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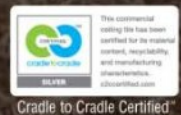
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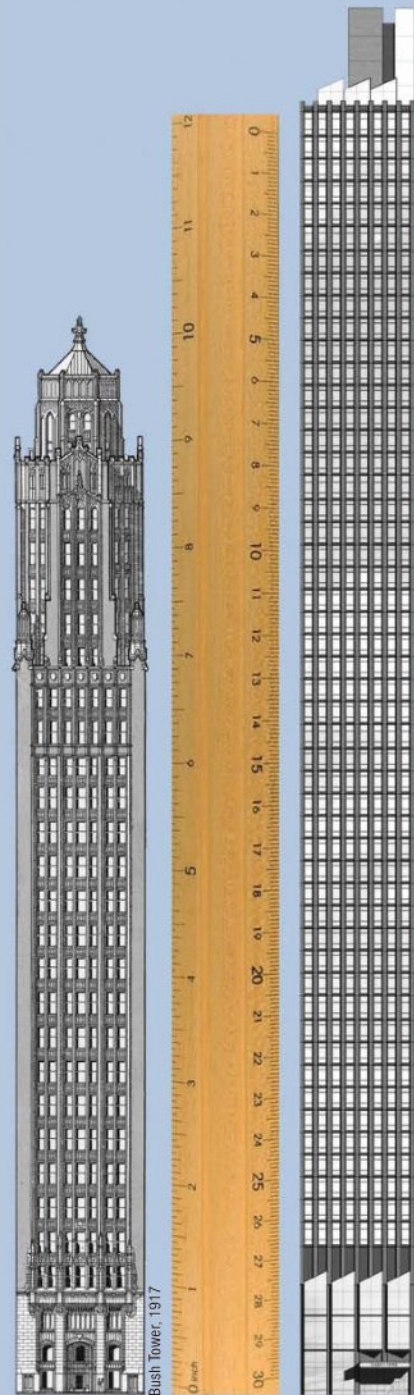
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On the Cover: *Museum of Arts and Design, by Allied Works. Photo by Helene Binet.*
Right (clockwise from top): *Royal Playhouse, by Lundgaard & Tranberg, photo by Jens Lindhe; Inner-City Arts, by Michael Maltzan, photo by Iwan Baan; Paul Rudolph and his A&A Building at Yale, photo by Ezra Stoller/Esto.*



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Reader Photo: This photo of Meyer Davis Studio's Taconic House in Copake Lake, New York, is one of more than 2,000 reader-submitted images in ARCHITECTURAL RECORD's online galleries.

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— Anonymous response to the article "Layoffs Sweep Architecture Profession."

Expanded Coverage



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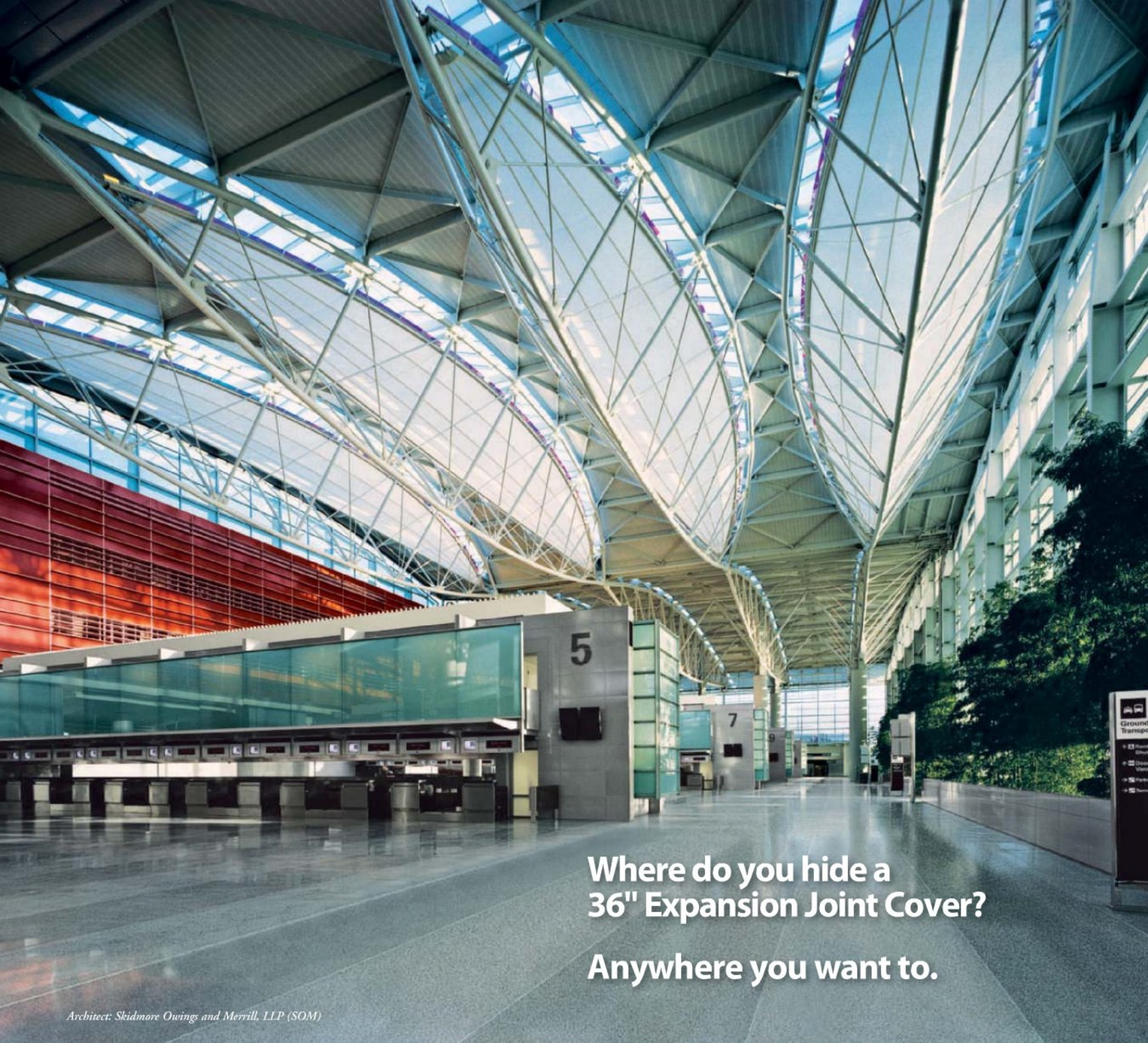
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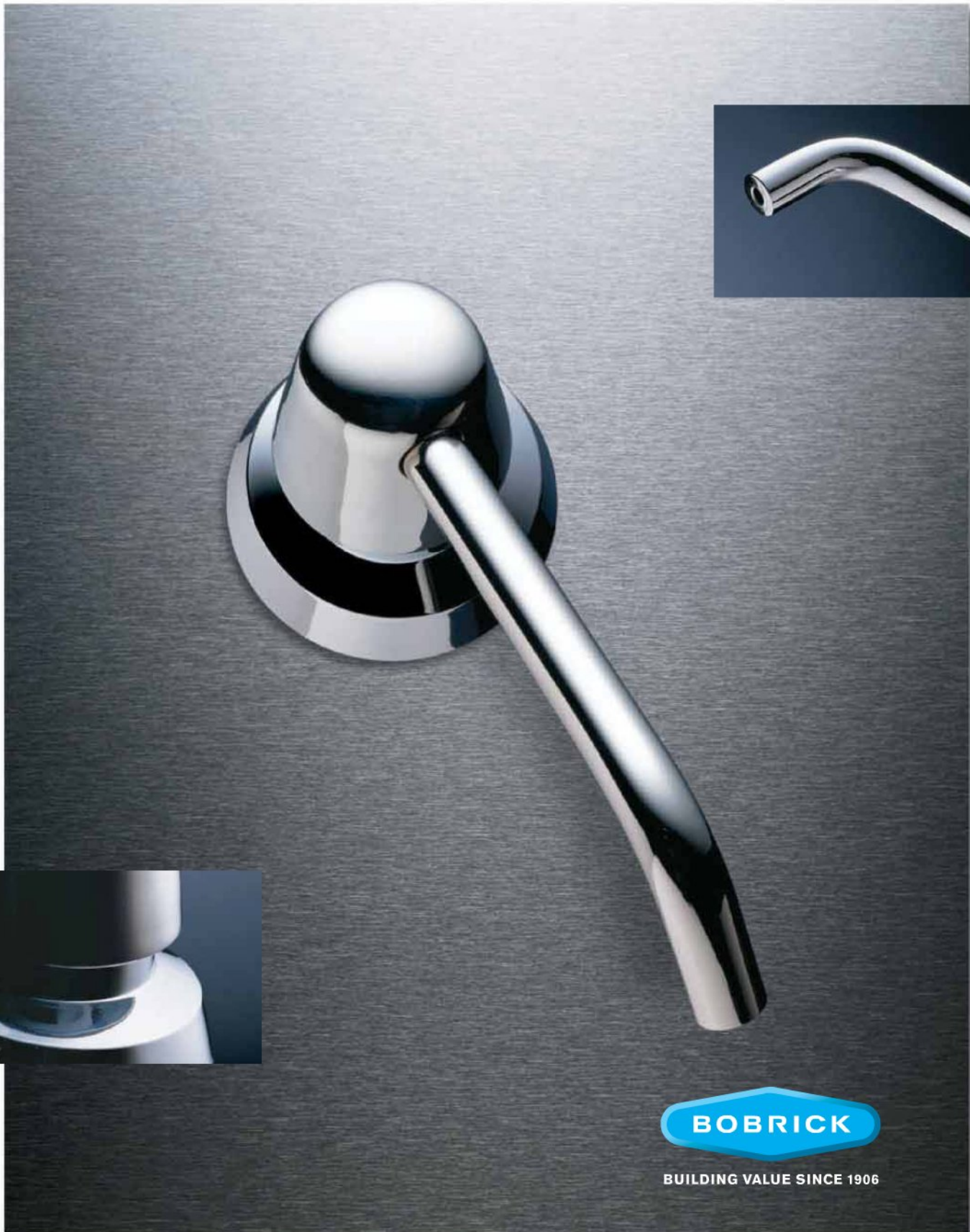


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SOLAR CONTROL

CIRCLE 145



Editorial

By Robert Ivy, FAIA

Parachute into Dubai, the glittering chimera, for an architectural smorgasbord. Since the 1970s, the little city on the waterfront of the Persian Gulf has boomed into a unique, tower-inflected phenomenon, corresponding to the vision of its ruler, Sheikh Mohammed bin Rashid Al Maktoum.

What does it add up to? For an architect, Dubai has become a required stop on the 21st-century version of the grand tour—a place to balance the firm's portfolio of domestic work, to compete for a job, or to gawk. Imagine a totally new city (though a small trading center existed before), springing up in the desert, filled with a gaggle of skyscraping monoliths, artificial islands offshore, the world's tallest building, the world's largest mall, the most luxurious ... seemingly everything. For architects during the past decade, the future possibilities have seemed endless.

Endless, but thin. Structurally, Dubai operates off a single strip development like Las Vegas, called Sheikh Zayed Road. Drive far enough away at an angle, and the city seems precariously and narrowly poised. Recently, however, the city has been adding infrastructure by widening the original highway, adding an elevated tram that will link the extremities this fall (and, unfortunately, block the adjacent buildings), and incorporating tunnels and connecting roads with ease. The strip is widening and fattening up.

Changes allowing foreign ownership of real estate in 2002 fueled growth, and towers bloomed as a result. Few individual structures, however, warrant admiration. While thoughtful or experimental tall buildings can be spotted among the clusters of spires and cranes, it is the aggregate of 40- to 60-story buildings, not the specific examples, that attracts our attention: How did they do it?

Urbanistically, the city is making attempts to densify, constructing whole neighborhoods of related functions at a stroke, such as the emerging financial district, or the luxury housing and hotel complex that surrounds the new Dubai Mall. Low-scale luxury housing often apes a vaguely Moroccan effect, rather like Disney's Epcot World Showcase. The artificial islands, such as Palm Jumeirah, which have received a bountiful share of media attention, combine housing and resorts, like the newly opened Atlantis, offering supposed security and exclusivity.

One stunning exception to the pack literally stands out—the Burj Dubai. Developed by Emaar properties, designed by the Chicago office of SOM with a team that included architect Adrian Smith, FAIA, when he was still with SOM, and still involves structural engineer and partner William Baker, the tower displays the insistent elegance of a large needle plunged into the sand. It also remarkably echoes another vision hailing

from Chicago, Frank Lloyd Wright's mile-high tower called *The Illinois*.

According to Baker, the building differs from Wright's in several key aspects. While Wright's tower, a tripod, would have been filled with its own infrastructure, the Dubai wonder spirals up from a base constructed of three petals that provide maximum stability to the wind loads that would have caused Wright's to oscillate. The solution, which will not be completed until September 2009, rises to an unparalleled height—some sources currently list 2,684 feet, though the client and its agents and related professionals are sworn to silence. That Burj building alone, which may represent some kind of metaphorical topping out—of an era's optimism and unbridled extremes—is worth the flight. SOM and Emaar have realized what is possibly the world's most elegant, as well as tallest building—spare, using a minimum of mass, structurally tight, and architecturally evocative.

At present, the flights from Dubai International Airport are out-bound. When world markets slowed, the pace of design screeched to a halt in Dubai, an emirate now subject to the vagaries of world markets. This publication and others have reported mass layoffs at the international architectural firms stationed there, as mega-towers disappeared into an economic sandstorm. Every other major tower, meant to rival the Burj, has been placed “on hold,” as has *The Waterfront*, the major new city master-planned by Rotterdam-based OMA. The gossip around the watering holes tells of young employees, inexperienced with a recession, who, burdened with mortgages and leases and auto loans, are driving to the airport, leaving their keys in their cars, and flying home. Bye-bye Dubai.

Official statistics of the state of the real estate economy remain obscure: why would any developer, particularly such a closely guarded one, need to tell anyone? But a drive through Marina City presents a spectral face, as scores of buildings remain totally empty (though sometimes “sold-out”), and merchants in the shops surrounding them complain of little or no traffic. Cars can easily roll along Sheikh Zayed Road, normally at a congealed standstill.

Built on oil, or the products that oil provides, Dubai has become dependent on others—including the worldwide lust for more and better real estate that characterized the recent past—for its future. Dead quiet from a design perspective at present, the city is riding the sine curve of the world economy, which will rise again. When it does, what will Dubai do next?



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Letters

Making the case

Thank you for your November editorial, "Making the Case." It was what a lot of us needed to hear. I gave the commencement address last week for the College of Design at NCSU and quoted what you had to say about clients needing architects more than ever.

– Frank Harmon, FAIA
Raleigh, N.C.

Spell it out

A past edition of the *Guinness Book of World Records* featured a photo of the world's tallest human, Robert Wadlow, who, at nearly 9 feet tall, towered over family members pictured alongside him. Even so, the editors included a (humorous) note in the accompa-

nying caption describing Robert's location in the photo, though it was quite obvious. I was reminded of this while looking at the news article "World's best buildings honored at festival" [December 2008, page 38], as the accompanying caption describes the location of the award-winning building in the photo provided. However, while Robert's unparalleled height was clear, if Luigi Bocconi University requires a (nonhumorous) note to inform readers of its location alongside otherwise banal edifices in a photo, perhaps it was unworthy of its "World Building of the Year" distinction. Or perhaps RECORD needed to provide a more flattering photo.

– John Curran
Vilcabamba, Ecuador

Continuing the education

In response to several recent letters regarding state and national AIA CEU requirements, I would like to offer the perspective of an AIA-registered provider who offers classes for a living. Too many CE classes are taught by vendors who pay to become providers as a way of selling their product. I have been to these classes and they are nothing more than commercials with free snacks. The content is shallow and the presenters usually boring. These vendor-provided classes have created the assumption among architects that all CE classes should be free since most classes are poor quality anyway. As someone with industry expertise who now teaches for a living, I am not in the position to offer this. I

don't sell a product. I am someone who offers real-world information that will make architects better at their jobs. As long as the AIA allows product advertisements to be considered CE classes and until there is one set of National CEU requirements, fewer and fewer architects will regard CE classes as anything more than a free lunch.

– Chris Grawburg
Raleigh, N.C.

Corrections

In January's "On the Web" index [page 12], the House of the Month image depicted December's house by Riesco + Rivera Arquitectos Asociados instead of January's house by Belzberg Architects.

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CIRCLE 12



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Lincoln Center undergoes a dramatic face-lift

Announcing a year's worth of events to celebrate its 50th anniversary in 2009, Lincoln Center president Reynold Levy admitted that the 16-acre arts complex doesn't give up its treasures easily. "For 50 years," he said, "visitors to Lincoln Center have been rewarded for traversing eleven lanes of traffic."

Surrounded by busy streets, and long seen as an isolated – even elitist – cultural compound in New York City, Lincoln Center is finally getting a new look. A renovation by Diller Scofidio + Renfro (DS+R) with FXFWLE, and additional work by Tod Williams Billie Tsien, don't do away with the vehicular moat. But the architects hope the revamp will mitigate the "fortress" aspect, turning Lincoln Center into the welcoming public space it was meant to be.

Eisenhower broke ground for Lincoln Center in 1959. Avery Fisher Hall, home to the Philharmonic, opened in 1962, with the rest of the buildings following throughout the decade. A child of Moses-era urban renewal, Lincoln Center gathered together the city's best arts organizations – the Philharmonic, Juilliard, and the Metropolitan Opera were the first; now 12 groups are based there – into an outpost of order and refinement.

The architects of the day, including Johnson, Saarinen, and Bunshaft, filled the complex with slender columns, flying arches, and open plazas, but quoting the Acropolis didn't make it one. "Many of the urbanistic mistakes of that era are monumentalized there: the megablock, and with it, feelings of exclusivity and elitism," says Liz Diller, partner at DS+R.

Lincoln Center seemed to turn its back on the rest of the city. "You



The redesign of the 16-acre Lincoln Center (3) in New York City includes a new, street-level, glass-walled television studio (1) and renovation of the central fountain and plaza (2).

could walk up Broadway and have no idea it was there," says Billie Tsien, AIA, partner at Tod Williams Billie Tsien. Her firm's new visitor center on 62nd Street, on the south side of the complex, is the first sign of a different attitude. When it opens in the fall of 2009, vines will climb the space's 20-foot walls, and 16 skylights will usher in natural light. A café, a removable stage for small performances, and a box office will fill the interior. "It's a place to go in and get a coffee or a glass of wine and maybe buy tickets to a show, which normally you wouldn't do if you were just walking by," Tsien explains.

For the existing structures, work is divided into two major projects: the Promenade and the West

65th Street corridor, both set to finish in February 2009. If the visitor center is a side entrance, Lincoln Center's front door is the grand staircase on Columbus Avenue. DS+R sunk the bordering service road underground (one less lane of traffic for visitors to dodge) and expanded the stairs along the length of Columbus Avenue. The Josie Robinson Plaza will be cleaned up with more seating and better lighting, highlighting Philip Johnson's patterned pavement around its central fountain.

Meanwhile, West 65th Street is being rechristened the "Street of the Arts" and will serve as a theme ride of sorts past the center's biggest names, including the Chamber Music Society, the School of American

Ballet, and Juilliard. All of the buildings along 65th will have new glass facades – transparency replacing travertine, but the star of the show will be Alice Tully Hall. It gets a new 5,000-square-foot, three-story lobby encased in glass, and an updated auditorium featuring a new stage and a state-of-the-art lighting system that glows behind wooden walls.

Despite these flourishes, Diller says she had to respect Lincoln Center's 50-year history. Elitist or not, it's an icon. "We can't be totally different – it's too monumental already," Diller admits. "The strongest impact we can make is for people to have a double take. It's a small revolution." *William Bostwick*

[View a slide show online.](#)



ON THE WEB

C.J. Hughes checks in on Yale, where several projects have been postponed, including a new **business school designed by Foster + Partners.**

In Los Angeles, construction of 10,000 Santa Monica Boulevard (below), a **45-story condo tower designed by Jean Nouvel,** has been put on hold due to financing problems. Also on hold: a Cesar Pelli-designed office tower and



art museum planned for downtown Austin, Texas. Tony Illia reports on these project delays, among others.

With President Barack Obama now in office, hopes are high that his economic **stimulus package will boost activity in the design** and construction industry. We take a look at the \$825 billion plan that House Democrats unveiled in January.

At a recent forum hosted by the Architectural League of New York, arts and cultural organizations presented various **grant and fellowship opportunities.** Tim McKeough reports.

The American Institute of Architects' Consensus Construction Forecast delivered some bleak news: **non-residential construction spending will drop 11 percent** in 2009. To learn more, and to see the most-up-to-date Architectural Billings Index, visit our "Recession Reports" section online.

Architects head south to weather the economic storm

In recent years, as many major U.S. architecture firms expanded internationally, they often bypassed Latin America in favor of Europe, China, and the Middle East. Gradually, though, that may be starting to change, as architects open offices and enlist for projects in Central and South American countries, where population and economic growth have been strong in recent years.

Even as financial troubles mount around the world, and increasingly put some Latin American nations at risk, there's a sense that much of the region, which has been buffeted by severe recessions before, can weather the current crisis. At least that's what some architects believe.

"I'm continually surprised how much of a need there is for development," says Stephen Forneris, AIA, who heads the 10-employee office that Perkins Eastman opened in Guayaquil, Ecuador, in October. The city, which is Ecuador's largest and a busy port for shipments of chocolate, bananas, shrimp, and cement, has mushroomed from 300,000 people in 1970 to 3.5 million today, Forneris says.

Now cropping up are stores selling luxury foreign goods, the kinds of watches and handbags once purchased by big spenders on Miami, Florida, shopping trips. More significantly, a growing middle-class in Ecuador, as well as in Peru and Colombia, is spurring the construction of discount stores, adds Forneris, who recently completed a 12-story mixed-use project in downtown Guayaquil. Among its tenants will be a new outpost of Juan Eljuri, an Ecuadorian-type Wal-Mart that sells clothes, housewares, and electronics. The building will house both the 45,000-square-foot store and the company's corporate offices, in addition to other tenants.

While the global credit freeze could theoretically curtail shopping habits, the overall effects "won't be as severe here," Forneris predicts.



Perkins Eastman recently opened an office in Ecuador. One of its projects is a 12-story building (left) in downtown Guayaquil.

are just 500 luxury hotel rooms in all of Costa Rica, he says – developer interest should remain high. That's just one of the reasons his firm,

"Money has been hard to come by for years, so I don't know how much more credit can shrink for them."

The foreign influence on Costa Rica, meanwhile, is predominantly from U.S.-based personal-care products and technology companies looking to outsource jobs, says Joe Brancato, a managing principal with Gensler, which opened an office in Escazu, Costa Rica, in 2006.

To accommodate clients, it helps to have local connections: All 22 employees in Brancato's office are native Costa Ricans, because they're familiar with the country's intricate building codes, he says. Plus, residents are often better equipped than transplants for the delicate task of convincing local contractors to start projects after construction plans are finalized, not before, as is often the case in Costa Rica. "You need to understand and embrace that this is a different culture, that they do things differently," Brancato says.

Another driver of Latin America's building boom is tourism. Despite a global drop in travel due to the economic downturn, Bryan Algeo, AIA, principal of WATG, an Irvine, California-based firm, says the Latin American tourism industry shouldn't be as badly affected as other parts of the world because the region is still relatively affordable compared with other destinations. Plus, with demand for hotel rooms there far outstripping supply – there

which has designed hotels in 150 countries since its founding in 1946, is seeking more commissions in Latin America. "We go where the action is, and we see activity moving south," Algeo says.

In Panama, he adds, developers can't usually secure loans until they have preleased 75 percent of a project, ensuring that the kinds of speculative buildings that can worsen downturns aren't constructed. His firm currently is working on Panama City Center, a \$60 million project whose twin, 22-story glass towers rise from a four-story podium that includes a casino and spa. Excavations are under way for the project, which is on track to open in 2010, according to Algeo.

Latin America's stabilizing political landscape is also fueling its appeal, says Alberto Aranda of Giancarlo Mazzanti Architects, a 12-year-old Bogota, Colombia, firm specializing in schools, libraries, stadiums, and other state-sponsored commissions. He adds, however, that a gold-rush mentality may never totally catch on, as South American clients still typically pay far less than their American counterparts.

"There's still a gap, and that gap makes us less competitive than the rest of the world," Aranda says. "It's not always attractive, economically speaking, for an American to come work here." *C.J. Hughes*

IMAGES: COURTESY SUNCAL CENTURY CITY (LEFT); PERKINS EASTMAN (RIGHT); MIT (OPPOSITE TWO)

Universities forced to reconsider building projects

Harvard ended 2008 a little less rich. The world's wealthiest university announced in December that its endowment had shrunk from \$36.9 billion to \$28.8 billion during the second half of the year. In light of that asset plunge and the general economic malaise, the school is reconsidering the scope and timing of ambitious expansion plans. Even the 1-million-square-foot, \$1 billion science complex designed by Behnisch Architekten, already under construction and slated for completion in 2011, is under the microscope, says spokesman Joshua Poupore.

Harvard's dilemma reflects the hard reality that universities and other nonprofits, until recently the most recession-proof consumers of design and construction services, are cutting back. The American Institute of Architects' market data, the Architecture Billings Index (ABI), reflects this drop-off. The institutional sector's most recent ABI score, from November, was 40.8, down from 41.3 in October and 44.4 in September. A number above 50 indicates an

increase in billing activity, and below 50, a decrease. Prior to August 2008, the last time the institutional score had dipped below 50 was in December 2004.

"As recently as several months ago, it was looking like institutional was holding up pretty well and the sector might actually get through this downturn unscathed," says Kermit Baker, the AIA's chief economist. Yet the equities meltdown has hammered endowments, obliging universities to divert funds from capital projects

to financial aid, faculty salaries, and other core needs, Baker notes. Institutions are also finding it difficult to line up loans, issue bonds, and attract donors. Princeton has trimmed \$300 million, or 12 percent, of its capital plan budget and delayed by a year



Layoffs sweep profession as economy worsens

In moves that will surprise no one who has followed the barrage of grim economic news, architecture firms across the country are laying off workers at unprecedented levels.

Over the past few months, Perkins Eastman, one of the country's largest firms, has let go of 10 percent of its staff, or about 80 of 800 employees, according to Bradford Perkins, FAIA, firm chairman. "It's very unfortunate when this happens," says Perkins, adding that the cuts are the deepest in the firm's 24-year history.

Meanwhile, FXFWOLE cut 6 percent of its staff in October, leaving 185 in New York and 15 in Dubai. Like Perkins Eastman, postponed projects were a chief reason for the

layoffs, according to spokesman Brien McDaniel, who didn't provide specifics. His firm, founded in 1978, hasn't laid off anybody since the last major recession, in the early 1990s. "We are entering 2009 pretty good, as our backlog of work is as strong as 2008," McDaniel wrote in an e-mail. "We are optimistic, but cautious."

On the West Coast, Mulvanny G2 Architecture, a retail-focused firm based in Bellevue, Washington, had let go of about 20 percent of its staff as of December – roughly 90 of its 460 employees, according to Mitch Smith, the firm's managing director. Proportionally speaking, they are the biggest layoffs for the firm since its 1971 founding, Smith adds. "Financing problems are affecting

everybody," he said. "Some clients are slowing down and postponing commitments, while others are now focused on long-term planning."

HOK Group, meanwhile, confirmed it has let some staff go but would not specify figures. "There have been select reductions, but just a handful," says Christopher Laul, a principal in the New York office of the 2,500-employee firm. The firm was founded in 1955 and now has 29 offices across the globe, including Mumbai, Hong Kong, and Mexico City.

Other top firms, including Gensler and Skidmore, Owings & Merrill, did not return calls for comments for this article.

The job losses in the architecture profession seem in step with national unemployment figures. On January 9, the federal Bureau of Labor Statistics

the mid-2009 start on neuroscience and psychology buildings designed by Raphael Moneo, says director of media relations Cass Cliatt. Several other projects, including elements of a new arts and transit neighborhood, with buildings by Steven Holl, have been pushed beyond the master plan's 2016 horizon.

MIT anticipates spending cuts on the order of 10 to 15 percent over the next several years. But Fumihiko Maki's Media Lab expansion, Moore Ruble Yudell's Sloan School expansion, and Ellenzweig's David H. Koch Institute for Integrative Cancer Research, all under construction, should proceed on schedule, according to officials.

Although the recession may drive down construction costs, university real estate planners can't count on that as a silver lining, given the economy's volatility. As a result, analysts say schools are expected to favor renovation and expansion over new construction. *Ted Smalley Bowen*

At MIT, projects by Fumihiko Maki (top) and Moore Ruble Yudell (left) should proceed as planned.

reported that the unemployment rate hit 7.2 percent in December, up from 6.8 percent in November, for a 15-year high. And many sectors were hurt, according to the report, which found that the architectural and engineering sector lost 7,000 jobs in December, while the construction industry lost 101,000. Since September 2006, when construction industry employment peaked, 899,000 jobs have disappeared.

Not all gloom has been evenly distributed. As of mid-December, Perkins + Will, a 21-office international firm with 1,750 employees, hadn't let anybody go, according to spokesman Howard Weiss. "We have benefited from work overseas," he says, "and the firm has not had many projects cancelled nationally." *C.J. Hughes*

In Texas, even arts districts are supersize



Located just north of the city center, the Dallas Arts District, established in 1983, spreads across 68 acres, or 19 blocks – making it the largest of its kind in the nation. Beyond its impressive size, it boasts I.M. Pei’s Meyerson Symphony Center (1989) and Renzo Piano’s Nasher Sculpture Center (2003).

Now, it’s about to get a few more buildings by architectural heavyweights. Work is under way on the Center for the Performing Arts, which will feature venues by Norman Foster and Rem Koolhaas, along with Skidmore, Owings & Merrill (SOM). Once this \$338 million undertaking is complete, the Dallas arts neighborhood will be the only place in the world where people can see the work of four Pritzker Prize winners (Pei, Piano, Foster, and Koolhaas) within a single district.

The Center for the Performing Arts will consist of three major buildings woven together by a 10-acre park designed by the French landscape architect Michel Desvigne, with the Chicago-based firm JJR. Foster + Partners’ 234,000-square-foot Winspear Opera House calls for a 2,200-seat auditorium contained within a cylindrical volume covered in red-tinted glass. A trellislike canopy extends from the auditorium on all sides, shading an outdoor performance area.

The 600-seat, 80,000-square-

Work is under way on a new performing arts center for the 68-acre Dallas Arts District (above).

foot Wily Theater was designed, initially, by Koolhaas’s Office of Metropolitan Architecture (OMA) and was taken over by REX, founded in 2006 by OMA alums Joshua Prince-Ramus and Erez Ella. The design programmatically reshuffles typical horizontal theater layouts into a 12-level vertical expression, placing front-of-house and back-of-house areas above and below the auditorium, rather than around it.

SOM’s City Performance Hall is organized as a series of sloping parallel concrete bands of varying heights and widths. Each band contains a single performance venue,

IT WILL FEATURE VENUES BY FOUR PRITZKER WINNERS: PEI, PIANO, FOSTER, AND KOOLHAAS.

which design partner Leigh Breslau, AIA, says will create easy-to-navigate circulation paths meant to aid the 70 groups that will use the building. As the only project in the center that is city-funded and dependent on bonds, Breslau says he designed it to be built, as financing permits, one section at a time, as a “continuous ribbon” that still maintains design coherence.

The center is not the only new addition to the arts district. A 170,000-square-foot expansion,

Austin’s tallest building halfway there

At 680 feet tall, the Austonian, designed by Houston-based firm Ziegler Cooper Architects, will be the tallest building in Austin when it’s completed in 2010. Additionally, the developer is seeking a four-star rating for the tower under the Austin Energy Green Building Program, equivalent to a LEED Gold rating from the USGBC.

Currently at the halfway point, the elliptical, 56-story steel, aluminum, concrete, glass, and limestone-clad building will add to Austin’s skyline a somewhat softer (and less controversial) top than the pointy ends of the current highest building, the 515-foot, 33-floor Frost Bank Tower, built in 2003 by Duda/Paine Architects and HKS and sometimes referred to as



The Austonian will be 680 feet tall.

designed by Allied Works, to the Booker T. Washington High School for the Performing and Visual Arts – a longtime presence in the neighborhood – was completed last

June. Firm principal Brad Cloepfil, AIA, planned the addition as a series of masonry-clad interlocking bars, each dedicated to a particular curriculum. The earthy, industrial presentation of materials suggests artists’ lofts, and in fact, Cloepfil says he thinks of the building in a “factory context” because “that’s where artists are made.”

Many hope the district will evolve into a pedestrian neighborhood of mixed uses and artistic

“giant nose-hair clippers.”

According to Scott Ziegler, the Austonian’s design principal, the illuminated zenith of the new building will resemble a “lamp of knowledge” – a nod to the prominence of Austin’s University of Texas. “We didn’t know when we started how tall it would be,” says Ziegler. “But we knew that to encourage density downtown, Mayor Will Wynn had lifted the 8-to-1 floor-to-area (FAR) ratios and that negotiations were in progress to go as high as we could. The Austonian’s FAR is 18-to-1.”

The mayor’s stated plan in 2006 was to get 25,000 people living downtown – discouraging sprawl and attracting retail and hospitality to the city’s core. It has worked to some extent. With around 10 downtown high-rise condo projects in the works, Austin is poised to either gain a vibrant city center, or be stuck with a glut of empty units.

As for the Austonian, with the smallest units, at 1,200 square feet, starting at \$559,000 and more than 100 units selling for more than \$1 million, it remains to be seen if the country’s stunted economy will keep tenants from filling Austin’s mightiest tower. *Ingrid Spencer*

synergies in the middle of sprawl-laden Dallas. Arts-district boosters say that having a public high school helps make the area an active community; housing and retail development should also prevent the district from becoming a cultural ghetto that empties out when the theaters are dark. But Cloepfil says it might be misguided to expect Jane Jacobs-style urbanism to sprout in north Texas, and that isn’t necessarily a bad thing. Dallas might have to accept the arts district as a successful destination, not a way of life. “I’m trying to be a realist to other urban types,” he says. “I do think there are other models of urban success that we may not want to believe are successful.” *Zach Mortice*

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Record News

Court gives go-ahead for Jerusalem's Museum of Tolerance

Israel's High Court of Justice has allowed construction to proceed on Jerusalem's Museum of Tolerance, designed by Frank Gehry and backed by the Los Angeles-based Simon Wiesenthal Center.

The court had halted work on the \$200 million project in February 2006 in response to petitions by two Muslim groups after graves and human remains were uncovered during the early stages of construction. The closely guarded site in Jerusalem's center was once part of a large Muslim cemetery but in recent decades was a parking lot. In Israel, it is not uncommon for human remains to be discovered during construction.

Court-ordered mediation was unsuccessful: The museum backers said they could not change the design or move the museum, an assemblage of freestanding and

linked compositions that includes a crescent that will house the main museum, and a two-tiered nautilus-shaped volume that differs substantially from the stone-clad buildings surrounding it. The petitioners rejected the backers' offers to relocate the graves or to "float" the floor above them.

The High Court of Justice concluded in late October that the "national and international importance" and potential benefit of the museum outweighed any violation of the constitutional rights of the deceased. The court allowed construction to proceed on condition that the graves, which were found on 12 percent of the 33.5-acre site, be relocated or a floating floor be built.

The 230,000-square-foot complex is formally called the Center for Human Dignity – Museum of Tolerance Jerusalem. In addition to the semicircular museum, the facility features an education center distinguished by a bouquet of rectilinear limestone-clad volumes,



Construction of the Gehry-designed museum was halted three years ago.

theaters wrapped mostly in glass, a blue aluminum-and-steel children's museum, and a conference center whose exterior titanium walls look like deep blue ribbons. The steel-colored nautilus volume will serve as the location of a grand hall and accompanying terrace. The project is expected to be completed by 2014.

At the 2003 ground breaking and in the court ruling, the museum was seen as promising a "Bilbao

effect" that would revive the moribund city center and attract tourism. Rabbi Marvin Hier, the dean and founder of the Wiesenthal Center, says the project has already received \$110 million in donations without active fund-raising.

Human rights groups and others, including the architecture critic of the daily newspaper *Ha'aretz*, continue to oppose the museum. *Esther Hecht*

Zaha Hadid chosen to design Vienna library

The largest business school in the European Union, the 20,000-student Vienna University of Economics and Business Administration, has

increased its head count 2.5 times since 1981. Yet it has accommodated this explosive growth hastily, scattering four academic campuses

throughout its home city.

In October 2007, school and government officials announced the university would consolidate into a 22.7-acre site just south of the city's fairgrounds. And this past November, a six-person jury determined that Zaha Hadid Architects would realize a competition design for the Library and Learning Center at the center of that complex. The firm was chosen from a short list that included Morphosis and Hans Hollein.

Although the 430,000-square-foot building will contain classrooms, a bookstore, and cafeteria and hangout spaces, it will be devoted primarily to administrative offices and a library with integrated study zones. "We wanted to get these two program parts very clear," says Cornelius Schlotthauer, project architect and one of two heads of the firm's Hamburg studio. "We created basically two volumes within this space, and

they shift around each other to define an internal open space."

The two volumes appear freestanding, but actually form a canted, six-story polygonal structure. In order to suggest that the administrative and library volumes occupy separate volumes, the exterior of the library-programmed space will be clad in fiberglass-reinforced-concrete panels that are darker than the offices' skin.

Inside, the design articulates the distinction by distributing rooms into seemingly disparate volumes – as if programs occupy different towers, or as Schlotthauer calls them, "canyons."

The project should be completed in 2012. It is one of five buildings that will make up the new campus, according to a master plan conceived by local design studio BUSarchitektur. *David Sokol*

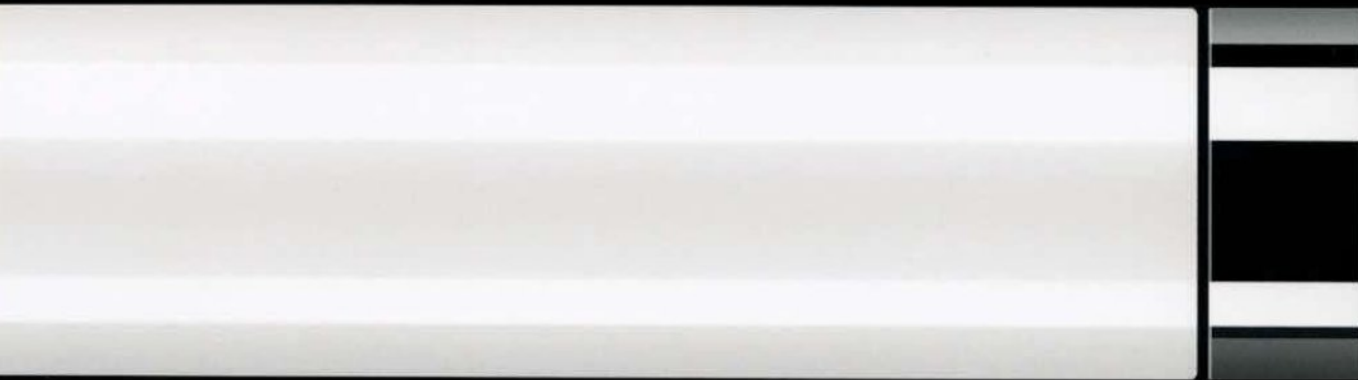
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The building has two main volumes that "shift" around a central space.

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House by Eero Saarinen donated to art museum

Among the cache of architectural treasures in the small-town design mecca of Columbus, Indiana, one has been accessible only to a privileged few: The Miller House, an elegantly understated one-story pavilion by Eero Saarinen with a powerfully geometric landscape by Dan Kiley. But this exemplar of Midcentury Modernism is likely to open for public tours now that the Indianapolis Museum of Art has announced it will acquire the 6,838-square-foot house, a National Historic Landmark.

Completed in 1957, the Miller House was built for industrialist J. Irwin Miller, the head of Cummins Engine Company, and his wife, Xenia. Miller was the visionary patron who brought designers such as Harry Weese and The Architects Collaborative to Columbus, 40 miles south of Indianapolis, to shape schools, banks, and other buildings that would improve the town's quality of life and help attract talented employees.

The house, whose senior designer was Kevin Roche (Alexander Girard was responsible for the interiors), is a domestic outgrowth of that civic program. Supported by 16 cruciform steel columns and sheathed in glass and panels of blue-gray slate and white marble, the flat-roofed structure clearly bears the influence

of Mies van der Rohe, yet it is far more conducive to everyday family living than Mies's much-smaller Farnsworth House. Four zones – for parents, children, guests, and service – pinwheel around a 10-foot-high, skylit living space that features a suspended circular fireplace, a 50-foot-long storage wall, and a 50-square-foot conversation pit. Kiley's geometric gardens extend the house's rectilinear geometry into the landscape, most memorably in an allée of trees that runs parallel to house's rear facade.

"The Miller House showcases the work of leading 20th-century architects and designers, and we believe that it's important to preserve this internationally known jewel," Maxwell Anderson, the museum's director, said in a prepared statement. Members of the Miller family and the Irwin-Sweeney-Miller Foundation have agreed to donate the house, gardens, and many original furnishings to the museum, along with \$5 million toward an \$8 million endowment. For its part, the museum will raise the remaining \$3 million for the endowment and \$2 million more for an 18-month renovation. Once that project is complete – a date has not been set – the museum plans to work with the local visitors center to offer public access to the house and its gardens. *Blair Kamin*



Alexander Girard was responsible for the Miller House interiors.



Dominick designed the Horizon Pass Lodge (right) in Colorado.

Peter Dominick, architect of Disney hotels, dies

Denver architect Peter H. Dominick, Jr., FAIA, will be remembered for his larger than life personality and his impact on redevelopment of the city's urban core. His legacy also includes three high-profile hotels designed for the Walt Disney Company: Wilderness Lodge and Animal Kingdom Lodge in Orlando, Florida, and the Grand Californian Hotel in Anaheim, California.

Dominick, 67, died of a heart attack January 1 while cross-country skiing near Aspen, Colorado. He was founding president and chairman of 4240 Architecture, with offices in Denver and Chicago.

During his 40-year-long career, Dominick designed hotels, resorts, houses, apartment buildings, offices, and even a unique museum (the Great Platte River Road Archway) that spans Interstate 80 in Nebraska. His projects reflected a variety of architectural styles. "I've never believed in a style at all," he once said. "[My] work is about absorbing a philosophy and building something appropriate." For Disney, that meant drawing inspiration from the California Arts and Crafts movement, African safari camps, and historic National Park lodges.

"He loved the West, loved Colorado, and I think that's where

his inspiration came from," says his 4240 colleague E. Randal Johnson, AIA. "But no matter where he was working, he was always responsive to the site, to the local culture, and he always used local building materials."

Dominick was born in New York in 1941 and moved with his family in 1946 to Colorado. He studied architecture at Yale under legendary professor Vincent Scully and earned his graduate degree from the University of Pennsylvania, where his mentor was Louis Kahn.

After graduating from Penn, Dominick spent three years traveling the world before returning to Denver to practice architecture. In 1974, he founded Dominick Architects in Denver's Lower Downtown, then a declining warehouse district. Dominick became an early champion of the historic area and helped guide its transformation into the lively, mixed-use neighborhood that it is today. In 1989, Dominick merged his firm with Urban Design Group, which he left in 2003 to form 4240 Architecture.

Robert A.M. Stern, FAIA, dean of the Yale University School of Architecture, was a longtime friend. Stern remembers Dominick as "a regionalist in the best sense of the term," whose work reflected a deep love and understanding of the building traditions of the Rocky Mountain West. "His specialty was wonderful buildings that celebrated the landscape he loved." *David Hill*

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CIRCLE 15

News Briefs

Maki and Associates has completed the first building in the world specifically designed for the Aga Khan – the spiritual leader of the world's Ismaili Muslims and founder of the coveted Aga Khan Award for Architecture. **Known as the Delegation of the Ismaili Imam**, the new, 95,000-square-foot building (right) is located in Ottawa, Canada, and houses offices for the Aga Khan Foundation of Canada and the Aga Khan Development Network, a group of secular agencies that aid developing countries. The Aga Khan has two other new buildings in the works in Canada, both in Toronto: an Islamic art museum designed by Maki, and a religious and community center designed by Charles Correa. Roughly 100,000 Ismaili Muslims live in Canada today. *Tim McKeough*



In January, the American Institute of Architects announced the **winners of its 2009 Honor Awards**. The awards are given to projects that exemplify excellence in architecture, interior architecture, and regional and urban design. This year, jurors selected 25 projects from 700 submissions. Award recipients will be recognized at the AIA's national convention in San Francisco, April 30 to May 2. Visit us online to **see a slide show of the winning projects**; look for complete coverage in a future issue of RECORD. *Aleksandr Bierig*

Los Angeles-based practice **Gehry Partners is expanding into larger headquarters** at a time when most companies are scaling back. The 160-person firm, which declined to comment on rumored layoffs, is vacating its five-year-old, 44,000-square-foot home at 12541 Beatrice Street for new digs in El Segundo. Gehry has signed a 10-year lease to occupy an existing 70,000-square-foot industrial complex. The 3.53-acre campus **consists of two 950s warehouse buildings**, which are being upgraded and expanded (left). The project will open in phases from mid-2009 into early 2010. *Tony Illia* [View a slide show online.](#)



President Obama's pledge to invest in infrastructure, and Los Angeles County's enactment of a tax measure that will provide **up to \$40 billion for transit-related projects**, have prompted an ideas competition sponsored by the Southern California Institute of Architecture and *The Architect's Newspaper*. Architects, engineers, urban planners, and students are invited to propose projects that "rethink the relationship between transit systems, public space, and urban redevelopment." **Submissions are due March 9.** For information, visit www.sciarc.edu. *Aleksandr Bierig*

The global financial crisis has hit Dubai, where real estate prices are sinking and development companies are laying off staff. Despite the slowdown, **construction is progressing in Dubai Metro**, a new light-rail system intended to ease traffic problems, according to Adnan Al Hammadi of the Dubai Roads and Transport Authority. By the time the \$4.2 billion project is complete in 2012, there will be **469 miles of track and a total of 17 stations**. Four different lines are planned; work is currently under way on the 32-mile Red Line and 14-mile Green Line. Atkins Middle East is managing all of the civil, structural, and architectural design; Aedas Architects is consulting on the design of several stations. Shell-shaped roofs (right), already visible at some construction sites, are intended to evoke Dubai's pearl-diving heritage. Partial service is scheduled to begin in September 2009. *Chandan Deuskar* [View a slide show online.](#)



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Maggie Peng Studio

Flexible, and in fashion

Belle, Beverly Hills, California, 2008

This store for Belle (right), the chic sister collection to shoe purveyor Sigerson Morrison, features a dynamic ribbon that flows through the space and creates varying shelf heights. Wall textures, mirrors, and custom-embossed wallpaper reflect the ephemeral spirit of the brand.

"The shipping container or the scaffolding or the construction mesh or the ductwork": Brooklyn-based architect Maggie Peng is listing some ingredients favored by her former employer, LOT-EK, the New York firm hailed for its fanciful environments made from scraps and off-the-shelf parts, for which she worked from 2001 to 2004. "I don't necessarily embrace that material palette."

Even so, Peng insists that her LOT-EK bosses, Giuseppe Lignano and Ada Tolla, influenced her more profoundly than surfaces would suggest. "It's really iconic to see the shipping containers," she says, citing what is arguably LOT-EK's signature element, "but ultimately, the office is interested in designing for flexibility. Whether it's using modular systems or preexisting units, it's about tapping into the built-in intelligence of preexisting products. And that is very much something I still work with."

Since launching Maggie Peng Studio in 2005, she has effectively erased LOT-EK's visual stamp without sacrificing that underlying proposition. Two 2007 concepts, Modular Hotel and the multifamily building San Isidro, barely evoke the shipping containers that LOT-EK has put to use in projects like the Bohemian Foundation, a commission that Peng shepherded during her tour of duty there. Yet both creations boast the easy configurability, informal permeability – between the Modular Hotel's units, and between interior and exterior in the case of San Isidro – and dynamic, almost precarious aesthetic of a stack of cargo.

On a smaller scale, Peng has found inspiration in the Japanese tatami unit. "I wanted to explore that replication of proportions throughout a building," she says. That analysis brought her to plywood, "the most standard building material," she notes. The resulting Plywood House deploys the sheets as both architecture and furniture. Moreover, at the New Art Dealers Alliance's 2007 fair in Miami, Florida, Peng created booths for publishers by arranging Uline plywood shipping crates into series, and stenciling their names onto the boxes. "They could keep stock inside the crates and display their publications on top," Peng says. "They could even use the crates to ship back overstock." CMU concrete blocks topped in foam provided seating in this no-frills landscape.

Findings, New York City, 2006

A floating antique-oak and blackened-steel stair connects two floors between two veils of thin steel rods hung from the upper floor in this 6,000-square-foot expansion of a showroom for fashion rep Findings.



PHOTOGRAPHY: © NOAH SHELDON PHOTOGRAPHY (TOP RIGHT AND BOTTOM)

DEPARTMENTS

Peng embraces a certain messy vitality in inventing solutions from existing sources, but there's nothing untidy about her completed work. That may be why the fashion industry has sent so many commissions her way. Friends connected her to her first commission in the category, a 6,000-square-foot expansion of fashion representative Findings' New York showroom. The successful completion of that project led to accessories house Loeffler Randall, which then hired Peng to design its headquarters. In 2008, she finished a retail space for Belle, a diffusion line by white-hot shoemaker Sigerson Morrison.

Importantly, these spaces demonstrate that Peng has more on her mind than LOT-EK's legacy and differentiating herself from it. Her designs for Findings and Loeffler Randall carefully negotiate circulation for a split-personality audience – guarded department-store buyers and show-off, trendsetting boutique owners, for example. And while the ribbonlike shelving units at Belle translate that brand's groovy logo into three dimensions, Peng says the store's floor-to-ceiling storefront window, open center, and shiny surfaces also reflect the outdoor scenery, dissolving the interior "in the spirit of Los Angeles's climate and sensibility." *David Sokol*



Modular Hotel, multiple cities, unbuilt

This design for a flexible, efficient hotel looks to the organic structure of DNA for inspiration. Single modules of rooms can remain independent or be connected, as required.



Plaster-clad straw bales replaced typical drywall construction in the three-story Grand House (above). Cabinetry and other built-ins, such as the kitchen island (below), were constructed of recycled woods. Students (right) and volunteers did the work.



work

Grand House Cooperative

University of Waterloo, Ontario, students built and live in it

Although a particularly harsh southern Ontario winter delayed construction, the first residents finally took occupancy of the unique Grand House Cooperative in Cambridge, Ontario, in the fall of 2008. The brainchild of Chantal Cornu, who holds an M.Arch. degree from the University of Waterloo, the \$1.1 million (Canadian) project is the epitome of affordable and environmentally friendly architecture. "The UW School of Architecture moved to Cambridge in 2004," says 29-year-old Cornu. "We really wanted to create housing for students. And because the city and community were so interested, we found an opportunity to connect people from the school and the community with people from trades and industry."

Perched on the side of a hill, atop giant steel I-beams resembling stilts, the three-story building comprises 12 bedrooms, two kitchens, four bathrooms, and a common living area. A relatively small construction crew aided by volunteers from the community as well as students from the school of architecture toiled on the project for a little over a year. Students received credit toward their degrees in lieu of pay.

The walls are made of straw bales covered with clay-lime plaster. The upstairs floor is wood recycled from the gymnasium of a local high school. Cornu and her team raised money through local sponsorships and donations with initiatives such as their "Buy a Bale" campaign, which garnered anywhere from \$100 to \$10,000 per bale.

Along the way there were lots of pleasant surprises. The City of Cambridge, for instance, sold the land to the cooperative for \$55,000 then returned the money as a donation a year later. Costs were kept to a minimum through some frugal management, including using locally produced and recycled materials.

Among the residents is 19-year-old Susan Wang, a student who has just begun her second year of architecture studies. "This was my first opportunity to be on-site and work with materials," she says proudly. "It's pretty exciting. You walk around and you say, 'I built that part.' "

Grand House Cooperative is owned by University of Waterloo architecture students and members of the community. On top of a one-time \$500 deposit, each resident pays a monthly fee of \$480 to cover mortgage and operating costs. It could very well become the model for future student-inspired projects. *Paul Gains*



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CIRCLE 17

Some suggestions on how to spend \$800 billion

Critique

By Michael Sorkin

Dear President Obama,

I am extremely heartened that you are planning to address our miserable economic situation with a massive investment in infrastructure. This is not simply a logical and efficient way of translating dollars into jobs (although it's always important to ask for whom), it is an investment in the long-term future of the country. Although I am writing this in December and don't know precisely what the shape of your program will be, I appreciate that it will be of a magnitude commensurate with the problems at hand. You've already suggested that it will be the largest investment in public works since the building of the interstate highway system in the Eisenhower days, and that in the interest of speed you will be seeking "shovel-ready" projects. While I understand that the Eisenhower analogy is meant to suggest magnitude and "shovel-ready" efficiency, I urge you to be cautious about additional implications. The last thing we need is more highways, and those "shovel ready" projects will tend to reflect old priorities, not the change we need and can believe in.

Here are 10 suggestions for a stimulus program that will help remake our cities and take them into the new century.

1. Prepare for the postautomotive urban environment. After taking care of the most pressing repairs to

Contributing editor Michael Sorkin directs the urban design program at City College of New York and runs Michael Sorkin Studio.

bridges and roadways, initiate a massive aid program for the creation of a postautomotive urbanism. This will mean enormous investment in urban mass transit, intercity rail, as well as a planning and design regime that puts human locomotion – on foot, on bicycles – at the very top of the transit hierarchy. Both our cities and suburbs need radical redesign to incorporate systems that are in fundamental sympathy with urbanity. Instead of offering subsidies to convenience cars (look at the damage done to cities by the availability of irresistible financing in which the feds pick up 90 percent of the tab for the construction of interstates), the government should encourage compact cities that consume less energy and offer a good mix of uses. Subsidies should go for removing traffic lanes, not adding them. The effects of such "greenfill" would be to increase urban greenery (mitigating the heat-island effect and refreshing the air), offer space for pedestrians and public transit, and rebalance the use of what is far and away the largest component of our public built space.

2. Reconceive the automobile industry. Do not simply bail out the car companies, but force them to rebuild based on a new paradigm. This should include both their involvement in sustainable forms of mass transportation as well as a dramatic reconsideration of what an automobile should be in our era. Although moving rapidly away from fossil power is crucial, so is the production of cars that are specifically designed for cities. Instead of the large, dangerous vehicles optimized



Flooded after Hurricane Katrina in 2005, New Orleans still has areas that need to be rebuilt.

can quickly make to reduce energy consumption. Because such work does not require large organizations, it is most likely to benefit smaller businesses. Moreover, what could be a more suitable activity than a WPA-like intervention in both training and implementation? America has an obscenely large prison

for the highway, we need a new class of small, slow, nonaggressive, clean cars for the urban environment – cars that fit comfortably with reduced roadways and the expansion of the pedestrian realm.

3. Rebuild the sewers. We need a massive program to reconstruct our water and sewage systems. Money should flow to eliminate sewers that mix storm and waste water in order to reduce pollution and conserve and appropriately reuse scarce water resources. We must also introduce gray-water systems and bioremediation facilities everywhere possible to further manage this life-giving asset.

4. Green America's buildings. Raising standards for insulation and weatherization and greening the roofs of our buildings is perhaps the single most efficient expenditure we

population. Instead of allowing it to languish, why not institute a large-scale program to train inmates in the skills necessary to green the country, creating a CCC work-relief program for the new century and a new cadre of small entrepreneurs. Imagine this huge cohort insulating, green-roofing, planting urban forests, repairing and expanding parks, managing urban agriculture, organizing recycling and reuse programs, and then returning to their neighborhoods to act in the vanguard of their sustainable transformation.

5. Convert rapidly to renewable energy. Undertake a Manhattan Project-scaled effort to convert our energy systems to renewable sources. After decades of palaver, it's time to put up or shut up about this. We have come to understand that there is no silver bullet – no single

Critique

system – that will move us beyond petroleum. And it has likewise become clear that much of the technology for rapid conversion already exists: wind-, hydro-, tidal-, gradient-, and solar-energy systems are ready to go and ready to be applied at all scales, not simply concentrated in the hands of giant utilities. Let us subsidize a vast conversion (and vastly discourage the use of such disproportionately dangerous, expensive, and dirty technologies as oil, coal, and nuclear energy). Let us also dramatically increase investment in research on the next generation of possibilities. Such expenditure is one of the most efficient ways of leveraging investment.

6. Build schools. Speaking of research, let's spend billions on building and repairing academic facilities. I may be prejudiced, but years of teaching have convinced me that good schools are the most important



Rebuilding the nation's sewers should be part of the stimulus program.

key to both prosperity and equity. Our underfunded and unequal school systems are both an embarrassment and an obstacle to real progress. While I will not offer my opinions on testing, vouchers, school choice, or any of the other educational policy controversies of the moment, I am certain of one thing: Beautiful, spacious, and well-equipped school and university buildings can make

an enormous difference in the self-esteem of students and the effectiveness of teachers and researchers.

7. Build public housing. The bursting of the housing bubble has not simply helped plunge the economy into recession, it has been an object lesson in the distortions of the market. The profligacies of credit extended to those who could not afford it –

often on incredibly deceptive terms – and the widely bruited fantasy that prices would simply rise forever, have helped to demonstrate once again that anyone who believes uncritically in either the wisdom or justice of the market is foolish. Despite the fall in prices, the nation still faces a crisis of both housing affordability and quality. As the national income gap continues its obscene growth, both the poor and the middle class are being squeezed out. It's time to get over the old politics of indirection and get back to the direct provision of vital services. We massively subsidize home ownership via mortgage-interest deductions but can no longer bring ourselves to support the idea of public housing as something government can build directly. Yet a third of Americans live in substandard or unaffordable housing, and the market has shown neither the inclination nor the ability to solve this problem. Government can. But subsidy strategies – whether offered to homeowners or developers – are not enough. It's time to step in both to repair and renew existing public stocks



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and to construct millions of new units. To be sure, we've learned the lesson of public housing built meanly, housing that simply concentrates the poor in new ghettos. So let's get on with something better, housing that will allow our cities to be fairly shared by all their citizens.

9. Build New Cities. When the cold war came to its close, there was much talk of what might be done with the "peace dividend," the funds freed up by the disappearance of the Soviet threat. It's time to pay that dividend. While I'm as Keynesian as the next born-again New Dealer, it's clear that the trillions in giveaways and bailouts to the fat cats in the financial sector under Bush and the huge sums you propose to spend on stimulus will have a disastrous effect on our out-of-control national indebtedness; the Chinese are unlikely to buy our paper forever. Huge savings are also needed, and the one truly soft spot in the budget is defense, which currently consumes a trillion dollars a year. (According to an article in the

Washington Post by Linda Bilmes and Joseph Stiglitz, the war in Iraq alone will eventually cost \$3 trillion in direct and indirect expenses.)

You have pledged to withdraw our forces, but why stop there? How about cutting defense spending in half and using the money for something constructive? Of course, it doesn't make sense to simply fire our military personnel, discard their resources, or sever the intricate cultural connections of the military-industrial complex. Let us, instead, give the military and its contractors a new task commensurate in grandeur and importance with warfare: building cities. As towns from Fort Wayne to Fort Worth show, the military has long played a crucial role in setting our urban pattern and providing necessary infrastructure. At a time when the automobile-induced pattern of edge cities and sprawl has spun completely out of control, what better antidote is there than the systematic construction of hundreds of new towns on a radically sustainable pattern? And what better use is there for

a military that has been growing for two centuries than to put it to work converting its thousands of bases into new cities and towns?

9. Reconstruct New Orleans. I was surprised at how little New Orleans was discussed during the campaign. Although the levees have been repaired to a point and prime tourist areas restored, the city remains massively depopulated and little has been done to rebuild most of the neighborhoods destroyed. Why not step up to the plate? We take it for granted that federal money – via the Army Corps of Engineers! – will be spent on flood-mitigation measures. But why not spend on the rest of what needs to be done? I find it beyond ironical that we have poured tens of billions of dollars (huge portions of which have been squandered due to inefficiency, corruption, and greed) in "rebuilding" the Iraq we destroyed, but have yet to make an even remotely similar commitment to our own devastated city. Instead, we do not simply countenance racist inertia but even sanction

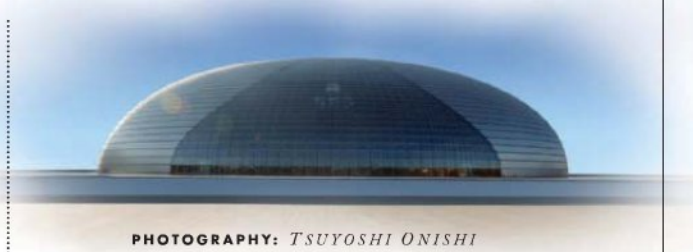
the destruction of the city's public housing stock. Make this city great again. Send in the Urban Forces!

10. Clean Up the Place. There are around 1,300 "Superfund" sites in the U.S., and the rate of cleanup has slowed to a snail's pace. Part of the reason is political: There are no funds in the Superfund. Another is the difficulty in compelling polluters to do the remediation themselves. The economic crisis will only increase the number of companies in bankruptcy or otherwise able to plead poverty. And the Superfund sites are only the tip of the toxic iceberg. Our cities continue to be plagued by air and water pollution, by dangerous materials, and by overwhelming amounts of solid waste. Taken together, this is a public health emergency. As you move to reform our medical delivery system, it would make a lot of sense to look to the causes of our ill-health; to make the country beautiful; and to restore our land, air, water, and woods to something a lot closer to pristine. We'll all breathe easier. ■

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Greening your design culture to gain a competitive edge

Practice Matters

By B. J. Novitski

Slumps in the construction economy are good times for firms to rethink many things, including the philosophies that underlie their design work and the way they collaborate with consultants. One strategy that potentially accomplishes all of these things, according to consultant Barbra Batshalom, executive director of the Boston-based Green Roundtable, is to “green” your practice. Many U.S. firms are already encouraging staff to earn LEED certification and research sustainable materials, but she believes this is not enough. Truly greening your firm requires a substantial restructuring of firm culture and design processes.

High-performance buildings are not simply a collection of new materials and equipment plugged into conventional shells. Rather, they require attention to sustainable goals during programming, siting, and massing design. This means inviting mechanical engineers to collaborate from the outset. If they get involved in design early, they can provide data that informs shell design, for instance. If a curtain wall responds well to sun and wind, the building can rely more on natural energy, and the mechanical equipment can be smaller. But such opportunities for sustainability are lost if the engineer sizes cooling units based on the assumption that the building’s skin will be conventionally, and therefore

B.J. Novitski writes about architectural practice and sustainability. She can be reached at bjn@efn.org.



The economic slump may allow your firm the time it needs to rethink its green design culture, and to gain a competitive edge in the process.

poorly, designed. This may be the hardest part of greening your firm, Batshalom says. “It’s easier to figure out how to make your internal standards or your specifications LEED-compatible, but to change the process of design and your relationship with your mechanical engineer takes a lot longer.”

In a program she dubs “Green Design Boot Camp,” Batshalom guides firms through a process of restructuring. She believes that in successfully integrating green design – product and process – firms can achieve business performance and quality that are not thought of as related to green, including profitability and internal process

efficiency. “These traditional business goals are a priority for any architecture firm and also relate specifically to producing healthy, high-performing and cost-effective buildings,” she says. These goals, along with a better-educated staff and better relationships with clients and consultants, all weave together in a framework created when green becomes fundamental and not just a design add-on.

Some firms still avoid sustainable design because they believe it is a time-consuming profit drain. But the opposite can be true, Batshalom argues, if the firm recognizes that a lot of design effort needs to be “front-loaded.”

Preliminary decisions made collaboratively with engineers can save time later in design – in reducing change orders, for instance. Staff time can be saved through process efficiencies that come with integrated design. Green-construction costs, often perceived as a barrier for clients, can also be at or below conventional construction costs. “The money you’re saving by right-sizing your mechanical equipment,” she points out, “can be put into finish materials if the contract is structured properly.” And if life-cycle and future energy costs are factored in, sustainable design can be vastly less expensive for building owners.

Firms that develop reputations for such buildings will have a market advantage during hard times and be able to draw in new clients. Many clients today, Batshalom argues, still perceive that firms offer more “greenwash” than true ability, so she advises her architect-clients to base their marketing on a solid foundation of metrics and performance data for greater credibility in a competitive market. For instance, a firm can expand its scope of services to include carbon-footprint analysis, green operations, and maintenance plans.

According to Batshalom, most firms that have already begun greening themselves have still not internalized the “all-green-all-the-time” philosophy she espouses. “They’re getting their staff LEED accredited,” she says, “but they don’t understand the management ramifications or the

PracticeMatters

internal commitment they need to make as company in order to do it efficiently and cost-effectively.”

The 80-person Portland, Oregon, firm SERA is approaching the “all-green-all-the-time” goal. About 80 percent of its projects are now aimed at LEED certification. In addition to working with mechanical engineers early in design, the firm has hired one to work in-house. According to SERA associate principal Clark Brockman, AIA, its staff engineer conducts energy modeling well before working with consultants. “She provides guidance early on, when things are happening fast and furious,” Brockman explains, “when designer and client are trying to figure out whether the building makes financial sense, before sustainable design is typically a driver.” He notes that beginning with constraints such as building orientation and optimum glazing

area is much more effective than inserting these ideas later in design.

As part of practice-greening, Brockman encourages architects to get involved in public policy work. He advises at the city, county, state, and federal levels and marvels at the effect of progressive policies on green building. In Portland, incentive programs pay for the “soft costs” – LEED paperwork, energy modeling, building commissioning – making clients more enthusiastic and making it one of the greenest cities in the country. Brockman also advises firms to sign on to the Architecture 2030 Challenge. “The design profession has the ability to change U.S. energy use more quickly, on a greater scale, than almost any other sector. I don’t think a lot of the profession knows it yet.”

Brockman also believes it’s useful to get involved with local chapters of the AIA Committee on

the Environment (COTE) and of the U.S. Green Building Council. This involvement can teach architects how to talk about sustainability issues for various audiences. “It’s very different trying to sell a green building to a university and a developer,” he notes. “Learning how to make the case for both kinds of client is really valuable.”

Some of the skills needed in building green are ones that few learn in architecture school. Brockman jokes: “I can’t believe how much time I spend, as an architect, talking about finance and chemistry. Firms need to understand all the workings of how buildings are built, financed, and developed, in order to make the case for green building.” They should also understand the chemical composition of materials and their impact on people, as well as other characteristics such as their source, embedded energy, and recyclability. Brockman adds, “We went through architecture school assuming we didn’t have to take

finance or chemistry. But understanding both is now a priority.”

In 2006, SERA completed a LEED-Gold remodel of its own offices. The firm introduced daylighting, nontoxic materials, energy-efficient windows, and mechanical systems. It encouraged employees to find transportation alternatives and collectively altered its attitude to energy and resources. This change of firm culture, Brockman says, is spilling over into design practice. “If we’re going to ask our clients to do more with less,” he says, “we need to show them we’re doing the same.” SERA’s reputation as a green design firm has attracted clients seeking more sustainable alternatives. For firms just beginning to green their practice, Brockman suggests getting their own house in order is a good first step.

Is an economic downturn an appropriate time to worry about process changes and office remodels? Why not? If your workload is light, what better time to change some light bulbs? ■

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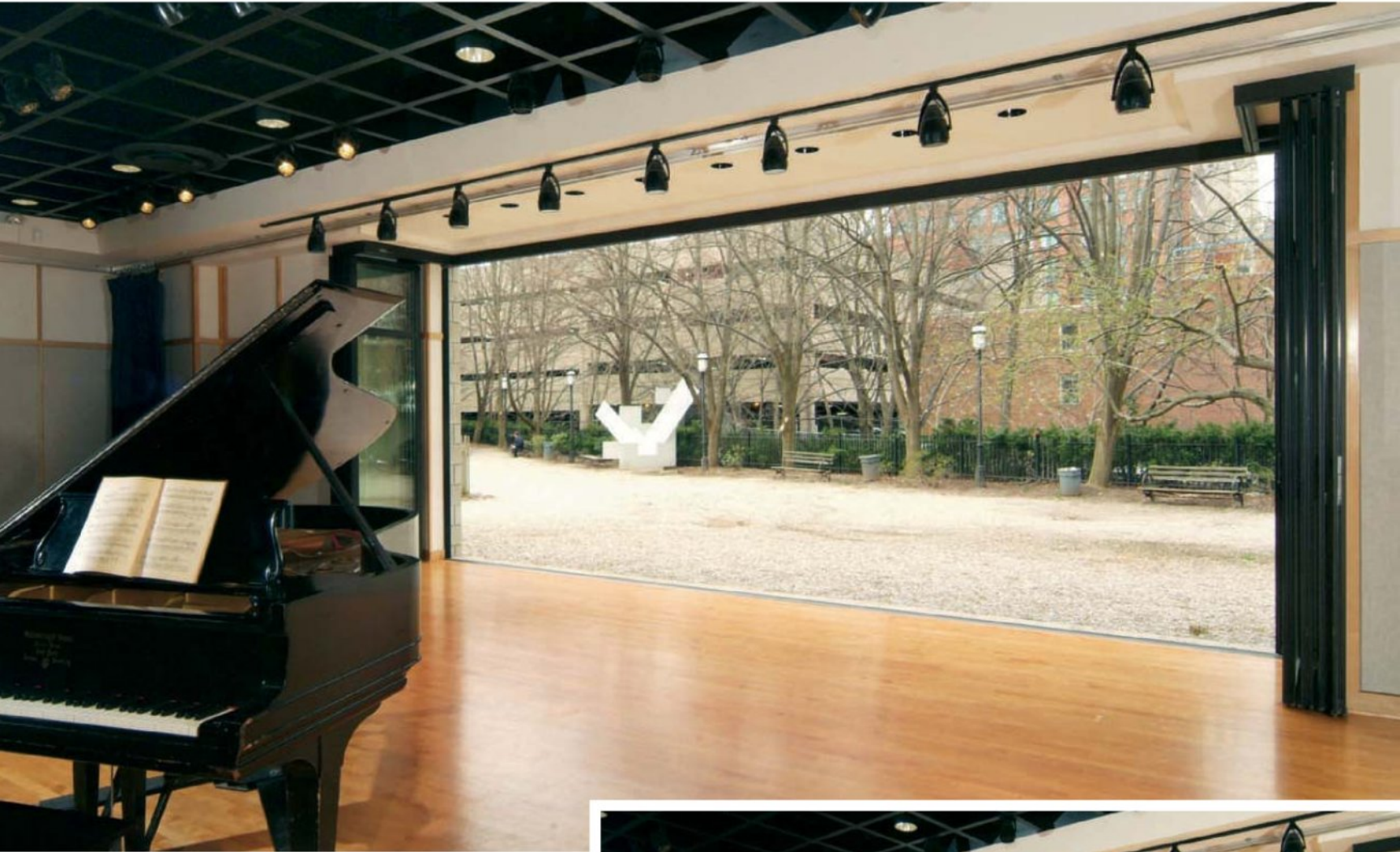
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Books

DEPARTMENTS

Le Corbusier: A Life, by Nicholas Fox Weber. New York: Alfred A. Knopf, 2008, 848 pages, \$45.

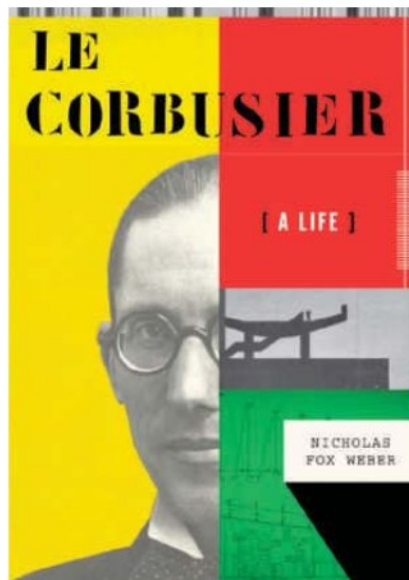
Le Corbusier was notoriously secretive. Everyone knows the official persona, the man with the heavy-rimmed glasses and the bow tie, but few have any idea about his private life. Given the vast number of books written about his architecture, it is surprising that there has been no detailed biography. With *Le Corbusier: A Life*, Nicholas Fox Weber attempts to put things right. His book, more than 800 pages long, represents roughly a decade of labor by its intrepid author. He traveled the world in search of documentary sources and personal reminiscences, and visited Le Corbusier's far-flung buildings. The result is a text full of intriguing detail and new information about the architect's friendships, family, and professional relationships. But the book is not always convincing when analyzing Le Corbusier's buildings; still less so when trying to make links between his life and his art.

Fox Weber takes us through the stages of Le Corbusier's life, tracing the development of Charles Edouard Jeanneret from his introspective youth in provincial Switzerland to his maturity as "Le Corbusier," the protagonist of Modern architecture on a world stage. The author reveals the complexities of a man obsessed with his historical destiny yet curiously vulnerable, aloof yet capable of sudden shows of affection, dogmatic yet open to fresh experiences and experiments. Fox Weber was lucky enough to have access to a stash of letters between Le Corbusier and his mother (who lived

to be nearly 100), and these reveal the intensity of their relationship, chart the high and low points of Le Corbusier's career, and add to our understanding of his life with his wife, Yvonne Gallis. Unfortunately, the author cannot resist trite and outdated psychological explanations, and he really overdoes the mother fixation.

To accurately situate a major artist's life in its personal, historical, and cultural setting, a biography needs to strike the right balance between the private self, its creative universe, the world of work, the political realm, and events of history. On the whole, Fox Weber is most interested in the private sphere, including the erotic. The book provides an extensive portrait of Le Corbusier's relationship with his wife. They were an odd couple. Excessive drinking contributed to Yvonne's deteriorating health, and she died first. They are buried together in a tomb that Le Corbusier designed overlooking the Mediterranean at Roquebrune, a place where they spent many summers, and where he died while swimming in August 1965. Le Corbusier had several liaisons over the years, including possibly a brief affair with the American expat entertainer Josephine Baker and a longer relationship with Marguerite Tjader Harris, who looked after him during his troubled lecture tour of 1935 in the United States and became a lifelong friend.

But Fox Weber cannot resist sexing up the story whenever he can, and this leads to an unbalanced and caricatured treatment, even of Le Corbusier's architectural production. Fox Weber reveals that the young man was obsessed with his erections when in Istanbul during his *Voyage*



d'Orient of 1911 but neglects to mention the momentous impact upon him of the Suleyman Mosque, recorded in several stunning sketches. When dealing with the period around 1917, the author suddenly asserts, without demonstration, that, "The act of love and the making of buildings were inextricably linked in Le Corbusier's mind." But he forgets to mention the

FOX WEBER CAN'T RESIST SEXING UP THE STORY WHENEVER HE CAN.

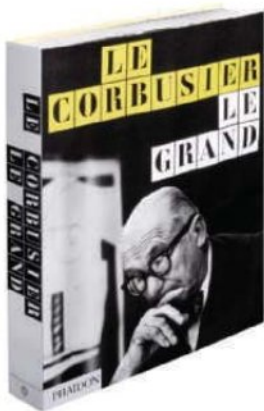
absolutely crucial Villa Schwob just completed in La Chaux-de-Fonds, Switzerland. Later, when discussing the *Unité d'Habitation* in Marseille (a work partly inspired by the layout of ocean liners), Fox Weber again indulges in psycho bunk, writing of the cabinlike interiors: "In essence what the architect wanted was to have his mother in the setting he had shared

with Josephine Baker."

It is a pity that Fox Weber's editors did not apply the brakes, for there is much of interest in *Le Corbusier: A Life*. The author grabs the nettle of Le Corbusier's involvement with the Vichy regime and also supplies much fresh information about the architect's postwar clients. He reconstructs the context of Le Corbusier's Indian buildings, in part with the testimony of people who worked on them. He seems most at ease when dealing with the religious works, especially the Monastery of La Tourette and the Chapel at Ronchamp, in

France, and he brings them alive in descriptions. Oddly, given the detailed monograph available on the subject, he gets into a muddle over the architect's only building in North America, the Carpenter Center for the Visual Arts at Harvard. Since *Le Corbusier: A Life* surely relies upon numerous secondary sources, it should have included fuller references and a bibliography.

Fox Weber has filled out the picture of Le Corbusier's life in several respects, but he has undermined his own efforts at times with melodramatic prose, misleading projections, and pop psychology. Somehow the vast mind and imagination of Le Corbusier, the artist and architect, remain beyond reach. Perhaps there is another sort of life, the life of forms, and perhaps this obeys a logic that cannot be explained by biography alone. *William J.R. Curtis*



Le Corbusier Le Grand, by editors of Phaidon Press; introduction by Jean-Louis Cohen. London and New York: Phaidon, 2008, 768 pages, \$200.

A book that weighs 20 pounds and costs \$200 – even one on Le Corbusier – seems an absurd anomaly in a digital age and a deep recession. Go to the Web, you say. But this compendium is much like the Web, only better. The “visual biography,” as it is called, is actually a giant scrapbook you can dip into the way you would click on a Web page. And instead of looking at a small screen cluttered with badly designed ads, you turn to a spread on, say, Le Corbusier’s surreal penthouse for the patron and decorator Carlos (aka Charles) de Beistegui in Paris in 1931, with plans and rarely seen photographs. Turn the page and you find a spread on the Le Corbusier’s sample books of wallpapers for Salubra, the Swiss manufacturer. In the rest of the book are the notes, letters, photos, plans, and sketches having to do with large projects (including his self-built housing “*Constructions Murondins*” of adobe and logs for the Vichy government (1940–42). The famous projects are also there, including the Villa Savoye (1929), and such experimental works as the Philips Pavilion at the Brussels World’s Fair (1958), with its multimedia “electronic poem.”

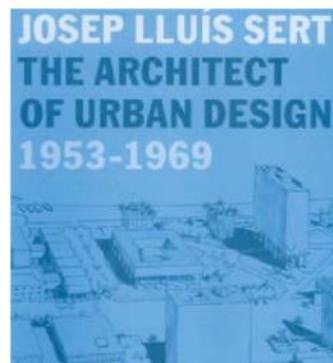
The 768-page book with 2,000 illustrations, brilliantly designed by Julia Hastings, includes chapter introductions by Le Corbusier scholar Tim Benton (who tucks in discussions of the master’s political dalliances as well as personal affiliations and professional tales). An illuminating introductory essay by architectural historian Jean-

Louis Cohen and an accompanying softcover publication that translates the French letters, diaries, and newspaper clippings, rounds out the book. In 2006, Phaidon published a similar publication, *Andy Warhol, Giant Size*. But who knew that monster format would work so well with an architect who made such a complex contribution to the discipline? Even in a recession, the expense is worth it. It’s just hard to lug around. *Suzanne Stephens*

Josep Lluís Sert: The Architect of Urban Design, 1953–1969, edited by Eric Mumford and Hashim Sarkis. New Haven: Yale University Press, 2008, 256 pages, \$50.

Josep Lluís Sert was an International Style architect and urbanist from Barcelona who escaped Franco and emigrated to the United States in the late 1930s. A member of CIAM and a friend of all the great Modern architects of the period, he became dean of Harvard’s GSD and a primary architectural player in the 1950s and ‘60s. At Harvard, Sert coined the term *urban design* to correct what he thought was the unfortunate tendency of urban planners to remove themselves from the aesthetic and physical aspects of their discipline and restrict themselves to economics and public policy. His books, *Can Our Cities Survive?* and *The Heart of the City*, were widely read and were influential in the postwar period of urban renewal and renovation.

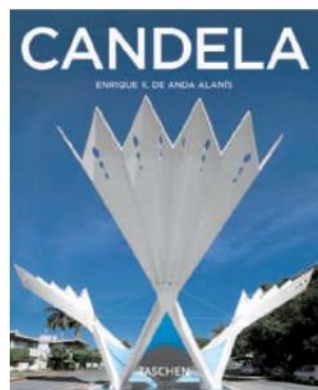
Much of Sert’s urban design work might be characterized as “Corbu light.” Because of Sert’s greater interest in enclosing urban space, and with a typically smaller scale of intervention, his urban schemes are more closely connected to their contexts than those of Le Corbusier, Ludwig



Hilbesheimer, Mies van der Rohe, and other Modernists of the era.

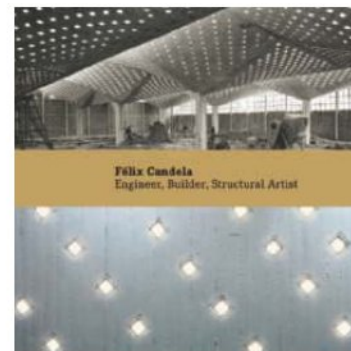
This volume of 11 essays – from various authors – on Sert’s importance as an urban designer, while not an exercise in hagiography, is far from critical. One of the pieces is on the urban theories of Le Corbusier, while another is on Joseph Hudnut, who, as the founding dean of the GSD, had brought Walter Gropius to Cambridge, Massachusetts. Hudnut and Sert together popularized the idea of citizen inclusion in design decisions, which was typically left out of the design and planning process of the postwar era. This book is for anyone wanting to better understand in detail Modernist ideas of urban space and form. *Thomas L. Schumacher*

Candela, by Enrique X. De Anda Alanís. Köln, Germany: Taschen, 2008, 96 pages, \$10.



Félix Candela: Engineer, Builder, Structural Artist, by Maria E. Moreyra Garlock and David P. Billington. New Haven: Yale University Press, 2008, 208 pages, \$45.

As an architecture student in his home city of Madrid, Felix Candela (1910–97) was already obsessed with the geometric principles informing structural theory, which he would apply to understanding the structural issues of thin-concrete-shell construction. Driven from Spain into political exile in Mexico, Candela worked as a freelance architect specializing in thin-concrete-shell designs for a variety of Mexican public buildings, most notably, churches. Alanís perceptively notes that Candela’s commission for The Church of Our Miraculous Lady in Mexico City offered a kind



of “experimental laboratory for the numerous spatial possibilities he was able to develop from the geometry of hypars.”

The hypar, also known as the “hyperbolic paraboloid” (think of a Pringle potato chip), was at the heart of Candela’s contribution to modern architectural design. With reinforced concrete as his material of choice, Candela created nearly 1,000 Mexican buildings possessing a double-curved structural form of extraordinary aesthetic dynamism, durability, and economy. Candela was not the first to work with thin concrete shells, but he was the most prolific, arguably the most sophisticated theorist on the form, and the designer who most completely conceptualized these buildings as engineering marvels rather than artful architectural icons.

Candela was a self-professed “builder” who refused throughout his career (from 1940 to 1970) to embrace the title of architect. Taschen’s *Candela*, part of its fine Basic Architecture series intended for a general readership, is unconcerned about distinctions between builder, structural artist, and architect. Garlock and Billington’s book, aimed at a professional readership, is a magisterial overview of Candela’s synthesis of geometry, engineering, and art. Their book was published in conjunction with an exhibition at the Princeton University Art Museum. Faculty and students from Princeton’s Department of Civil and Environmental Engineering contributed chapters.

Purchasing the inexpensive Taschen book will spark your interest. Then spring for Garlock and Billington’s impeccably written, well-illustrated overview of this modern Leonardo. *Norman Weinstein*



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COMMERCIAL

Trade Show Review Bologna • Cersaie

Tiles are elevated to an art form at Cersaie, the ceramic industry's annual fair in Bologna, Italy. Yet this year, **bath and radiator companies** also reinvented their goods to stunning effect, playing with form, color, and material. *Julie Taraska*

1 Tear right in Déchirer ("to shred," in French) is designer Patricia Urquiola's debut line of ceramic tile for Ceramiche Mutina. The line features large-scale pieces with surfaces imprinted with snatches of different patterns. In four sizes and five colors, including gray (shown). Italian Trade Commission, Ceramic Tile Dept., New York City. www.italytile.com **CIRCLE 200**

2 Cityscapes Maps provide the design for the Streets range, which depict the roads in a variety of towns (Macao, shown). The pathways are marked by a glossy embossed line on the larger ceramic tiles (23.6" x 47.2") and in bas-relief on the smaller ones (23.6" square). Lea North America, Charlotte. www.ceramichelea.com

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3 Clear winner Containing a minimum of 80 percent postconsumer recycled glass, Feel mosaics are available in 12 opaque colors and 26 pre-set patterns. Prices for the 3/4"-square tiles start at \$10 per square foot. Trend USA, Miami. www.trendgroup-usa.com **CIRCLE 202**

4 Go with the flow In Matteo Thun's Invisible Bath for Rapsel, drains, faucets, and bulky pipes all but disappear. Instead, the suite – made of water-resistant green pine – puts the movement of water front and center. Still in the concept stage, with availability to be determined. AF New York, New York City. www.afnewyork.com

CIRCLE 203

5 In the pile Comprising a sculptural stack of steel discs, the Milano radiator can be affixed to the wall or placed on the floor. It comes in both electric and hydraulic versions, the latter of which uses 1/3 less water than other models. Tubes Radiatori North America, Corona Del Mar, Calif. www.tubesradiatori.com **CIRCLE 204**

6 Hot stuff Nera is fabricated from lava quarried from Mt. Etna, which is then cooked until its pores are sealed. The procedure means the tile doesn't stain like marble or granite or need any protective coatings. Available in a choice of a honed, crusted, and brushed finish. Casa Dolce Casa USA, Alpharetta, Ga. www.casadolcecasa.com **CIRCLE 205**



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Benedetta Tagliabue joins Merce Cunningham on stage

Collaborations

By Josephine Minutillo



Merce Cunningham with Benedetta Tagliabue (above). A working model of the set design, which accommodates musicians on stage (above right). The shapes and light qualities of crystal inspired the design (below).

Architects rarely get to spread their artistic wings and join forces with professionals in the performing arts. So when the opportunity to work with dance legend Merce Cunningham presented itself to Benedetta Tagliabue, principal of renowned Barcelona-based studio Miralles Tagliabue, she jumped at the chance.

For his part, over the past six decades, Cunningham has become as famous for his unique, and often

unexpected, collaborations – earlier with artists Robert Rauschenberg and Jasper Johns, and recently with rock bands Radiohead and Sigur Rós – as he is for his groundbreaking choreography. “I’m interested in artists that explore new ways of working, certainly in music, but in design also,” explains Cunningham.

This distinguished pairing of Cunningham and Tagliabue came at the suggestion of Trevor Carlson, ex-

ecutive director of the Merce Cunningham Dance Company in New York City. For a special performance at the Brooklyn Academy of Music to celebrate Cunningham’s 90th birthday on April 16, the company decided to bring the musicians into the performance space. “It seemed clear that if we were taking the musicians out of the orchestra pit and putting them on stage, it would be best to work with an architect,” says Carlson. “I was introduced to Benedetta in Barcelona. What struck me about her architecture is the dialogue her buildings have with the community around them,” he adds, referring to projects like Barcelona’s Santa Caterina market (2005). “It’s no different working on a stage with a group of dancers and musicians – you’re simply agreeing to occupy the same space at the same time.”

Tagliabue had only designed for the stage once before – for an opera at Barcelona’s Liceu. “I had no real experience doing this,” she recalls. “Like Merce, though, I enjoy taking risks.” But while Cunningham has built a career leaving things to chance – quite literally the toss of a coin – Tagliabue has taken a very architectural approach. The geometries and reflective qualities of crystal inspired the initial design concept, which has developed through a series of angular models. The models’ dynamism, a trademark of the studio, will no doubt be intensified on stage by the interaction of the musicians and dancers.

Meetings between the collaborators in the months leading

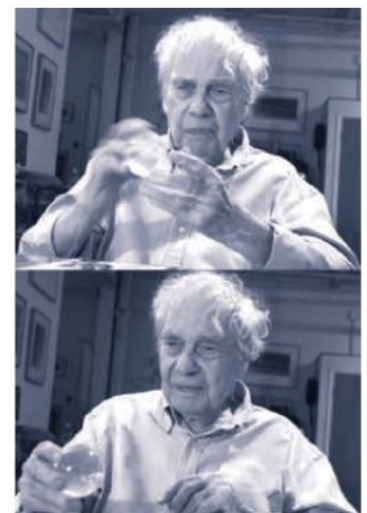


up to the performance have been limited. “Working this way, there has to be some form of good faith,” Cunningham admits. “That moment when we all can see it come together usually isn’t until the dress rehearsal. On occasion, there hasn’t even been a dress rehearsal.” For a man who enjoys surprises, all bets are on this being a very special birthday surprise. ■

Merce Cunningham at 90.

At the Brooklyn Academy of Music, Brooklyn, N.Y., April 16–19, 2009.

[View video interview online.](#)





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Snapshot



By David Sokol

Call it extreme bird-watching. Structures like Mark Johnson's glass-bottomed Grand Canyon Skywalk and Stegastein, a jutting viewing platform in Aurland, Norway, designed by Saunders & Wilhelmsen, are suddenly appearing on rocky promontories and pushing the limits of architecture, engineering, and personal courage. The latest addition to this snowballing phenomenon is Top of Tyrol, a lookout on Mount Isidor in Tyrol, Austria.

An Innsbruck ski operator commissioned local design studio Astearchitecture to design the platform "to energize tourism during transitional seasons and summer," says Astearchitecture partner Frank Ludin. From this perch 10,500 feet above sea level, visitors can take in a 360-degree view of the surrounding Stubai glacier and glimpse the Dolomites, northern Italy's distant section of the Alps. Tourists reach the Tyrol platform by a combination of cable car, sloping pathway, and stair, and have access to the overlook in wintertime only when weather conditions permit it.

Ludin, who notes that the client demonstrated "unlimited openness to experimentation," says the architecture team did not want its creation to appear tacked onto the scenery. Five Cor-Ten-steel beams, mounted in concrete foundations and rock anchors, hug the ridge and cantilever 30 feet from the mountain. They hold a platform comprising 645 square feet of steel net flooring and an equally diaphanous larch handrail. Astearchitecture's composition assumes a sweeping gesture, almost like an orographic cloud drifting off a peak. While it visually blurs with the landscape, the project capitalizes on human innovation: Its parts were prefabricated in a factory and assembled by helicopter lift. ■

Cloud five: A quintet of beams cradles an Alps aerie



PHOTOGRAPHY: COURTESY ASTEARCHITECTURE

Gwathmey Siegel Associates sparks
controversy with an addition
to Paul Rudolph's **YALE ART AND
ARCHITECTURE BUILDING**



The original concrete structure of the Yale A&A Building, viewed from Chapel Street (left), contrasts with the new limestone and zinc addition. To the north, the Collegiate Gothic style of the Yale Daily News building (right) echoes the architecture of the block (site model, below).



PHOTOGRAPHY: © PETER AARON/ESTO (LEFT AND ABOVE)



By Sarah Amelar

Though Paul Rudolph's newly renovated Art and Architecture Building at Yale has emerged as an object of admiration, if not adoration, it generated controversy—as rough-edged as its bush-hammered concrete shell—from the moment it opened. Anticipated as a great heroic masterwork by the university's gifted and legendary chairman of architecture, the Art and Architecture (or A&A) Building was greeted from its completion, in 1963, with a decisive mix of acclaim and disdain. While *The New York Times* architecture critic, Ada Louise Huxtable, praised it as “a spectacular tour de force,” art historian Nikolaus Pevsner, the keynote speaker at the structure's dedication, disparaged it as a work of an “individualist, the artist-architect, primarily concerned with [his own] self-expression.”

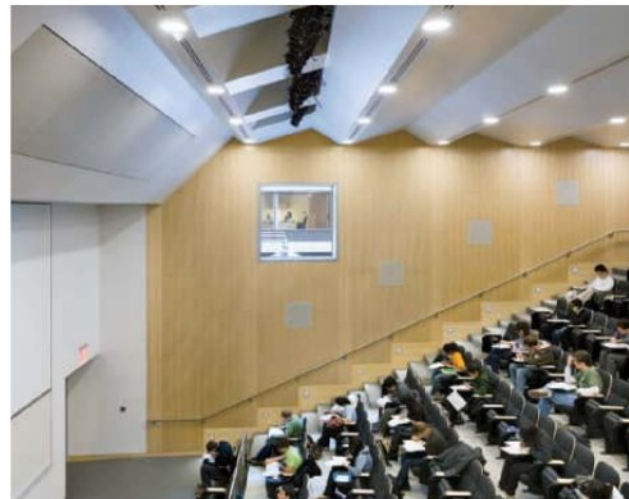
Monumental in its interlocking concrete forms, the building was designed to anchor a key corner site, culminating an architectural procession that includes Yale University Art Gallery, just across the street. With the centripetal force of a pinwheel, the A&A's massing spins off of four complex concrete towers, with a fifth vertical shaft set to one side to house the elevators and main interior stair. Up a run of front steps that pool metaphorically at the base of the building and nearly disappear into the shadows between two towers, the interior unfolded with a panoply of interlocking spaces and planes—37 different levels terracing through seven stories, a penthouse, and two below-grade levels.

Formally and philosophically akin to Frank Lloyd Wright's Larkin Building, the A&A proposed a great cen-

Sarah Amelar, a contributing editor at RECORD, holds a Master of Architecture degree from Yale.



1. Paul Rudolph Center
2. Loria Center
3. Yale Daily News
4. Graduate and Professional Student Center
5. Chapel Street
6. York Street



A bas-relief mural by Fernand Léger (left) is mounted above the new Loria lobby. A second-floor corridor is one of several connecting the old and new wings (below left). The new auditorium (above), paneled in maple, seats 174.

cast-in-place, “corduroy”-textured concrete shell (and long reinforced views of the A&A as an inhospitable fortress). Inside, Rudolph’s vibrant “paprika” carpeting, a warm counterpoint to the A&A’s rough and ubiquitous concrete (inside and out), has been re-created, supplanting decades of mud-brown floor cover. And the open, double-height drafting room, with a replacement Minerva, is gloriously back. (The art students moved to their own structure in 2000.)

Rudolph envisioned the building as a teaching tool, peppering his Modernist castle with fragments of history: plaster casts of Assyrian reliefs and Parthenon friezes; Le Corbusier’s Modular measure; original Louis Sullivan gates; and locally salvaged Ionic capitals. Incorporated with remarkable self-confidence despite the contemporary sway of Bauhaus ahistoricism, many of these items have been preserved or restored.

The A&A’s notorious lack of climate control, or even airflow, has been tackled with modern mechanical systems, largely housed in the addition, and thermally efficient windows. The building is on track for LEED Silver certification.

But with these changes came losses that detract from its sectional richness and complexity. With 37 levels, ADA requirements had clearly become an issue. So the renovation leveled some (though not all) of the sunken jury “pits,” flattening zones that had been integral to the school’s culture. Rudolph’s rough-textured, asbestos-sprayed ceiling treatment required removal in 1973. Here, Gwathmey installed a bright-white, dropped-ceiling system (providing radiant heating and cooling). Its grid of square, semigloss *(Continued on page 136)*



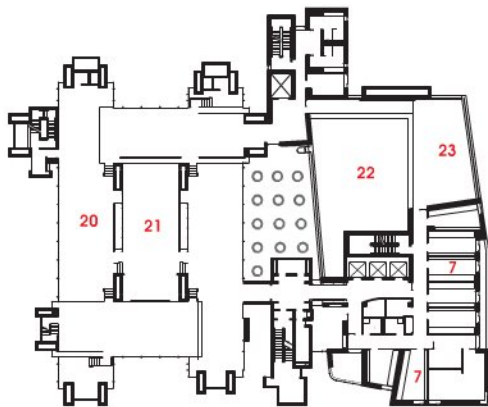
Project: Paul Rudolph Hall and Jeffery H. Loria Center for the History of Art, New Haven
Architect: Gwathmey Siegel and Associates Architects—Charles Gwathmey, FAIA, design partner; Robert Siegel, FAIA, design partner

SOURCES

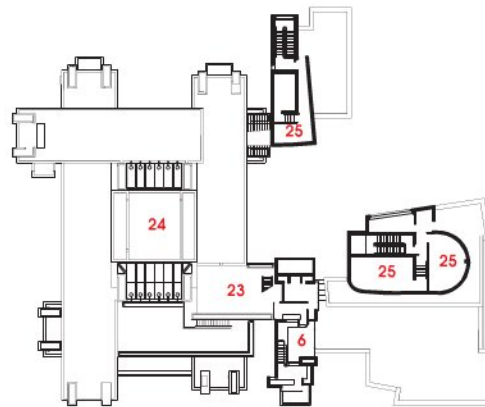
Limestone: Indiana Limestone
Metal/glass curtain wall and windows: Kawneer
Elevators: Schindler Elevator
Planted green roof: American Hydrotech
Glazing: Viracon

The Great Hall is topped by 12 monumental skylights. Visitors pass a circulation desk (right), and walk down steps to the below-grade hall. An amoeboid opening in the stairway is characteristic of Gwathmey's often freewheeling departure from Rudolph's spare style.

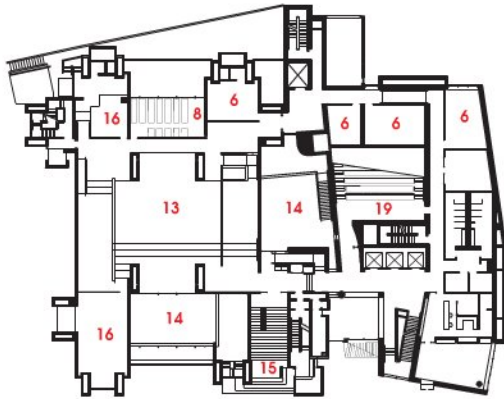




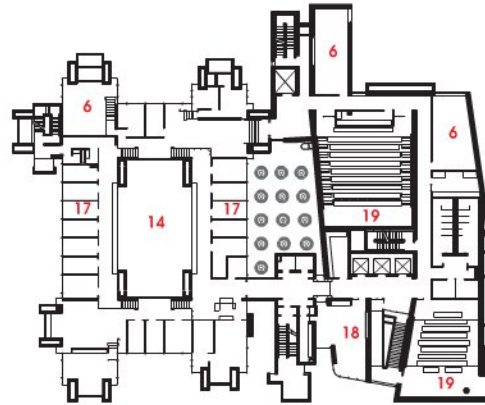
FOURTH FLOOR



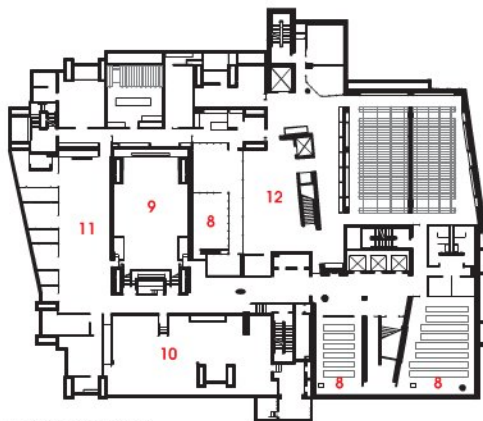
EIGHTH FLOOR



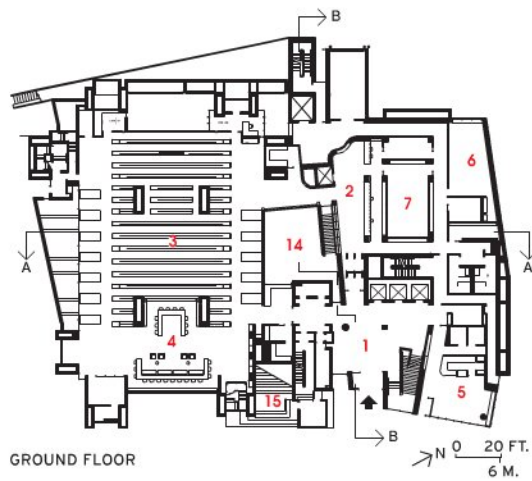
SECOND FLOOR



THIRD FLOOR



BASEMENT FLOOR



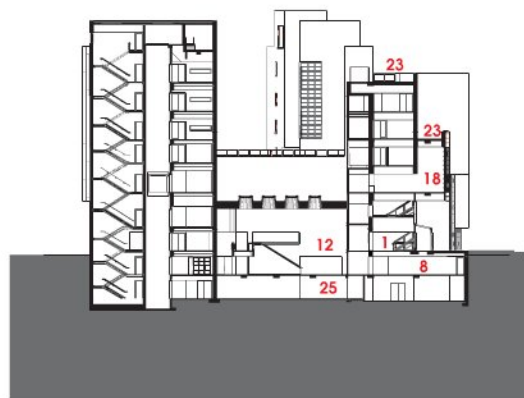
GROUND FLOOR

1. Lobby
2. Library
3. Main reading room
4. Rudolph Reading Room
5. Café
6. Seminar room
7. Office
8. Classroom
9. Hastings Hall
10. Storage
11. Drawing studio
12. Great Hall
13. Gallery
14. Open to below
15. Old entrance
16. Exhibition support
17. Faculty offices
18. Faculty lounge
19. Lecture hall
20. Studio
21. Jury
22. Green roof
23. Terrace
24. Roof
25. Mechanical room
26. Metal shop



SECTION A-A

0 20 FT
6 M.



SECTION B-B



tral communal work space, surrounded by overlooks spanning four colossal piers. Rudolph expressed the focal center as stacked double-height spaces: an exhibition area, rising from the piano nobile and ringed by an administrative mezzanine, and directly above it, a soaring architectural drafting room, surveyed by a cast of a Classical statue of Minerva.

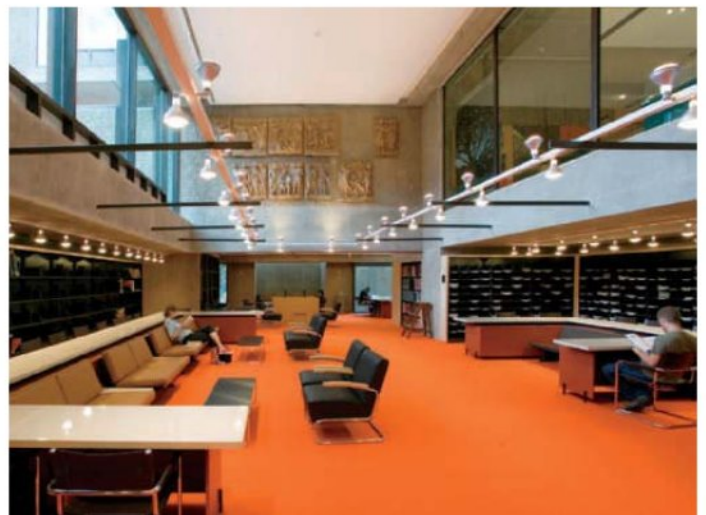
Despite the spatial dynamism, censure mounted. Sculpture students protested their “banishment” to subterranean (albeit skylit) studios; painting students complained of ceilings too low for the era’s increasingly large canvases; and others considered the building an inhospitable fortress, racked by temperatures too hot or too cold. The worst blow came in 1969, with a devastating fire of suspicious origin—widely viewed as arson. Charles Moore, who openly disliked the building and succeeded Rudolph as Yale’s architecture chair, reconfigured the fire-gutted interior, obscuring and hacking up key spaces. Most egregiously, the double-height drafting room was split into two separate floors, each a warren of painting studios.

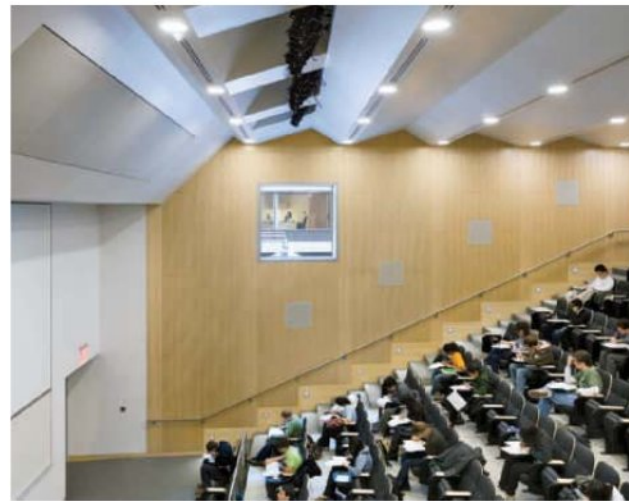
After leaving Yale in 1965, Rudolph only returned many years later, and with great reluctance. That building “no longer exists for me,” he said several years before his death, in 1997. But the design that tragically led to his fall from grace was actually a bold and extraordinary architectural experiment.

To celebrate and restore what lay hidden, tarnished, destroyed, or outright vilified, the university engaged Charles Gwathmey (Yale, M. Arch., 1962) to renovate the 114,000-square-foot A&A Building and design an 87,000-square-foot addition for the art history department. The results range from exhilarating to disappointing.

The most successful part of the \$126 million commission reclaims the existing building—now rechristened Paul Rudolph Hall (as requested by Sid Bass, the renovation’s lead donor). Power-washing and patching—along with vast, glowing new windows—have brought out the exterior interplay of light and shadow, of massive volumes and voids. Gone are 45 years of grime that shrouded the building’s

The renovated Hastings Hall features the re-created “paprika” carpet (above). A jury gathers below the A&A’s famous cast of a statue of Minerva (top right). The gallery space (right) overlooks the Rudolph Reading Room (bottom right).





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The problem of adding onto an icon

By Michael J. Lewis

To recognize a masterpiece in a lovely building is no great feat; the trick is to spot one in an object as insolent, as splendidly belligerent, as Paul Rudolph's Art and Architecture Building at Yale. Few did so when it opened in 1963; it seemed willfully provocative, as if its baffling spatial sequences and corrugated concrete walls were expressly devised to repulse understanding, let alone affection. As it happened, it existed in this shocking form for only a few years before it was mauled beyond recognition. Now the A&A has been restored by Charles Gwathmey of Gwathmey and Siegel, and with great brilliance; his achievement is to reveal just how great it actually is.

Most architecture is conceived incrementally, advancing from plan to section to elevation, but the A&A seems the expression of a single massive thought, its components neatly folded into one another to make a compacted unity. It can no more be separated into structure and space than can a cavern. Such a degree of resolution, rare when it was built, seems almost inconceivable today.

Gwathmey restored its large sheets of glass, reopened its long-closed vertical light shafts, and—most satisfyingly—recreated the open configuration of the architecture studios, with their grand archipelago of platforms and mezzanines. Where original features could not be recreated, his substitutions have been uniformly impeccable, as with the restored but now energy-efficient lighting scheme. Even those changes that compromise the original spatial order—such as the simplification of the main gallery's sprawling stepped floor—have been as sparing as modern building codes allow. In every respect, this is a model restoration.

The addition is another matter. Rudolph deliberately left the A&A "open-ended toward the north," as he wrote in *Architectural Design* in 1964, so that it might "grow in that direction forming a future courtyard." He anticipated an enlargement of the studio spaces, however, and not a new building for the history of art department, with all its attendant seminar rooms and offices. This complicated Gwathmey's task immeasurably. Buildings are rarely as complex as the A&A, whose 10 floors ramify into 37 distinct levels and sub-levels, and whose ceiling heights range from 28 feet to just over 4 feet. To make matters worse, the addition would obstruct the A&A's crucial northern light (so

that the historians who would illuminate art are at the same time, and in quite literal fashion, obscuring it). All this forced Gwathmey to design as a contortionist, bobbing and weaving to let the light pass, and reaching over to grasp the A&A whenever possible.

This programming aspect has been handled imaginatively. Gwathmey has opened up the original art library into the addition at basement and ground level, adding compact shelving and nearly doubling its capacity. The main lecture hall, by far the finest of his spaces, wrapped on three sides by classrooms and offices, perches atop the new circulation desk. Above the third story, the building pulls apart to coax light into the A&A and to make room for a small (and rather forlorn) green-roofed plaza. The divided building continues for another four stories, in the form of a service stack to the rear and a main office block

IN THEIR OWN WAY, GWATHMEY'S ZINC-CLAD ELEVATIONS ARE AS CLEVER AS HIS PLANNING, WHICH IS UNFORTUNATE.

to the street, which contains the rows of monastic cubicles of the faculty offices. These are stacked in the north side of the building in the manner of ice-cube trays, the only passage of regularity in what is otherwise a spatial jigsaw of a building.

In their own way, Gwathmey's zinc-clad elevations are as clever as his planning, which is unfortunate, since cleverness is perhaps the last quality one would wish to flaunt next to the A&A. It is not only the odd little flourishes that seem gratuitous, such as the angled monitor that lights the second-story conference room, pointed upward like a wandering lazy eye. Nor is it the jaunty way that the white limestone bay swings into space, parodying the strenuous display of structure in Rudolph's building like a clown lifting spurious weights next to a genuine weightlifter. It is that these features are placed arhythmically; they neither express the spaces within nor establish a coherent set of relationships on their own terms. They are what no architectural feature should be, verbose but not articulate.

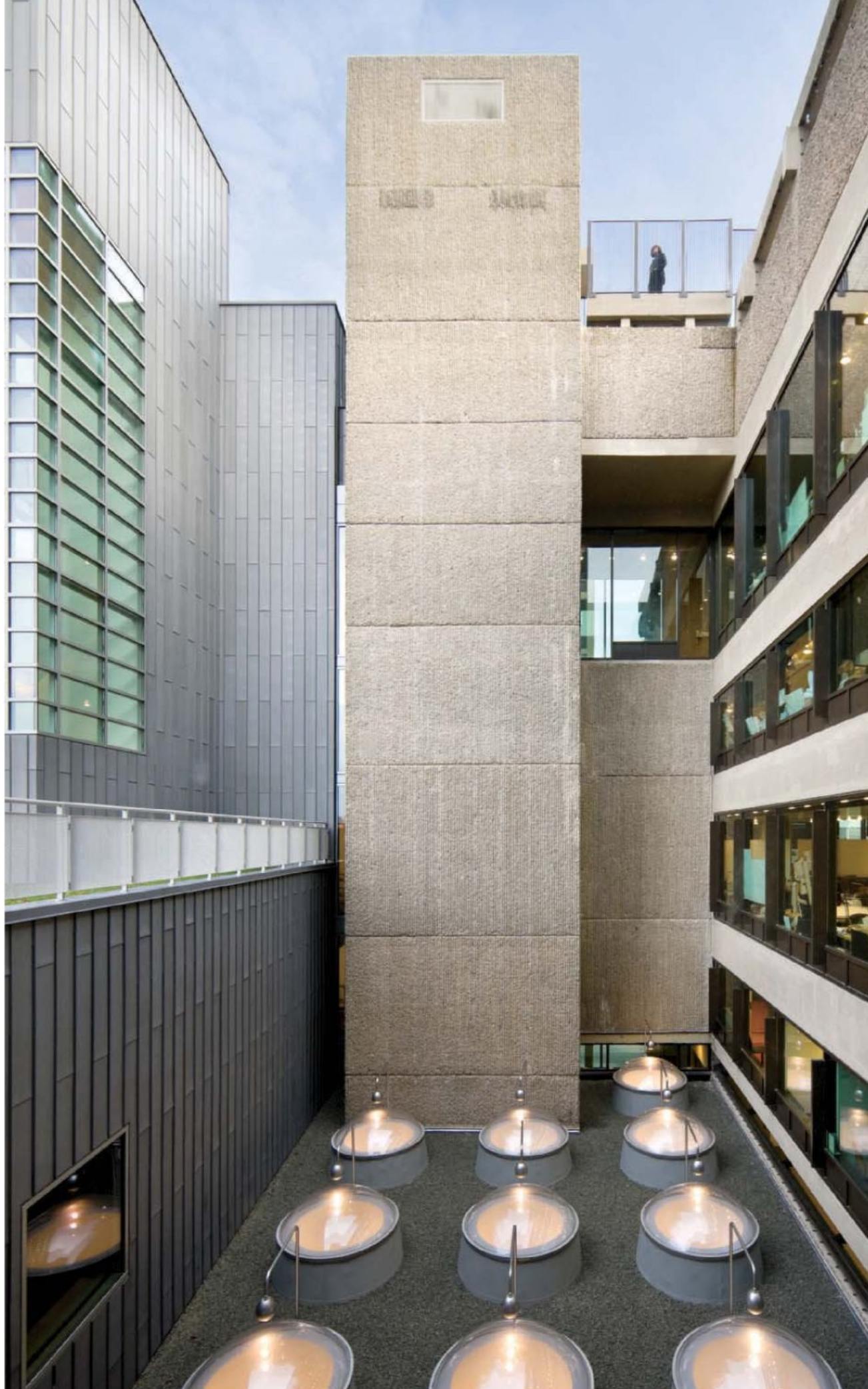
It is possible to add to a masterpiece, but one must first know why it is a masterpiece. Much of the sheer visceral force of the A&A is achieved through contrast with its surroundings, especially Louis Kahn's adjacent Yale Art Gallery, whose very "neutrality," Rudolph observed, made his building "much more plastic." It would be asking too much for Gwathmey to match the emotional intensity of the original A&A. A product of its time, its existential energies—its almost sadomasochistic sensibility, its concrete tormented with hammers—cannot be retrieved and should not be feigned. Perhaps Vincent Scully was right to propose that the facade be made entirely of glass. In the end, Gwathmey stumbled over his insistence that his building "present its own iconic presence in the overall composition." Next to this leviathan of American Modernism, this is one icon too many. ■



Michael J. Lewis is a professor of art and architecture at Williams College.

PHOTOGRAPHY: © EZRA STOLLER/ESTO (TOP); PHOTOGRAPHER UNKNOWN/ESTO (BOTTOM); PETER AARON/ESTO (OPPOSITE)

Archival photos show Rudolph in front of his building in 1963 (opposite, top) and the cast of *Minerva* in the spacious drafting room (opposite, bottom). Skylights, shaped like truncated cones, lie at the base of the atriumlike space (right) and illuminate the Great Hall below. The juncture between old and new emphasizes the contrast between architectural approaches.



Michael Maltzan designs a place of hope and creativity for **INNER-CITY ARTS** in Los Angeles

By Clifford A. Pearson

PROJECTS

Walls and courtyards have defined much of Southern California's architecture since the Spanish built the first missions in the 18th century. These elements shape and inform Inner-City Arts, a 1-acre oasis for at-risk kids surrounded by the dull gray boxes of Los Angeles's Skid Row. Like those early mission buildings, Inner-City Arts balances demands for protection and learning, connection and individual identity. And like its religious predecessors, it has grown over time, getting spatially and programmatically richer with each expansion.

"I wanted to create a compressed urbanism," states Michael Maltzan, FAIA, who took on the project as his first

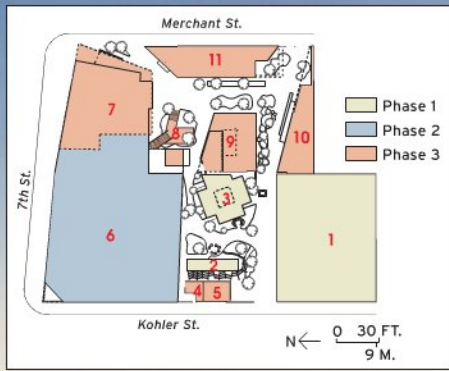
job in 1993 after leaving Frank Gehry's office and has worked on each of the three phases since then. "The idea was to craft an urban village with a series of indoor and outdoor spaces," explains Maltzan, who collaborated with Marmol Radziner and Associates on the first phase and with landscape architect Nancy Goslee Power and the graphic-design firm Ph.D on all three. From the beginning, the design team emphasized the visitor's experience walking through the campus—catching partial views of a building or yard just around the corner and enjoying a range of sunny or shaded outdoor rooms.

A nonprofit organization, Inner-City Arts provides education in ceramics, visual arts, theater, dance, and anima-



A new entrance on Merchant Street opens views to the protected center of the campus, helping to create stronger connections with the city and surrounding Skid Row neighborhood.





1. Original building
2. Support
3. Ceramics (Phase 1)
4. Trash
5. Transformer yard
6. Visual arts
7. Performing arts
8. Elevator/mechanical
9. Ceramics (Phase 3)
10. Resource center
11. Administration



The \$10 million Phase III includes an administration building (below left), a performing arts building (below right), and an outdoor stair (op-

posite, below left) leading to a parking deck on the roof of an old warehouse converted into a visual art facility in Phase II. A new ceramics tower

with orange surfaces inside (opposite, top) and a covered kiln yard stand next to a ceramics pavilion and its sculptural tower, built during Phase I (above).



tion to about 10,000 K-12 students each year from L.A. public schools and trains their teachers to teach art. The great majority of the students come from very poor families, many of whom are homeless. "Our primary goal is to increase graduation rates and keep kids in school," says Cynthia Harnisch, president and C.E.O. of Inner-City Arts, explaining how training in art can have a profound effect on children's lives. According to a five-year study by the U.S. Department of Education, the organization's program indeed boosts graduation rates and improves general academic performance as well.

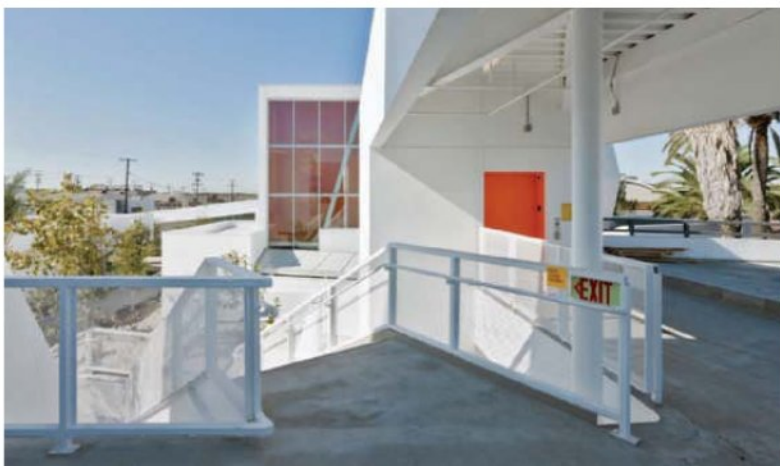
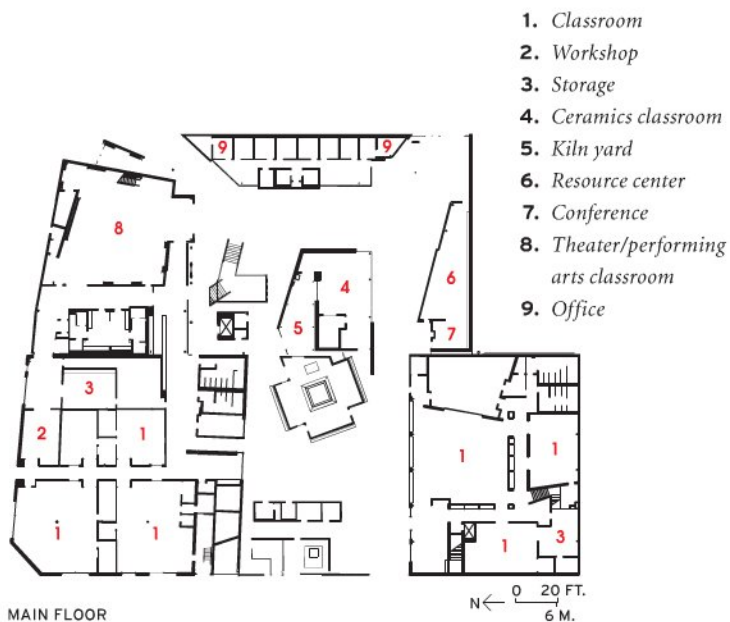
The project began with the organization buying an 8,000-square-foot auto-repair shop on Kohler Street in one of the worst parts of town. Maltzan and Marmol Radziner converted the building by exposing its graceful bow-string roof trusses, carving out raw spaces given character by simple materials, and opening interiors to an outdoor plaza with industrial roll-up doors [RECORD, February 1996, page 78]. Walls along the street, a palm-dotted plaza, and a freestanding ceramics pavilion with a sculptural tower imbued the little project with a campuslike feeling. A few years later, the organization acquired an adjacent warehouse on Seventh Street and hired Maltzan to convert it into a visual arts building and

develop a master plan for future growth. His plan envisioned new buildings on Seventh and Merchant Streets and a set of courtyards and paths within the confines of the complex.

Maltzan's plan has now been realized, with Phase III opening in October. Although bigger and more sophisticated in its forms and detailing, the new construction is of one piece with the earlier work—held together by Power's landscaping, a limited palette of white exteriors and orange accents inside, and a vocabulary of simple geometric forms spiked with the occasional iconic element. The design dates from the late 1990s, when Maltzan drew up the master plan, but he decided to stick with it. "I felt comfortable with where I had been, so I only adjusted the designs rather than start over," he explains. The key elements of the latest phase include a performing arts building with a 99-seat black-box theater, a library/resource center, an administration building, and a new ceramics tower to go along with the existing ceramics pavilion. The campus will now be able to accommodate up to 20,000 students each year.

While the first phase emphasized security, Maltzan used the latest buildings to open the campus more to its surroundings. A large gate near the corner of Seventh and Merchant Streets and another one farther down on Merchant can

PHOTOGRAPHY: © IWAN BAAN



swing open and provide view corridors into and from the central courtyard. "I felt it was important to create some cracks between the buildings and let the city flow in," says Maltzan.

By filling out most of a city block and offering new entrances on Merchant Street, Phase III turns the complex's original beachhead into a real campus. For the new administration building, the resource center, and the ceramics tower, Maltzan used steel-frame construction with pressure-treated wood joists; for the performing arts building, he used a steel frame with concrete-block infill to acoustically isolate the theater. Simple materials such as exposed-wood structural members, concrete floors, and drywall express an important message: "The materials are just as humble as those found on the street," explains Maltzan. "It's how you use them that counts."

When Maltzan painted the original buildings white, he made a striking statement—marking the complex as a place of hope, a clean slate for troubled kids. Although treated with an antigraffiti coating, the buildings have rarely been defaced, says the architect. Local people have embraced the campus as a critical part of the community, and homeless men often act as unofficial crossing guards and tour guides, says Harnisch.

While the Phase III buildings mostly extend the ar-

chitectural DNA of their predecessors, the new ceramics tower and an outdoor stair serve as sculptural mutations anchoring the center of the campus. Maltzan, though, makes sure these gestures also work on a practical level—wrapping one corner of the tower, for example, with a band of floor-level glass so kids can see out when they work on their small potting stools, and designing the stair's landing as a "speaker's platform" for public announcements and theater productions. Such concern for both the symbolic and quotidian reflects the ethos of Inner-City Arts as it helps change society one child at a time. ■

Project: *Inner-City Arts, Phase III, Los Angeles*

Architect: *Michael Maltzan Architecture—Michael Maltzan, FAIA, Tim Williams, Stacy Nakano, Kurt Sattler, Krista Scheib, Jeff Soler, Owen Tang, Terence Cheng, Yvonne Lau, Michael McDonald, David Freeland, Brad Groff, project team*

Consultants: *John A. Martin*

(structural engineer); Nancy Goslee Power (landscape); Ph.D (graphics)

General contractor: *Matt Construction*

SOURCES

Storefronts: *United States Aluminum Storefront*

Glass: *Oldcastle Glass*

Skylights: *Metcoe*





The new resource center serves as a library and meeting place (above). Roll-up doors and skylights were part of Phase I's conversion of an auto-repair shop (right). Maltzan kept spaces such as a music room (opposite, right) fairly raw, while just covering a kiln yard (opposite, bottom left). A band of windows at floor level offers views out for kids when they sit on low stools in the new ceramics tower (opposite, top left).



INNER-CITY ARTS

Standing out in a gritty locale

By Christopher Hawthorne

One thing that often surprises first-time visitors to downtown Los Angeles is the proximity of its gleaming clutch of skyscrapers and cultural facilities to the homeless encampments in the area known as Skid Row. From the front doors of Frank Gehry's exuberant Walt Disney Concert Hall, it takes about 15 minutes to walk—or 2 or 3 minutes to drive—the mile or so downhill to a landscape full of quiet but marked desperation, a place where social-services agencies, single-room occupancy hotels, and liquor stores serve a stubbornly large homeless population. (From the steps of City Hall or the wide plaza in front of Thom Mayne's Caltrans headquarters, the trip is even shorter.) It is on the edge of this neighborhood that the Los Angeles architect Michael Maltzan has spent a decade and a half—or nearly his entire career as the principal of his own firm, Michael Maltzan Architecture, which he founded after leaving Gehry's office in 1993—working on a campus of buildings for the nonprofit arts-education organization Inner-City Arts (ICA).

Maltzan is no stranger to well-heeled clients. Many miles to the west of Skid Row he is finishing work on a sizable new house for the former Hollywood power broker and art collector Michael Ovitz that is as much museum as private residence. But the ICA project, on which he has worked pro bono, is one that seems to have fully engaged him from the start. Perhaps the central reason is that the ICA's 1-acre site, built up in three phases since 1994, has allowed Maltzan to execute a strategy that slides almost imperceptibly from architecture to urbanism and back again. The result is a family of new buildings that interacts with its context in a complex range of ways, emerging finally as a kind of protected beacon.

The buildings closest to ICA are mostly single-story warehouses selling fish, produce, or automobile parts. Clad in drab cement-block and topped by loops of razor wire, they reflect

the risks inherent in doing business in a neighborhood where violent crime is rare but petty thievery is not. (When Maltzan was working with the Los Angeles firm Marmol Radziner on the project's first phase, they regularly lost construction equipment and materials to theft.) Maltzan's design is hardly naive about that reality: The fact that ICA brings public school students into this neighborhood—most of them by bus—means that its buildings, like the others on the block, turn a necessarily blank and security-conscious face to the city.

But this is no fortress. By the standards of Los Angeles, gated-community capital of the world, a place as full as ever of protected oases, it shows a marked curiosity about the outside world. Each of the newest buildings—which line the eastern and southern edges of the site, completing the complex as an urban object—is creased or folded back at one or more

THE NEW BUILDINGS INTERACT WITH THEIR CONTEXT IN A RANGE OF WAYS, EMERGING FINALLY AS A KIND OF PROTECTED BEACON.

edge. Those seemingly minor architectural gestures change the whole personality of the campus's exterior, turning what could have loomed as a series of protective walls into something more pliant—plaster into origami. They provide visual connections and bring light from outside to inside and vice versa. The pair of towers that crown the ceramics studio at the center of the campus are similarly symbolic, suggesting a desire to be seen by and look out toward the larger city.

Those efforts to make the campus appear luminous and visible are boosted by the decision to paint the whole complex white. In a neighborhood where grime is everywhere, to make a building white means signing up for a lifetime's worth of upkeep. (White is also the color of temptation for taggers,

though Maltzan says that they tend to point their spray-paint cans elsewhere out of respect for ICA's mission.) But there is another series of messages in the choice of palette. The campus, like each group of students brought to ICA for the first time, is a blank slate, a fresh canvas, always ready for the first brushstroke. Perhaps most important of all, in a neighborhood full of people and buildings that are essentially invisible, reluctant to do much more than line up in anonymous bunches, the proudly conspicuous ICA is teaching kids to stand up and eventually stand out. ■

Christopher Hawthorne is the architecture critic for the Los Angeles Times.



Just a mile or so from downtown Los Angeles, the Inner-City Arts campus (this page) provides an alternative to the squalor of Skid Row (opposite).



Rafael Moneo weaves the past and the present in an intricate intervention for the

MUSEUM OF THE ROMAN THEATER OF CARTAGENA

By David Cohn

Located on the Mediterranean coast almost 300 miles southeast of Madrid, the port city of Cartagena is rich in a history that dates back more than 2,000 years, when it was a stronghold of ancient Carthage. More recently, the five hills of that Carthaginian settlement, a subsequent Roman colony and Byzantine outpost, are largely bare—the decaying streets between them housing the city's poorest residents. In 1988, while carrying out a routine archaeological probe for a construction site on the most prominent of these hills, archaeologists stumbled upon the remains of a sumptuous Roman theater that, inscriptions revealed, had been built on orders of the Roman Emperor Augustus near the end of the first century B.C. Eleven years later, in 1999, after securing adequate funds, local officials enlisted architect Rafael Moneo's collaboration not only to restore the site but to make it the centerpiece of efforts to renew the city and attract tourism.

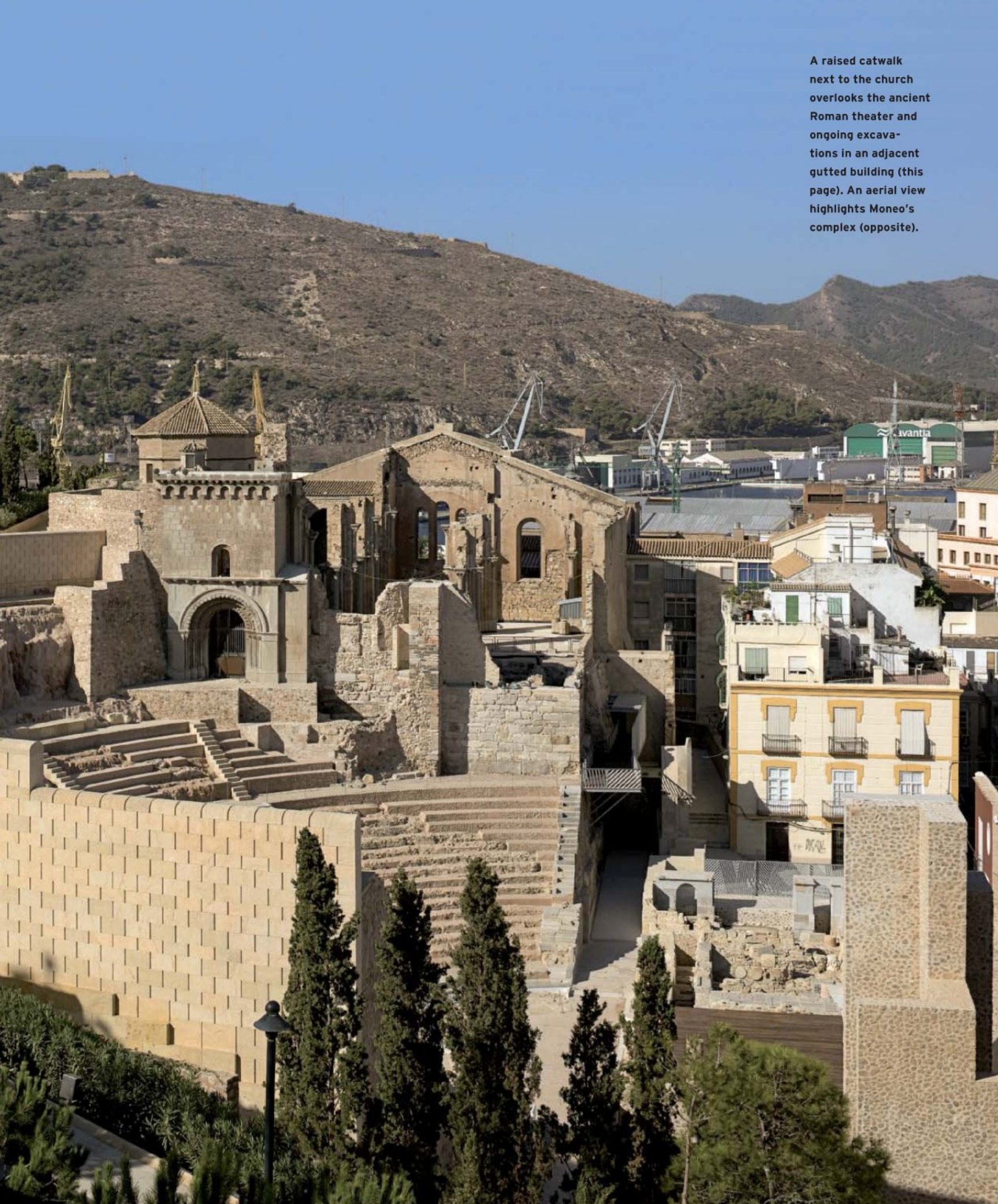
Rather than simply building a museum and visitors' center for the theater's excavations, Moneo has undertaken a project of civic and historic suture. By organizing his intervention as an urban sequence through two museum buildings, a series of tunnels, and a wall of escalators, visitors are transported from the central City Hall Plaza near the waterfront to the hillside ruins 56 feet above. In Moneo's own words, "The museum ... has been designed as a 'promenade' from sea level to the higher ground of the city, climaxing with the unexpected

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

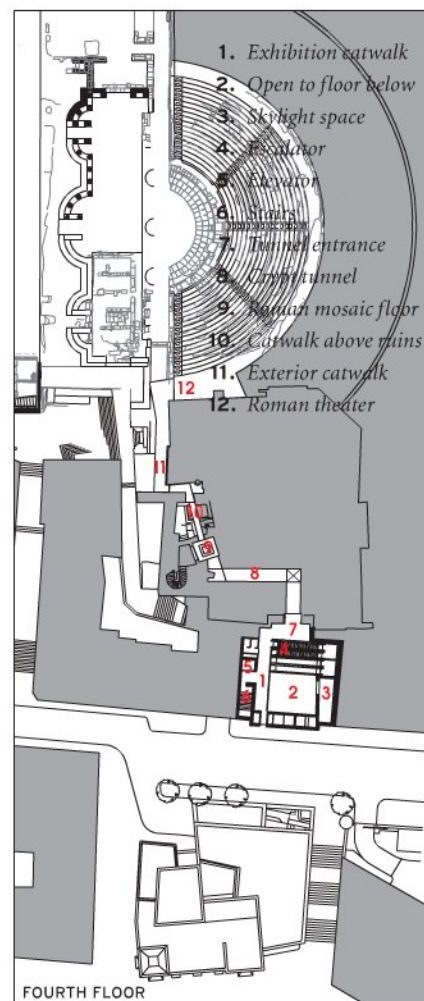
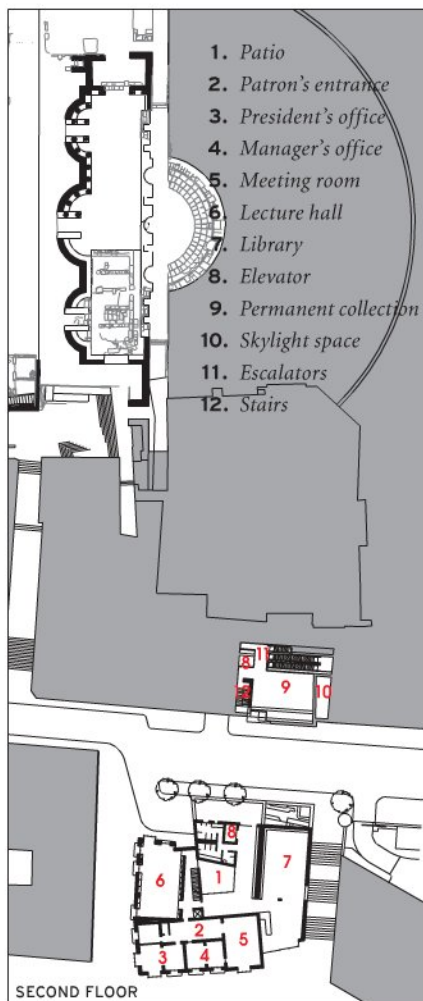
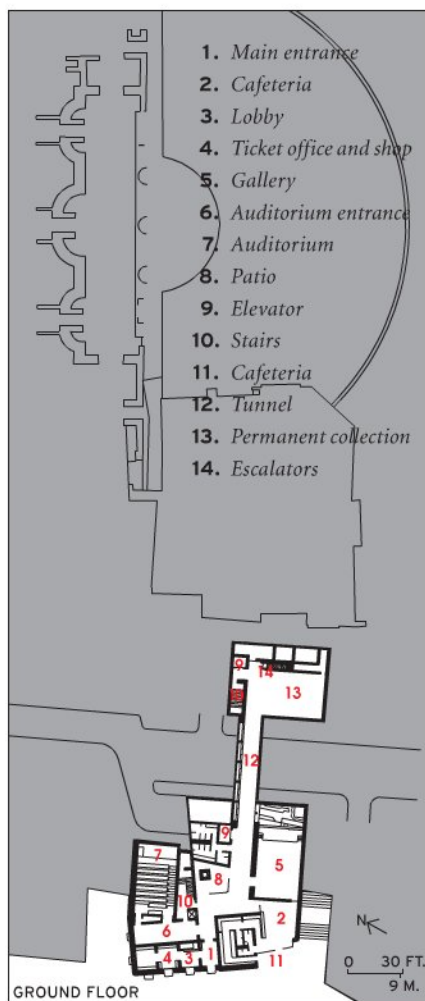
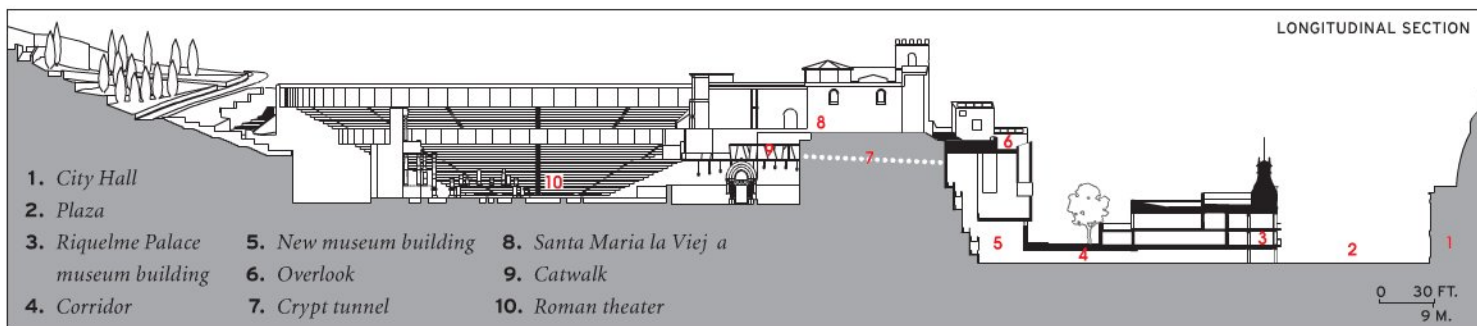


1. Riquelme Palace building
2. New museum building
3. Overlook
4. Santa Maria la Vieja
5. Catwalk
6. Roman theater
7. Stage
8. Ruins of Roman theater portico
9. Park





A raised catwalk next to the church overlooks the ancient Roman theater and ongoing excavations in an adjacent gutted building (this page). An aerial view highlights Moneo's complex (opposite).



appearance of the theater's imposing space."

Best understood in section, Moneo's promenade bores through different historic layers of the city, uncovering surprising juxtapositions of different epochs. He took as a starting point a ruined 19th-century palace facing the city hall, which he gutted and rebuilt with an addition as the museum complex's entry (comprising offices, a library, and a sidewalk café). From the ground floor of the palace, a wide passage leads under the street behind it to a new exhibition building with two gallery floors. A series of switchback mechanical stairs at the back of this building climbs to a tunnel that takes visitors on a zigzagging route under the ruins of the medieval Santa María la Vieja Church, destroyed in Spain's Civil War, which the excavators discovered to be built over part of the theater's seating. Following a trajectory determined by the archaeological discoveries

encountered on its path, the tunnel passes through a crypt with early mosaic paving from a Roman house, and emerges onto a midair catwalk leading into the theater. Once visitors have left the theater precinct, they can descend existing streets back to the city hall, or turn and climb to a lookout terrace on the roof of the exhibition building, with views over the harbor, and to a hillside park designed by Moneo.

With its facade of chisel-faced local limestone and the elaborate spatial play of its interiors, the exhibition building is Moneo's contemporary contribution to the museum's promenade. It is designed to display the most important and well-preserved elements recovered from the theater, including Corinthian capitals of Carrara marble carved in Rome, red travertine column shafts, altars, and commemorative plaques. But the structure is also an elaborate stair tower with its back

The elements of Moneo's complex begin at the pink Riquelme Palace with its addition, continue up to the new museum building behind it, under the church, ending at the ancient theater nestled in the hillside.



The new building has a cut stone facade and three distinct deep-set windows (below). The church tunnel exits at its upper level, where escalators descend to the displays

(right). The museum buildings are connected by a corridor (bottom right). Light travels to the lower gallery via clerestory windows and a skylight (bottom left).





Adjacent to the front of the church, Moneo's plan includes a lookout above the new building with views of the port, as well as a park at the top of the steps surrounding the theater (this page).

dug into the hillside, and the architect emphasizes its verticality with two light shafts that descend from its roof to the exhibition floors. On the southern party wall, one light shaft descends 72 feet to illuminate the lower gallery, a feat possible due to Cartagena's strong southern sun. The other, above the main facade, is interrupted at midpoint by a vitrine that displays a Corinthian capital to the street and the gallery, and folds into the receding and intersecting planes of a large window opening that frames the reproduction of a Roman statue.

Moneo worked with archaeologists Sebastián Ramallo and Elena Ruiz, director of the museum, and the restoration specialist Isabel García-Galán, in consolidating the theater's ruins. In Spain, it is common for generalists like Moneo to take on important restoration projects, although he jokingly describes his role here as "the archaeologists' enforcer," defending

and carrying out their aims. The archaeological team rebuilt part of the original scaena, or stage house, supporting original stones and fragments with rubblework walls designed by Moneo, and stucco-finished infill. They left another section of the stage as they found it, where stones from the theater had been reused for a 5th-century market. They rebuilt a missing section of the cavea, or seating area, in rubblework, but left the highly eroded surviving areas basically untouched, making contemporary use of the theater impossible.

Hanging over these decisions was the court case ordering the demolition of Giorgio Grassi's reconstruction of the Roman theater in Sagunto, Spain [RECORD, March 2008, page 32]. The court found that Grassi had breached the 1985 Historic Patrimony Law prohibiting the reconstruction of protected ruins except for work of consolidation and when original ele-



ments are used. Carla Bovio, one of Moneo's collaborating architects on the project, explains that, in interpreting the vague terms of the law, "we had to develop a clear theory and argument for the project, which then had to be approved" by local cultural authorities supervising the work.

Moneo's strategy in Cartagena is strikingly similar to that of his enlargement of the Prado Museum in Madrid, which opened in 2007 [RECORD, March 2008, page 118]. In both, he sets a new building between two historic structures at different elevations and links them internally through tunnels and escalators. And in both projects, the new building, without direct street access, presents itself to passersby as an exquisitely wrought jewel box. In urban terms, the spatial promenade that Moneo fashions, crossing over and under the conventional ground plane of the urban fabric, transforms its area of impact into a three-dimensional "collage city," in the spirit of Colin Rowe's 1978 book of the same name. In other works, too, Moneo undercuts the apparently conservative, tectonic solidity of his designs, most memorably in the Museum of Roman Art in Mérida, Spain (1984), where thin concrete floor slabs float incongruously through massive brick walls, or in Madrid's Atocha Railroad Station (1992), whose underground commuter station finds expression at ground level through a domed entry pavilion that is essentially floorless. In Cartagena, this subtle subversion of construction's gravity-bound conventions finds a new dimension of expression as urban and historic collage. ■

Project: *Museum of the Roman Theater of Cartagena, Spain*

Architect: *José Rafael Moneo—Rafael Moneo, principal design architect—Juan Manuel Nicás, project architect*

Engineers: *NB 35, Jesús Jimenéz Cañas (structural); Úrculo*

Ingenieros (mechanical)

Consultants: *Carla Bovio, Angel Huertas Suanzes*

Contractors: *U.T.E. Azuche-Villegas (museum); JJRos Construcción y Restauración (theater restoration and urbanization)*



Visitors cross a catwalk through and above Roman ruins in the crypt of the church (this page). The mouth of the tunnel emerges onto the upper level of the second exhibition building (opposite, top left). The tunnel passes around the remains of Roman houses and an early mosaic (opposite, top right). Visitors flow from tunnel to exterior catwalk for views of the theater (opposite, bottom).

A reflection of the architect's best work

By Martha Thorne

The National Museum of Roman Art in Mérida, Spain (1984), was one of the first projects that brought Rafael Moneo to the attention of the American architectural scene. There, one must traverse the museum's entrance pavilion, where uncovered Roman ruins below can be viewed, before entering and grasping the dimensions of the spectacular main exhibition space. The spaces created by the large, arched bearing walls—reminiscent of Roman brick and illuminated by skylights—while powerful, still allow for the significance of the works on display.

With this precedent, there could be no better project for the Madrid-based Moneo than the restoration of the ancient Roman theater in Cartagena, Spain, which also included the creation of an adjoining museum housed in two buildings and the design of a park to embrace the pieces of the architectural composition. Commissioned in 1999 and open to the public in 2008, this work allowed Moneo to bring together several of his fundamental concerns about architecture, building, and the city.

The abundance of ideas often imbued in a project by Moneo, which at times results in dense or disconcerting buildings, becomes increasingly successful the more complex the commission. In the case of the Cartagena project, his accomplishment is great because both intervention and invention were required—in the museum buildings, in the powerful Roman theater itself, and at various points throughout the city. Moneo's architectural hand, in essence, has struck a balance between the singularity of each building in the complex and its relationship to the city—past and present.

Reconciliation between architecture and the city is an important idea evident in many projects throughout this prolific architect's career. One early and clear example is Bankinter (1976), where he seamlessly inserted a rather large banking and office building behind a small, 19th-century palace on a main boulevard of Madrid. A more recent example of the need to achieve a careful balance between city and edifice can be seen in the extension to that city's acclaimed Prado Museum [RECORD, March 2008, page 118], where the pieces of a varied and delicate

puzzle—a historic museum, a new underground addition to it, and a new building around a cloister—must fit together not only for function's sake, but also to strengthen the city's fabric.

In Cartagena, Moneo seems to have been conscious of a city formed by memories, as well as a city shaped by the present. He opted to restore the 18th-century Riquelme Palace

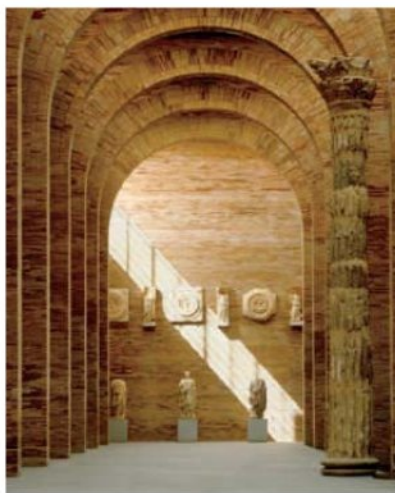
and allow it to form a dialogue with the town hall of Cartagena, a building begun in 1900. His new addition to it, which houses the first part of the Roman Theater Museum, while clearly modern in materials and form, is recessed to allow the palace a prominent place on the square. The museum's exhibition galleries are located in a second building that respects the scale of the city, but its textured stone facade, punctuated by relatively few windows, is clearly a 21st-century building. The restoration of the Roman theater itself, the result of the difficult and delicate strategy of adding new to old, does not compromise the old—with additions that are capable of being reversed, if need be. Throughout, visitors can move easily and honestly between past and present.

This trajectory (or promenade) created by Moneo, extending from the city's sea level to the higher ground of the

IN CARTAGENA, MONEO SEEMS TO HAVE BEEN CONSCIOUS OF A CITY FORMED BY MEMORIES, AS WELL AS A CITY SHAPED BY THE PRESENT.

museum culminating in the Roman theater, reflects the architect's recurring position on the nature of a museum. Architecturally, his buildings and public spaces unfold as one walks through the city. Within the museum, the connection from one building to another via underground corridor reinforces the notion of journey and discovery—a device Moneo first used to connect buildings for his expansion of the Museum of Fine Arts Houston (2000). There, with an installation by James Turrell, he created a transitional preparatory space, making one's arrival at the new galleries even more interesting and dramatic.

The progression in Cartagena from the lower-level exhibitions to the higher level and finally out to the theater is as much an architectural tour as it is a museum visit. Allowing its patrons to be conscious of space, as well as the texture and color of the building materials, is something that contributes to the memorable quality of a Moneo building. In the Mérida Museum of Roman Art, space and light are experienced in tandem with the art—fostering the architect's idea of the museum as sacred space, whereby the building enhances the actual content of the museum. Likewise, in the Los Angeles Cathedral of Our Lady of the Angels (2002), the required walk via an ambulatory that extends from the entrance to the back of the sanctuary is a clear expression of a journey where one becomes conscious of the magnitude of the building and the quality of light filtering through the alabaster from above. Yet again, Moneo's interiors in Cartagena receive light from above and provide generous space for the contemplation of the works of art, reflecting a clear understanding and appreciation of the objects. It should be remembered that Moneo's concepts of promenade and museums embody an element of freedom that allows the public to choose a path and to vary it spontaneously, a welcome attitude of respect toward the museum visitor. ■



Martha Thorne has been executive director of the Pritzker Architecture Prize since 2005.

The restored theater nestles on a hill within Cartagena's urban fabric (this page). Its museum interiors recall Moneo's National Museum of Roman Art in Mérida, Spain (opposite).



The Museum of Arts and Design, clad in iridescent terra-cotta (right), occupies a prominent site facing north, near the Hearst Building (in the background, right).



Allied Works Architecture's Brad Cloepfil bravely tackles the redo for New York City's MUSEUM OF ARTS AND DESIGN

By Fred A. Bernstein

Lighten up. That's my advice to the critics of New York City's Museum of Arts and Design (MAD). The renovation by Allied Works Architecture turned what had been a dreary, haunted house (Edward Durell Stone's 1964 Gallery of Modern Art) into a lively amenity for the city. And—at risk of damning with faint praise—the best of the buildings fronting Columbus Circle.

On one of my visits, I was accompanied by my sons, who were delighted to see that the museum's entrance facade seems to spell "HI." I explained to them that the oversize letters were accidental—the principal of Allied Works, Brad Cloepfil, AIA, had called for three vertical bands of glass on the north and west facades. But after construction had begun, the museum insisted on the addition of a horizontal band on the north (entrance) facade, to improve the views from the planned ninth-floor restaurant. That addition turned two of the verticals into an "H," leaving the third an "I," and angered Cloepfil, who took the unusual step of telling journalists of his complaint about the client's intervention.

But my sons didn't understand why Cloepfil was upset. "Every building should say 'HI,'" they announced, as if proffering a manifesto. Metaphorically speaking, they're right: Every building, unless it's a bioweapons laboratory or a prison, ought to be inviting. Stone's original building for Huntington Hartford was about as welcoming as a mausoleum.

By contrast, Cloepfil's scheme—which required removing one of the building's famous lollipop columns—features an inviting entrance facing Columbus Circle. Inside, a handsome stairway draws visitors up to the second floor. From there, it is possible to continue on narrower, but still pleasant, flights, to each of the gallery levels. In creating such an effective circulation system in a confined space (the footprint, a tetragon with a gently concave front, measures 4,770 square feet), Cloepfil scored a major success. And the galleries those stairways lead to are surprisingly bright and open. Who knew that the building, which was scaleless behind Stone's fussy faux-Venetian facade, contained some 54,000 square feet over 12 levels? It seemed, at most, half that big.

For Cloepfil, previously known for Weiden + Kennedy's ad agency headquarters in Portland, Oregon (where he is based), and the Contemporary Art Museum (2003) in St. Louis, MAD was a chance at the big time. Cloepfil was chosen in 2002 over Toshiko Mori, FAIA, Zaha Hadid, and Smith-Miller Hawkinson. But preservationists were outraged by

Fred A. Bernstein writes on architecture for a number of publications, including The New York Times.



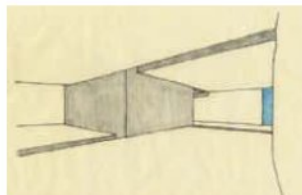
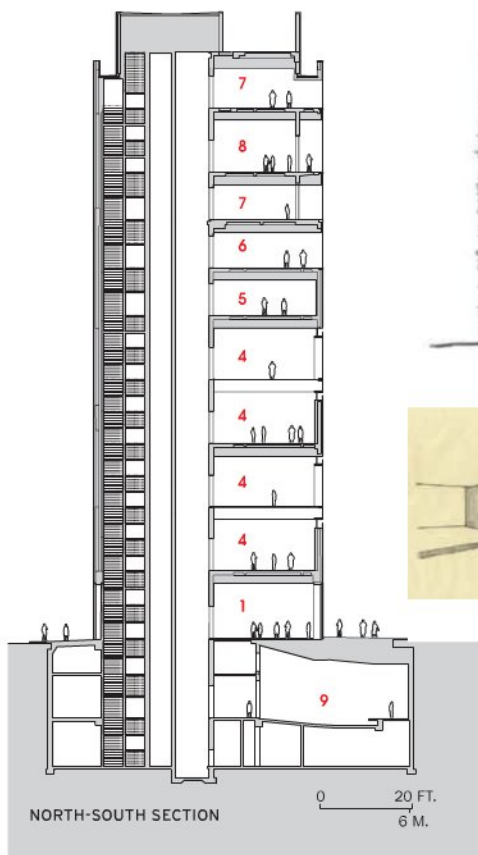
The \$90 million renovation kept the 10-story, 158-foot height because zoning would require punitive

setbacks for a taller tower. The new steel-and-wood stair in the lobby (below) is framed by original columns.



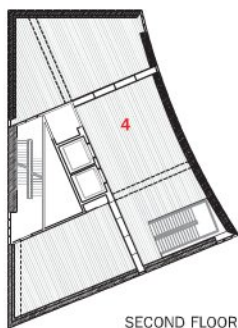
PHOTOGRAPHY: © HELENE BINET (OPPOSITE AND TOP RIGHT); ALAN KLEIN (BOTTOM RIGHT)

PROJECTS

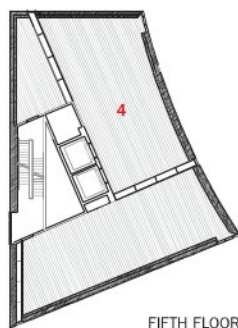


Cloepfil's sketches for the skin and interior (above right two) indicate how he planned to dematerialize the exterior. Inside, he moved

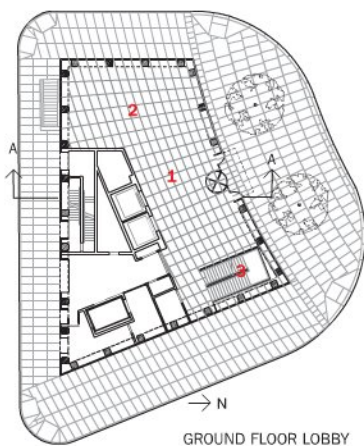
stairs behind the existing elevator core and created a main stair to extend from the second floor to the auditorium level.



SECOND FLOOR



FIFTH FLOOR



GROUND FLOOR LOBBY

1. Lobby
2. Retail shop
3. Main stair
4. Gallery
5. Education
6. Mechanical space/ event rooms
7. Offices
8. Restaurant
9. Auditorium

plans to alter Stone's exterior, and the project was delayed by lawsuits (including one in 2005 against MAD and its director, Holly Hotchner, for "conspiracy to obstruct and subvert the lawful functioning of the New York City Landmarks Preservation Commission"). Cloepfil says he knew there would be controversy, but, "I didn't think it would be as vicious as it was."

Still, he never considered keeping the Stone facade. Cloepfil had found the building "frightening" since his days at Pratt in the 1970s and later at Columbia's GSAPP. And it was an urbanistic wasteland—"a block that had been taken away from the city for so long," he says. Then, too, the cladding, according to engineers retained by MAD, was beyond repair. Cloepfil replaced Stone's white Vermont marble with glazed terra-cotta tile. "Its iridescence brings the body of the building alive," he says, though some observers see a strong resemblance to a 1960s white brick apartment building.

But recladding is one thing; the architect faced a bigger challenge working with the building's structure, consisting of concrete core and perimeter bearing walls (raised on those "lollipop" columns), and concrete slabs. Cloepfil decided to create a 2-foot-wide cut through the north facade facing Columbus Circle to bring light into the galleries. But that simple gesture devolved into a series of deep, dark horizontal gashes and shallow, glass-fritted vertical stripes that seem to draw on different architectural vocabularies. Cloepfil describes the cut as "a relatively minor intervention," yet it reads as a complex, and confusing, set of moves.

During construction, Cloepfil had said the cut through the facade would turn the bearing wall structure into a series of cantilevers. In reality, metal pins are needed to reduce deflection and they quite noticeably traverse the horizontal gaps; Cloepfil concedes the pins are bigger than he had expected. Inside, the clumsy way the glazed vertical slits meet their horizontal extensions near the gallery ceilings (which Cloepfil says is explained by the need to hide blackout shades in overhead soffits) has come in for heavy criticism. But Cloepfil is undeterred. "I have to say, it's an exquisitely detailed building," he says. "If there's one thing I know how to do, it's detail."

He was less gallant when it came to the new horizontal window, which he blamed on a museum donor who "suddenly became a designer." Cloepfil called the result "disconcerting and disruptive."

Cloepfil will have other chances to show what he can do as a museum designer: at the University of Michigan, where his 100,000-square-foot art museum will open this spring, and in Denver, where his Clyfford Still Museum is expected to break ground this summer. In those projects, where he is not treading on hallowed ground, his architecture will get a chance to succeed or fail on its own merits. As for the new MAD: Perhaps it's not a great building—but it is a building to be grateful for. ■

Project: Museum of Arts and Design (Jerome and Simona Chazen Building), New York City
Architect: Allied Works Architecture—Brad Cloepfil, principal
Consultants: Robert Silman (structural); Arup (m/e/p)

SOURCES
Masonry: NBK Ceramic (Terrart)
Metal/glass curtain wall: Seele
Glass: Oldcastle Glass
Paints: Benjamin Moore
Wall covering (auditorium): Knoll Textiles
Office furniture: Steelcase

PHOTOGRAPHY: © RICHARD BARNES (OPPOSITE, TOP AND BOTTOM LEFT); COURTESY ALLIED WORKS (OPPOSITE, BOTTOM RIGHT)



Cloepfil introduced daylight into the four 4,100-square-foot gallery levels through clerestory bands of clear glass connecting to fritted vertical glass slots. They are 24 inches wide and extend across the floor and ceiling (above). The typical galleries (right) are loftlike, with oak wood floors. Curved vitrines subdivide the jewelry gallery (left).



History haunts a (non)landmark

By Suzanne Stephens

When I was a kid (though not a mere child), I defended Edward Durell Stone's much maligned Gallery of Modern Art at 2 Columbus Circle when it opened in 1964. It had that recherché white marble cladding with an arcade and loggia outside, and rich walnut and macassar ebony paneling within. Thick, jungled-carpeted stairs took you up to intimate galleries at half-levels, where a soigné and surreal art collection, including Gustave Moreau's *Salome Dancing Before Herod* (1874–76), awaited. At the top of the museum was the Gauguin Room, with tapestries à la Gauguin, where you could dine on (then) rare Polynesian cuisine in a grasscloth-lined Modernesque setting overlooking Central Park. You would hardly notice the dreary Coliseum to the west, where the Time Warner Center looms today.

At the time, an older, wiser architect tried to explain the errors of my judgment: The monument to Huntington Hartford's hothouse nonabstract art collection just "didn't work." My point about the gallery being designed by the same architect as the venerated Museum of Modern Art (MoMA) didn't fly. In the years between MoMA (1939) and the Gallery of Modern Art, Ed Stone had gone over to the dark side. Proving I was ultra-naïve was Ada Louise Huxtable's pronouncement in *The New York Times* that it was a "die-cut Venetian palazzo on lollipops."

With a spunky prescience, I, in turn, pronounced: "Mark my words, in 50 years it will be revered as historic." Even though Stone's opus was not given the time of day by the New York City Landmark Preservation Commission (LPC) when the Museum of Arts and Design decided to totally overhaul it some

40 years later, I must say the kid in me felt somewhat vindicated by the five lawsuits over its future that started in 2003. But I wasn't on the front lines: Since Hartford had given the gallery up in 1969, it had lost its plush interiors, comfy Modern furnishings, and outré artwork. It needed the *gesamtkunstwerk* shtick to make it the quirky, kitsch period artifact it had been—but by then it was only a grotty concrete hulk plopped atop lollipop columns.

Even so, it is reprehensible that it never got a fair and full hearing at LPC, despite valiant efforts by Landmarks West, the Historic Districts Council, and the New York chapter of Docomomo. As expected: Mayor Bloomberg's interest in architecture begins and ends with big new developer buildings. By denying it even a hearing, LPC damaged its stature and integrity.

Surprisingly, architecture

critics took uncharacteristic stances: Ada Louise Huxtable, a longtime advocate of preservation, came out for Allied Works' radical renovation, excoriating preservationists for "nostalgia" and "trendy revisionism." The late Herbert Muschamp of *The New York Times*, who often pooh-pooed preservation causes, wanted to save this symbol of the "emerging value of queerness" in the New York of its day.

Clearly, this is a no-win case: The new scheme would have to be beyond fabulous to make opponents forget the bloodshed. Though Brad Cloepfil's concept of cutting through concrete bearing walls to dematerialize the opaque structure was ingenious, the facade still looks drab. Cloepfil hoped the ivory, glazed, terra-cotta rain screen would make it luminous. But while the north facade has a sheen, it lacks glitter and gleam, since it receives no direct rays of light. And on gray days, forget

A GLASS CROSS BAR FORMING A GIANT "H" DOES RUIN CLOEPFIL'S COMPOSITION. BUT IT IS MEANT TO BE, NO?

it. This is all the more poignant because the museum plays a significant urbanistic role due to its prominent if eccentrically shaped site, seen from four sides. Moreover, with the concave entrance facade terminating the sweeping arc of the new Time Warner Center, it needs to provide proper punctuation. To do so it needs more ... well, pizzazz. Like the old days.

Keeping the lollipop columns intact was arguable structurally, but by Cloepfil's partially masking them with glass on the outside, they look like half-forgotten remnants of a tear-down. Inside, their Moorish profiles add a jarring note. To be sure, the gallery space benefits from the new loftlike, open plan, and makes a strong case for gutting the old innards. Now you can really see the works on display (which may or may not be a good thing, depending). But the memorable spaces are Stone's below-ground auditorium and its lobby, on which Cloepfil performed a sensitive interpretive restoration. He brilliantly reconstituted the billowing curves of the metal disk ceiling, kept the walnut walls, and restored the bronze doors to recreate the once-chic and shimmering ambience. On the ninth floor, where the restaurant is planned, Cloepfil filled in the loggia so that the restaurant gains about 4 feet in depth. And now, with the controversial crossbar of clear glass, a knock-out view of the park view can be taken in. I'm on the side of the crossbar: In New York, any view is far too rare for restaurants; to block out even a portion of the panoramic vista of Central Park framed by skyscrapers is loony—and bad business.

So now the crossbar forms a giant "H." It does indeed ruin the architect's composition. But it is meant to be, no? The "H" acts as a ghostly reminder of the museum's first client, Huntington Hartford, and while we're at it, the client of this incarnation, Holly Hotchner, MAD's indomitable director. And just wait: In 50 years, it will be declared a landmark. ■



The 24-inch-high clerestories turn into 12-inch-high horizontal slits on the outside to mitigate glare (right). Fritted glass fills the vertical channels and continues inside on floors and

ceilings. The reconstitution of Stone's auditorium below ground (opposite, bottom), accessible by the main stair, is a glamorous reminder of the original building (opposite, top) in its heyday.





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Taking a Bow

Architects offer up an arresting array of performing arts venues across the globe – from grand concert halls to striking new theaters and intimate recital spaces.

By Josephine Minutillo



ROYAL PLAYHOUSE
Copenhagen, Denmark
Local architects Lundgaard & Tranberg create a new national treasure with their striking glass-and-brick theater along the capital city's revitalized waterfront.



CRYSTAL ROOM
Waidhofen, Austria
Hans Hollein defies conventional wisdom by designing a performance space clad almost entirely in glass panels. His acoustical experiment is nestled within a medieval castle in western Austria.



BROAD STAGE
Santa Monica, California
Renzo Zecchetto's new theater for music and the dramatic arts provides an elegant space for live performances a stone's throw from the moviemaking studios of Tinseltown.

It's no secret that in tough economic times, people seek escape. During the Great Depression, the masses would famously forgo basic necessities and drop 25 cents on a Charlie Chaplin flick or one of the mesmerizing new talkies. Though clearly not recession-proof, ticket sales for many of the bigger musicals and star-studded dramas of Broadway's Great White Way have remained strong over the past few months of the economic meltdown.

And while we are quick to acknowledge the extraordinary performances of actors, singers, and musicians (especially during the current award season), less attention is paid to the people behind the scenes, particularly those who create venues for live performances—the host of architects, engineers, lighting designers, acousticians, and consultants needed to get these complex structures built.

“These are very complicated buildings,” says Craig Schwitter, a structural engineer with Buro Happold who has worked on a number of performing arts facilities, including the new Experimental Media and Performing Arts Center (EMPAC) in Troy, New York, which is featured in this month's technology article on page 100. “The forms are tough, spaces are difficult, volumes are huge, and there are not a lot of rules.”

EMPAC's team of designers jumped through hoops to ensure that its four main performance spaces had first-rate acoustics. Pritzker Prize-winning architect Hans Hollein, on the other hand, went against the grain by choosing the most unlikely acoustic panels—made entirely of glass—for the diminutive Crystal Room he designed inside a castle in Austria. Renzo Zecchetto also focused on acoustics when designing Santa Monica's Broad Stage, but it is the handsome overall ensemble that steals the show.

Copenhagen's Royal Playhouse is a showstopper, as well. Designed by local architects Lene Tranberg and her partner, the late Boje Lundgaard, the waterfront theater kicked off with a performance of Shakespeare's *Hamlet*—an especially apropos selection for this dramatic arts venue in the Danish capital.

Sometimes theatrical productions require the services of an architect. For a special performance to celebrate his 90th birthday, legendary dancer and choreographer Merce Cunningham collaborated with Barcelona architect Benedetta Tagliabue on a set design that accommodates dancers and musicians on stage (see story on page 51).

Whatever the venue or type of performance, design professionals—while never as visible as the performers—will be there to help transport audiences away from their everyday lives. ■

One: ROYAL PLAYHOUSE

Copenhagen, Denmark

Lundgaard & Tranberg Architects' stunning new theater steals the show along Copenhagen's developing waterfront.

By Victoria Newhouse and Alexander Gorlin, FAIA

Architect: Lundgaard & Tranberg Architects—Lene Tranberg, Boje Lundgaard, principals; Henrik Schmidt, Kenneth Warnke, Hanne Alrø, Jens Øblom, Trine Hedeager Harboe, Annika Carlson, Henrik Christensen, Michael Bech, Michael Kvist, Jacob Nørlov, Malene Hjortsø, Thomas Rahbæk Madsen, Lone Franker Geyer, Signe Baadsgaard, Emil Johnson, Nikolaj Richter-Friis, Lene Wiel, Benjamin Ter-Borch, Filip Heiberg, Peter Thorsen, project team

Client: Ministry of Culture

Consultants: COWI (structural); Gade & Mortensen Akustik (acoustics); Rambøll Sverige (theater installations); Aggerbo & Henriksen (graphic design); Jesper Kongshaug (lighting design)

Size: 226,000 square feet

Cost: Approximately \$90 million

Completion date: February 2008

SOURCES

Glass: Pilkington

Ceilings: Sto

Lighting: Light Makers; Louis Poulsen; Asger BC; Roblon

Chairs: Getama Danmark (main theater); Montana Mobile (foyer and lounge)

Fabric: Kvadrat (chairs); Living Art (curtains)

ONLINE: Rate this project and access additional sources at architecturalrecord.com/bts/.

Copenhagen's new Royal Danish Theater should have played a secondary role to the city's more prominent Opera House (2005), by Henning Larsen Tegnetsue (HLT), but it has stolen the show. Lundgaard & Tranberg Architects is less familiar internationally than the older Larsen office, and the theater's program and budget less ambitious than the opera's, but the playhouse's monumental massing and its effective contrast between glass and rustic brickwork are showstoppers.

The playhouse is an abstract composition of the basic elements of theater, recombined in a striking and unexpected way. The massive cube of the fly tower floats above the horizontal glass plane of the rehearsal and dressing room level that in turn appears to levitate miraculously above the tall open foyer. These service rooms, often hidden away in airless spaces, are boldly cantilevered out above the water. Recalling in its limpid and etiolated massing Koolhaas's Kunsthall in Rotterdam (1992), as well as the ingenious integration of waterfront public spaces of Diller Scofidio + Renfro's Boston ICA (2006), the dark, copper-clad cube is the *Stadtkrone* of Copenhagen.

Victoria Newhouse is an architectural historian who writes frequently on cultural institutions.

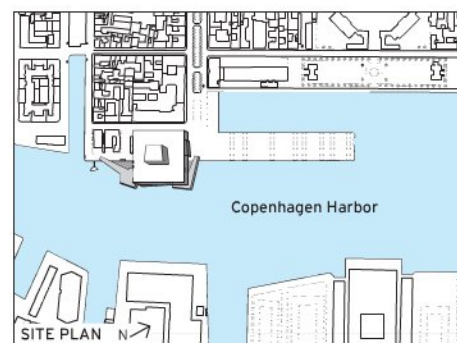
Alexander Gorlin is an author, critic, and principal of Alexander Gorlin Architects, based in New York.

Program

The theater is one of a series of cultural institutions projected for a mixed-use scheme by HLT to redevelop Copenhagen's run-down harbor area and turn the focus of the city toward the water. A parking lot was to be placed underground and a public space made on the pier, with some smaller buildings on one side. Although the 2002 competition brief for the playhouse called for two stages, a third was added for more flexibility. In addition, there were to be the technical facilities related to these stages, a restaurant, and a café.

Solution

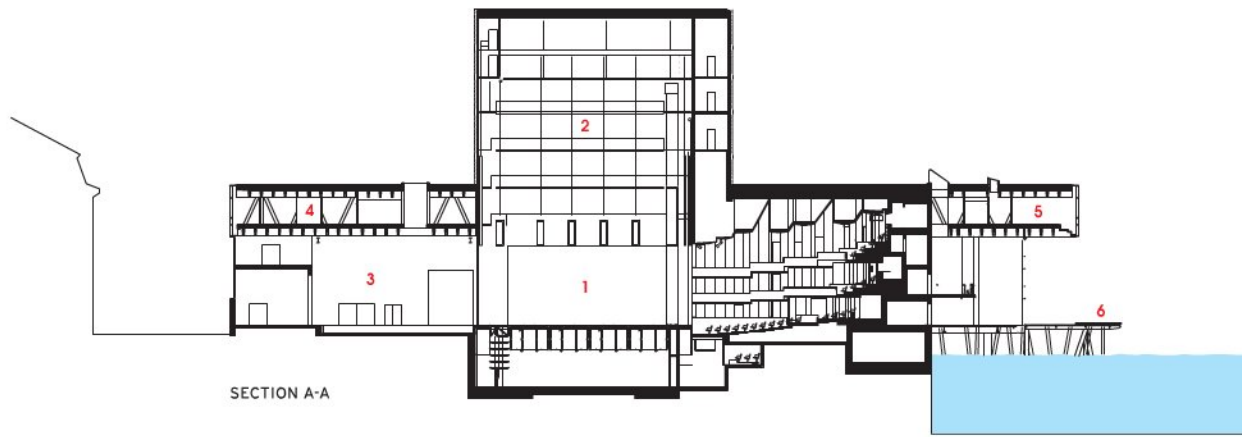
The architects responded with a tripartite composition. A broad oak-deck promenade wraps around three sides of the building and provides access to the glazed foyer with dining facilities. The three theaters – with 650, 250, and 100 seats, respectively – occupy the main masonry volume; and the projecting, upper-level glass box houses the services. The exterior promenade and airy, 492-foot-long, 26-foot-high interior foyer meld into one another with panoramic views of the waterfront – a broad channel extending to the Baltic Sound at the north – and of the historic skyline to the south. Lighting has been handled with special care. Outside, bands of glass-covered lights set in



the platform illuminate the parking area below and serve as directional guides. Inside, a forest of long, thin fiber-optic lights hang from the ceiling, recalling the suspension devices (for stairs, for example) that were a favorite of Arne Jacobsen.

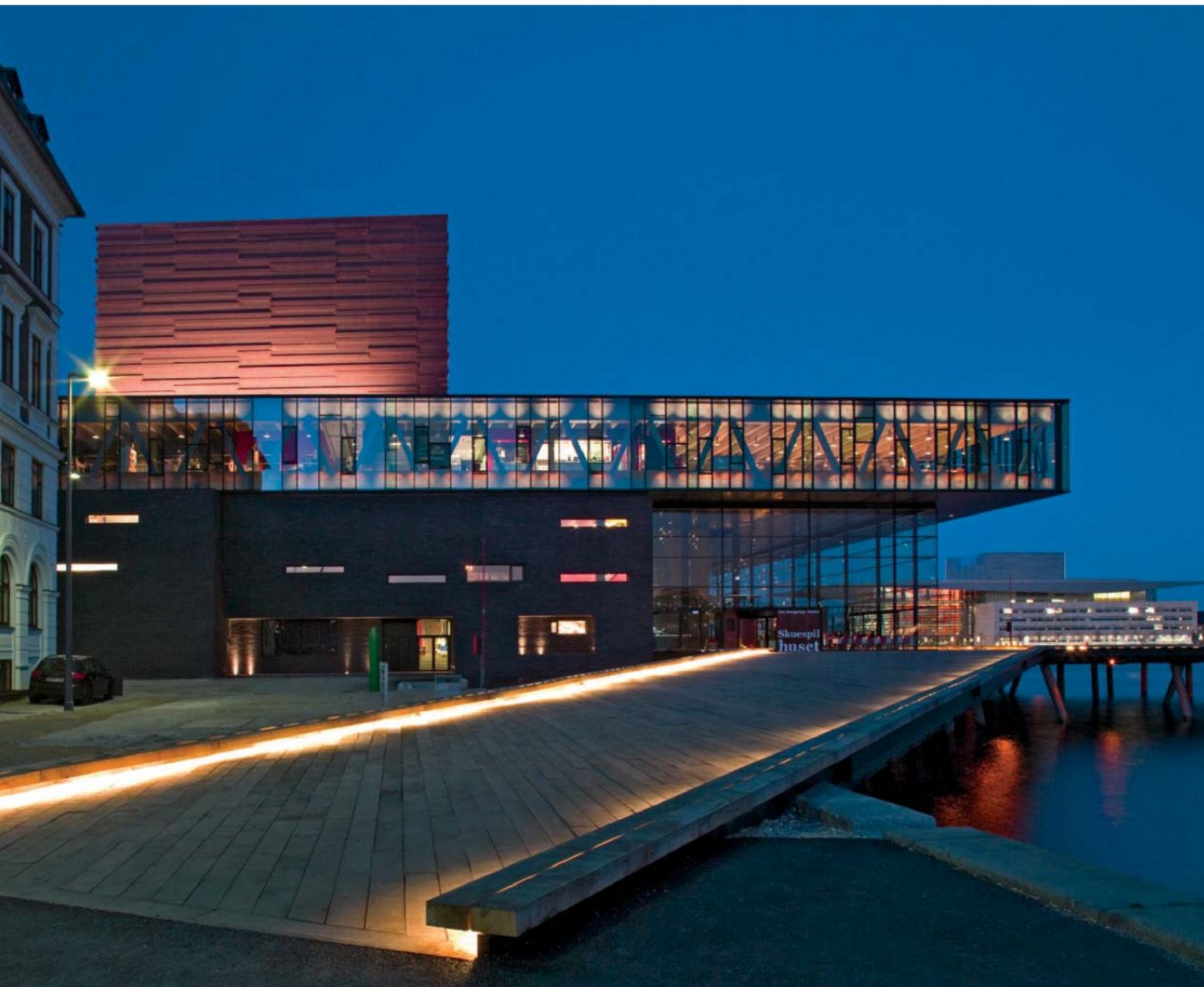
Passing from the light-filled public space of the foyer into the main stage, theatergoers plunge into what seems to be a darkened grotto, its staggered walls the same rough, deep brown brick as the exterior. Seating, arranged in a traditional horseshoe with two narrow balconies, provides an intimate environment for a classical and contemporary repertory.

The second, small stage, which can be reconfigured as needed, and the rehearsal rooms are separated from other functions by a long skylight that allows daylight to penetrate the center of the building. This slit in the roof also supplements the ample daylight of the service level, where dressing rooms, a recording studio, the costume workshop, offices, and a library are located. The final and smallest stage is a simple black box.



1. Main stage
2. Fly tower
3. Backstage
4. Sound studios
5. Dressing rooms
6. Promenade

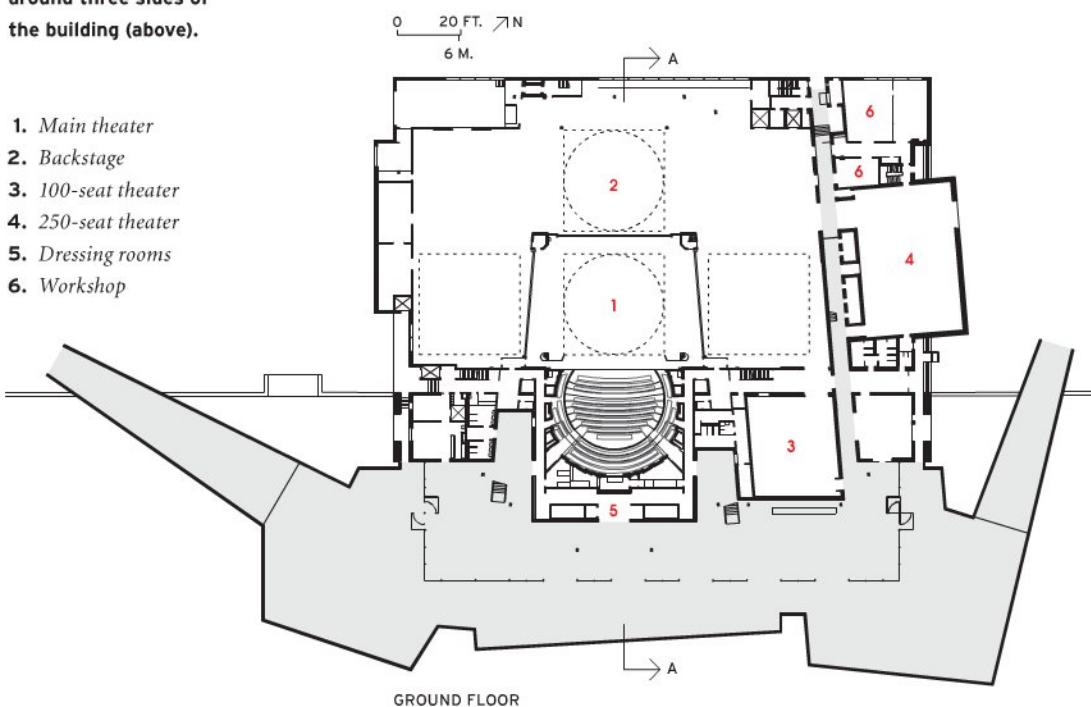
The theater comes alive at night, glowing from within like a lantern on the water (below).





An oak promenade hovers above the water and wraps around three sides of the building (above).

1. Main theater
2. Backstage
3. 100-seat theater
4. 250-seat theater
5. Dressing rooms
6. Workshop



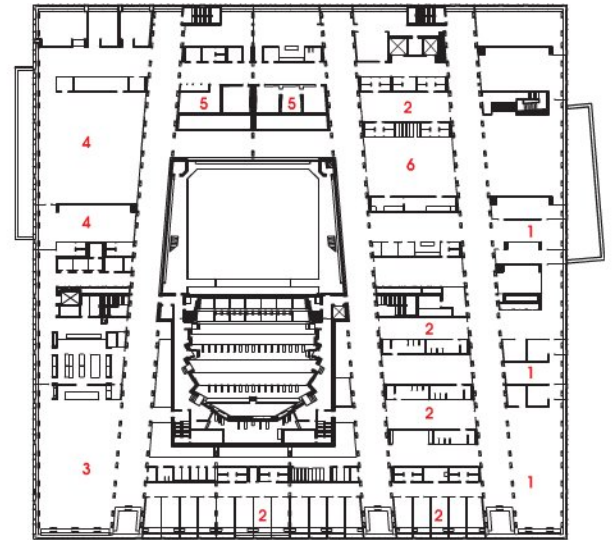
The glazed top level offers a transition from below equal in drama to the light/dark contrast of the ground level. Flooded in daylight, the largely open space is organized into different areas by exposed steel trusses. The architects take full advantage of views that are even more breathtaking from this elevated position, with inviting stepped nooks for informal meetings dropped from the floor's peripheries.

The theater is a composite structure; bearing walls support the exterior walls and the large fly tower, with additional columnar supports for the cantilever above. Giant trusses, the full depth of the service floor, extend perpendicular to the waterfront and frame the main theater within. These steel trusses are exposed on the inside, creating dramatic corridor spaces between their diagonal braces. They are also visible on the exterior, as the glass curtain wall is pressed close to their chords.



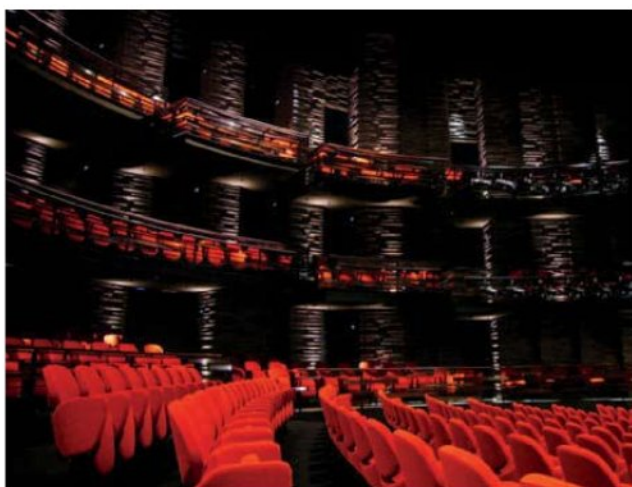
Brick is used on the lower portion of the exterior (left). A copper-clad fly tower tops the tripartite composition (below).

1. Administration
2. Dressing rooms
3. Cafeteria
4. Library
5. Video/sound studios
6. Costume storage



THIRD FLOOR





The lounge offers breathtaking views of the harbor (top). The interior of the main stage, arranged in a traditional horseshoe shape, is clad in rough, deep brown brick (bottom).

Commentary

The siting of the Royal Danish Theater, while successful on the harbor side, is problematic in the approach to its entry. The theater essentially turns its back to the historic center of Copenhagen: It takes its bows toward the sweeping water views while ignoring the adjacent urban fabric. Although the intention is to inject the waterfront with a new cultural venue, when one arrives from the main Avenue of Sankt Annae Plads, the theater is virtually invisible. The axis of the street slides right by and into the water. One must turn hard right, up a fairly narrow ramp, to enter. So discreet is the elevated boardwalk that some exiting theatergoers have fallen into the water while looking to find their cars in the parking lot beyond. Guardrails have since been installed in these areas (which, contrary to U.S. standards, are not required along the waterfront in Denmark).

Even more problematic is the side of the theater facing what eventually will be a park but is now a parking lot. It is a blank brick wall with a large garage-type door and a few tiny windows that appear more like a service entry than a secondary entrance into the theater.

Clearly, the Royal Danish Theater is a building of the night, the time when theater comes alive. Then, it is a lantern, glowing from within the grand foyer and especially in the glittering glass slice of the actors' floor above, the triangles of the truss like a tiara of diamonds hovering over the harbor. From the foyer, the twinkling lights of Copenhagen harbor open up like a great stage, continuing the performance within to the performance without.

As Shakespeare wrote, "All the world's a stage." Now, when *Hamlet* is performed in Denmark, it can appear in a proper modern setting worthy of its prince. ■



The immense steel trusses of the service floor are a distinctive feature of the interiors as well as the exterior.

Two: CRYSTAL ROOM

Waidhofen, Austria

Hans Hollein **carves out a diamond in the rough with a crystalline performance space inside a medieval fortress.**

By Josephine Minutillo

Architect: Atelier Hollein—
Hans Hollein, Hon. FAIA, principal;
Paul Steinmayr, project architect
Associate architect: Wolfgang
Pfoser
Client: City of Waidhofen an der Ybbs
Consultants: Karlheinz Müller,
Müller BBM (acoustics);
Rudolf Lamprecht (lighting); ARGE
Schneider & Retter (structural)

Size: 2,560 square feet
Cost: Not available
Completion date: April 2007

SOURCES

Glass: Fuchs Glas-Technik GmbH
Steel construction: Urbas
Maschinenfabrik GmbH
Flooring: Schatz Böden GmbH
Seating: Bene AG

ONLINE: Rate this project and access additional sources at architecturalrecord.com/bts/.

As a general rule, hard, flat surfaces produce lousy acoustics. Hans Hollein however, has been writing his own rules for decades. In his very first built performance space, the Pritzker Prize-winning architect insisted on using glass. "I've always wanted to prove that you can create exceptional acoustics in a space made entirely of glass or stone," says Hollein. He finally got his chance when designing the Crystal Room (*Kristallsaal*) inside Rothschildschloss, a medieval castle in the picturesque town of Waidhofen an der Ybbs, a 2-hour drive west of Hollein's Vienna office.

Program

Hollein made several interventions to the castle – most notably, a 20-foot-tall glass box atop the main tower – which recently opened to the public. Though a museum occupies most of the restored structure, the town also required a performance space for annual music festivals and a yearlong program of classical and jazz concerts.

Solution

Nestled within the upper floors of the castle, the double-height volume, clad almost entirely in translucent glass, is an unexpected sight given its context and function.

Pieced together like a puzzle, glass panels of varying size and shape fan out across the room like the bellows of an accordion. Hollein's design of the folds was intuitive, confirmed later by an acoustician.



The performance space is tucked inside a former Rothschild family castle.

Ceiling panels hang from newly installed steel rafters, tilting upward to a zigzagging band of wood-backed, perforated aluminum panels that absorb sound. Wall panels – many of which are not completely vertical – conceal existing windows, but allow for some daylight to pass through. (Neon tubes along the floor behind the walls are switched on during performances, giving the room a cool, blue glow.) Circular fasteners, which affix the panels to their supports, create a visual rhythm. Gaps between ceiling panels were left open, but sealed between wall panels to address aesthetic, not acoustic, concerns.

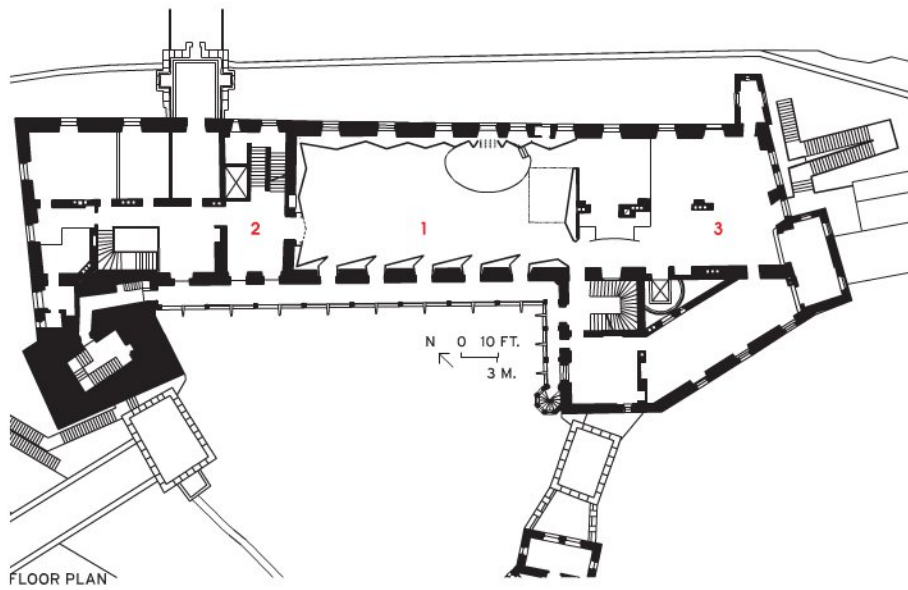
The glass is laminated to meet fire-code requirements and to temper its sound-reflecting qualities. For musical performances, seating radiates around an elevated stage, which can be removed to accommodate a straight seating pattern for lectures,



readings, films (shown on a flat screen integrated into the back wall), and meetings. A small balcony offers additional seating, for a total of 200.

Commentary

Hollein hits a high note; his intimate, cloudlike concert space is the perfect place to get swept away by music. Reviews for its acoustics have also been favorable. A resounding stamp of approval came from a local violinist, who used it as a recording studio. ■



1. *Crystal Room*
2. *Foyer*
3. *Museum*

The walls and ceiling of the Crystal Room are composed almost entirely of translucent glass panels. Spot lighting is suspended from a band of aluminum panels diagonally above the stage (below).



Three: BROAD STAGE

Santa Monica, California

Renzo Zecchetto creates a performing arts center that captures the laid-back vibe of Southern California.

By Clifford A. Pearson

Architect: Renzo Zecchetto Architects—Renzo Zecchetto, principal; Michael Stebbins, project manager; Lari Hashimoto, Danielle Yafuso, assistant project managers; Taylor Hsiao, Daryl Maguire, Minya Radenkovich, Keri Morton, Mathew Nelson, Sara Loe, Larry Biggs, Richard Song, project team

Engineers: Nabih Youssef & Associates (structural); Mazzetti & Associates (m/e/p); KPFF Consulting Engineers (civil)

Consultants: Jaffe Holden Acoustics (acoustics); Newson Brown Acoustics (sound isolation); Fisher Dachs Associates (theatrical)

General contractor: FTR International

Size: 32,000 square feet

Cost: \$34 million

Completion date: September 2008

SOURCES

Basaltina stone cladding:

IMT Italian Marble & Tile

Curtain wall: W&W Glass

Steel windows: Hope's Windows

Skylights: O'Keefe's

Acoustical ceiling: BASWA Acoustic

Suspension grid: USG

Window coverings: MechoShade

Downlights: ERCO; Rambusch;

Indy Lighting

Exterior lights: ERCO; Simes;

Poulsen; Lumux

ONLINE: Rate this project and access additional sources at architecturalrecord.com/bts/.

For westside residents in Los Angeles, the Eli and Edythe Broad Stage in Santa Monica offers a welcome alternative to fighting traffic en route to a downtown theater. Owned by Santa Monica College but serving both school and community audiences, the theater complex juggles a range of tasks. On one level, it provides remarkably sophisticated theater-arts facilities for a community college. On another, it stands as a symbol of a blossoming cultural scene in Santa Monica (and the "growing Balkanization of the L.A. area" due to traffic congestion, as Christopher Hawthorne noted in the *Los Angeles Times* on October 11). "Santa Monica is a beach town," states Dale Franzen, director of the Broad Stage. "We're not a black-tie kind of place." But with movie stars, famous artists, and big-time developers living in the area, it's not Podunk either.

Program

Funded by private donations and bond measures passed by the cities of Santa Monica and Malibu, the project cost \$34 million to build and serves many masters. It comprises the new 499-seat Broad Stage, a black-box theater in a renovated building next door, and a variety of rehearsal, teaching, and support spaces in the old and new structures. The main theater had to accommodate a range of performances – from opera and music to dance and drama. With Franzen, a former opera singer, as its director and actor Dustin



The theater's south elevation faces busy Santa Monica Boulevard.

Hoffman as its board chairman, everyone expected the Broad Stage to provide excellent acoustics and a great place to watch theater.

Solution

"We started with the idea of an acoustically superb space," states Renzo Zecchetto, who established his firm in Santa Monica in 1990 after working with Charles Moore for 10 years. "From the beginning, we designed from the inside out," he adds. With Italy's "horseshoe" opera houses in mind, Zecchetto kept the dimensions of the theater fairly intimate (74 feet long and 72 feet wide) and tucked boxes at either end to bring audiences close to the performers. But he gave the theater a grand stage – 94 feet wide and 36 feet deep with a proscenium opening 47 feet wide and 24 feet high – to accommodate large productions.

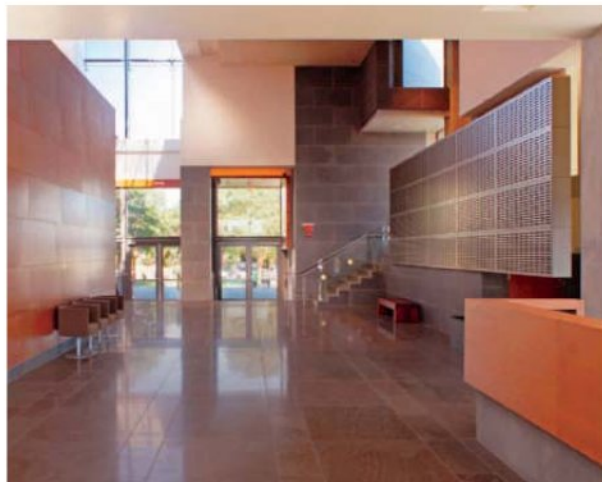
Collaborating with Jaffe Holden

Acoustics, Zecchetto developed a system of convex surfaces – some finished with CNC-milled mahogany panels and others with plaster – that combine early and secondary sound reflections and soften the acoustics. Zecchetto likens the plaster-coated sections curving above the seats to a peeled orange, while the mahogany forms at either end of the balcony recall the hulls of a ship. Motorized drapes hanging from the ceiling adjust acoustics to handle different types of performances.

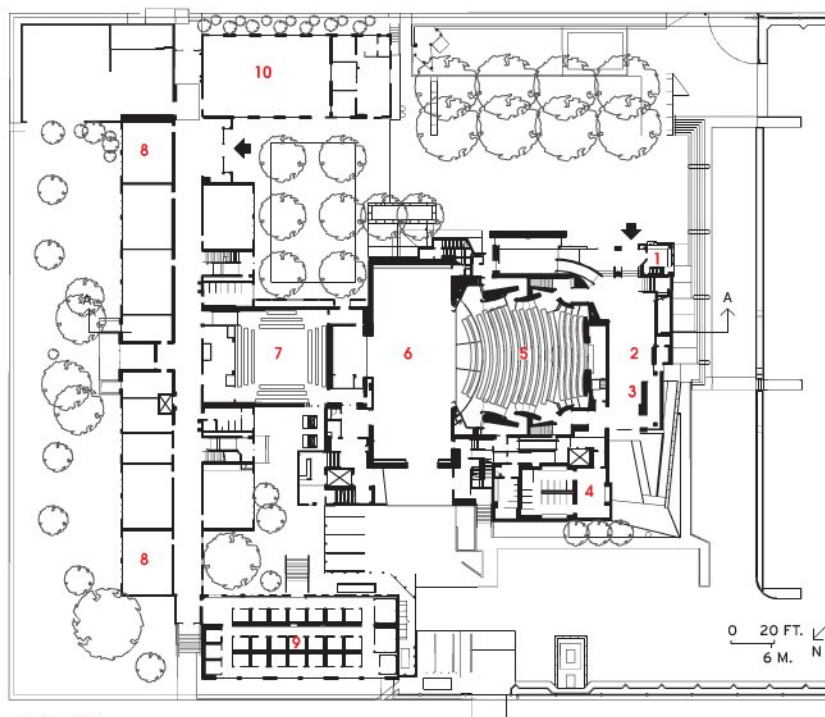
Reducing noise was as important as creating a rich sound. So the designers brought air in from below the seats, instead of using noisy equipment to force it down from above. They also pulled mechanical equipment out of the hall, housing it in a set of white boxes expressed on the exterior of the building.

To get double use of the impressive fly tower with its 37

To buffer the theater (below) from noise, the architect set it back behind a glass-enclosed lantern and housed mechanical equipment in separate white boxes (right). The lobby (far right) is naturally ventilated.

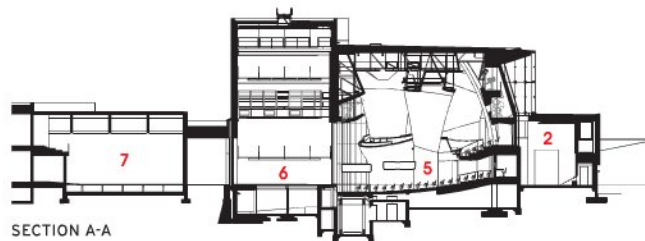


1. Ticket office
2. Lobby
3. Concession
4. Women's lounge
5. Theater
6. Stage
7. Black-box theater
8. Classrooms
9. Rehearsal
10. Administration



MAIN FLOOR

Curved mahogany and plaster surfaces shape the acoustics in the main hall (below). The theater seats 499 but expands to 539 with chairs above the orchestra pit.



SECTION A-A



counterweight line sets for scenery, Zecchetto placed the 99-seat black-box theater on the other side of the tower. So the small theater could work independently of the main one, he provided access to it from a courtyard serving the classroom wing in the existing building. With little money for renovating this structure, the architect dressed up the entry with tall banners strung on simple metal frames projecting off the old facade.

To wrap the new building housing the main theater, Zecchetto used mostly composite-wood panels and glass on the east, where people enter, and dark-gray basalt stone from Italy on the long south elevation. A glass lantern tops the composition, revealing the warm mahogany on the main wall and ceiling in the upper lobby of the theater. Below the lantern, a large canopy whose underside is surfaced with composite-wood panels turns the corner, tying the wood-and-glass east facade to the mostly stone south facade. A poured-concrete frame carries most of the building's structural loads and supports a steel roof.

Although Zecchetto started designing the building 10 years ago, before sustainability became such an important issue, he designed the two-story lobby to capture breezes from the west, eliminating the need for air-conditioning here. Inside the lobby, he used mahogany and basaltina on the walls and brought them together with polished limestone on the floors.

Commentary

The new Broad Stage provides a handsome home to an array of theater facilities serving a disparate set of audiences and performers. If its east and south elevations don't come together in a totally graceful manner, you can blame it on a complex program. However, setting the building behind a sea of parking on the south – the main public elevation – is a bigger problem. Zecchetto says the client hopes to put the parking below grade someday and provide a landscape park above. But you wonder if there wasn't a way of getting the building closer to Santa Monica Boulevard on the south and tucking the parking behind it on the north. ■

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“And the award for best sound effects goes to ...”

ACOUSTICS GET A STARRING ROLE IN THE DESIGN OF A NEW PERFORMING ARTS CENTER

By Josephine Minutillo

Acoustic surface treatments and baffles may work to improve the quality of sound transmission in ordinary spaces, but to create world-class performance venues where the need for pristine acoustics is critical, every aspect of the design—from formal and spatial considerations to structural and mechanical needs—are closely examined by a team of architects, engineers, and acousticians. The Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC) at Rensselaer Polytechnic Institute (RPI) contains four distinct performance and recording spaces, each requiring first-rate acoustics—a challenge for any single building to accommodate, but one made even more daunting given this building’s dramatic siting in a hillside.

Grimshaw Architects was charged with designing this complicated structure, their first performing arts building, after winning an invited competition in 2001. Partnering with Buro Happold Consulting Engineers and architect-of-record Davis Brody Bond Aedas,



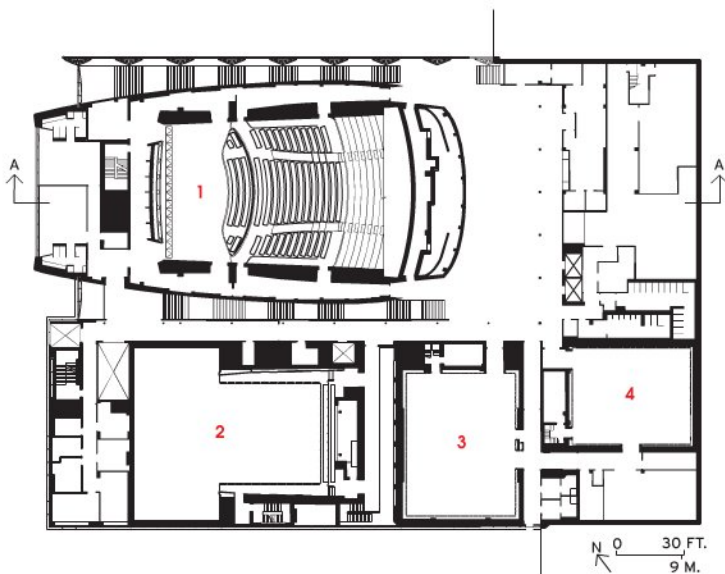
CONTINUING EDUCATION

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 107 and follow the instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Recognize and define diverse acoustical terminology.
2. Explain how acoustical concerns affected the structural and mechanical design of EMPAC.
3. Describe various treatments used to improve sound quality.



Penetrating the building's west facade (opposite), the wood hull of the concert hall is the most prominent feature of EMPAC's exterior. Several bridges provide access to its interior (below).

1. Concert hall
2. Theater
3. Studio 1
4. Studio 2

Grimshaw's New York office had to roll with the punches as EMPAC's program evolved into a 220,000-square-foot building that includes a 1,200-seat concert hall, a 400-seat theater with a full fly tower, two black-box studios for experimental media, artist-in-residence studios, a dance studio, audiovisual production suites, and support facilities. According to RPI president Shirley Ann Jackson, "EMPAC is an extraordinary venue where science, research, and performance meet."

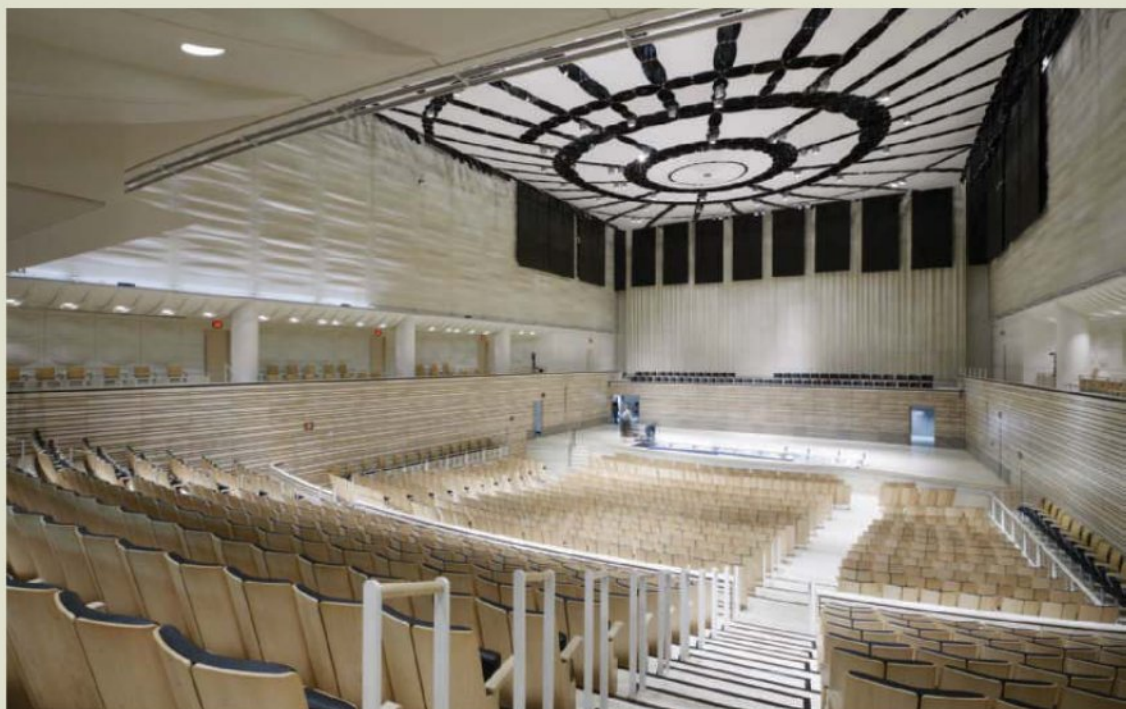
Grimshaw arranged the concert hall and atrium axially with the main entrance in a linear sequence on the north side of the building, while the studios and theater form an adjacent sequence on the south. The main programmatic space is the most visible. Encased in a wooden hull, the floating ovoid of the concert hall penetrates the building's west facade overlooking the small town of Troy, New York. Hidden behind the cedar planks—arranged in a decorative chevron pattern—is a sophisticated steel framework which, among other things, provides support for access bridges to the concert hall. The bridges rest on acoustic isolation barriers.

Inside, the concert hall takes on a shoebox shape, the long walls of its concrete inner shell slightly curved to avoid cross-room flutter (successive, repetitive sound reflections that bounce off parallel walls). While much thinner dimensions would have sufficed for structural purposes, the slabs of the concrete shell average 14 inches in thickness to provide superior isolation from exterior noise. Affixed to the inside surfaces of the upper walls is an array of gently convex and concave-shaped cast-concrete panels, bringing the overall thickness of the walls to 22 inches in some locations. These panels, along with ravioli-shaped, glass-fiber-reinforced gypsum panels in the gallery level (where the curvature is most pronounced), and wiggle-shaped maple strips on the lower walls, all help to diffuse sound throughout the concert hall, aided by the overall convex shape of the auditorium. The interior shaping of the surfaces, and inclusion of sound-reflecting panels, combine to control tone and liveness.

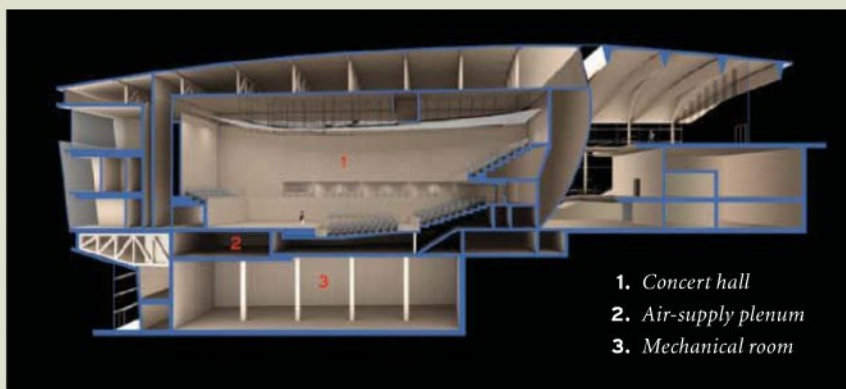
The surface of the concrete panels, which contain pulverized limestone, has a very fine porosity, carefully chosen and analyzed to provide some high-frequency absorption in addition to the sound diffusion created by its geometric shaping. "Musicians love concert halls where they can hear themselves really well, where it doesn't get overly loud, and where there are no confusing reflections," explains Larry Kirkeg-



Variouly shaped cast-concrete, gypsum, and wood panels; a fabric ceiling; and custom-designed seats aid the acoustics in the concert hall (right). The shoebox-shaped volume is separated from the mechanical



room below by a plenum (right). Conditioned air rises from the plenum through grilles that are located at each seat (above), an efficient and quieter option than pushing air through an overhead system.



1. Concert hall
2. Air-supply plenum
3. Mechanical room

aard, Hon. AIA, president of Chicago-based Kirkegaard Associates, the acousticians for EMPAC. “Sound should come back to the stage as a warm hug, not as a Heimlich maneuver.” Selected for its fire-retardant attributes, the tightly woven Nomex fabric of the ceiling panels allows performers to hear themselves and each other through a balanced reflection of middle and high frequencies. To achieve the desired warmth and presence of acoustic reflections, the custom-engineered

FOR THE MUSICIANS, SOUND SHOULD COME BACK TO THE STAGE AS A WARM HUG, NOT AS A HEIMLICH MANEUVER.”

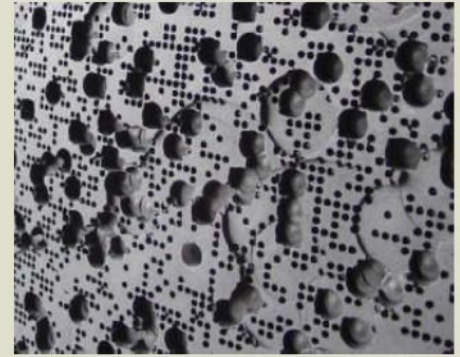
ceiling also lets lower frequencies partially flow through it. Warmth has a clearly observable effect on orchestral timbre—the quality of sound that distinguishes one instrument from another.

With all the measures taken to ensure optimum acoustics within the concert hall, the last thing anyone wanted to do was introduce noisy HVAC equipment into the space. Therefore, the auditorium is cooled through underfloor air distribution. Fresh air slowly and silently

rises through grilles distributed throughout the floor from a large, pressurized plenum below the stage and audience. Each of the fixed audience seats—custom designed by Grimshaw with Billings Jackson to optimize ergonomics and acoustics—features a diffuser below it, barring instances where structural elements under the floor get in the way.

This type of displacement ventilation is becoming the standard for state-of-the-art performance venues, not only because of the lower noise levels, but because of issues of audience comfort (no drafts) and sustainability (inherent energy savings). “The whole problem with delivering air from the ceiling level in large, high spaces like these is that you have to deliver it at much higher velocities to get past the hot zone of the lighting and down into the occupied area,” explains Denzil Gallagher, head of Buro Happold’s m/e/p project team.

Gallagher was also responsible for keeping the noise down in the mechanical room, which occupies a three-story space directly below the concert hall. “It’s a risky location because of the possibility of noise transfer,” he says. “But the plenum acts as an acoustic barrier.” Moreover, a number of efforts were made to keep the mechanical room as quiet as possible. One reason for the room’s huge volume is the sheer



The wire grid ceiling over the studios provides a walkable surface and structure from which to hang banners, diffusers, and 360-degree screens for immersive performances (left). Computer-milled acoustical panels in the studios have random, pocked surfaces (above) and are lined up along the studio walls (below left). Live sound testing is performed on a mock-up of the panels (below).



PHOTOGRAPHY: © CHUCK CHOI (OPPOSITE, TOP); COURTESY KIRKEGAARD ASSOCIATES (THIS PAGE AND OPPOSITE, LEFT, IMAGE, OPPOSITE, BOTTOM)

size of the equipment housed there. Ducts and ventilation shafts are three to four times bigger than in conventional buildings so that air moves at slower velocities within them.

The engineers were able to save some space, however, with a relatively new technology that they specified in a project for the first time with EMPAC. Rather than using an air-handling unit with a large, centrifugal fan, they opted for a Fanwall system that uses a series of small, direct-drive fans. But more than the space-saving benefits, the system achieves 20 to 30 percent noise reduction, especially at low frequencies, which are typically very difficult to eliminate. (High-frequency noises are treated more simply with sound traps—duct liner, for instance.) Flexible pipe connectors in the mechanical room—and similar measures at various building joints—prevent vibration from entering into other spaces, walls, or floor systems. The sum of these efforts prevents cross-talk, breakout-noise, and plant-noise transmission.

The mechanical room, like the concert hall, is constructed as a “box-in-box.” A steel frame covered in several layers of gypsum board surrounds the room’s enclosed space, yet does not touch any of its columns, or the slab above (closest to the concert hall). In this way, all the

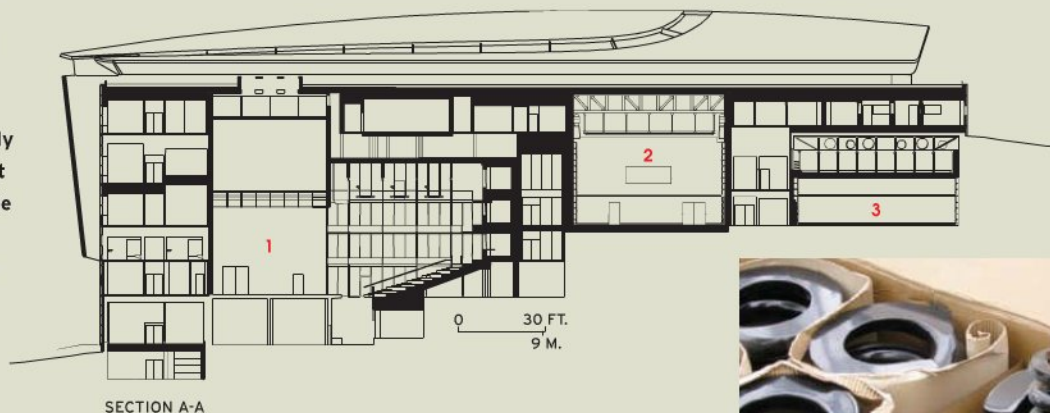
equipment contained within it is further isolated from the concert hall.

EMPAC is in effect a series of structurally isolated buildings, due in large part to the need for acoustic isolation during simultaneous performances. Nowhere is this more evident than in the two black-box studios. The larger of the two, called Studio 1, is fully base-isolated, an extreme measure used mainly in earthquake-prone areas or for sensitive laboratories. “Typically, this type of space would employ just a jack-up slab for the floor,” admits Craig Schwitter, who led Buro Happold’s structural design. “Here, all of the slabs, including the 12-inch-thick floor slab and the 60-foot-high walls, were poured and then lifted up on springs. Studio 1 is truly a floating building within a building.”

Studio 2, on the other hand, sits on completely separate foundations from the rest of the building. “There was concern about noise literally traveling down into the ground and cross-talking between concrete beams,” says Schwitter. “Above Studio 2 are additional spaces that span over the studio, but don’t rest on it.” These structural gymnastics were further complicated by New York State’s adoption of the International Building Code in 2002, which dictated that the building address seismic issues. Because of the sloping hillside into which EMPAC

Studio 1 is fully base-isolated. A series of springs (top right) is cast into the poured-concrete floor slab (below). The foundations for Studio 2 are physically separate from the rest of the building. Flexible pipe connectors in the mechanical room prevent vibration from entering into other spaces, walls, or floor systems (bottom right).

1. Theater
2. Studio 1
3. Studio 2



is embedded, it was placed in a higher seismic category than is typical for the region. As each element of the building is a unique structure, individual venues had differing drift characteristics. All movements were coordinated with up to 4-inch joints in many areas.

Beyond the studios' unique structural aspects were their highly specialized interior requirements. Studio 1 is optimized for scientific visualization, multiscreen and immersive performances, and dance; Studio 2 for music recitals and recordings. Acoustic requirements were stringent for both. Each studio's walls are lined with a series of specially developed gypsum acoustic panels, arranged as a grid, which reflect and scatter sound. The panels in Studio 1 feature a perforated metal surface backed with absorptive material. Inspired by the bark of a tree, the panels are computer-milled to contain random, pocked surfaces. "Sound waves interfere with each other when they experience repetitive surfaces," says Kirkegaard.

Each time a traveling sound wave bounces back from a room surface, its strength is weakened by the sound absorption of that surface. The time it takes for a loud sound to decay to inaudibility after being cut off is called the reverberation time (RT). According to

Kirkegaard, the RT in Studio 1 prior to installing the acoustic panels (and the resonant absorbers behind them) was between 7 and 10 seconds—quite long. After installation of these critical elements, the RT was reduced to less than a second. (By contrast, the RT in the concert hall is closer to 2 seconds.)

Both studios feature a wire grid ceiling that provides a walkable surface upon which technicians can work to adjust the room to fit

THERE WAS CONCERN ABOUT NOISE LITERALLY TRAVELING DOWN INTO THE GROUND AND CROSS-TALKING BETWEEN CONCRETE BEAMS."

the needs of individual performances. Banners, diffusers, and screens can be hung from this surface for use in video projections, three-dimensional presentations, and immersive environments.

"The studios were probably the most complicated spaces to design," Gallagher concedes. "The noise criteria was as strict for them as for the concert hall. Nowhere else in the world do you have a build-

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ing with not one or two, but four world-class acoustic spaces.” The criteria Gallagher refers to are Room Criteria (RC), which measures the background noise in a space over a certain frequency range. While the average RC range for ordinary spaces like restaurants and even libraries is between 30 and 40, the requirements for all the spaces at EMPAC were RC15—in other words, quiet enough to hear a pin drop.

After Studios 1 and 2, the theater makes up the last major performance space in EMPAC’s southern block—which consists of a total of six independent structures linked by a spine. Smaller and less formal than the concert hall, the physical space of the theater is meant to recede as the stage lights come up. The theater can be used with or without its orchestra pit. Movable seating at the parterre level along the sides allows artists to configure the theater as proscenium space, or to extend the playing area along the sides of the audience. The major acoustical intervention involved making the winch equipment around the stage and within the 70-foot-tall fly tower as quiet as possible—achieved primarily through



one of the most advanced computer-controlled rigging systems in the world. Like the concert hall, the theater uses displacement ventilation.

Barely noticeable to the average audience member, ordinary filament lights produce a small amount of noise when dimming. This concern—among countless seemingly minor issues—was addressed in the theater and elsewhere by using a sound wave dimmer.

Operational since October, all reviews seem to indicate that the stringent acoustic levels demanded by the designers and client have been achieved. But while an extraordinary effort was put forth to make EMPAC as technically perfect as possible, its mission is something else entirely. “This building is not about the technology,” says EMPAC founding director Johannes Goebel. “It is all about the experience of people seeing, hearing, and moving inside it.” ■

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- 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 take the test online at continuingeducation.construction.com/ to receive one AIA learning unit.

QUESTIONS

- The slabs of the concert hall’s concrete inner shell average 14 inches in thickness for which reason?
 - to provide adequate structural support
 - to act as a superior acoustic barrier
 - both a and b
 - none of the above
- In the concert hall, the main purpose of each of the following elements is to diffuse sound except which?
 - cast-concrete panels
 - glass-reinforced gypsum panels
 - engineered ceiling fabric
 - wiggle-shaped wood strips
- The sound quality that distinguishes one instrument from another is which?
 - flutter
 - frequency
 - warmth
 - timbre
- Which is not an advantage of displacement ventilation in the concert hall?
 - greater audience comfort
 - lower ceiling height
 - energy savings
 - quiet distribution of air
- Of the following, which does not reduce noise?
 - air moving at low velocities
 - air moving at high velocities
 - duct liner
 - flexible building joints
- All of the following statements are true except which?
 - low-frequency noises are easier to reduce than high-frequency noises
 - flutter is created from sound bouncing off parallel walls
 - the plenum below the concert hall acts as an acoustic barrier
 - both the concert hall and the mechanical room are housed within a hidden steel framework
- To avoid cross-talking between beams, Studio 2’s structure is designed how?
 - with a jack-up slab
 - with a system of interior acoustic panels
 - on a completely separate foundation from the rest of the building
 - as a fully isolated concrete box that rests on springs
- Reverberation time measures which?
 - the absorptive rate of a surface
 - the number of times a sound wave is bounced off a surface
 - the frequency of a sound wave
 - the time it takes for a sound to decay to inaudibility
- In comparison to a room with an RC rating of 25, an RC15 space is which?
 - louder
 - quieter
 - grander
 - smaller
- The pattern on the acoustical panels in the studios is which?
 - botanical
 - chevron
 - random
 - a grid



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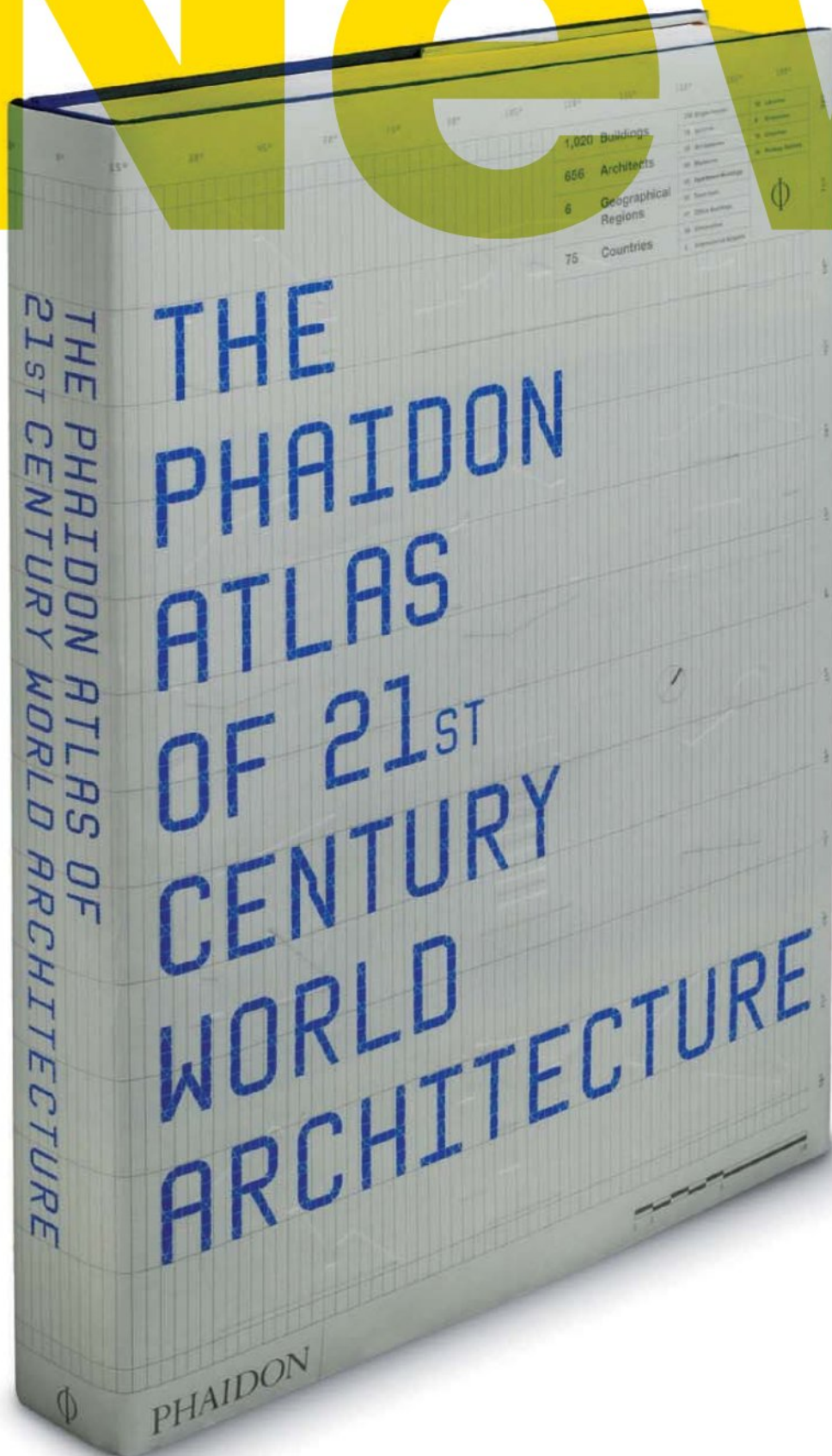
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Tech Briefs

Designers grapple with diverse and sometimes **competing demands** when trying to create **acoustically ideal** learning environments

Acoustics in school building moves toward the head of the class



A new creative-arts building at Brisbane Girls Grammar School is organized around a multistory, activity-filled hub.

From cacophony in the schoolyard and tense quiet during finals to the social jungle of the cafeteria and the read-out-loud of Roald Dahl: Maybe no acoustic environment is expected to perform in such a variety of ways as the contemporary school.

Despite these diverse expectations, it's only recently that formal acoustic standards moved toward the head of the class in school building, architects and acousticians say. Too often it is seen as a matter of money. Meanwhile, the rise of high-performance, energy-conserving design is prompting challenges, with features like natural ventilation sometimes at surprising cross-purposes to tuning sound in the classroom.

Energy and persistence

Facing a stand of fir trees in Kirkland, Washington, is the three-year-old Benjamin Franklin Elementary School, the vision of contemporary learning in the pine-green and tech-forward northwest. Mahlum Architects of Seattle garnered several awards with the two-story building that features classrooms clustered around open learning areas – a layout that is an

outgrowth of the school's educational philosophy. The local district chose daylighting and natural ventilation for Ben Franklin well before green mandates for schools and other state-funded buildings passed in 2005. These measures

have helped the building earn high marks with staff for air quality, thermal comfort, and lighting. But Ben Franklin isn't perfect.

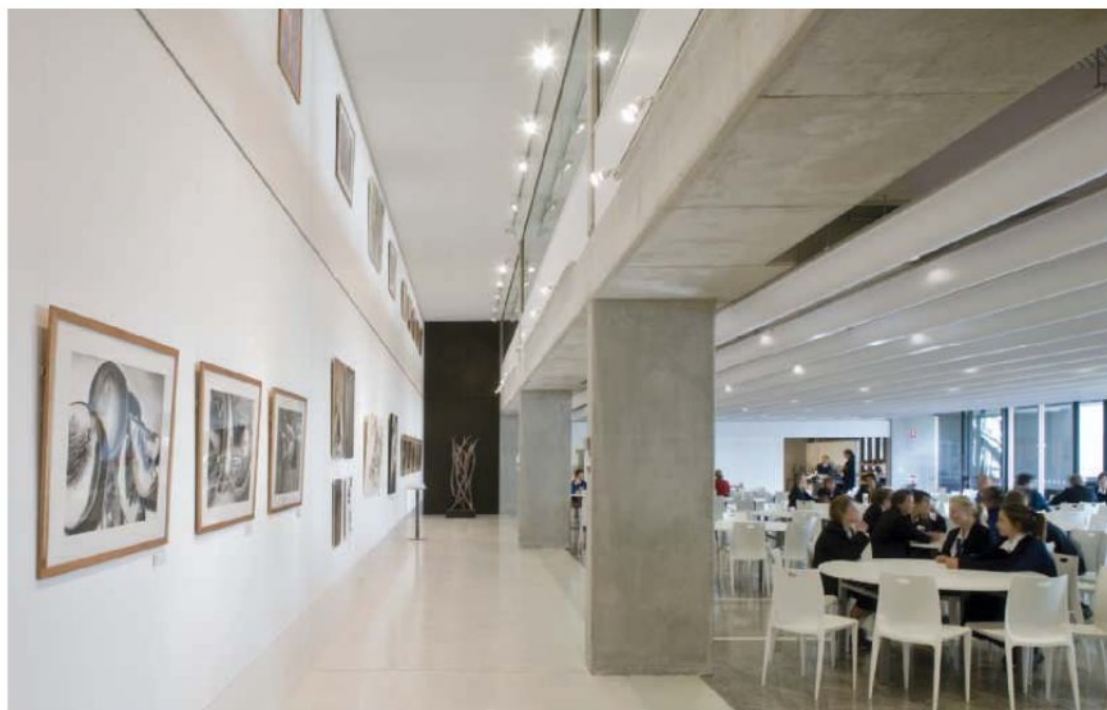
It's too quiet. Using natural ventilation at the school changed the everyday environment so much that it may prompt installing artificial background noise in some locations. The lack of white noise from forced ventilation draws attention to other distracting sounds. This points to a broader issue for architects, says Mahlum design director Anne Schopf, FAIA. Sometimes sustainable approaches can hamper acoustic performance.

What is to be done?

Mahlum, like most architects now, almost always calls in an acoustic consultant for new schools. An acoustician on board is cost-effective; the expense only arises when acting on some of the findings and advice. It's not all lavish high-tech.

Basic measures can be inexpensive, requiring only advance planning. But for Seattle-based acousticians SSA and Greenbusch Group, and for acoustic engineers from Bremen to Brisbane to Berlin, budgeting is always a sensitive topic.

If a project is over budget, the first thing a district does is cut acoustic design, says Mohamed Ait Allaoua, an SSA managing partner. "We work on many schools after the fact. It's hard. There is no magic spray to fix everything," he says. Wolfgang Ahnert, a Berlin-based acoustic engineer who has worked on projects such as the Deutsche Opera and electronically linked lecture halls, is more blunt. "The question is just money," he says. Ahnert estimates 5 percent of recent German schools live up to acoustic standards. Older schools have more pressing problems, says Christian Nocke, a physicist and acoustic consultant based in Bremen. "They're worried about leaking roofs."



Billowy fabric ducts on the ceiling of the cafeteria at the Brisbane Girls Grammar School help mitigate the acoustically undesirable characteristics of the mostly exposed concrete structure.

Tech Briefs

Architects and engineers say that the ideal learning environment has identifiable acoustic qualities. "It should provide a good environment for speaking without raising the voice. Good listening conditions mean not having to concentrate to understand spoken words. It is freedom from distraction," Allaoua says. This demands attention to reverberation, sound absorption, the strength of direct sound, and the involvement of the listener. Nocke says the rule of thumb is about half a second for reverberation; no more than one. There's no shortage of goals and standards for acoustics. There's LEED For Schools acoustic requirements, older guidelines such as the NC 30-35 (NC stands for noise criteria), and the American National Standards Institute (ANSI) 12.60.

Elements of style

Bringing acoustic elements into high-performance schools will become a more common and thorny issue, especially when designers strip away finishes, predicts Greenbusch president and acoustician Julie Wiebusch, who has worked on many school projects, including Ben Franklin, with Mahlum. Glass, drywall, and exposed concrete are equal: They do not absorb sound, she says. The ceiling finish must be absorptive, and wall treatment is desirable.

Ben Franklin's acoustical shortcomings can't be attributed to improper finishes, since classrooms do incorporate absorptive material, such

as carpet tile and suspended ceilings. Along with the lack of ambient noise from a mechanical system, Schopf says the problem is the sliding glass doors separating the shared multipurpose space and the classrooms. The scheme provides flexibility and allows teachers to supervise pull-out groups in multiple rooms. However, this type of arrangement and teaching style compromises acoustical isolation, Schopf says. "It's very complex balancing."

Further complicating things is the need for durable materials, which tend to be the most reflective, points out Chicago architect John Ronan, AIA, who is now working on four school projects. At the Gary Comer Youth Center, which opened in mid-2006 on the city's South Side, Ronan tackled competing requirements with a largely glass-enclosed gym that converts to a top-notch theater. Although glass is not ideal acoustically, curtains extend to act as a bass trap and block out light from neighboring spaces when the room is in use as a performance space. Corrugated-steel walls, which retract to reveal the stage, have duct liner behind a perforated skin.

Many acousticians recommend including absorptive materials into furniture. Allaoua likes to use acoustic metal-roof decking with

fiberglass in the flutes. "If acoustical material is part of the structure, it can't be deleted."

Australian outfit m3architecture used a different strategy with its recent creative-arts building at Brisbane Girls Grammar School. The architects surrounded a multistory open space with practice and music rooms, drama studios, classrooms, and a cafeteria. No special efforts were taken to isolate the adjacent spaces from this central social hub. Noise is instead handled by scheduling. "For the most part, classes are either on or off. When they are off,

there is very little activity in that central environment," according to Michael Banney, m3 director. "But as soon as class finishes, it becomes an ant hive," he says. "The sound of students buzzing in the void is a wonderful thing," he adds.

The surrounding rooms are loft-like, with raw concrete ceilings. But they take a sophisticated approach to acoustics. Inside the cafeteria, for example, the ceiling is covered with billowy radial ducts that not only deliver air, but also help control noise. They are made of an absorptive material: cloth. *Michael Dumiak*

At the Gary Comer Youth Center, two spaces with different acoustical requirements – a theater and a gym – are combined. To convert the gym (far left) to a performance space (near left), a telescoping seating system is deployed, and perforated steel doors retract to reveal a well-equipped stage. Curtains (not shown) extend around the perimeter to act as a bass trap and block daylight.



At Benjamin Franklin Elementary School (top), sliding glass doors between classrooms and shared multiuse spaces (above) support the district's teaching philosophy, but compromise the acoustical isolation.





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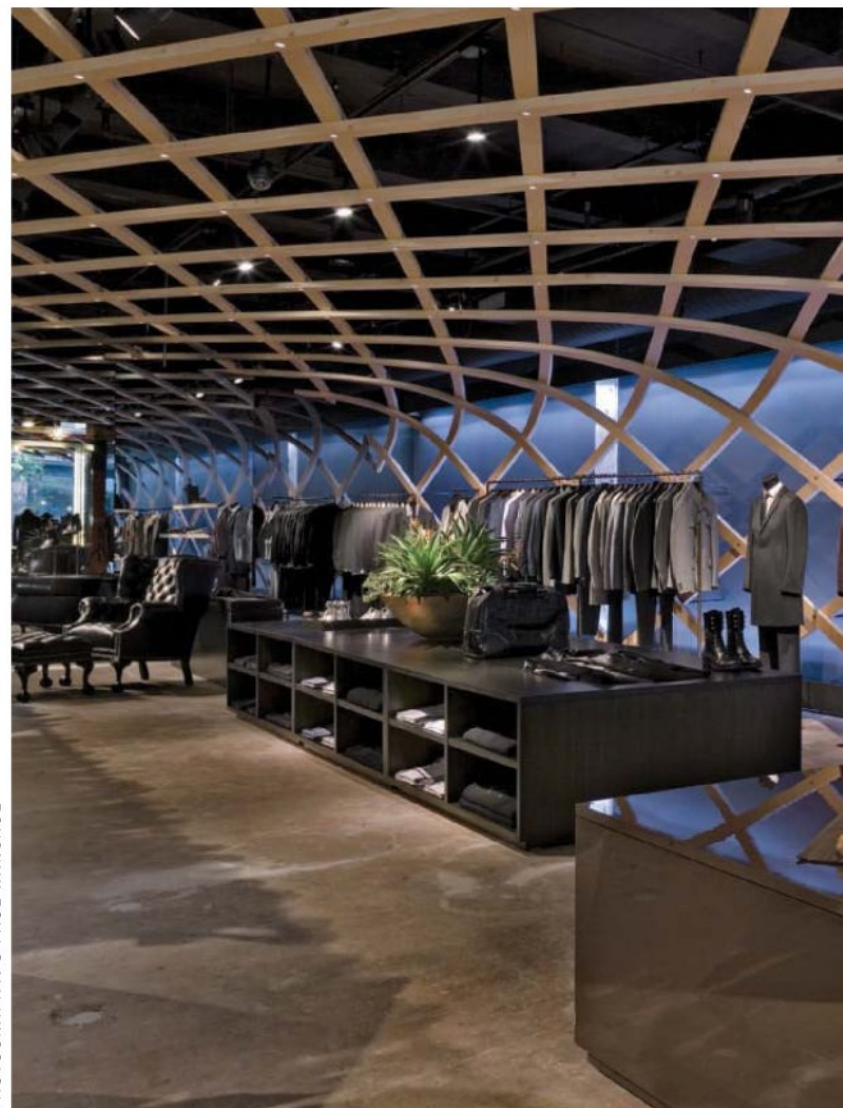
Who among us isn't influenced by light or its absence? Perhaps nowhere is this more apparent than in a sales environment, where lighting can make or break the deal. The architects of the following projects all exhibit light-savvy approaches to architectural interiors. Their designs demonstrate both simple and complex solutions to their particular venues: a trend-setting retail boutique in New York City's Meatpacking District, the top floor of a department store in historic Milan with views of the Duomo, and a sunlight-starved furniture showroom in downtown Tokyo. Employing but never abusing the wealth of emerging technologies available, each architect collaborated with a lighting designer, and in so doing devised a successful plan in which space, materials, and illumination combine to enhance the buying experience – ultimately resulting in sales. Linda C. Lentz

Matteo Thun illuminates a new concept for **Hugo Boss** in New York City

By Linda C. Lentz

Milan-based architect Matteo Thun strives to “respect the soul of a place.” So when the German fashion giant Hugo Boss tapped him to design a new concept shop that would showcase all of its tony brands within a gutted former food market in New York City’s Meatpacking District, he developed a program influenced by the site’s gritty past and urban locale. Thun’s design for the store also reflects the corporate image he began crafting with his architecture in 2006 for the Switzerland-based headquarters of the company’s Strategic Business unit. There, he devised a daylight-filled, low-lying building that nestles into a bucolic setting—its glazed curtain wall enveloped by a wooden latticelike “super” structure evocative of the surrounding vineyards.

The architect realized this strategy for the New York City space through a seemingly simple yet intricate intervention. He fit two thirds of the gutted 4,035-square-foot interior with a scaled-down modular variation of the Swiss headquarters’ cross-hatched superstructure. Made out of white oak, this curvilinear grid is much more than an architectonic reference, however. It creates a bold yet inviting juxtaposition with the old market’s original concrete structure, which Thun left virtually intact as a raw backdrop. Additionally, the arched trellislike form provides a flexible base for the store’s lighting and display systems. “It’s pure function,” says Thun. “And it never touches the structure of the building.”



PHOTOGRAPHY: © PAUL WARCHOL

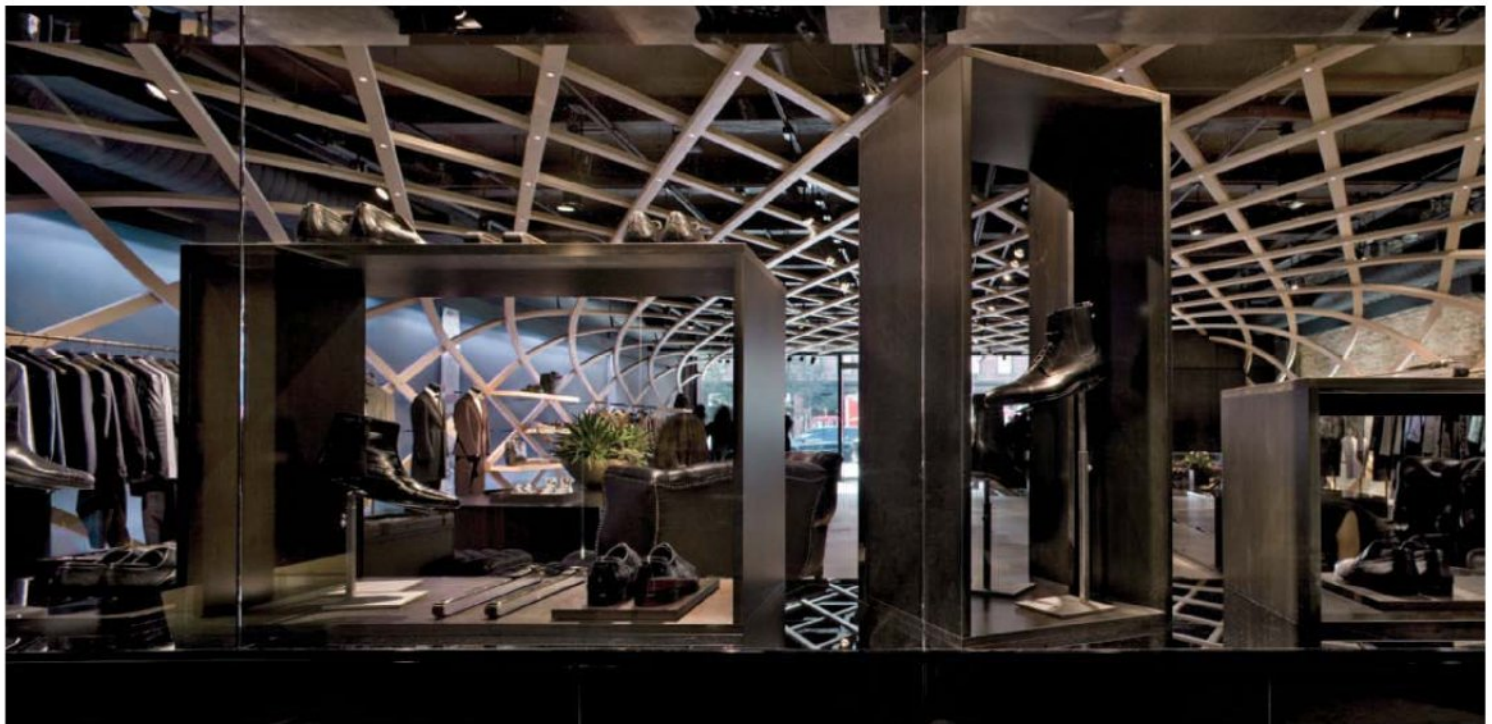


A white LED Kelvin mixing system washes the brick wall and columns, reflected in the focus wall (above). A sequenced system controls LEDs on the new wall and in the lattice ceiling (left).

The design accommodates the temporary nature of retail venues, explains the architect, “[The shop] is easy to keep as long as it’s viable.” Yet everything is removable, and the finishes and footprint were left as close to the original as possible. For instance, Thun kept the old concrete floor—only smoothing and polishing it. He stripped one wall to the brick. Opposite, he insulated a common wall with a neighboring boutique, faced it with drywall, then painted it a neutral gray. He kept the columns as they were—peeling and partially stripped.

Working with American lighting designer A.J. Weissbard—whose international scope of work encompasses architectural installations, theater, opera, dance, exhibitions, and video—Thun then focused on a lighting scheme that would not only set the stage for an enhanced shopping experience but intrigue passersby, no matter what the time of day or night. In essence, he claims, “The investment is just light, and nothing else.”

According to Weissbard, his job was to establish a certain ambient look where everything—objects and merchandise—is made more dramatic through the use of light. “We wanted to keep the ambient levels dark, much darker than those typically found in Hugo Boss stores, and devise a system that would pull everything out from this void.” At the same time, the design team focused on “highlighting the character of the walls to maintain as much of the character of the building as we could in the renovation,” says Weissbard.





The lattice structure houses LED systems (left). Dressing rooms are bathed in direct and indirect light (above). One can see through the focus wall from the dressing rooms (opposite, bottom).

The resulting plan combines several types of lighting. Besides traditional metal-halide track lights directed at merchandise—set on burnished-iron, wood, brown-lacquer, leather, and glass displays—different LED systems wash the walls: a Kelvin mixing system that ranges from warm to cold for the brick wall and an RGB (red, green, blue) and white one for the painted wall opposite, dubbed “the new wall.” Weissbard located the wiring and LED modules on the back side of the oak structure’s vertical segments, as well as in washers installed at the top and bottom of both walls. The building’s concrete-faced steel columns are washed by the same Kelvin system as the brick wall.

“Then there is what we call the ‘starry sky,’” says Weissbard. A series of small LED spots placed at the intersecting points along the lattice ceiling, this system works as a low-resolution video surface programmed for different effects. For example, the color and level of light can change throughout the course of the day. At night, the lights directed on the garments turn off so that the shell becomes prominent. The RGB-lit wall, which the architect claims will soon become a palette for local stencil artists, receives the same treatment—with changing light effects animating its surface.

To contrast with the raw main space, Thun created luxurious dressing rooms at the back of the selling floor behind a privacy “focus wall” made of highly reflective solar glazing—smoky taupe mirror from the front, transparent window from behind. Topped by a golden

ceiling and filled with area rugs, red velvet drapes, and ample mirrors, this entire area is bathed in a warm, bright glow ideal for seeing the clothing. Here, indirect fluorescent cove lighting is supported by the addition of direct unfiltered light—to complement skin tones—in the form of elegant incandescent chandeliers.

“I wanted a system that is quite flexible,” says Weissbard. “In the end, we created one that we program, but that [store personnel] can control.” In an ongoing process, once programs are installed, the shop’s staff can select from different lighting sequences to suit the desired environment—whether that be for selling during day or evening hours, or for situations when the store is closed. In the future, says Weissbard, the system can even be programmed to suit a variety of events, such as parties and art installations. “The space is very flexible in that sort of way,” he says. “It’s not locked down to just the [demands of] the store.” ■

Project: *Hugo Boss store, 401 West 14th Street, New York City*

Owner: *Hugo Boss USA, New York City*

Architect: *Matteo Thun & Partners—Matteo Thun, principal*

Lighting design: *A.J. Weissbard*

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Noiz creates an illusion of midday for the sunlight-starved **Wilkhahn Japan** showroom in Tokyo

By Naomi R. Pollock, AIA

Once upon a time there were two German brothers-in-law, Christian Wilkening and Friedrich Hahne, who founded a furniture factory at the edge of a forest. For years their modest venture crafted high-quality wood chairs, until war intervened and the carpenters had to close shop. Fortunately, the founders' sons brought the firm back to life and over time grew it into the high-end office-furniture manufacturer that bears a composite of their family names. To celebrate the German company's 100th anniversary in 2007, the Tokyo-based subsidiary, Wilkhahn Japan, decided to upgrade its headquarters. Though palatial in comparison with its previous location, the new place was as dark as the Black Forest. But thanks to Tokyo-based Noiz Architects, this story has a happy ending.

Facing an internal courtyard, the 6,351-square-foot space sits on the third floor of a design-oriented commercial building in the heart of the city—a common condition in Tokyo, where the demand for street frontage far exceeds the supply. Aside from an angled

plate-glass entrance, it is essentially devoid of windows and natural light. Yet this deficit did not faze the architects. Envisioning sunshine streaming down between trees, they created a lighting scheme meant to mimic clusters of the sun's rays, and used the contrast of light and dark to differentiate the main programmatic components: a display gallery, corporate offices, and a fully functioning conference room.

To organize the cavernous interior, the architects first devised a modular system derived from standard Japanese construction measurements, a technique that Noiz principal Keisuke Toyoda perfected during his four-year stint working for Tadao Ando. For Wilkhahn Japan, this entailed blanketing the floor plane with a 2-foot (.6 m) grid and establishing a virtual ceiling plane 8 feet (2.4 m) from the ground. Suggested by soffit edges and paint-color changes, this imaginary line divides the orderly cosmos of chairs and tables arranged neatly below from the snarl of exposed pipes and ducts lurking in semidarkness above. "Horizontality is the given nature of this space and also its pre-existing condition," explains Toyoda.

The well-lit furniture displays of the main gallery surround the multi-use conference room (top).

Naomi R. Pollock is *RECORD's* special international correspondent based in Tokyo and the author of *hitoshi abe*, recently published by Phaidon Press.



A black ceiling minimizes pipes and ducts and emphasizes the forms and ambient light of the metal-halide fixtures (above). A roll-screen system provides privacy in the conference room (opposite). The showroom entrance faces an interior courtyard on the third floor of a commercial building (left).



To expand the room vertically without denying its innate character, the architects created five “courtyards” that fit neatly within the plan coordinates but transcend the implied overhead boundary. Lit from above, each boxy volume seems magically open to the sky. Measuring 1,744 square feet, the largest contains the conference room. Intended for meetings with visitors and clients as well as staff use, it had to be enclosed with glass to limit sound transmission, and equipped with roll screens for visual privacy. Adorned with a subtle imprint of beech trees, the shades descend in unison, turning the meeting room into an artificial forest clearing bathed in man-made sunlight. The only other glass walls sequester the office zone at the rear of the room.

The centerpiece of the entire composition, the conference room glows with an intensity ranging from 800 to 1,500 lux thanks to its dual lighting systems: fluorescent tube fixtures in the middle and track-mounted metal-halide lamps concealed by a dropped soffit at the perimeter. Encased in reflective boxes, the latter mainly brighten the ceiling but also illuminate the work surface below, while the track-mounted fixtures direct their narrow beams only on the band of white gravel marking the edge of the conference-area floor. Handpicked by Noiz employees during a company outing in the country, the rocks shimmer under the spell of the bright light.

By comparison, the levels of illumination in the surrounding gallery are diffuse and, ranging from 300 to 500 lux, relatively dark. While track-mounted spotlights focus attention on the displayed products, large, bucket-shaped metal-halide lamps provide ambient light. Distributed evenly around the gallery, the fixtures’ glass bottoms appear co-

planar with the invisible ceiling. Normally recessed, each one is wrapped with a steel cylinder that conceals its inner workings and imparts a clean, functional look consistent with the über Minimal Wilkhahn aesthetic.

To present Wilkhahn’s furnishings with precision, the architects opted for whiter-than-white light throughout the project—choosing lamps with color temperatures above 5,000 Kelvin that mimic the midday sun. But the absence of pigment is not limited to illumination. “We tried to erase the color of the architecture as much as possible,” says Toyoda. Against the backdrop of a monochromatic material palette—black and white paint, gray carpet and concrete-resin floor, and slivers of stainless steel to mask the glass walls’ green edges—they hoped that the hues of Wilkhahn’s products would really shine.

This sensitive approach meant Noiz had to lower the volume on its own dynamic design sensibility. A reference to an appreciation of new musical forms, the firm name is a reminder to look anew, says Toyoda, who founded the firm with his wife Jia-Shuan Tsai in 2006. Yet even muted, the architecture shows Wilkhahn in a new light. ■

Project: Wilkhahn Japan, Tokyo

Architect: Noiz—Keisuke Toyoda, Jia-Shuan Tsai, partners; Tatsuya Kawahara, project manager; Tomoko Satake, Yoshitaka Kimura, designers

Engineers: K2 Design

Lighting: Koizumi Lighting Technology

General contractor: Nomura

SOURCES

Lighting: Zumtobel

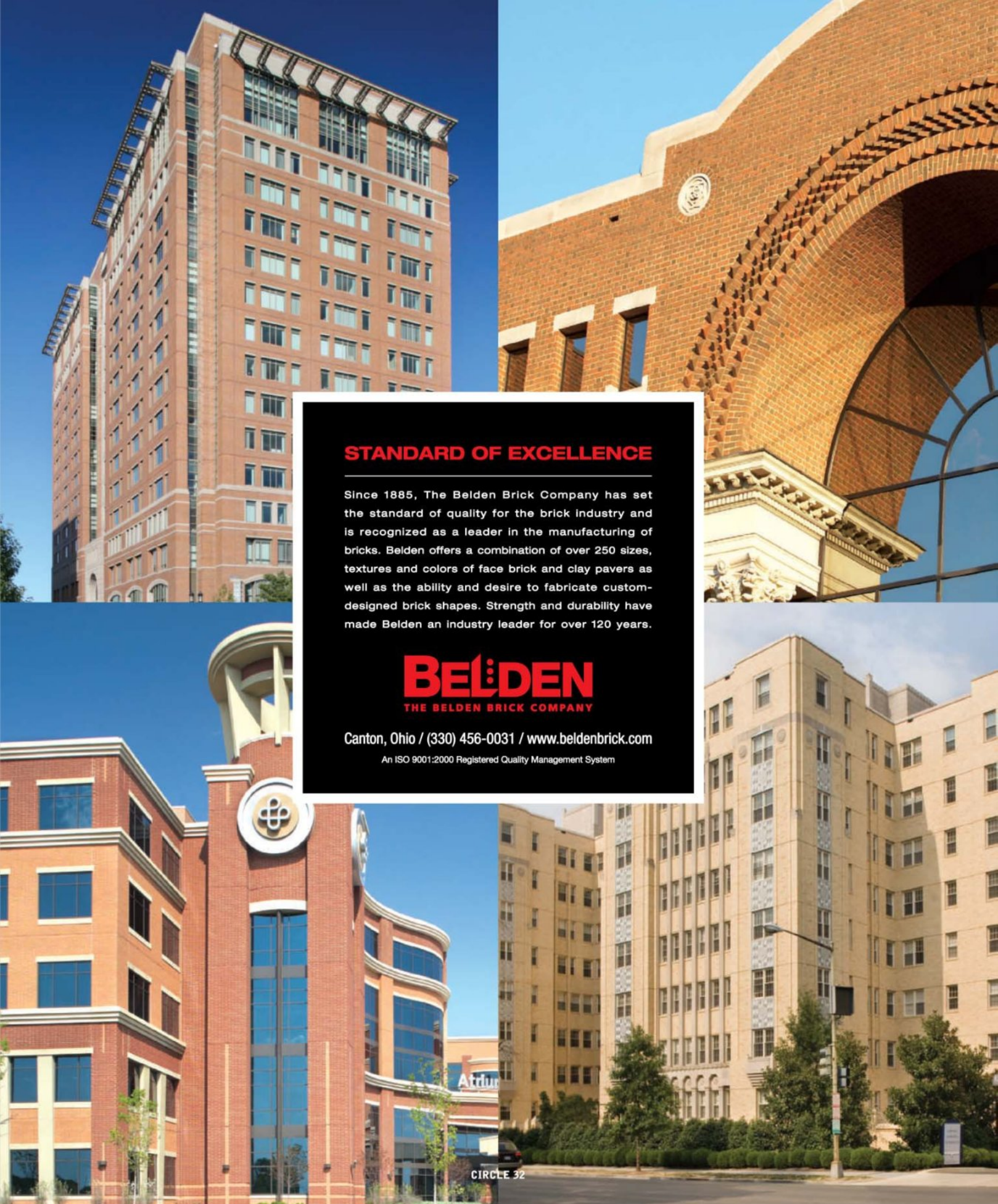
Lighting controls: Lutron

Furniture: Wilkhahn

Roll-screen system: Tachikawa

Windows: Nomura (steel framing and glazing)

Sliding doors: Hawa



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Lifschutz Davidson Sandilands tops off Milan's **La Rinascente** with the glow of culinary activity

By David Sokol

In the historic center of Milan, two buildings represent opposites in almost every way. The Duomo is the city's centerpiece, and its confection of flamboyant Gothic and complementary Renaissance-style cupolas, spires, and flying buttresses stoke the spirit. Overlooking its north-facing transept is La Rinascente, the famous eight-story department store that attracts shoppers offering devotions to Cavalli, Etro, and other fashion brands. The 58-year-old building—with its stout colonnade and largely opaque, symmetrical facades—expresses foreboding in contrast to the Duomo's sugary exuberance.

Last year, Lifschutz Davidson Sandilands (LDS) translated some of the Duomo's delight to the interior of the modern-day temple to shop-

Modular translucent ceiling fixtures provide ambient lighting for the store's top floor (above).

ping. The London-based architects completed an overhaul of La Rinascente's top floor, which now houses a food hall and a series of restaurant tenants. The highlight of the project is a decorative ceiling in which 508 triangular acrylic modules hover above shoppers like the faceted planes of a giant amber gem or the patches of a Brobdingnagian quilt.

LDS project architect Germano Di Chello says that previously, the eighth floor was a poorly illuminated warren where two restaurants, a bank, a cellphone store, and a beauty salon uneasily sat alongside one another, and back-of-house circulation gobbled a large portion of the 20,000 square feet available. The design team decided, first, to reprogram the space to highlight food solely, and then



Diners sit below the arm of a T-shaped ceiling feature with a view of the Duomo (left). Fixtures in the T's stem illuminate the stands along the central hall (bottom).

to change the circulation of the space to maximize selling area. Today, restaurants and cafés surround a central hall where merchandising fixtures hold dry foodstuffs. The overall plan of the floor appears as a trapezium in which one short side faces the Duomo.

The ceiling feature underscores the new pattern. In plan, it spreads out like a large T whose stem runs parallel to the long sides of the trapezium; the arms of the T hug the front of the building, where diners overlook the roofline of the renowned cathedral. Di Chello says this form allows shoppers to understand the new circulation, and to orient themselves to the Duomo.

The trapezium plan also drove the design of the ceiling modules with LDS halving that shape into pairs of isosceles triangles. “We initially thought of it as a flat quilt, but then we decided to play with an undulating three-dimensional quality by lowering one of the corners below the others to create depth,” Di Chello explains. As a result, there are four kinds of acrylic units. Two are isosceles triangles in which a different corner tapers in height, a third module emphasizes the vertex of the isosceles triangle so that it resembles a prow, and a fourth is tailored to accommodate existing ventilation.

A subcontractor, Camagni Arredamenti, laser cut and glued the acrylic planes into the quiltlike modules. Di Chello also explains that, as the panels came to evoke honeycomb modules instead of quilt panels, the design team chose the custom amber color to amplify the beehive comparison. The modules are placed on the ceiling randomly, “with no two types touching each other. It could have been one continuous quilt going up and down to create a Yokohama Terminal [RECORD, November 2002, page 142]—type of effect, but we went in this direction instead.”

The modules were installed in a series of aluminum extrusions suspended in rows from the existing concrete ceiling. The extrusions contain upper and lower channels. The lower channel holds a track for metal-halide downlights. Upper slots contain T5 fluorescents that illuminate the white-painted ceiling and reflect back down into the amber acrylic modules. Some extrusions do not include lamps; instead, the channels are left open to pull cool air inside the ceiling feature.

LDS has developed an expertise in department-store penthouses. Prior to the La Rinascente job, it created top-floor restaurants and food halls for new Harvey Nichols stores in Edinburgh and Manchester, for example. “We always opted for a solution that included the ceiling,” Di Chello says, comparing the feature to a “vertical bookend” that makes shoppers realize they’ve reached the top floor. In those earlier projects, LDS used coffers mounted with cold-cathode lighting, whereas at La Rinascente the ceiling is embossed and illuminated from within. This latest manifestation of the vertical bookend may be a variation on a theme, but in the case of La Rinascente’s amber accent, LDS injected dynamism into an intimidating building—and reminded shoppers that Milan’s original destination is right next door. ■



Project: La Rinascente, Milan
Architect: Lifschutz Davidson Sandilands—Paul Sandilands, principal in charge; Germano Di Chello, project architect; Chris Waite, Chloë Phelps, James Miles, architectural assistants
Lighting: Equation Lighting Design
Engineers: BRE Engineering

(mechanical); CS Progetti (electrical)
Contractors: Impresa Minotti (general); Camagni Arredamenti (ceiling)

SOURCES

Lighting: Zumtobel (track); Vivo (metal-halide spotlights)
Ceiling: Plastidite Acridite (cast acrylic sheet)



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CIRCLE 34

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▲ **Sea creatures** The urchin softlight is the latest addition to Molo's "soft" collection of expandable/compressible furnishings created from flexible, nonwoven polyethylene. The honeycomb structure of the light is intended to expand, contract, and flex in an elastic way so the shape can be molded into multiple variations of the form. Available in four sizes in translucent white, the light is for indoor/dry use with 20-watt max compact fluorescent bulbs. Molo Design, Vancouver. www.molodesign.com **CIRCLE 206**



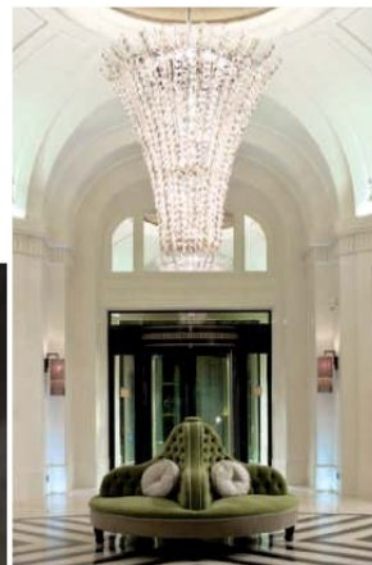
◀ **Outdoor LED options** Hubbell Outdoor Lighting and Devine Lighting have expanded their current offerings with solid-state lighting options, including LED flood, step, landscape, and wall/surface luminaires. The 309-10LEDML Bullet landscape floor lamp (shown) is a 10-Watt, 120-277 volt luminaire with a medium flood beam. This wet location light is available in a dark bronze finish and has a color temperature of 5000K. Hubbell Lighting Outdoor & Industrial, Greenville, S.C. www.hubbelloutdoor.com **CIRCLE 208**



▲ **World's largest** Meyda claims to have created the world's largest LED chandelier for the Stanley Center for the Arts in Utica, New York: It is 35' in circumference, 17' in height, and contains 264 LEDs. The fixture uses 350 watts, but has a light output equivalency of 3,500 watts, a 90 percent energy savings. Meyda claims the fixture will not require relamping for 50 years. Meyda Lighting, Yorkville, N.Y. www.meyda.com **CIRCLE 210**

▶ **Custom lumières** The contemporary Venetian glass producers at Andromeda created the decorative lighting for the historic Trianon Palace Hotel in Versailles as part of a two-year renovation project. Andromeda custom-designed decorative lighting elements for the hotel's main entrance, gallery, and its two Gordon Ramsey restaurants. The Knit element, designed by Karim Rashid (right), was transformed into four suspended structures in the lobby, while the Pearls collection (detail of glass spheres, below) illuminates the fine dining restaurant. Andromeda, Murano, Italy. www.andromedamurano.it

CIRCLE 207



▶ **Dual-axis downlight** Lucifer Lighting has introduced the first dual-axis, adjustable downlight to the market, according to the manufacturer. This gear-driven downlight features two concealed, self-locking, internal gear trains that allow trim rotation 357 degrees, tilt 45 degrees, and hot aim to be precision-adjusted from the room side, with the lights on, so you can see the effect as you are creating it. Lucifer Lighting, San Antonio. www.luciferlighting.com **CIRCLE 209**



▲ **Stylish beam** Manufactured from recyclable aluminum and acrylic components, the Stile beam fixture is available with LEDs and energy-efficient T5 and T5HO fluorescent lampings. The standard 18" wall projection adjusts to meet ADA requirements, while the lamp body can rotate up to 330 degrees for application-specific aiming. UL-listed for damp locations. SPI Lighting, Mequon, Wis. www.spilighting.com/stile **CIRCLE 211**



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Product Focus **Acoustics**

To help control noise pollution, spaces need not only employ products that offer **acoustical properties**, but also utilize **the quietest options available** from those systems that may otherwise exacerbate the problem. *Rita Catinella Orrell*



The Logix integrated ceiling system (far left) can be specified with high-performance acoustical panels. Perforated and nonperforated bamboo panels at the Chicago Recording Company (near left). Wave-shaped Claro panels are used for a below-grade conference center (below).



Acoustical ceiling options designed to blend in or stand out

To help achieve a “Brazilian” look for its remodeled facilities, the Chicago Recording Company – the Midwest’s largest professional recording facility – chose tree bark wall veneer, patterned pecan-wood plank flooring, emerald-green granite accents, and Bioline wood ceiling tiles from pinta acoustic. Pinta acoustic manufactures a range of ceiling tiles, wall panels, and other acoustic materials for commercial and industrial applications.

Bioline ceiling tiles in natural bamboo – some solid and some with a perforated pattern – were installed in the Chicago Recording Company’s office common spaces, including the lobby and elevator areas. The solid-finish tiles contain 70 percent recycled material and are available in custom

and six standard wood veneers. The wood tiles offer an NRC of .40, come in perforated and unperforated options, and fit into pinta acoustic’s other conventional grid systems. pinta acoustic, Minneapolis. www.pinta-acoustic.com **CIRCLE 212**

The Logix integrated ceiling system houses mechanical components, such as lighting, HVAC diffusers, and sprinklers, in 6"-wide channels running along the full length of an acoustical ceiling in narrow, continuous bands. The field can then be fitted with fiberglass or metal panels in a range of sizes.

The specification of larger, high-performance acoustical panels – such as USG Halycon ClimaPlus fiberglass lay-in panels or Panz metal

ceiling panels – in the systems helps minimize the total grid effect within a space while keeping all utilities in a uniform channel. Halycon ClimaPlus planks, field panels, and channel panels offer a minimum NRC ranging from .90 to .95. When perforated and used with the Acoustibond factory-applied acoustical backer, Panz panels achieve a .65 NRC without additional acoustical blankets or panels installed in the plenum. USG, Chicago. www.usg.com **CIRCLE 213**

Dealing with an underground location was the main challenge for the design team of a new conference center at the Organization for Economic Cooperation and Development headquartered in Paris. Pei Cobb Freed & Partners

Architects, New York City, worked with lighting and acoustical consultants to form a lighting and acoustic control plan that included wave-shaped Decoustic Claro 3D coated ceiling panels and the Ceilencio easy-access suspension system for the center. Claro is an acoustically transparent coating on Decoustics ceiling panels with superb sound-absorbing properties and the appearance of painted drywall or plaster. The sound absorption of Decoustics fiberglass panels was instrumental in reaching the sound attenuation and reverberation control required. CertainTeed, Valley Forge, Pa. www.decoustics.com **CIRCLE 214**

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Products Acoustics



▲ **Silent exit** The new quiet electronic latch (QEL) option for Von Duprin 98/99 and 33a/35a series exit devices offers the industry's quietest overall operation when operated mechanically and electronically, according to the manufacturer. Applications include hospital nurseries and patient rooms, libraries, museums, theaters, and other projects requiring electrified hardware that operate at whisper-quiet levels. Von Duprin, Carmel, Ind. www.vonduprin.com **CIRCLE 216**

► **Better barrier** Led by Dufлот Technical Nonwovens and the French Textile-Apparel Institute, the Flexifunbar project was a four-year collaboration to produce a new flexible and multifunctional barrier or shielding material. The resulting material for surfaces such as textiles, leather, or paper provides at least two barrier functions, such as fire protection, anti-odor, or bactericidal properties. For building applications, wall coatings made of the material can offer both acoustic and thermal insulation properties. Dufлот Industrie, Caudry, France. www.flexifunbar.org **CIRCLE 217**



▼ **Quieter cooling** Ecosaire has introduced the Signature Series Precision Comfort Control (PCC), a self-contained air conditioner with the highest cooling energy-efficiency rating for precision air comfort in offices, hospitals, and other commercial applications. The PCC is the commercial building market's quietest unit-per-ton system that meets NC-30 or NC-40 noise criteria. It uses R-410A HFC refrigerant and ranges in size from 10 to 140 tons. Ecosaire, Roswell, Ga. www.ecosaire.com **CIRCLE 215**



► **Noiseless neighbors** Traditional sound barriers often require an extra step in the construction process, but Fomo's Handi-Foam Sound Barrier Foam provides contractors with a two-in-one product that combines a sound-barrier with spray foam insulation. The foam achieves a Sound Transmission Class (STC) rating of 35 at 3" thick. The barrier is a low-density, open-cell foam that allows enough absorption to provide sound-deadening for buildings that feature shared walls or for spaces such as home theaters. Fomo Products, Norton, Ohio. www.fomo.com **CIRCLE 218**



◀ **Sound blanket** DuPont LoWave is a passive, low-frequency acoustic-reduction solution for commercial applications that can be tuned to target specific pure tones like those generated by security alarms, or provide broadband coverage, reducing sounds such as the hum of heavy machinery. LoWave can reduce low-frequency noise and vibration without altering machine design or existing infrastructure. DuPont expects the product to offer a significant reduction in total operating costs. DuPont, Wilmington, Del. acoustics.dupont.com **CIRCLE 220**



◀ **Double stuffed** ComfortGuard sound-deadening gypsum board features two specially engineered gypsum panels, each including a mold-and-moisture-resistant core and facers, laminated together using a viscoelastic polymer. The pliable adhesive between the two rigid panels interrupts the transmission of noise vibrations through partition assemblies. When tested in accordance with ASTM C423, a wall built with ComfortGuard produced an STC value of 47 compared to 30 for standard options. Temple-Inland, Diboll, Tex. www.templeinland.com **CIRCLE 219**

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Product Briefs



▲ **A nosh and a nap** Kosmos seating from Extremis can seat six to nine people and is made from "dry feel" polyurethane foam cushions with white leatherette upholstery. The adjustable table can be lowered to floor level, turning Kosmos into a lounge for two to three with the use of an additional cushion. An integral parasol (with light) opens and closes horizontally. Extremis, Gijverinkhove, Belgium. www.extremis.be **CIRCLE 221**



▲ **Up on the roof** First introduced in 2007, the Andalay solar power system's prefabricated panels eliminate 70 percent of the parts used in ordinary systems, streamlining the process. A recent round of upgrades includes the introduction of a prefabricated combiner box, which previously had to be installed on the rooftop. Akeena Solar, Los Gatos, Calif. www.akeena.com **CIRCLE 224**



▲ **New cover-plate concept** The Canadian design house Bocci has introduced 22, a complete suite of CSA- and UL-approved, interior wall accessories that challenge the ubiquitous cover plate concept. A minimal alternative, 22 is designed to "mud in" directly into drywall, millwork, or any wall surface without a visible cover plate or trim. Retailing for \$10 each, the system is currently available in North America while European and U.K. versions will be available later this year. Bocci, Vancouver. www.bocci.ca **CIRCLE 225**



▲ **Virtual prototypes** Miele has invested more than \$2 million in Computer-Aided Virtual Environment (CAVE) technology and claims to be the first residential appliance manufacturer to use this design tool. CAVE creates a virtual but realistic image, allowing designers to take products that do not yet exist and evaluate, change, and try them out in a variety of surroundings, saving the time and money involved in creating physical models and prototypes. Miele, Princeton, N.J. www.miele.com **CIRCLE 222**



▲ **Smaller cement footprint** Ceratech's FortMax Extreme Green masonry system and RediMax cement technology are produced via a low-energy manufacturing process, eliminating 1 ton of harmful CO₂ greenhouse gas for every ton of material produced. RediMax, which serves as an alternative to traditional Portland concrete, consists of 95 percent recycled waste materials, including fly ash, volcanic ash, and dredge materials. Ceratech, Baltimore. www.ceratechinc.com **CIRCLE 223**



◀ **Innovative filtration** StrionAir's electrically enhanced air-filtration products – which have been shown to significantly reduce mold spore counts in facilities – helped earn three points for the LEED-EB 2.0 recertification application submitted by the National Geographic Society for its three-building complex in Washington, D.C. The system exceeds the required MERV 13 standard and by itself earned an Innovation point. Innovation points are more typically earned only with a combination of environmentally sensitive improvements for existing buildings. StrionAir, Louisville, Colo. www.strionair.com **CIRCLE 226**

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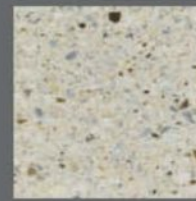
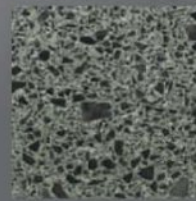
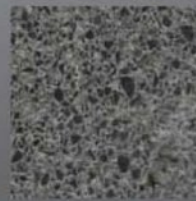
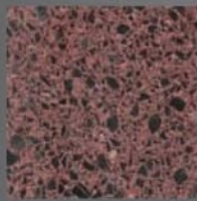
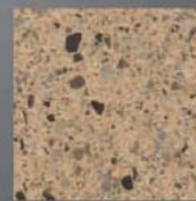
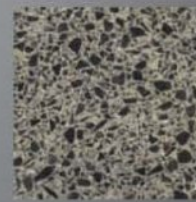
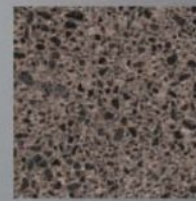
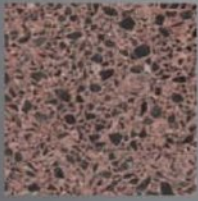
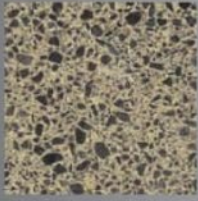
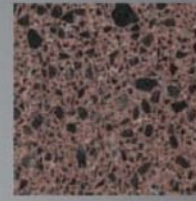
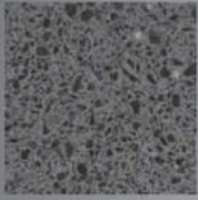
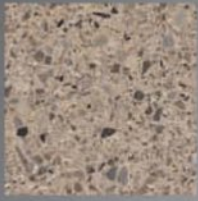
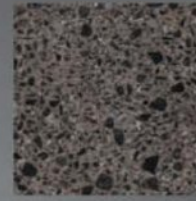
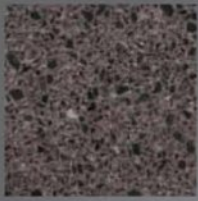
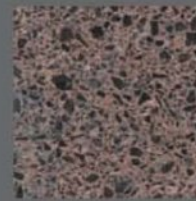
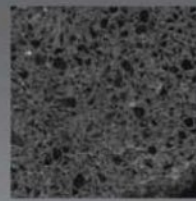
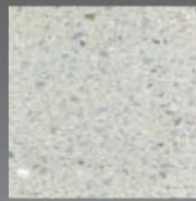
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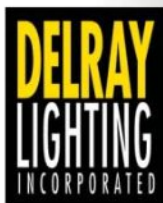
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CIRCLE 36



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Submission Deadline: May 20, 2009

This competition offers students the opportunity to think critically about communities looking to a sustainable future. Locate a site in your area, identify the barriers and strengths to living sustainably, and develop a proposal to create a flourishing and sustainable community using the tools of the environmental design disciplines: architecture, landscape architecture, and urban planning. Call 202/785-2324 or visit www.acsa-arch.org.

The Architectural League of New York Young Architects Forum: Foresight

Deadline: February 11, 2009

Young architects and designers are invited to submit work to the annual competition for designs that in some fundamental way rely on mobilizing elements of foresight – thinking ahead, forecasting possible outcomes and opportunities, and imagining an effective role for the future of architecture. Call 212/753-1722 or visit www.archleague.org.

AIA Committee on Design 2009 Ideas Competition

Registration Deadline: February 13, 2009

The AIA Committee on Design (COD) invites architects, students, and allied design professionals to submit sketches to the international COD Ideas Competition. In this unique sketch competition, submitters are asked to explore the legacy of Modernist design through a conceptual design problem. For more information, visit www.aia.org/cod_ideas.

Harleston Parker Medal

Nomination Deadline: February 13, 2009

The annual effort to identify the single most beautiful building or other structure built in the Metropolitan Boston area in the past 10 years. Nominations must include the name and address of the project and, if known, the architect. Visit www.architects.org or e-mail nominations to Nancy Jenner at njenner@architects.org.

K12 Facilities

Deadline: February 19, 2009

New England and New York City architects are invited to submit work they have done throughout the world, and architects elsewhere in the world are invited to submit New England and New York City projects. Visit www.architects.org/awards.

Building Enclosure Design Awards

Deadline: February 25, 2009

This awards program promotes best practices and innovation in the design, construction, and performance of building enclosures; built projects that conform to the Massachusetts State Commercial Building Code are eligible. Visit www.architects.org/awards.

Going with the Grain: Design an Object Using Sustainable Wood

Deadline: June 2, 2009

The "Going with the Grain" challenge is to design an original and compelling object that can be made from a single sheet of FSC-certified plywood measuring 4 feet by 8 feet by 1 inch. All are welcome to enter, including furniture designers and manufacturers, architects, and industrial designers. Visit www.design21.cmail.com.

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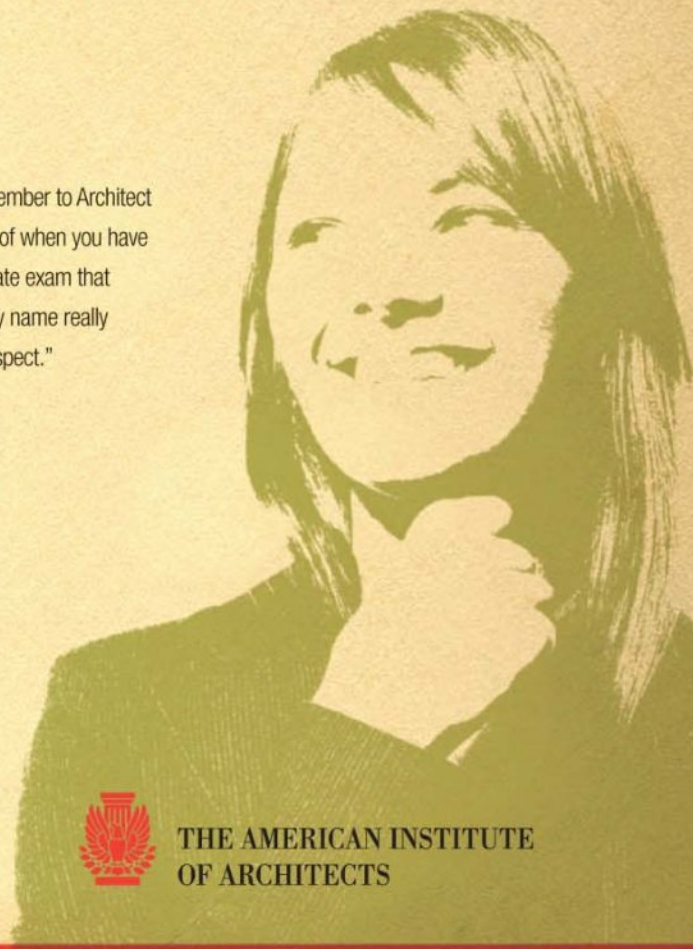
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E ARTAND ARCHITECTURE BUILDING

(Continued from page 58)

tiles seems disconcertingly at odds with Rudolph's tactile surfaces and language of planes and volumes slipping past one another, dynamically breaching the box, or grid, rather than conforming to it. Similarly, the massive concrete towers at the structure's back, or west, end no longer hold habitable, open work areas, but house sealed-off mechanicals, blunting the spatial flow.

But the real casualty is the primacy of the main entry and interior stairs, now relegated to vestigial roles. Rudolph, by many accounts, had always envisioned an addition to the north, and his placement of the stair anticipates the dual structures sharing vertical circulation. Instead, Gwathmey's addition, the Jeffrey H. Loria Center for the History of Art (housing primarily faculty offices, plus lecture halls, mechanicals, and a library expansion), introduces its own main entry and principal stair, rendering Rudolph's counterparts oddly redundant.

The A&A's notoriously inadequate elevators are gone, but the elevator core is now in the new wing, with the original shaft reduced to storage and other trivial functions. (Alternative solutions, such as a larger elevator in the existing shaft, supplemented by an adjacent service shaft might have been possible.) With its elevators gone and stair marginalized, Rudolph's circulation tower loses its pivotal role and functional logic.

When he won the commission, says Gwathmey—who gained it after Yale had parted ways with Richard Meier for the addition and David Childs/SOM for the renovation—his initial reaction was: "Let's enjoy this happy moment for five seconds, and then, well, it's no win." Appending onto a monumental icon,

especially a freestanding one with commanding forms, is no easy feat, but Gwathmey, a former student of Rudolph's who had helped draft the A&A drawings, had discreetly expanded Frank Lloyd Wright's Guggenheim Museum. An equally quiet annex, a finely crafted and contrasting box, perhaps of glass, might have served the Rudolph building well, but Gwathmey's goal, as he puts it, was to be "deferential" while actively "engaging in a dialogue." The Loria wing, with a busy facade of curves and skewed angles, rendered in limestone and zinc, offers more distraction than satisfying counterpoint.

While a bridge connection, or other spatial breather, might have preserved some of the freestanding autonomy of Rudolph's dynamically splintered cube, the addition, in a language consciously distinct from the A&A's, extends the existing entry facade, forming a single megablock without the clarity of the original volume.

Though the Loria interior pales beside the architecture school's spatial invention, Gwathmey, following Rudolph's cues, wisely retains an internal courtlike separation between the two structures, enriched by constant views back to the A&A. A new, skylit reading room, extending the original library across the ground floor, connects the two wings, forming a visually, but not physically, accessible courtyard.

Sadly, Rudolph did not live to see his building glowing in the limelight (though his ashes were partly scattered there by an artist in 1997). His work, however, is never free from controversy: Even with the A&A lovingly fêted, his Blue Cross Blue Shield tower, in Boston, and the interior of his Greeley Labs, at Yale, may soon be history. ■

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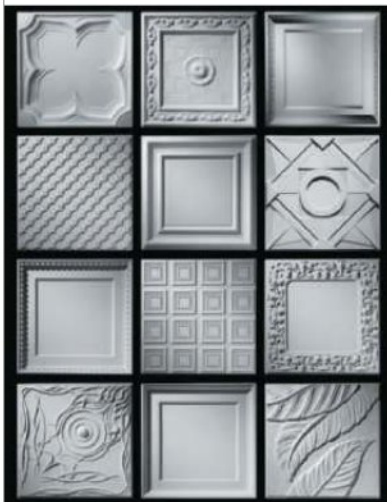


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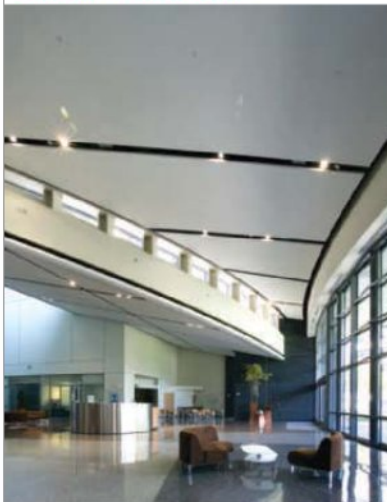
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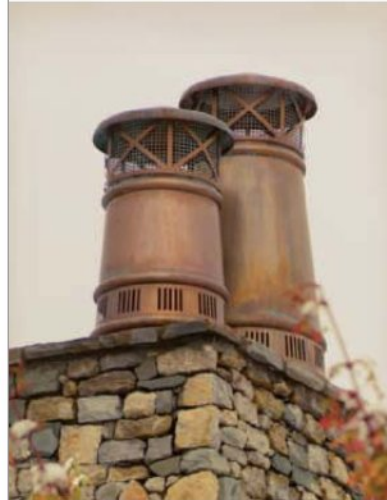


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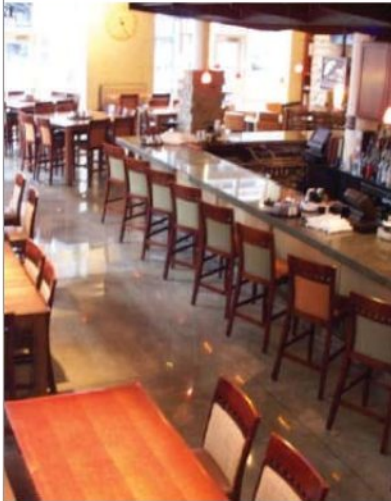


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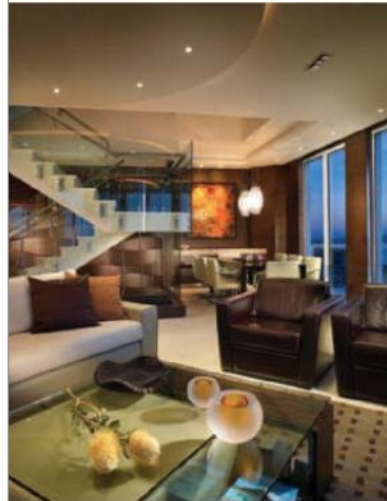


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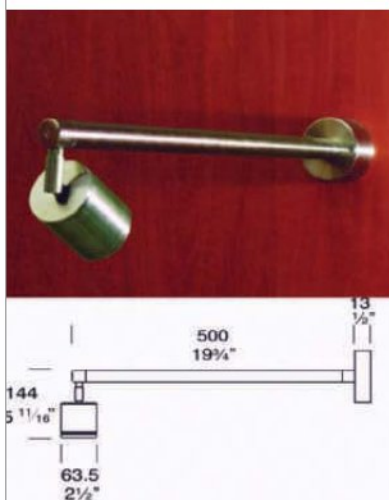
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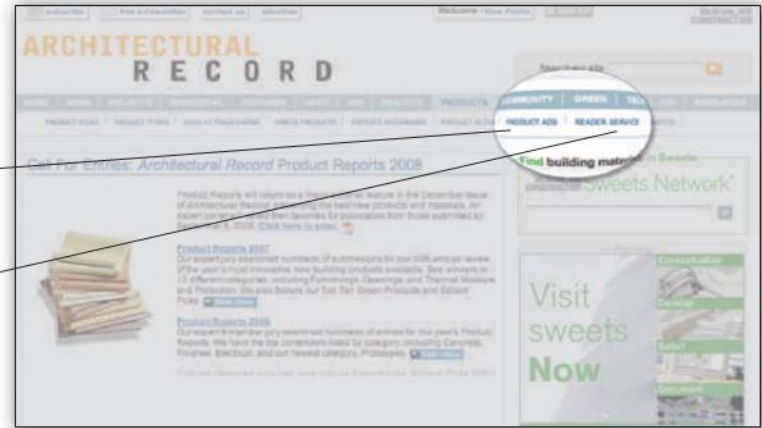
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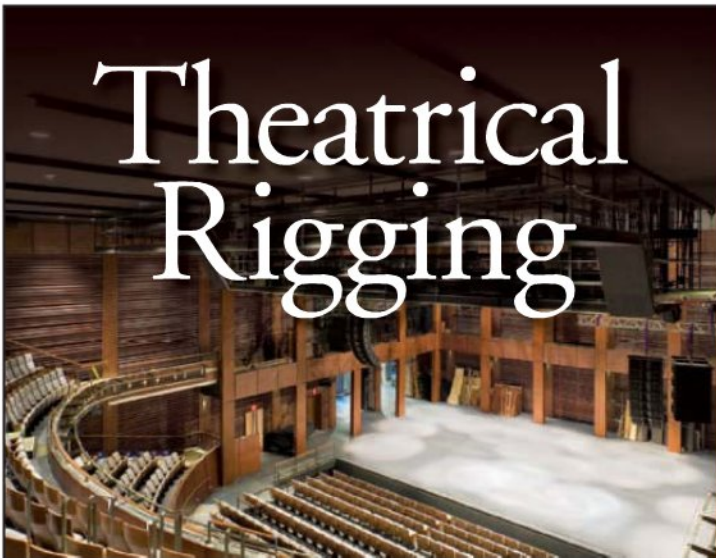
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Kitchen & Bath Portfolio

CALL FOR ENTRIES

The editors of ARCHITECTURAL RECORD are calling for entries for the **2009 Kitchen & Bath Portfolio**. Entry is open to any registered architect who has recently completed an innovative residential kitchen and/or bath project. We are looking for projects that feature unexpected materials, address unique client needs, or are designed in a manner that allows these utilitarian spaces to be functional, sustainable, and beautiful. Selected entries will be featured in the July 2009 issue.

Mail submissions to:

Rita Catinella Orrell

Architectural Record

Two Penn Plaza, 9th Floor

New York, NY 10121

Questions can be directed to

Rita Catinella Orrell at

rita_catinella@mcgraw-hill.com

There is no fee. Submissions should include images (color prints or high-res digital images on a CD or flash drive along with a labeled color printout), a brief project description, and a complete credit and product source list. No e-mailed submissions please. Projects must have been completed within the past two years.

All materials must be postmarked by Friday, April 3rd.

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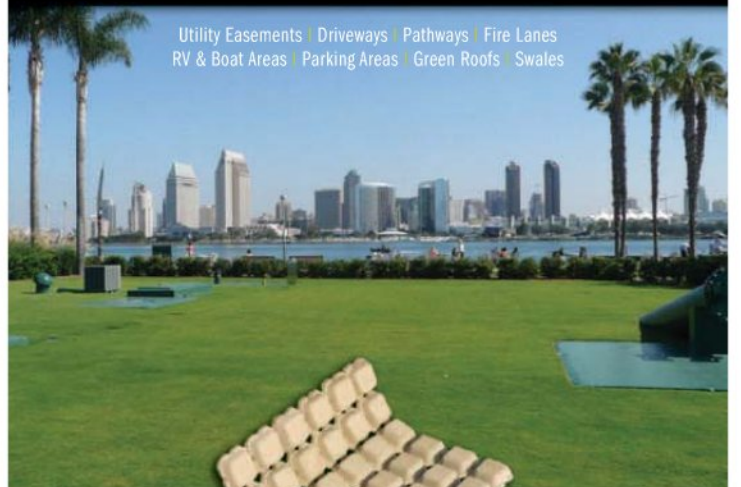
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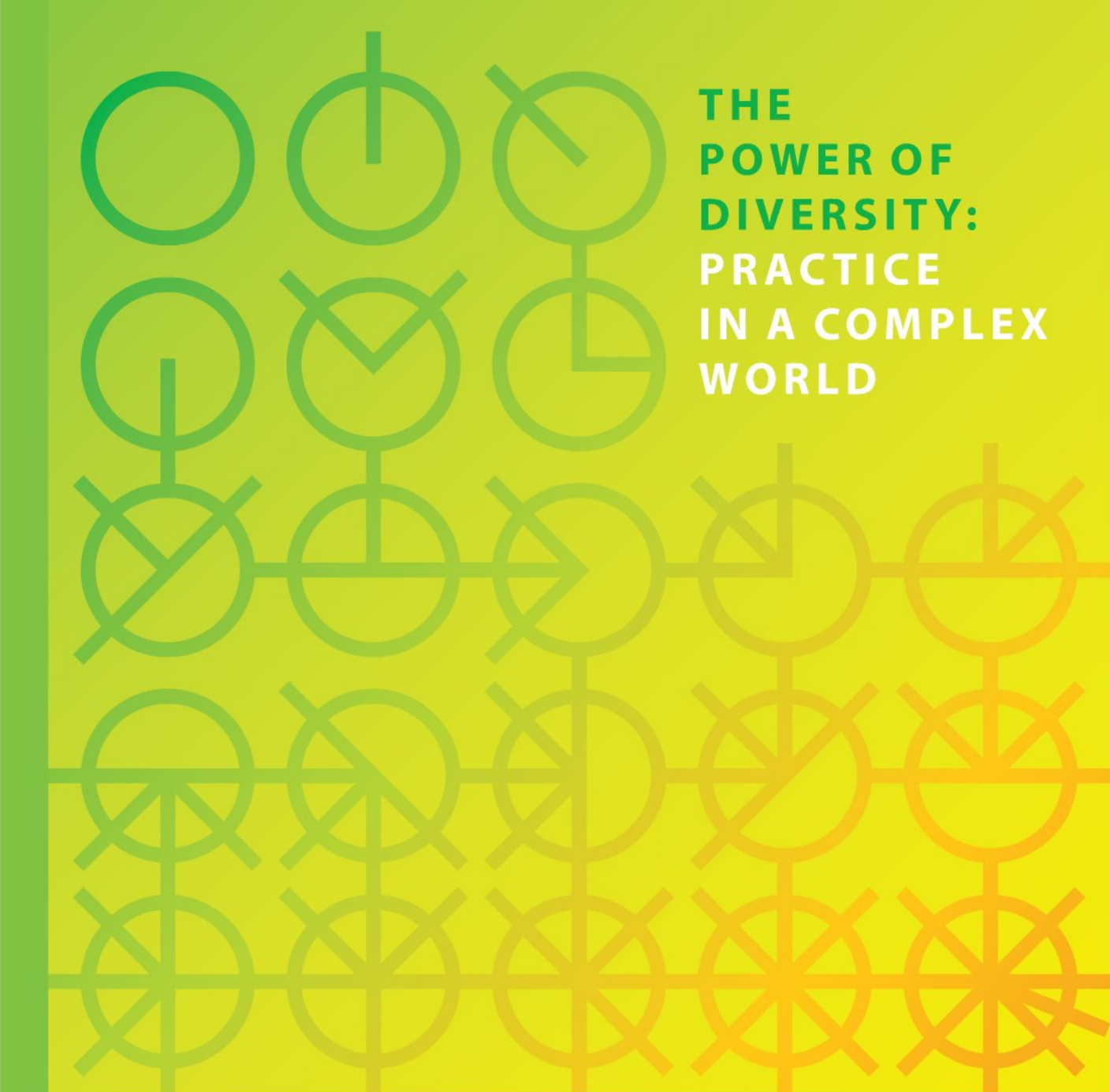
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LED Seminar Series:	AIA and CEU credits
Next Generation of Luminaires (NGL) presentation	4:00 p.m. and 7:00 p.m.
LED Basics	2:30 p.m. and 5:30 p.m.

Next Generation of Luminaires, (NGL) in partnership with the U.S. Department of Energy, and the Pacific Northwest Laboratory, reveals the results of a national competition among LED/Solid State Lighting manufacturers. Learn about the test methods, submission criteria and standards used by the NGL.

Registration: www.DLFNY.org
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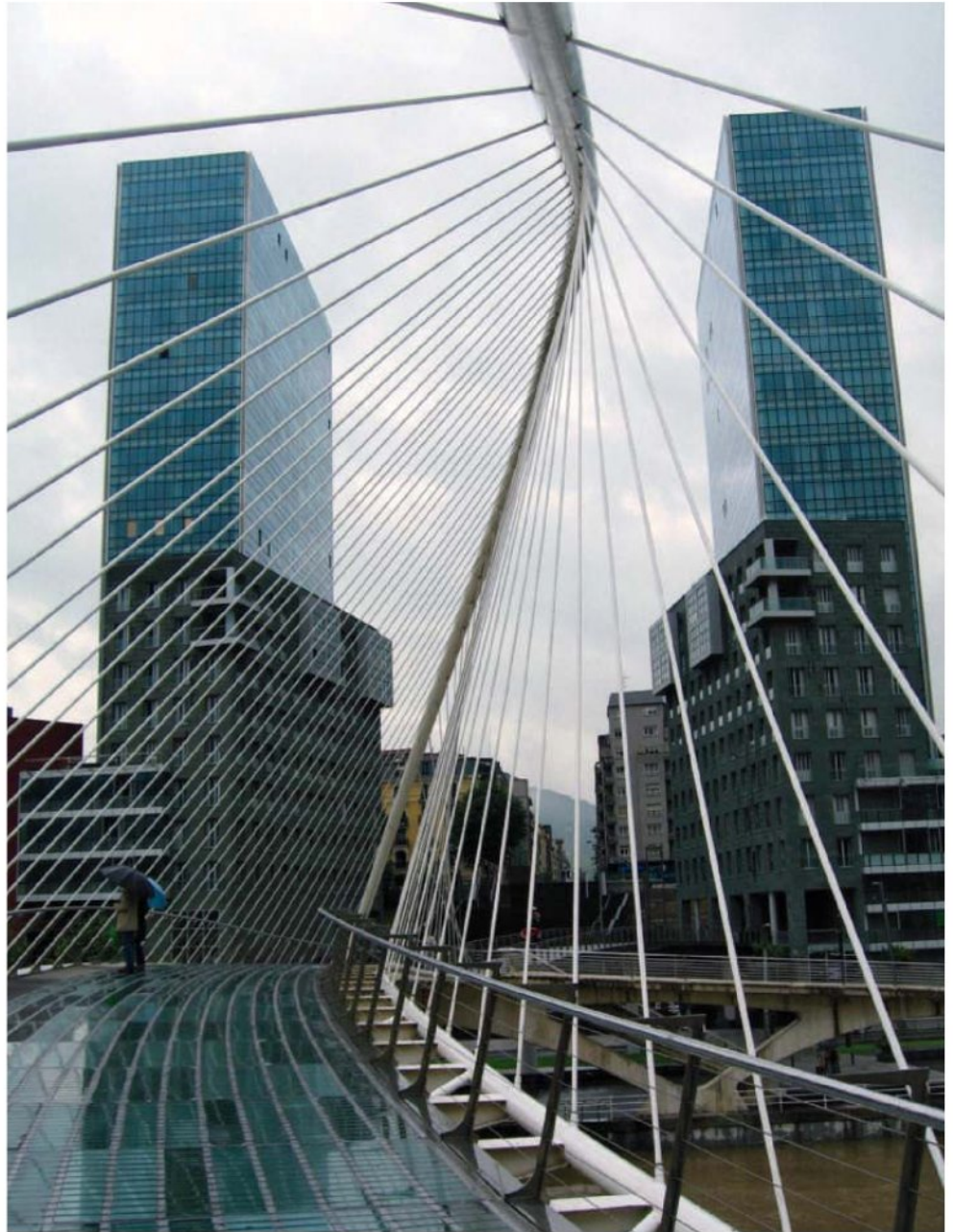
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CIRCLE 54

Gallery

Gabriele Cavazzano submitted this image of Santiago Calatrava's Campo Volantin Bridge and Arata Isozaki's twin residential towers in Bilbao, Spain. A Venice, Italy-based architect with OPENLAB Architettura and an assistant professor at the University of Venice, Cavazzano aimed to capture the asymmetry of the foot-bridge heightened by its relationship to the towers.



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