *The Mastaba: Project for the United Arab Emirates* (at right, in pencil, wax crayon, pastel, charcoal, and tape, with photograph by Wolfgang Volz).



Working again with Ito, Sasaki designed a reinforced-concrete shell structure for the Kakamigahara Crematorium in Japan [RECORD, March 2007, page 166], which combines a billowing roof and columns into a single, uniform surface. "It's not necessary to restrict material," Sasaki says. "With this project, I wanted to take my theoretical studies and apply them." A few years earlier in Fukuoka, Japan, Sasaki and Ito had collaborated on a similar project for a botanical garden—a flowing reinforced-concrete-shell structure with walkable, vegetated roofs. In her 2007 book, *Support and Resist: Structural Engineers and Design Innovation*, Nina Rappaport compares the garden building to a "piece of fabric that moves to spread and stretch in tension but then is stiffened for stability and captured, midmotion, at its most efficient form."

Following his studies at Nagoya University and before founding his own firm in 1980, Sasaki worked for the great Japanese structural engineer Toshihiko Kimura, whose firm is known for its work with Isozaki, Fumihiko Maki, and Yoshio Taniguchi. Kimura's 1989 design for the Tokyo Sea Life Park, an aquarium, with Taniguchi, includes a massive octagonal glass dome and several tensile fabric structures that indicate the willingness for experimentation and research as part of practice. Taken together with the engineer Masato Araya, of Structural Design Office OAK, and another one of Sasaki's key sources of inspiration—the late Japanese structural engineer Yoshikatsu Tsuboi, who with Kenzo Tange designed Tokyo's National Indoor Gymnasiums in 1964—you have the high-end of recent Japanese structural engineering.

Sasaki undoubtedly prizes this historical context, viewing his work as being within a tradition of design vanguard in Japan, in addition to that of European Modernism. To discuss one of his latest built projects, how he designed concrete fire-proofing around a steel-plate structure to form the project's distinctive arches, but rather with the origins of the arch more than 3,000 years ago. "There has been nothing new with the arch since Roman times," he says. "So, I went back to its origin and looked at it with 21st-century computer technology."

Lately, Sasaki finds himself in an enviable position where he can say, "If it's not interesting to me, then I don't take the work." His practice has also increasingly expanded to foreign work, including a museum at the University of California at Berkeley with Ito, as well as work with SANAA that includes the Ecole Polytechnique Fédérale Learning Center in Lausanne, Switzerland (EPFL), and New York's New Museum (see page 132). The EPFL project expands the plate-structure approach that Sasaki employed on earlier museum projects with SANAA, warping them into a sloping interior landscape, like a topographical map of structural forces.

Further afield, Sasaki was recently asked to propose a conceptual structure for a project by the New York artists Christo and Jeanne-Claude. The Mastaba, first conceived in 1977 for the United Arab Emirates, will be a 492-foot-high, 738-foot-deep, and 984-foot-wide permanent structure of 390,500 stacked, empty oil barrels. Of the project, Sasaki says, "Architects have a reason to make a building, but with an artist, you have to take more time to understand the need to make the project." He awaits a decision on whether his solution will be selected from a set of other proposals, but he is clearly delighted by the opportunity, saying, "These projects are sometimes beyond our description and imagination and can

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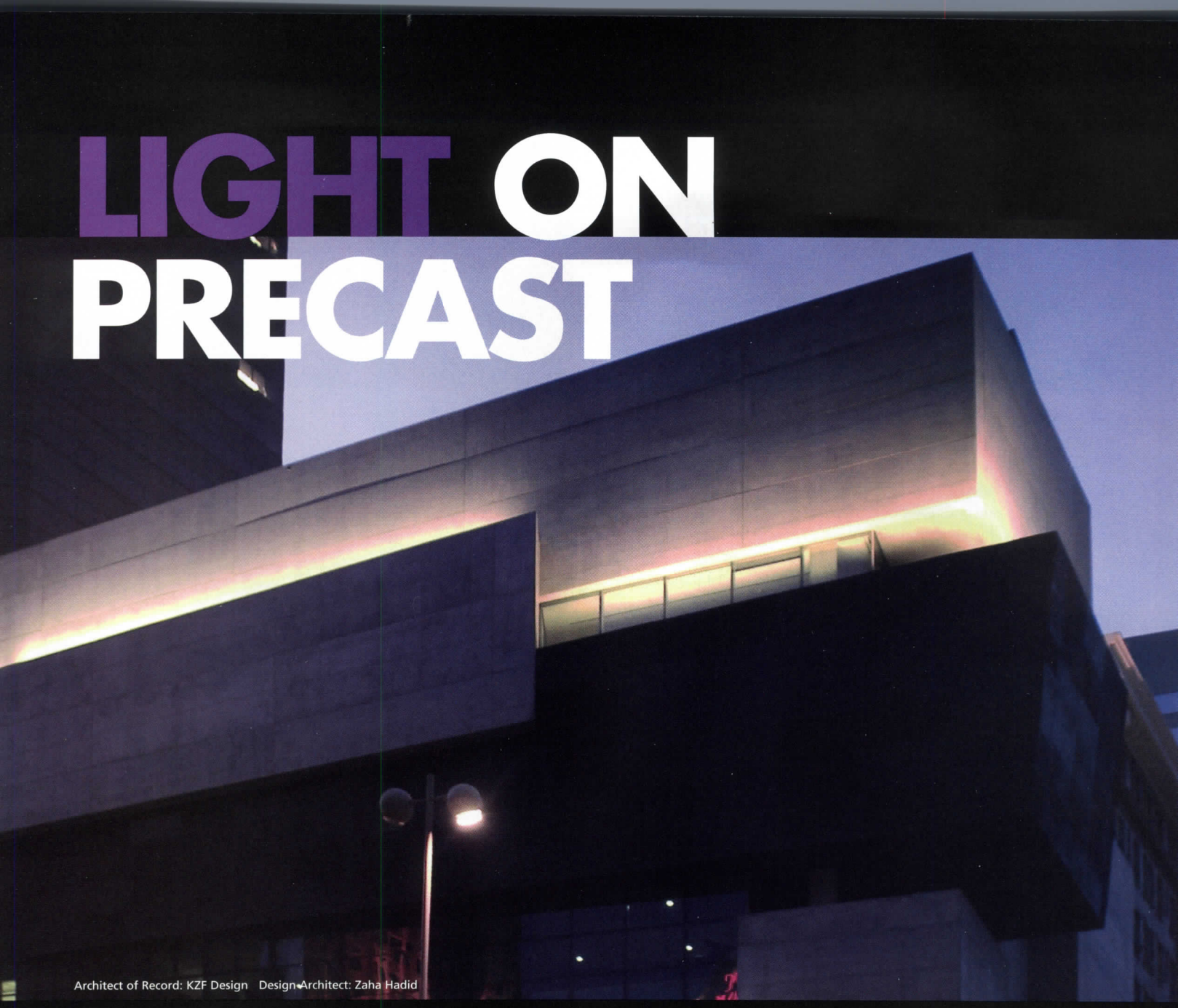

Architect of Record: KZF Design Design Architect: Zaha Hadid

The spotlight is on precast concrete when cutting-edge design meets innovative technology in the award-winning Rosenthal Center for Contemporary Arts in Cincinnati, Ohio. Architects chose High to execute the expressive, sculptural facade because they knew High precast concrete would be most effective in enhancing the dramatic play of light and shadow while providing superior strength with timeless appearance and durability. Using a blend of aggregates and a combination of innovative, high-range, water- reducing, and viscosity-modifying admixtures, structural needs were met and the building is stunning. High's unparalleled commitment to new technology and innovation has led to solutions like this and advancements including carbon fiber C-GRID® reinforced CarbonCast®—precast that's stronger, lighter, better insulating, and more durable, allowing a virtually unlimited selection of colors, textures, and finishes. And High's exclusive 15' and 16'-wide MEGA-Tee deck systems enable wider spans and more open plans with shallower tees in precast-framed buildings and parking garages. With expert technical assistance in all phases of a project, from design to erection, High gives architects and engineers the flexibility to explore unique solutions while ensuring a job is completed on schedule and on budget. Call High Concrete to shine a light on precast.

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Technicalities

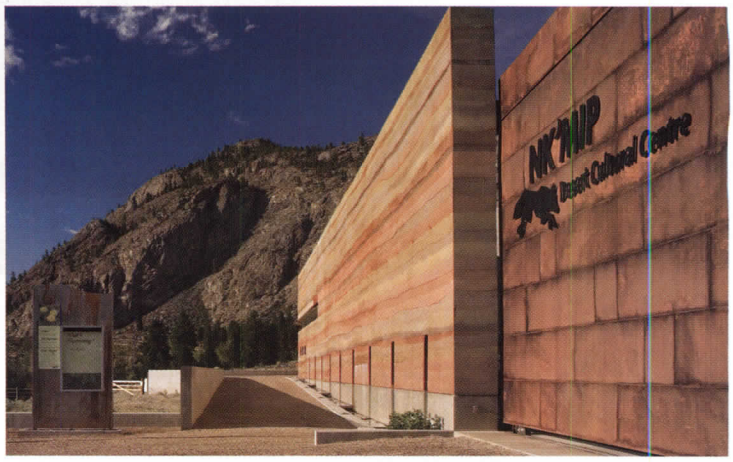
In Canada, a rammed-earth wall for the ages

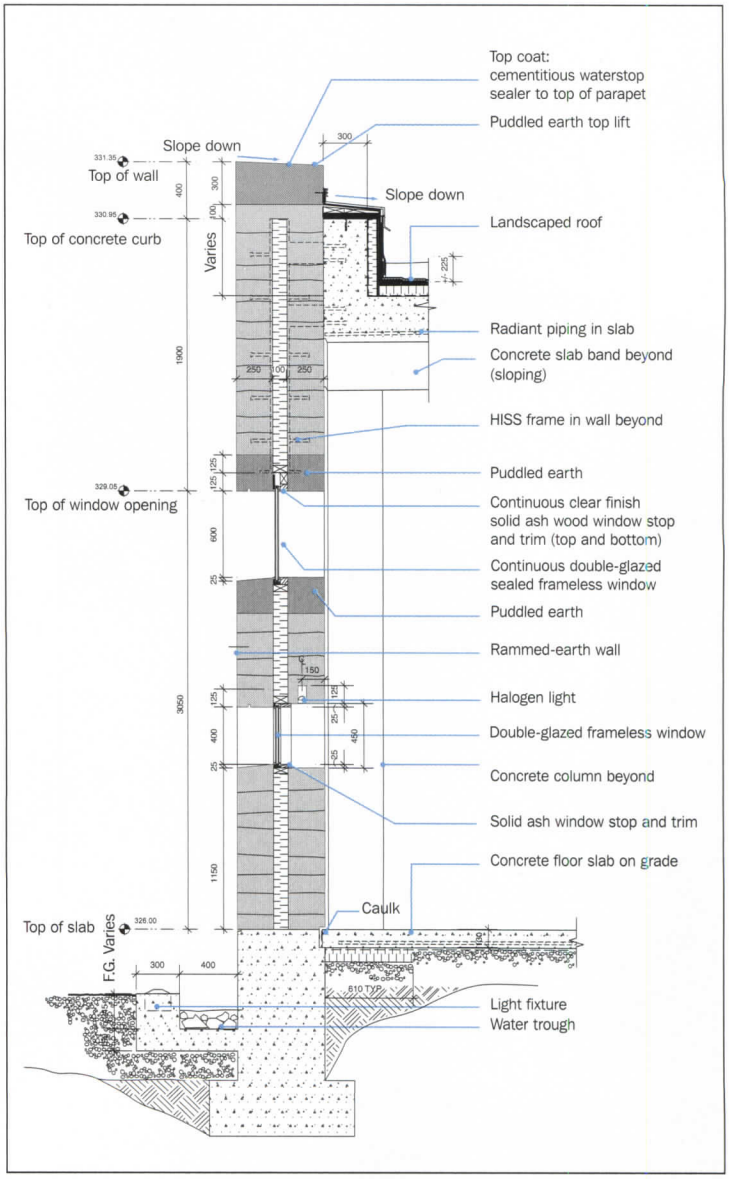
By Russell Fortmeyer

The relationship between architecture and nature rarely gets more explicit than with rammed-earth construction. The 18-foot-high western exterior wall of the Nk'Mip Desert Cultural Center in Osoyoos, British Columbia, stretches for 260 feet, making it the longest rammed-earth wall in North America, according to Vancouver-based Hotson Bakker Boniface Haden Architects (HBBH). But the size is downplayed by the ruddy material, much of which was excavated on-site to capture the desert colors of the South Okanagan Valley.

Bruce Haden, a principal at HBBH, says he tried to resist the traditional choice of ersatz regional architecture, like that found in Santa Fe's fake adobe buildings. "We wanted a building that was simultaneously modern and spoke to the landscape and the contemporary traditions of the Osoyoos Indian Band," he says. Although the 12,000-square-foot center—used as an exhibition and meeting space by the Osoyoos—disappears behind the earthen wall and under a vegetated roof, these two highly visible sustainable design elements support a comprehensive energy-efficient project that also relies on radiant heating and cooling.

The west-facing, 24-inch-wide rammed-earth wall, bolstered with an internal layer of Styrofoam insulation, performed well enough to resist summertime temperatures that can reach 100 degrees F. The wall consists of local dirt, with organic matter filtered out, combined in a mix of 10 percent concrete and color additives (to get that clean, layered look). Contractors from British Columbia's Terra Firma Rammed Earth Builders laid down each strip and then mechanically tamped it down to 50 percent of its original height. Haden says it was more labor intensive and expensive than concrete, but his hope is to encourage more rammed-earth architecture in the region by training locals in the construction methods. "If this could become a more generic material, it could foster a modern and regional aesthetic," Haden says. ■

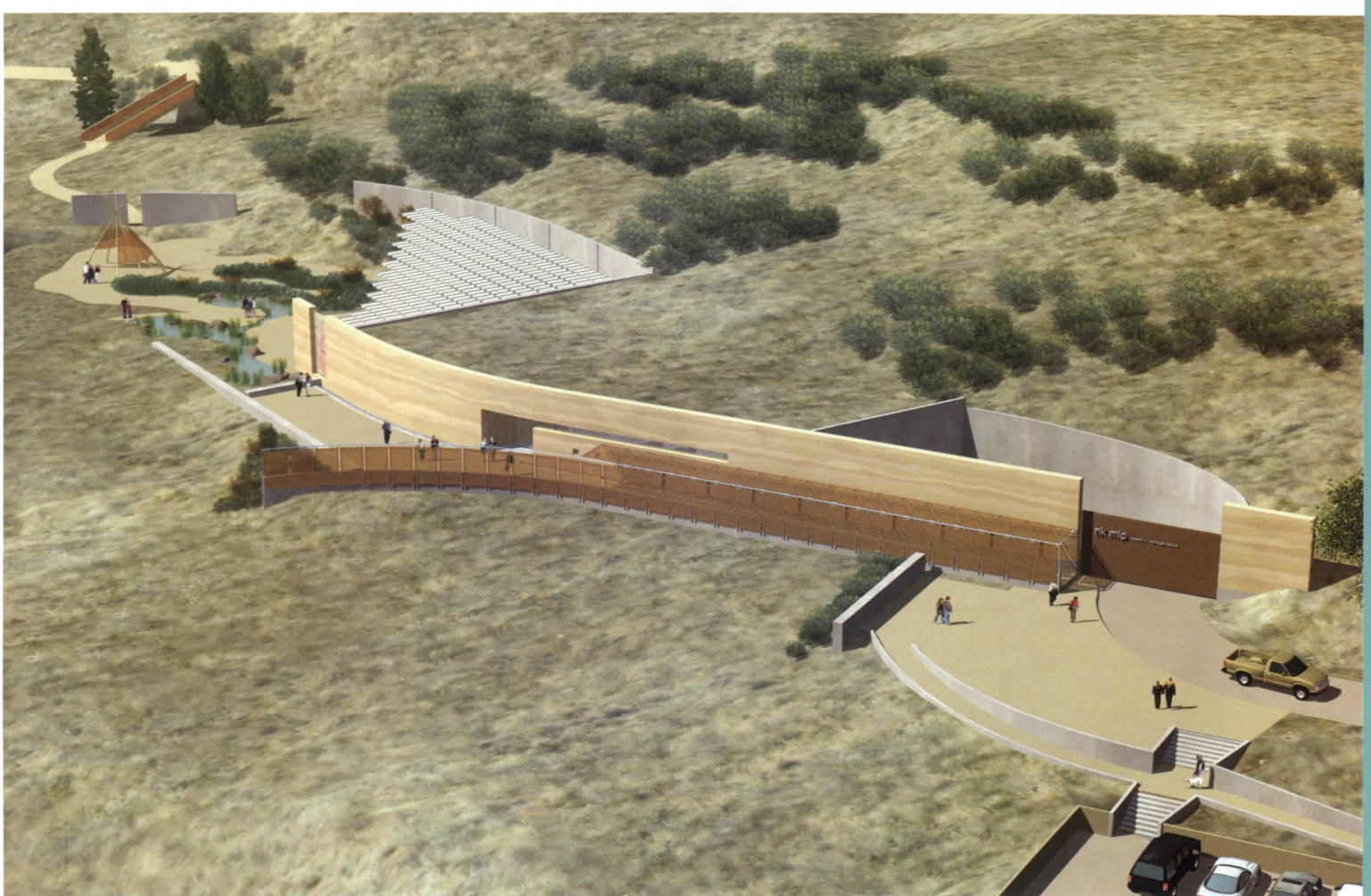




The center, the hub of a 1,600-acre nature preserve about 250 miles straight east of Vancouver, was designed to call attention to a landscape increasingly endangered by sprawl (left). It opened in June 2006, and it cost nearly $3.5 million.

A rendering (below) illustrates the scope of the project. Formwork for rammed-earth construction is similar to that of concrete, although construction is more time consuming (above).

The contractors say rammed-earth walls such as this one will withstand a 3,500-psi water stream.



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Tech News & Reviews

Groups advance two sets of high-performance building standards

In the not-too-distant future, there could be two U.S. standards for green buildings. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), in conjunction with two other industry organizations, is developing the Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings. Meanwhile, the three-year-old, nonprofit Green Building Initiative (GBI) is also working toward establishing its Green Globes rating system for commercial buildings as an official standard. Both organizations are following the protocols of the American National Standards Institute (ANSI) and expect to release fully completed and approved documents by the end of 2008.

The ASHRAE initiative, also known as Standard 189, is being developed with the U.S. Green Building Council (USGBC) and the Illuminating Engineering Society of North America (IESNA), and could ultimately become a prerequisite under the LEED rating system. At press time, the organizations anticipated releasing a second draft of the standard for public comment in late February and planned to post it at www.ashrae.org/publicreviews.

With 189, ASHRAE and its partners hope to provide a baseline definition of green building in code-enforceable language. The standard is conceived as an appendix to the International Building Code that jurisdictions could adopt "and code officials would understand how to enforce," explains Kent Peterson, ASHRAE president and a principal of P2S Engineering, based in Long Beach, California. Although many cities and states have incorporated LEED, and to a lesser extent Green Globes, into green-building legislation and executive orders, the rating systems were not originally devised for that purpose. "Jurisdictions have adopted the rating systems, but they are struggling to interpret them," says Peterson.

In contrast to the code-ready format of 189, the GBI standard would not be written in "mandatory" language. It would establish guidelines for multiple building-performance levels designated by one to four "globes." According to Vicki Warden, GBI's vice president of commercial programs and product development, "the standard is not intended to elevate code, but to be an incentive for achieving higher levels of performance." The group plans to release its first draft for public comment sometime this spring.

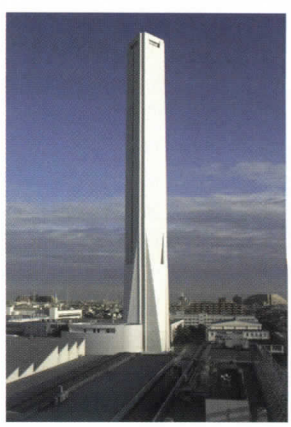
Standard 189 will address sites, water use, materials, and indoor air quality, among other issues. It is also part of a set of ASHRAE initiatives aimed at helping teams design more efficient buildings, with the ultimate goal of creating net-zero-energy buildings—those that consume no more energy than they generate on an annual basis. The ASHRAE net-zero initiatives were outlined at the organization's winter meeting held in New York City in late January. These include a set of Advanced Energy Design Guides, a series of publications tailored to specific building types and providing guidance for achieving 30 percent energy reduction. A set of 50 percent energy reduction guides is due to be published later this year. Eventually, ASHRAE plans to offer a series focused on net-zero buildings.

One goal of standard 189 is to achieve a 30 percent reduction in energy cost over the 2007 version of building energy standard, ASHRAE/IESNA 90.1. Standard 189 will also contain a requirement that a minimum of 1 percent of peak energy come from renewable sources and is generated on site. With each revision of 189, the energy-efficiency and renewable requirements would become more stringent, "so that we are approaching net-zero energy by 2030," Peterson says. *Joann Gonchar, AIA*

Aiming at super-tall market, Mitsubishi opens record-breaking elevator testing tower

Inazawa City, Japan, is the home of Mitsubishi Electric's elevator division, and accordingly, the city skyline includes six small peaks—all towers that the company uses to test its product. Earlier this year, Mitsubishi inaugurated its seventh elevator testing tower, a 568-foot-tall structure that's also the tallest building of its kind in the world.

According to Mitsubishi, the new precast-concrete-clad tower, called Solaé, is a direct response to a high-rise building boom. With record-breaking skyscrapers under construction in emerging markets like Dubai and Shanghai, the $50 million tower will be used to develop higher-speed, higher-capacity elevators. One such project has the goal of producing an elevator that travels faster than 3,300 feet per minute. The tower will also be used to test ropes and traction machines, prototype safety systems such as long-stroke buffers and large-scale safety gears, and technologies that lessen vibration and wind noise generated by high-speed elevator service.



Mitsubishi will use its 568-foot-tall tower to help develop higher-speed and higher-capacity elevators.

Designed by Mitsubishi Jisho Sekkei, the tower features a 45-degree twist at its base that provides the building with its main seismic bracing; beveled corners reduce disturbance from wind. Engineers Takenaka Corporation and Shimizu Corporation also fitted the reinforced-concrete structure with oil dampers to mitigate vibration caused by seismic activity or wind. At the crown of the slender tower, a tuned mass damper also helps absorb lateral forces.

An adjacent building houses a showroom of elevator and escalator components and management systems. *David Sokol*

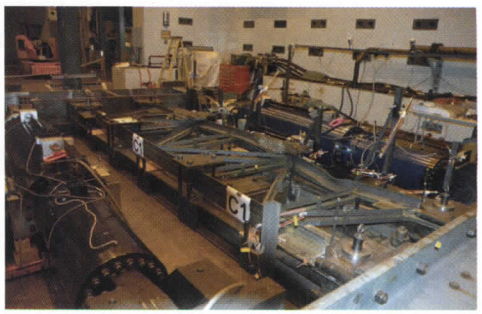
PHOTOGRAPHY: COURTESY MITSUBISHI ELECTRIC CORPORATION

Tech News & Reviews

Microalloy promises better steel structures

The U.S. Army, in conjunction with private industry, is involved in a multiyear research project that could yield stronger, lighter, and longer-span structures, for both civil and military applications. The research is examining the benefits of adding vanadium to steel.

Vanadium is an element distributed widely through a variety of minerals. But in the U.S., it is primarily recovered from by-products of chemical and petroleum processing. The addition of a small amount to steel, from 0.03 to 0.10 percent, "can have a dramatic effect on properties," says Bob Glowdowski, director of technical services for Pittsburgh-based vanadium supplier Stratcor.



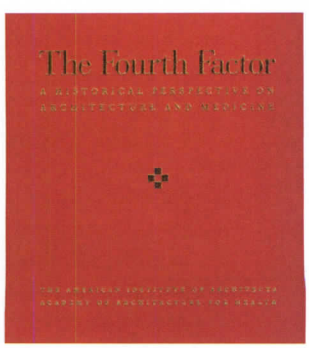
Since mid 2005, engineering firm Simpson Gumpertz & Heger (SGH) has been studying the potential of vanadium-based high-strength steel for long-span roof structures, examining weld integrity, the optimal size of components, and strength, with physical tests and simulation. So far, results indicate that the vanadium-based alloy has a yield strength of up to 80 kips per square inch (ksi), compared to 50 ksi for conventional structural steel, according to Ron Mayes, a SGH staff consultant in San Francisco. The firm is slated to complete a detailed report this summer and will then work with the army to design a full-scale demonstration project.

The army's vanadium research has not been limited to buildings. Other partners are working to produce lighter, and therefore more fuel-efficient, military vehicles. Also, they hope to reduce the weight of anything transported by truck or plane, such as temporary bridge structures, explains Charleston, South Carolina–based Polly Graham, Vanadium Technology Partnership program manager.

Project participants say that the project should yield environmental benefits since vanadium-based steel components are as readily recyclable as those made of more common steel alloys but provide the same load-bearing capacity with 25 percent less material. Economic benefits are also expected. However, these savings are unlikely to be proportional to the weight savings, says Mayes, since the raw material only accounts for about one third of the price of a finished structural component. *J.G.*

Engineers subjected vanadium-based steel angles (above) and fully assembled trusses (below) to various loads to analyze the components' behavior.

The Fourth Factor: A Historical Perspective on Architecture and Medicine, *by John Michael Currie. Washington, D.C.: The American Institute of Architects, 2007, 191 pages, $39.99.*



The title of this book refers to the words of Hippocrates of Kos, widely regarded as the father of Western medicine. He held that there were "three factors" important to the success of medical care: the disease, here, author John Michael Currie, AIA, expands this list to acknowledge the role of the built environment in the healing process.

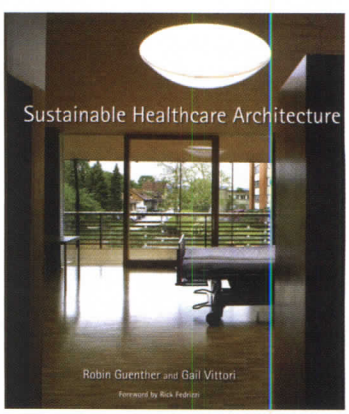
Illustrated with historical images that Currie has been collecting for almost three decades, *The Fourth Factor* tracks the relationship between the practice of medicine and architecture from ancient times to the present. It follows changing attitudes toward illness, advances in disease prevention, developments in technology, and the emergence of evidence-based design. *J.G.*

Sustainable Healthcare Architecture, *by Robin Guenther and Gail Vittori. Hoboken, New Jersey: John Wiley & Sons, 2008, 448 pages, $75.*

In *Sustainable Healthcare* and Gail Vittori, make the case for the urgent need to reinvent medical facilities so that they better promote the well-being of patients and staff, consume less energy and water, and produce less waste.

The book provides helpful background on tools such as *LEED for Healthcare* and the *Green Guide for Healthcare*, which the authors were instrumental in developing. In addition to informative text by Vittori, codirector of the nonprofit Center for Maximum Building Potential, in Austin, Texas, and Guenther, founding principal of the New York City–based Guentherfive Architects (now part of Perkins+Will), the book includes contributed essays on topics such as integrated design, the relationship between nature and healing, and commissioning.

Vittori and Guenther also



mentally sensitive strategies into practice with more than 50 health-care project case studies. Unfortunately, the book is largely in black and white, which does not fully convey the vibrancy of many of these buildings. But even if it is a bit graphically dry, *Sustainable Healthcare Architecture* is still an important reference for creating

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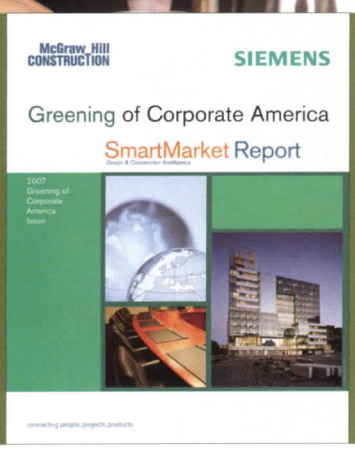

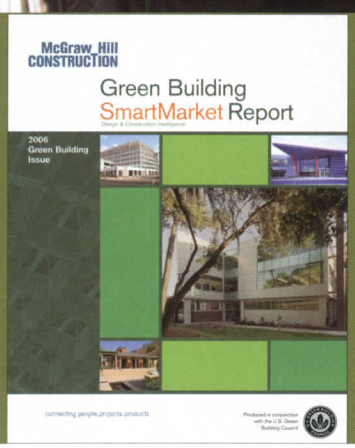

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Interiors

Two for one: Exhibition interiors consider their sister spaces

Asked to describe Tokyo's Omotesando District, a normally reserved Richard Gluckman, FAIA, turns effusive. "It's just this textbook, a directory, a compendium of architectural thinking," he spouts of the Omotesando addresses by Tadao Ando, SANAA, Toyo Ito, Herzog & de Meuron, and Jun Aoki. The latest addition to the group is Gyre, a multitenant commercial building by MVRDV that is partly occupied by Gluckman's 4,500-square-foot interior for the MoMA Design Store.

The shop, which opened in November, may be the first outside the U.S. for New York's Museum of Modern Art, but it is not Gluckman's first commission to design one. Upon the museum's renovation and expansion by Yoshio Taniguchi in 2004, Gluckman Mayner Architects completed retail spaces inside the new building. The two venues have as many brand-affirming similarities as site-specific differences. "Dealing with Taniguchi's building or [MVRDV principal] Winy Maas's building—that's part of the context," Gluckman says. "The interior should be seamless with it."

Whereas the New York project offers "a sense of relatively clean Modernism," with a dominant grid and material palette informed by Taniguchi's work, the Omotesando MoMA Design Store is inspired by the torqued Gyre building. Evoking how the building's five almost-identical floor plates rotate around a core, a glass entry wall is placed out of parallel with the perimeter wall, the ceiling detail shifts to reflect the building's own changes, and, Gluckman explains, "collectively, the casework responds to the architectural imperative."

But interior and architectural design do not always have to have a rapport, Gluckman points out. "I think one can turn out a blatant contrast or a more sympathetic response. In some ways, it's easier to deal with something that's quite different rather than to do something that is sympathetic without being derivative or too deferential," he says. So how to decide which way to go? "It's difficult, but the distinction can be refined by evaluating whether the building is of important character or not."

Such wide-ranging contemplation characterizes the designs featured in this month's interiors section, each of which is related to one of the buildings highlighted in the project well. For example, Gluckman's experience most closely compares to the Amsterdam-based firm FG Stijl, which carefully navigated both contrast and sympathy in designing four restaurants inside the Brobdingnagian BMW Welt. Similarly, the delicately undulating roof of the Kogod Courtyard at the Smithsonian American Art Museum and National Portrait Gallery gains additional meaning alongside the restoration of the museums' Patent Office Building home, a meticulous undertaking overseen by Hartman-Cox Architects of Washington, D.C.

London architect David Adjaye approached an analogous crossroads in designing Arario Gallery New York. Although this project differs dramatically from his newly opened Museum of Contemporary Art Denver (page 126), Arario explores ideas about the art experience that are also manifested there. In this case, Adjaye was not so much commenting on another project but linking sisters and establishing a template for future work. Regardless of the exact nature of their concerns, the creators of these interiors have widened their perspectives, and thereby enhanced our engagement. *David Sokol*

To rate these projects and for additional information on interiors, go to **architecturalrecord.com/interiors/**.

CONTENTS

PHOTOGRAPHY: © JAMES STOKES, EXCEPT AS NOTED

FG Stijl creates coziness for the dining spaces of **BMW Welt**

By Audra Shanley

At 753,473 square feet, the Coop Himmelb(l)au–designed BMW Welt in Munich can easily accommodate the showroom, retail, and branding functions worthy of its "Car-thedral" nickname. To punctuate the vastness of stainless steel, glass, and concrete, the 12-year-old Amsterdam firm FG Stijl was hired to create four restaurants that would be inviting and comfortable spaces—oases of compassion in this world of machines.

"The whole story of BMW Welt is about creating intimacy in this enormous space," says Colin Finnegan, who cofounded FG Stijl with Gerard Glintmeijer in 1995. Lighting would be the protagonist. Finnegan points out that the cavernous ceiling heights forbade pendants, so, he says, "The warmth of the interiors and furniture was going to have to come from the furniture itself." Indeed, a focal point of FG Stijl's intervention is a series of internally illuminated furniture pieces that, alongside stainless-steel trim and leather upholstery borrowed directly from car passenger cabins, unify the four restaurants.

Because BMW Welt's high ceilings precluded pendant lighting, illumination is integrated with fixtures as in the International Restaurant bar (left).

Coop Himmelb(l)au's architecture easily dictated the placement of dining rooms. "The building was created with chasms and caves, and I saw these hollowed-out areas as natural environments," Finnegan says. FG Stijl tucked display fixtures, bars, and open kitchens into the otherwise open spaces.

The ground-floor Bistro announces its budget fare as visitors proceed from the entryway. On a recent Saturday, it was filled with families who had come to peruse the motorcycles and hit up the gift shop. Happy shoppers' glow didn't necessarily come from within. Rather, dining tables in creamy glass and stainless steel were also conceived as light boxes, fitted with fluorescent lamps that cast a warm but clear light.

A prominently placed stairway entices visitors to the second level, where the Café and an adjacent bookstore are not as assertively positioned as the Bistro below. "We wanted the restaurant spaces to be easy," Finnegan says of the way traffic flow ostensibly skirts each dining area. "The idea was to offer options, never to pin the visitor into a corner." The Café also features oversize light-box tables, in particular an illuminated central area and surrounding tables that can be reconfigured for after-hours use as a bar.

Both the Café and International Restaurant (so named for its sushi-to-schnitzel menu) share a 130-seat terrace overlooking Munich's Olympic Park. In this outdoor space, FG Stijl complements Coop Himmelb(l)au's moves. Furniture is covered in a Kvadrat fabric with

Audra Shanley is a freelance writer who, before relocating to Munich in 2006, was an editor at AARP *magazine and* Popular Science.

An outdoor terrace links the International Restaurant with the Café (left). Its shade sails, like the beverage display case and multiple-height tables of the Bistro (bottom left and right), complement the architectural derring-do.

metallic sheen that echoes the architect's material palette, and retractable sail-like shades echo the building geometry. Here, the light boxes reappear, this time in the form of several host podiums whose low color temperature matches the halogen lighting in the sails. Inside the International Restaurant, stainless-steel walls appear plucked from the architecture, and dining tables that convert from dining to lounge height evoke the dynamism of a soft top.

The fourth restaurant, the 50-seat Club Restaurant, is one component of the third-story Club Floor and offers a commanding view of BMW Welt's interior. "We wanted people to feel special in this place," Finnegan says. "It reflects BMW—there is a range of product, and the Club represents that exclusive option."

Although light boxes are deployed as an entrance bar and as surrounds for the open kitchen and a creamy sofa, the Club Floor is a drastic departure. Illumination levels are more subdued, courtesy of mushroomlike pleated fabric lamps, and rooms feature multiple layers of materials and amenities, such as a 16-foot, backlit wine wall in the lounge that precedes the Club Restaurant dining room.

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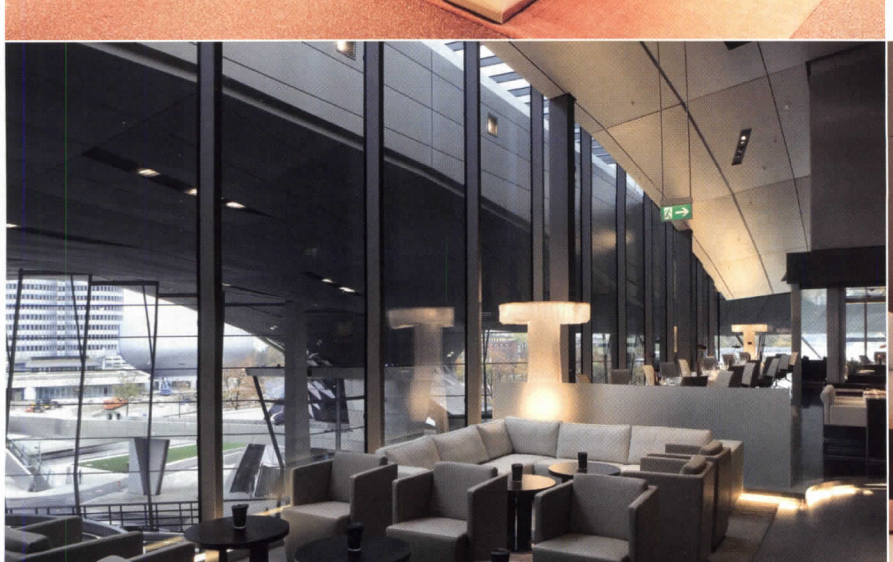
The Club Floor comprises a variety of intimate experiences, including a wine-lover's lounge just outside the Club Restaurant (left), the sleek dining room of the Club Restaurant (bottom left), and the boardroom (below).

In the milieu of the Club Floor, one decision encapsulates the challenge FG Stijl faced throughout the entire project: A rear wall of the Club Restaurant's lounge is clad in rainforest brown marble that is scrubbed with steel brushes to create a tactile effect. "We had three walls of glass looking over a stainless interior, and we needed a backdrop," says Finnegan. Like its other humanizing gestures at BMW Welt, FG Stijl's earthy marble, paired with the dark walnut floors, effects a warm cliffside aerie for peering into the sea of steel, glass, and concrete below. ■

Project: *BMW Welt restaurants, Munich, Germany*
Client: *BMW*
Designer: *FG Stijl—Colin Finnegan, Gerard Glintmeijer, lead designers*
General contractor: *Interna Group*

Sources
Cabinetry: *Interna Group*
Seating: *Walter Knoll; COR; ARtifort; Moroso; Anglodutch for Interna*
Tables: *Interna; Anglodutch for Interna*
Carpeting: *Casalis*
Outdoor furniture: *Gandia Blasco; Sunsquare*



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Lunder Conservation Center

To convert a third-floor library into the Luce Foundation Center (opposite), pendants were copied from a period catalog. In gallery hallways (this page), however, marble pavers were removed, cleaned, and reinstalled.

PHOTOGRAPHY: © BRYAN BECKER

Hartman-Cox Architects preserves and innovates in its renovation of two **Smithsonian icons**

By Jen Renzi

The Smithsonian American Art Museum and National Portrait Gallery share a National Historic Landmark building in downtown Washington, D.C., recently renovated by local firm Hartman-Cox Architects and renamed the Donald W. Reynolds Center for American Art and Portraiture, in honor of a generous gift from the Donald W. Reynolds Foundation. Besides the two museums, the center is home to the Lunder Conservation Center, Luce Foundation Center for American Art, Nan Tucker McEvoy Auditorium, and the Robert and Arlene Kogod Courtyard, which Norman Foster has recently covered with a glass canopy (page 98).

The center's home is a work of art in its own right, as well as a case study in the vicissitudes of 19th-century architecture. The former Patent Office Building was built in phases between 1836 and 1868 by three different architects: Robert Mills, Thomas U. Walter, and Edward Clark. Following a devastating fire 10 years after completion, parts of the building's four Greek Revival wings were given a Victorian overhaul by Adolf Cluss, and in 1958 the structure was gifted to the museum after preservationists rescued it from impending demolition. The galleries chart the evolution of building methodologies from solid masonry to

Jen Renzi is a freelance writer based in New York and former a senior editor at both House & Garden *and* Interior Design.

The great hall features reproduction encaustic tiles and newly cleaned skylights (left). In the Lincoln Gallery of contemporary art, glass paver insets previously hidden by flooring convey daylight from oculi to lower levels (below).

cast-iron construction, and the shift from the sober Doric order to Victorian excess.

Prior to the Hartman-Cox renovation, much of the building's architectural majesty was hidden from view, and it had fallen into disrepair. The exhaustive undertaking, a coordinated effort of 14 consultants, has restored the interior's original luster and added 50 percent more square footage as well as much-needed auditorium space. The project, explains Mary Kay Lanzillotta, FAIA, who headed the team with Warren Cox, FAIA, entailed a top-to-bottom upgrade, visually unifying spaces varied in size and texture, matching the various collections to the character of each gallery, and staying on the good side of the National Planning Board, the U.S. Commission of Fine Arts, and the Council on Historic Preservation. "Literally every widget got reviewed," Lanzillotta says.

Infrastructure proved to be one of the first challenges, she notes. "Solid masonry construction leaves no elbow room along the floors or ceiling, so accommodating new HVAC and electrical wiring was like crocheting the building together." The designers also replaced all 550 window sashes with ones of durable mahogany supporting insulated glazing, about which Lanzillotta comments, "The sashes had to be adjusted to fit the frames, which weren't square: Nothing in the building is plumb, true, or level."

A historic structure report helped rank spaces in order from most to least intact so the architects could focus on preserving what was reparable—a process that involved restoration, recreation, and improvisation. They exposed painted-over white marble walls, freshened-up decorative painting and stained glass, and cleaned careworn marble pavers. Encaustic tiles were fabricated in England to match the great hall's few salvageable originals. Replicas of the top floor's oculus skylights, removed in the 1960s, were re-created from photos. Because chandeliers in the Cluss-designed triple-height former library were undocumented, replacements were replicated from a period catalog.

In addition to refurbishing structure and surfaces, Hartman-Cox addressed life-safety issues, adding railings to various staircases and lining low balconies with glass balustrades. "Such details are invisible enough to let the architecture shine, but also assertive

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New oak floors grace a gallery devoted to the permanent American art collection (left). A glass wall reveals the inner workings of the Lunder Conservation Center to passing museumgoers (below).

as deliberate interventions," Lanzillotta says. In that spirit of historiography, the firm left traces of the building's past life exposed, such as the initials carved into one of the Lincoln Gallery shutters and a panel of decorative woodwork in the great hall that had been whitewashed in the 1960s. "We treated the building like a grand old lady who's allowed to show her age."

New amenities address contemporary needs as well as the changing nature of art institutions. The basement was excavated to make way for the 346-seat Nan Tucker McEvoy Auditorium, which now lies beneath the courtyard. Although the design is stridently contemporary, with streamlined chairs and a grid of louvered millwork, Hartman-Cox retained a connection with the past by choosing vertical-grain hemlock, commonly used in the 19th century, for walls, chairs, and doors.

Replacing the former library on the third floor, the new Luce Foundation Center is a study area showcasing Venetian glass, Gilded Age items, WPA paintings, and marble busts in salon-style open storage displays and pneumatic drawers whose hefty weight necessitated double reinforcement of the historic Peach Bottom slate floors. Just beyond is the Lunder Conservation Center, where the public can watch specialists gild frames and repair torn canvases behind glass walls. In this way, the renovation better displays the artwork and the architecture, but also the inner workings—curating and restoring, education and exhibition—of a contemporary museum, bringing a national historic treasure into the 21st century. ■

Project: *Donald W. Reynolds Center for American Art and Portraiture, Washington, D.C.*
Architect: *Hartman-Cox Architects—Warren J. Cox, FAIA, senior partner; Mary Katherine Lanzillotta, FAIA, partner in charge; Greta Weidner, Seth Wilschutz, Julia Cobb, AIA, Kristin Gray, AIA, Jenna Neal, AIA, Rosina Negron, Melissa Kimball, Elizabeth Thompson, Richard Houghton, project team*
Structural engineer: *Thornton Tomasetti Cutts*
Mechanical, electrical, and telecommunications engineer: *URS*
Historic preservation: *Oehrlein and Associates*

Sources
Windows: *Dalgrens/Old Castle*

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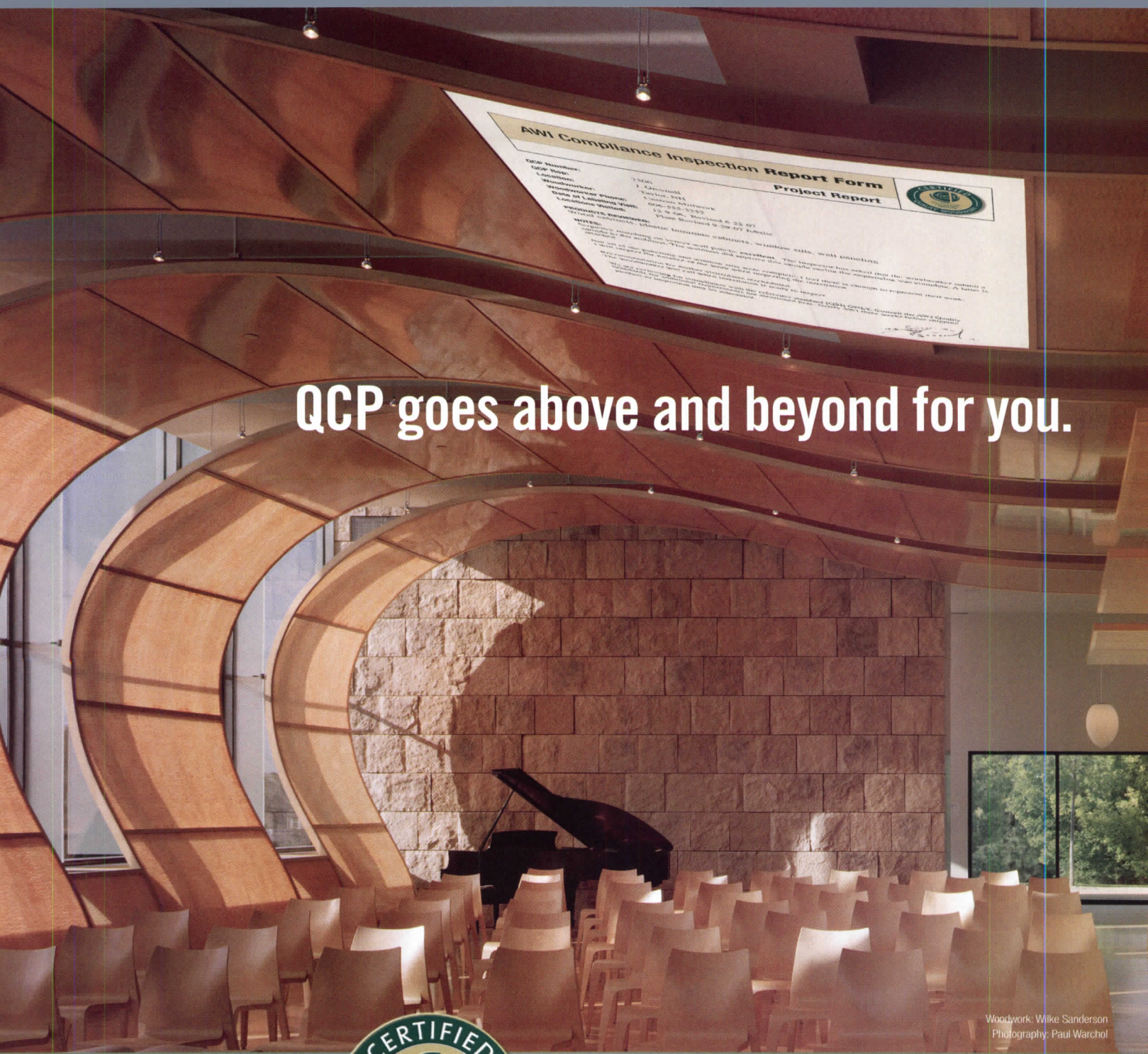

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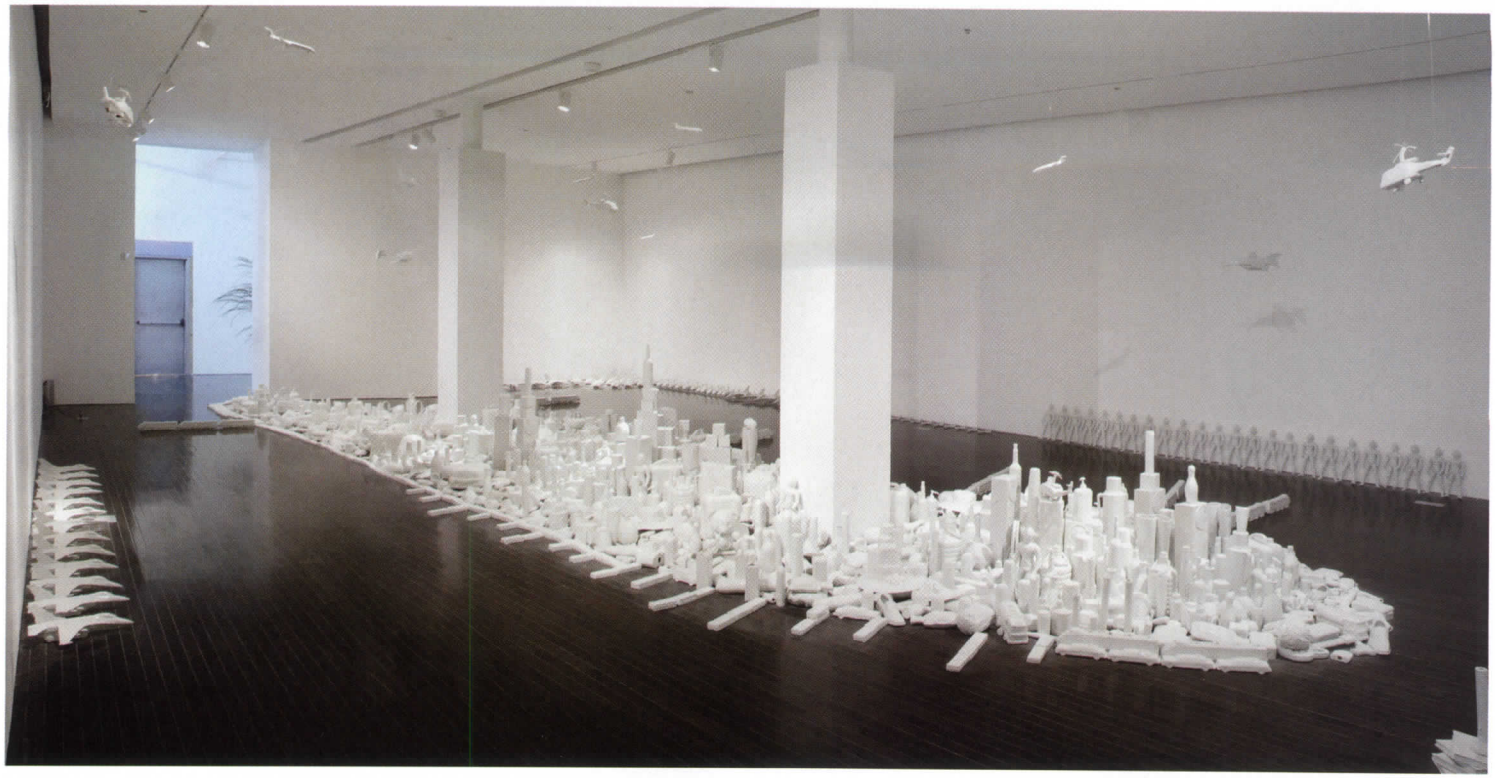


David Adjaye divides a former warehouse floor into the domestically scaled rooms of **Arario Gallery**

By David Sokol

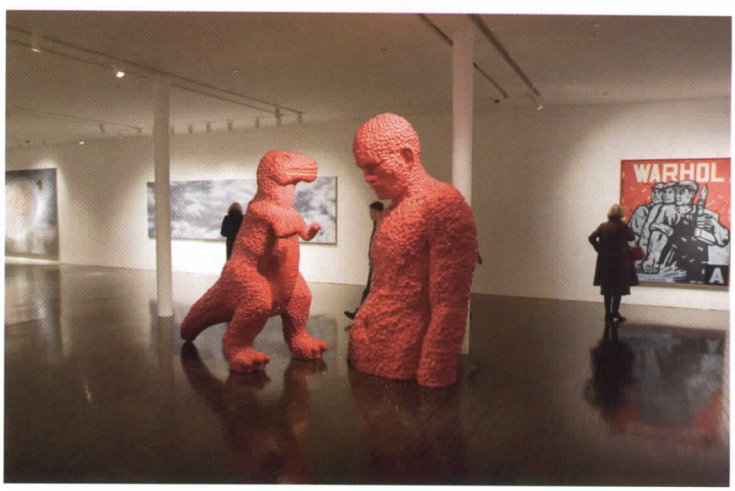
The growing reputation of David Adjaye has hinged on the London architect's longtime relationship with the art world. He has accumulated studio commissions from artists Jake Chapman, Chris Ofili, and Lorna Simpson, and he installed *Your Black Horizon* at the Venice Biennale in 2005 with Olafur Eliasson. Adjaye's extensive collaboration with Ofili includes the environment he designed for *The Upper Room* at the Tate Britain in 2007; Ofili, in turn, painted a wall mural in Adjaye's Nobel Peace Center café in Oslo and created decorative glass for his new Stephen Lawrence Centre in London.

Another art-world link that Adjaye has forged is with Ci Kim, a renowned aficionado of Asian art and the founder of Arario Gallery. The two have been planning a private museum complex that will house Kim's collection and will welcome visiting artists.

While Kim's private cache of artworks has grown, his business has expanded even more rapidly. Launched from Cheonan, Korea, in 2002, Arario now comprises a network of additional galleries in Seoul, Beijing, and New York. When Kim learned that Adjaye had opened a New York office to facilitate completion of the Museum of Contemporary of Art Denver and to pursue further work in North America, he asked him to design a New York outpost for the gallery. Located in the white-hot West Chelsea arts district, it had a soft opening in November and officially launches this month.

Adjaye has mixed feelings about commercial assignments like Arario's. "It's a selling space, it's a shop for art," he says. But he agreed to Kim's request, noting, "I'm interested in a way of bringing in another layer of richness—of public experience—to that private discourse."

To design Arario Gallery New York, Adjaye drew on his artist connections and the places where they work. "It's interesting to see the



Arario Gallery New York features three galleries. Two main rooms, like the one displaying Sui Jianguo's *Conversation* (above), fork from the entrance. A third, largely hidden space is devoted to projects by emerging artists (top).

David Sokol is a regular contributor to ARCHITECTURAL RECORD. *The New York–based freelancer also writes for* Interior Design, Mark, *and* Metropolis.

PHOTOGRAPHY: © LIZ LIGON

A main gallery features large-scale works and links to another, daylit gallery from an opening in its side (background). The project space connects to the back of the room.

scale they choose," he says of visiting artists' studios. "Although it's a kaleidoscope of spaces, it's very precise—artists are slightly superstitious about their environment." And although artists produce their work in these very characteristic studios, the final product "is neutralized when it comes into an institutional setting. I tried to bring back a relationship between art-making and art space, rather than follow an agenda of linear footage."

Adjaye divided the 15,000-square-foot floor plate into reception, storage, and office spaces, as well as three galleries. The reception area forks into two main galleries, which run parallel to each other along an east-west axis. The southernmost gallery abuts an exterior wall, with a row of windows opening to the street below. Viewers proceed through the other, artificially illuminated space to a threshold that leads to the smaller gallery, devoted to emerging artists. The galleries evoke the scale of an artist's studio, and that sense of domesticity is enhanced by the flooring choice of smoked oak. "There was an emphasis to not do neutral, abstracting concrete, but rather to use a material that has a specificity and warmth to it," the architect says.

with the Arario Gallery's existing condition. Located on the second floor of a turn-of-the-last-century storage depot—gallery director Jane Yoon recalls an initial walkthrough at which boxes were piled to the ceiling—Adjaye says the building features an "intense" column grid, which his walls partially hide. Exposed columns evoke even smaller, more intimate rooms within the gallery. They also intimate how the spaces may be further subdivided, a possibility made easier by a ceiling plane in which air ducts are hidden within rectilinear channels.

The way the gallery engages with its windows is another example of how Adjaye's ideas about the ideal art experience have been reconciled with the existing space. Just as only two of the three galleries sit within plain view while the visitor discovers the third over time, the unobscured windows encourage making further discoveries—either of artworks or the surrounding neighborhood—at a leisurely pace. Whereas, as Adjaye says, "galleries have become soulless and generic," Arario suggests a weekend trip to the home of Ci Kim or the studio of one of the artists he represents. ■

Project: *Arario Gallery New York, New York City*
Client: *Arario Gallery*
Engineer: *Altieri Sebor Wieber/ Nu-Way Heating and Cooling*
General contractor:

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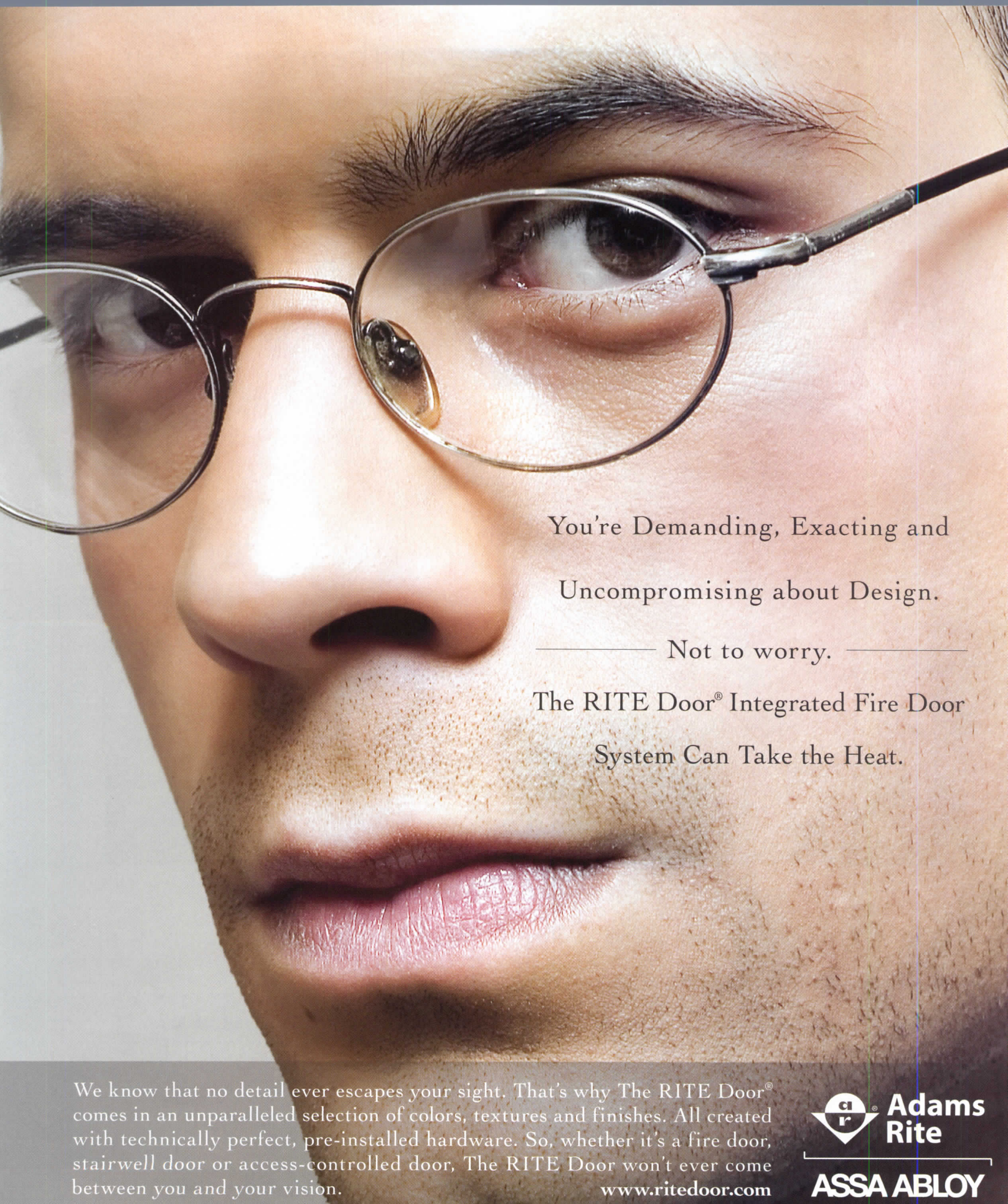

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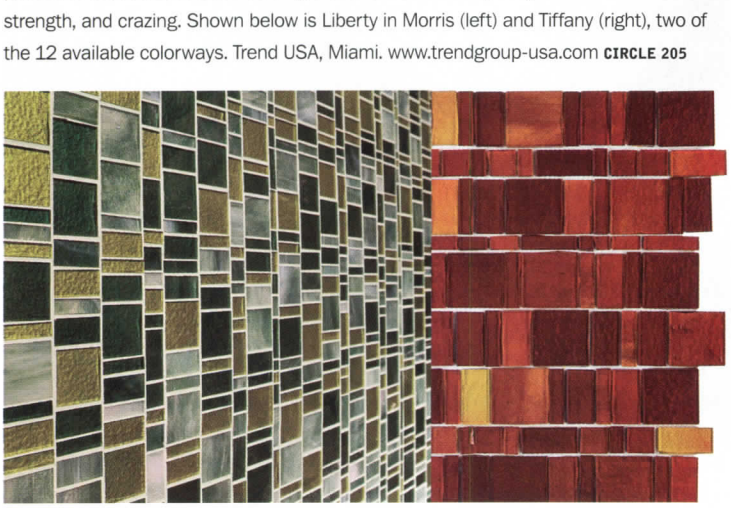
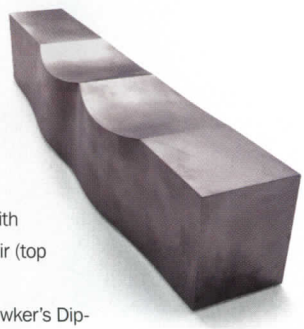


▲► For contract projects B&B Italia's Project Collection includes a coordinated range of tables, chairs, and soft seating specifically designed for the contract market. The Cloud sofa (above), designed by Naoto Fukasawa, is available with an upholstered bench-style seat with or without a backrest. The revolving Sina armchair (top right), designed by Uwe Fischer, rests on a cast-aluminum base with four or five spokes. Chris Howker's Dip-Double Dip bench for indoor/outdoor use (right) is built from a sheet of stainless steel with a circular sanded finish. B&B Italia, New York City. www.bbitaliausa.com **CIRCLE 206**



► They love L.A. ViVA LA is a collection of three carpet patterns from California-based Bentley Prince Street designed in collaboration with Los Angeles artist Andre Miripolsky. All three styles—Which Way Now (right), Feet on the Street, and Linked to the Vibe—were inspired by the movement and energy of Downtown Los Angeles. All are available in broadloom; Which Way Now is also offered in 18" x 18" carpet tile. The patterns come in 15 colorways with 50 percent or greater high-recycled-content nylon. Bentley Prince Street, City of Industry, Calif. www.bentleyprincestreet.com **CIRCLE 207**

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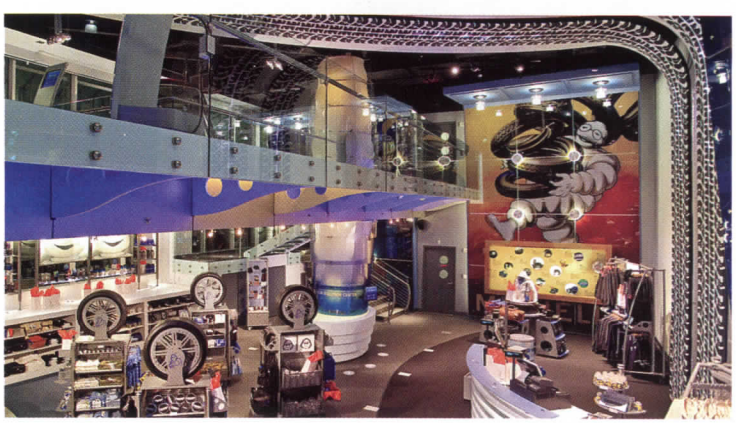
▼ Anything but tired For Michelin on Main in Greenville, South Carolina, the first corporate retail store for the Michelin brand, custom fabricators Eventscape created several features to help translate the company's corporate identity to the public. Designed by Neal Prince Architects, the space includes several Eventscape designs, including a central column that draws its form from the "Michelin Man" mascot, a large acrylic graphic wall, and a ribbon "tire road" with integrated LEDs that tie together the two levels of the store and provide a sense of motion throughout the space. Eventscape, Ontario. www.eventspace.net **CIRCLE 208**



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▲ **Two decades of textiles** Textile design firm Pollack celebrates its 20th anniversary this year with Connect the Dots, a collection of textiles featuring designs that use the dot and circle as the grammar of pattern language. The collection brings the total number of Pollack designs to 420, which are on display at 20 domestic and 12 international showrooms. Highlights of the collection, including Ringtoss, Disc-O, Archetype, and Connect the Dots, mix different surfaces, grounds, yarns, and fibers. Pollack, New York City. www.pollackassociates.com **CIRCLE 213**

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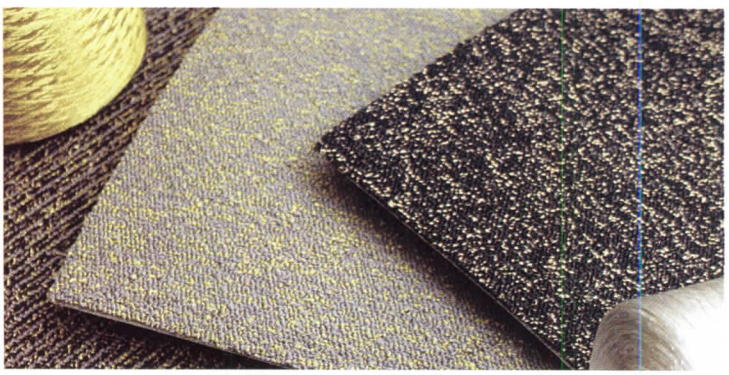
▼ **14-karat carpet** The metallic yarns used in Glitz and Glamour carpet produces subtle iridescent effects. A linear-patterned, textured loop, Glamour is available in broadloom and 24"-square modular tile. Thirteen available colorways include orange-reds, silvered blacks, and deep blues. Coordinating Glitz is a textured loop available exclusively in tile. Both styles feature a backing with 85 percent postconsumer recycled content and are Green Label–certified. Bolyu Contract, Adairsville, Ga. www.bolyu.com **CIRCLE 210**



▼ **Keep cool** The P-Series, Mitsubishi Electric's next generation of Mr. Slim split-ductless indoor units, features a wider airstream and individual vane control ideal for cubicle and open work-space areas. A built-in sensor measures the infrared radiation generated from the surrounding wall and floor surfaces, computes radiant energy, and then converts it into temperature value to create a more comfortable environment near the floor. Mitsubishi Electric, Suwanee, Ga. www.mehvac.com **CIRCLE 211**

▲ **Lasting impressions** HighRes, the latest offering from 3form, allows any image with a resolution of 300 dpi to be embedded within the company's signature Varia eco-resin. HighRes can be customized not only with an image, but with 3form's color, interlayer, texture, and hardware options. Applications include a branding element in office environments, a display panel at a cultural institution, or a decorative element in a hospitality space. Varia is Greenguard-certified for Indoor Air Quality and earns two LEED points for recycled content. 3form, Salt Lake City.

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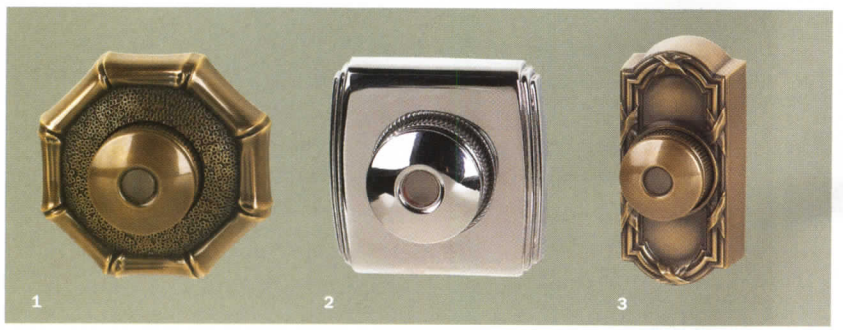
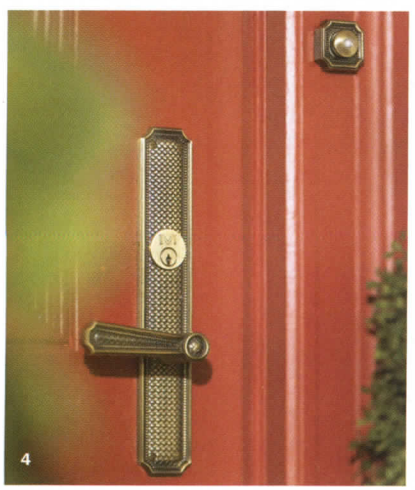
Product Focus Hardware

Our roundup this month includes architectural hardware pieces **that are meant to be displayed,** such as ergonomic door pulls and highly detailed bell pushes, as well as those **intended to remain unseen,** including sturdy door frames and structural connectors. *Rita Catinella Orrell*





New doorbell push-button designs add a small but detailed option for specifiers

According to Von Morris president and lead designer Eric Morris, the New Jersey–based hardware company's new line of highly crafted bell pushes were inspired by an unlikely source—cheap, illuminated doorbell buttons. "I would be walking down the street and see so many doorbell buttons with the ivory plastic button cracked, broken, and caved in," says Morris. "I knew that I wanted to produce doorbell buttons that would fit into our suited line, but I was intent on finding the right switch."

In order to prevent the switch from damage as a result of vandalism, abuse, and weather, Morris designed the housing to protect it from direct exposure to sunlight and rain as well as from the full force of impact. After a three-year search, Morris chose a high-grade electronics switch with silver-plated contacts rated for over 100,000 operations.

Intended for residential and commercial use, the bell-pushes are designed with concealed mounting fasteners and are LED backlit. The long-life LED provides neutral white illumination suitable for all finishes. In order to be used as a guest-room occupancy indictor for hospitality applications, the push-button switch can be changed to a rotary switch and the illumination changed to a two-color LED. The bell-pushes are available to match Von Morris's six signature collections—Bamboo, Beaded, Deco, Moorestown, Ribbon & Reed, and Weave—as well as in traditional Square Bevel, Oval, and Palladian styles. Sizes range from a small and large rose to an oblong shape.

All Von Morris products are manufactured in the company's factory in China. According to Morris, the Chinese factory recycles brass scrap, as well as steel scrap, cardboard, shipping crates, and even sawdust, which is mixed with soap powder and used by employees to wash their hands after work.

Morris feels it is the painstaking attention to detail in his company's small but vital products that appeal to architects. His clientele includes Robert A.M. Stern Architects, who specified the Moorsetown suite entry sets, ring door knockers, suite bell-pushes, and custom suite door viewers for the 10 Rittenhouse Square mixed-use project under construction in Philadelphia. Von Morris, Camden, N.J. www.vonmorris.com **CIRCLE 215**

1. Small Bamboo design. 2. Small Deco design. 3. Oblong Ribbon & Reed design. 4. Weave door handle and matching doorbell. 5. Deco door handle and matching oblong doorbell. 6. Bamboo door handle and matching oblong door bell.

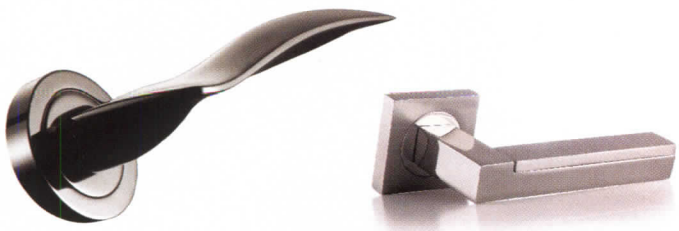
For more information, circle item numbers on Reader Service Card or go to **architecturalrecord.com/products/.**

◄ Tuber-inspired pulls

The Oversize Potato door pulls from MNG Hardware feature smooth ergonomic curves and are ideal for hotel or resort environments. A subtle concavity at the top of the pull lends to the potatolike shape and provides a comfortable bed for the thumb while gripping. The pulls can be mounted on standard, bifold, double-opening, or swinging doors and are available in lengths of 6", 8", and 12" center-to-center. MNG Hardware, Southampton, Pa. www.mnghardware.com **CIRCLE 216**

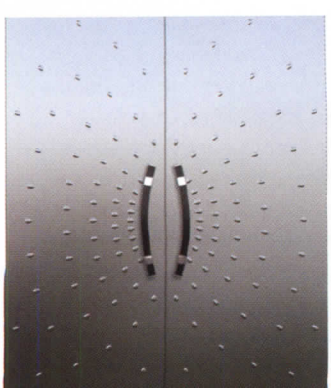
▼ Window and door hardware, Italian-style

In recent years, Italian hardware manufacturer Manital has expanded into new markets, including the U.S. and Canada. New from Manital is the Wind door and window handle collection (left), designed by Milan-based architects Maurizio Giordano and Roberto Grossi, featuring a sleek, aerodynamic handle. The Morphos door and window handle series (right), by Milan-based Studio Hot Lab, fuses simple, geometrical shapes, minus the sharp edges. Edge Hardware, Ontario, Canada. www.edgehardware.com **CIRCLE 218**



▼ Standard customization

Based on an array of standard components available in countless variations, the Quadrant door-pull family consists of two series including straight and arc-shaped grip options and three standoff designs. Both series feature the same 1" x 1½" rectangular cross-grip: Series 1000 orients the grip with the narrower 1" side of the rectangular profile facing outward; Series 1500 orients the grip with the wider 1½" side of the rectangular profile facing outward. The pulls are suitable for interior and exterior use. Forms+Surfaces, Carpinteria, Calif. www.forms-surfaces.com **CIRCLE 220**

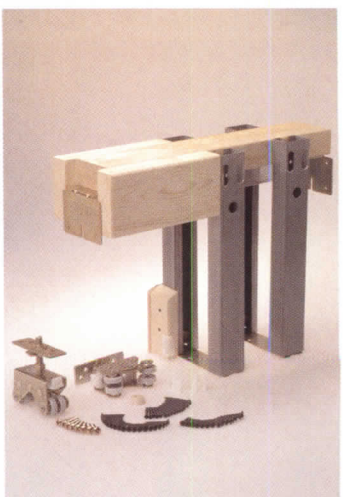


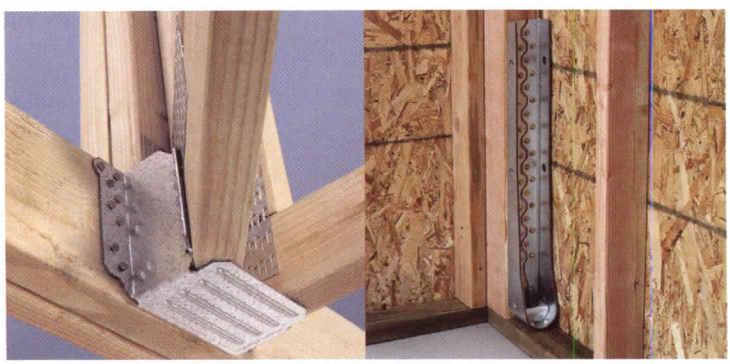
▲ Get a handle on the Old World

Häfele's Artisan collection is a complete line of decorative hardware inspired by Euro Classic design. With an old world styling reminiscent of the Renaissance era, the collection includes a variety of coordinating handles, knobs, and wood ornaments, including corbels, onlays, and moldings. The handles and knobs are available in multiple finishes and a full range of sizes. Häfele America, Archdale, N.C. www.hafele.com/us **CIRCLE 217**

► Tough pocket door frame

The Series 2060 heavy pocket door frame from L.E. Johnson Products accommodates doors weighing up to 300 pounds. The door frame features sturdy, all-steel studs, fabricated from extra-thick, 16-gauge, zinc- coated steel, which measure 1¼" deep x 1¾" wide. Designed for installation in walls framed with 2 x 6 studs, the frame fits doors ranging from 2' to 5' wide, from 6'8" to 9' tall, and from 1⅛" to 2¼" thick. A full line of accessories are available for the frame, including privacy locks, door pulls, and a converging door kit to create a double-door opening. L.E. Johnson Products, Elkhart, Ind. www.johnsonhardware.com **CIRCLE 219**





▲ Hanging on and holding down

Simpson Strong-Tie introduced several new structural connectors at last month's International Builders' Show in Orlando. The configuration of the THJU hip/jack hanger (left) allows it to handle both right and left hand hips. It can be ordered to fit a range of hip skews up to 65 degrees as well as various single- and 2-ply hip/jack combos. The HDU14 (right) is the company's highest capacity holdown to date, with more than 14,000 pounds of allowable load. Simpson Strong-Tie, Pleasanton, Calif. www.strongtie.com **CIRCLE 221**

For more information, circle item numbers on Reader Service Card or go to

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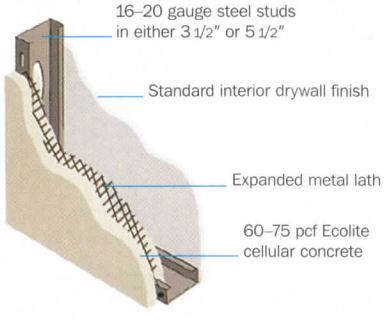
Product Briefs

► Sexy surfacing

A sister brand to Oceanside Glasstile's handcrafted artisan glass line, Mandala offers a collection that includes etched stone, brushed-finish stone, fused glass, and porcelain and ceramic tile, with new introductions planned annually. Initially, five product lines will be offered by Mandala: Labyrinth etched Jerusalem Gold Limestone and Classic Travertine that features complex interlocking patterns (right); Wavelength fused glass; Etrusco natural stone; Brio rectified porcelain; and Sinu glossy crackle ceramics. Mandala, Carlsbad, Calif. www.mandalatile.com **CIRCLE 222**

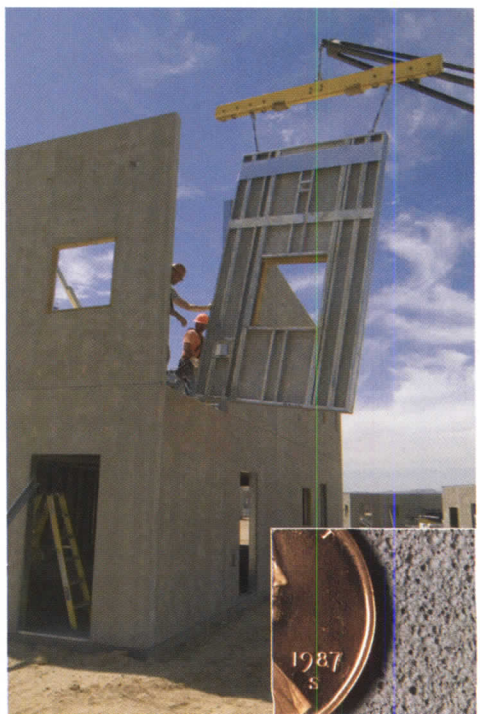
◄ Heated game

Solaronics' new True Dual 2-Stage Heaters operate on natural gas or propane and are ideal for sports facilities such as ice skating rinks, where spectators can enjoy a comfortably warm experience without overheating the rest of the space. The air and gas flows that produce combustion are each precisely regulated at both the high- and low-heat stages for optimum efficiency. According to the manufacturer, in most buildings the heaters will be operating on low heat about 90 percent of the time, helping to save up to 75 percent of fuel costs over other units. Solaronics, Rochester, Mich. www.solaronicsusa.com **CIRCLE 223**



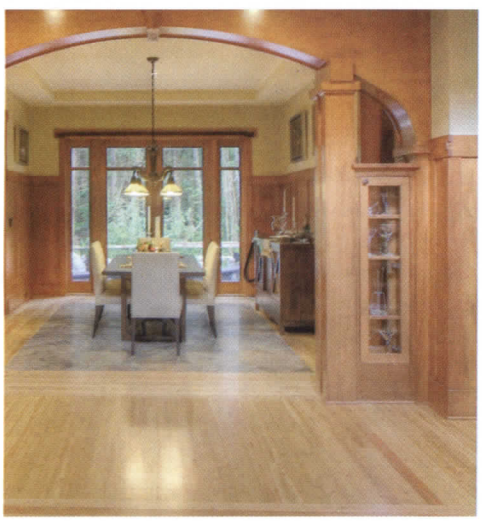
► Cellular concrete wall system

Ecolite Concrete USA has introduced a new building system of lightweight precast-concrete walls. The ready-to-erect, load-bearing walls offer integral steel framing and cellular concrete cladding and contain up to 50 percent recycled content. Billions of air bubbles give the cellular concrete improved thermal insulation and reduced weight; the walls can weigh as little as 12 pounds per square foot. Ecolite is currently supplying walls and decks for 55 buildings in a training complex for the U.S. Army National Training Center in Fort Irwin California (right). Ecolite Concrete USA, Los Angeles. www.ecoliteconcrete.com **CIRCLE 224**



► Invisible support

The Abu Dhabi Investment Authority headquarters in Abu Dhabi, United Arab Emirates, designed by Kohn Pedersen Fox Associates International, in London, features a canopy that seems to float but is supported by delicate stilts intended to help embody the dynamic and transparent character of the building. To withstand strong winds, the canopy over the entrance was secured with I-SYS stainless-steel cables manufactured by Carl Stahl. The approximately 1"-thick cables can withstand forces resulting from high winds or the swaying of buildings while remaining virtually invisible. Carl Stahl DecorCable Innovations, Chicago. www.decorcable.com **CIRCLE 225**

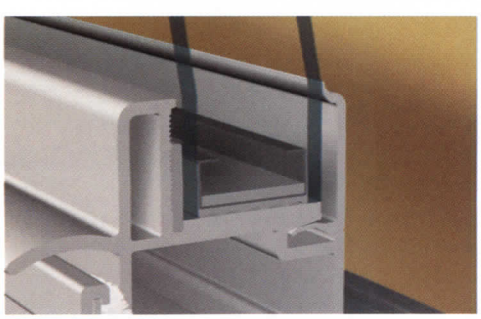


◄ See the forest for the trees

Treadlight flooring and trim is milled from small-diameter larch or tamarack trees, culled from overgrown forests in order to allow the "old growth" conditions to return to Northern Rockies forests. According to Treadlight producer North Slope Sustainable Wood, poor logging practices and the attempt to extinguish even beneficial forest fires have prevented this natural thinning to occur. Featuring honey and cinnamon hues and dark pinhole knots, the wood is available in 1" x 3", 1" x 4", and 1" x 5" face width solid, tongue-and-groove flooring, and eased-edge trim. North Slope Sustainable Wood, Missoula, Mont. www.northslopewood.com **CIRCLE 226**

► Mold your view

Brickmould 600 is a new addition to Simonton Windows' ProFinish new construction product line. Every window in the new Brickmould 600 series is Energy Star–qualified and comes with Low E/Argon and ⅞" IGU standard. Intended for higher-end new construction projects and for installation in more traditional wood markets, the windows feature optional PVC grids in Colonial, Prairie, and Perimeter styles that create Simulated Divided Lites on the windows. Full screens are included standard with every window. Simonton Windows, Parkersburg, W.V. www.simonton.com **CIRCLE 227**



Product Briefs

► Color-changing glass option

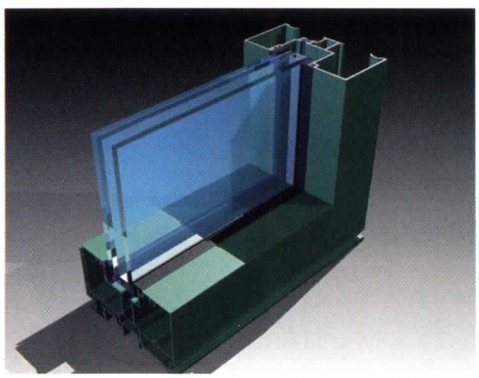
According to inventor and manufacturer John Blazy of John Blazy Designs, Dichrolam color-changing architectural glass is optically identical to dichroic glass but without the price, size, and code-certification limitations. Glass options include annealed, tempered, heat-strengthened, satin-etched, and low iron. On the market since 1998, Dichrolam was recently selected for the skylight (inset), vertical fin walls, safety glass, signage, and interior handrail glass (far right) for the new Levine Children's Hospital in Charlotte, North Carolina. John Blazy Designs, Cleveland. www.johnblazydesigns.com **CIRCLE 228**

◄ Fire-rated walls integrate blinds

Pilkington Pyrostop, a fire-rated, impact-safety-rated, transparent glass wall panel distributed by Technical Glass Products, is now available with integrated Venetian blinds in a range of colors to enhance privacy and reduce glare. In instances where users want to control the amount of light entering a space or visibility into the space, Pyrostop products with 45- and 60-minute fire ratings can be combined with manually operable Venetian blinds included in an insulated-glass unit. Technical Glass Products, Kirkland, Wash. www.fireglass.com **CIRCLE 229**

► Modular addition

Tecta America has introduced a new TectaGreen modular solution to complement its TectaGreen continuous green roof system. Made of recycled polyethylene, the modular system can be preplanted or the units can be installed on the roof and filled on-site. Measuring approximately 2' x 2' x 4', the system includes plants tolerant of the rooftop environment, and growing media that is blended and engineered for sustainable green roofs. All modular systems offer the same TectaGreen warranty. Tecta America, Skokie, Ill. www.tectaamerica.com **CIRCLE 230**



◄ Storefront for storm fronts

EFCO's new Series 526 Thermal Impact Storefront is designed to accommodate 1$\frac{5}{16}$" insulating glass units for greater U-values and incorporates a polyurethane thermal barrier that enhances the frame's Condensation Resistance Factor (CRF) values. Dry-glazed interior and exterior gaskets eliminate the need for structural silicone sealants and provide enhanced thermal performance by ensuring a high-quality weather seal. The system's integral door adaptors make it compatible with all EFCO entrance doors, while the availability of outside- and inside-glazed configurations increases versatility. Series 526 meets both large- and small-missile impact standards. EFCO, Monett, Mo. www.efcocorp.com **CIRCLE 231**

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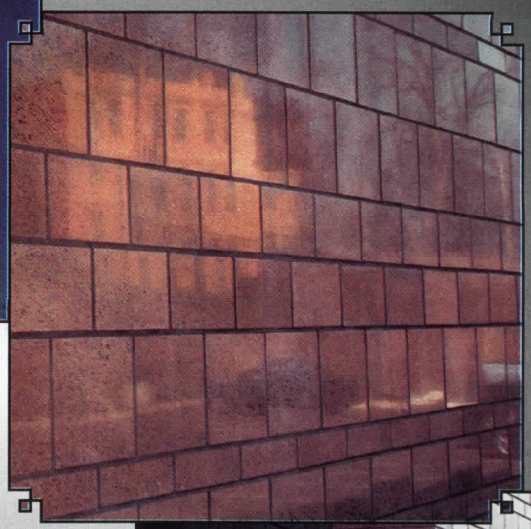

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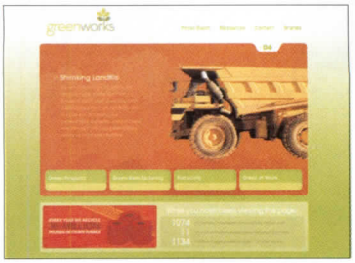
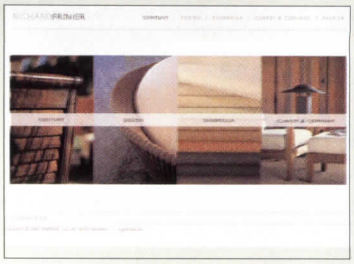
Product Resources On the Web



www.mohawkgreenworks.com

U.S. carpet manufacturer Mohawk has compiled information on all of the company's green projects on this new site. In four sections—Green Products, Green Manufacturing, Recycling, and Green at Work—the site details how the company commits itself to sustainable production, from its effort to limit the use of physical carpet samples to its use of recycled plastic bottles in carpet fibers.



www.richardfrinier.com

Award-winning furniture designer Richard Frinier has recently launched this site to showcase his work in textiles, outdoor furniture, and lighting. The Web site compiles Frinier's collections for Century Furniture, Sunbrella performance fabrics, Dedon Worldwide, and Currey & Company. Fans of Frinier can also find a detailed profile, commentary on the designer from his peers, and a portfolio of his work spanning more than 20 years.

www.andromedamurano.it

Luxury lighting aficionados will appreciate lighting designer Andromeda's new Web site, which showcases five collections of lighting products handmade from Murano glass. Styles range from the explosive and baroque in the Nastro collection to the more restrained and traditional in the Soirée collection, a reinterpretation of classic Venetian lighting. Users can also download technical data for each product and browse through profiles of designers.

www.tecspecialty.com

TEC, a leading manufacturer of installation and maintenance systems for hard surface flooring, has relaunched its site with a new look and improved functionality. The company's products include grouts, mortars, adhesives, and surface preparation. Products and their technical data can be located easily through a search function on the homepage. The site also includes special sections with information targeted to specific users.

www.mirror-reflections.com

On its new Web site, Mirror Reflections sells DXF files, templates, and knives compatible with most grinders and molders on the market. Architects and designers looking for molding options can search through the company's more than 11,000 full-scale, molding-profile choices in the online catalog and buy template-ready DXF files. The site also provides guidance regarding which knives are suited to which types of projects.

www.weehouse.com

In 2003, Alchemy Architects launched the weeHouse concept—cheap, modular, and green residential units that can be reconfigured into 11 different arrangements.The flashy and fun weeHouse site presents the possibilities this sustainable system affords. Currently in the works is a page where you can virtually build and price your own weeHouse. Until then, users can check out the gallery of recently constructed examples.

www.dynastructure.com

Structures built from Dynastructure, a tubular framing system from Allied Tube & Conduit, can withstand a 7.3 magnitude earthquake, according to the company's new Web site. The site offers a 30-second video of a dynastructure system under simulated earthquake conditions to support the claim. Also available for download on the site are spec sheets, case studies, and images of successful structures.

www.ubergizmo.com

In about three years since its launch, the Ubergizmo blog has become one of the Web's leading gadget sites. Run by engineer Hubert Nguyen and designer Eliane Fiolet, the site is predominantly geared toward computer gizmos, cell-phone technology, and the like, but occasionally it posts news on solar, transportation, and green products, including a solar-powered billboard and an outdoor bike stand that doubles as an air pump.

Dates & Events

New and Upcoming Exhibitions

Berlin/New York Dialogues
Berlin, Germany
March 7–June 2008
This exhibition explores lessons learned through the cross-fertilization of ideas among citizens, policy makers, institutions, and design professionals in Berlin and New York, focusing on exemplary practices and strategies affecting city planning and new building. Using illustration, and drawings, and other imagery, the exhibition describes social, political, economic, and cultural processes through current works of architecture and urban planning. Projects featured in the program include public spaces, housing, neighborhood revitalization, cultural initiatives, waterfront developments, and temporary interventions. At the German Center for Architecture (Deutsches Architektur Zentrum DAZ). For more information, call 49 30 27 87 99 28 or visit www.daz.de.

Home Delivery:
Fabricating the Modern Dwelling
New York City
March 14–July 20, 2008
Launching in advance of the July 20 opening of *Home Delivery: Fabricating the Modern Dwelling*—an exhibition exploring factory-produced architecture—is a special online project documenting the planning, fabrication, delivery, and assembly of five architectural works specially commissioned for the exhibition. The five houses will be installed one at a time on MoMA's vacant west lot beginning in early June. This process will continue up to the exhibition's public opening and will be visible to the public from the city streets. Beginning March 14, visitors to www.moma.org will be able to access an online journal that features daily updates—through text, photos, and video—on each architect's process and progress. At the Museum of Modern Art. Call 212/708-9400 or visit www.moma.org.

Ongoing Exhibitions

Map This! Envisioning a Global City
Chicago
Through March 21, 2008
The Chicago Architecture Foundation joins 30 other cultural institutions for the City of Chicago's Festival of Maps with this new exhibition. At the Chicago Architecture Foundation (CAF). Call 312/922-3432 or visit www.architecture.org.

Contemporary Architectural Drawings
New York City
Through April 20, 2008
Contemporary Architectural Drawings presents a counterpoint to the concurrent exhibition of the meticulously detailed renderings of Richard Morris Hunt and highlights the work of 10 pre-eminent contemporary architects: Bruce Fowle, Richard Gluckman, Hugh Hardy, Richard Meier, Cesar Pelli, James Stewart Polshek, Kevin Roche, Laurinda Hope Spear, Bartholomew Voorsanger, and Samuel G. White. In concert with the Hunt exhibition, *Contemporary*

Dates & Events

Architectural Drawings exposes the architects' current creative methods, which incorporate computer rendering, photography, and even film and video, expanding the conventional definition of architectural drawing. At the National Academy of Design. For more information, call 212/369-4880 or visit www.nationalacademy.org.

Russel Wright: Living with Good Design
St. Paul, Minn.
Through April 20, 2008
An exhibition of the work of Russel Wright, who made prolific and lasting contributions to shaping the lifestyle of the American middle class, ranging from the interior space of housewares, furniture, and fabrics to the exterior environment of landscape design. At the Goldstein Museum of Art, McNeal Hall. For more information on the exhibition, call 612/626-9068 or visit www.design.umn.edu.

Design Life Now:
National Design Triennial
Houston
Through April 20, 2008
This exhibition presents the experimental projects, emerging ideas, major buildings, new products, and media that were at the center of contemporary culture from 2003 to 2006. Inaugurated in 2000, the triennial seeks out and presents the most innovative American designs from the prior three years in a variety of fields, including product design, architecture, furniture, film, graphics, new technologies, animation, science, medicine, and fashion. At Houston's Contemporary Arts Museum. For more information, call 713/284-8250 or visit www.camh.org.

Building China:
Five Projects, Five Stories
New York City
Through May 31, 2008
Created by curator Wei Wei Shannon of People's Architecture and cocurator Shi Jian, this exhibition examines the exploratory work of five emerging architects in China. Revealing the process behind the country's building practices, the exhibition includes information about the architects' relationships with their clients and the bidding process in their homeland. At the Center for Architecture's Judith and Walter Hunt Gallery and the Mezzanine Gallery. For additional information about the show, call 212/683-0023 or visit

Lectures, Conferences, and Symposia

The Architecture of Ralph Adams Cram and His Office
Philadelphia
March 11, 2008
A presentation of Ralph Adams Cram's works, such as the Cathedral of St. John the Divine in New York City, by Ethan Anthony, author of a recent book on the architect. The presentation and book signing, sponsored by the Institute of Classical Architecture and Classical America, will be held at Carpenters Company of Philadelphia. Call 215-963-0747 for further information.

I and M Canal: An Update on America's First National Heritage Area
Chicago
March 12, 2008
A public program with Gerald W. Adelmann, executive director of Openlands Project and president of the Canal Corridor Association. At the Chicago Architecture Foundation. Call 312/922-3432 or visit www.architecture.org.

CA Boom V
Santa Monica, Calif.
March 14–17, 2008
New to CA Boom this year, the Prefab Zone will showcase more than 10 of the leading Modernist prefab designers and manufacturers. Over 100 participating exhibitors will present what's next in how we live and work. Specific areas in the show include prefab, indoor/outdoor living, fine furnishings, surfaces and finishes, and modern parenting. At the Barker Hangar. Call 818/735-8803 or visit www.caboomshow.com.

Spaces Between the Hammer and the Mouse
Los Angeles
March 19, 2008
Ball-Nogues Studio is an integrated design-and-fabrication practice that creates experimental built environments to enhance the potential for social interaction through sensation, spectacle, and physical engagement. The firm works with unusual materials, develops new digital tools, and applies architectural techniques in unorthodox ways. Focused on digital development but also hands-on approaches to fabrication research, CNC fabrication capabilities, and exciting material discoveries, the firm studies technique in order to

Dates & Events

and into the realm of creating atmosphere. At W.M. Keck Lecture Hall SCI-Arc. Lectures can also be streamed live on SCI-Arc's Web site at www.sciarc.edu/live. Visit www.ball-nogues.com.

Concrete and Cast Stone in the 21st Century: Design, Preservation, and Care of Contemporary and Historic Architecture
Cambridge, Mass.
This intensive conference/training program will explore technical and practical issues involved in keeping concrete and cast-stone facades, exterior components, and structural elements of buildings and of outdoor monuments and sculpture in good condition. It will cover the cost benefits of procedures for preserving and protecting these building envelopes, ornamentation, and artistic works. At MIT. Call 617/623-4488 or visit www.committees.architects.org/hrc.

Competitions

RIBA Norman Foster Traveling Scholarship
Deadline: March 14, 2008
A travel grant will be awarded to one student, selected from more than 100 architecture schools with RIBA validation in the U.K. and abroad. The grant will fund international research on a topic and in a location of the student's choice, to be presented in a report—which can be photographic, graphic, or written—and represented in the RIBA President's Medals Student Awards exhibition. Applicants will be chosen on the basis of proposals submitted for an area of research, which might include learning from the past to inform the future; the future of society; the density of settlements; sustainability; the use of resources; or the quality of urban life and transport. Each school of architecture can nominate only one student. Visit www.architecture.com/educationandcareers.

Flip a Strip: A National Architectural Design Competition
Submission deadline: March 31, 2008
Exhibition: October 2008
This innovative project will foster creative new visions for the renovation of the small-scale strip shopping plazas that line the streets of virtually every suburban zone in the country. Ringed by parking and adjacent to thriving neighborhoods, these strip malls have great potential for adaptive

Dates & Events

undervalued and neglected building stock. This competition will look at options for making strip malls economically viable, aesthetically interesting, and communally meaningful. For more information, visit www.flipastrip.org.

International Architecture Competition for Sustainable Housing
Deadline: April 28, 2008
The 3rd International Architecture Competition presents architects with the task of creating energy-efficient, single-family detached housing in Russia that minimizes climate-change emissions and can withstand temperature extremes, yet is affordable to build and to buy. Visit www.livingsteel.org/extremehousing.

White House Redux
Deadline: April 2008
The original White House design, by James Hoban, was the result of a competition held in 1792. Over the centuries, presidents have added rooms, facilities, and new wings, turning the White House into the labyrinthine complex it is today. What would a White House designed in 2008, the year of election of the 44th president of the United States, look like? White House Redux is a global call for ideas. For more information, visit www.storefrontnews.org.

2008 National Student Steel Bridge Competition
May 23–24, 2008
This competition will take place at the University of Florida in Gainesville, Florida. Visit www.2008steelbridge.com for more information.

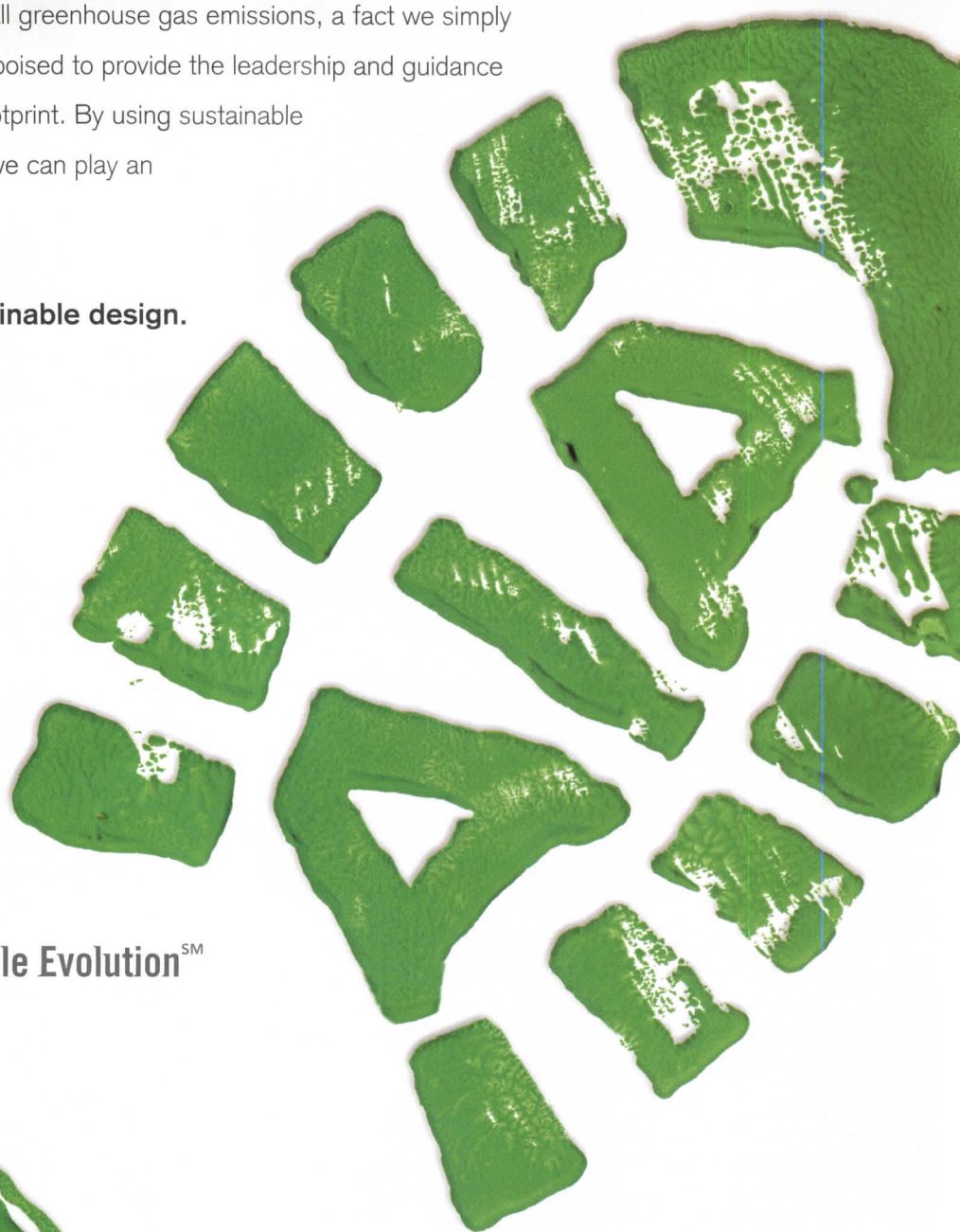
International Design Competition for the Magok Waterfront, Seoul, Korea
Project Design Submission Period: June 5, 2008
The goal of the competition is to transform the area of Magok into a tourist, commerce, and environmentally friendly waterfront area, in line with Seoul's Han River Renaissance Project, through the participation and input of various professionals and experts from Korea and abroad. For additional information, visit www.magokwaterfront.org.

E-mail event and competition information two months in advance to elisabeth_broome@mcgraw-hill.com.

There's been a lot of talk about changes in our climate lately. CO_2 emissions, dwindling resources, and energy usage are growing concerns in every walk of life. AIA Architects, in particular, want to address those concerns. We strongly believe that the time for talk has passed, and now it is time to walk the walk.

Buildings currently account for nearly half of all greenhouse gas emissions, a fact we simply cannot ignore. As architects we are uniquely poised to provide the leadership and guidance needed to provide solutions to reduce that footprint. By using sustainable design practices, materials, and techniques, we can play an active role in, well... saving the world.

AIA Architects walk the walk on sustainable design.



Walk the Walk

Architects Leading the Sustainable Evolution℠

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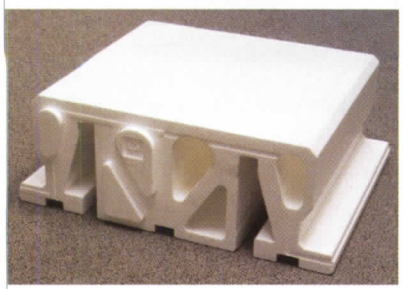
Translucent Daylighting Reference Guide

Major Industries, Inc.

Transform your next project with cost-effective Guardian 275® Translucent Daylighting Panels—available in custom and Quick Ship™ configurations that fit every design and budget. Guardian 275® translucent skylight and curtainwall systems allow controlled natural light to illuminate interiors while eliminating annoying glare and hot spots. The new 28 page reference guide details the advanced material technology, LEED® opportunities and industry-leading warranties that make Major Industries the right choice. Request your guide today. 888-759-2678 Fax number 715-848-3336 www.majorskylights.com

Circle 150

Floor & Roof System



Amvic Building System

AmDeck™ is a lightweight, modular stay-in-place form made of EPS for concrete floors/roofs. One-way concrete floor/roof joists can span up to 30- to 35-ft. and shoring can be placed up to 20-ft. on center. Overall, AmDeck™ is well engineered and easy to use. A perfect addition to your next project. 877-470-9997 / 416-410-5674 www.amvicsystem.com

Circle 151

Architectural Natural Stone

Vermont Structural Slate Company

For almost 150 years, Vermont Structural Slate Company has quarried and fabricated top-quality natural Vermont slates, producing all types of architectural, flooring and roofing slate products. They complement their range of local materials with select slates, quartzites, sandstones, limestones, marbles, granites and basalts from around the world. They specialize in architectural projects and can help architects evaluate, detail and specify natural stone. Call for their brochures and boxed full range of 30 stone samples. Photo of St.Thomas More Chapel designed by Pelli Clarke Pelli Architects. 800-343-1900 www.vermontstructuralslate.com

Circle 152

Architectural Metal

Cage Corporation, Int.

GageMetal® is an innovative collection of 12 designs suitable for walls, elevators, column covers, and other architectural fabrication. Standard sizes 48-in. x 96/120-in. with available thicknesses from .025-in. aluminum to 16 gauge stainless steel. GageMetal® is one component of Gage Vertical Surfacing. Custom design and collaboration is available. Contact the Gage factory for literature and sample requests. 800-786-4243 gagecorp.net

Circle 153

Floor System

Cage Corporation, Int.

The Gage Stainless Steel Floor System by Planium is a durable, high-tech flooring solution designed and manufactured in Italy for purity of form and ease of installation. The embossed stainless steel and black organic finishes have been designed to prevent traffic wear and are virtually indestructible. Contact the Gage factory for literature and sample requests. 866-855-4243 gagecorp.net

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Metal and Metal Grating

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Setting a new standard for perforated metal and metal grating, Hendrick offers unlimited applications including grating and grilles, curved grating, and facades, building sun shades, wall and ceiling cladding, columns covers, railing in-fill panels, signage, custom interior panels, ventilation and aesthetic screening for building mechanicals and equipment. 800-225-7373 www.perfscreen.com

Circle 155

Decorative Beams & Accessories

Architectural Products by Outwater

Architectural Product's by Outwater's high-density polyurethane Decorative Beams not only recreate the rustic look afforded by authentic, aged, hand-hewn oak beams, they are indistinguishable from the originals after which they have been patterned. Offered in "Ancient Rustic," "Modern," "Contemporary" and "Vintage" finished oak grain 10-ft. lengths in various widths and thicknesses, Outwater's Decorative Beams and complementary Corbels, Brackets and Panels are not only dimensionally stable as well as impervious to moisture and insects, they can be tooled and refinished using traditional techniques and tools. 800-835-4400 www.Outwater.com

Circle 156

Extreme Fenestration Performance

AZON USA INC.

Conserving energy resources, while reducing greenhouse gases, is possible in commercial buildings when manufacturers of fenestration products use the Azon pour and debridge thermal barrier method for aluminum windows and Warm-Light® warm-edge spacer for insulating glass. Modern daylighting systems produced with both Azon structural thermal barrier technologies in conjunction with other enhanced performance glazing components, such as low-E, will yield a fenestration system capable of upholding the highest efficiency and sustainability standards. 800-788-5942 www.warmedge.com

Circle 159

Columns, Balustrades & Cornices

Melton Classics

Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, mouldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers a maintenance free balustrade product ideal for any application. 800-963-3060 www.meltonclassics.com

Circle 157

Double Action Doors

Eliason

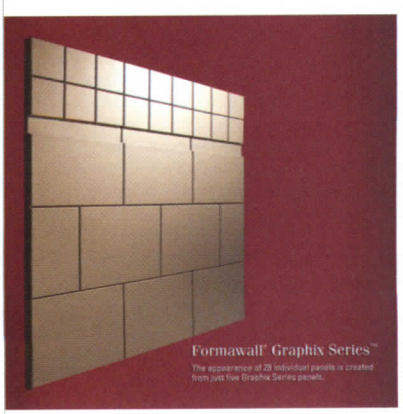
Easy Swing® Doors manufactured exclusively by Eliason Corporation. Model HCP-10 High impact traffic door reinforced at hinge location. New Flush Window no extruding frames or rubber molding. Easy Spring bumpers absorb the initial impact of pallet jacks and motorized carts or choose flat scuff plates. Excellent for sales to stock room doors. Doors are custom manufactured to fit into your finished opening. Eliason doors are used in sales to stock rooms, walk-in coolers, delis, secondary freezer doors, restaurants, or just personnel doors. Easy to install and can be shipped directly to the job site. 800-828-3655 www.eliasoncorp.com

CSI Booth #1614

Circle 160

Endless Design Opportunities

CENTRIA



CENTRIA Formawall® Graphix Series™ offers endless design opportunities. The insulated metal composite wall-panel system creates the effect of a multi-panel installation with a single panel by adding segmented joints that mimic panel joints. These can be placed at almost any location along the length of the panel. Graphix Series is available in a variety of lengths and widths by contacting CENTRIA at their toll-free number or their web site. 800-759-7474 www.centria.com

Circle 158

Door Closer Undercover at Hilton Hotel

Samuel Heath

Some 400 PERKO POWER™ concealed, controlled door closers have been installed at one of Hilton's landmark hotels. The closers were selected for their compliance with fire performance regulations and because they are totally invisible when the door is closed, enabling the designer to retain a clean, unhindered appearance to the doors. 212-599-5177 www.perkopower.com

Circle 161

Distinctive Track Hardware

Specialty Doors

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Circle 162

Automatic Door Bottoms

Zero International

Patented technology activates to drop the seal with a scissors-like motion when the door closes, and retracts when opened. A smooth drop, without drag for a tight seal against the saddle or floor. Many models to choose from: for sound ratings, fire-ratings, lead lining, surfaced mounted, semi or full mortised, both regular or heavy duty models. Specify with confidence and ask for their new 76-page catalog. 718-585-3230 zerointernational.com

Circle 165

Daylighting for Enclosed Pools

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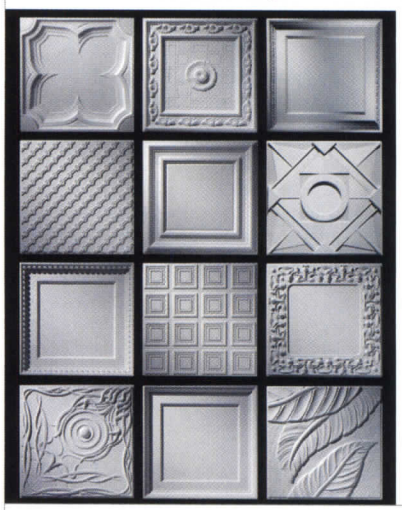
Circle 163

Ornamental Plaster Ceiling Tiles

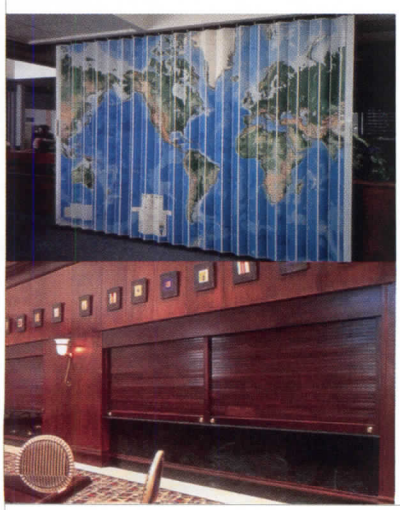


Above View Mfg., By Tiles, Inc.

Above View ornamental plaster ceiling tiles are fabricated from a non-toxic, non-combustible, proprietary composition. They drop into any standard 15/16-in. T-Bar grid system. There are more than 50 standard designs, custom design work, and 1,300 custom colors and faux finishes available upon request. 414-744-7118 www.aboveview.com

Circle 166

Doors for Interior Architecture



Woodfold Mfg., Inc.

Some will say that nothing is more beautiful than wood. Woodfold Mfg., Inc. would agree. Woodfold Mfg., Inc. custom made accordion and roll-up doors (available in hardwood and non-hardwood finishes as well) are both functional and beautiful. Woodfold Mfg., Inc. has models available for use as sight, security, and acoustic applications. Its solid hardwood roll-up doors coil conveniently overhead. And, to assure on time completion of your projects, Woodfold Mfg., Inc. has an excellent production cycle. 503-357-7181 Fax number 503-357-7185 www.woodfold.com/AR

Circle 164

Color System

ICI Paints Dulux

The new Dulux® Color System contains easy-to-use color tools designed to make color selection simpler. The Dulux Fan Deck is arranged by hue for ease in locating color and provides a 50% larger color swatch than other fan decks. The new color palette incorporates the most popular, frequently specified colors plus over 1,000 emerging trend colors. The palette's colors were chosen by an international team of color experts and designers to coincide with the deeper, more intense colors and decorative accents now used in the global marketplace. 800-432-8678 www.duluxpaints.com/color

Circle 167

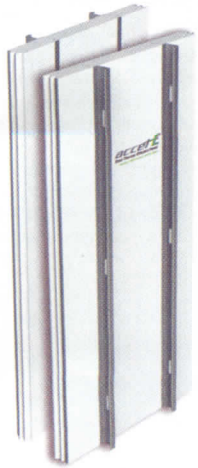
Solid Hardwood Flooring

Lumber Liquidators

With its exclusive high abrasion aluminum oxide finish and 50-year warranty, Bellawood is the premier manufacturer of pre-finished solid hardwood flooring. When you choose Bellawood Pre-Finished Hardwood Floors there's no messy sanding or smelly fumes. Domestic and exotic species, like Australian Cypress and Brazilian Walnut, are available to complement any design. Bellawood is available at Lumber Liquidators. 800-FLOORING www.bellawood.com

Circle 168

Energy-Efficient Wall Panel



ACCELERATED Building Technologies, LLC

The accel-E™ Steel Thermal Efficient Panel (S.T.E.P.) from ACCELERATED Building Technologies is a thermally resistant, high performance building panel that's strong, lightweight and energy efficient. Combining the strength and performance of cold-formed steel framing with the superior insulation properties of expanded polystyrene, the accel-E™ STEP wall system simplifies framing, insulation and sheathing to just one installation process. 888-9-accelE (888-922-2353) www.accel-E.com

Circle 171

Acoustic Plaster System

Pyrok, Inc.

Pyrok StarSilent is a smooth, seamless sound absorbing plaster system. This unique system, consisting of a rigid sound board made of 96% post consumer recycled crushed glass, combines the look of monolithic gypsum board with high acoustical performance. 914-777-7070 Email info@starsilent.com www.starsilent.com

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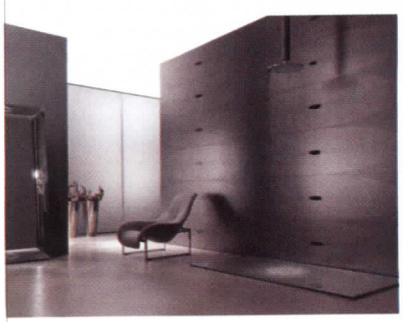
Times-2 Step-Up, Step-Down Storage System

Aurora Products

The Step-Up, Step-Down Storage System from Aurora Products is designed for the office that needs compact storage and work space. Step-Up, Step-Down is preconfigured as a bank of four locking cabinets that rotate for double-sided access. Customize with accessories to store binders, files, books, and personal items. With an optional countertop, the center units become a workstation for printers or fax machines. For more information call their toll-free number or visit their web site. 800-877-8456 www.aurorastorage.com

Circle 172

Wall Tile Collection



Viva Ceramica

"This is my first wall tile collection completely designed by another person. But what a person! Ulf Moritz, who is synonymous to the nicest wallpaper and the most sensual home textiles. Also for him this is his first tile collection. With its sophisticated, elegant simplicity it will be difficult to forget. Good in choosing Viva and an avant-garde material as the big (50x100cm) porcelain slabs highly innovative, state of the art new line. Only 3mm thick, it guarantees a weight of 7kg per square meter; however, the 15,000 tons of pressure that produced it means that it obtains a high bending resistance. A touch of 'glamour' to use not only in the bathroom."-Fabrizio Zanfi www.cerviva.it

Circle 170

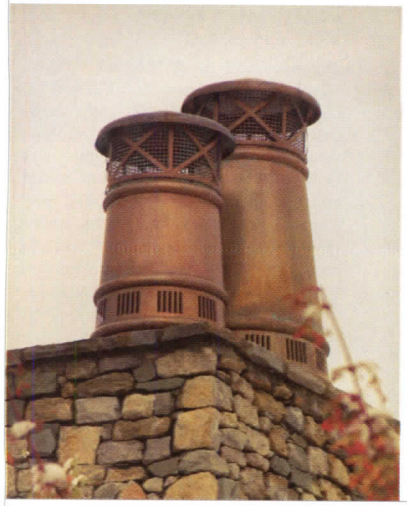
Innovative Hand Showers

HANSA AMERICA

Exuding a feeling of elegant weightlessness, the Hansapurejet embraces genuine minimalist design. The slender design of the fully chromed hand shower allows for seamless integration into a wide variety of shower concepts including Universal Design. Featuring a smooth scroll converter the Hansapurejet easily oscillates between Classic-Jet and Soft-Jet spray modes. 770-334-2121 Fax number 770-334-2128 Email dstroud@kwcamerica.com www.hansa.com

Circle 173

Copper Chimney Pots



Jack Arnold — European Copper

Eliminate rooftop clutter with recyclable, innovative UL-listed copper chimney pots. From Jack Arnold, AIA, European Copper chimney pots are the only UL-listed pots for both masonry and metal flues. Withstands all types of climate conditions, building code compliant. Available in three unique styles and seven sizes, easy to install. Patented. 800-391-0014 europeancopperchimneypots.com

Circle 174

Art Presentation

Walker Display Incorporated

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Architectural Walls

KI

KI's Genius® architectural walls offer the right balance of aesthetic appeal, functional flexibility, acoustic privacy and environmental integrity. Made with more than 70 percent recycled aluminum, Genius walls are 99 percent reusable and 96 percent recyclable, support the U.S. Green Building Council's LEED® (Leadership in Energy and Environmental Design) Green Building Rating System®, and are GREENGUARD™ approved. Genius walls are suitable for corporate, education, healthcare and hospitality markets. 800-424-2432 www.ki.com

Circle 175

Daylighting Program

MechoShade

SolarTrac®, MechoShade Systems' groundbreaking WindowManagement® daylighting program, integrates digitally addressable motorized shades with automated, solar-control software. The system tracks the sun and sensors detect cloudy conditions or excessive glare and lower the shades incrementally to diminish glare and provide occupant comfort. The system offers brightness, shadow and manual overrides that further enhance the system's effectiveness. www.mechoshade.com

Circle 178

Shelving Systems

Rakks

Rakks aluminum shelves are an ideal solution for the storage and display of CDs and DVDs. Anodized-aluminum shelves, available in up to 12-ft. lengths, provide attractive low-profile support. Infinitely adjustable Rakks-style shelf brackets act as bookends and allow positioning of shelves with optimal spacing to accommodate your collection. Call or visit them online. 800-826-6006 www.rakks.com

Circle 176

Commercial Grade Outdoor Furniture

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Circle 180

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Applied as a rainscreen panel system. Graffiti and vandal resistant. Fire resistant. Environmentally friendly. Wide range of colors, patterns or digital images. Will not delaminate. Guaranteed colorfastness for 10 years, panel integrity for 20 years. For samples call their toll-free number or visit their web site. 800-228-2238 www.abetlaminati.com

Circle 183

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Hunza Lighting

The Hunza Bollard is only 2-1/2-in. in diameter yet it effectively illuminates walkways, driveways and landscape borders with minimal glare. There are mounting options for both soil and hard surfaces, a choice of 12-in. or 27-in. height and a variety of durable finishes such as solid copper or stainless steel. 310-560-7310 www.hunzausa.com

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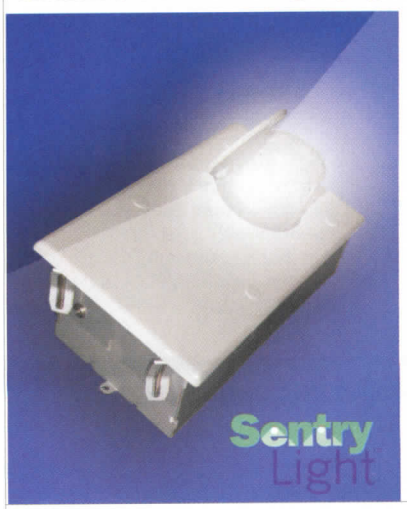
Self-Locking Gate Latch

D&D Technologies

Lokk-Latch PRO®—SL provides self-locking and self-latching security in a latch that won't rust, is horizontally and vertically adjustable, and features a 6-pin re-keyable lock. Formed of super-strong engineering polymers with stainless steel components, it fits metal, wood and vinyl gates. A key is required to enter and exit (institutional function). Only one hole is drilled to connect the internal and external units. The latch fits posts up to 6-in., and comes with a limited lifetime warranty. 714-677-1300 www.ddtechglobal.com

Circle 184

Concealed, Affordable Emergency Light



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Commercial & residential emergency lighting installed in 11 countries. Automatically provides light for a minimum of 2 hours. ADA compliant: world's only emergency light UL924 approved for installation at ANY height. Powerful Xenon lamps provide bright, even illumination. GREEN: Maintenance-free battery subscribes to RBRC Recycling. Replaces "bug eye" lights. Three models ready for installation. Hotels and motels. LEED Certified Buildings. Office and apartment buildings. Malls and shopping centers. Museums & fine arts centers. Residences and condominiums. For a free catalog or quote, visit their web site. 866-494-4431 www.SentryLight.com

Circle 182

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greenscreen® is an innovative landscape trellis system that provides endless possibilities for creating "green wall" landscape elements, fencing, screening, and enclosures. The main component is the unique 3-D wire panel. Rigid, light weight, and incredibly strong, greenscreen® can span between freestanding structural members or between floors, wall mount off the building surface, and stack or join to cover larger surfaces. Made from recycled content steel and with colors and a complete system of attachment hardware available. Panels can be cut, notched, trimmed, or curved. 800-450-3494 www.greenscreen.com

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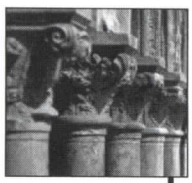


College of Architecture
The University of Oklahoma, Norman Campus

The University of Oklahoma invites applications and nominations for the position of Dean of the College of Architecture. The ideal candidate should have prominent stature in a field related to the built and virtual environments in harmony with the natural environment, and the ability to inspire leadership in a multidisciplinary academic setting with the creative vision, integrity, and passion to lead the College of Architecture in the pursuit of excellence.

We seek a person who sees in the diversity of our students and faculty, a unique opportunity to inspire greatness in future generations of architects, interior designers, constructors, landscape architects, and city and regional planners. As Chief Executive of the College, the Dean should have the following qualities and credentials:

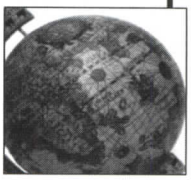
- Appropriate academic and professional credentials, including an outstanding record of achievement, sufficient for appointment as Full Professor with tenure in the College
- A strong commitment to and understanding of excellence in undergraduate education, graduate education, scholarly research, and creative activities typifying the various programs in the College
- Proven leadership, managerial, and administrative abilities in professional and academic settings that would enhance existing collegial relationships among the faculty, staff and students within the College, as well as relationships with the University, and with the national and international community of constituents
- The ability to develop and maintain supportive relationships within the College, the University, the State, the community, alumni, practicing professionals, and their professional organizations
- Capacity to procure resources that support College activities including fundraising
- A focus on the future of the AEC Industry with an understanding of rapidly-evolving technologies and business relationships involved

In Norman, Oklahoma, the College of Architecture has programs in Architecture, Construction Science, Interior Design, Landscape Architecture, and Regional and City Planning. In Tulsa, Oklahoma, the College has its graduate Urban Design Studio. The College has 42 full and part-time faculty with an enrollment of 770 undergraduate students and 105 graduate students. Beginning in June, '08, construction will commence on a fully-funded $26 million renovation and addition to Gould Hall, the home of the College on the University Norman campus.

The University of Oklahoma is a comprehensive research University offering a wide variety of undergraduate and graduate programs and extensive continuing education and public service programs. Its 2,000-acre Norman campus houses 15 colleges with approximately 1300 faculty serving 26,000 students. Norman, located seventeen miles south of Oklahoma City, has a population of 103,000 (est), making it the third-largest community in Oklahoma, and is known for its quality of life and affordability.

Initial screening of candidates will begin on March 15, 2008 and the search will continue until the position is filled. The position is available as early as 1 July 2008. Candidates are requested to submit a letter of interest and a detailed resume. Following initial screening, a professional portfolio clearly depicting applicant's professional achievements may be requested. All applications and nominations are to be directed to:

R. William Funk & Associates
Architecture Dean Search for University of Oklahoma
100 Highland Park Village, Suite 200
Dallas, TX 75205
Fax: 214/295-3312
Application materials may also be submitted electronically to:
krisha.creal@rwilliamfunk.com



The University of Oklahoma is an Affirmative Action, Equal Opportunity Employer. Obtain further information about the College of Architecture at http://coa.ou.edu/

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OFFICIAL PROPOSALS

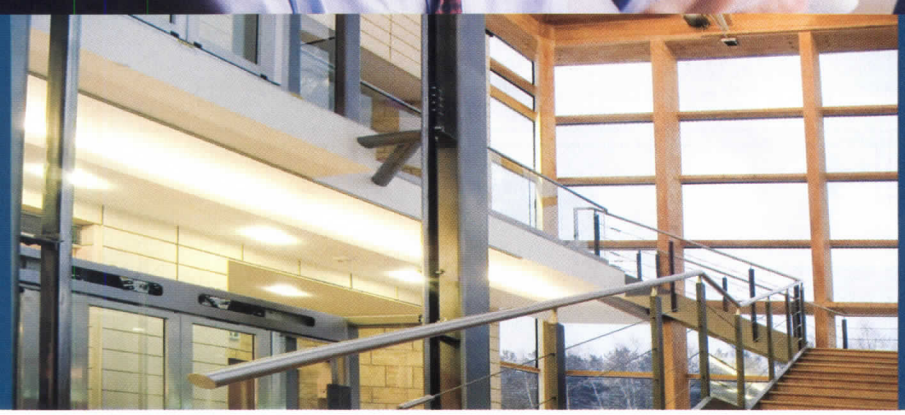
THE PORT AUTHORITY OF NY & NJ

REQUEST FOR PROPOSALS FOR PERFORMANCE OF EXPERT PROFESSIONAL INTERIOR DESIGN SERVICES FOR OFFICES AT 4 WORLD TRADE CENTER

The Port Authority of NY & NJ is pleased to announce that seventeen submissions were received in response to our RFQ for performance of the subject services. As a result of our review, the following six firms have been identified and shall be requested to submit proposals in response to a formal RFP: **DMJM ROTTET Interior Architecture; Gensler Architecture, Design, and Planning, P.C.; HELLMUTH, OBATA + KASSABAUM, Inc. (HOK); PERKINS + WILL; STUDIOS Architecture, D.C., P.C.; and Swanke Hayden Connell & Partners LLP.**

Congratulations to the selected firms. Sincere thanks to all firms that submitted proposals, for their commitment to design excellence, and their continued interest in working with The Port Authority of NY & NJ.

connecting people_projects_products



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ARCHITECTURAL RECORD CALL FOR ENTRIES

Kitchen & Bath Portfolio

The editors of Architectural Record are calling for entries for the 2008 Kitchen & Bath Portfolio. Entry is open to any registered architect who has recently completed an innovative kitchen and/or bath project. Of interest are projects that feature unexpected materials, address unique client needs, or are designed in a manner that allows these utilitarian spaces to be both functional and beautiful.

There is no fee. Submissions should include images (color prints, large-format transparencies, or high-res digital images on CD along with a labeled color printout), a brief project description, floor plan, and a complete credit and product source list. No slides or e-mailed submissions please. Materials must be postmarked by Friday, April 4th. Selected entries will be featured in RECORD's July 2008 issue.

Mail submissions to

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Two Penn Plaza
9th Floor
New York NY 10121

Please direct all inquiries to
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Of course, there will be hundreds of design industry professionals there as well... just in case you feel the need to suitably impress a non-architect here and there.

If that isn't enough, try this... gather a group of compatriots with the idea of visiting one of Boston's fine eateries once the show closes. The opportunities for engaging local Bostonians in conversation about yourself are numerous. The only thing better than the feeling of saying "I'm an architect" is the camaraderie you share by announcing "We're architects!"

Become an AIA member and get a free registration to the AIA 2008 Convention.
Call 800-242-3837 or go to www.aia.org/join_today.

* Offer is valid for first-time new Architect and Associate members only. Other restrictions apply. Visit www.aia.org/join_today for more information.

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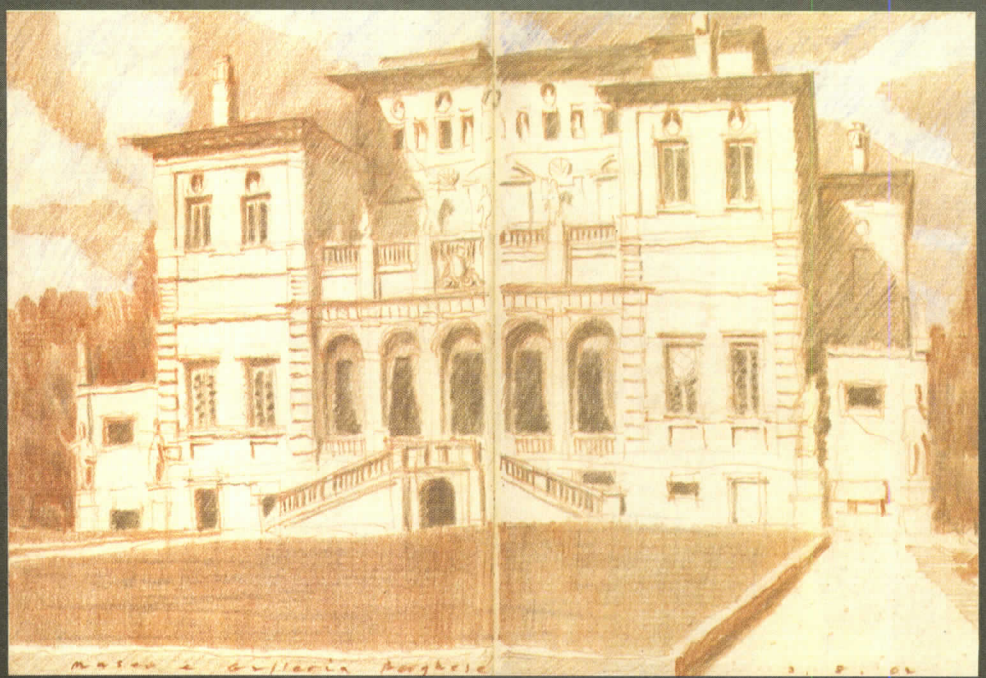
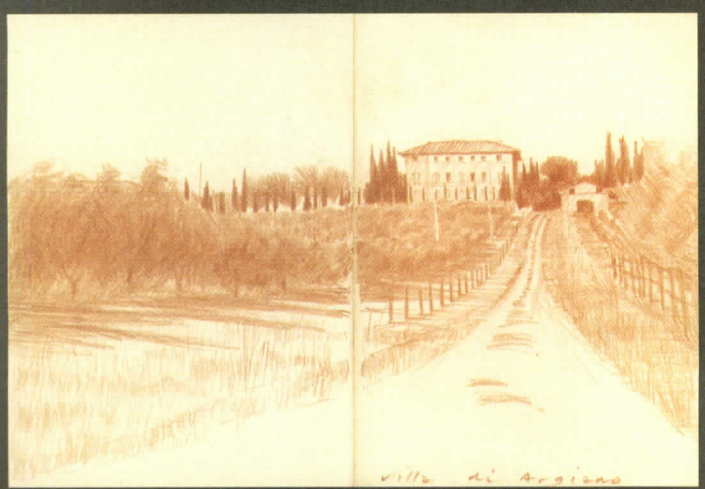
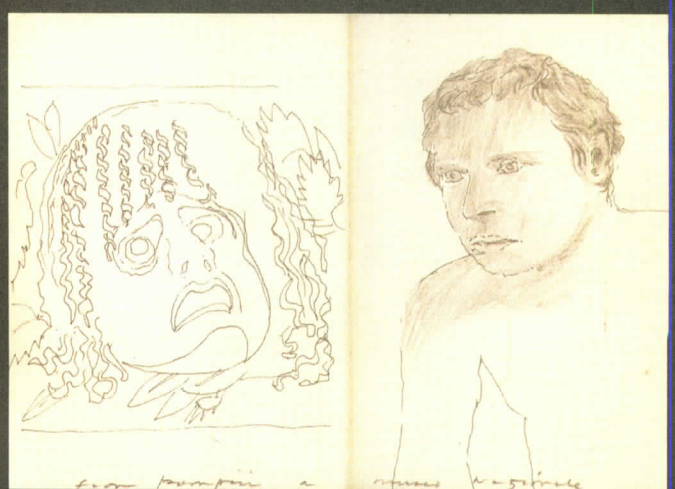
The Architect's Hand



Museo e Galleria Borghese, Rome (right), pencil on yellow paper, 8/2/02. ***Villa di Argiano, Montalcino*** (below), pencil on yellow paper, 6/30/02. ***From Pompeii a Museo Nazionale, Naples*** (below right: theatrical mask from a wall mural; bronze statue of a young man), pencil and pen and ink on yellow paper, 7/13/02.





Italy in situ: Capturing a sense of place

William H. Fain, Jr., FAIA, has been drawing all his life. He began as a boy in the 1950s, sketching beside his artist mother as she painted the countryside near his home in Palos Verdes, California. Today Fain, partner in the Los Angeles firm Johnson Fain, is an accomplished draftsman whose 41st sketchbook, executed in Italy while he was a Rome Prize Fellow at the American Academy 2002, was published last year. The drawings in this pocket-size volume, *Italian Cities and Landscapes*, done mostly on-site with traditional pencil and pen and ink on paper, are not architect's renderings, but an artist's impressions of light, atmosphere, shape, and color. Yet each resonates with "the intangible qualities that make a place," as Fain says, evoking urban and rural subjects sketched from Venice to Naples.

The Villa Borghese, in its historic park, was Fain's favorite place in Rome, a Baroque "jewel" he prized especially for the art collection it houses, notably the exquisite sculptures by Bernini commissioned by its creator, Cardinal Scipione Borghese. Traveling in Tuscany, Fain stayed near the 16th-century Villa di Argiano, center of the Argiano Winery southwest of Montalcino. As he set off one morning for a bike ride, he stopped to sketch the site, using his bicycle seat as a drawing board. The Pompeiian artworks he saw in the Museo Nazionale in Naples satisfied Fain's curiosity about the inhabitants of the ancient city he had just visited. Who were the people who acti-

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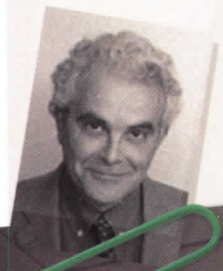

Francis Rubinstein
Staff Scientist
Building Technologies Department
Lawrence Berkeley National Laboratory

Actual unsolicited response.
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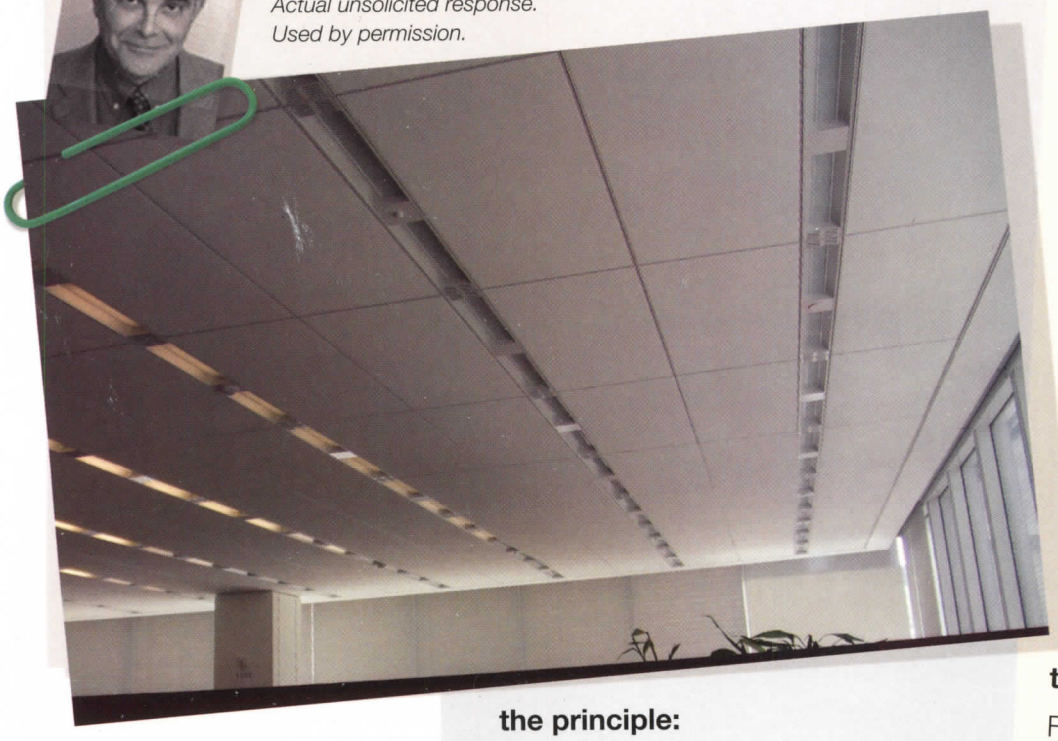

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