

# ARCHITECTURAL RECORD

**Authenticity Examined**  
Engaging the Past  
with the Present

also

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# ARCHITECTURAL RECORD

## 11.2001

On the Cover: *Collège Gérard-Godin*, by Saucier + Perrotte Architectes; photograph by Marc Cramer  
Right: *Gasometer B*, by Coop Himmelb(l)au; photograph by Gerald Zugmann▶



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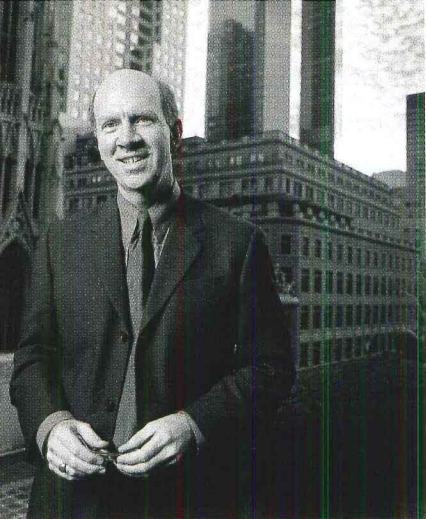


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# Editorial

By Robert Ivy, FAIA

**G**et real. For architects, to say a work is authentic represents highest praise. Despite our continuing flirtation with veneer-thin pop, when searching for words to describe what we admire, we continually turn to authenticity—a term that is inarguable and inarguably right, what the architectural historian William Curtis calls “genuineness” or “probity.” What truth was to the Greeks or virtue to the Romans, this single word carries a world of positive meaning; it is an encomium that bears the weight of history and allusion, even with the tart whiff of who we are now.

Authenticity as a subject has a patrician lineage. Plato and Aristotle pondered how to discern an original from an imitation, seeking to define the real. In Greek, it suggests action or accomplishment—not a passive object, but something done. Modern philosophers, including such well-known figures as Martin Heidegger, Jean-Paul Sartre, and André Gide, have followed in the wake of the ancients, linking authenticity and self-fulfillment. I do, therefore I am, despite my sometimes conflicted consciousness.

We use the term casually today, gratuitously throwing it into conversation when we expect agreement. We mention “authentic” sounds when we refer to music played on instruments that copy those of the fifteenth century, regardless of the fact that we may not know what those instruments sounded like. Authentic food conveys something about its essence, its origins, or its pungency. Say something is authentic and heads nod, even when the same individuals would vehemently reject other notions implying meanings beyond the here and now.

Authenticity suggests underlying values, a notoriously unfashionable attribute in a jumping universe, yet the values we

ascribe to the term in the year 2001 vary from the former classical ideals, since our concepts are shaded by contemporary sensibilities and thought. We live in an age of parallel realities, a through-the-looking-glass world in which anything imaginable, including any articulation, can command its own existence, somewhere. So much the deeper our intrinsic love affair with genuineness, if tempered today by real frayed edges, a reality combining the rational with the imaginative, pleasure with the knowledge of its concomitant pain. In our eyes, the authentically real displays chromatic range.

To the modern sensibility, a fully shaded definition of authenticity implies dialogue. In employing the term to describe architecture, we inextricably link authenticity to place, as if an authentic building or work of architecture cannot exist outside of a site. Twenty years ago, the fashionable term was “context.” Contemporary digital technology raises another question: Can purely virtual architecture be authentic? The answer: only in virtual space or virtual time. Once a cybervision leaps from a screen to a real foundation, it must deliver its own architectonic expression, on a real site. For real.

Likewise, we relate authenticity to time. To be considered authentic, an architectural design should state something about the moment, even if its statement is a bold denial of the status quo. Wright’s expressionistic modernism, as at the Ennis House or La Miniatura in Los Angeles, bears relation to Cubism or to Corbu, yet speaks with the unmistakable authority of the genius from Spring Green. Even Wright’s work bears a time signature.

Authenticity need not equate with regionalism, although architects operating within a strong regional tradition



## Editorial

may produce authentic architecture. Materials, forms, symbolism, conceptual creativity or rigor, and social underpinnings all may play a part in the development of an architecture of authenticity. However, authenticity rejects style, which fades, as a determinant. Instead, it relies on deep understanding of history or land or time or people—analyzed, rethought, and reconstituted in new buildings. The authentic project belongs to its setting, whether incised into the landscape or juxtaposed beside a preexisting fragment, like the architecture in this issue.

How can we pin authenticity down, when it encompasses such diffuse meanings? Historic preservation will be the lens through which we examine authenticity more closely. The latest AIA survey proved that most architects deal with structures built in earlier times by other builders. Over 50 percent of our efforts include designs in dialogue with found objects, real places, and earlier periods. By looking at how architects confront preservation, how we engage the built fabric of the preexisting, real world, we hope to define what authenticity means to this generation. How do we relate to the buildings that our predecessors built? What value do we assign to them?

Currently, preservation ranges across a broad spectrum. Four primary methods for engaging the past stand out: restoration (the careful reordering of what had been present in a given building, even if new methods or materials are required to accomplish it); adaptive reuse, in which we find new uses for older buildings, refitting or transforming them to match our current vision; reconstitution, like Japan's incomparable Temple of Ise, which is rebuilt every 20 years; and additions—either imitative or discursive.

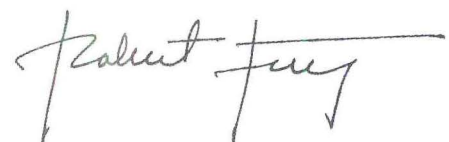
Questions of confrontation inevitably arise. When a building has a strong identity or a strong material presence, how do you add to it, authentically? Within the preservation community, the answers have seesawed between extremes. In the 1960s, the accepted wisdom suggested differentiation between old and new, the authentic response being one of clarity and timeliness. Yet a postmodern understanding of preservation permitted additions both as replication and reinterpretation and would have allowed two educated individuals to vary in what they value, permitting him to denigrate “ersatz” histori-

cism (even if appropriate in scale and materials), while she dismissed “harsh” modernism in historic settings. Potato, potahto, tomato, tomahto. Which is the authentic addition?

With our November issue, ARCHITECTURAL RECORD takes a leap into the fray, devoting an entire issue to a treasured, if beleaguered, term. With unusual focus for our comprehensive publication, we have devoted all of our pages to exploring authenticity in all its guises. To initiate the debate, two distinguished essayists, Michael Benedikt and Thomas Hine, discuss the nature of authenticity and the preservation dilemma. Our projects demonstrate strong additions to older structures in vibrant, sometimes strikingly discordant conversation with the past, rather than merely repeating older phrasing. They prove that strong architectural language, even assonance or dissonance, has its place in authentic preservation today.

The conversation continues. How to renovate and save modern buildings constitutes the Building Types Study, acknowledging earlier methods and materials while rethinking many of the techniques that made them distinctive. Critiques address the authentic character of post-9/11 New York and the contentious proposals for saving Saarinen's iconic TWA terminal. Technical articles on historic restoration and digital technology, and even architectural practice, complement the theme, with ongoing, broader discussions on our Web site.

Authenticity engages more than the past. The lessons we can glean from current preservation suggest directions for future projects. Consider these suggestions in concocting your own methodology. First, seek to know your subject deeply. Explore and internalize the work you will engage—from its myths and history to its geography and qualities of light. Where does it stand in time? For whom will it remain? What describes its moment—now and in a future now? Examine the givens, make them your own, and reinterpret them through all your faculties. This may not be a purely a rational enterprise. Authenticity, and authentic architecture, spring from full understanding, blending cognitive and intuitive energies, allowing deep knowledge to precede action. Accomplishment follows. In this rapidly orbiting world, styles change overnight; authenticity endures.





# Letters

## The dialogue must continue

"The art and science of building," has seemed to become the standard definition of architecture. However, shouldn't architecture be viewed more as a metaphor, or the language of living as it is manifested in people, cultures, spaces, and patterns?

There are those who are of the opinion that building the new WTC should be just another prescriptive exercise in construction. This and similar arguments are troubling to me. The trend now is to blindly stretch the limits of technology, either by expanding material technology or by testing the parameters of graphic design software—in the name of "modern" architectural practice—to produce ambitious structures. Often it is the same group of architects who are pushing the envelope—and conducting the propaganda for defining the "current" architectural language.

The resulting emphasis on sculptural monumentality at the expense of human essence should begin to alarm all architects and many user groups.

—Elias Rollie-Harvens, AIA  
Via e-mail

## Shooting the high horse

Thank you, thank you, thank you for excellent, introspective coverage on the WTC tragedy [Special Report, October 2001, page 22]. In essays that spoke to our fears, frustrations, and, yes, our grief—not only over the loss of innocent lives, but also of two of our profession's most monumental achievements—your October issue was a salve on our professional wounds.

The human toll on September 11 is incomprehensible. I can't get my mind around it—like trying to swallow a doorknob. It felt irreverent to grieve for the buildings themselves, but at least I could focus on that. I grieve also for the engineers and architects

who were part of the making of those buildings.

In last month's "Letters" [page 56], Mr. Magnusson expressed it well when he stated, "The fact that the towers survived the initial attack hid the reality that virtually all buildings would collapse immediately." My initial astonishment was that the tops of the buildings were not sheared off as I would have expected. As the towers fell, my family members remarked that they appeared to collapse, like other buildings that had been purposely imploded. Yes, I told them, the buildings fell as perfectly as they stood.

The headlines screamed, "Over 6,400 Missing, Presumed Dead." They could have just as well cried, "Over 30,000 Saved."

The year after the World Trade Center towers debuted, the Sears Tower in Chicago said "top this!" Frank Lloyd Wright had his mile-high tower all designed, never built, for Oklahoma. Yes, there was a bit of arrogance and competition in our professional community—but it was a pride, not of the individual, but of a collective. Our skyscrapers were monuments to human achievement, and not individual power trips, as some have suggested.

—Sherry McReynolds  
Fort Worth

## In memoriam

Last week when this terrible attack occurred on the World Trade towers, I was brought back to my freshman year in college and a comment that one of my architecture teachers made, that New York would be better off if someone bombed the World Trade Center. He meant it as a comment on the dubious architectural merit of the buildings in the context of the New York skyline and other more sensitive buildings that had gone before. It is one of those off-hand comments that has rolled

around in my head for the past 25 years and has come to my memory unbidden every time I see the Manhattan skyline.

I can tell you that, for me—and I imagine a very large sampling of the world's population—the removal of these buildings from Manhattan does not improve the vista of the greatest city in America. Of course, one could argue that it was the means of removing the towers that renders this observation irrelevant, but, more to the point, it focuses on the real issue, that buildings are the people in them, the aspirations and dreams of their builders, their place in the world, and how they interact with the lives that make them important. To most people in the world (and, on at least two occasions, to terrorists from places far away from New York), those two buildings were powerful symbols of America and all it stood for, no matter how our profession and its critics viewed them.

—Michael Malone, AIA  
Michael Malone Architects  
Dallas

## Second that emotion

I would like to second Alexander Gorlin's impassioned cry for a return to the Real, after the WTC disaster [Letters, October 2001, page 56]. The current scurrying for the scorched earth of the site is utterly distasteful, and architects ought simply to back off. As long as architecture is essentially real estate, we will never hear a word about space and responsibility to the citizens of New York to liberate this city from the grips of unparalleled greed and self-interest. The WTC site—owned by the city—belongs to everyone, now more than ever.

Perhaps the most egregious event in recent memory was recently staged at the Cooper Union, where architects rallied around one another to speak for everyone else. An event of extraordinary arrogance, it

amounted to nothing more than commiserating by claque. The city should immediately terminate the lease for the WTC site and decommission it forever. All architects that liked the Yamasaki buildings may build the next pair in their own neighborhoods.  
—Gavin Keeney  
New York City

## A matter of people

I was dismayed by your selection of design-professional responses concerning the rebuilding of the World Trade Center in the October 2001 issue. Why has no one addressed the comfort level future occupants would have in such a replica? To build "even higher" is downright arrogant. The new building(s) should incorporate contemporary issues of infrastructure, urban fit, security, safe egress, and sustainability, as well as form and symbol.  
—Sanford R. Bender, AIA  
Philadelphia

## Corrections

The Ethereal Theatre featured in Archrecord2 in September 2001 should also have been credited to undergraduate Temple University students Cristina Savarese, Eun Kang, Joy Charleston, Adam DiAngelo, Andrea Ostrovsky, Daniel Wallace, Matthew Finlay, Michael Sindlinger, Susan Zoerkler, Edward Cotton, Chen Ho, Soyon Kim, Marcello Crestani, Natsuko Ando, Chio Hsu, and Mary Yates. The photo on the bottom of page 154 of the September Escher GuneWardena's Electric Sun III story is upside down and should have been credited to John Ellis. The SAP Headquarters featured on page 104 in October neglected to credit David W. Gomez, AIA, the project manager for HLW International; Tim Schenck should have been credited as structural engineer.

E-mail your letters to Robert Ivy  
at [rivy@mcgraw-hill.com](mailto:rivy@mcgraw-hill.com).



An aerial, high-angle photograph of a modern skyscraper at night. The building's facade is illuminated with warm, golden lights, creating a strong contrast with the dark sky. The building's structure is complex, with multiple levels and a prominent, curved section. Below the building, the dark water of a harbor or bay is visible, with a large, white boat or ferry in the foreground. The overall scene is dramatic and emphasizes the architectural grandeur of the building.

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## SPECIAL REPORT

### Intricate WTC Cleanup to Continue for Months

In the wake of the September 11 terror attacks in New York, hundreds of workers swarm over the site of the former World Trade Center as the massive recovery and cleanup effort progresses. Officials anticipate that removing the estimated 1.2 million tons of rubble from the site will take 8 to 14 months, although they hope it will be shorter.

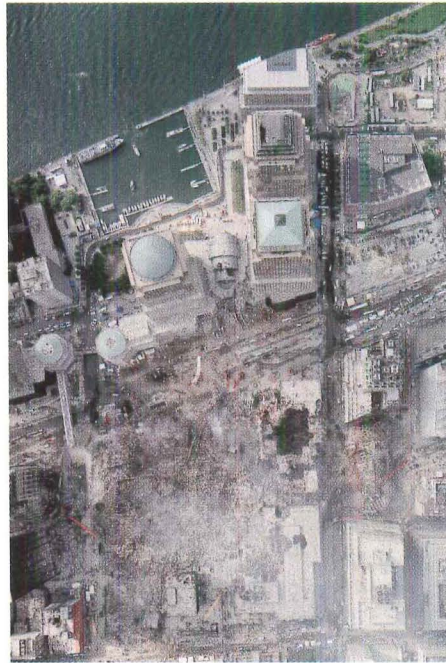
LZA/Thornton-Tomasetti, the New York engineering firm leading the structural inspection and cleanup at Ground Zero, is working closely with a team of four subcontractors hired by New York City's Department of Design and Construction: Turner Construction/Plaza Construction, Bovis Lend Lease, Tully Construction, and AMEC Construction Management. Assisting LZA are many of the major structural engineering firms in New York City, an effort coordinated by the Structural Engineers Association of New York (SEAoNY).

What was at first a desperate rescue operation has evolved into a focused, round-the-clock endeavor to remove rubble quickly and safely. AS RECORD reported in October,

each contractor is responsible for removing debris from a quadrant of the site. The work is painstaking, deliberate, and dangerous. Movement of equipment and people is coordinated carefully so that the enormous mounds of rubble do not shift or collapse. At press time, hot spots were still prevalent and needed to be hosed down when uncovered. Debris removal is halted when human remains are found and recovered. An acrid, burning odor persists at the site, and recovery workers wear respirators to protect them from contaminants and particles resulting from the fires.

Though the smell drifts throughout lower Manhattan, air quality outside of Ground Zero has been deemed safe by federal officials.

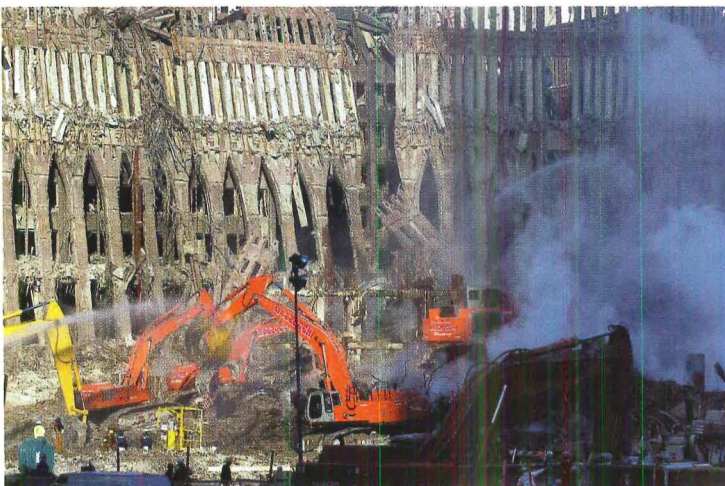
The rubble, plucked delicately from the site by cranes, backhoes, and other heavy equipment, is



An aerial view of Ground Zero, September 23, with the green roofs of the World Financial Center.

taken by barge to Fresh Kills Landfill on Staten Island, where it is searched for evidence and human remains. Much of the structural steel from the twin towers will be melted down and recycled, though the forensic team assembled by the American Society of Civil Engineers hopes to examine steel from the site to gauge its performance during the fires. These inspections could impact future steel designs or fire systems. To date, however, no specific steel specimens had been selected for forensic analysis.

Structural engineers at the site are showing ingenuity as they toil in war-zone conditions. Steel box columns from the wreckage, for instance, have been fashioned into bridge girders to move a crane over the debris, says Dan Cuoco, managing principal of LZA/Thornton-Tomasetti. *Deborah Snoonian, P.E.*



As shown in mid-October, cleanup work continued six weeks after the attack.

#### GENSLER ASSISTS 24 WTC CLIENTS FIND NEW SPACE, BECOME OPERATIONAL AGAIN

The New York office of Gensler has 24 clients that were located in or immediately near the World Trade Center (WTC) towers. Realizing a need to provide client services beyond strictly design in the wake of the disaster, Gensler has assisted those clients to once again be "business operational."

Gensler's WTC clients, including Lehman Brothers, Morgan Stanley, Merrill Lynch, and Carr Futures, ranged from 50- to 60-employee concerns with 10,000 square feet of space to companies with more than 1 million square feet. For those clients, Gensler has helped obtain new office space in Manhattan, Connecticut, or New Jersey and find necessary office furniture, fixtures, and products at a reasonable cost for them to resume work in the short-term.

"We're scrambling for our clients right now," says Joseph Brancato, AIA, vice president and managing principal at Gensler. "The real value (our clients) are getting are options and our ability to quickly evaluate—service, speed, and knowledge."

Gensler employees have been busy with this task, working evenings and weekends since the disaster. Brancato says, "Seeing the need for our services has helped keep our morale high." *John E. Czarnecki, Assoc. AIA*



### Significant damage to subways near WTC

Amid the rubble of the World Trade Center, transit engineers are facing immense challenges below grade in assessing and shoring up damaged subway lines.

With steel beams and debris from the destroyed buildings skewering the tunnel and stations of the No. 1 and 9 subway lines, more than a mile of the route must be completely rebuilt. About 575 feet of the 1/9 tunnel collapsed in two places, while hundreds more feet of the tunnel are structurally unsound. About 200 feet north of the 1/9 Cortlandt Street Station, where the tunnel ran alongside the eastern edge of 7 World Trade Center, a 220-foot section will be temporarily filled with concrete to support the street above. Transit officials say work to repair the 1/9 line from south of Chambers Street to its end, at South Ferry Station, could take more than two years.

At press time, cost estimates to rebuild had not been announced, but assessment of damage continued. Emergency work—to shore up

the tunnel and stations, stabilize the road bed above, and plug potential Hudson River flood routes within the WTC “bathtub” basin—will cost an estimated \$2 million to \$4 million.

Besides damage to the 1 and 9 lines, the N and R lines are out of service until at least next spring. A section of the facade from Tower Two has punctured the tunnel near the N/R Cortlandt Street Station. Through October, engineers from Slattery Skanska and Mueser Rutledge Consulting Engineers worked with crews to stabilize Church Street above the N/R tunnel, to provide support for the heavy demolition and excavation equipment that is removing debris from the collapsed buildings.

PATH train service has been suspended from the WTC site to New Jersey due to damaged station platforms and tunnels.

When rebuilt, some subway and train lines could be reconfigured to create better linkages with buildings that may rise on the WTC site. *William Weathersby, Jr.*



The 1/9 (top two) and N/R (above) subway tunnels incurred significant damage on September 11. Cost estimates to rebuild have not been announced.

### New York design, construction, and preservation groups join forces for lower Manhattan

A number of organizations involved in design and construction in New York have quickly mobilized to consider the future of lower Manhattan.

The New York City Infrastructure Task Force ([www.nycrebuild.org](http://www.nycrebuild.org)) has formed as a coalition of private sector resources to develop a vision for rebuilding New York. The task force is charged with informing and assisting elected leaders and providing professional advice and counsel on the rebuilding process, resource availability, issues of liability and jurisdiction, emergency response procedures, and building codes and utilities. The task force executive committee includes Bob Prieto, chair of Parsons Brinkerhoff; Marilyn Jordan Taylor, FAIA, chair of Skidmore, Owings & Merrill; Daniel Tishman, president and CEO of Tishman; and Lou Coletti, chair and CEO of the Building Trades Employers Association.

The task force is “an opportunity to put together the best minds in the city and think about principles to guide the future of lower Manhattan,” says Taylor. “It’s an extremely fluid situation right now.”

The New York chapter of the American Institute of Architects (AIA/NYC) ([www.aiany.org](http://www.aiany.org)) has organized a volunteer action committee to mobilize local

AIA members to respond to immediate and long-term needs. The action committee is in collaboration with the New York City Partnership, the Real Estate Board of New York, the New York Building Congress, the Structural Engineers Association of New York, and the New York Association of Consulting Engineers. The committee is providing base building and building operation assessments, pro bono space-planning services, and assistance in the development of appropriate temporary zoning and code regulations. AIA/NYC has organized at least 150 individual architects and firms to volunteer. “What I’m touched by most are the sole practitioners and smaller practices that are volunteering,” says Fredric Bell, FAIA, AIA/NYC executive director.

Five historic preservation organizations have joined to have a unified voice in the rebuilding of lower Manhattan, which includes 67 designated city landmarks south of Chambers Street. The World Monuments Fund (see story, page 44), the National Trust for Historic Preservation, the Preservation League of New York State, the Municipal Arts Society, and the New York Landmarks Conservancy have each given \$10,000 in seed money to co-sponsor the Lower Manhattan Emergency Preservation Fund. JEC



## Architects that worked near World Trade Center return to practice, keeping data off-site

Architecture firms that were in or near the World Trade Center are rebuilding their practices, despite the difficulty of the past two months. The most important lesson that these firms offer is the need for off-site secure storage of data.

"Off-site record retention has always been really important, but now the importance is crystal clear," says Dave Hannaford, chief financial officer and principal at Mancini Duffy. His firm's 140 employees all safely escaped their office in Tower Two [OCTOBER 2001, page 26] and have returned to work in a new office. Mancini Duffy had data stored on tapes in a safety deposit box in a bank vault in Manhattan, but the key to the safety deposit box was in the firm's office. A locksmith was hired to open the box to get to the firm's data.

Gruzen Samton's office, across the street from the World Trade Center in the third and fourth floors

of 90 West Street, was destroyed by fire and smoke damage. All 120 employees survived the disaster, but all paperwork, drawings, and slides were destroyed. Peter Samton, FAIA, noted that his Rolodex, of which he only had a hard copy, was destroyed. All of the firm's data backup was kept on the premises in three safes. Only one of the safes was designed to withstand extreme heat—materials in that safe were salvageable, but a crowbar was needed to open the partially melted door. Backup tapes in that safe, which were slightly damaged, were taken to a data recovery center to salvage information. The firm has also obtained backup data from its consultants.

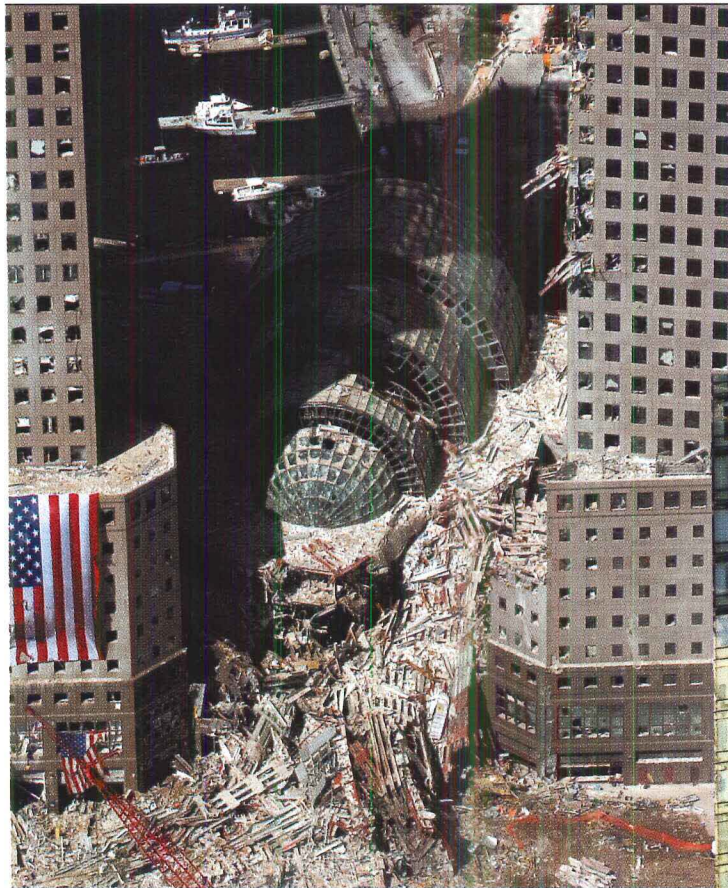
"I don't know how cautious one can be," says Peter Samton, FAIA. He notes the importance of business interruption insurance, which has covered "whatever it takes to get back into business" for his firm.



Firm leadership at Gruzen Samton: (from left) Jordan Gruzen, FAIA, Peter Samton, FAIA, Mary Burke, AIA, Gerald Varisko, AIA, and Michael Gelfan, AIA.

Skidmore, Owings & Merrill's Wall Street office is only two blocks from Ground Zero. SOM employees returned September 17 to an office without phone service, T-1 lines, or air-conditioning. One SOM architect, Arkady Zaltsman, AIA, who was going to the World Trade Center that morning to meet with a client, died

in the disaster. Despite the hardship, SOM is committed to staying in the financial district. "Returning to work that Monday was a very anguishing process," says Marilyn Jordan Taylor, FAIA, chair of SOM. "But we're very proud of our determination to resume our practice and move forward." JEC



The Wintergarden at the World Financial Center (above) and the Bankers Trust building (right) sustained considerable damage on September 11.



## WTC neighboring buildings inspected; some require extensive reconstruction

In the weeks since the collapse of the World Trade Center towers, safety inspections and recovery efforts have been completed in tandem. Structural inspections of some 400 buildings in the area were conducted by the Structural Engineering

Association of New York (SEAoNY) [OCTOBER 2001, page 27] in conjunction with ZA/Thornton-Tomasetti. "The SEAoNY volunteers were instrumental in getting the inspection work done so quickly," says Dan Cuoco, president of LZA.

Buildings surrounding the WTC site that sustained significant damage include Bankers Trust (left), N.Y. Telephone, and 90 West Street. One World Financial Center is scheduled to reopen November 19, but the Wintergarden and its flanking towers, Two and Three World Financial Center (far left), may take up to a year to reopen. One Liberty Plaza, a 53-story building that was used to support emergency operations post-September 11, was to reopen the last week of October. A 1907 Cass Gilbert building [see story above], 90 West Street has been deemed structurally sound but has significant interior damage due to fire and debris. DS and JEC



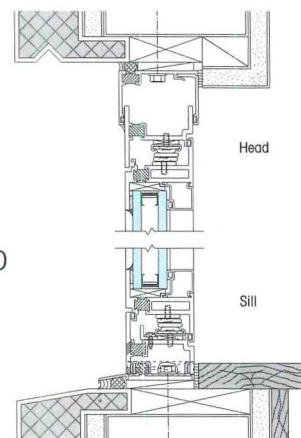


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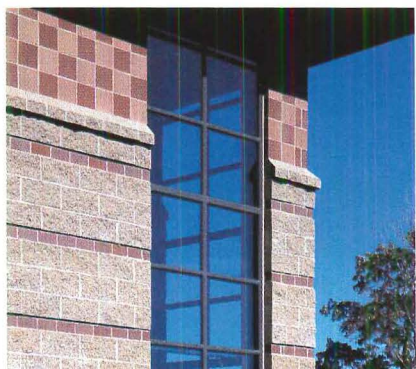


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## SPECIAL REPORT

### More than two years and \$520 million needed to rebuild damaged portion of Pentagon

Rebuilding Wedge 1 of the Pentagon—the newly renovated area that sustained the most damage during the September 11 terror attack [OCTOBER 2001, page 23]—will cost \$520 million and will take up to two-and-a-half years to com-

plete, according to estimates from the Pentagon Renovation Office. London-based design-build firm AMEC was awarded a modification on their existing contract for the Wedge 1 renovation for the new work. RTKL of Baltimore won a

\$20.8 million contract to redesign interior spaces for the repaired area. The RTKL contract includes \$1.6 million to assess the damaged structure.

Restoring Wedge 1 involves first rebuilding its shell—fixing damaged columns, floor slabs, and walls. The building's foundation remained intact and will not require extensive repair. The limestone facade will be replaced using stone from the same Indiana quarry that the original Pentagon limestone came from. Once the shell is repaired, core work and tenant fit-out will proceed.

The shell work will take approximately 18 months to complete, according to Lee Evey, manager of the Pentagon renovation program, and interior work could last up to two years. Evey emphasized that the construction team will make every effort to shorten this schedule. The damaged area will be mapped and measured using laser imagery and digital photography, which will quicken the pace of repair, he says.

One of the biggest challenges of the cleanup effort so far has been battling mold and mildew that resulted from the thousands of gallons of water used to fight fires after the attack. Large dehumidifiers have been moved into the Pentagon to combat mold and mildew growth as repairs are underway.

At press time in late October, much of the crash debris had been removed from the site, and small areas of Wedges 1 and 2 were reopened for occupancy. Domestic water lines, fire pumps, and sprinkler systems were restored, and about half of Wedge 1 had electrical power. Air quality has been monitored throughout the Pentagon following the attacks, and no problems have been found.

The previously planned renovation of Wedges 2 through 5 will continue on schedule, with some modifications to phasing of activities. DS



While a relatively small portion of the Pentagon was destroyed on September 11, the estimate to rebuild is \$520 million.

### AIA members alerted to unusual requests for building information

Citing reports of unusual requests for building plans from several architecture and engineering firms, the American Institute of Architects (AIA) joined the National Society of Professional Engineers and the General Services Administration (GSA) in issuing an advisory letter to their members.

Reports of the unusual requests first surfaced in the days surrounding September 11. A large Manhattan firm received e-mail requests for plans of some of the firm's major public or government buildings from people who purported to be Pakistani students. The firm notified the AIA and the Federal Bureau of Investigation (FBI).

The letter subsequently released on the AIA's Web site, [www.aia.org](http://www.aia.org), tells of the reported incidents and says that "it is appropriate to exercise reasonable caution and good judgment in reviewing each request before providing documents or plans." The letter also provides a link to a form for reporting suspicious incidents directly to the FBI. A copy of the AIA's letter and a link to the report form can be found at [www.architecturalrecord.com](http://www.architecturalrecord.com).

James Dinegar, the AIA's chief operating officer, was pleased with the letter's initial reach and response. "The letter spread far wider than we anticipated," Dinegar said. "We understand that GSA has received up to 10 specific responses, which it has not shared (with the AIA), nor have we asked the GSA to share the details."

The advisory letter was not intended to scare firms, according to Dinegar, who said the higher state of alert should not interrupt the free flow of information within the architectural profession. Kevin Lerner

**www** For continuous updates on the developing story at the World Trade Center, go to [www.architecturalrecord.com](http://www.architecturalrecord.com) to find a special section including:

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# Record News

## OFF THE RECORD

Cesar Pelli & Associates with Architectural Alliance has been selected to design the new \$122 million main branch of the Minneapolis Public Library.

The completed Milwaukee Art Museum addition by Santiago Calatrava, with a dramatic brise-soleil, opened to the public October 14.

Rafael Viñoly, FAIA, has been selected to design a 102,000-square-foot addition to the Cleveland Museum of Art.

The Sterling and Francine Clark Art Institute chose Tadao Ando to design a new 85,000-square-foot building with exhibition and academic spaces for its campus in Williamstown, Mass.

Dr. Nicholas Olsberg has been appointed the new director of the Canadian Centre for Architecture (CCA) in Montreal. Dr. Olsberg joined the CCA in 1989 as its first head of collections and was named chief curator in 1991 and interim director last June.

Vienna's Coop Himmelb(l)au [this issue, page 108] will design a \$30 million, 50,000-square-foot addition to the Akron Art Museum. Coop Himmelb(l)au was chosen in a competition that included two finalists: Snøhetta of Oslo and UN Studio in Amsterdam. This will be the firm's first public building in the U.S.

Finalists to design a 45,000-square-foot addition to the Queens Museum of Art in New York are Eric Owen Moss Architects, Culver City, Calif.; Evidence Design, Brooklyn; Fox & Fowle Architects, New York; Hanrahan Meyers Architects, New York; and Salazar Davis Architects, New York. A winner will be selected in December.

Ezra Ehrenkrantz, FAIA, a partner in the New York firm Ehrenkrantz Eckstut & Kuhn Architects, died of cancer September 22 at age 69.

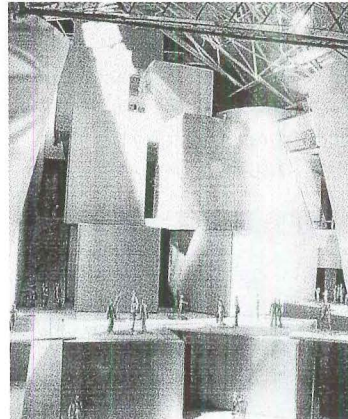
## Unanimous approval for Gehry's Corcoran

Gaining approvals for buildings in Washington, D.C., especially unapologetically modern structures, can be notoriously contentious. That's why it was a bit of a surprise that a dramatically refined scheme for an addition to the Corcoran Gallery and College of Art in that city by Frank O. Gehry, FAIA, received unanimous approval by the Commission of Fine Arts on October 18. Gehry Partners can now move ahead with design development for the \$120 million wing, to be built directly behind the gallery and across the street from the national office of the American Institute of Architects on New York Avenue. Construction is expected to start in 2003, with completion by 2006.

Gehry won the competition in 1999, but he was initially reluctant to even enter. "I thought, 'Me and Washington? It ain't gonna work.' But we got here," he told the com-



Gehry's refined design (above) has a soaring interior space (left).



mission before it approved his design. Gehry altered his design, which initially had a bundle of about a dozen ribboned masses of glass and metal. The refined design now has fewer, broader, and more sweeping curves that better relate to the original 1897 Corcoran build-

ing's curve at the corner of 17th Street and New York Avenue.

"It is unconventional and challenging," commission chair J. Carter Brown said in describing Gehry's design. "But in the context of Frank Gehry's work, it is very calm, very pure, almost simplified. It will be a great addition to that block."

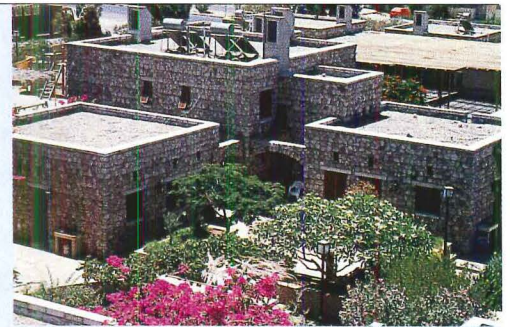
The 145,000-square-foot addition, which more than doubles the Corcoran's space, will include a new main entrance and new gallery space. Studios and classrooms will be added for the college in mostly underground space with skylights for natural light. The original Corcoran building by Ernest Flagg will also be renovated. JEC

## 2001 Aga Khan Awards announced


His Highness the Aga Khan announced the recipients of the 2001 Aga Khan Award for Architecture in a ceremony at the historic Citadel of Aleppo in Syria on November 6. The award has a triennial prize fund of \$500,000.

The Aga Khan Award for Architecture was established by the Aga Khan in 1977 to identify and encourage building concepts that address the needs and aspirations of Islamic societies. The award recognizes exemplary architecture in the Islamic world in contemporary design, social housing, community improvement and development, restoration, reuse, area conservation, and landscape design and improvements to the environment. This year marks the eighth cycle of the triennial prize.

Nine projects were awarded this year: New Life for Old Structures, various locations, Iran; Ait Iktel, Abadou, Morocco; Barefoot Architects, Tilonia, India; Kahere Eila Poultry Farming School, Koliagbe, Guinea; Nubian Museum, Aswan, Egypt; SOS Children's Village, Aqaba, Jordan (right top); Olbia Social Centre, Antalya, Turkey; Bagh-e-Ferdowsi, Tehran, Iran; and Datai Hotel, Pulau, Langkawi, Malaysia (right bottom). A special Chairman's Award was presented to Sri Lankan architect Geoffrey Bawa. Architects on the Master Jury were Darab Diba of Tehran, Dogan Hasol of Istanbul, Ricardo Legorreta of Mexico City, Glenn Murcott of Sydney, and Raj Rewal of New Dehli. JEC







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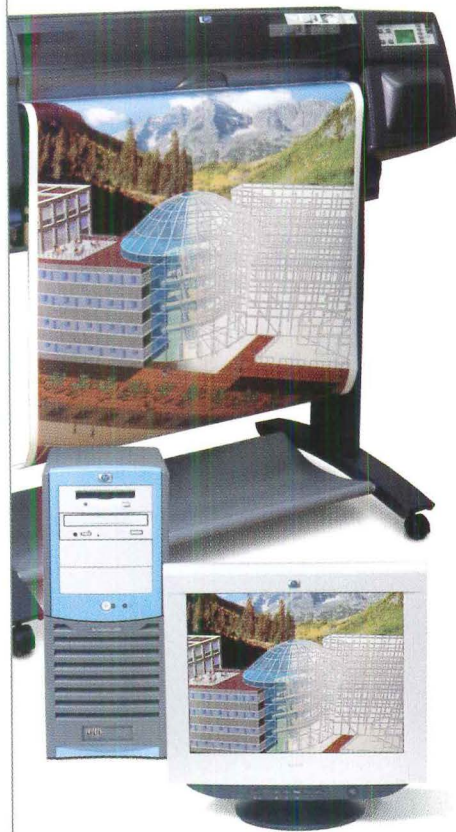
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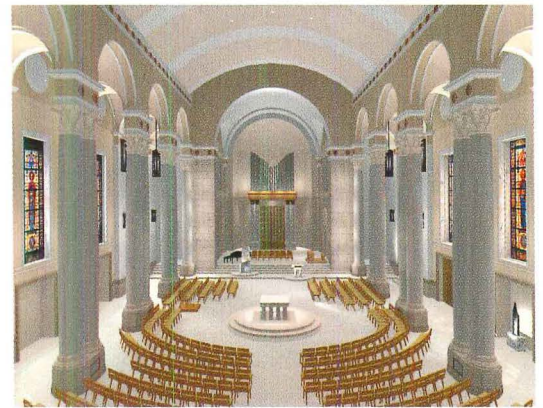
## Record News

### Milwaukee cathedral renovation draws conservative criticism

A major renovation of the 153-year-old Cathedral of St. John the Evangelist in Milwaukee has sparked debate over bishops' rights and interpretations of Second Vatican Council reforms. Construction continues, despite opposition from conservative Catholics and one Vatican-based Cardinal.

The \$4.5 million cathedral renovation is part of a comprehensive \$10.5 million renovation of church-owned buildings on the cathedral block in downtown Milwaukee. Designed by James W. Shields, AIA, of the Milwaukee office of Hammel, Green and Abrahamson, the renovated interior is intended to better reflect post-Vatican II concepts of worship. The cathedral will be adapted from a traditional layout with primarily two spaces—the nave with rows of fixed pews and the chancel with an altar for clergy and choir—to a single room for worship with the altar in the middle surrounded by moveable oak chairs. In this configuration, more worshipers will be closer to the altar. The cathedra, or throne for the bishop, will be placed near the new altar. The tabernacle, which contains the Eucharistic hosts, will be moved from the chancel to a side chapel. An organ console will be in the chancel.

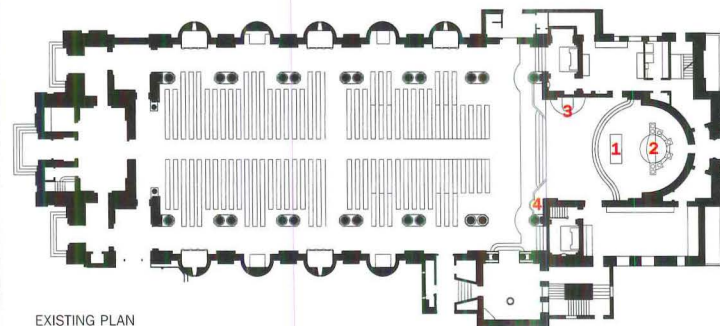
A conservative group of Milwaukee Catholics has opposed the renovation, calling it a "destruction" of the building, and petitioned the church to refurbish in its current configuration instead. The



The new interior will have chairs surrounding the altar.

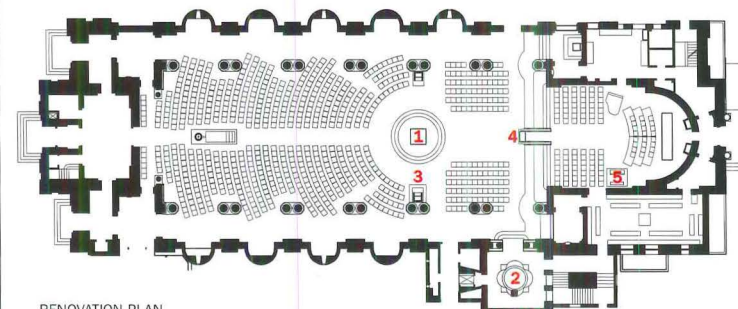
group was aided by a conservative San Antonio foundation and discovered a sympathizer in Cardinal Jorge Medina, prefect of the Congregation of Divine Worship and Discipline of the Sacraments. Medina wrote to Milwaukee Archbishop Rembert Weakland on June 30, noting that moving the altar and placing an organ in the chancel would not "adequately respect the hierarchical structure of the church of God that the cathedral by its scheme is to reflect." The letter is inconsequential, though, because Medina does not have jurisdiction over Weakland. Renovation work continues, with completion set for spring 2002.

Church scholars believe the opposition may be directed, in part, to Weakland himself, who is one of the leading liberals in the church. JEC



EXISTING PLAN

1. Altar
2. Tabernacle
3. Cathedra
4. Pulpit
5. Organ console



RENOVATION PLAN

Alterations at the Cathedral of St. John the Evangelist call for the altar to be placed near the center of the church, with moveable chairs replacing fixed pews. The chairs could be arranged in multiple configurations.



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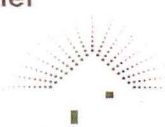
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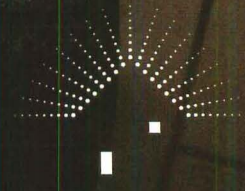


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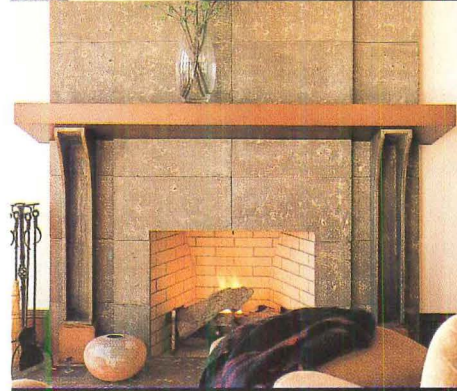
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## Record News



### Group of Harvard alums protest clubhouse facade

Every alumni club specializes in the encounter between the present and the past. But at the Harvard Club of New York, the glassy new addition by New York firm Davis Brody Bond has prompted some members to contemplate a particularly architectural form of time travel. They have commissioned facade studies from New York classicist Richard Cameron, AIA, of the Brooklyn firm Cameron, Cameron & Taylor, illustrating how the addition could be clad in the neo-Georgian style of the 1894 clubhouse building by McKim, Mead and

**Harvard Club members have protested this facade by Davis Brody Bond as inappropriate for the site.**

White. Excavation is currently underway for the addition between the existing clubhouse and the 1898 New York Yacht Club.

"Brick and limestone means Harvard to a lot of people, not a glass box," says one club member favoring a more historicist facade.

Further, suggests Cameron, the DBB design "is not especially forward-looking. It's a post-Second World War form of Modernism."

Developed by Max Bond, FAIA, a 1955 Harvard grad, with DBB partner Christopher Grabé, AIA, the eight-story, 34,000-square-foot expansion is scheduled for completion by the end of 2002. It will include 18 new guest bedrooms, two international squash courts, a ballroom, an audio-visual facility, and ADA-compliant renovations to the existing building. The addition was approved by the New York City Landmarks Preservation Commission in March and the local Manhattan community board.

Grabé describes the addition's geometrically complex facade as "an interweaving of the old building and the new project. In scale, proportion, and rhythm, as well as in its limestone detailing, it relates to the existing clubhouse. The goal of the design is to honor the buildings on either side but not to mimic them."

A group of club members, called the Committee for HCNY Choice, unsuccessfully filed suit with the New York State Supreme Court last June to delay ground breaking, alleging violations of club bylaws in the discussion of the addition. Richard Ottinger, an attorney retained by the dissenters, said the group may attempt further legal action "to prevent construction from continuing." *Thomas de Monchaux*

### National Building Museum hosts events in terror aftermath

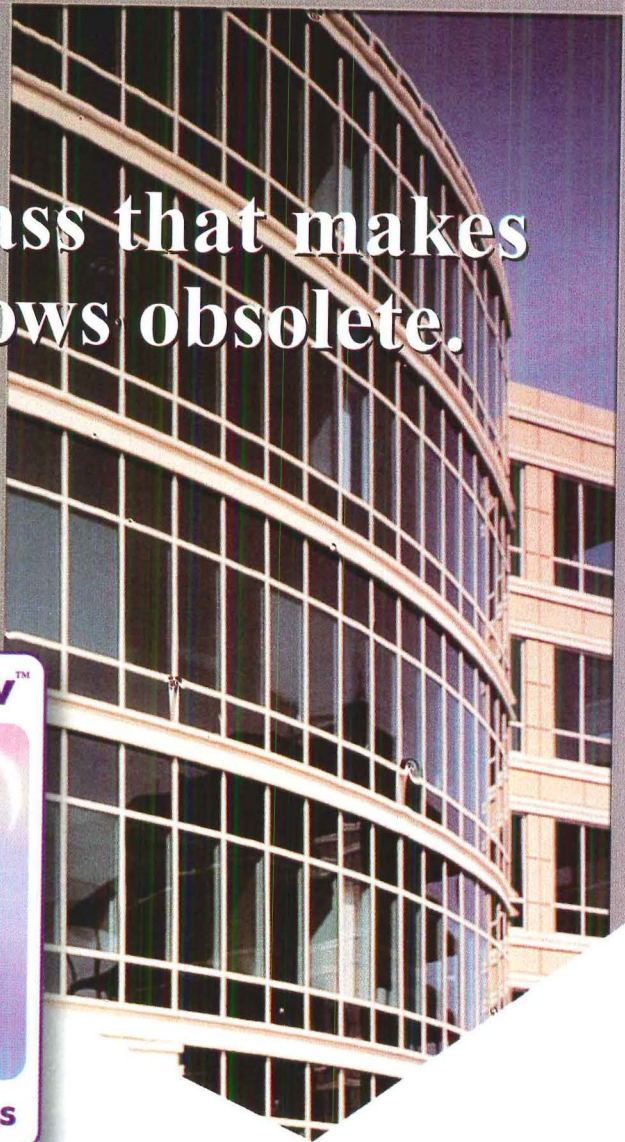
The National Building Museum in Washington, D.C., will host events that will explore the impact on the built environment of the attacks on September 11. A symposium, "The Future of the Skyscraper," will be held Friday, November 9, at 6 P.M. Speakers include Leslie Robertson, FASCE, the structural engineer for the World Trade Center; Paul Katz, AIA; Bruce Fowle, FAIA; Witold Rybczynski; and Robert Campbell, FAIA, contributing editor for ARCHITECTURAL RECORD and architecture critic for the *Boston Globe*. A symposium, "Freedom without Fortresses? Shaping the New Secure Environment," cosponsored by RTKL and ARCHITECTURAL RECORD will be held Tuesday, November 27, at 6:30 P.M. Moderated by Robert Ivy, FAIA, editor in chief of ARCHITECTURAL RECORD, speakers will include Daniel Patrick Moynihan, former U.S. senator from New York; architect and planner Jonathan Barnett, FAIA; and the executive architect for the reconstruction of the Pentagon, David Vere Thompson, AIA, of RTKL. An exhibit, "Twin Towers Remembered," will be on display November 10 through March 10, 2002. For more information, visit [www.nbm.org](http://www.nbm.org). JEC



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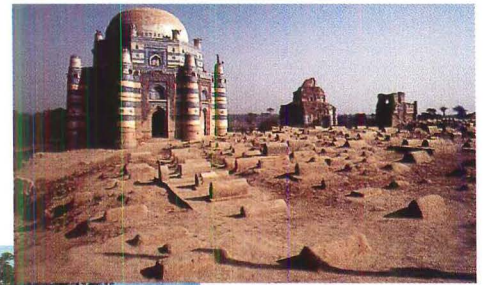
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CIRCLE 20 ON INQUIRY CARD

## News Briefs

### Historic Lower Manhattan on Most Endangered Sites list

The World Monuments Fund has released its 2002 World Monuments Watch List of 100 Most Endangered Sites, and has added a 101st—Historic Lower Manhattan. The biennial list is a call for international attention, an attempt to raise funds to save cultural monuments and heritage sites. Historic Lower Manhattan was added as an emergency measure after the September 11 attack. One of the most important historical areas in the United States, Historic Lower Manhattan has more than 65 individual landmarks and historic districts. The 2002 list includes 42 places in Europe, 20 in Asia, 17 in Africa and the Middle East, and 22 in the Americas. See the complete list in "News" at [www.archrecord.com](http://www.archrecord.com).



Endangered sites on the World Monuments Fund list include the Uch Monument complex in Pakistan (left) and the Larabanga Mosque in Ghana (above).

### Design approved for Safdie courthouse

The design concept for a federal courthouse in Springfield, Mass., by Moshe Safdie, FAIA, has been approved by the General Services Administration. Safdie's design, which includes four courtrooms, has a colonnaded entry pavilion with a curved colonnade for a pedestrian promenade and grand stair. Construction on the 162,000-square-foot courthouse is expected to begin in fall 2002 with completion in 2005.



Safdie's design for a federal courthouse in Springfield, Mass.



### AIA and McGraw-Hill extend partnership

The American Institute of Architects (AIA) and McGraw-Hill, publisher of ARCHITECTURAL RECORD, have extended their existing strategic partnership through 2010. Norbert Young, FAIA, president of the McGraw-Hill Construction Information Group, and AIA Executive Vice President/CEO Norman L. Koonce, FAIA, signed the agreement October 11.

### Rosa named curator of architecture and design at SFMOMA

Joseph Rosa has been appointed as the Helen Hilton Raiser Curator of Architecture and Design at the San Francisco

Museum of Modern Art (SFMOMA). He will begin in that role in January. He has been the curator of architecture at the Heinz Architectural Center at the Carnegie Museum of Art in Pittsburgh for the past two years. Rosa replaces Aaron Betsky, who left SFMOMA in May after seven years to become the director of the Netherlands Institute of Architecture in Rotterdam.

### Siegel elected to Pratt Institute board of trustees

Robert Siegel, FAIA, a principal with New York firm Gwathmey Siegel & Associates Architects, has been elected chair of the Pratt Institute board of trustees. He was elected to a three-year term that began July 1, 2001. Siegel received his Bachelor of

Architecture degree from Pratt in 1962. Pratt has an enrollment of 4,200 in art, architecture, and design.

### Gehry on board for affordable housing in Oregon

Frank O. Gehry, FAIA, has agreed to design a mixed-use, affordable housing project in Portland, Ore. Planned for the city's burgeoning River District adjacent to downtown, the project will include a Montessori school and approximately 180 units of housing. Developer Homer Williams, who has been responsible for new high-end housing in the River District, is developing the project. Construction is scheduled to begin in early 2003. The budget is estimated at approximately \$126 per square foot, a figure less than one fifth that of signature Gehry projects, but 20 percent more than the average Portland affordable housing project.

Brian Libby



# Debating the future of the world's financial capital

## Correspondent's File

By James S. Russell, AIA

Even as the 16 acres over which the World Trade Center once stood still smoldered at the tip of Manhattan, ideas for rebuilding the site poured out in public forums and flooded the desks of officials and op-ed pages. The suggestions tended to fall into four categories: make a defiant gesture ("build them back bigger!"); rebuild the center largely as it was as fast as possible (the pragmatic approach intended to stem the short-term losses to businesses and the city); don't build anything, but instead create a serene monument to the victims; make a more modest, affirmative gesture (suggestions included a museum of world culture or an antiterrorism center).

Ad hoc commissions and committees began forming to guide the reconstruction even as thousands of victims remained unaccounted for and final removal of the wreckage seemed months away. Although this could be seen as architectural ambulance chasing, New York practitioners waded immediately into the emerging fray, since they are all too well acquainted with the currency of ego and influence that steers endeavors that are the proper purview of architects into the hands of others more skilled at working the levers of power.

### Who can rebuild?

In early October, for example, Larry Silverstein, whose Silverstein Properties led a consortium that leased Towers 1 and 2 only last July, had pledged to rebuild on the site, describing four towers of 50 to 55 stories and about 2.5 million square feet each. This idea is "very prelimi-

nary," according to his spokesman, Steve Solomon. Silverstein has brought the architectural firms of Skidmore, Owings & Merrill (SOM) and Cooper Robertson "on board" to develop design concepts.

It is unclear whether Silverstein has a right to rebuild, however. Just the sheer number of interests involved in the World Trade Center's reconstruction could chew up and spit out any vision, whether grand or not. The land is owned by the Port Authority of New York and New Jersey, which is controlled by the respective state governors. The blast damaged subways owned by the

New York Transit Authority, which happens to be part of a state agency. Since reconstruction funds will be contributed by the city, state, and federal governments, each has demanded an important voice in what is built. The views of the families of the dead, including the hundreds of police and firefighters who lost their lives attempting to rescue victims of the disaster, cannot be denied.

Can any form of greatness come of this? Alex Washburn thinks so, but only if people recognize the paralyzing dynamic that can arise in such a situation and confront it

head-on. (An architect and partner in New York City-based W Architecture, Washburn learned this lesson firsthand when he united the competing agendas of three layers of government and two states to achieve agreement on reconstructing New York's Pennsylvania Station ["Form Follows Process," MARCH 2001, page 127]. "There are distinct political reactions, business reactions, and design reactions," he explains. "The most powerful people in each field are here in New York, and their efforts will be brilliant and forceful, and behind all of them are billions of dollars to actually accom-

DEPARTMENTS



Although only a small part of Lower Manhattan was destroyed, the full impact is only now becoming understood.



## Correspondent's File

plish something. But there is not yet a mechanism to integrate those fields and reach some kind of understanding. And yet the project will freeze if it is at cross-purposes." To develop a consensus vision he hopes to help organize workshops akin to those of the Mayors Institute of City Design, which exposes political figures to the problem-solving skills of designers and other technical experts. In the meantime, design fields that often compete have come together in a coalition spearheaded by New York City AIA. Including professional organizations for planners and landscape architects as well as the politically active Municipal Arts Society and the public-outreach oriented Architectural League and Van Alen Institute, it is "a loose and wonderful federation," says AIA New York executive director Rick Bell. "The organizations are volunteering their time and services as they offer professional knowledge and expertise."

### Is density too risky?

Developing a clear vision for the future of Lower Manhattan may prove a daunting task. Overnight, dispersal and redundancy became

## "WE NEED PLACES LIKE LOWER MANHATTAN—IT FUNCTIONS AT A GLOBAL LEVEL." —MICHAEL GALLIS

the new real-estate zeitgeist. But within weeks, the sensibility began to change, as it became clear that fewer surrounding buildings sustained fundamental structural damage than had been feared, and companies began to reckon with what moving away from the historic fulcrum of finance really meant.

Many firms are returning to Lower Manhattan as both an act of defiance and because fewer business relationships and commuter patterns will be disrupted if they do. "In the short term, it's a devastating blow to the city and downtown's economy," said Carl Weisbrod, president of the Alliance for Downtown New York, a

business-improvement organization. "The building blocks—the New York Stock Exchange, NASDAQ, the Depository Trust, the Federal Reserve, the New York Mercantile Exchange—are all back in business and committed to lower Manhattan. In the long term, I have no doubt that New York and Lower Manhattan will emerge better than ever."

But the Trade Center disaster adds to a long list of problems that have long gone unaddressed by local officials. Traffic congestion, poor access to airports and commuter-rail transportation, and lack of quality trading space make the financial district less appealing than it should be. Over the long term, such everyday hassles added to terror-generated fear may make it hard for downtown firms to hire the best staff, which may further propel the urge to disperse outside of the city.

And yet for many, the promise made by the stock exchange's chairman, Richard A. Grasso, to get the floor up and running—and the smooth resumption of trading days after the disaster, even as smoke still billowed from the Trade Center ruins—represented a turning point.

"Grasso has done a fabulous job," said SOM's David Childs (by cell phone—the firm, two blocks from Ground Zero, temporarily lost telephone, data lines, and air-conditioning). "And he has said the exchange must build." (The firm is designing NYSE's long-planned expansion.) Added architect Hani Rashid, of Studio Asymptote, "Grasso's speech made me aware of how important the locus is, the notion of gathering people—in other words, how important the city is." Rashid's sentiments may prove to be minority ones. Most observers agree that it is too early to say how well New York will recover, and how far the disaster's

effects will ripple.

### Does downtown matter?

Could the disaster trigger a shift in the nation's financial-services center of gravity? "The forces of decentralization were there well before the buildings became symbolic targets," says Carol Willis, author of *Form Follows Finance*, and head of the Skyscraper Museum, whose temporary home

## "POWERFUL PEOPLE ARE INVOLVED . . . BUT THE PROJECT WILL FREEZE IF IT IS AT CROSS-PURPOSES." —ALEX WASHBURN

in Lower Manhattan was commandeered for relief efforts. Indeed, the received wisdom prior to the disaster was that capital had left behind such defining artifacts as skyscrapers and trading floors and had become a digitized abstraction, best moved through wires to computer-connected market makers, who could locate themselves unconstrained by traditional urban enticements such as closeness to markets and supply of transportation or labor force.

Rashid has made his own contribution to the trend by designing a "virtual" counterpart to the real stock exchange. Yet he argues for a hybridization of the real and the virtual. "Rather than build another world's highest skyscraper, the tragedy strikes me as an opportunity to build a new urban center linked to information technologies," he says. "People need to meet to discuss important issues—and cities of the future are already responding to the hybrid potential."

That hoary reason for downtown—to encourage interaction—may not seem enough when too many people congregated in one place can pose a security risk. But we need to put the utility of a place like Wall Street into perspective, argues Michael Gallis, an urban strategist based in Charlotte, N.C., who at the time of the attack was studying urban-growth patterns in New Jersey. (Full disclosure: The author has performed consulting services for Gallis.) Regionalization

of the office market has its place, he says, but, "We do need places like lower Manhattan as region-level hubs. Manhattan has additional cultural, social, economic, and institutional dimensions that allow it to function interactively at a global level. That's why the attack has seemed so paralyzing not just to New York but to the world."

Rapid reconstruction of lost space may restore the vitality of

downtown, and the size of the American economy may assure the New York region's role as the world's center of finance. But if capital is as mobile as experts have long told us it is, such an outcome is by no means guaranteed. That direr scenario may better reflect the national implications of the disaster and the rationale behind the call of local and state officials for a whopping \$54 billion in federal aid. Understanding the potential future of finance as a "downtown" kind of business may require a much deeper analysis of the future than is contemplated by most redevelopment schemes so far proposed.

While electronic competitors call NYSE's trading floor a "single point of failure," susceptible to attack, the well-documented vulnerabilities of all-electronic commerce seem to have been forgotten. No one has really taken the time to wonder what kinds of physical spaces might augment electronic ones. At which points in the vastly complex dealmaking, banking, and brokerage businesses are person-to-person interactions useful—and what form can they take compared to what exists now? What combination of technology and human skill is required to understand fast-breaking business developments? It seems inconceivable to contemplate such abstract notions while the grim demolition and recovery of human remains continues, but such urban soul searching may be necessary to create a genuinely vital future for lower Manhattan and the nation's financial business. ■



# Dates & Events

## New & Upcoming Exhibitions

### Tadao Ando, Architect

#### St. Louis

Through December 30

A rare opportunity to experience the work of this self-trained Japanese architect through models, drawings, and photographs. Featuring 17 projects from Japan, the installation also includes several full-scale architectural elements and a reflecting pool. At the St. Louis Art Museum. Contact 314/721-0072.

### Vital Forms: American Art and Design in the Atomic Age, 1940-1960

#### New York

Through January 6, 2002

One of the first exhibitions to survey the use and influence of organic forms upon visual media. With more than 250 objects on display, the exhibition explores a multitude of mediums including painting, sculpture, clothing, architecture, industrial design, jewelry, and furniture. At the Brooklyn Museum of Art. Contact [www.brooklynart.org](http://www.brooklynart.org).

### Steven Holl: Parallax

#### Rome

October 20-January 13, 2002

Steven Holl complements his most recent publication by showing a similar group of projects in this exhibition. So similar, in fact, that the same title, *Parallax*, is used for both. Holl exhibits his work as first and foremost fantasies, in their wee beginnings as ethereal watercolor sketches, study models, and notebook doodles. At the American Academy in Rome. Contact 011 39 06 58461.

### Wall House 2: John Hejduk

#### New York City

November 6-November 30, 2002

Exhibition featuring original drawings and photos of the completed Wall House 2, as well as documentation of the construction process. This house was not realized in Hejduk's lifetime and over 30 years later was built in Groningen, Netherlands. At the Arthur A. Houghton, Jr. Gallery at The Cooper Union. Contact 212/353-4158.

### SFMOMA Experimental Design Award

#### San Francisco

November 9-February 5, 2002

Featuring the work of this year's recipients, Thom Faulders, Donald Fortescue, and Post Tool Design, the exhibition delves into the breadth of material experimentation taking place among architects and designers in the Bay Area. Architectural compositions of wood and typography are reinvented to question notions of space, function, and

communication. At the San Francisco Museum of Modern Art. For more information contact 415/357-4000.

## Ongoing Exhibitions

### Ten Shades of Green

#### Berkeley, California

Through December 2, 2001

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## Dates & Events

This exhibition seeks to illuminate the relationship between architecture and nature through a selection of environmentally friendly projects. Organized by the Architectural League of New York. At the Berkeley Art Museum. Contact 510/643-6494.

### Perfect Acts of Architecture Pittsburgh

Through January 6

Features more than 140 drawings and collages on the architectural meditations of architects from the 1970s and '80s, when design was

highly theoretical. Includes the work of Rem Koolhaas, Bernard Tschumi, Peter Eisenman, Daniel Libeskind, and Morphosis. At Heinz Architectural Center. Contact stitelert@carnegiemuseums.org.

### Monuments and Memory Washington, D.C.

Through January 13

A timely showcase regarding the memory of nationally significant events and the designs that help create and maintain these memories.

Washington-based architects exhibit competition entries for various war memorials, in addition to hypothetical projects. At the National Building Museum. Contact 202/272-2448 or see [www.nbm.org](http://www.nbm.org).

### The Architecture of the American Folk Art Museum New York City

Through January 13

An installation of a model of the newly designed building by architects Tod Williams/Billie Tsien and a photo essay documenting the construction process, from ground breaking to near completion, of the museum's new site at 45 West 53 Street. At the Lincoln Square Gallery. Contact 212/595-9533 or see [www.folkartmuseum.org](http://www.folkartmuseum.org).

### From Arts and Crafts to Modern Design: The Architecture of William L. Price Washington, D.C.

Through March 24

The first retrospective of the architect's 30-year career features original drawings and furniture designs. Projects include luxury hotels in Atlantic City, midwest train stations, and private residences. At the National Building Museum. Contact 215/898-7798.

### Cesar Pelli: Connections Washington, D.C.

Through April 28

One of the most comprehensive retrospectives on the life and work of distinguished architect and AIA Gold Medalist Cesar Pelli. Through photographs, photo murals, more than 100 drawings, and 30 original models, the show will explore over a half century of his career, culminating with his most recent work. At the National Building Museum. Contact 202/272-2448.

### Mathematica San Francisco

Through May 5

This Eames-designed exhibit from 1961 showcases mathematics as both a science and a tool for art. Revisited 40 years later, it remains the only Eames exhibit still in existence. Other Eames designs on display include toys, home electronics, and lesser-known furniture. At the Exploratorium. Contact 415/563-7337 or see [www.exploratorium.edu](http://www.exploratorium.edu).

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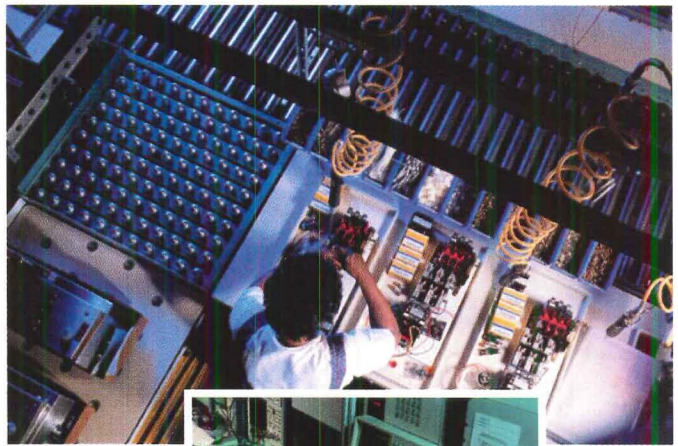
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## Dates & Events

### **Symposium** **Pontresina, Switzerland**

*November 12–14*

A three-day symposium dedicated to the discussion of media, politics, mobility, and architecture in the coming century. Sponsored by the British Council, the forum features an interdisciplinary panel of internationally known architects, theorists, and city planners, including Will Alsop, Wolf D. Prix, Maxwell Hutchinson, and Hani Rashid. Contact 011 41 81 838 8318 or visit [www.archisymp.com](http://www.archisymp.com).

### **Lars Spuybroek, NOX:** **Machining Architecture** **New York City**

*November 9*

Lars Spuybroek, principal of Rotterdam-based architectural firm NOX, explores the relationship between architecture and computing in the digital age. His current projects include an interactive tower for the city of Doetinchem and an office building in Stratford-upon-Avon. Sponsored by the Architectural League of New York. Visit [www.archleague.org](http://www.archleague.org) for more information.

### **Tours**

#### **Sicily: Archaeological and Architectural Splendors**

*November 10–20*

Hosted by Archetours, the tour combines luxury and learning about Greek, medieval, and even Art Deco architecture. Contact 800/770-3051 or e-mail [info@archetours.com](mailto:info@archetours.com).

### **Conventions**

#### **Build Boston** **Boston**

*November 13–15*

Brings together over 350 suppliers of building products and services and more than 11,000 architects, engineers, specifiers, contractors, facility managers, and other net-

working specialists from all over the world. At the World Trade Center Boston. Contact 800/544-1898 or visit [www.buildboston.com](http://www.buildboston.com).

### **Competitions**

#### **The Rome Prize**

*Deadline: November 15*

Qualified architects, designers, landscape architects, composers, scholars, and visual artists are invited to apply for this prestigious award that includes spending six months to two years in Rome. Visit [www.aarome.org/](http://www.aarome.org/) for information.

#### **Jenn-Air Kitchen Competition**

*Deadline: December 28*

Only new or remodeled kitchens that exclusively use Jenn-Air major appliances are eligible. A \$10,000 cash prize and a trip to Milan are offered. Contact 612/375-8541 or [vmelen@clynch.com](mailto:vmelen@clynch.com).

#### **The NCARB Prize**

*Deadline: February 1, 2002*

In a direct attempt to bring together the academy with professional practice, the National Council of Architectural Registration Boards offers a grand award of \$25,000 for a fall 2001 term project that demonstrates this integration. For an entry packet, contact 202/879-0535 or [Mbourdrez@ncarb.org](mailto:Mbourdrez@ncarb.org).

#### **RIBA Competition**

*Deadline: February 28, 2002*

Invited to explore the possibilities of environmental construction, the Government Energy Efficiency Best Practice Programme sponsored by the Royal Institute of British Architects has launched its fourth open ideas competition to promote sustainable architecture. Open internationally to students and architects, first prize is £10,000. For more information, contact RIBA at 01 13 234 1335.

*Send submissions for Dates & Events two months before the event to [ingrid\\_whitehead@mcgraw-hill.com](mailto:ingrid_whitehead@mcgraw-hill.com).*

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# For and about the new generation of architects

## archrecord2

### FOR THE EMERGING ARCHITECT

DEPARTMENTS

This month, archrecord2 focuses its attention on New York City. First, a profile and design portfolio from a couple of architects who sent their work in over the proverbial transom and caught the eyes of the editors. And then a special report on what young firms in the city are worried about now that they find their hometown forever changed. As always, this section and the Web site offer features in all of our sections: Design, Work, Live, and Talk.

#### DESIGN

### Graftworks: The thought process



Lawrence Blough and John Henle, collectively known as Graftworks, don't usually finish each other's sentences. In fact, they make a point of emphasizing their individuality. But when they do complete each other's thoughts, they do so with a sense of timing that could

only come from vaudeville, a subliminal common sense of purpose, or three years of sharing an office on the small side of 1,000 square feet in size.

The last two conditions actually make up a fair description of the state of things at the New York City office of Graftworks, where Blough and Henle have recently hired a third full-time staff member and an additional freelance employee. The two principals met at Davis, Brody, Bond, where Henle had been working for some time and Blough was hired on as a consultant. They hit it off professionally, and, frustrated with the limitations of working at a larger firm, set off on their own. "You take a huge pay cut when you go out on your own," Blough said, "so we're not doing this for the money."

Early projects for the pair came in from "friends of friends," and they consider themselves lucky to have found clients who are willing to be adventurous with designs. Henle and Blough take a research-intensive approach to even the smallest assignments.

"Some architects would think of a staircase as a small project," Henle said, referring to Graftworks' commission to design a new staircase for a New York City loft, "but we put a lot of time just into researching that project."

Indeed, the walls of their studio still display some of that rather diverse research, including a study of the leg movements of spiders.

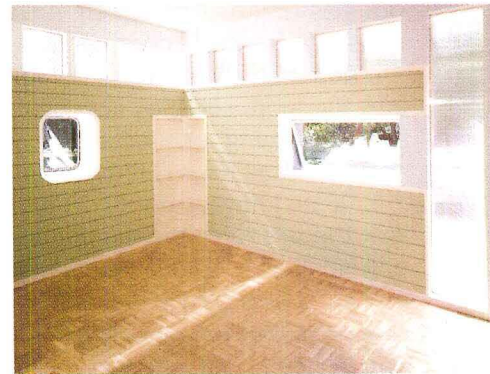
Graftworks currently has two projects on the boards for one generous client: a mountain house in Vermont and a rooftop garden on the East Side of Manhattan. Building models—both physical and computer-generated—of the former takes up most of the team's energies, though they foresee a time when they will to grow to more than a three-and-a-half-person operation.

Although they are clearly on their way to achieving that goal, no one project



Ranch House Addition,  
Amagansett, NY, 2001

Graftworks. This reconfiguration of a 1960s ranch house into a summer residence took cues from the town's seafaring tradition. The new exterior panels are marine-grade plywood, and some of the windows are ship windows. Work was completed for \$75,000.



PHOTOGRAPHY: © ROY WRIGHT PHOTOGRAPHY; HEADSHOTS BY CHRIS NIEDERER



(continued from page 59) has yet represented a huge breakthrough for the firm. However, they recently completed an addition to a house in Amagansett, N.Y., that tested their patience (a difficult contractor) and their ingenuity (a tiny budget). As they do for all of their projects, Blough and Henle initiated the design process with research.

"The site was not at all far from the ocean," Henle said, "and the town has this real fishing tradition ..."

"... that really inspired our thinking and resulted in some of the nautical details," Blough continued, finishing his partner's sentence without a pause. Go to [architecturalrecord.com/archrecord2](http://architecturalrecord.com/archrecord2) for more photos, models, and renderings of Graftworks' projects, and to submit your own.

#### Mountain House, Stratton, Vt., 2002

Graftworks. The glue-laminated wood beams of this family retreat and ski lodge for a mountainous, wooded site were inspired by technology used in the manufacture and lamination of snow skis.



## WORK

### Young firms adjust to a changed city

Muddled optimism and uncertainty loom over young New York City architects—some working only steps away from the World Trade Center site—as they try to endure. It remains unclear how the financial, ideological, and psychological impact of the September 11 disaster will be felt in the next couple of months.

"I've heard of architects who have suffered because their projects or their clients were down there," said James Slade of Cho Slade Architects, "yet I think it affects us not only in terms of clients, but as citizens of the world."

Rebuilding is a major topic of discussion. Offices will have to relocate, buildings will need restoration, and the WTC site itself will be rebuilt. With all of this building imminent, some young firms are confident that clients will eventually turn to them.

"There is going to be something like \$100 billion of rebuilding at the World Trade Center site," said Douglas Gauthier of System Architects, "and Kohn Pedersen Fox can't do all of it."

And as conversations of rebuilding slowly slip into the more complex issues of security, scale, and stability, young architects are finding incredible opportunities for collaboration and innovation.

"It isn't always during times of economic boom that the best architecture happens," said Eric Bunge of nArchitects. "Times like this give us a moment to reflect." *Christina V. Rogers*

For more stories about career issues affecting emerging architects, visit [architecturalrecord.com/archrecord2](http://architecturalrecord.com/archrecord2).



#### Hanging Stair, New York, 2001

Graftworks. A wood and plaster spiral staircase blocked sunlight and views in this loft residence that was once a ballroom. The new, partially suspended stair draws on influences as diverse as boat rigging and bent tubular furniture.

## LIVE

### Life beyond the CAD station

There is a common belief that young architects have no lives, that they spend all of their time slaving over design projects or entering minute details into CAD programs for their bosses. But this is an intensely creative group of people, and when they're not shackled to a drafting board or a keyboard, they're expressing themselves. Archrecord2 is proud to provide an outlet for some of this creativity. Drawing, painting, photography, travel writing: We have it all for you to see, and for you to create yourself.

Go to [architecturalrecord.com/archrecord2](http://architecturalrecord.com/archrecord2) to see what other architects are doing "on the side," and to learn how to submit your own work.

## TALK

### Talk amongst yourselves

Join the conversation in archrecord2's moderated discussion forum. Current topics include the World Trade Center, books, role models, and answers to your questions about the ARE. New posts appear every weekday, so check back often for the latest gossip, buzz, and insider information, and to add your own.

Go to [architecturalrecord.com/archrecord2](http://architecturalrecord.com/archrecord2) to read the latest discussion forum posts or to make your own voice heard.



# TWA's Fight for Flight: what preserves a landmark most?

## Commentary

By Suzanne Stephens

The TWA terminal, our Parthenon of early jet flight, was shuttered in early October. So what will happen to the empty landmark, a spectacularly sculptural structure, designed by Eero Saarinen in 1962? Since TWA was absorbed early this year by AMR, the parent company of American Airlines, it was scheduled to vacate its quarters (known also as Terminal 5) in January. After the September 11 attacks, AMR moved up the date to consolidate its operations.

The dynamic structural expressionism of the TWA terminal, with its reinforced-concrete shell composed of four segmental vaults, has made it one of the more astonishing accomplishments of postwar Modernism. But most important, TWA has exemplified the kinesthetic experience of architecture. From curb to airplane, the traveler was immersed in an architectonic sequence that communicated the sense of flight and travel. You arrived at the entrance and were guided by its swirling forms past the swooping information and ticketing counters, on upstairs to the café and restaurant, or to the glamorous Ambassador Club. Natural light, space, and form were part of the experiential narrative that was heightened by the procession through either of the two sculptured tubes connecting to departure lounges in the flightwings.

That transcendent preflight experience is now threatened. The Port Authority of New York and New Jersey, which has responsibility for the terminal once AMR's lease is up

in January, presented a proposal last summer to turn TWA into a conference center. The building, to be renovated by Beyer Blinder Belle and surrounded by a new, semicircular, 1.5-million-square-foot terminal designed by William N. Bodouva and Associates, has been met with apprehension, dread, and antipathy, to put it mildly. Most critics fear, with reason, that a change of program will diminish the authenticity of this singular structure. They insist that the function needs to be preserved as well as the form.

### Landmark hurdles

Since TWA is eligible for the National Register of Historic Places, the Advisory Council on Historic Preservation has jurisdiction in accordance with section 106 of the National Historic Preservation Act to determine whether alterations involving federal money are appropriate. Earlier this year the State Historic Preservation Office ruled that the proposal presented by the FAA and the Port Authority had an adverse impact. So a meeting of consulting parties on October 29 was held to determine what stipulations are needed for a memo of agreement to be signed. (New York City's landmarking, bestowed in 1994, has no real leverage in this case, since the Port Authority is allowed to override it.)

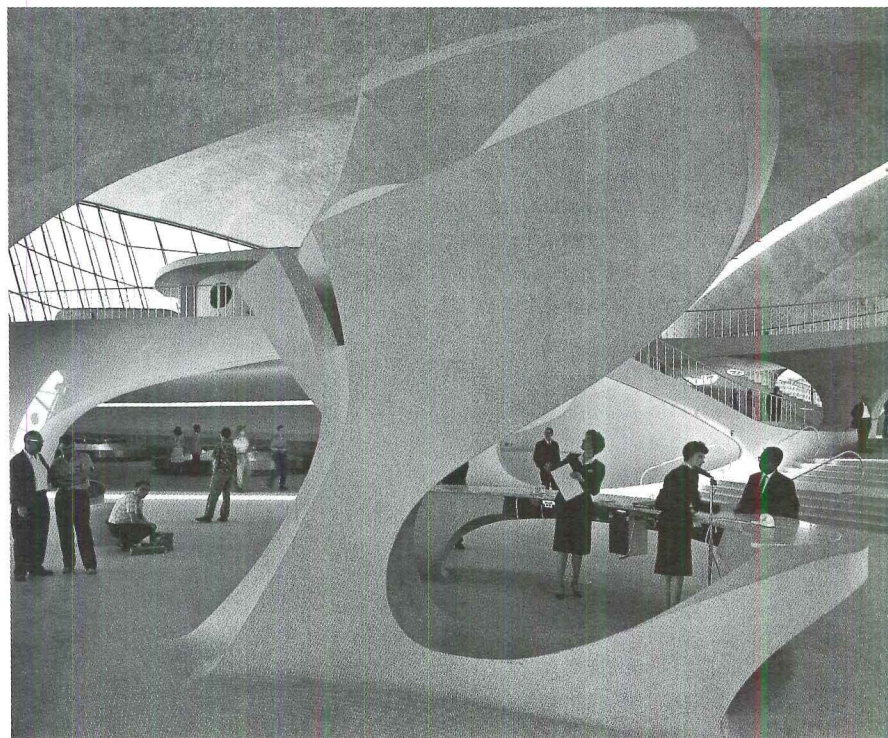
Meanwhile, the TWA terminal,

landmarked on both the exterior as well as the interior's main public spaces, could simply molder on-site, without any use.

The Port Authority maintains, with reason, that the growth of air-transport traffic and the size of planes—compounded by increased

into TWA, but more about that later.)

Bodouva's proposed curved tubular building would create a new combined Terminal 5 and 6 behind the TWA terminal, with 750,000 square feet reserved for United's domestic and international operations, now divided between Terminal



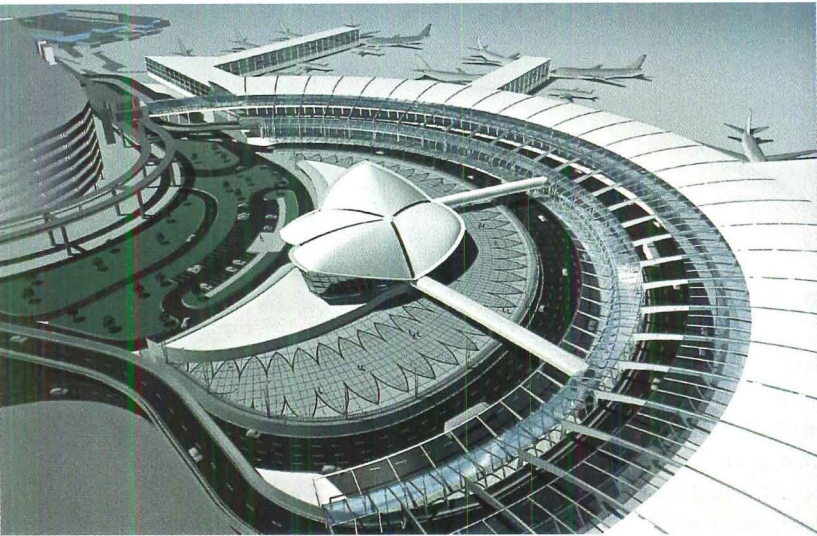
At Saarinen's TWA terminal, the information desk is one part of the *gesamtkunstwerk*.

security precautions—have made Saarinen's terminal totally out of date. Even putting in a small airline in need of a home, such as the fledgling JetBlue, they argue, would not work, since no-frills air carriers still need extra space for the heavy volume of passengers and large jet planes. (Nevertheless, JetBlue has told RECORD it is reviewing a move

6 and Terminal 7 (occupied by British Airways). The new structure would also offer 340,000 square feet for the aforementioned JetBlue, which now uses 10 gates of Terminal 6, with 450,000 square feet left over for an unnamed tenant, and a total of 52 to 58 gates. The existing Terminal 6, an elegant pavilion designed by I.M. Pei in 1971



## Commentary



In the proposed plan, William Bodouva's Terminal 5 and 6 wraps around TWA.

for National Airlines, would be razed. Although it represents the first use in the U.S. of glazed mullions supporting a window wall, the Pei building is not a landmark.

Not surprisingly, after the World Trade Center attacks, the Port Authority's ambitious proposal seems to be entering a deep-hold phase. Certainly the precipitous drop in air travel, the financial woes of the airlines, not to mention the loss of so many lives, including that of the Port Authority's executive director, Neil Levin, all have cast a deep pall over the ambitious scheme.

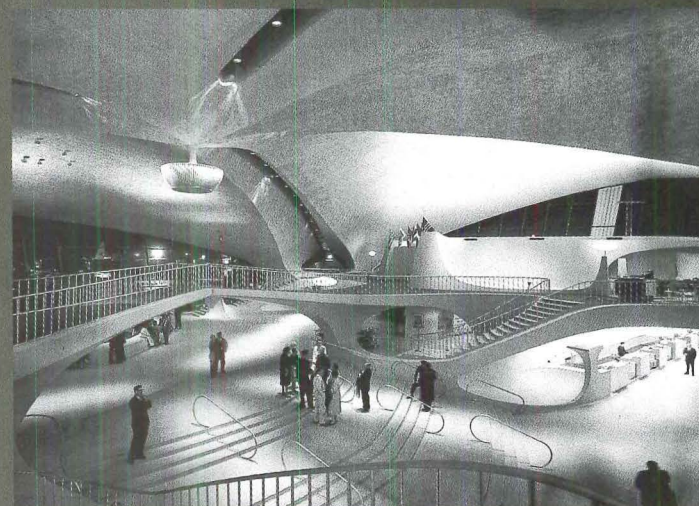
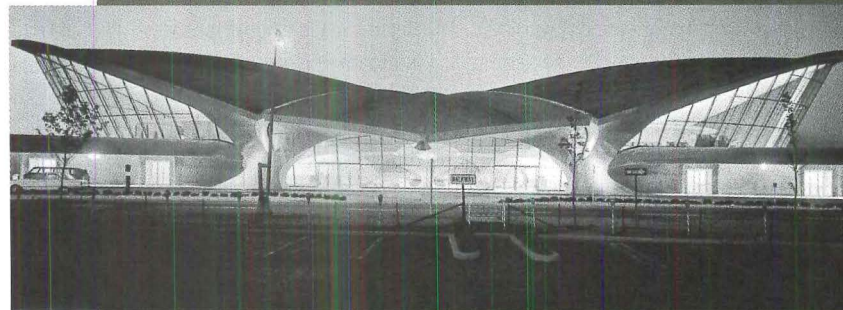
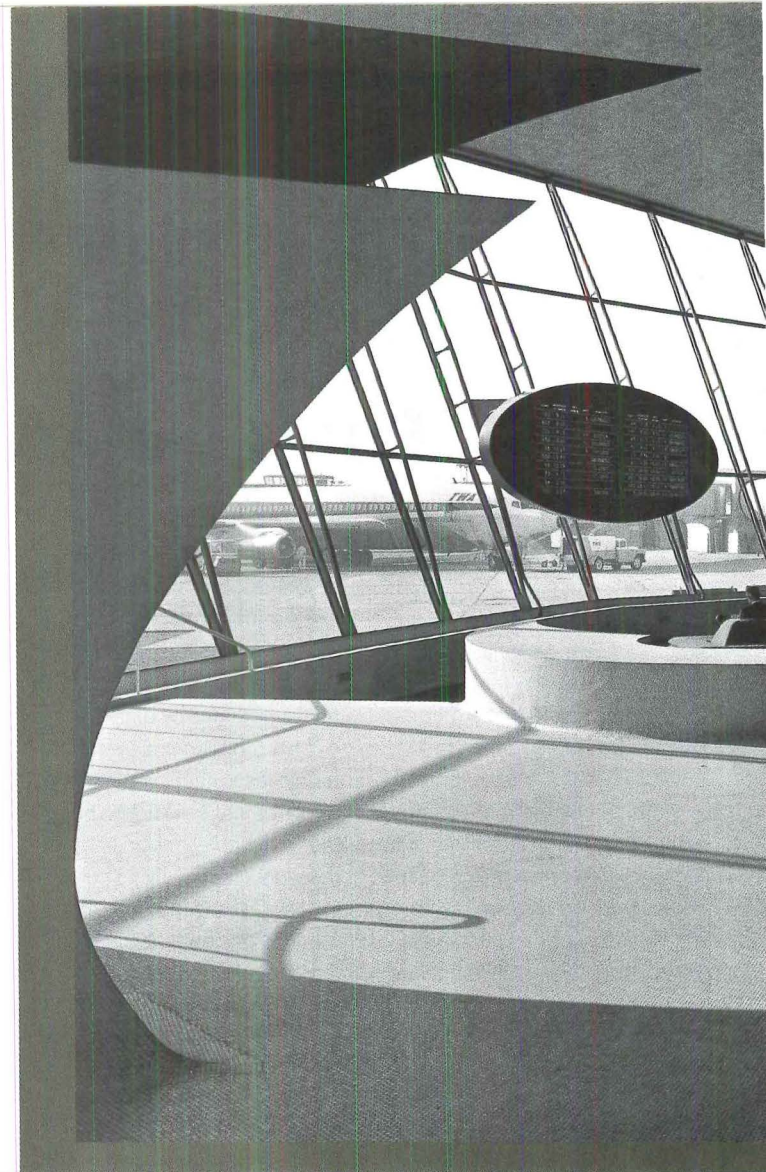
Even before the terrorist attacks, all the airlines were slowing in growth, and United was predicted to lose \$1 billion this year. And while United is to receive \$804 million in federal bailout money appropriated after September 11, financial experts such as Jamie Baker at UBS Warburg are dubious that United will stay committed to leasing space in the new terminal. For its part, JetBlue has signed on for five more years in the existing Terminal 6. Regarding its expanding into the new terminal, Fiona Morrison, a company spokesperson, said, "There are no plans for a build-out now." Yet JetBlue is looking into taking over the terminal: "Both TWA

and the existing Terminal 6 have advantages and disadvantages," she adds, "and we have to see how things change."

A bad economy is usually good for preservation. If such volatile circumstances allow more time to rethink the scheme, then we should take advantage of it. Obviously JetBlue's moving into TWA would solve the problem from the preservationist standpoint. But the company's interest is still tentative. In lieu of JetBlue or another airline moving in, there is no apparent, ideal solution to the TWA dilemma. The question lingers whether any other compromise can be found that would be "authentic," that is, come close to maintaining the aura that once emanated from this symbol of flight.

### Objections to reuse

Opponents to adapting the terminal to another function include New York's Municipal Art Society and the Modernist conservation group, DoCoMoMo. They and others vehemently argue that making TWA a conference center, or even a restaurant, would cut it off from the real activity of the airport, as well as divorce it from its symbolic function of flight: Only the expression would

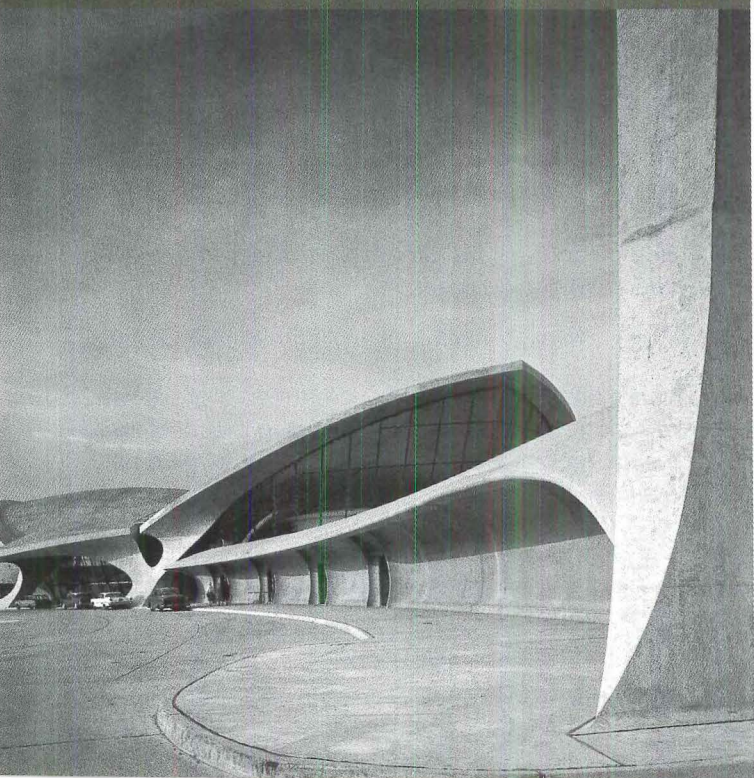






Saarin's TWA terminal is a soaring testimony to the experience of flight. The entrance (below and center left), the mezzanine (bottom

left), and the conversation pit overlooking the airfield (top) exemplify the wedding of function, form, and symbolism.



PHOTOGRAPHY: © EZRA STOLLER/ESTO

remain, not the content. On top of that, they object to the proposal to chop off the satellite gates (one designed by Saarinen with the original terminal in 1962, the other, by his successor firm, Kevin Roche and John Dinkeloo, in 1970) for the new Bodouva building. For his part, Kevin Roche responds, "I am not hung up on saving the flightwings." But Roche seriously wonders if another new use, especially a conference center, would be viable for TWA.

### Port Authority's proposal

Meanwhile, Beyer Blinder Belle, fresh from its success in restoring and readapting Grand Central Station, has sketched plans to show TWA as a conference center. (The cost analysis is to come later.) The firm envisions 30 or 40 meeting rooms arranged in two clusters behind current ticket counters and baggage areas on the main level, along with shops and a bar. The upper mezzanine would offer a lounge and meeting center in the restored Ambassador Club, plus new dining facilities.

The BBB proposal means that nasty accretions added over the years would be scraped away, including a rectangular baggage-handling facility appended in the past five years on the south side, and the roadway canopy plunked down at the front curb in 1990. Interior finishes that currently show water damage and dirt would be restored to their original state, and the bits and pieces (including hand-capped ramps) that so quickly destroy the unified look of an interior, redesigned. Even the shiny elastomeric coating that masks the purer luster of the exterior concrete shell would be removed and a better sealant sought.

The architect for the new Terminal 5 and 6, William Bodouva, lacks the halo effect of saving Grand Central to convince preservationists he is on their side. He has specialized in the design of air terminals for a good part of the 33-year-period since he left the Port Authority in 1968, after working there for a decade. While Bodouva hardly has

the design reputation of Saarinen or Pei, two of his terminals, one for U.S. Air at La Guardia (1992), the other, Terminal One at JFK (1998), have been viewed as being more acceptable than the usual bland boxes at the airport. Bodouva has made beefed-up, white, space-frame roofs and ample skylights his trademark. The impact of such spaces, of course, depends on where you've been: We are not talking about Renzo Piano's Kansai Airport in Osaka, or Helmut Jahn's United Terminal at O'Hare in Chicago.

As far as the conference center is concerned, several experts have their doubts, especially since there is no hotel. Karl Nybergh of American Meetings and Conventions in Miami says, "I want a hotel room attached, or it means added expense." In addition, he is skeptical about bringing conference attendees to New York without having them go into Manhattan ("This isn't the Midwest"). Nybergh also wonders if the capitalization and amortization costs in restoring the 146,800-square-foot TWA space would make it profitable. Joan Eisenstodt, a conference management consultant in Washington, says increased security at the airport might discourage people from going to a terminal for a conference, especially one-day stints organized by local businesses, for which non-residential conference centers would be appealing. "This sounds like it has location challenges," she adds. The executive vice president of the International Association of Conference Centers in St. Louis, Tom Bolman, agrees. Nevertheless, he and Ron Naples, another conference center consultant, from Manchester, Vermont, point out that it has been done successfully—for example, by American Airlines' various airports. Naples also thinks that distinctive architecture could be a draw, but marketing studies—which the Port Authority has yet to do—are needed.

### Arriving there isn't the same

Regardless of the programmatic problems, we should be aware that



## Commentary

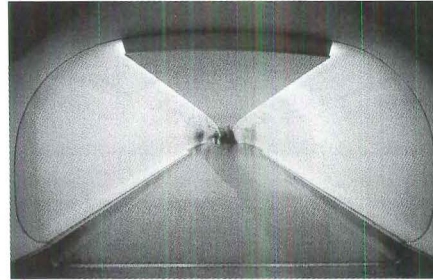
the spatial context would be altered irreparably by the new master plan. Saarinen's TWA terminal would be hugged by Bodouva's semicircular new terminal on its airside and hemmed in by the AirRail Transit structure and a parking garage on the landside.

There is more to the situation than a diminished view of the Saarinen terminal as a freestanding object: Passengers would enter and depart the new terminal via upper and lower roadways that would swing behind Saarinen's TWA. While the new plan opens up drive-by views of TWA's airside elevations, the landside entrance that so dramatically beckons would no longer be as visible to passengers. Also, the view from within TWA would be drastically altered: Instead of seeing jets taking off and landing, you would be staring at the roadways appended to Bodouva's terminal.

### So what should be done?

Since top tier architecture is so rare, it is all the more desirable to save TWA, and save it well. At the same time, we have to acknowledge that TWA is outdated. If JetBlue decides to go into TWA, that would be great, although we still have to ask what changes are necessary to accommodate its needs. And there is the nagging thought that if a small airline such as JetBlue takes over TWA and later is swallowed by a larger one, or goes under, the problem would begin all over again. Airlines merge, disappear, and expand. Nothing is forever, and landmarking laws only go so far.

If the terminal isn't workable for any airline, other uses besides a conference center might present themselves. For example, some airport experts are calling for putting shops and eateries totally outside the security gates. Turning TWA into



Part of the experience: TWA's departure tubes.

a shop and restaurant facility to serve a new Terminal 5 and 6 could arguably be one part of the flight experience. It would have to be investigated: Airport specialist James Bradburn of Fentress Bradburn Architects in Denver points out that passengers usually want to be at the gate, ticketed, inspected, and checked in before thinking about shopping and dining (incidentally, the major money-maker for the terminals).

If some alternate reasonable use can be found, very close scrutiny has to be given to the architectural design and modifications of TWA, plus any new structure

encircling it, no matter who the architect, no matter the size. Up until recently (before George Pataki became governor), the Port Authority had an architectural review committee. In the case of a delicate situation such as TWA, it should be reinstated, with a review committee of

outside architects and preservationists to address the execution of all design aspects.

We would hope that in the meantime the Port Authority would undertake initial restoration of TWA, including removal of the unoriginal add-ons. Otherwise it will become a ruin—an expensive one. Above all, let's remember that the most important part of TWA is the experiential quality of moving through the building—starting with its entrance—as you prepare to fly. Nothing, including a new arrival point, or alternate uses of the original structure, must change that. It is worth spending this amount of effort on saving a singular temple to flight. ■



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# The powerful egalitarianism of disaster sheds light on a post-September 11 future

## Critique

By Michael Sorkin

Traffic returned to the streets of my neighborhood after the security cordon moved south to Canal Street. It was the day of Bush's tardy visit to "ground zero" and the sky was filled with the futile darting of fighter jets, commanding anxious looks upward with every pass. I made my way through the police lines to my studio—not many blocks from the Trade Center—and sat around in paralysis for most of the day. Outgoing communication was down and I was unable to respond to dozens of e-mail and phone messages wondering if we were all alive.

In the evening, I returned home and switched on the television to learn the latest and watch the riveting pornography of planes smashing over and over into buildings, the eruptions of flame, the horrific collapse—all the while ashamed at my own fascination. Like the restored traffic in the streets, the traffic of commerce had also returned to the airwaves and the dour talk was again interrupted by commercials, happy faces commanding us to buy SUV's and stock up on useless commodities.

I had seen the disaster from the street out front of my apartment. It had been Primary Day for local elections and I had set out, a little later than usual, to vote. Sixth Avenue was filled with people look-

ing south, one building was already down, and the north tower was in flames. The news spread rapidly about what had happened and the mood was simply one of shock and paralyzed calm. I raced back upstairs to try to phone people, to see if family, friends, and colleagues were all right. When I returned to the street, the second building was gone and the long, invariable view downtown with its twin punctuations replaced by a pall of smoke.

### Solidarity and civility

What to do? I went to vote, reasoning that this might be some small way of helping to defend democracy. But the polls were closed, yielding to a frightened crush of parents trying to find their kids at the school where the neighborhood votes. I wandered down the block to St. Vincents Hospital, where a queue of blood-donors already wound around the block, and told myself I would come back later. I began to walk downtown, toward the studio and against the numb crowds walking silently north.

Everywhere, people had gathered in knots around television sets put out on sidewalks and near cars with their radios turned up so all could hear. The sense of solidarity and civility came immediately as barriers of diffidence fell and com-

fort and information flowed freely between strangers. In the next days, acts of kindness and friendship multiplied and the public's demeanor became somber and respectful. We comforted each other with small exchanges of information and feeling and by the powerful egalitarianism of disaster. The city's official response was magnificent, beyond

smell of incineration permeated the air was there a sensory reminder of the hell nearby, belying the cool. And everywhere fell the ash.

I write these thoughts with hesitation. It still seems corrupt to experience enjoyment, still unsettling to encounter a laugh or a smile. Even shopping for food, I am embarrassed at the necessity of



Spontaneous memorials have popped up all over New York, giving form to public grieving.

efficient, astonishing.

In the days following the attack, roads below 14th Street were closed to traffic and nobody but local residents was allowed in. The result was an eerie calm as people, quiet and restrained, took possession of the empty streets as after a big snowfall. The weather was mockingly, preternaturally, beautiful, and the city was, in this way, at its very best: quiet, free of cars, crisp, cooperative. Only when the wind shifted and the dreadful

choice, at the act of selecting the taste that pleases me more, that pleases me at all. More than anything, luxury offends these days, both at the level of the everyday and in the fixation on the architectures of hyperconsumption that so dominate the discourse of our own profession. Surely, there will soon be calls to make a building even higher than the twin towers.

Before September 11, thinking about what to write for this column, instructed to conform to the the-



## Critique

matics of an issue about preservation, I had decided that my lead would be the—now postponed—opening, a block from my office, of a new Issey Miyake boutique designed by Frank Gehry and Gordon Kipping. As chance would have it, I bumped into Gehry the night before the terrorist attacks, while he inspected the frantic efforts to have the boutique ready for a party that was supposed to take place 48 hours hence. He asked me, with irony, whether I planned to shop there, and I told him that what I really wanted was the return of the old natural foods market that had been driven out by the rise of prices in this now remorselessly fashionable neighborhood.

### The ecology of place

I had planned to write in response to the narrowed focus among architects and critics in which “preservation” has been reduced to a battle of styles, an endless debate

## THE TRAGEDY HAS ALREADY INVENTED ITS OWN MEMORIAL—PHOTOGRAPHS OF THE MISSING POSTED ALL OVER THE CITY.

over the virtues of modern building versus the historicism that serves as the official default for building in old neighborhoods like this one. The point I wanted to make was that the discussion had lost sight of the ecology of place, that we needed to preserve not simply the sense of visual reliability in beloved environments but also to be sensitive to the far more consequential issues of established ways of living, of daily habits, of the need for human permanence in chosen habitats.

Gehry's boutique was going to have been exhibit A in all of this because it would surely have been beautiful, the work of our most artistically accomplished architect. And now, confronted by the presence of the agonizing absence of the twin towers from our field of vision, I am thrown back into the

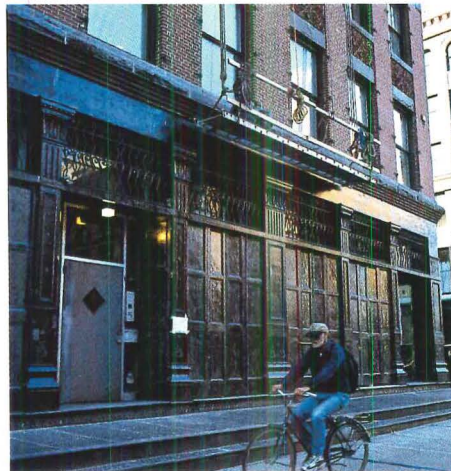
role of architecture as an element of citizenship. Must it now be subsumed in the rhetoric of defiance and victory? Will we continue to look at architecture as the answer?

### Taking risks

There has been a brave and understandable clamor for rebuilding. After all, this was a preeminent icon of the town, and we don't want to give terror the symbolic victory of disfiguring our legendary skyline. Those terrorists—obviously informed about the structural character of this edifice—used architecture as a means of mass murder, and architecture, in this context, was an accessory to the crime. The economic and narcissistic logic behind these towers caused a series of choices that simply put people at risk.

Risk assessment—like “threat” assessment for the military—is always a component of architecture. Among the risks the designers of

the Trade Center decided were worthwhile was a one hour climb downstairs for people attempting to flee the upper stories of the building, a climb impossible for the handicapped. Among the tradeoffs made was the elimination of asbestos fireproofing around the structural steel. There has been much discussion about whether the building—which sits along a primary approach route to La Guardia airport—was designed to survive the impact of a plane crash. The answer circulating in the media was that, yes, indeed, it had been, but of a crash of an older, smaller plane of the vintage of the years when the structure was designed. Whatever the specifics, though, the question remains about which harm's ways a building should be in, remembering that the harm can occur far away in



Frank Gehry is designing a boutique in Tribeca, adding high design but change to the area.

the exploitation of resources and the inconvenience of workers.

For the moment, I am uncertain about what should be done to heal the site. Perhaps this is the moment for a decisive break from the machismo of scale that foregrounds values of size and cost above all other signifiers of success and power. Perhaps this is the site for reimagining architecture, not from the position of either power or paranoia but from a sense of humanity and compassion. Perhaps, however, this is a site not to be rebuilt. I shudder at the trivial objects of memorial that will ultimately be offered, the ornamented island of calm amidst the gigantic new construction. Perhaps this is a scar that should simply be left. Perhaps the billions should be spent improving transportation and building in neglected parts of the city. Neglected parts of the world.

### Forever after

As the endless loop of planes crashing into buildings plays over and over in our heads, it is rapidly stored in the aestheticized image bank of disasters: the Challenger, the Hindenberg, the mushroom cloud over Hiroshima, the burning ships at Pearl Harbor, the ash-preserved figures of Pompeii. I had an especially icy feeling when I saw my first post-September 11 commercial. This first insertion of the rhetorical images of advertising between those of the disaster assimilated the spec-

tacle to normal routines of capitalist visuality. Disaster morphed into a special effect. Depressing how many people interviewed refer to Bruce Willis, *Independence Day*, *The Towering Inferno*, the earthquake ride at Universal Studios. Every day now, when I cross Canal Street, I'm confronted with a huge billboard portraying Schwarzenegger with a murderous grimace, hyping his new film, *Collateral Damage*.

But the tragedy has already invented its own memorial. On every lamppost and mailbox, fence and facade, thousands of images have been posted, photographs of the missing, advertising the ineradicable despair of their loved ones. All over the city, people stop and stare at these photographs taken when things were normal: formal portraits and tourist snaps, family photos, graduation pictures. We all look at them to see if we know their subjects, breathing with quiet relief whenever we don't, but recognizing that every picture seems familiar, that every picture could have been our own or that of someone we love.

I am not chronically paranoid, but I'm good and worried. Not so much about the next attack (though I am still afraid to fly), but about the reconstruction of our city and our culture. The victory for terror lies in our own frightened willingness to give up on the values that are under attack, values that lie at the core of what good architecture and urbanism are about: facilitating the face-to-face, creating places of privacy and personal sanctuary, setting the pleasures of community, foregrounding the beautiful. Asked for an ID every morning by a guardsman in combat dress, listening to the President blustering about “smokin' them out of their holes”—with the “them” as yet unknown—I fear for us all, fear for where we'll live from now on. ■



# Salvation for the obsolete need not mean authenticity must be sacrificed

## Practice Matters

By Charles Linn, AIA

Renovation can be tricky. The challenge lies in finding a way to make the modern improvements necessary for economic viability while determining what to retain to preserve the building's historic authenticity. Success renders the practical, adaptive reuse of architecturally significant buildings into an art.

Some projects carry the additional freight as icons. The New Jersey Sports and Exposition Authority (NJSEA) decided to update its famed Atlantic City Convention Hall, also known as Boardwalk Hall, to serve as a small sports and special events venue. That choice meant the building's new program would be, in effect, an extension of its old one, making it practical to retain and restore many of the building's original architectural features, and much easier to maintain the historic character of its interiors. Changing the building into a large casino, for example, would have rendered the interior almost unrecognizable.

The NJSEA hired the architectural firm Ewing Cole Cherry Brott, which worked with sports design specialists Rosser International to incorporate many new features into the structure, including a new steel-and-precast seating bowl, as well as an ice sheet, scoreboard, and event lighting and rigging systems. Ewing Cole also brought on Watson & Henry, architects and engineers specializing in the preservation of historic buildings, to help assess the building's historic significance and incorporate sound preservation practices and principles into the

renovation process. Donald Dissinger, AIA, and John Sassman, AIA, of Ewing Cole, and Michael Henry, AIA, of Watson & Henry were in charge of the project.

### A 1920s wonder

Boardwalk Hall was a marvel when it opened in 1929. Its stone, Art Deco-influenced facade dominated the beachfront. At 140,000 square feet, its auditorium was touted as the "world's largest," and seated 32,000 at capacity. Its immense, barrel-vaulted ceiling, supported by enormous arched trusses and said to comprise the greatest clear-span space in the U.S., had a 131-foot floor-to-ceiling height. The proscenium was 104-feet wide, and the pipe organ, it was claimed, was the biggest ever built.

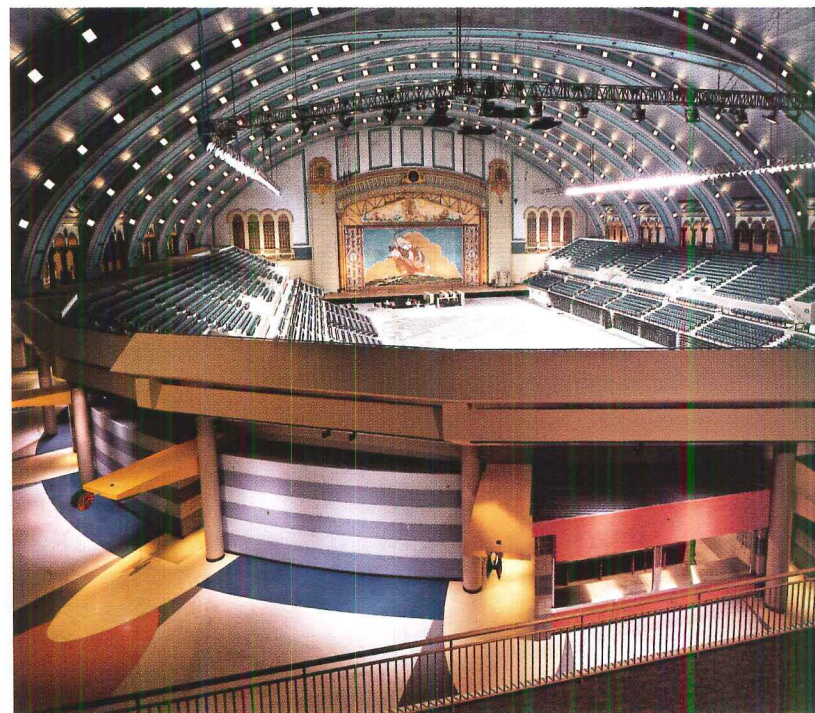
The interior of the hall was designed in a delightful pseudo-Byzantine style, embellished with seals of Atlantic City and the U.S. states and territories, as well as flags of the Society of Nations. Its polychromed architectural finishes, painted in a wide range of colors, gave scale to the huge interiors, with themes that cast a net from the adjacent coastline to the shores of the Mediterranean. The call letters of a radio station once located in the building, WPG, formed an acronym that reflected what Atlantic City really was back then: the World's Play Ground. The windowless auditorium inside the hall also boasted the the most sophisticated animated lighting system of the day: Lights shone through hundreds of panes cut into

the sides of the arches that held up the roof. Their colors could be changed at will, and they reflected onto the silver ceiling.

But, it is difficult for even magnificent buildings to keep up with the times. Over the next six decades, Boardwalk Hall could no longer meet the demands made of

the Miss America Pageant through thick and thin, and its prime location, on the beach in the midst of an assortment of recently built hotels and casinos, is unique on the East Coast and one that many convention cities would covet. The NJSEA decided to save it.

The question was how much of



A new precast seating bowl improves sight lines, capacity, and comfort.

modern convention and exhibition facilities. It was too small for many events, and most of its mechanical, electrical, and lighting systems were outmoded and in need of replacement. When Atlantic City opened its new convention center facility in 1997, the building was rendered all but obsolete.

Still, it had remained the home

the building should and could be preserved while it was updated—a key question for tax credits to help finance the improvements. Once elements are chosen to be repaired, preservation consultants decide what historic period will be favored in the restoration. This time frame that is chosen is called the "period of interpretation."



## Practice Matters

### Research

A first-hand assessment of the auditorium's interior confirmed that much of the architecturally significant historic interior was intact, although important features were obscured by the harsh glare of modern overhead lights and layers of inappropriate, nonhistoric paints. The ceiling was severely damaged, grime-covered, and water-stained.

Choosing a period for interpretation was fairly straightforward. Although the hall has been important throughout its history, the team decided on its glory years—from the dedication in 1929 to about 1934. At that low point, in the midst of the Depression, the owners decided that the building's intricate lighting system was too expensive to operate and maintain. They abandoned and replaced the original with various systems of pendant lighting, which were simply punched through the ceiling. Subsequently, the once silver-painted acoustical ceiling panels began deteriorating. It would not be long before the beautiful polychroming that had originally covered many of the building's architectural details was hidden by multiple coats of paint.

After identifying the architecturally significant period in the building's life to establish a starting

point for planning the adaptive reuse, the architects focused on other factors. They paid particular attention to the building's interior massing; the arched trusses that supported it; its original indirect lighting scheme; and the architectural detailing. The seating systems and balconies would be altered as the building was converted to a modern sports arena and entertainment center.

### Design and construction

Sometimes in preservation work, compromise is the best solution. The three most important elements of the renovation would be the installation of a new auditorium ceiling, the introduction of a new seating bowl, and the restoration and treatment of the decorative arts finishes. Proposals for dealing with these various elements were presented to the New Jersey Historic Preservation Office, and approval was secured from the state as well as the National Park Service of the U.S. Department of the Interior. The careful planning, analysis, and review allowed the New Jersey Sports and Exposition Authority's rehabilitation work to qualify for a substantial tax credit. [For more information on federal tax credits for rehabilitation of buildings, see RECORD, October 2000, pages 63–64.]

Not all building systems were replaced in kind. The original ceiling was acoustical board and had been made of compressed sugar cane, backed with friable asbestos board. The acoustical board would have been difficult to match, and encapsulating the asbestos would have added a tremendous load to the structural system and done nothing to improve fire resistance or acoustics, so the ceiling was replaced. To avoid constructing floor-to-ceiling scaffolding, the architects, along with Tishman Construction, devised a trolley-beam supported moveable-scaffolding system. Platforms could be used to support workers while they removed the old ceiling



**A sense of scale: The top of the proscenium is 131 feet above the stage.**

and asbestos, then relocated to a new area when the work was finished. Glass-reinforced gypsum and perforated metal panels were installed in place of the old panels. Their appearance is faithful to that of the original ceiling.

### Replacing the seating bowl

The existing balconies had inadequate sight lines and did not meet

an overlook where the vast size of the space can be appreciated.

The historic seats also did not conform to present standards of comfort. New seating was considered acceptable, as long as sufficient quantities of historic seats were restored for reuse in various locations throughout the building.

Decisions involving the original decorative painting scheme were

## THE CHALLENGE IS KEEPING AS MUCH AUTHENTICITY AS POSSIBLE WHILE RESTORING ECONOMIC VITALITY.

code for a multipurpose event center that would serve a range of events, including minor league hockey, the Miss America Pageant, and concerts. Here, a compromise was required—the old balcony was removed and a radial U-shaped bowl of the lightest steel framing possible was used to support precast concrete seating. The architects were able to extend seats toward the center of the hall to improve sight lines to the stage and ice sheet. A musicians' balcony once located on the south wall was replicated in the new bowl, providing

the easiest to make: Conservators recreated the original scheme and applied conservation treatments elsewhere as they were needed.

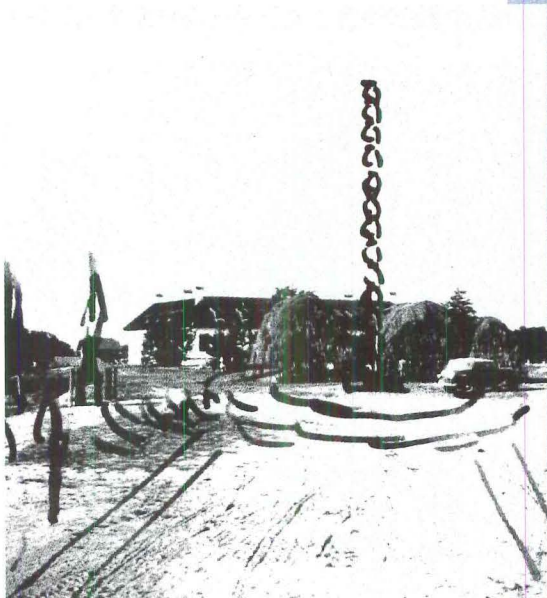
The restoration of the Atlantic City Convention Hall illustrates how retaining a building's authenticity while at the same time functionally improving and restoring its economic vitality can be a balancing act. In many cases, patient assessment, a commitment to protecting the existing structure, and a realistic willingness to accept changes are the keys to saving architecture that might otherwise be doomed. ■



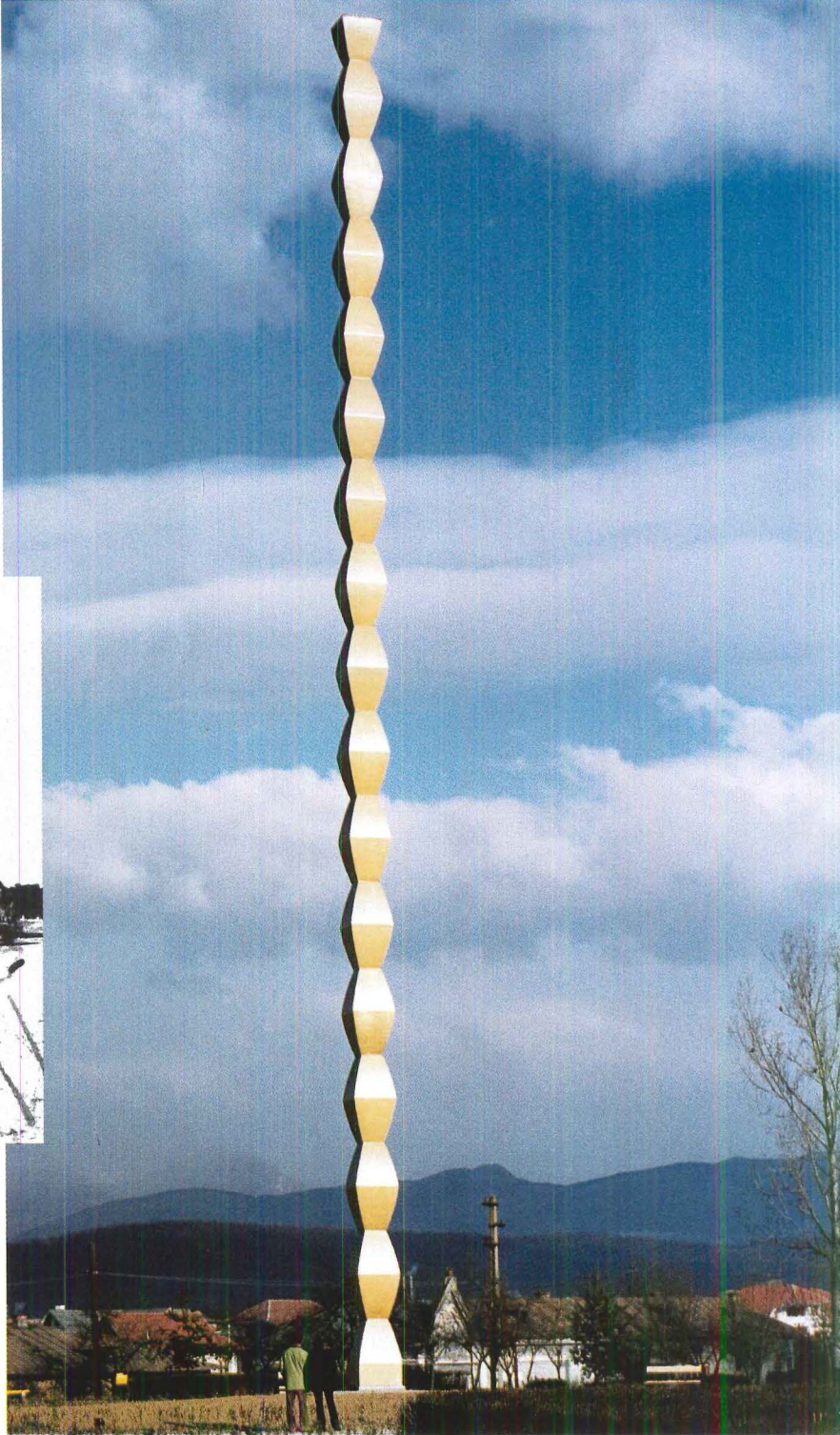
**Boardwalk Hall's nautical, pseudo-Byzantine details were restored.**



# Snapshot



From Brancusi's sketch (above), *Endless Column* was built in modules (bottom) to a height of 98 feet (right).



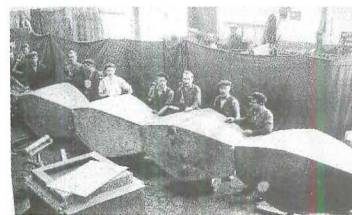
By S.A. Miller

Three monumental sculptures by Constantine Brancusi have stood in the obscurity of Tirgu Jiu, a city in southwestern Romania, for more than six decades. But lately, the international limelight has begun to shine on the 98-foot-tall *Endless Column*, the ceremonial *Table of Silence*, and the triumphal *Gate of the Kiss*. In 1996, the World Monument Fund put them on its *Watch List of 100 Most Endangered Sites*. As a result, the long-neglected site has received financial support from such sources as the World Bank, Romanian Ministry of Culture, and World Monument Fund, and gained the attention of expert groups ranging from the Swedish Corrosion Institute to the J. Paul Getty Conservation Institute.

Meticulous restoration of all three sculptures recently reached completion, as the scope of a multiphase conservation project expanded to encompass the townscape around them. But the long and rocky road from the initial Brancusi commission to the ambitious undertaking now in progress can be traced back to modest beginnings.

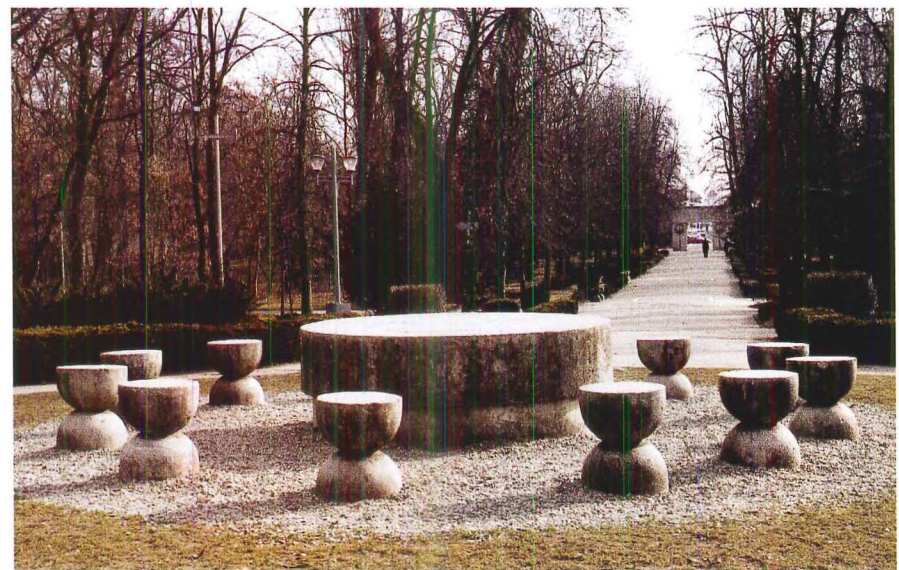
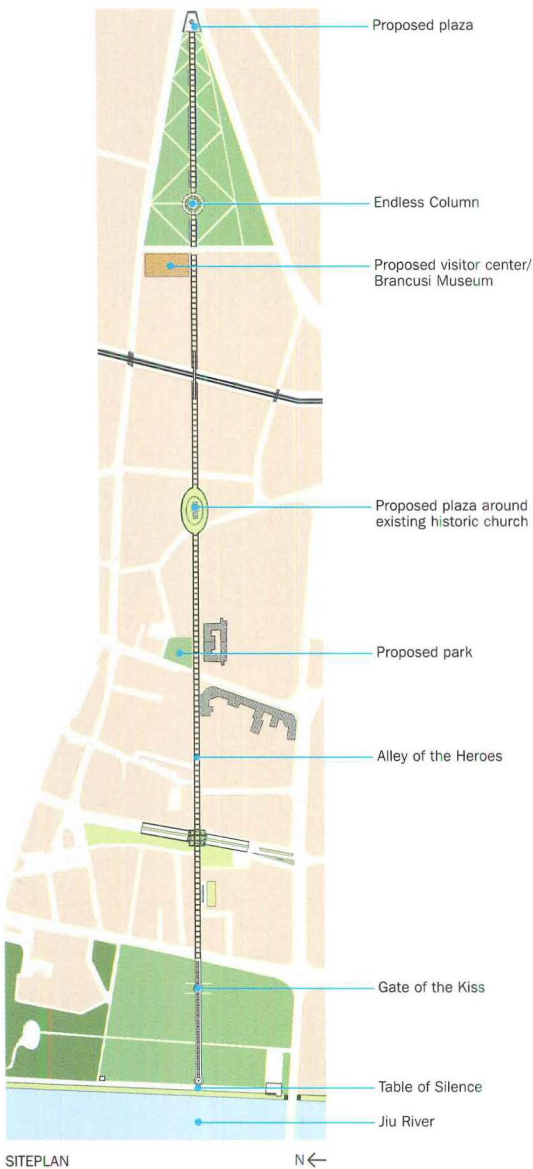
In 1937, the League of Gorj Women, a local nonprofit group, approached Brancusi to create two monuments as

## Near Brancusi's birthplace, his sculptures are reborn

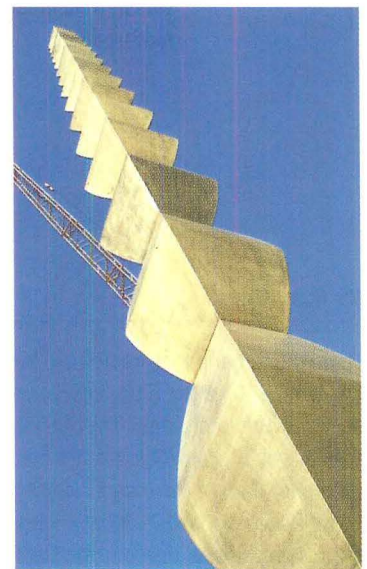




# Snapshot



**The Gate of the Kiss and Table of Silence (above) are travertine, while the Endless Column (below) is of bronzed cast iron with a steel spine.**



a World War I memorial for Tirgu Jiu, capital of the region where he was born. The town, along the Jiu river, is near some WWI battle sites. Brancusi exceeded the initial commission—convincing the League to sponsor three sculptures, linked by a processional pedestrian axis, the 0.9-mile-long Alley of the Heroes, through the town center.

As designed, the *Endless Column* rises through lozenge-shaped cast-iron modules, plated in brass and threaded onto a carbon-steel spine. The *Gate of the Kiss* and *Table of Silence* are carved in travertine. Completed in 1938, the sculptures received no preservation or maintenance for nearly 30 years. In the 1950s, under Ceaucescu, the local Communist government tried to demolish the column “for ideological reasons” (possibly causing a seven-degree bend toward the top, which was recently corrected). Also in that era, the clarity of the town plan and vistas culminating at the column were disrupted by unsightly high-rises, as well as rail tracks and a major vehicular artery crossing the alley.

The World Monument Fund hired Mihai Radu, AIA, a Romanian-American architect, and his New York-based firm, Lauser & Radu, to oversee the teams of researchers, conservationists, metal and structural analysts, and artisans restoring the sculptures. The column was disassembled down to its spine and reassembled with new welds and finishes. Measures were taken to prevent future corrosion and to allow for drainage, ventilation, and maintenance.

“Beyond preserving monuments,” Radu points out, “the World Monument Fund empowers communities to maintain them and become economically self-sustaining.” Accordingly, the Fund enlisted Lauser & Radu to develop a master plan to stimulate tourism and boost the local economy. The 30-year plan includes reviving the pedestrian axes and historic buildings, creating parks, and building a Lauser & Radu-designed visitor center/Brancusi museum providing studios for young sculptors. The architects aspire eventually to demolish the Ceaucescu-era high-rises—and fully reclaim the *Endless Column’s* position of dignity and grandeur. ■



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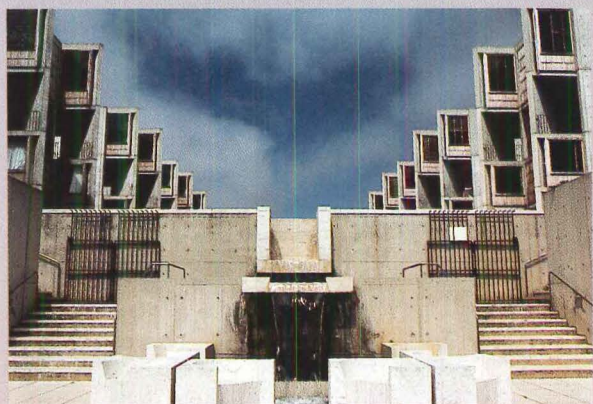
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# Reality and Authenticity in the



FEATURES

The new  
experience  
economy  
challenges  
how we judge  
what is real

By Michael Benedikt

**W**e move about in an increasingly media-saturated environment. In suburb and city, the quiet of nature has become harder to experience on a daily basis, as has the quiet of Classical and “classic” Modernist architecture—buildings that radiate that they are what they are, that they have already said what there is to be said, that although they stand by us and for us, they do not seek to persuade. Reality—this quieter reality, anyway—is under threat, as well as authenticity, which is the authority that comes with being real in just this way.

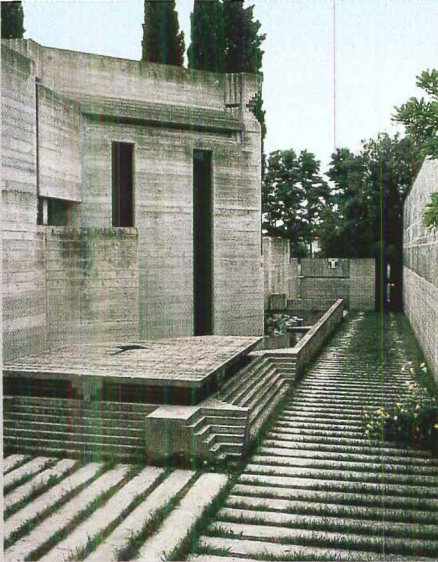
Some argue that this state of affairs is an ineluctable consequence of the evolution of our economy. Increasingly, as we make our livings and seek our pleasures in the fields of information created by others, more of us are drawn into working in a new kind of economy—one beyond the familiar “information economy.” Today we live and work in the “experience economy.” In a book of this name, Joseph Pine and James Gilmore argue that as free-market capitalism evolves, the locus for the creation of new value (and, with it, the locus of new profits) shifts from the production, distribution, and consumption of material goods, first to services, then to information, then to experiences. This development can be seen as a counterthrust to a simultaneous movement in the opposite direction: the steady devolution, under routine price competition, of hundreds of once estimable goods and once luxurious services to low-profit commodities and automated services.

The focus of more and more of our creativity, then, is not things, really, nor services as “parcels” of useful labor, but information fields, treated as private property, in which memorable and entertaining experiences can be had. Restaurants compete in atmosphere and service, with the

*Michael Benedikt is architecture professor and holds the Hal Box Chair in Urbanism at the University of Texas, Austin, where he is also the director of the Center for American Architecture and Design. His book, A General Theory of Value, is forthcoming in 2002.*



The dual qualities of intimacy and immensity are dramatized with simple materials in Louis Kahn's Salk Institute (1965) in La Jolla, Calif.; Carlo Scarpa enlists a complex vocabulary of material and form in the Brion Cemetery (1970), San Vito d'Altivole, Italy.



# Experience Economy

food becoming more like art on a plate, and waiters more like actors. Climate-controlled shopping streets become “Roman marketplaces”; gigantic suburban bookstores imitate old-time, intimate ones with living room furniture, readings, and espresso bars; movie houses become movie “palaces” again (but, much more economically, set off of freeways), and so it goes. At children’s hospitals, patients become explorers, “embarking on a journey to recovery,” while new housing developments imitate historic or imagined small-town life (if at quadruple the density). In short, every place, every product, every service and event in the experience economy becomes themed, as though it were part of an endless carnival.

These developments have not been lost on architects, of course. Ever since Postmodernism broke through late-Modernist orthodoxy in the early 1970s, more and more architects have joined in the business of entertaining with their buildings, that is, providing pleasurable experiences. Although rather few architects today are interested in perpetuating the classical-historical pastiche that Postmodernism first favored, many are still interested in the proposition that all buildings—not just amusement parks, museums, hotels, aquaria, and such—ought to provide exciting and memorable encounters, albeit with trendier shards and curves or luminous twisted volumes crammed with electronic paraphernalia. Follow this trend and extend it, and ultimately we must arrive at a new general understanding of architecture—to wit, architecture as experience à la Jon Jerde or, let it be admitted, Frank Gehry—and a new baseline as to what the word *experience* means in the everyday.

Given architecture’s long history of providing visitors marvelous experiences—from Rome to Disneyland—why does the thought of our whole economy mutating into an experience economy not thrill every architect to the marrow? Might such architects’ misgivings belie nothing more than elitism with respect to popular culture? Might it belie the fear of not being able to compete successfully with the other experience-producing industries, like film, music, sports, and television? Maybe.

But perhaps architects who worry about the rise of the experi-

ence economy are onto something more significant. Like canaries in the proverbial coal mine, they could be registering a disturbing shift in modern culture, namely, the loss of a healthy balance between what is real in life and what is not—between what is authentic and what is not—and of the balance between these qualities that architecture has historically been instrumental in providing.

Every person has an abiding need to make this related set of discriminations between the actual and the illusory, between fact and fiction, the natural and the artificial, the material and the nonmaterial, the significant and the trivial, the authentic and the fake ... and so on. Why? So that at the very least we can freely choose between them, or, more basically, because without the ability to make such binary discriminations we could not function at all. Let’s try to take this thought to architecture.

As I pointed out in *For an Architecture of Reality*, realness in buildings has four elemental components: presence, significance, materiality, and emptiness. Very briefly: “Presence” is about a building’s perceptual clarity and self-confidence; “significance” about its involvement in people’s lives; “materiality” is the building’s physicality, its heft, temperature, airiness; and, finally, “emptiness” is about a building’s lack of didacticism, a sort of indifference and generosity that we can’t or don’t want to explain. These four qualities also comprise our sense of reality about everything else. But buildings, which routinely and everywhere embody all four to some degree, play the important role of providing people with benchmark examples of what reality is and what the experience of reality feels like. This standard-bearing is all the more needed when we live in a mediated and media-filled world. Buildings that have a powerful presence, significance, materiality, and emptiness serve as touchstones against which more ephemeral human productions are shown to be less than fully real, though perhaps no less important for life’s richness. On this accounting, the play is less real than the set, which is less real than the theater, which is less real than the hill covered by the street.

I am in no way ignoring architecture’s many long flirtations with illusion and artifice. Poised between nature and culture, architecture,





Simplicity with tactility are seen in Peter Zumthor's Thermal Baths (1996) in Vals, Switzerland, and Alvar Aalto's summer house (1953) in Muuratsalo, Finland.

even at its most fanciful, has always shown two faces at once, the real and the unreal. However much artifice architecture has historically indulged—and it has—the face of reality has always shone through as a matter of technological, physical necessity. One could not see the trompe-l'œil angels without also seeing the heavy vaults they were painted on. With today's lightweight construction methods, and late-20th- and early-21st-century attitudes toward reality, the situation has changed. When so many building types are reduced to card-thin containers; when any shape dreamed of can, with computers, be rigged with light steel, plastic, gypsum, and glass; when *reality* is a word seldom printed or pronounced without quotes or a knowing chuckle, only economic constraints keep us from building our most extreme architectural fantasies.

Some architects have responded to the potential horror of the situation by regressing, as it were, to Miesian Modernism, that is, to a stringent economy of form and absolute “honesty” in construction. They refuse to indulge in the formal and semantic possibilities offered by the full range of contemporary construction technologies. Others are more eager to explore these possibilities, but at the same time, in the name of Modernist honesty, feel compelled to expose structure, fabrication, joints, and ductwork to pub-

## THE AUTHENTICITY OF AN ARCHITECTURE THAT EMBODIES A QUIET REALNESS SHOULD BE POSSIBLE TO ACHIEVE.

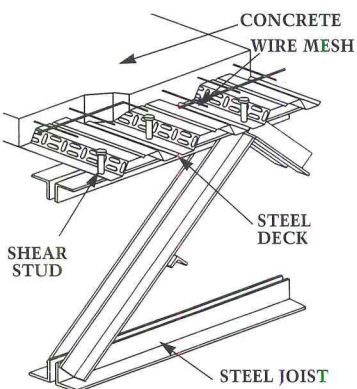
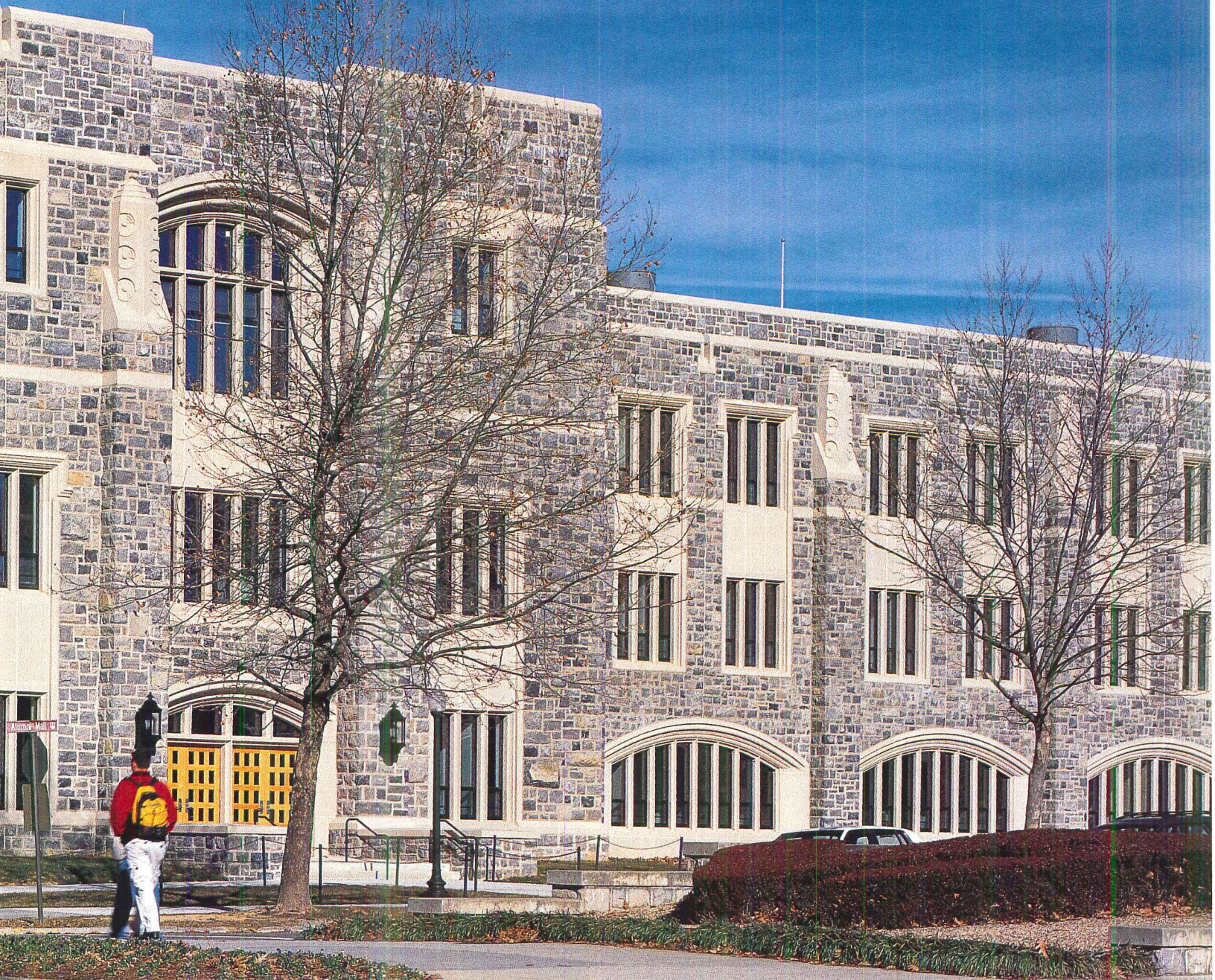
lic view. Yet others are quite comfortable creating dramatic and themed spaces—as long as they can be frank about the artifice. But honesty and frankness are not enough, since most of the facts that buildings portray are up to architects to choose in the first place. The quest, rather, is for authenticity, which is the authority that comes from being real without trying.

And there's the rub. The moment one tries to be real, tries to be authentic, and the trying is detected, the bubble bursts and inauthenticity spills out. But all is not lost; there is some middle ground. The best actors can make us forget they're acting. Affecting nonaffectation (unless their characters are affected), they somehow remain true to themselves as per-

sons and true to the characters they portray, reconstituting them into singular and wholly new personalities. Can architects—or, rather, their buildings—do the same? One might argue that the “willing suspension of disbelief” that is prerequisite to the functioning of the theater and movies works unfairly in the actors' favor. But, in truth, a parallel and equally willing suspension of disbelief works in the architects' favor, too. People assume their buildings to be fully real, giving them as much credit on this score as they possibly can. Who of the public can tell sheetrock-on-studs from a plastered wall? Who but an architect can tell whether an arch is really carrying a load? On the other hand, who doesn't know that the Bellagio in Las Vegas is not Bellagio in northern Italy? They know the Bellagio in Las Vegas to be what it is: a huge concoction and experience—with, yes, real flowers and real water out front. Matters are more problematic when chain bookstores, stocked with best-sellers and staffed by 20-year-olds, disport themselves as cozy haunts for bibliophiles.

A world without circuses is not one I want to live in, nor a world of circuses where nothing is what it seems. The authenticity of an architecture that takes as its goal the embodiment of quiet realness should be possible to achieve. Many ordinary people want that sort of realness, too, and long to have experiences of it that are not obviously for sale. I offer this analysis of architecture's realness as a tool for thinking about the issue, and suggest that we look to the work of Aalto, Van Eyck, Kahn, Scarpa, and Zumthor for guidance as to what authentic architecture might look like in modern times. We look to Aalto for his nondoctrinaire yet fully material renderings of new and useful form; Van Eyck for his seemingly unlimited attentiveness to perceptual and social realities; Kahn for his ability to bring intimacy and immensity together using the simplest materials, and to make spaces that are more generous and dignifying than called for. Then we value Scarpa for developing a vocabulary both curious and inevitable, like new nature, speaking straight to the heart, and Zumthor for reminding us that admirable simplicity is never simple, that architecture is tactile, that the land is our larger home. And how much more there is to learn from the thousands of unassuming yet generous old buildings that still dot the American landscape, patiently awaiting our attention. ■





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# Preservation's Shackles

Is the movement doomed to enshrine an imagined past?

By Thomas Hine

**T**he building in question was only a clothing store, but for those fighting over Rem Koolhaas' design for a new Prada shop near Union Square in San Francisco, the issues seemed momentous. Would this city—a hotbed of nostalgia for the radical and the decorative—allow a building that speaks of the future, or would it insist on one that looks to a largely imagined past?

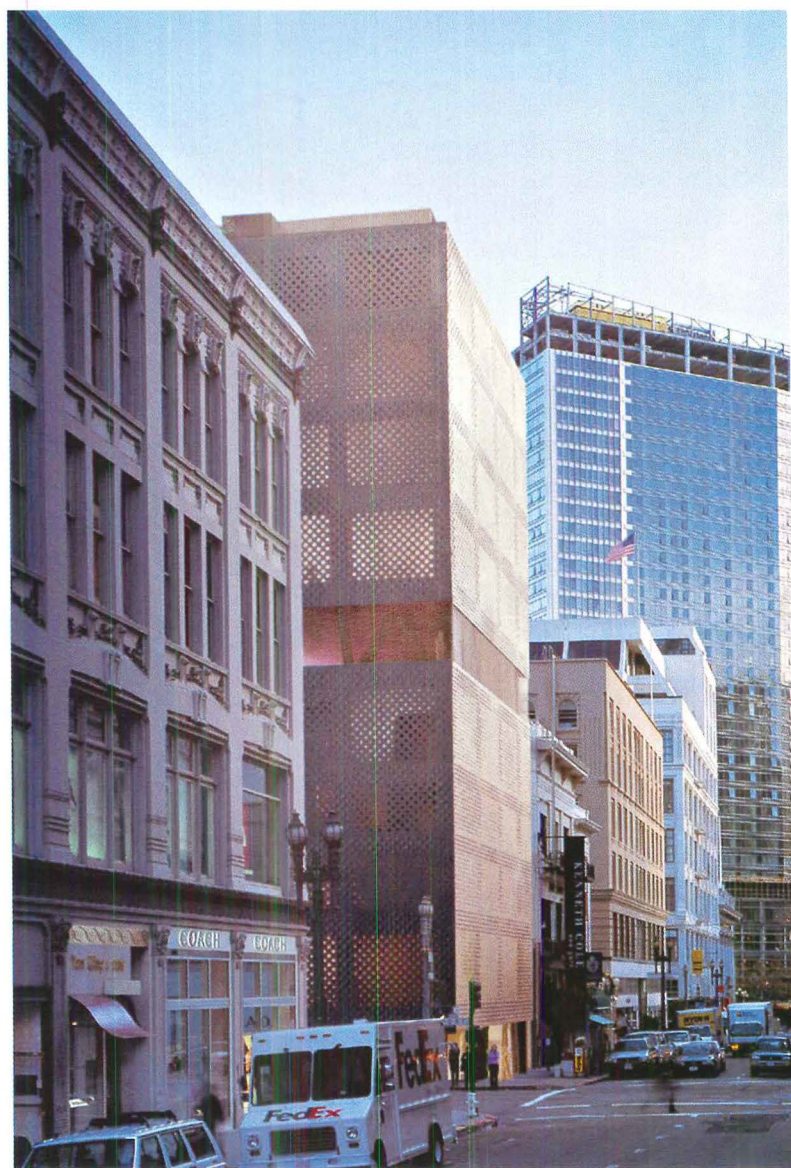
Koolhaas had proposed a 10-story building with a glass storefront at street level, rising to a stainless-steel facade punctured with more than 8,000 holes that earned it the nickname “the cheese grater.” Because the site occupies a conservation district, the design needed approval of the city planning commission. A 59-page Environmental Impact Statement noted that the design included neither San Francisco's preferred materials nor the classical base and cornice, which, the report asserted, characterize this very mixed commercial neighborhood. In September, the commission voted to allow the building, over the strong objections of its planning staff and director, Gerald Green, who concluded, “We're coming down a slippery slope here.” (Well, it is San Francisco.)

Thus, the new achieved a narrow victory—in contrast to a similar battle last spring in Cambridge, Mass., where the local landmarks commission rejected the scheme for a 25,000-square-foot Harvard Square office building, designed by Hans Hollein and proposed by Harvard University. Still, win or lose, adventurous buildings seem doomed to face bureaucratic ordeals, bound to discourage future clients. Many will presumably respond with designs that can win easy approval, resulting in duller American cities. And, some argue, it is all the preservationists' fault.

After a long period in which historic preservation seemed an unquestioned virtue, it has taken a hit in the past year or two. Critics and academics have asked whether the movement is standing in the way of living cities and vital architecture.

To preservation's skeptics, existing laws enshrine a past that never was, suppress the change that history is all about, and encourage new architecture based on historical pastiche, rather than the ideas and capabilities of our time. “Preservation is in danger of tumbling into sentimentality,” says David G. De Long, architect, historian, and former chairman of the University of Pennsylvania's historic preservation program. “Little to do with love of the past, it's too often about fear of the future.”

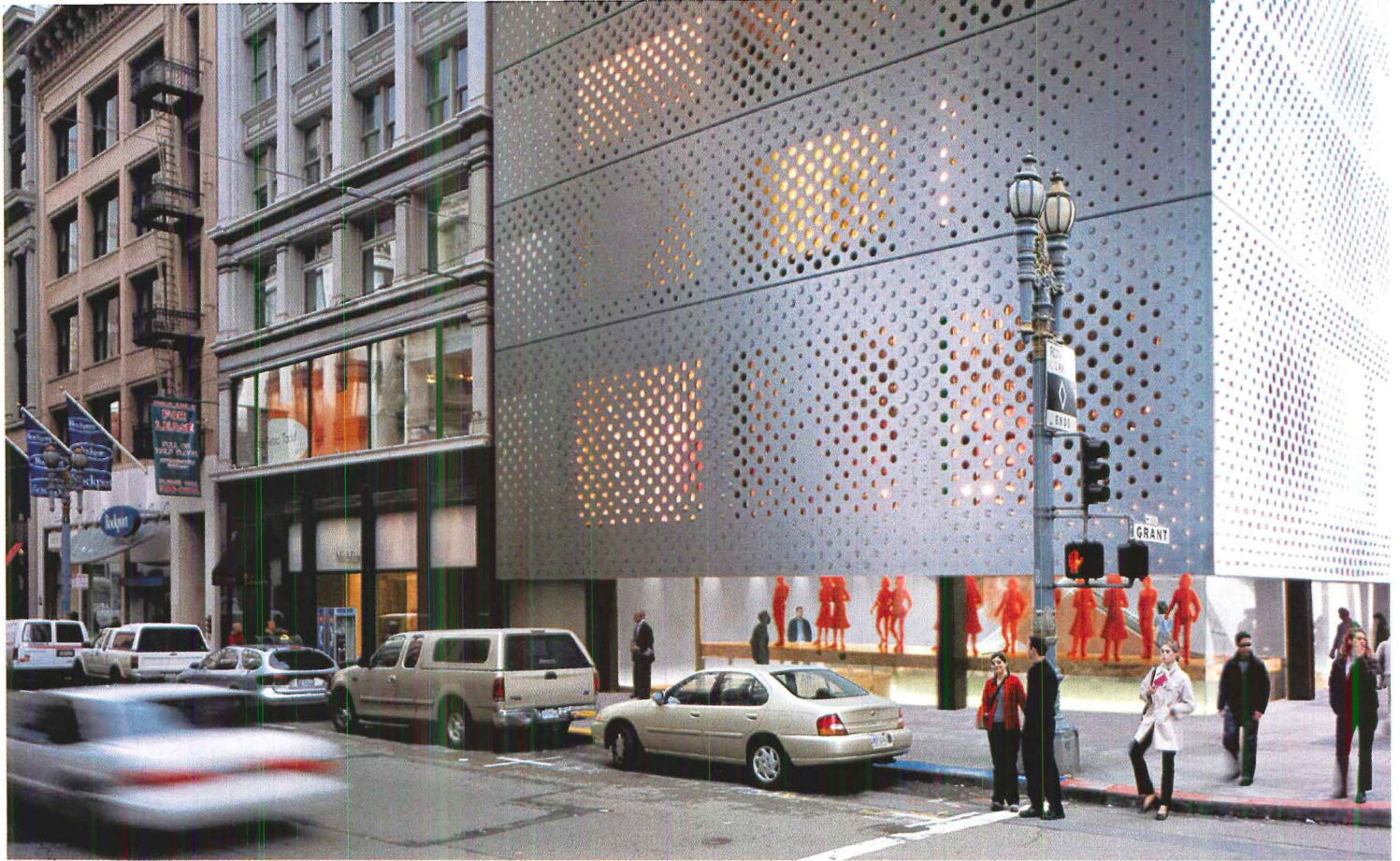
*Thomas Hine is former architecture critic of The Philadelphia Inquirer. His books include Populuxe and The Rise and Fall of the American Teenager.*



As shown in photomontage (above and opposite top) Koolhaas' “cheese grater” Prada store was ultimately approved for construction in San Francisco.

It's not surprising that some architects don't like preservationists, because many preservationists don't like architects, at least not living ones. The preservation movement has been sustained in the past four decades by a profound public pessimism about the capabilities of contemporary architects. It was galvanized by the destruction in 1963 of New York's Pennsylvania Station and the construction of the dispiriting complex that took its place. And the San Francisco law that required the Prada





review was, in part, a reaction against the nearby unpopular Neiman Marcus store, designed by Philip Johnson.

There's little doubt that architects have, at times, justified pessimism. Preservationists helped establish the view that buildings are important cultural achievements, but members of the movement often behave as if all history and worthwhile architecture have already happened—thus sustaining the faith that the old is always better than the new. The movement has failed to develop a theoretical framework to allow, for example, consideration of the relative importance of buildings. Nor have preservationists participated in intellectual debates among historians and others about the nature of history and how old buildings and artifacts should be understood. Rather, the movement has operated more as a political entity, successfully building constituencies and defending interests.

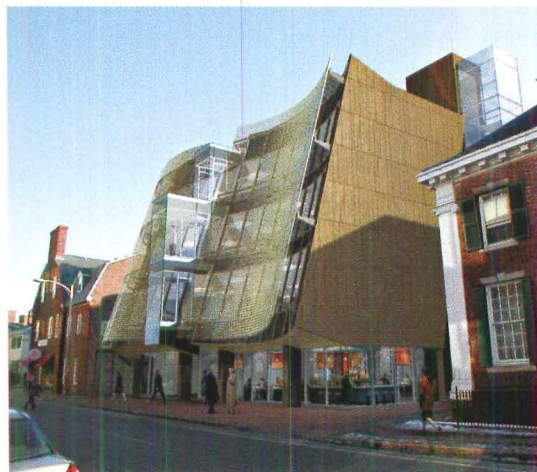
At the moment, historic preservation appears to be enjoying widespread public support, having survived a decade of legal challenges that pronounced historic regulation an unconstitutional seizure of private property. (The Supreme Court has generally ruled against land regulation, but on such narrow grounds in each case that no real precedent was set.) Preservationists suffered a setback in 2000, when Congress exempted all religious buildings from regulation, though the matter will likely reach the Supreme Court, which has already found a similar law unconstitutional.

Since the 1960s, historic preservation has evolved from a protest movement—the proverbial little old ladies in tennis shoes—into a major civic undertaking, involving thousands of historic-district commissions and advocacy groups. It has

also become, increasingly, a profession. Congress' 1976 enactment of preservation tax credits brought real estate developers into the preservation community, in turn generating jobs for architects specializing in adaptive reuse. And the movement has been absorbed into government, not merely with historic and landmark commissions, but also with planning, zoning, building inspection, and economic development.

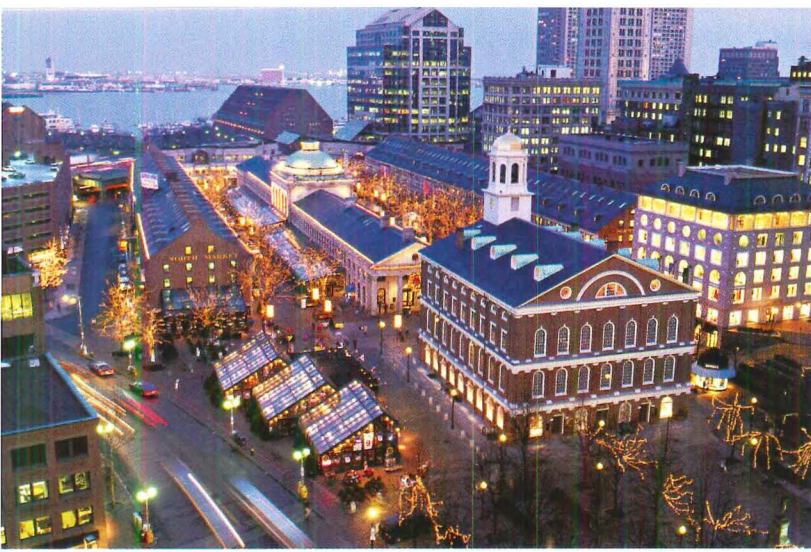
"Preservation has become a bureaucracy," says Richard W. Longstreth, director of the graduate program in historic preservation at George Washington University. "But look at the plus side of that bureaucracy—how many thousands of neighborhoods have been retained and rehabilitated, how great a sense of stability has been restored to places that were in decline. Preservation has been a very positive force in our society."

Longstreth believes that those who denigrate preservation are confusing it with a phenomenon that ought to be its opposite: themed environments. Theming is about packaging places as friendly, commercially enticing experiences, and, in its aspirations to create unified, harmonious environments, it tends to suppress differences among historic buildings. By emphasizing the fabric of specific buildings, historic preservationists should provide an antidote to theming, but they have often been its accomplices. Some of the town centers redesigned under the National Trust for Historic Preservation's Main Street Program bear an uncanny resemblance to Disney's Main Street, USA, whose approach is theatrical, not historical. Moreover, some of the first models of successful, profitable preservation were themed developments: San Francisco's Ghirardelli Square and Cannery of the 1960s and Boston's Faneuil Hall Market



Hollein's proposal for a Harvard Square building (above) was turned down by the local landmarks commission.





**Boston's Fanueil Hall Market (above) and San Francisco's Ghirardelli Square (below) were early paradigms that generated abundant formulaic knockoffs.**

of the 1970s. These outstanding projects generated knockoffs that treat historical elements with less integrity and design skill.

America's propensity to theme its cities and neighborhoods suggests that we think about these places more as real estate development sites than as cultural undertakings. We seem to believe that the opportunities for improving cities come through radical transformation poised to increase real estate values and cash flow, instead of through organic growth and change over time. In such a mind-set, real history plays a very small role. Development with a patina of history has been popular for the past few decades, which might give the impression that preservation is sacrosanct. Still, the past is on probation. When cities are understood solely in terms of development opportunities, everything is up for grabs.

Such thinking may explain why many European cities, rich in historic fabric, welcome bold new buildings while American cities, as a rule, do not. "Sometimes we see proposals where the architect has ignored almost all the rules, but the designs would really work in the historic context," says Pamela W. Hawkes, a principal of Ann Beha Architects, about her experience on Boston's Landmarks Commission. Nevertheless, she says, she votes against such designs for fear of what might happen next. "The developer might fire this architect and hire one who doesn't get it, or the next developer might come along with a bad design that violates the rules, and point to the other building as a precedent." She says she'd like to see Americans embrace exciting new buildings as in Europe, but adds, "We don't have the depth and density of historic fabric—or a history of change."

The charge that preservationists are the enemies of progress has been made for so long and so often during the past half century that those in the movement tend to shrug it off. Jerold Kayden, a professor at Harvard Graduate School of Design and chief counsel on constitutional matters for the National Trust for Historic Preservation, argues that today's controversies about razing landmarks and building new structures in historic districts are no more numerous or contentious than they were in the past. He believes that the Hollein building in Harvard Square would have been rejected at any time in the past three decades. "There is an idea here that quaintness is 'authenticity,' and people have trouble seeing a new style as part of it," he observes. "Brick has always

held a hegemonic position here. What is hopeful and surprising is that the building was proposed and seriously discussed."

As preservationists point out, the job of their movement is to be conservative in the material, if not the political, sense. If preservation were to advocate replacing existing urban fabric with avant-garde construction, they contend, it wouldn't be playing its role in the civic and cultural dialogue. "I understand their position," Koolhaas said of the opposition to his Prada design. "It is good for the city that somebody is defending it."

Yet even among preservationists, a greater hunger for the future—a desire for buildings and cities that embody the new as well as the old—seems to be emerging. It is part of a more general impatience with a ruminative culture, in which the ephemeral never really goes away, but simply gets chewed over again and again. Hundreds of television channels rerun old sitcoms, bad movies get remade again and again, and advertising campaigns attempt to induce consumer nostalgia for things, like the Coca Cola bottle, that don't ever disappear. It's not surprising that such a culture would produce ersatz urbanism à la *Nick at Nite*.

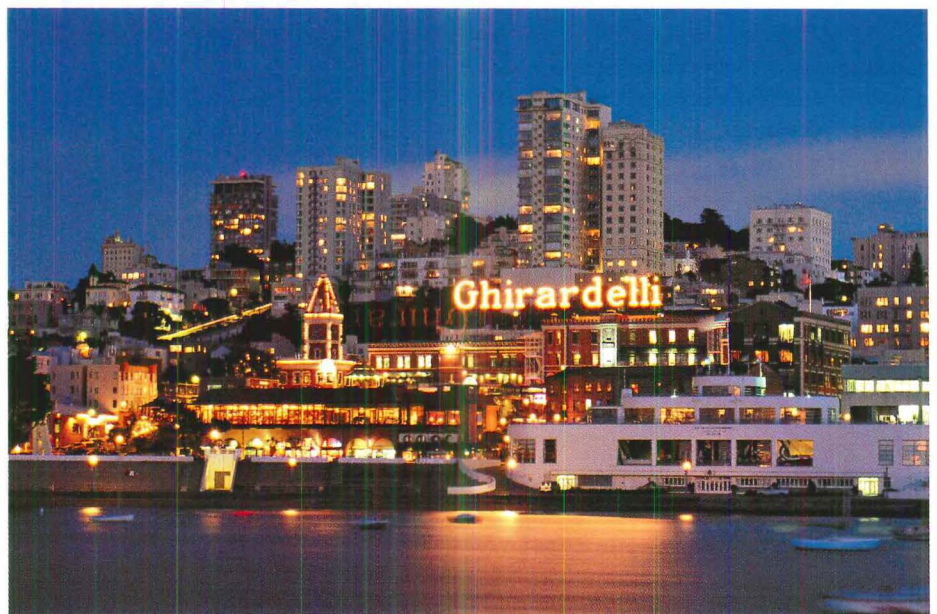
Preservationists have often benefited from participating in that culture. So have architects who deploy elements and forms from historic architecture to create cheerfully pseudo-historic buildings. Now both

## IT'S NOT SURPRISING THAT SUCH A CULTURE WOULD PRODUCE ERSATZ URBANISM À LA NICK AT NITE.

groups, along with many others, are nursing a post-millennial hangover, and pondering what should happen now.

Some preservationists believe their movement will gain energy and support from opposing big-box retailers and exurban sprawl. Others argue that they will have to come together with architects to form creative approaches to difficult landmarks, such as Philadelphia's Eastern State Penitentiary and Boston's Charles Street Jail. Buildings of this sort don't evoke sentimentality, and their renovation will require understanding of what's important about them and what will enable them to have a future.

In a sense, preservationists and architects are still recovering from Postmodernism, and they both yearn for something real. But if some preservationists seem nostalgic for imagined pasts, some architects seem nostalgic for a bygone heroic future, when it seemed as if architects could make a better world. ■





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**Windows needed to fit with the original stonework of the building, Apostle Island Sandstone.**

**Clad round top windows were custom made to match the historic architecture.**

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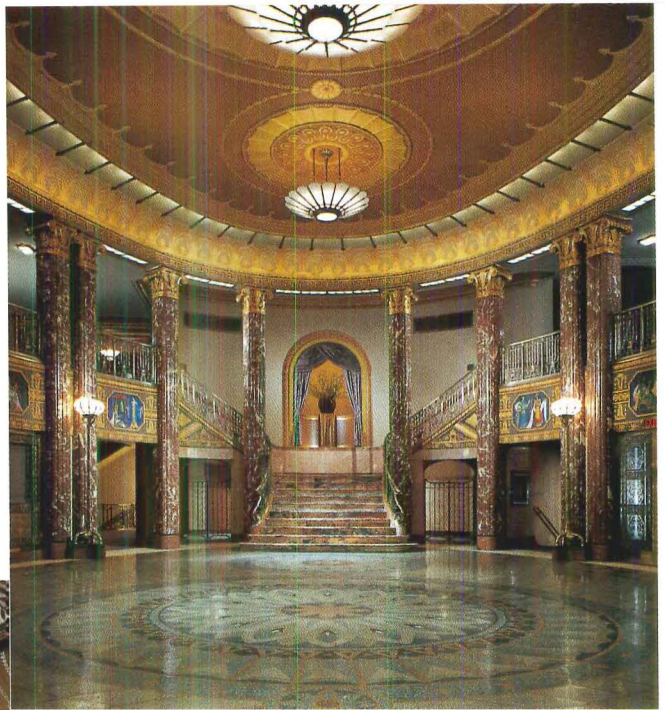


AMERICAN PRESERVATION:

# Revering the Past

A roundup of recent projects displays work at the forefront of restoration

FEATURES

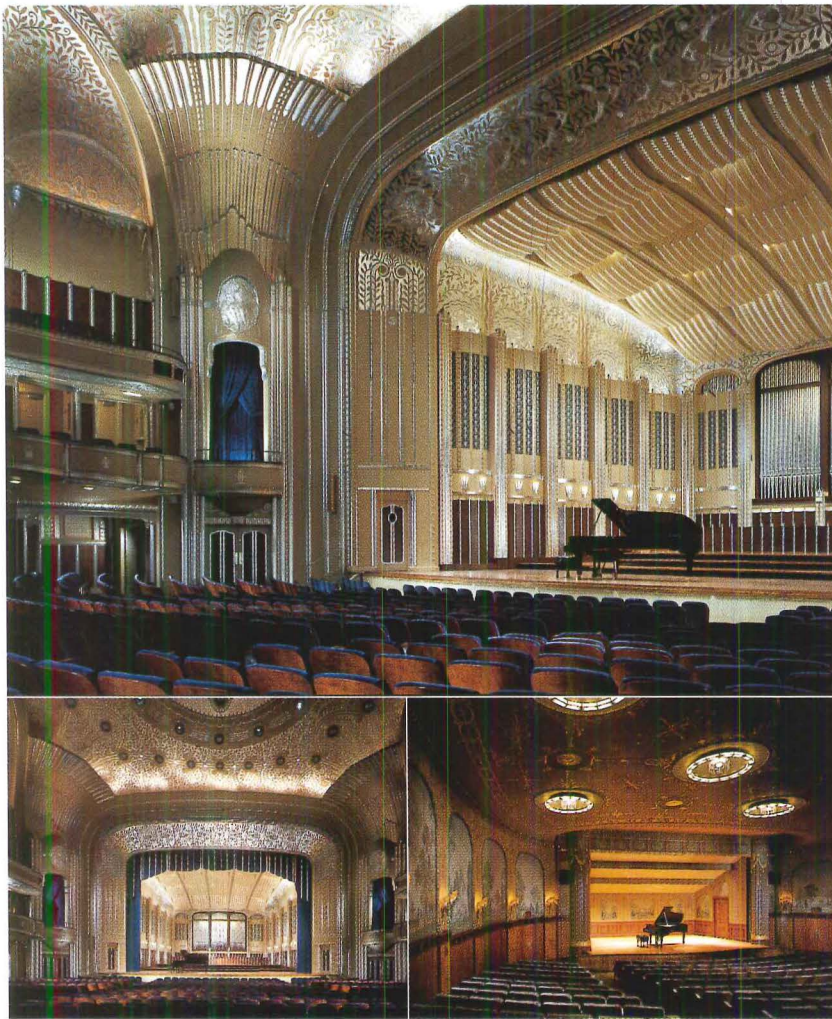


## CLEVELAND'S PREMIER SYMPHONY SPACE IS RETURNED TO GRACE

Built in 1931, Severance Hall is a gem on the necklace of Beaux-Arts structures strung along Cleveland's University Circle, an urban park and cultural district. The 2,000-seat hall's original design by Walker and Weeks blended traditional and modern elements, with flamboyant flourishes of Art Deco. The interior was awash with silver surfaces, counterbalanced by blue carpet and upholstery. The proscenium featured an English point-lace pattern, balconies displayed more streamlined elements, and the ceiling employed a process called *pastaglia*—aluminum-leafed canvas laid over a smooth coat of plaster. The restoration team, headed by design architect David Schwarz, refurbished the interiors, reconfigured space, built an addition, and added backstage facilities, technical systems, an acoustical shell, and amenities including a restaurant and reception rooms.

**Project:** *Severance Hall, Cleveland*  
**Architects:** *Walker and Weeks (original); David M. Schwarz Architectural Services (design architect); GSI Architects (architect of record)*

**Consultants:** *Sonya Winner-Smith (restoration); Fisher/Dachs (theater); Jaffe Holden Scarbrough (acoustics); Gensert Bretnall Associates (structural engineer of record); EverGreene Studios*



## THE HISTORY OF SAVING HISTORY

By Thomas Mellins

*Thomas Mellins, an architectural historian who writes frequently for RECORD, cowrote New York 1880, New York 1930, and New York 1960.*

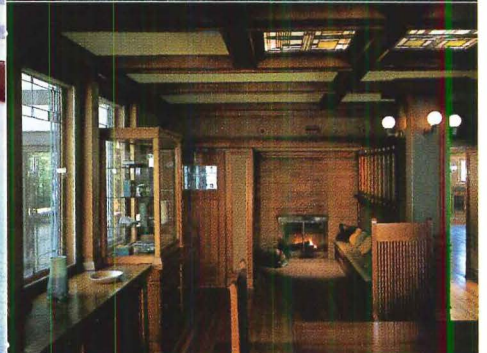
In 1963, no one was able to save McKim, Mead & White's masterful Pennsylvania Station. A true New York City landmark since its completion in 1910, the building was demolished and its remnants shamelessly scattered in a New Jersey swamp. Today, across the country, news that even a rather ordinary nineteenth-century building might succumb to the wrecker's ball often sets off highly organized protests. Why were we complacent for so long about preserving our

architectural history? And what caused a sea change in our attitudes?

Traditionally, Americans have held dear the belief that we can invent not only our own personas, but also our personal pasts. We are all Lone Rangers—heroes from nowhere. And we have consistently searched for the "new," believing the best is yet to come. Yet our sense of freedom and our optimism have a dark side; we suffer from a fear of history.

PHOTOGRAPHY: © HEDRICH BUSSING





## AN EXEMPLARY PRAIRIE HOUSE BY FRANK LLOYD WRIGHT IS SAVED

Commissioned by Ward W. Willits for his family, the house in Highland Park, Illinois, designed by Frank Lloyd Wright in 1902 is paradigmatic of the Prairie School style with its cruciform plan, use of timber framing, centrally located fireplace, and broad, low overhanging roofs.

In 1983, new owners Milt and Sylvie Robinson retained John Eifler of Eifler & Associates in Chicago to oversee the extensive restoration project. Among other matters of concern, the interior woodwork was stained a dark brown, and the walls were painted white—a contrast Wright never intended. Art glass windows and original doors were missing, and extensive problems were found on the roof.

Although Wright designed furniture for every corner of the house, at the time of purchase none of it remained. Some pieces have been recovered or reproduced, and the remainder of the furniture is in character with the house—Arts and Crafts, mostly by Gustav Stickley and Charles P. Limbert.

**Project:** *Ward Willits House, Highland Park, Ill.*

**Architects:** *Frank Lloyd Wright (original); Eifler & Associates (restoration)*

**Consultants:** *James Raab (custom cabinetry and furniture); Robert A. Furhoff (historical paint); Nikolaus Wenz (art glass restoration)*



There have been notable exceptions to this tendency. In 1853, Ann Pamela Cunningham founded the Mount Vernon Ladies' Association and worked tirelessly to preserve George Washington's house as a national shrine. Her success spurred others to action. The Association for the Preservation of Virginia Antiquities and the Society for the Preservation of New England Antiquities were founded in 1888 and 1910, respectively.

By the 1920s, those with long family histo-

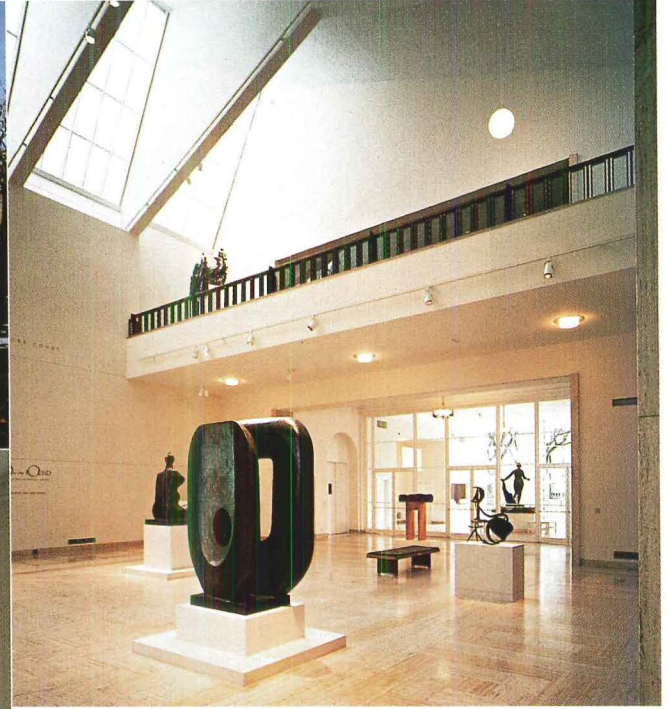
ries on this continent dominated preservation efforts. The message was clear: We got here first, we built with grace, and our vision and initiative defined a nation. Colonial America became the principal focus. The restoration of Williamsburg, Va., financed by John D. Rockefeller and begun in 1926, epitomized this trend.

In 1949, the private, nonprofit National Trust for Historic Preservation was established through an act of Congress. Now one of the nation's most

powerful preservation organizations, with more than 250,000 members, it annually identifies the country's "11 Most Endangered Historic Places."

In 1965, another influential organization, the World Monuments Fund, was established to promote architectural preservation internationally, including within the United States. Like the National Trust, it also calls attention to threatened buildings and places. In light of the recent destruction of the World Trade Center, the organization focused con-





## BEHA REFURBISHES A BELLUSCHI COMPLEX FOR A MODERN MUSEUM

Three Modernist buildings designed by Pietro Belluschi in the 1930s anchor the Portland Art Museum in Oregon. The museum's final gallery was added in 1938, and by 1994 the facility required more space. Over six years, Ann Beha Associates of Boston renovated and expanded the buildings, added a public sculpture garden, and converted an adjacent art school—also by Belluschi—to new galleries. The \$20 million project encompassed 60,000 square feet, of which 47,000 square feet is dedicated to the permanent collections, which are rich in twentieth-century art.

Beha says the project team tackled three challenges: to preserve the Belluschi legacy while updating building systems; to add exhibition space without expanding the footprint; and to integrate the structures as one cohesive museum. The project brought the former sunken terrace of the art school up to grade, creating a sculpture plaza at street level and an auditorium for film, lecture, and music programs below.

**Project:** *Portland Museum of Art, Portland, Ore.*  
**Architects:** *Pietro Belluschi (original); Ann Beha Associates (restoration); SERA Architects (associate)*  
**Consultants:** *Altieri Sebor Wieber, KPFF (engineers); Delaney, Cochran & Castillo (landscape design)*

cern on lower Manhattan by making Historic Lower Manhattan the 101st site on its biennial Watch List.

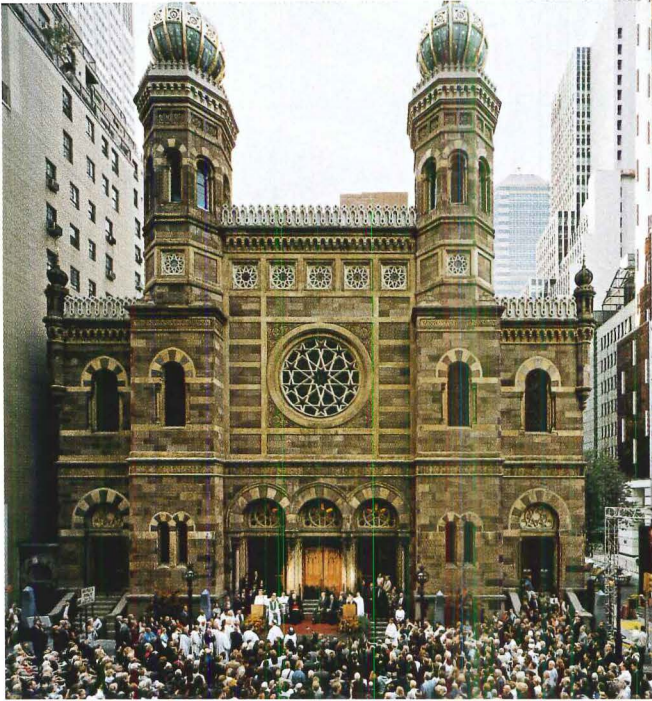
While private-sector efforts continue to be crucial, for decades the government has been a key player. Many people mistakenly believe New York City's preservation law was the nation's first. In fact, the city council of Charleston, S.C., led the way in 1931, ratifying a zoning ordinance for the country's first historic district. A municipally managed architectural review board provided

regulatory control. Five years later, an amendment to the Louisiana state constitution legally upheld New Orleans' Vieux Carré Commission, established in 1925, and granted it police power. Other cities and towns, including Natchez, Miss., Annapolis, Md., and Newport, R.I., soon followed

**The Skinner-Trowbridge House, designed by Town and Davis in 1832, has been renovated by Helpern Architects for Yale's School of Management.**







## HHPA BRINGS CRAFTSMANSHIP TO NEW YORK'S CENTRAL SYNAGOGUE

The skillful restoration of New York's Central Synagogue after a devastating fire in 1998 is what Hugh Hardy, of Hardy Holzman Pfeiffer, calls "interpretive." Most of the intricate elements of the ornate Moorish-style building designed by Henry Fernbach in 1872 have been faithfully returned to their original state. Since the fire destroyed everything above the clerestory windows, the roof's timber trusses were rebuilt, and the red and dark gray slate shingles reinstated. Gold leaf has been reapplied to the finials, ribs, and decorative bands of the onion domes, while two smaller copper finials—not in evidence since 1920—were reconstructed. Inside, artisans reconstructed plasterwork and floor tiles, restored black walnut and ash wainscoting and woodwork, and masterfully painted elaborate stenciled patterns on the walls, ceiling, and cast-iron columns. The new walnut and ash pews are now angled along the sides of the sanctuary; the floor level of the entrance vestibule was lowered, and a multipurpose room was created downstairs.

**Project:** *Central Synagogue, New York City*

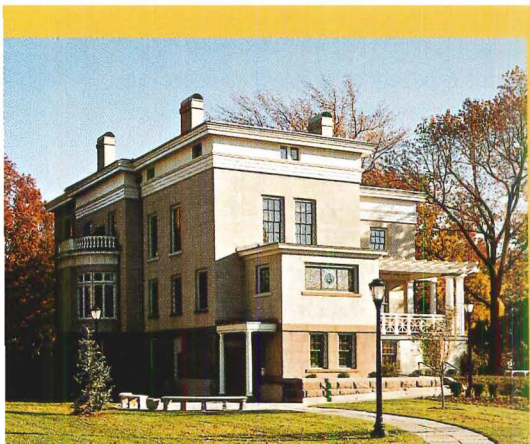
**Architect:** *Henry Fernbach (original); Hardy Holzman Pfeiffer*

*Associates (restoration)*

**Consultants:** *DPK&A (restoration); LZA/Thornton-Tomasetti (engineer)*



PHOTOGRAPHY: © FEIER WAPUSSIESTU (THIS PAGE AND OPPOSITE BOTTOM)

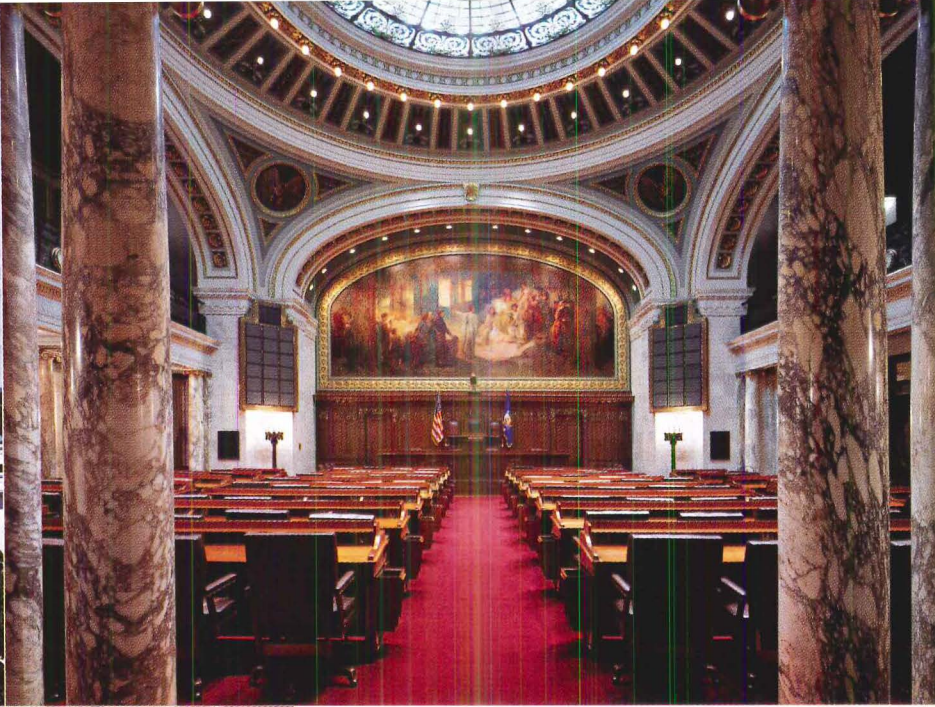


suit. Currently, around 2,000 municipalities nationwide have preservation ordinances.

In characteristic fashion, New York City, though far from being the leader, has done things on such a big scale that it has appeared to be charting new territory. Initially, the city's Landmarks Preservation Commission, founded in 1965 when Penn Station was still being dismantled, made rather safe choices, and some great buildings slipped through its fingers. Still, the com-

mission rapidly moved beyond the historic-house paradigm to protect settings for commercial and cultural activity. The commission also championed adaptive reuse as a preservationist strategy. The federal government has been an important agent of preservation, as well. In 1933, the Department of the Interior established the Historic American Buildings Survey; the following year, the AIA and the Library of Congress became cosponsors of the project. Government support of preservation





## WISCONSIN'S CIRCA 1917 CAPITOL SHINES AFTER A 13-YEAR REHAB

After a multiphase restoration spanning 13 years at a cost of \$141 million, the Wisconsin State Capitol looks—and operates—better than ever. Designed by George B. Post & Sons (architects of the New York Stock Exchange), the Capitol cost \$7.3 million to construct between 1906 and 1917, replacing a building destroyed by fire. In part, Post got the job because of his work at the World's Columbian Exposition in Chicago in 1893, where he designed the Court of Honor's Manufacturers and Liberal Arts Building.

A team led by Isthmus Architecture cleaned and repaired the granite facade, restored the rotunda and public spaces, and rehabilitated four wings—upgrading telecommunications, electrical, and technical systems. Sectors were isolated one by one, then restored or reconfigured. The project transformed an aging government center that, in classic bureaucratic style, had become a hodgepodge of stopgap remodeling. *Project profiles by William Weathersby, Jr.*

**Project:** *Wisconsin State Capitol, Madison, Wis.*  
**Architects:** *George B. Post (original); Isthmus Architecture (restoration)*

**Consultants:** *J.P. Cullen & Sons (contractor); Dan Steffan (Wis. Dept. of Administration senior manager); Anne Biebel (historian); Rebecca Garland*

increased in 1966, with the establishment of the National Register of Historic Places. In 1982, the passage of tax-incentive legislation encouraged the renovation of historic buildings.

Though broadly supported by the public, preservation has nevertheless faced strong opposition. In the 1970s, when real estate developers sought to overturn the New York City Landmark Preservation Commission's designation of Grand Central Terminal, the battle

went as far as the United States Supreme Court. The court ruled in favor of the commission, and the decision was widely regarded as a boon to legally mandated preservation.

Preservationists can be justly proud of their achievements, yet a particular strain of our collective fear of history persists. We continue to be slow to recognize the value of the architecture of the recent past, especially International Style buildings of 1950s and '60s.

Ironically, it is precisely those Modernist buildings, once criticized for turning their backs on history, that currently call out to be protected. The efforts of the preservationist group DoCoMoMo have been pioneering in this regard (see page 141). Indeed, if future generations are to be able to examine, learn from, and enjoy our rich and complex architectural heritage, we must save buildings that were dismissed—or even reviled—only decades ago. ■

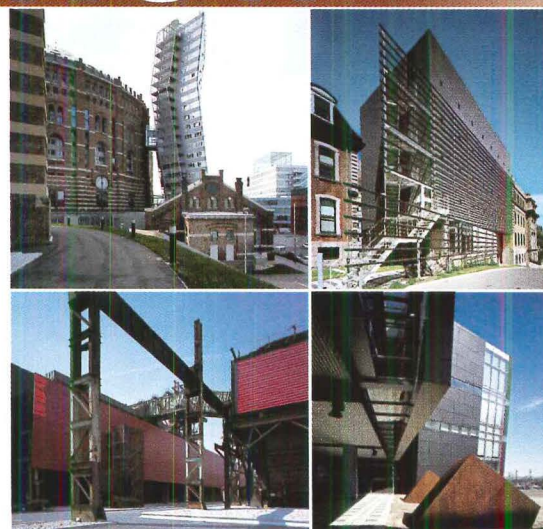


# The dialogue between old and new

By Suzanne Stephens and Sara Hart

**D**ialogue or tense standoff? At a quick glance, the projects on the following pages may seem to be brazen encounters between the new and the old. In designing additions and adaptive reuse schemes for original structures, the architects involved have chosen not to replicate, reinterpret, or be overly deferential to the existing architecture. They are searching for responses to preserving buildings that are “real”—responses that speak authentically to this particular moment. As the Gasometer B by Coop Himmelb(l)au in Vienna shows (page 108), a grating dissonance can energetically punch up distinctions between architectural periods and between past and present conceptions of what a residential complex should look like. In other cases, such as Dan Hanganu and Provencher Roy’s Centre d’Archives de Montréal (page 128), or Saucier and Perrotte’s Collège Gérald-Godin, in Sainte-Geneviève, Quebec (page 116), distinctiveness, not confrontation between the old and the new, is key. With the Magna Science Adventure Centre (page 122), a science museum inserted into a former steelworks in Rotherham, England, Wilkinson Eyre demonstrates how a new design for a contemporary program can simultaneously engage the older form and its former use. In spite of tough, even gritty, formal vocabularies, materials, and construction techniques, each project manifests an underlying unity of proportion and scale with the preserved structures. While asserting the independence of the new, they both respect and dramatize the identity of the old. ■

PHOTOGRAPHY: © MARGHERITA SPILUTTINI (TOP LEFT); MICHEL BRUNELLE (TOP RIGHT); WILKINSON EYRE (BOTTOM LEFT); MARC CRAMER (BOTTOM RIGHT)



Gasometer B (top left); Centre d'Archives de Montréal (top right); Magna Science Adventure Centre (bottom left); Collège Gérald-Godin (bottom right).

Contemporary architecture engages the old with boldness and brashness—but only on the surface.

INTRODUCTION



A "shield" of new apartments (this page) conveys a fresh image for the masonry drums (opposite), which look as if they have defended the Danube River plain for centuries.





# Coop Himmelb(l)au challenges preservation orthodoxy in the **GASOMETER B** project by making stolid former fuel tanks dance

By James S. Russell, AIA

Americans can be zealous in defending old buildings, even rather ordinary ones, because the patina of history seems to confer a kind of authenticity no new structure can hope to attain. An adaptation in the style of the old—however watered-down it may be—remains the predominant mode of dealing with historic structures. In this there is an apparent kinship with the Viennese. They are justly proud of one of the most appealing historic centers on earth, with its intricate medieval streets, its festive Baroque palaces, and the over-the-top bombast of its monument-bedecked Ringstrasse.

“The center has been the mental map for every Viennese,” says Wolf Prix, partner in the local firm Coop Himmelb(l)au. “They think it is the ideal city, and so they have prohibited modern development.” Prix thinks this “monocentric city” is a “closed system,” adding, “it is not dynamic.” Coop Himmelb(l)au has built a career in part by trying to shake the Viennese out of their urban complacency. It’s been an uphill battle, but an instructive one for Americans trying to figure out how to weave together cities made of increasingly disparate fragments. Although the firm has been around since 1968, it first captured the design world’s attention with a 1987 law-office suite that looks like a glass-and-steel prehistoric insect poised to pounce from the edge of a placidly dull central-city palazzo. That was their last project in the historic core.

In the tattered industrial district of Simmering, near the southeastern edge of the city, a slim, canted and tilted tower seems almost to prance and shimmy next to four hefty masonry drums that dominate the area. This is how Coop Himmelb(l)au builds what it regards as an authentic architecture—one that reflects both history and contemporary reality—and permits a pattern of urban growth that historic Vienna could never sustain.

The addition is an icon for a program of adaptive reuse that is anything but ordinary. The 230-foot-diameter masonry cylinders, built in 1896, were once gasometers, their bristling crenellations enclosing huge fuel storage tanks. Normally such structures have been built as straightforward works of tank engineering, with little architectural embellishment. But the original designer, Franz Kapaun, surrounded the usual industrial inner workings with a Hapsburg-era fantasia in brick on a Niebelungen-castle theme. By the time the tanks became obsolete, the city



regarded the masonry garb as of landmark quality and searched for a permanent means of reusing the structures.

## Giving a fuel tank a future

A peculiarity of urban development in Vienna, according to Prix, is that growth is led not by private-office or other commercial development, but by the city government, and it usually comes in the form of social (publicly subsidized) housing. “Its social-housing program is a very specific Vienna tradition,” says Prix. “It was the point of departure for the project.” The city sold the site to developers, who chose an architect to redesign each tank through a design competition (next page). The program called for 600 housing units for all four towers, with some office space and a street of shops that would run through all of the buildings.

Each architect chose a different path. Jean Nouvel designed great brooding piers of dark glass and polished metal, rising to a round oculus. Wilhelm Holzbauer picked up the arcuated theme of the exterior in the interior, and painted ranks of arches with cheerily Tuscan pastels. Manfred Wehdorn built in a modest, conventionally modern mode, with

**Project:** Gasometer B, Vienna, Austria

**Client:** GPA-Wonbauvereinigung

**Architect:** Coop Himmelb(l)au—

Wolf D. Prix, Helmut Swiczinsky,

Josef Weichenberger, Rainer Enk,

Friedrich Hähle, Stefan Hochstrasser,

Martin Mostböck, Stefan Fussenegger,

Andreas Mieling, Georg Kolmayr,

Ana-Claudia Gonzales, Ronald

Kesmann

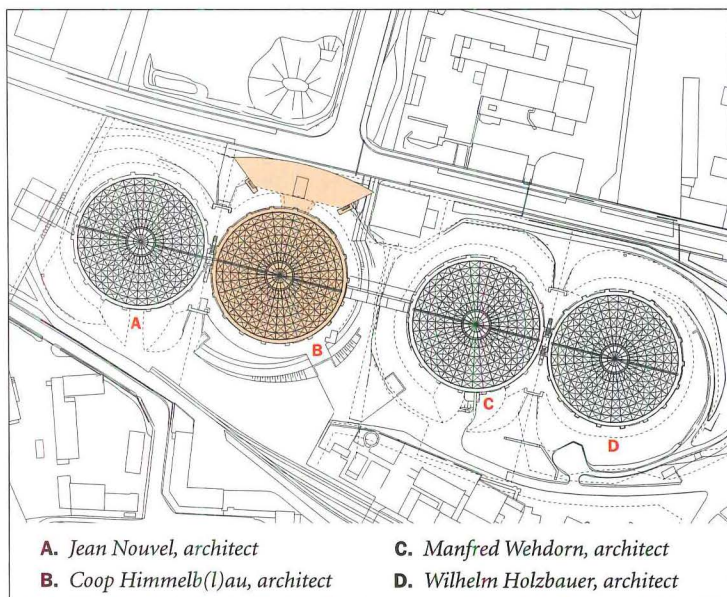
**Engineers:** Fritsch Chiari & Partner;

Stella & Stengl (structural); Büro

Bacher (HVAC);

**Contractor:** VOITL HABU-GERSTL





white stucco and rectangular recesses.

Coop Himmelb(l)au's Gasometer B turned out to be the most ambitious of the four. Within the restored masonry cylinders, the architect and engineer Fritsch Chiari & Partner devised an entirely separate concrete structure to support 13 stories of apartments, shops, and offices. A massive circular foundation wall encloses a 3,000-seat performance hall at grade (section, page 112). The enormous weight of the floors above is cantilevered over the top of the hall (sealing it acoustically by separating it structurally) by radial vertical walls held to the foundation ring by what is described as a "tension belt." A massive, circular, horizontal plate below the fifth apartment level props up the vertical walls. This structural bravura is only revealed at the cable-suspended glass and concrete oculus (page 114) that opens a view from the shopping concourse up the center of the cylinder.

#### Are landmarks too sacred?

Prix compares the contrast of the new and old construction within the cylinders to the Theater of Marcellus, one of ancient Rome's vast amphitheatres. Through the centuries the theater has sprouted accretions—primarily residential—while still retaining much evidence of its





past: A Baroque facade may bump up against a medieval pier supported by an ancient arch. “People took what they needed to take and just improved on it as they wanted,” says Prix. “It’s an attitude about landmarks that says they are not sacred. We should find new programs for them as well as preserving them. It’s what keeps a city alive.”

Although Prix calls the 22-story building attached to the gasometer cylinder a shield because of its shape, symbolically he regards it as “a sign to show that the old buildings now have a new program.” (None of the other tanks features such external emblems.) Of the 330 apartments in the shield and Prix’s Gasometer B, 76 have been set aside as dormitories for a nearby university. He says the additional units in the shield were needed to make the project work financially. The shield units are single-loaded from the gasometer side and many are duplexes, which reduces corridor square footage and the number of elevator stops.

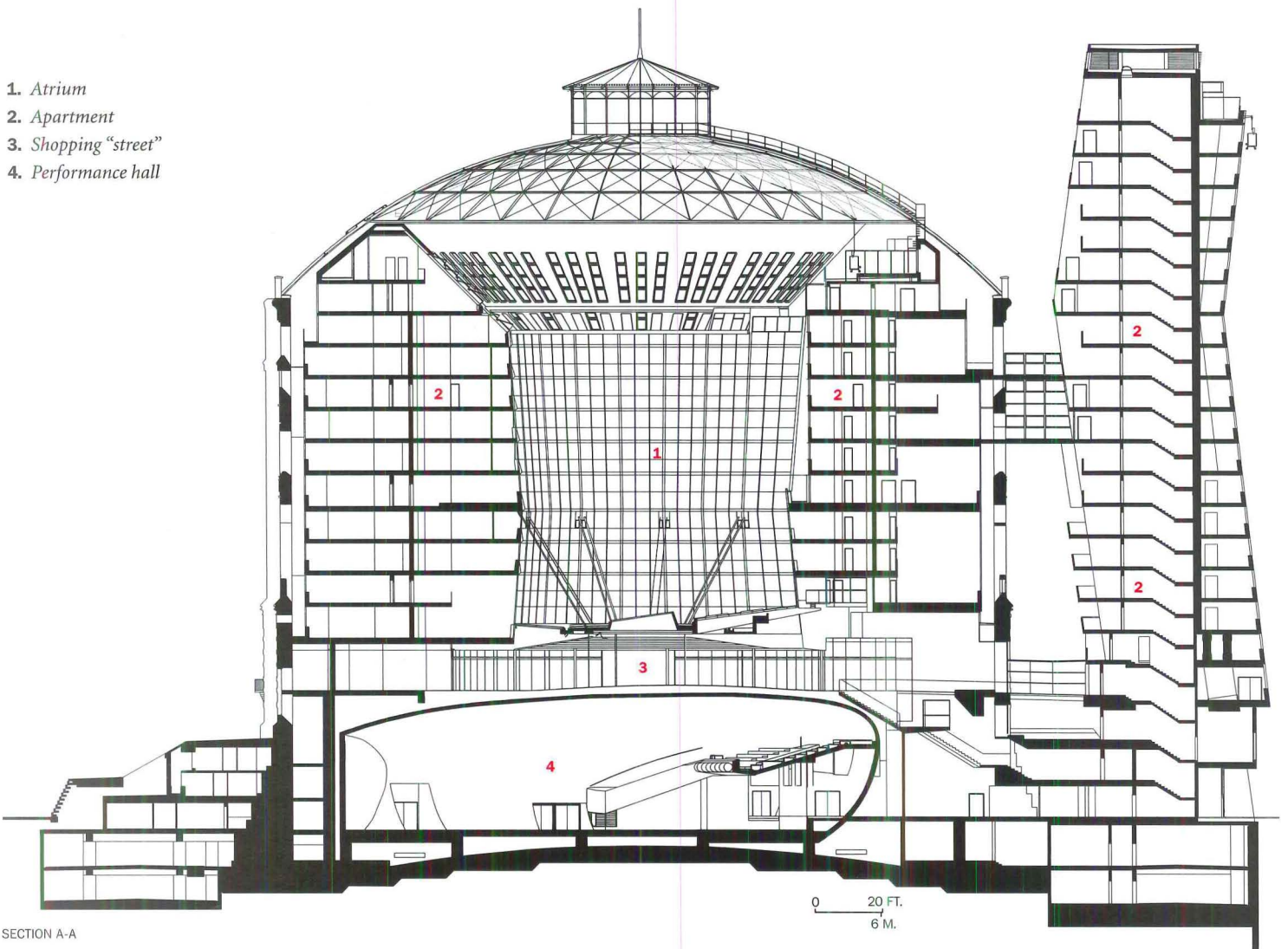
Prix describes the addition’s geometry as “the structure built into the void of the cylinder unrolled.” The shield makes no deferential gesture to the beefy bulk of the gasometers. Indeed, from some angles it entirely obscures its host tank. Prix is unapologetic. “We should be very self-confident that our new architecture is at least equal to what was there.



**Landmark authorities allowed few alterations to the historic cylinders themselves, but they did permit discreet vertical slots to be carved adjacent to the external piers—assuring daylight to all the apartment units within.**

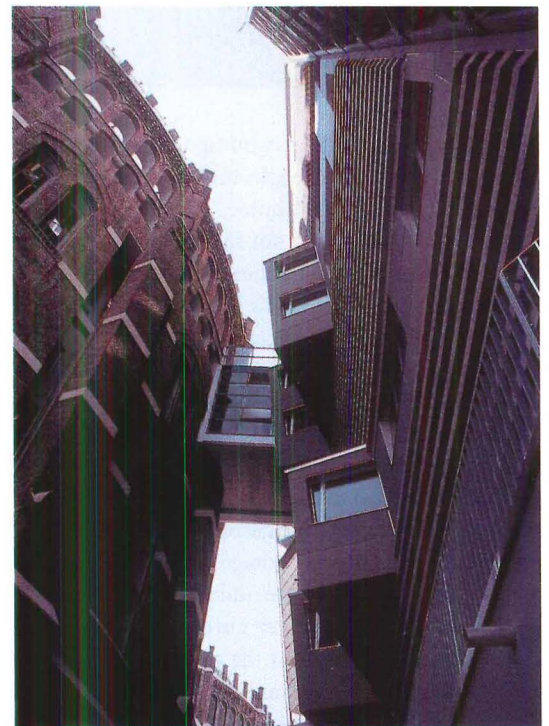
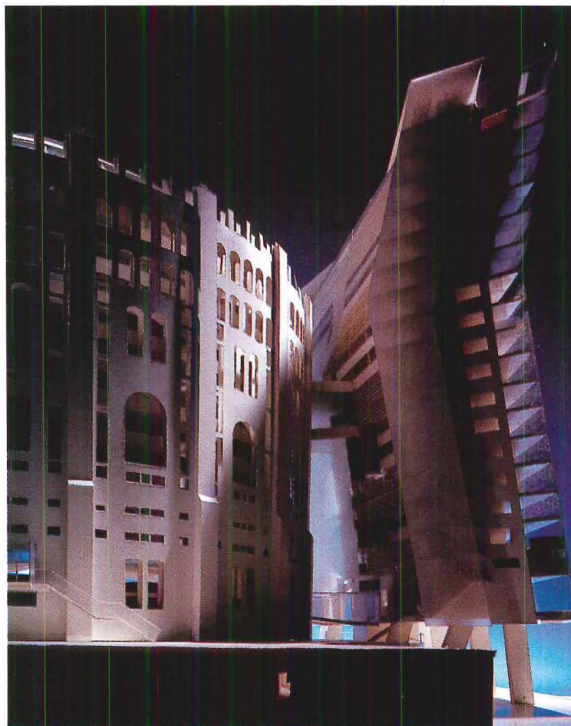


1. Atrium
2. Apartment
3. Shopping "street"
4. Performance hall

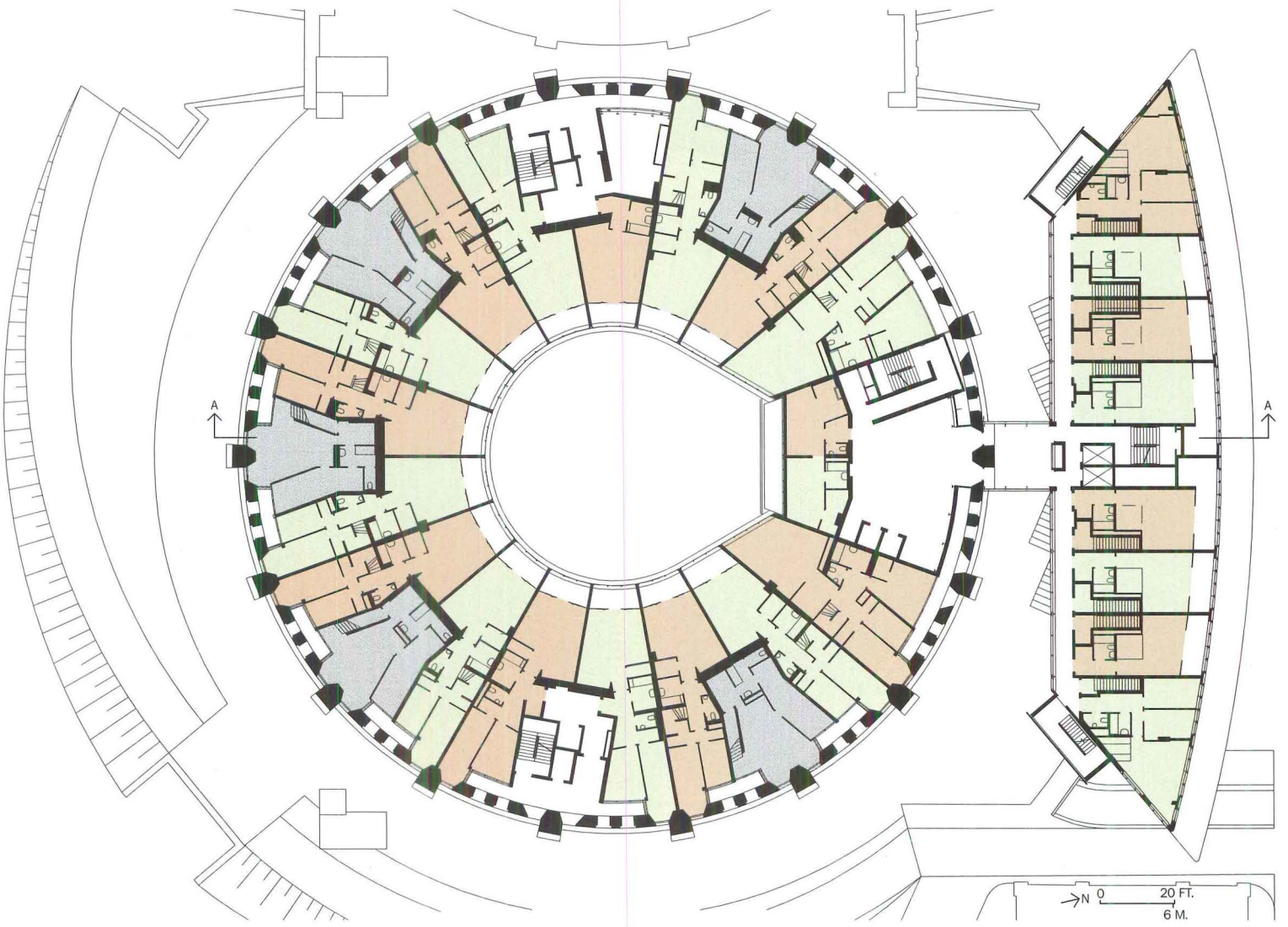


SECTION A-A

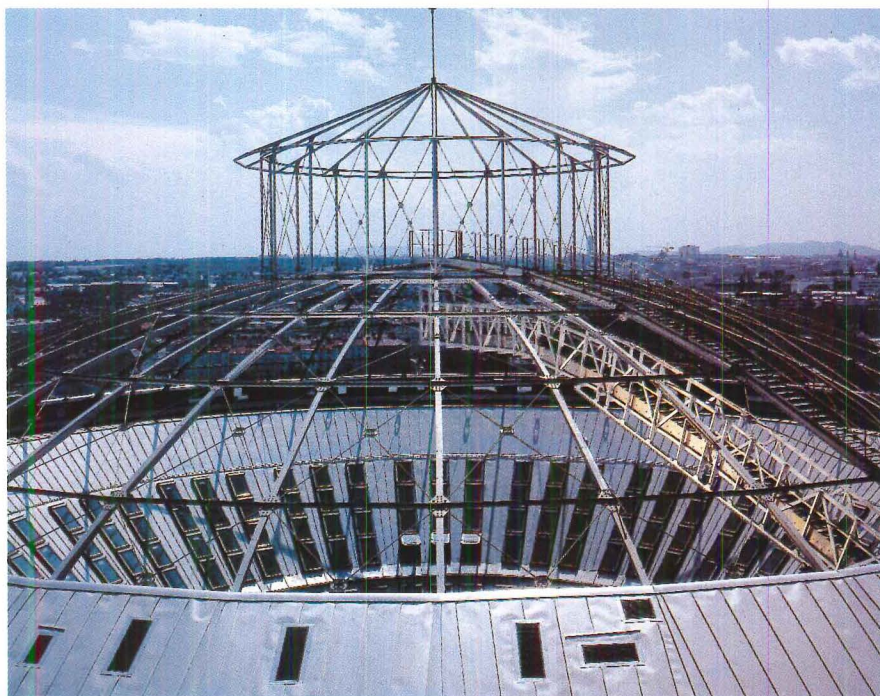
Apartments within the cylinder are reached by central corridors accessed from three cores. (Corridors are not visible because upper levels of duplex units are shown in plan, opposite.) While the exterior side of the shield structure is visually stretched like a taut skin, the architect added horizontal grids as wind protection for open galleries facing the tank.











The oblong court within the gasometer (above) opens to restored roof framing (left). Cable struts attached to an upper-level slab suspend the shopping street roof and oculus (opposite, right). The layer of new glazing forms a scrim in front of the fragmentary landscape views framed through the arched openings of Franz Kapaun's old walls (opposite, left).



If we believe in what we're doing, we should use landmarks, not just push them empty into the foreground."

And indeed this sinuous slab has a larger agenda, to mark an otherwise characterless quarter of the city, helping spur investment by giving it a memorable image. Augmented by the presence of a new subway station and a nearby highway extension, the area has attracted considerable new commercial and residential redevelopment. It's one of four in-city districts seeing substantial construction as high-density mini-downtowns. From the top of the Stephansdom at the center of town, one

## "WE MUST SELF-CONFIDENTLY MAKE NEW ARCHITECTURE AT LEAST THE EQUAL TO WHAT WAS THERE." — WOLF PRIX

now sees skyscrapers marking these developments. In the "new hot spots" amidst the low-rise city fabric, Prix sees a useful kind of old-new tension creating an identity for Vienna that at last encompasses the entire city, not just the historic area tourists see.

Coming to terms with old and new together may be key to the city's survival. Vienna has not become a museum at urban scale as have Florence and Venice, but its population peaked in 1918. The growth and vitality anticipated after the fall of the Iron Curtain is closer to a simmer than a boil. The city, though, is still palpably functioning commercially, but history has been so successfully and strikingly preserved that the many talented architects that live in Vienna look covetously on western Austria, where it has been far easier to hatch inventive work (though typically in the current Swiss mode of powerfully austere yet emotionally evocative forms).

### Icon or desecration?

Certainly the Gasometer project's assertive and highly individual form of expression does not go down easily with orthodox historic preservationists, who succeeded in depriving Vienna's enormous new MuseumsQuartier of any contemporary identity on the street [September 2001, page 44]. And

there remains so little consensus—in Europe or America—about what makes modern architecture good that there are plenty of people who will disagree with Prix's assertion that his design improves on the original.

But perhaps Prix has understood society's changing relationship to old buildings. Once, only major urban monuments or structures of great age could be thought meriting preservation. That view has broadened, not only in Vienna but in America. Now the U.S. confers landmark status on rusting remains of the nation's industrial heritage as well as neon-festooned roadside diners. But adaptation to match the audacity of Coop Himmelb(l)au's Gasometer project is all but untried in American practice. Instead, design that aspires to offend the fewest becomes the path of least resistance—the path nearly always taken. We not only fear offending peoples' taste, we perceive that an alteration or replacement will be worse than the original. Since we're so unwilling to try anything new, that prophecy too often becomes self-fulfilling.

Coop Himmelb(l)au have achieved something beyond the hyper-expressive baubles that too often ornament contemporary urban pretensions. The wasp-waisted shield building, visually teetering on coyly crossed columns, suggests a big, shy girl at a prom, hoping someone will ask her to dance. Yes, there's nothing shy about the Gasometer. But it's hard not to smile at how stylish and ingratiating this effort is. These are qualities almost never present in the tepid neutrality of so much American "adaptive reuse." Certainly there's a strain of self-described progressive criticism that admires a contemporary look or a kind of daringness alone, but Coop Himmelb(l)au points the way to an architectural newness that is grounded in the real circumstances of inevitable urban transformation. ■

### Sources

"Shield" cladding: *Eternit*

(composition cement board)

Glass: *ESG* (tinted and insulating glass)

Stainless-steel cladding:

*UGINOX*

**WWW** For more information on the people and products involved in this project, go to Projects at [www.architecturalrecord.com](http://www.architecturalrecord.com)





Although strikingly different in style from the existing monastery, the addition matches its size and massing (opposite) and creates a forecourt to complement the old cloister.





# Saucier + Perrotte makes cultural preservation an exercise in modern design at the **COLLÈGE GÉRALD-GODIN** in Quebec

By Paul Byard, FAIA

**F**rench Canada is almost surely North America's most ambitious "preservation" project, an ongoing effort by a nation to preserve its identity by maintaining its language and culture. A vivid measure of the investment required for this project is the new Collège Gérard-Godin in Sainte-Geneviève, Quebec, an extraordinary work of old and new architecture that shows how an adventurous addition can discover and, indeed, expand the expressive potential of an old building.

Sainte-Geneviève is a French-speaking hamlet surviving in a sprawl of shopping centers and suburban development beyond Montreal's airport. To strengthen the hamlet as a manifestation of authentic French Canada and induce residents to complete their education in their native language, the provincial authorities established the college in a large abandoned monastery that had long been the town's most prominent building. Erected in 1932 and dressed in a yellow stone veneer, the bulky monastery is "Lombard" the way many downtown YMCAs are "Romanesque": an institutional building of an enduring ordinariness. Wrapping around a closed and cloistered forecourt, the five-story structure stands on a rise with its back to a beautiful view over the wide, slow-moving Rivière-des-Prairies.

To convert the monastery into a college, the Montreal firm of Saucier + Perrotte Architectes designed a startling addition that is almost the same size as the old building but far greater in architectural life and strength. The bold form of the 74,000-square-foot addition looks as if a metal slab had been pulled from one side of the monastery then bent and folded so that one end comes back to face the old building across a new forecourt. While the old building's courtyard was cloistered, the new one's introductory outdoor space is quite different: open and rising toward the view and the horizon. Classrooms, laboratories, and teachers' offices fill most of the new structure aboveground, while a gymnasium, cafeteria,

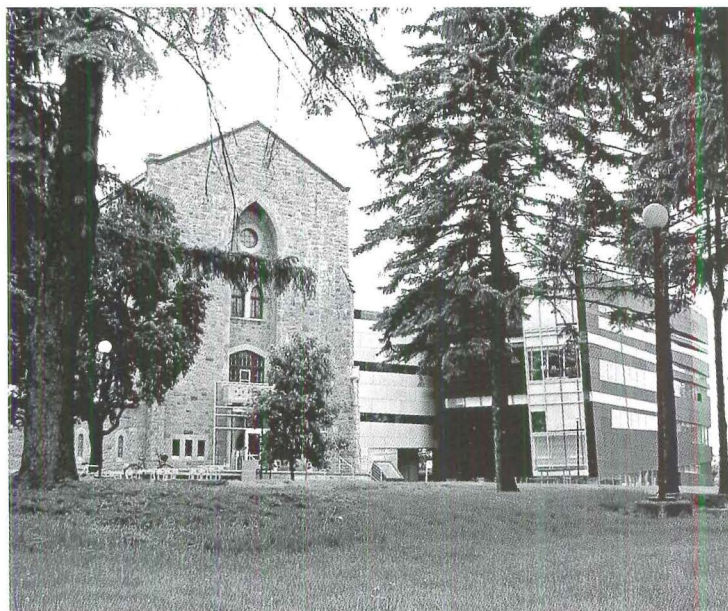
**Project:** Collège Gérard-Godin,  
Sainte-Geneviève, Quebec, Canada

**Architects:** Saucier + Perrotte  
Architectes in association with  
Desnoyers Mercure et Associés—Gilles  
Saucier, design architect; André  
Perrotte, André J. Mercure, project  
architects; Yves Bouchard, Martin  
Bouchard, Robert D'Errico, Jean-

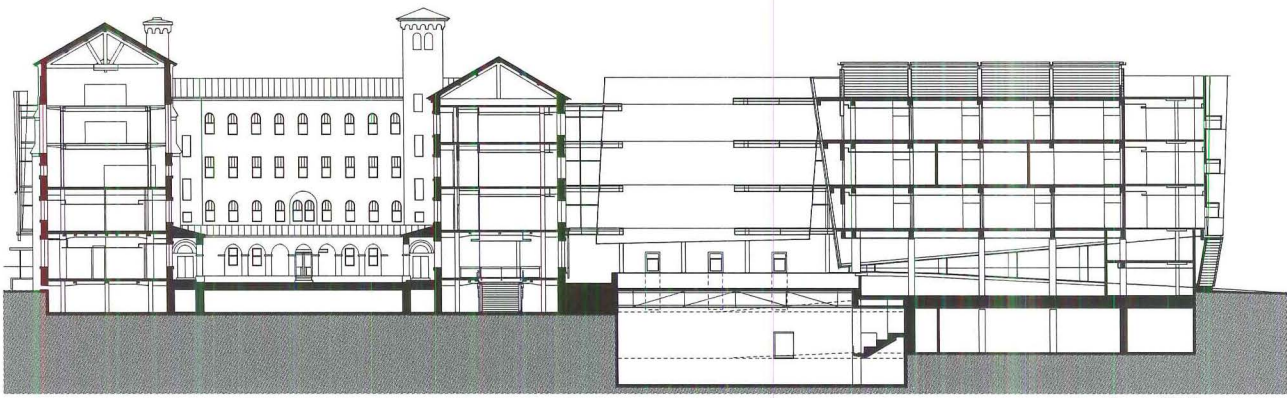
François Lagacé, Jean-Olivier Nadeau,  
Marc-André Ploude, Pascale Tétrault,  
Yves Legris, Thanh Liem Nguyen, Luc  
Boivin, François Hogue, Ted Markis,  
Bernard Mercier, project team

**Engineers:** Génive-BPR, Saia,  
Deslauriers et Associés (structural);  
Soprin-ADS (mechanical-electrical)

**General contractor:** Socam





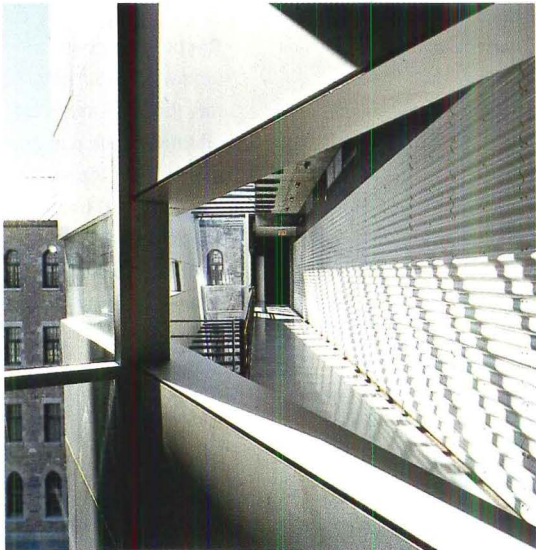


SECTION B-B

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6 M.





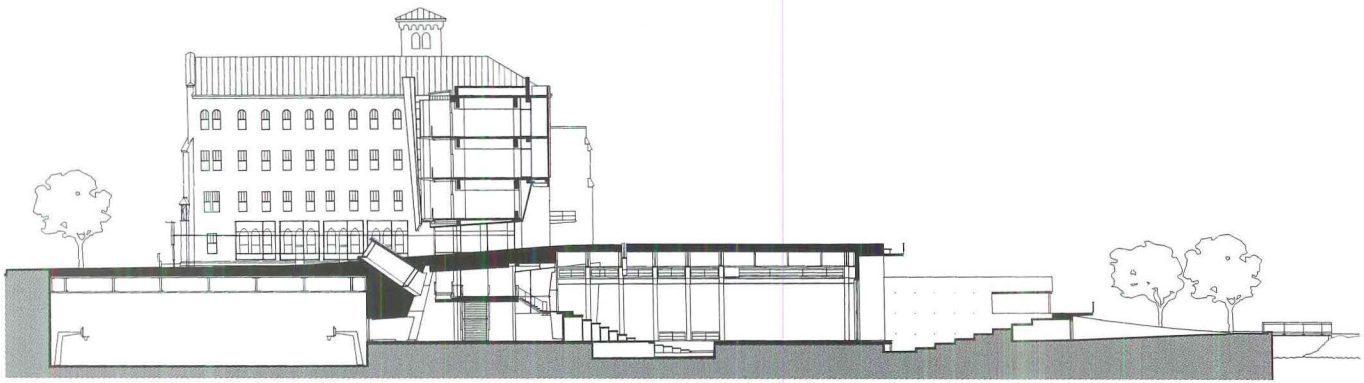


The glass and anodized-metal forms of the 74,000-square-foot addition (opposite) contain classrooms, laboratories, and offices above ground and a gym and 350-seat theater below. The angled walls of the new connector introduce a modern geometry to the college and allow day-

light to penetrate from several directions (above left and right). Angled monitors in the forecourt (right) bring sunlight to the theater's lobby tucked below grade. As renovated, the old monastery has almost exactly the same square-footage (73,500) as the new building.

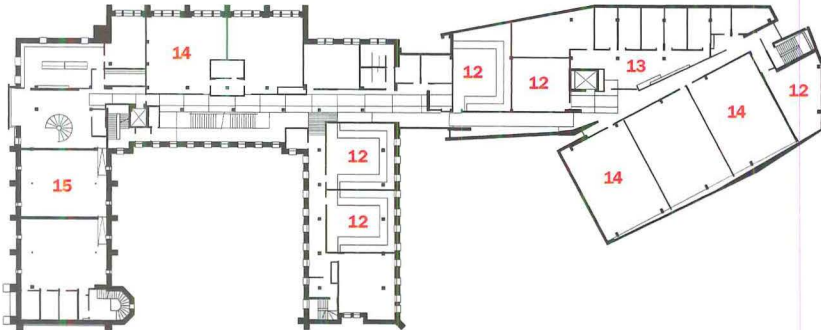




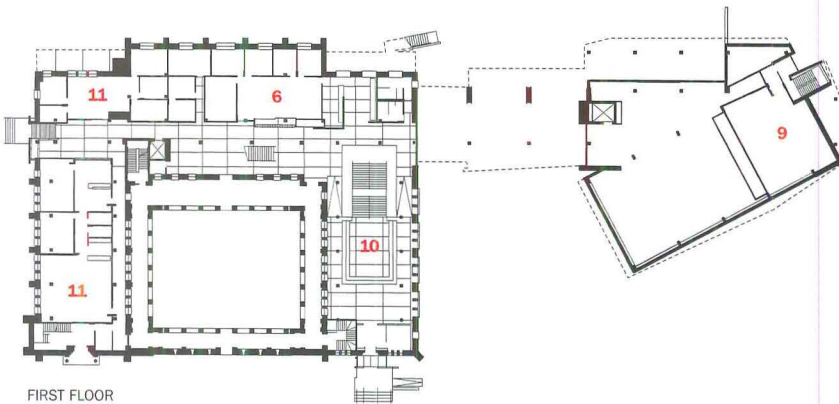


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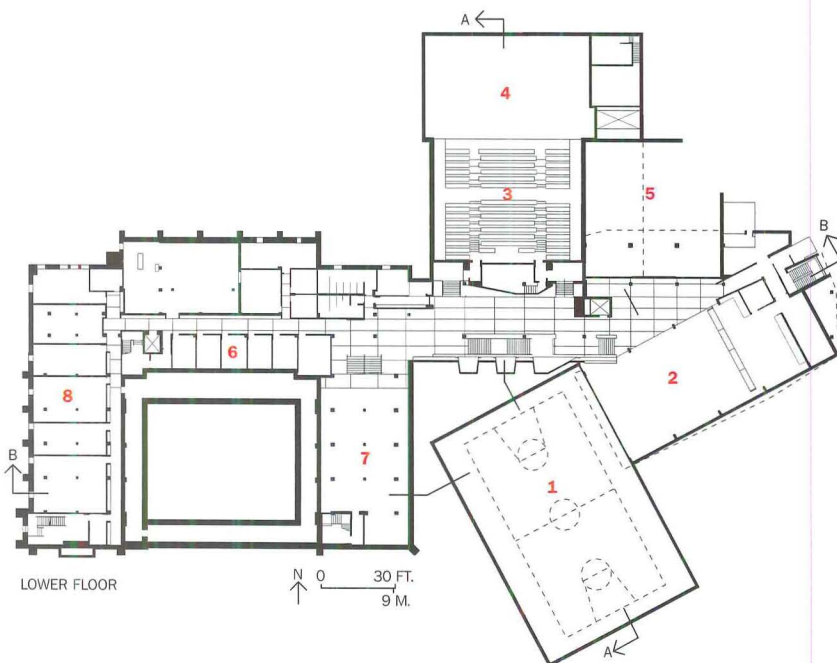
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THIRD FLOOR



FIRST FLOOR

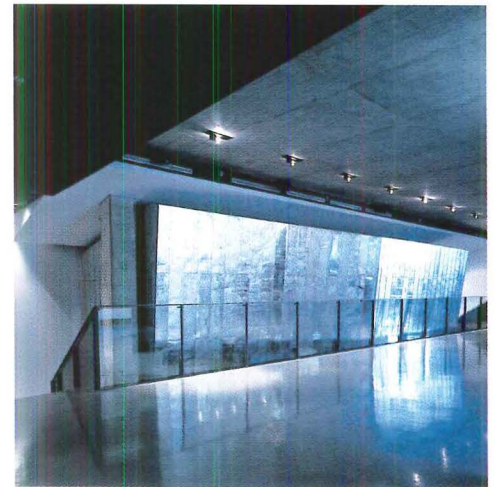


LOWER FLOOR

N 0 30 FT.  
9 M.

1. Gymnasium (below)
2. Cafeteria
3. Theater
4. Stage
5. Terrace
6. Student services
7. Lockers
8. Storage
9. Mechanical
10. Agora
11. Administration
12. Classroom
13. Offices
14. Laboratories
15. Library

The theater lobby (below) and laboratories (bottom) are in the addition, while a multi-story library (opposite, left and right) has been inserted into the old structure. Existing stained-glass windows were retained.







and 350-seat auditorium are set underground at the joint between the old and the new. Clad in black anodized aluminum and cut with ribbon windows, the unexpected form of the new building is at once strange and satisfying, stable and dynamic—a powerful novelty that it is here to stay.

Gilles Saucier, the firm's design partner, is a modernist with a pure, sharp edge and a skill at using glass and metal both to distinguish and knit together old and new architecture. His Cinémathèque Québécoise in downtown Montreal is an earlier example of such tendencies [RECORD, November 2000, page 142]. Wary of distractions like color, he is interested in the ways tilted walls and forms can bring new meanings to

## THE UNEXPECTED FORM OF THE NEW BUILDING IS AT ONCE STRANGE AND SATISFYING, STABLE AND DYNAMIC.

an underlying architectural order. At Gérard-Godin, he establishes internal order with a horizontal datum: a dramatic multistory gallery that runs straight through the old building to the far end of the addition. Then he introduces a more dynamic geometry with the downward twist and tilt of his addition and a pair of slanted light monitors that drive daylight down to the lobby of the underground theater.

The tilting forms of the new building accentuate the orientation of the forecourt toward the sky and, more importantly, tie the entire composition to its climactic spatial event—the layered descent to the underground theater. For Saucier, the underground is more than a repository of found space or a way to protect views of the site. It is a hidden realm, protected by the earth, that links the entire scheme to the source of its legitimacy. For in Saucier's eyes, the college is a pairing of old and new blocks whose importance is not just the discourse between the two parts,

but the strength drawn from the bedrock beneath them, symbolic of the underlying cultural continuity of French Canada.

In the course of the project, Saucier substantially reworked the interior of the monastery, cutting away floors for open stairs and moving corridors to the perimeter to bring in daylight. In making these changes, he was kind to the old building. He thickened the structure's thin stone-veneer walls in some places so they catch daylight as if they were the true masonry they pretend to be. He topped the gallery with a simple barrel vault as it runs through the monastery and painted it red to suggest a cut through architectural flesh. Converting the handsome volume of the old chapel into a cool white library, he left the rather garish stained glass to speak for itself and never pointed out that the great carved beams of the ceiling are actually concrete.

Emphasizing the old building's intentions, not its weaknesses, Saucier showed that he understands how the best additions work—by finding a composite form based on the existing component's underlying meaning, not its appearance. In the process, he made the most of the old building's ordinariness and used its aspect of continuity as a foil to show off a bold new expression of French-Canadian culture. ■

### Sources

**Precast concrete:** Shokbeton

**Curtain wall glass and**

**skylights:** Vitrierie J.L.

**Curtain wall metal:** VicWest

**Glazing:** Industries Cover

**Built-up roofing:** Hydrotech

**Aluminum windows:** Alumico

**Acoustical ceilings and**

**suspension grid:** Armstrong

**Cabinet work:** Nicolas Bonetto

**Laboratory furniture:** Bedcolab

**Slate tiles:** Cera-gres

**Interior ambient lighting:** Lightolier, Novus

**WWW** For more information on the people and products involved in this project, go to Projects at [www.architecturalrecord.com](http://www.architecturalrecord.com)



The air pavilion (this page and opposite, bottom) is shaped like a dirigible and clad in foil cushions. Steel walkways and bridges

separate visitors from the shell of the existing plant. Most of the plant envelope was retained and painted black (opposite, top).





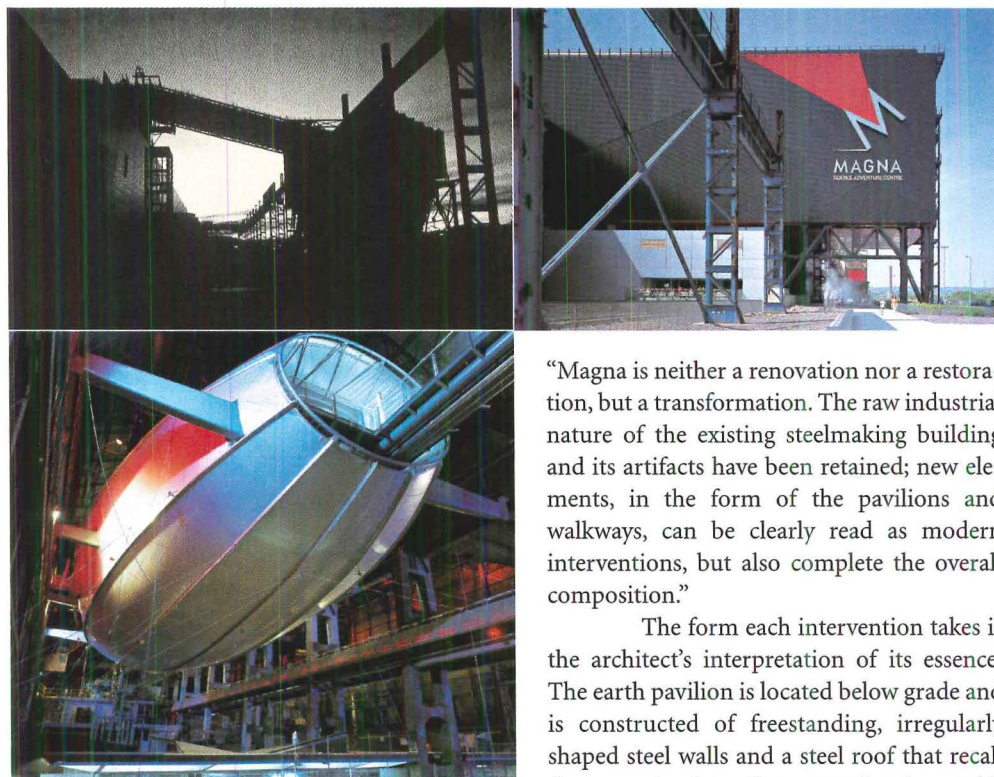
# Wilkinson Eyre has transformed an eerie, cavernous steel-processing facility into **THE MAGNA PROJECT**, the United Kingdom's first science adventure center.

By Sara Hart

The British have been brilliant lately at transforming archaic industrial cavities into modern cultural institutions. Swiss architects Herzog and de Meuron recently transformed a defunct power station on the South Bank of the River Thames in London into the Tate Modern [RECORD, June 2000], the United Kingdom's repository of contemporary international art. In that well-publicized example, although the workings of the oil-fired plant had been removed, the architects preserved the feel of heavy industry by treading lightly in the interiors and keeping the brick envelope much as they found it. Now, with more high-tech drama and dazzling special effects, London-based architecture firm Wilkinson Eyre has taken another kind of obsolete behemoth—a steel-reprocessing plant in Templeborough, Rotherham, England—and turned it into the Magna Science Adventure Centre. Both Magna and the Tate are adaptive-reuse projects with intriguing preservation subplots in which memories lost when the buildings were shuttered are resurrected.

The Magna Trust appointed Wilkinson Eyre to undertake the \$60 million project (funded in part by a Millennium Commission grant) in 1998. The Trust's program called for retaining most of the existing steel mill, and a tight budget limited the scope of the interior renovation. Only two ancillary bays were demolished, leaving two 1,200-foot-long and 115-foot-high bays to house four exhibition pavilions, which were organized around the Aristotelian elements of earth, air, fire, and water—the basic components of steelmaking. As project architect Marc Barron explains, "Raw material comes from the earth, and it is extracted with fire and air before being quenched with water."

With steelmaking as the governing conceit, the architect pursued a design strategy for the individual pavilions that dramatized with lighting and other special effects the characteristics of each natural element and its role in the fabrication process. These parts add up to a whole consisting of overlapping and interdependent experiences. "Our architecture is based on a functionalist approach, which can be traced back to the aims of early Modernism, but a project like Magna demands extra layers of complexity and interest," explains principal Chris Wilkinson.



"Magna is neither a renovation nor a restoration, but a transformation. The raw industrial nature of the existing steelmaking building and its artifacts have been retained; new elements, in the form of the pavilions and walkways, can be clearly read as modern interventions, but also complete the overall composition."

The form each intervention takes is the architect's interpretation of its essence. The earth pavilion is located below grade and is constructed of freestanding, irregularly shaped steel walls and a steel roof that recall the tectonic plates that comprise the earth's crust. Above the earth pavilion, the air pavilion has the character of a dirigible. Wrapped in three layers of ethyltetrafluoroethylene (ETFE) foil cushions clipped to aluminum extrusions, the pod appears to be suspended above the ground by a cable net tension structure. However, the walkway within it is mounted on four steel beams, which are bolted to the

## THE RAW INDUSTRIAL NATURE OF THE EXISTING STEELMAKING BUILDING AND ITS ARTIFACTS HAVE BEEN RETAINED.

existing structure. The water pavilion takes the form of a spiraling ellipse. Although the structural ribs are parallel for practical reasons, the stainless-steel cladding follows the implied spiral of an extruded ellipse. Water runs throughout the cool, blue space. In contrast, flashes of red light emanate from the fire pavilion, rendered on the exterior as a plain, matte-black box. Inside all the pavilions, high-tech, interactive exhibitions explain how each element contributes to the steelmaking process.

**Project:** *The Magna Science Adventure Centre, Templeborough, Rotherham, England*

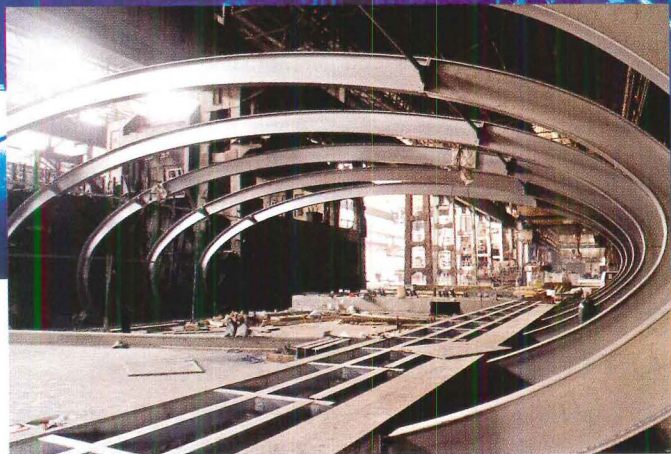
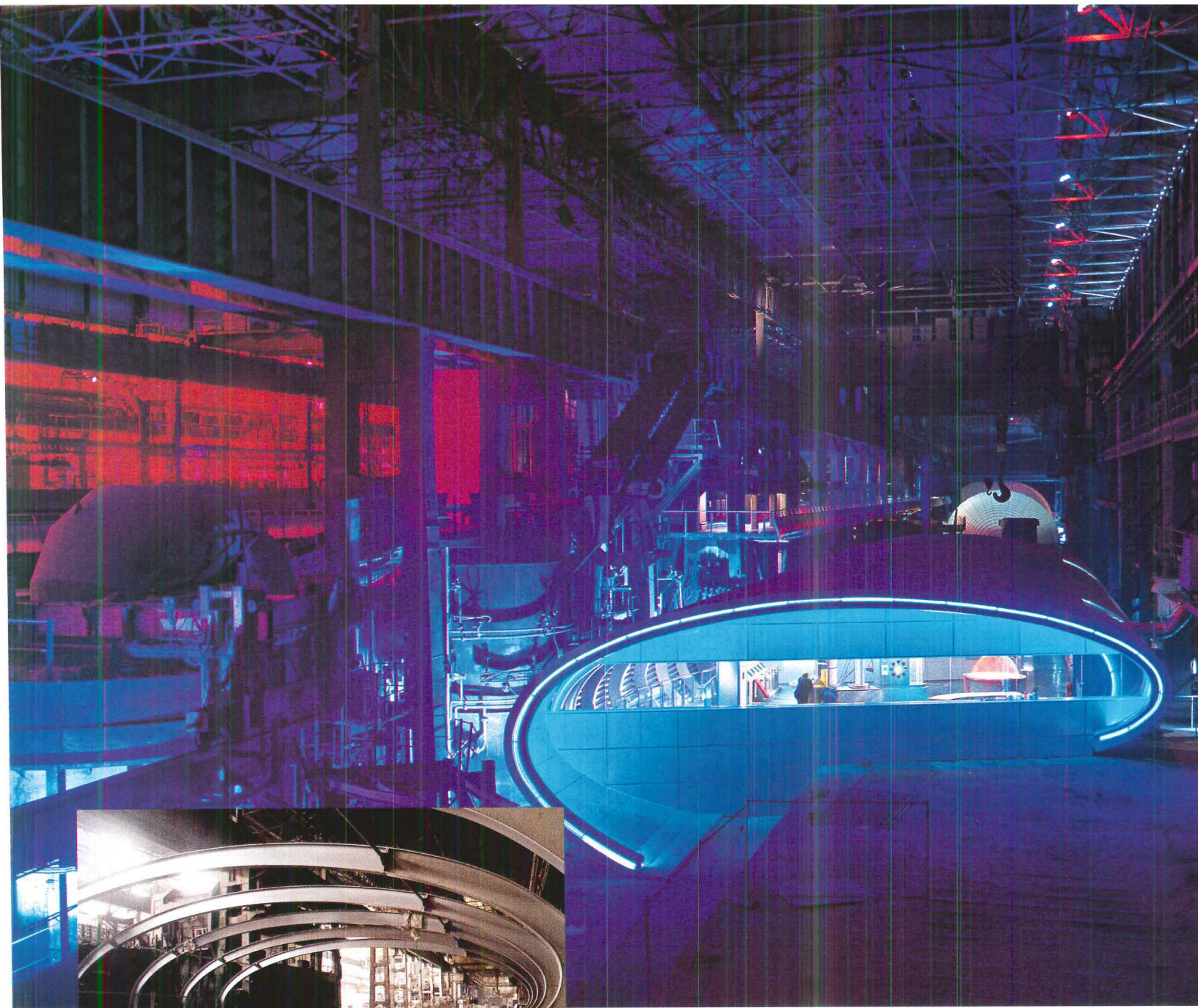
**Architect:** *Wilkinson Eyre Architects—Chris Wilkinson, director in charge; Marc Barron, project architect; Matt Appleton, John Coop, Graham*

*Gilmour, Bosco Lam, James Parkin, Chris Poulton, Sebastian Ricard, John Smart, Simon Tonks, project team*

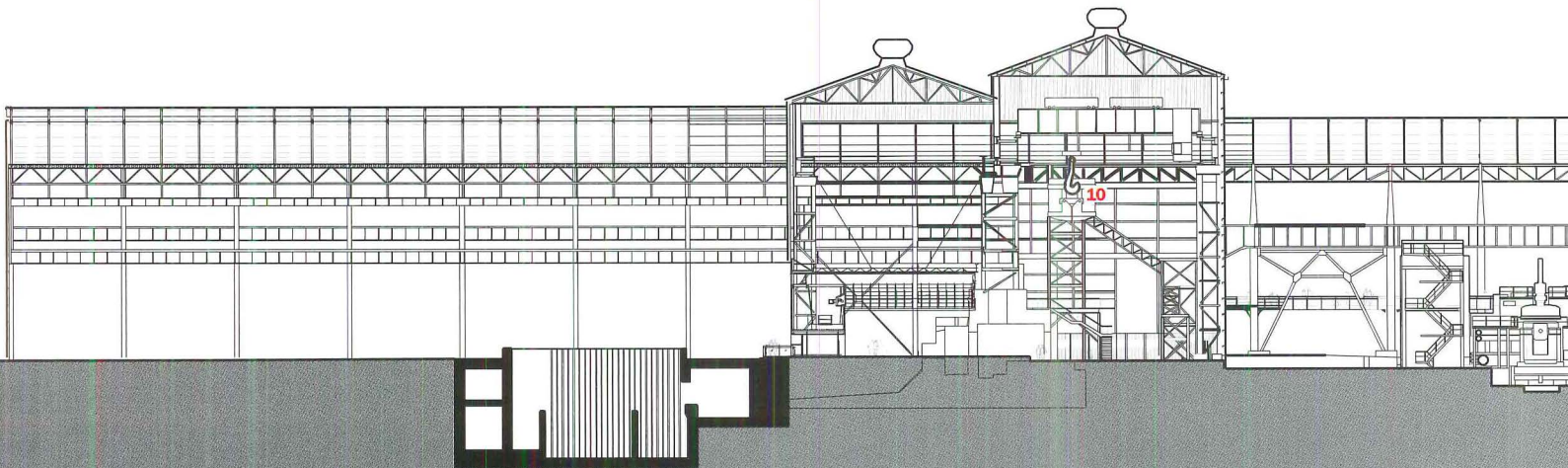
**Engineers:** *Mott MacDonald (structural); Buro Happold (services)*

**Exhibition designer:** *Event Communications Limited*

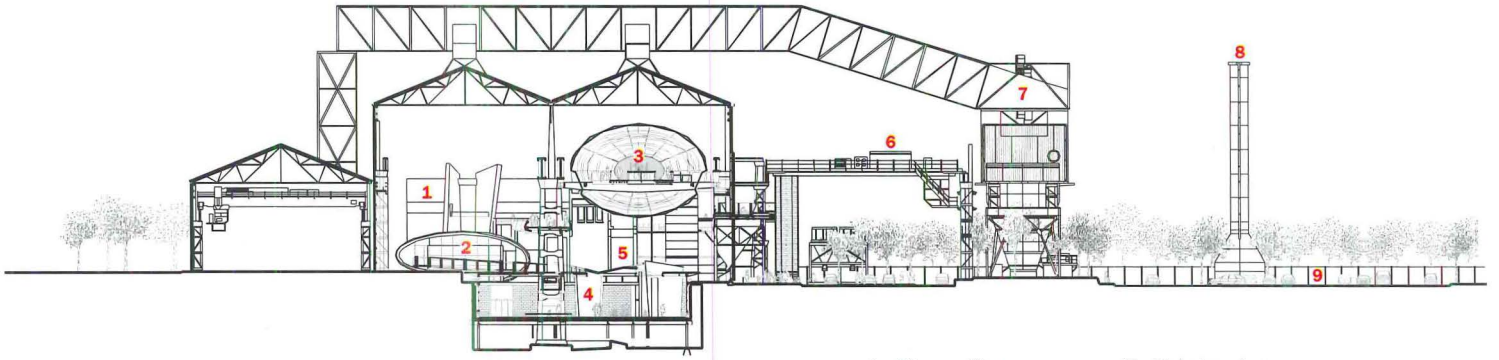




The shape of the water pavilion (above and inset) is based on two ellipses extruding into a spiral. Water runs throughout the space, which is illuminated with strong blue lighting.

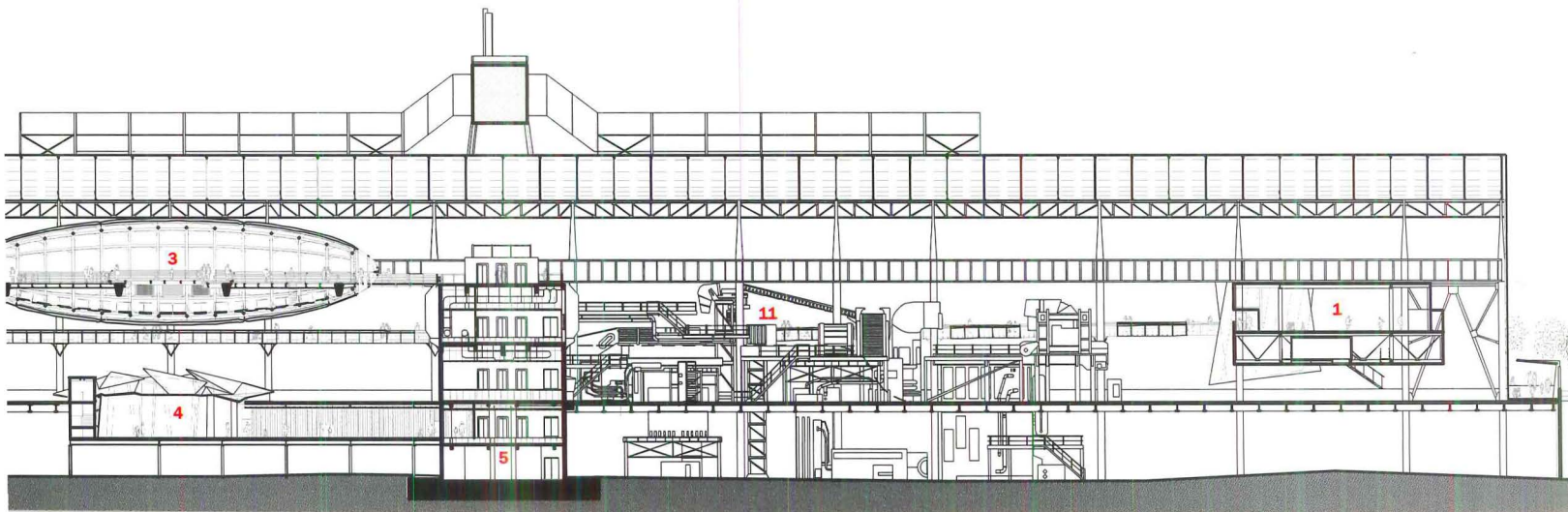
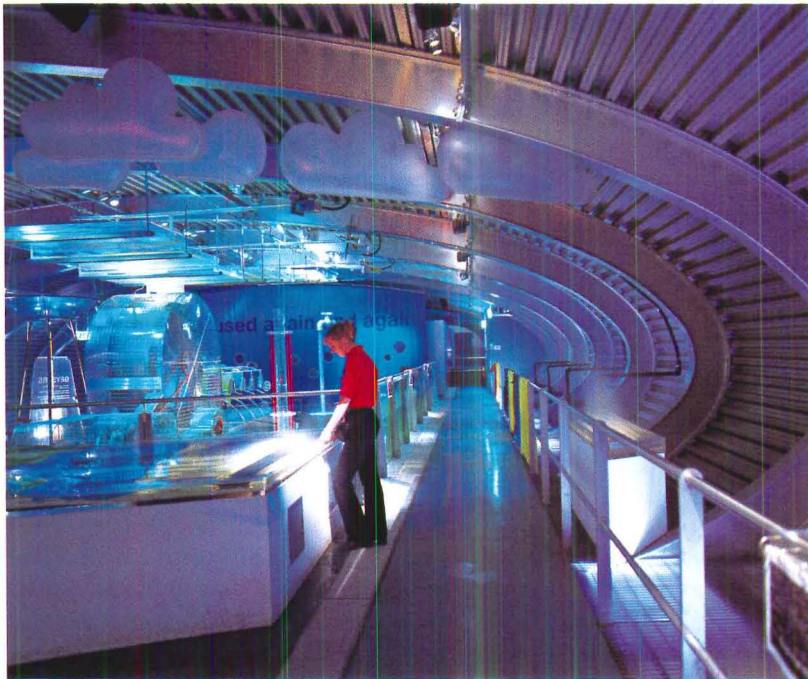




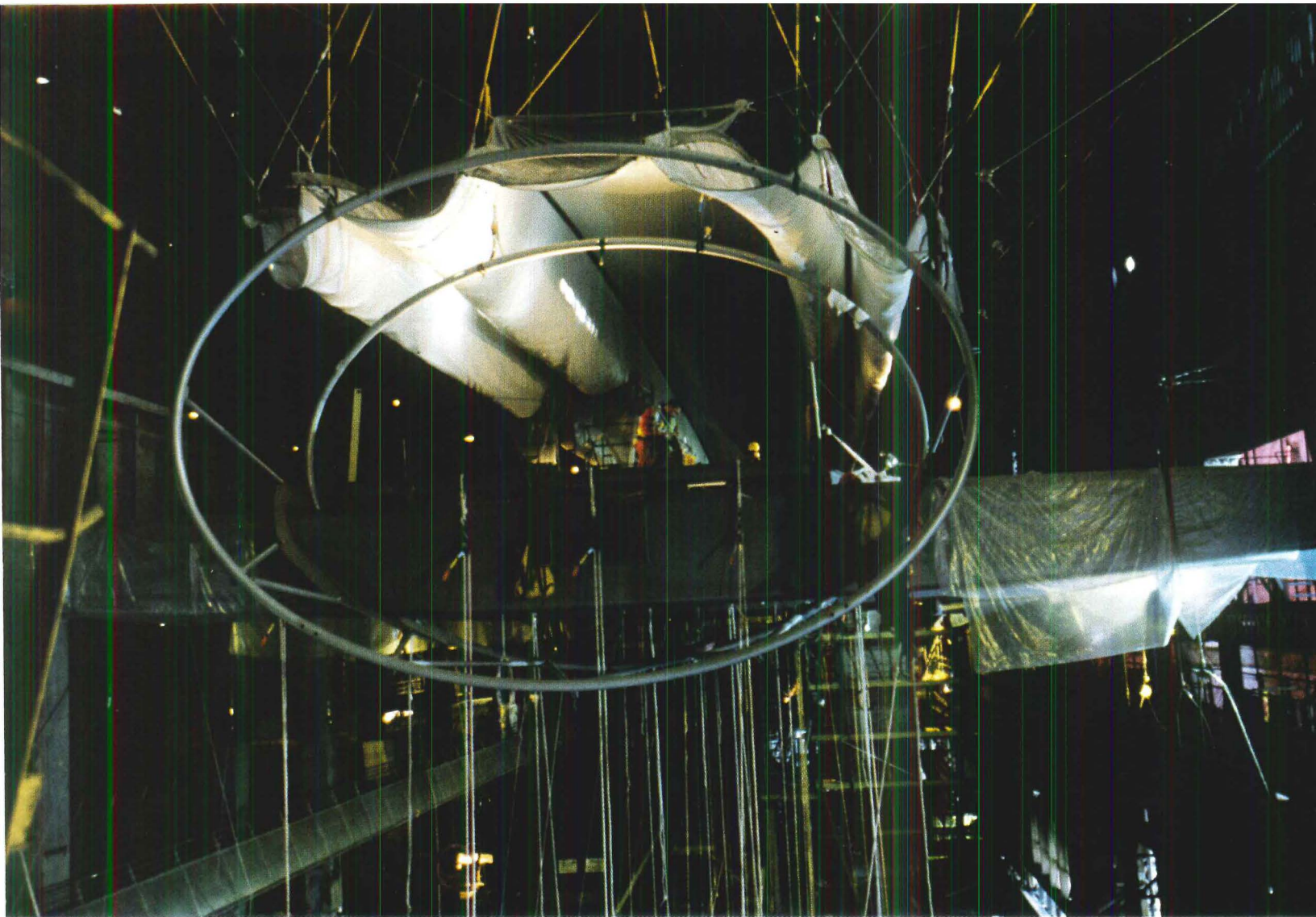


As the sections show, four pavilions dramatizing the steelmaking process are spaced throughout two cavernous bays of a defunct steel-processing plant.

- 1. Fire pavilion
- 2. Water pavilion
- 3. Air pavilion
- 4. Earth pavilion
- 5. Transformer house
- 6. Crane
- 7. Existing plant
- 8. Existing chimney
- 9. Car park
- 10. Introduction
- 11. Restored arc furnace







Elevated steel walkways and bridges take visitors from one to another.

The doubled-bay shell of the Great Hall where the exhibitions were inserted can be described in architectural terms as Gothic on the basis of its sheer volume. But the experience of it is more like a Gothic thriller, disguised by a deceptively innocuous exterior clad in metal painted black. The entrance is deceptive as well. The reception area, located in a bay perpendicular to the long bays of the Great Hall, is sunlit and modern. The adventure begins when visitors pass into a concrete

## THE EXPERIENCE IS LIKE A GOTHIC THRILLER, DISGUISED BY AN EXTERIOR CLAD IN METAL PAINTED BLACK.

chamber where they view a multimedia introduction called “The Human Experience.” Then they move up via stairs or elevator onto bridges in the vast, dark, and mysterious interior of the Great Hall. The atmosphere is more that of science fiction than the genuine science documented in the exhibits. Rusted and charred relics from the plant’s active days stand like skeletal remains of an extinct civilization in contrast to the new fabric of the sleek, brightly glowing pavilions. And then there’s the awe-inspiring vastness of it all—seven stories high and twice the length of the Turbine Hall at the Tate Modern, or the length of four football fields.

Magna opened last April to critical acclaim and an enthusiastic

public. More than 225,000 visitors came in the first four months, three times more than predicted. On October 21, The Royal Institute of British Architects (RIBA) in association with the *Architects’ Journal* awarded Wilkinson Eyre the prestigious RIBA Stirling Prize for the Magna Centre. The judges cited several reasons for awarding this project, including the architect’s decision “to allow the existing building to speak for itself and to tell its own story.” The building does indeed speak for itself, but it also provides context for the pavilions. In turn, the pavilions annotate the history of steel and the lives of those who toiled to produce it. By making the old and new work together to entertain and inform, Wilkinson Eyre has created an intellectual and experiential embrace between past and present that is truly authentic. ■

### Sources

**Lighting:** *Speirs and Major* (architectural); *DHA* (exhibition)

**Acoustical:** *Richard McKenzie Partnership*

**Landscape:** *Hyland Edgar Driver* (consultant); *Brambledown Landscape Services*

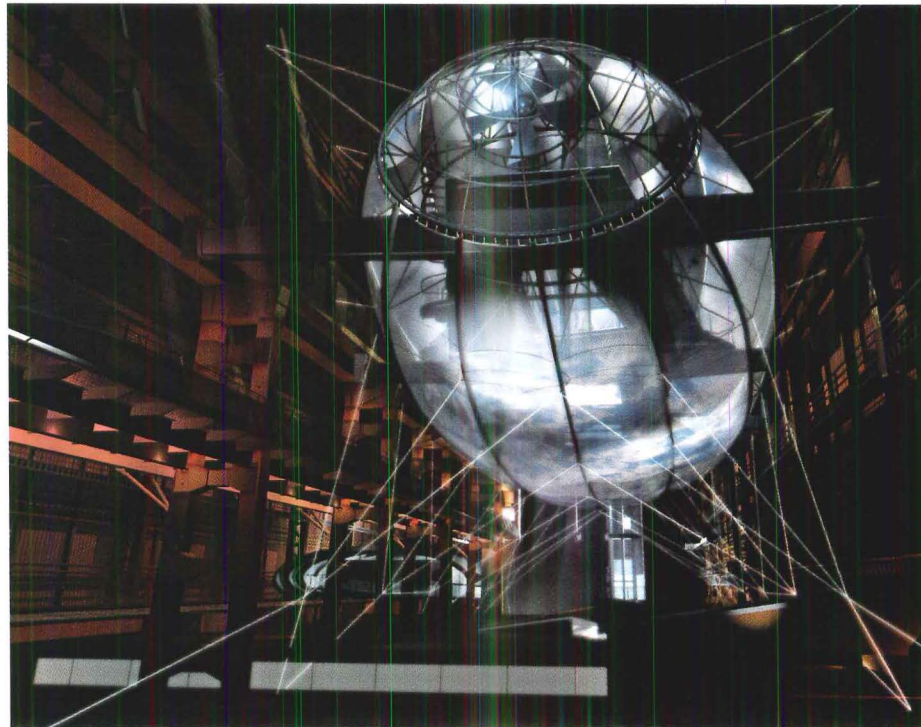
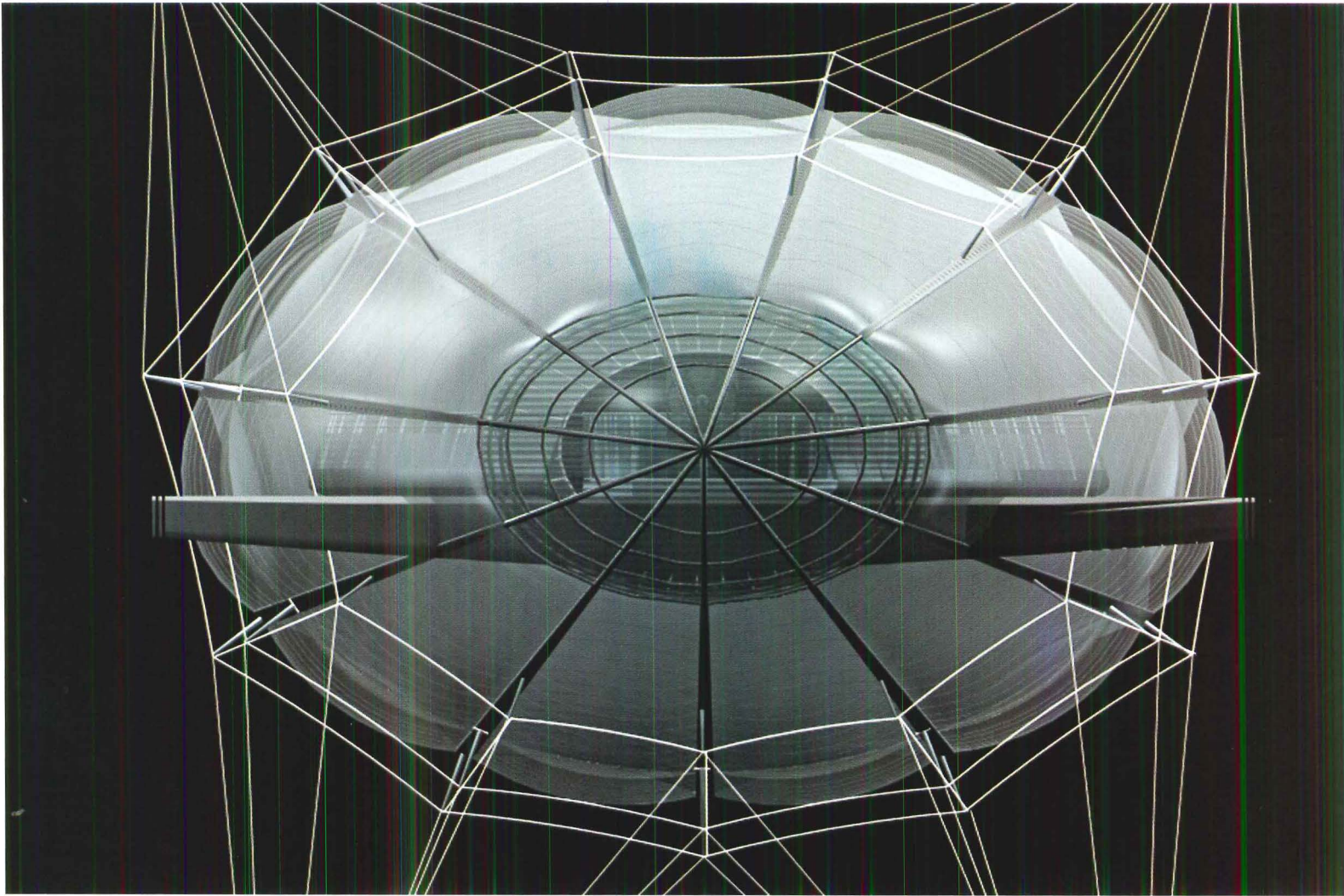
**Structural steelwork:** *Billington Modern Structures*

**Architectural metalwork:** *Adey Steelwork*

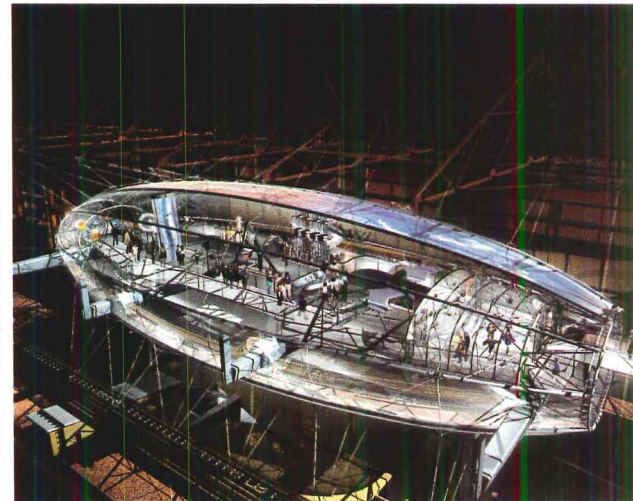
**Glazing:** *Bennett Architectural Aluminum*

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The interior deck of the air pavilion is held up by steel beams (opposite) bolted to the existing structure. The ETFE fabric is attached to the building by a system of external cables (above and bottom left). Visitors enter through curtained opening (below) into the brightly lit pavilion.





The striking zinc-clad addition to the Montreal Archives is around the corner from the main entrance (opposite) of the 1911 limestone and brick building.





# Dan Hanganu and Provencher Roy

## show how the new can enrich the old at the **CENTRE D'ARCHIVES DE MONTRÉAL**

By Paul Byard, FAIA

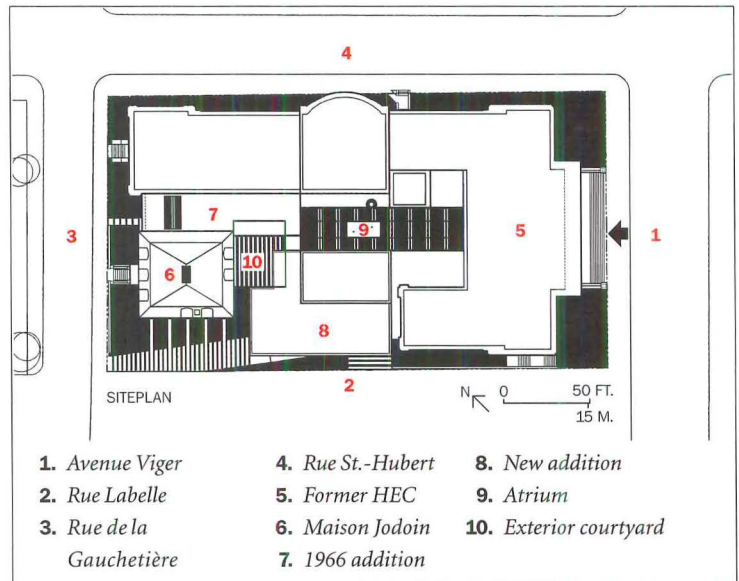
**T**he past 30 years of popular anxiety about new architecture have been good and bad for old buildings. Shunning the new in our great love of preservation, we have made sure the comforts and virtues of old architecture remain part of our spiritual environment. At the same time, by sanctifying old architecture and making it untouchable, we have increasingly foreclosed the expressive potential that good, new architecture alone can provide.

This potential is realized by adventurous additions that reflect an understanding of what old buildings mean, not what they look like, and that with them make unique statements that address the demands of our contemporary human condition. These additions frankly acknowledge the authenticity of old buildings—that they are the “real thing,” revealing human circumstances that have long since changed—and employ that authenticity to show both our difference and our continuity with that past. The additions themselves reflect the new variables we face today and use the old buildings to help us see what we have to confront. The new structures respect the old architecture by acknowledging its expressive strengths and interest. They invite old buildings to continue to contribute to the evolving challenge of architecture, to meet its obligation as an instrument of leadership.

The Centre d'Archives de Montréal is a recent paradigm of the architecture of additions at its best. The project started with a chunk of Beaux-Arts authoritarianism built in 1911 as the École des Hautes Études Commerciales (HEC), Montreal's premier business school. A J in plan, the thick-based old gray building was entered from the Parc Viger under a standard array of pilasters, statues, and trophies. Behind the door was a wide stair and a long leg containing many of the important original spaces. The Archives later acquired the handsome 1870 Maison Jodoin on the street behind, and in 1966 attached to it a concrete annex as plain and harsh as anything of its time. In 1998, it held a competition to complete the old building with an atrium made from its leftover light court.

Dan Hanganu and Provencher Roy won with a proposal for a strong, semidetached rectangular block, not a separate wing. Presenting its corner to the old light court, the addition makes an open-ended space

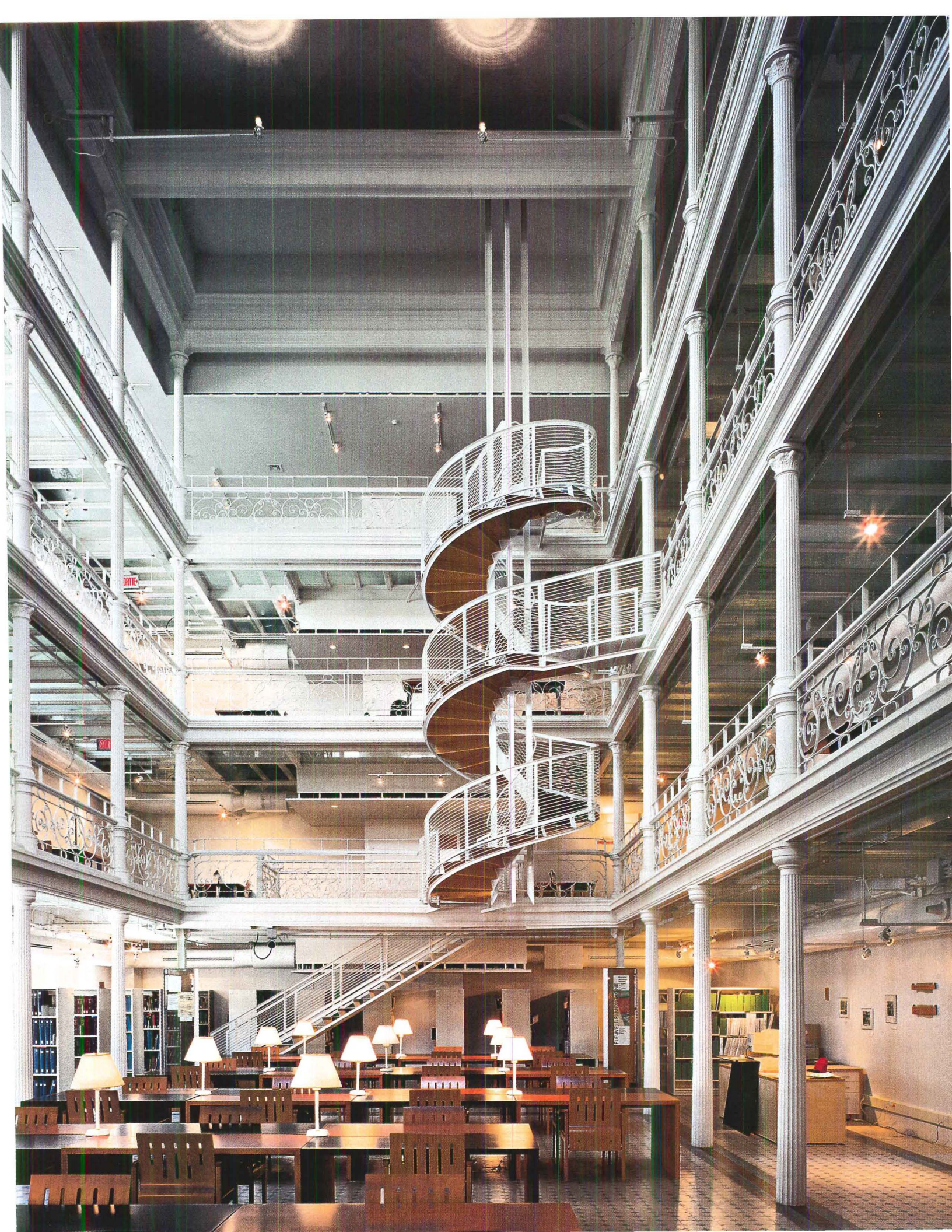
*Paul Byard, a principal of Platt Byard Dovell in New York, is the author of The Architecture of Additions: Design and Regulation (W.W. Norton, 1998) and the director of the Historic Preservation Program at Columbia University's Graduate School of Architecture, Planning, Preservation.*



**Project:** Centre d'Archives de Montréal  
**Architect:** Dan Hanganu with Provencher Roy and Associates—Dan Hanganu, design architect; Michel Roy, project architect; Gilles Prud'homme, Thomas Schweitzer, Marie-Claude Lambert, Alex Touikan, design team; Normand Desjardins,

Michel Amor, Réjean Comeau, Michael de Angelis, production.  
**Engineer:** Les Consultants Géniplex (structural); Groupe Dupras Ledoux Associés (mechanical/electrical)  
**Consultants:** Octave Acoustique (acoustics); Trizart (theatrical)  
**Contractor:** Gespro SST





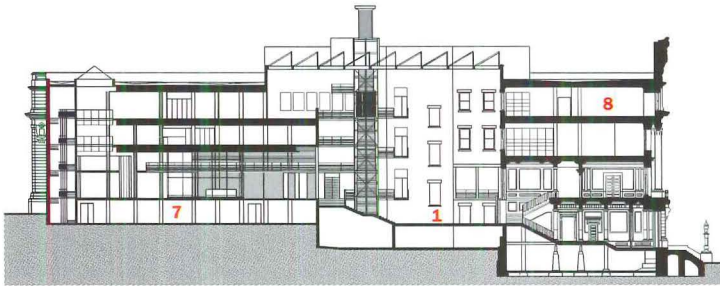


Hanganu brought out the dramatic height of the main reading room at the rear of the old *École des Hautes Études Commerciales* (HEC) building by painting the cast-iron columns white and adding a new spiral stair (opposite). Another vertical space, the central atrium, is inserted at the core of the complex (this page) to connect the various levels.



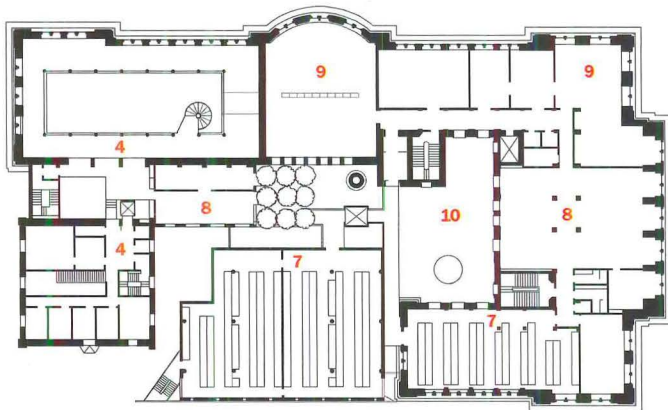


Folded aluminum checker-plate stairs take visitors up to the reading room, while steel freight elevators and catwalks provide circulation around the central atrium.

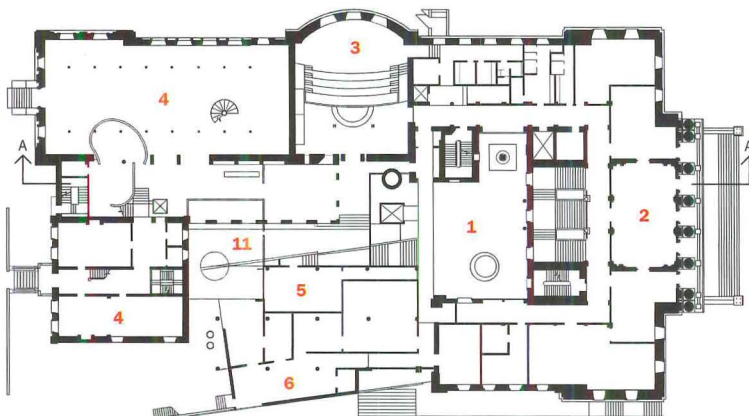


SECTION A-A

- |                       |                           |
|-----------------------|---------------------------|
| 1. Atrium             | 7. Archival storage       |
| 2. Exhibition         | 8. Office                 |
| 3. Auditorium         | 9. Conservation workshops |
| 4. Reading room       | 10. Open to below         |
| 5. Meeting room       | 11. Exterior courtyard    |
| 6. Shipping/receiving |                           |



SIXTH FLOOR



THIRD FLOOR

N 0 20 FT.  
6 M.

inside, not strictly an atrium, with a minor slot to the west, and a major one running up to the back wall of the old Maison Jodoin. In the major slot are the remains of the annex exposed as a concrete frame, the glass and mesh shaft of a new elevator, cut and textured metal surfaces, and a variety of bridges and galleries connecting all parts of the completed building. The entire, complex experience of the new space is organized around a straight path from the original monumental front door, up the original stair, and so on. New wide aluminum checker-plate steps take you up to the various repositories and research rooms that, as a seeker of truth—in the archival collections or its architecture—you have come to find.

And what you have sought reveals itself in the one truly distinguished architectural feature of the old building, the elegant reading room that remains the Archives' central public workplace. This long, four-story room is supported by slender pieces of iron, with an abundance of natural light and translucent glass floors that pique your curiosity with the shadows of feet and furniture above. Painted white, and animated with a new spiral stair, the iron, glass, and luminosity of the room together present a vocabulary for the expression of the architecture, which is uniform, fine and light, like old handwriting on a page.

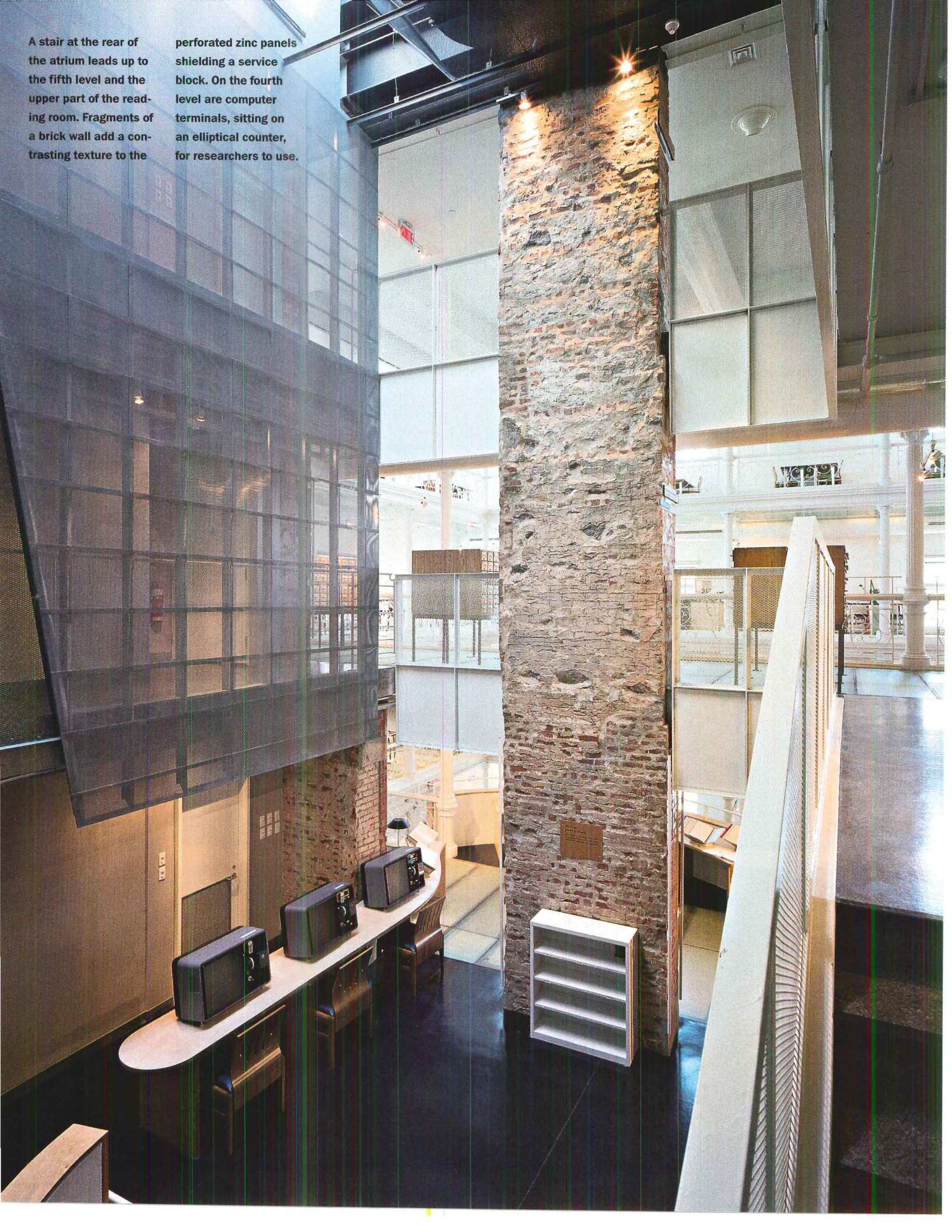
The Romanian-born Dan Hanganu is an earthy Modernist who likes to build robust frames of exposed or metal-clad concrete then to erode them, stab into them, and push them out with big elements that generate strong, three-dimensional, abstract compositions. At the same time, he revels in the textures and surface detail of common contemporary building materials like exposed concrete, expanded metal, and, possibly most of all, various forms of painted particleboard.

Hanganu works at both scales, large and small, to bring out the meaning of the Archives, invading the iron frame of the reading room with a pillowed bulge enclosing the microfilm readers, or, in the new



A stair at the rear of the atrium leads up to the fifth level and the upper part of the reading room. Fragments of a brick wall add a contrasting texture to the

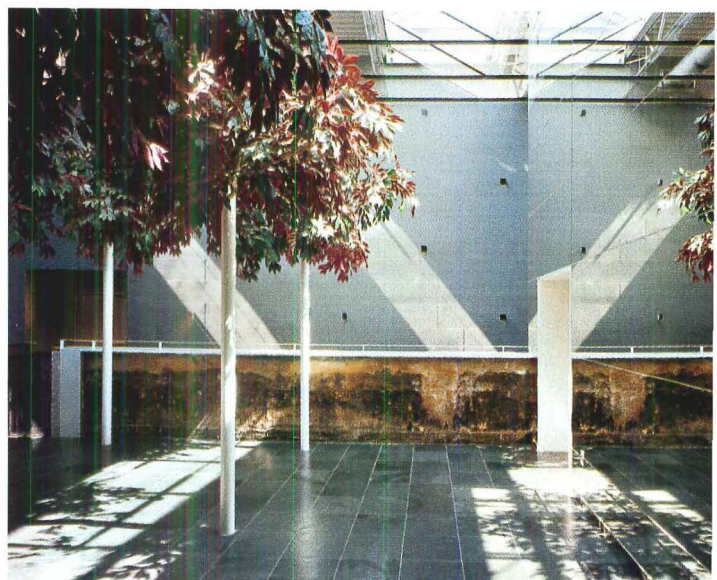
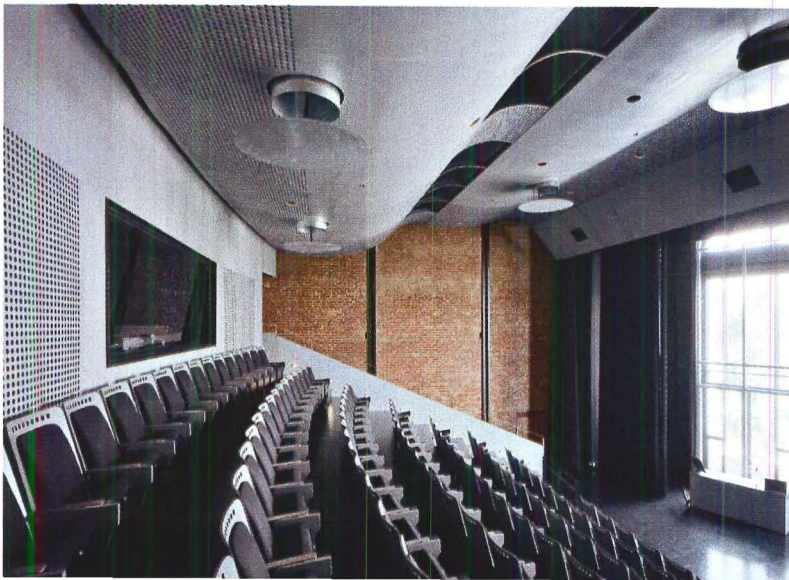
perforated zinc panels shielding a service block. On the fourth level are computer terminals, sitting on an elliptical counter, for researchers to use.







From a catwalk in the atrium the visitor overlooks the main stair and sees the outlines of another stair behind the perforated zinc partition (left). The architects renovated the 120-seat auditorium in the old HEC building (below left). A space between the new addition and the Maison Jodoin is now a small exterior courtyard (below right). The vestibule of the reading room (opposite) is heralded by limestone caryatids.







court, exposing the frame of the old annex to show off treasures like the giant caryatids salvaged from a Montreal office building. At the same time, he picks up on the grain established in the reading room, covering walls and shafts with sheets of abstract metal, detailed at the scale of texts and words, including metal mesh illuminated with bright points of light that make it move like *moiré*.

At the end of the new axis of the court the old architecture becomes more explicitly part of the Archives: Here, the remarkable semi-dressed stone back wall of the Maison Jodoin reads like a historic document. The climax of this architectural interweaving of meanings, however, is a single triumph of structural abstraction, the long concrete back wall of part of the annex from which the waterproofing has been stripped to reveal an adhesive residue as colored, textured, and evocative as a Native American narrative scroll. Hanganu has placed a bench opposite the wall so that the scroll can be savored by visitors. But what the

bench lets you savor is not just the interest of this one document. All around, the old building is engaged in a rich exposition of the expressive potential opened up for us by twentieth-century architecture. The combination of old and new makes clear where we were at the beginning of the century and, with the addition, how very far we have come. ■

#### Sources

**Structure:** *Axiome Construction & Orbi Metal Construction*

**Masonry:** *Maçonnerie Pro-Conseil*

**Metal and glass curtain wall:** *ADG*

**Zinc:** *Revêtement Vaudry*

**Concrete:** *Coffrage Dominic*

**Roofing:** *Couvertures Montréal-Nord (bituminous sheet membrane)*

**Aluminum:** *Kawneer (windows and curtain walls)*

**Glass:** *Viracon Solarscreen*

**Skylights:** *Kawneer, Verplex*

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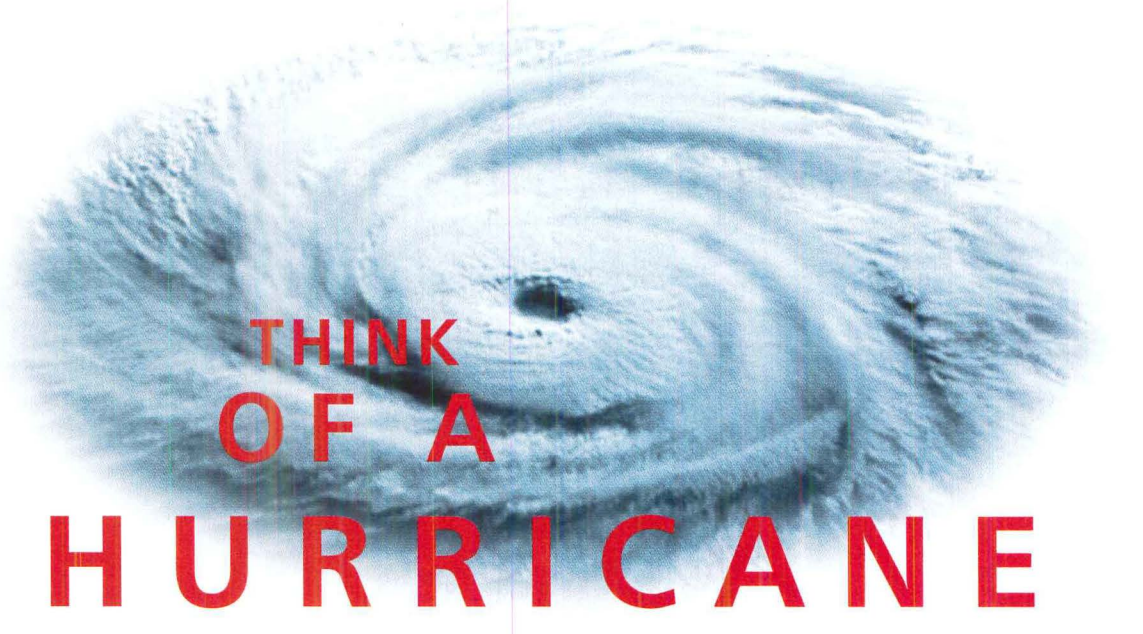
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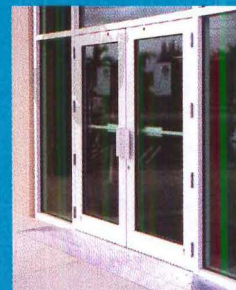




# THINK OF A HURRICANE

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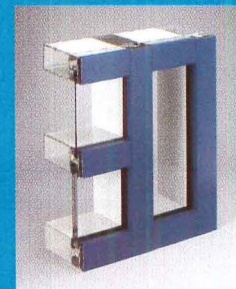
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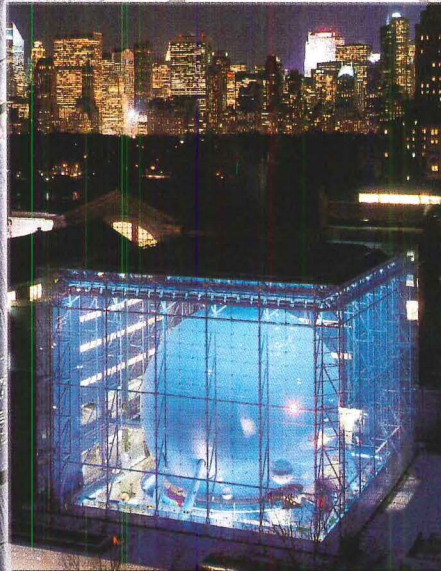
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## RENOVATION

# Modern history

**AS THE 20TH CENTURY BECOMES HISTORY, ITS BUILDINGS ATTRACT THE ATTENTION OF PRESERVATIONISTS AND RAISE QUESTIONS OF CONSERVATION, CHANGE, AND AUTHENTICITY.**



1.

### Corning, New York

*Bohlin Cywinski Jackson converts a 1966 office building into a glass library at Corning's campus of buildings by famous architects.*



2.

### Fort Worth, Texas

*Philip Johnson tackles his favorite subject—Philip Johnson—with an addition to a museum he designed at the end of his Modernist period.*



3.

### Groningen, the Netherlands

*A house designed by John Hejduk in 1973 is finally built in a different place for a different client. Is this historic preservation?*



4.

### Los Angeles, California

*An actress and screenwriter recapture the original design of this 1950 John Lautner house while adjusting it to fit their own lifestyle.*



5.

### Dallas, Texas

*A turn-of-the-century exhibition hall finds new life as a women's museum designed by Wendy Evans Joseph.*

By Clifford A. Pearson

For a movement that began as a revolt against history, there's a certain irony in modernism's growing need of historic preservation. Like aging radicals whose long hair is now going gray and whose bones are getting brittle, many modern buildings are losing their looks and some are falling apart. Because they often broke dramatically from earlier buildings in terms of materials, technologies, and aesthetics, 20th-century buildings today pose special problems for those who want to conserve them, add to them, or reuse them.

"Focusing on modern buildings spins preservation in a new direction," states Theodore Prudon, AIA, a noted preservationist who is the president of the United States branch of DoCoMoMo (Documentation and Conservation of Buildings, Sites, and Neighborhoods of the Modern Movement). One problem is early obsolescence. Because functional requirements were never as generic as modernists hoped they would be, modern buildings are often less easily adapted to new uses. (See article on Eero Saarinen's TWA Terminal, page 63.) "In the past, there really were just four kinds of buildings—palaces, churches, houses, and warehouses," says Prudon. "Now every function has its own building type." As a result, some important 20th-century buildings are threatened with destruction or are being changed in ways unsympathetic to their original designs.

The original construction methods used on many modern buildings also have caused a host of problems, in part because architects often specified thin layers of lightweight materials that had not yet been tested by time. In addition to the many technical issues of repairing or replacing failed curtain walls and sagging cantilevers, some modern preservation projects raise philosophical questions of authenticity and craft. For example, no respectable preservationist would replace a Gothic church's stone walls with new ones. But reskinning Lever House with completely reconstructed curtain wall seems reasonable to most experts. The transparency of many modern buildings creates some thorny dilemmas, too, making the preservation of interiors—or at least the parts visible to the public from the street—important to retaining the integrity of the architecture.

"We're just beginning to address the issues raised by 20th century buildings," says Prudon. ■

For 10 more renovation projects, go to Building Types Study at [www.architecturalrecord.com](http://www.architecturalrecord.com). The monthly expanded Web BTS features project descriptions, photographs, drawings, statistics, and links to people and products.



# Rakow Research Library

## Corning, New York

# 1

**BOHLIN CYWINSKI JACKSON RENOVATES A TIRED 1960s OFFICE BOX, GIVING IT A NEW LIFE AS AN ARCHIVE AND LIBRARY.**

By John E. Czarnecki, Assoc. AIA

**Architect:** Bohlin Cywinski Jackson—Jon C. Jackson, AIA, principal-in-charge; Frank W. Grauman, AIA, principal-for-design; Michael Maiese, AIA, project manager; Steve Chaitow, project architect; Michael Gwin, Shelly Maiese, Doug Speckhard, project team

**Client:** Corning

**Consultants:** Atlantic Engineering Services (structural); Dewhurst Macfarlane and Partners (structural glazing); The Sear-Brown Group (mechanical, electrical, and plumbing); Garrison/Lull (preservation)

**Size:** 43,500 gross square feet

**Cost:** \$4,850,000

### Sources

**Structural systems:** Delhi Steel Corporation

**Glass screen wall:** Clayton B. Obersheimer; Delhi Steel Corporation; Goldray Corporation; TriPyramid Structures

**Glazing glass:** Goldray Corporation; Vision Products; Viracon

**Acoustical ceilings:** Armstrong; Rulon

**Lighting:** Insight; Elliptipar; Lightron; Metalux; Bega

### WWW

#### For more renovation projects

and more information on the people and products involved in this project, go to Building Types Study at [www.architecturalrecord.com](http://www.architecturalrecord.com)

At first glance, a mundane, boxy 1960s building of brick and metal siding is not the most ideal setting for the world's preeminent resource on the history and technology of glass. Although the Corning company considered building a facility when the Corning Museum of Glass needed a new home for its library, the more attractive option was to renovate the banal warehouselike building that was once home to the company's housewares division. The former prosaic box with two floors of office cubicles, which would easily have been forgotten if demolished, has been transformed into the Juliette K. and Leonard S. Rakow Research Library.

### Context

Bohlin Cywinski Jackson was initially hired to design a new library building on the Corning campus near the Corning Museum of Glass [OCTOBER 2001, page 112] by Smith-Miller + Hawkinson. The Corning company had recently sold its housewares division, and Bohlin Cywinski Jackson studied options to renovate the building for the library. The renovation proved to be the most feasible and cost-effective option because the 43,500-square-foot structure offered more space than needed for the library, so the renovated interior could be designed with shell space for expansion already built in. Although the building was reduced to its four exterior



walls and interior columns, the adaptation was not easy. Preferably an archive should not have windows, but because this repository is all about glass, some level of glazing and transparency was needed. Also, the facility is built in an area that is prone to flooding (its ground floor lies in a floodplain)—certainly not a choice site for an archive.

### Solution

In the original building, fenestration was minimal. The designers therefore decided to leave the windowless east wall and the minimally glazed north wall intact. An entrance and two-story-tall window was placed in the west wall. The most distinct exterior alteration was a glass brise-soleil affixed to the





A new entrance (left and opposite, bottom) was inserted in the masonry west wall. The dramatic brise-soleil (above and far left) transformed the south wall with 6-by-12-foot glass panels to protect the second-floor reading room from both summer and winter sun.

PHOTOGRAPHY: © MARK T. WATSON (TOP); JEFFREY M. HARRIS (BOTTOM LEFT); JEFFREY M. HARRIS (BOTTOM RIGHT)





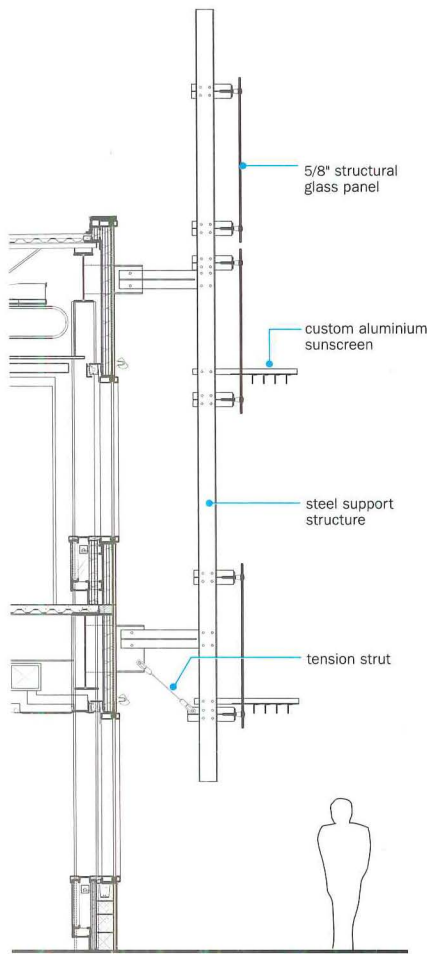
south wall. The brise-soleil, with 6-by-12-foot panels of  $\frac{5}{8}$ -inch-thick tempered glass on steel masts about 5 feet from the existing facade, acts as an environmental sculpture that celebrates the full range of the material's properties: clarity, translucency, opacity, refraction, and structural strength. A ceramic frit is on the side of the brise-soleil glass that faces the building, with acid-etched lines on the front. Its top panels filter light from summer sun, and lower panels protect the reading room from winter sun angles.

Most of the renovation occurred on the interior. For heavier load requirements on the second floor, another row of columns was added. The extra floor space allowed the architects to open a portion of the second floor for a double-height atrium with a glass ornamental stair as the centerpiece. The ample space allows for the archive and valuable materials to be kept on the second floor, protected from the floodplain below. A seminar room, staff offices, and mechanical equipment, which is insurable in case of a flood, are on the ground floor.

For an optimal archive space, chemical agents must be minimized. Finishes were selected to avoid volatile compounds that give off odors, and a slate floor in the reception area is a natural cleft that does not require sealant.

### Commentary

A prime example of transforming an indistinct building into a beautiful space, this renovation urges architects to ponder what can be done with newer structures that have outlived their original purpose. Frank Grauman, AIA, Bohlin Cywinski Jackson design principal for this renovation, said, "This solution was quite gratifying because it is grounded in how the world has changed. We have a whole generation of bland, joyless buildings out there and we really should, as a society, figure out what to do with them." ■

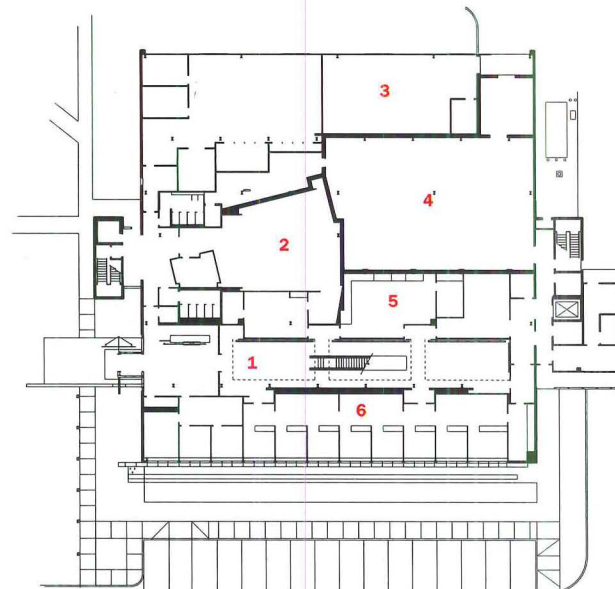


SOUTH WALL SECTION

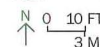
- |                        |                          |
|------------------------|--------------------------|
| 1. Reception           | 6. Staff offices         |
| 2. Seminar room        | 7. Future collection     |
| 3. Future development  | 8. Rare materials        |
| 4. Mechanical          | 9. Restricted collection |
| 5. Conservation spaces | 10. Reading room         |



SECOND FLOOR



FIRST FLOOR







The staircase leads from the reception area up to the public reading room. The second-floor archive is behind the glass wall.



# Amon Carter Museum

## Fort Worth, Texas

# 2

**PHILIP JOHNSON/ALAN RITCHIE ARCHITECTS EXPAND THE MUSEUM THAT JOHNSON ORIGINALLY BUILT IN 1961 FOR A COLLECTION OF COWBOY ART.**

**By David Dillon**

**Architect:** Philip Johnson/Alan Ritchie Architects  
**Architect of record:** Carter & Burgess  
**Client:** Amon Carter Museum  
**Engineers:** Patum Engineering (structural); Blum Consulting Engineers (mechanical)  
**Consultants:** Carter & Burgess (landscape); Gordon Anson (lighting)  
**Construction manager:** Linbeck

**Size:** 107,000 gross square feet  
**Cost:** \$39 million

### Sources

**Masonry:** Narjan Brown granite, Texas Shellstone (Lucia Marble & Stone)  
**Glazing system:** Bronze (Oak Cliff Mirror & Glass)  
**Doors:** Bronze (Offenhauser Co.)  
**Glass:** Insulating laminated (GlasPro)

### WWW

**For more preservation projects** and more information on the people and products involved in this project, go to Building Types Study at [www.architecturalrecord.com](http://www.architecturalrecord.com)

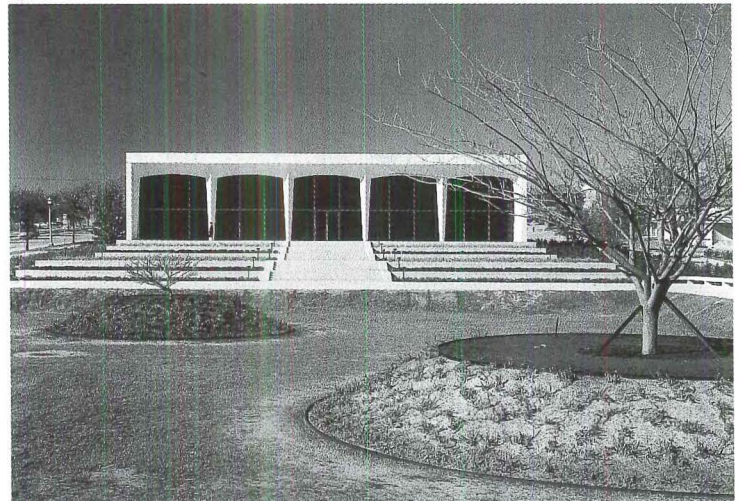
### Context

The Amon Carter Museum in Fort Worth opened in 1961 as a small shellstone building with thin tapering arches and a two-story loggia filled with the eponymous donor's collection of cowboy art by Frederick Remington and Charles Russell. Philip Johnson designed the museum at the end of his self-proclaimed Modernist period, when he had grown tired of Mies and the Bauhaus and was casting about for a looser, more expressive "ism."

But the institution soon outgrew the building Johnson had designed for Carter's 400-piece collection. Within a few years, its mission had expanded to Western American art more broadly, and then to American art in general, with special emphasis on photography. Suddenly Johnson's intimate little jewel box, his romantic break with Mies, had become an overstuffed suitcase. His modest additions of 1964 and 1977—including offices, a bookstore, a small garden, a 100-seat theater, and an expanded library—barely dented the space problem.

### Solutions

With its recent \$38 million addition, the Carter now resembles what Robert Venturi termed a "decorated shed." The original building serves as a kind of porch for the structure the architect calls his "big warehouse." "The new building had to bow in some ways to the past,"



**The original building, designed for a small collection, is clad in shellstone.**

Johnson explains, "I couldn't do my wiggly thing there, so I decided to leave the front part as it is and put everything else in back."

The latest addition is triangular in plan and three stories high. Faced in brown Arabian granite, it drives into a slope at the rear of the site. Within its 86,000 square feet are education, conservation, office, meeting, and storage facilities, and galleries for the museum's 237,000 paintings, drawings, sculptures, and photographs. A two-story atrium, with granite walls and a beanie-shaped skylight, links new and old.

"Philip did a plan for us in 1993, then realized it was totally inadequate and started over," says Amon Carter director Rick Stewart. "He did not want to put an addition onto an addition, or overwhelm the original

facade, so he had to rethink it all."

Johnson was adamant about not tampering with the original building, a personal favorite that marked a turning point in his career. It was conceived as a memorial to Amon Carter, and Johnson often referred to it fondly as a tomb or mausoleum, but said he never imagined it as more than a memorial of mainly local interest.

But to accommodate the current collection, he decided the best solution would be to isolate the 1961 building, the authentic piece, rededicate its first-floor galleries to the works of Remington and Russell, and then create a neutral backdrop to house everything else. Accordingly, he demolished his earlier additions and meticulously restored the teak walls and shell-





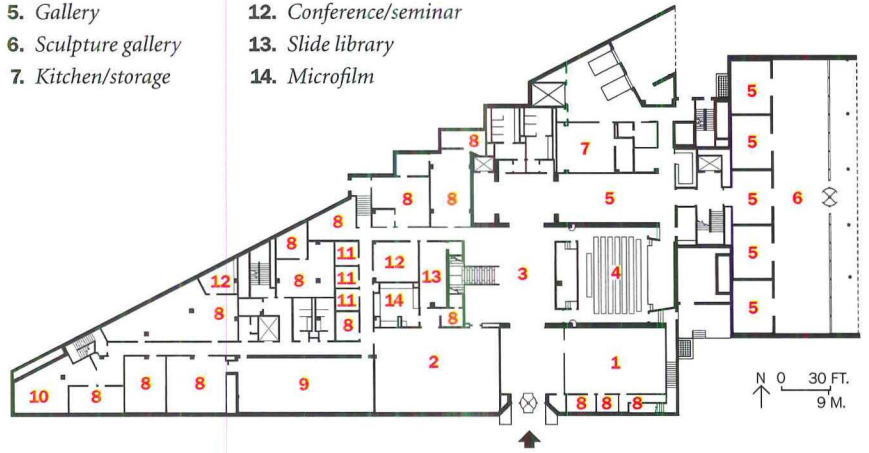
The recent 86,000-square-foot addition with an atrium (this page) is clad in brown Arabian granite, intended as a neutral backdrop to the original 1961 structure.





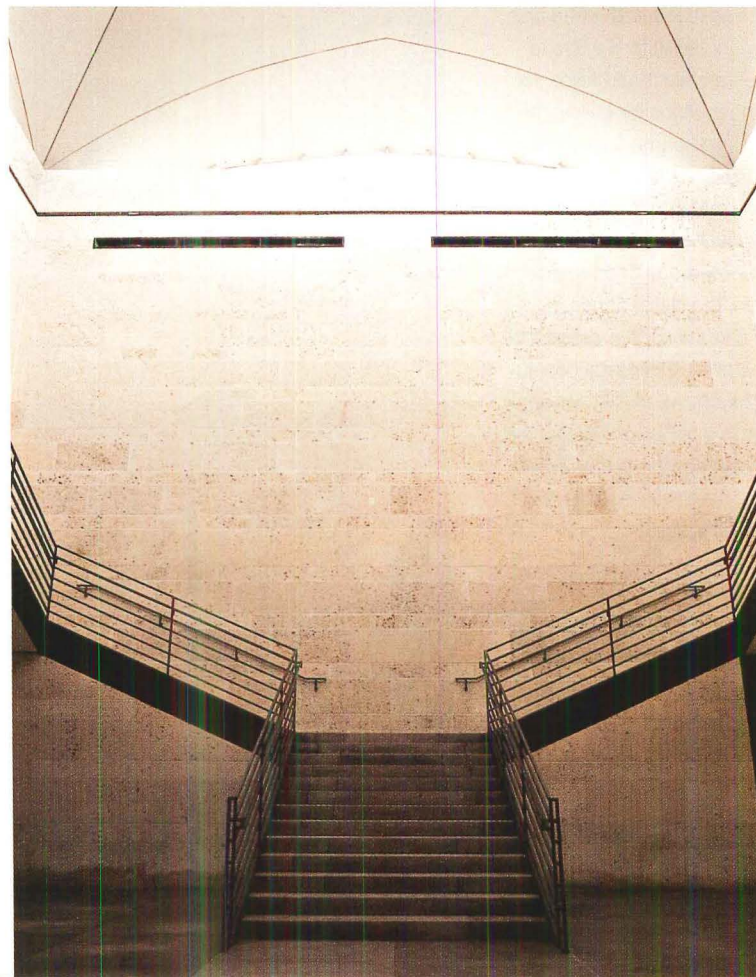


- 1. Museum shop
- 2. Reading room
- 3. Two-story atrium
- 4. Auditorium
- 5. Gallery
- 6. Sculpture gallery
- 7. Kitchen/storage
- 8. Office
- 9. Stacks
- 10. Archives
- 11. Study
- 12. Conference/seminar
- 13. Slide library
- 14. Microfilm





Shellstone lines the skylit atrium (this page). While daylight can enter some of the exhibition galleries, most are only illuminated electrically (opposite). The museum staff vetoed Johnson's proposal for a series of skylights, due to concerns about damaging rays.



stone ceilings in the original galleries. The architect also refurbished the formal entry plaza (even replacing a mesquite tree that had died) with its grand axial view of downtown Fort Worth. Behind this tableau rises the new wing, like a giant scrim for an outdoor pageant.

### Commentary

The addition solved many of the museum's functional problems, particularly the lack of exhibition space for its extraordinary collection of American photography. The images by Edward Curtis, Berenice Abbott, and many others now have a permanent home and a public life.

But if the addition solved practical problems, it also created a few aesthetic ones. The dark Arabian granite contrasts sharply with the creamy Texas shellstone, like a jeweler's cloth behind an ornate necklace. Its subtle shading and precise gridding modulate the scale of the facade, but without eliminating its stolid, standoffish quality. The north wall on Camp Bowie Boulevard seems particularly bland and cheerless.

More troubling is the paucity of natural light in the galleries. Johnson initially proposed a series of skylights for this addition, but the staff balked because the permanent collection has so much work on paper. "We didn't want galleries that played with Texas light," says Stewart. What they got instead was an atrium (two were proposed) and one large window in the temporary-exhibition gallery. Most of the other galleries are introverted and hermetic. Staff conservation concerns notwithstanding, daylight can enter a museum in many ways without risking the collection. One of the best examples is just down the street at Louis Kahn's Kimbell Art Museum.

That said, the Carter curators clearly feel they got the building they needed and wanted. "The main drive behind the expansion was to put as much of our collection before the public as possible," says Stewart, "and I think we've done that. We chose public space over support space every time." ■



# Wall House

## Groningen, the Netherlands

# 3

**JOHN HEJDUK'S FAMOUS HOUSE PROJECT, DESIGNED IN 1973 AND RECONSTITUTED FROM DRAWINGS, REPRESENTS A REVOLUTIONARY APPROACH TO THE IDEA OF AUTHENTICITY.**

**By Alexander Gorlin, AIA**

**Project:** *The Wall House 2, Groningen, the Netherlands*  
**Architect:** *John Hejduk, New York; Thomas Müller/van Reimann Architects, Berlin—Thomas Müller, principal; Otonomo Architects, Groningen—Derk Flikkema, project architect; Bart de Groot, Ramon Zuidersma, team.*  
**Client:** *Niek Verdonk, director of city planning, and Olof van de Wal, of Platform Gras, both of Groningen*  
**Consultants:** *Ingenieursbureau Dijkhuis, b.v.*  
**Contractor:** *Wilma, b.v.*  
**Size:** *2,500 square feet*  
**Completion date:** *October 2001 (finishes to be provided by owner)*

### Sources

**Wood:** *Harryvan, b.v.*  
**Structural steel:** *H. Meyer Staalbauw*  
**Glass:** *Nico Kool, b.v.*

### WWW

**For more renovation projects** and more information on the people and products involved in this project, go to Building Types Study at [www.architecturalrecord.com](http://www.architecturalrecord.com)

It is virtually without precedent that a house is constructed posthumously exactly as intended by the architect, 28 years after it was designed, on a different continent, and for a different client. The architect, John Hejduk, the longtime dean of the Irwin S. Chanin School of Architecture at The Cooper Union in New York, unfortunately died in July 2000, just before construction began on his seminal project, the Wall House 2.

Hejduk had originally designed the Wall House 2 in 1973 (the first was done in 1968) for Ed Bye, a landscape architect and fellow faculty member. Plans for building the modestly sized primary residence, on a forested site in Ridgefield, Connecticut, were abandoned due to concerns over the cost of building.

But now it has been realized in Groningen, the Netherlands, as a result of a convoluted process that was brought to successful conclusion by the efforts of Niek Verdonk, Groningen's director of city planning, and Olof van de Wal, the head of Platform Gras, a city-sponsored architectural group.

### Context

For 11 years Verdonk and Van de Wal remained committed to constructing Hejduk's famous project, an extraordinary intersection of

*Alexander Gorlin, AIA, a New York architect, studied with John Hejduk and taught at Cooper Union from 1998–2000.*

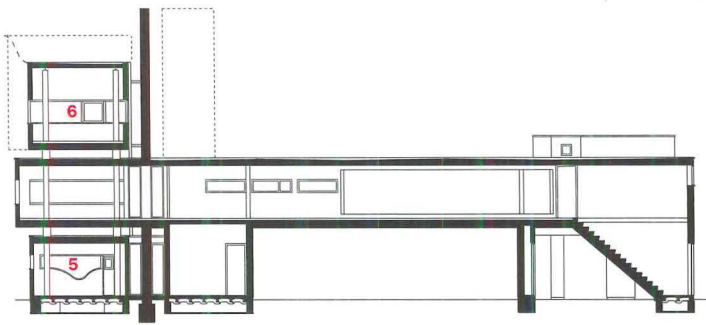




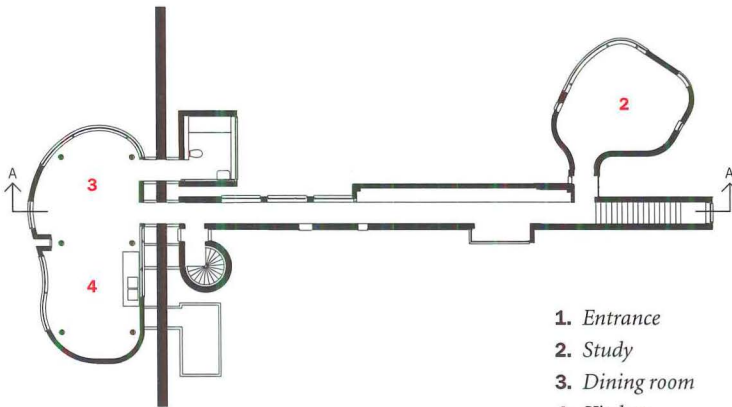
The concrete wall, 53 feet high, 75 feet long, and 18 inches deep, is painted gray. The room volumes, painted in saturated, pastel tones recalling Piero della Francesca, stand out in bold relief.





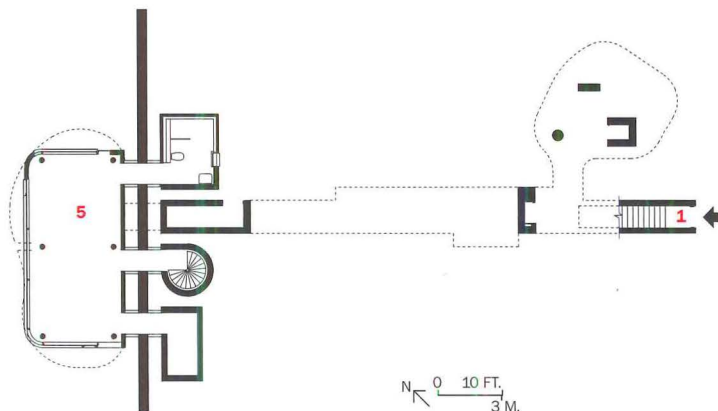


SECTION A-A



SECOND FLOOR

1. Entrance
2. Study
3. Dining room
4. Kitchen
5. Master bedroom
6. Living room



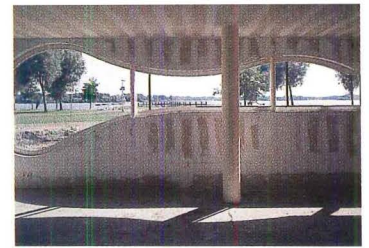
GROUND FLOOR

Cubist painting, Surrealist sculpture, and architecture, even as one potential client after another fell through. Then early this year, a development company, Wilma, b.v., decided to build the house at its own expense, turning it into a speculative venture. Due to building codes and construction techniques—which required, for example, leaving space between the wall and rooms for hand plastering—the house was enlarged proportionally 20 percent from its original size, to 2,500 square feet. A client has now purchased the house at a cost of \$800,000 and will be moving into it in January.

### Process

Executing the design for a different time, place, culture, and client seems an impossible goal in terms of creating an authentic work of architecture. Nevertheless, the house in Groningen captures the intensity and flavor of Hejduk's model and drawings, effectively challenging conventional notions about authenticity.

The Wall House employs the vocabulary of Le Corbusier to explore the relationship between inside and outside in a more extreme way than did the Swiss-French master. You enter by going up a flight of stairs to the piano nobile, where you find various biomorphically shaped spaces containing the study and, at the end of a long corridor, the kitchen and dining room. Above is the living room, below is the bedroom. These distended volumes, which seem to be filled with air (or gas) and



pressed tensely against the wall, appear cantilevered. However, they are supported by a grid of columns, emphasizing the wall as a rhetorical, not a structural element.

The original drawings had been suspended in the design development stage, but Thomas Müller of Berlin, a former student of Hejduk's, redrew the plans with Derk Flikkema of Otonomo Architects in Groningen, with Hejduk reviewing the drawings in each phase up until his death. As completed, the Wall House is a structure of reinforced concrete for the wall and columns, with a steel-framed corridor, wood stud walls, and a stucco exterior.

### Commentary

Conceptually the project follows the idea that animates a Greek temple, where once the type was perfected, it could be adapted to different sites, each one as authentic an interpretation as the next.

Now that it is constructed, the Wall House, a project of mythical status, has taken on a new life, especially in a country that values architecture and design. In its new home on the polder, where the mists and fog of the lake and North Sea combine, it rises like an apparition, evocative and mysterious. It is living proof that an original architectural idea can survive not only the abandonment of the client, but the death of the architect, as well. ■

The concrete wall of the house was the largest pour in the history of Holland, even including construction of the dykes—the archetypal Dutch wall.





The interior will be finished by the owner, and some exterior pipes (a periscope and a chimney) are to be added then.





# Harvey House

## Los Angeles, California

# 4

**JOHN LAUTNER'S 1950 HOLLYWOOD HILLS RESIDENCE FOR AN ALUMINUM MAGNATE HAS ITS FIRST SHOT AT AUTHENTICITY AFTER RESTORATION.**

By Alan Hess

**Architect:** *Lautner Associates—Helena Arahuate, principal*  
**Client:** *Kelly Lynch and Mitch Glazer*  
**Consultants:** *John de La Veaux (original builder), restoration consultant; George Haney & Son, mechanical contractors (mechanical); Good Earth Enterprises (landscape); Coastline Pools (swimming pool restoration); Helena Arahuate; Gilbertson Electrical (lighting)*  
**Restoration date:** 1998–99  
**Contractors:** *Robin Poirier and Associates (general contractor)*

### Sources

**Marble, slate, and terrazzo:** *Brennan Masonry and Robin Poirier and Associates*  
**Aluminum sliding doors:** *Robin Poirier and Associates*  
**Windows:** *D.E.C. Fabricators*  
**Locksets:** *Schlage*  
**Hinges:** *Soss*  
**Cork flooring:** *J.M. Norden Co.*  
**Wood flooring:** *Mike Pillar & Son*  
**Custom furnishings, cabinetry, wood paneling:** *Graham-Lee Associates, Bryan Miller, and Robin Poirier and Associates*

### WWW

**For more preservation projects** and more information on the people and products involved in this project, go to Building Types Study at [www.architecturalrecord.com](http://www.architecturalrecord.com)

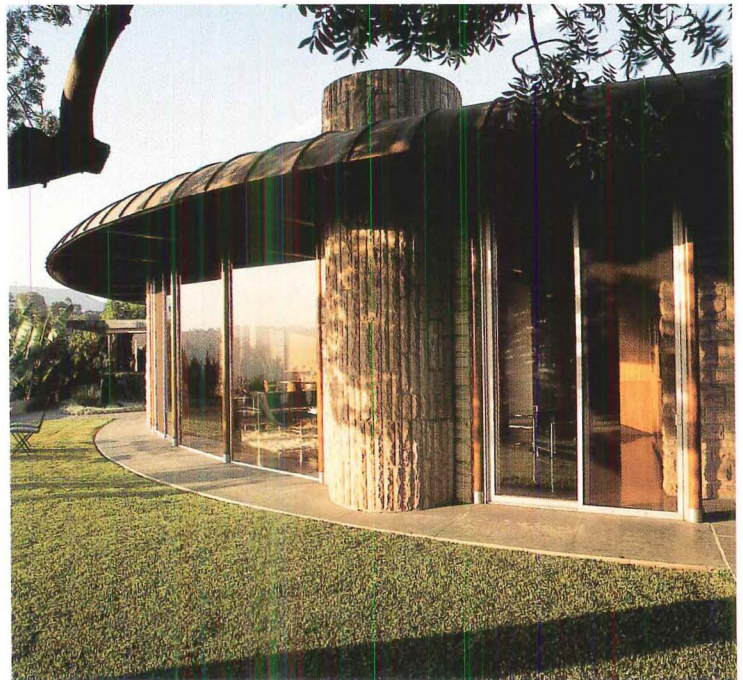
John Lautner's houses present a peculiar philosophical dilemma to restorers. To Lautner, architecture was an ideal independent of time, not part of a continuum of evolving traditions or styles. Making a house "authentic" meant advancing new forms with the latest materials and techniques available—not relying on what came before. The job today was to restore authenticity to something intended to be authentic when new.

Actress Kelly Lynch and screenwriter Mitch Glazer faced that conundrum when they found Lautner's 1950 Leo Harvey House in Hollywood for sale in 1998. They decided to treat it as a piece of living architecture, with certain changes reflecting their needs and tastes as its current owners. And yet they accepted that the house's historic character reflects the vision of an important designer overlaid with the patina of previous owners and passing time.

### Context

Designed in 1949 for aluminum magnate Leo Harvey, with a magnificent site encompassing unfettered views from downtown Los Angeles to Santa Monica and the Pacific Ocean, the house was intended for a master of the universe. Harvey clearly felt at home there. But by 1998, it was a modern ruin marred by remodeling,

*Alan Hess is the architecture critic for the San Jose Mercury News.*



and its exotic satinwood and padauk walls had been stained by water.

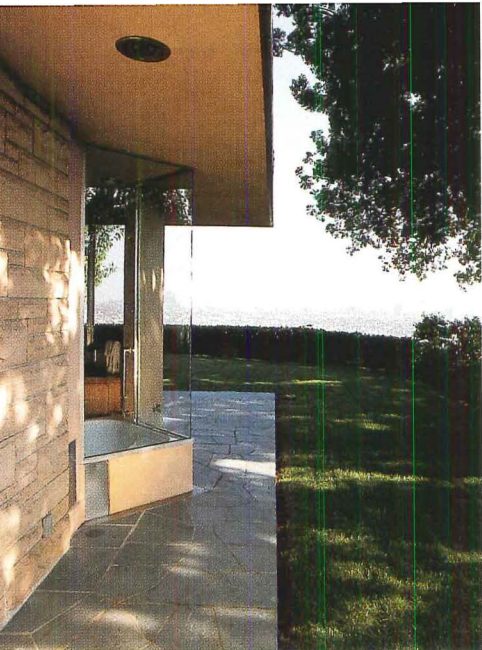
When L.A. was rediscovering its midcentury modern heritage in the 1990s, many found Lautner's houses still difficult to embrace. They were not like those by Pierre Koenig, Richard Neutra, or even Rudolf Schindler. Elegant minimalism was never Lautner's interest. In combatively creative designs like the Chemosphere House, designed in 1960 and today an L.A. icon, he had staked out a distinct but uncontestable branch of native Southern California Modernism: organic, dynamic, spatially opulent, geometrically complex, technically exuberant.

These unmistakable qualities were apparent to Lynch and Glazer in the Harvey House, even through the ruins. To execute the unconventional restoration, they selected three people who had worked closely with Lautner: Helena Arahuate, an architect who had been with the Lautner office for 25 years; Robin Poirier, a contractor who had worked with Lautner before his death in 1994, and John de La Veaux, the original contractor for the Harvey House.

### Process

The discussions between clients, architect, and contractor, each of whom revered Lautner, were passion-





One decision made during the restoration of the house was to replace its hot-mopped asphalt roof with standing-seam copper (opposite). The hefty door and window frames, originally milled out of solid aluminum bars, were also restored (this page).







Considering that aluminum magnate Leo Harvey furnished this John Lautner-designed house with wall tapestries and French antiques, its authentic nature was obscured even when the house was new.



ate. Although the building would be restored to its original form, there would be specific exceptions intended to reflect Lynch and Glazer's tastes (rather than the Harveys'), as well as to solve watersealing failures in the original design, and to rethink elements that were too costly or impractical. Colors—most likely the Harveys' selections—were muted. The master bathroom's small slit windows were replaced with a full window, copied in material and detail from another bathroom, to open up breathtaking views of Los Angeles.

To keep the character of 1940s construction techniques, the owners elected to restore the hefty aluminum door and window frames. Damaged wood and marble were painstakingly restored or seamlessly replaced. Another decision involved retaining and restoring a large entry and art gallery addition designed for Harvey by Lautner in 1959 to enclose the outdoor forecourt. It featured a remarkable trellis of concentric circles radiating from a trunklike column clad in vertical ashlar pink Arizona stone.

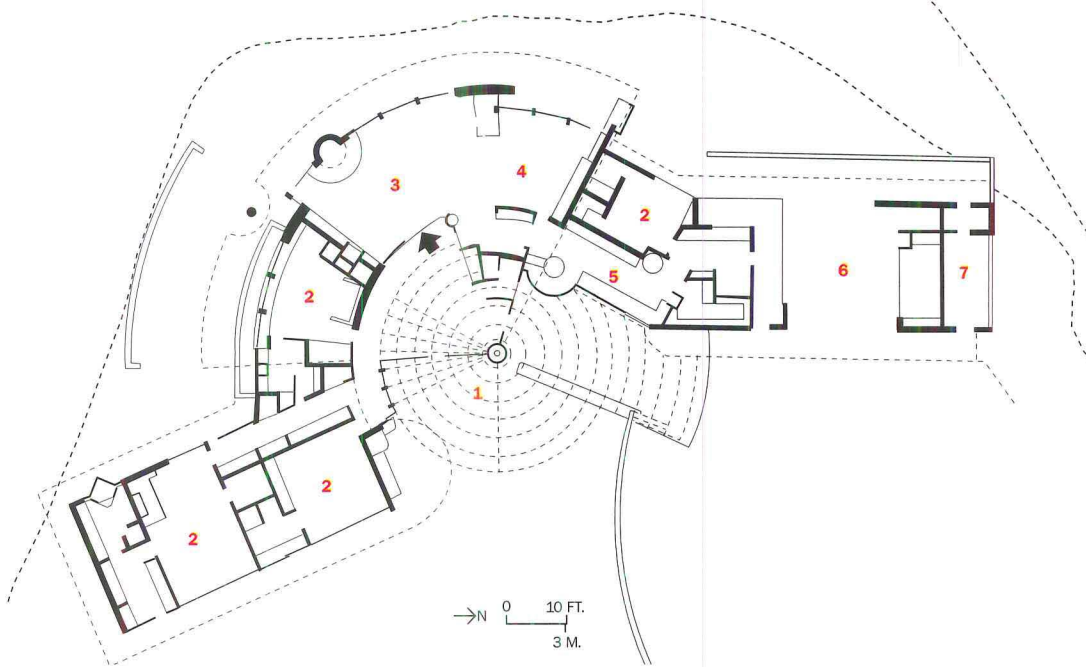
Another major change from the 1950 house came with Poirier's recommendation to clad the gray downturned eaves of the compound curved roof with copper. The original pumice and cement roofing had failed immediately (Lautner often pushed new materials to their limits) and was covered with a traditional (if unsightly) hot-mopped asphalt roof.

### Commentary

The result of the work is the recovery of a missing piece of the puzzle of Lautner's career. It has been suggested that he was disappointed with his first large-scale, lavishly budgeted project. When the Harveys filled the house with French antiques and covered the wood walls with tapestries, Lautner must have felt the house slipping away from him. He only allowed construction and model photos of it to be published.

Only in its restored form does the Harvey design reveal the broad, masculine strokes and complex, space-enclosing geometries that are authentic Lautner. ■





1. Main entry court
2. Bedroom
3. Living room
4. Dining room
5. Kitchen
6. Garage
7. Greenhouse



The house's main entry court features a restored trellis of concentric circles supported by beams and a stone column.



# Women's Museum

## Fair Park, Dallas, Texas

# 5

**WENDY EVANS JOSEPH'S NEW MUSEUM INSIDE A 1909 STATE FAIR PAVILION RESPECTS THE PAST BUT POINTS TO THE FUTURE AS THE PLACE TO BE.**

By David Dillon

**Client:** *The Women's Museum: An Institute for the Future*

**Design architect:** *Wendy Evans Joseph Architect—Wendy Evans Joseph, partner-in-charge; Robert N. Furno, project architect; Andreas Quednau, Anne Chen, Oliver Naumann, Stephen Ohnemus, Melissa Spindel, Thruston Pettus, Trina Miller, design team*

**Architect of record:** *F&S Partners—Anita Picozzi Moran, AIA, principal-in-charge; Catherine A. Wilson, Michael Woods, AIA, project architects; Lynn Lorch Metz, director of interior design; Susan S. Hukill, interior designer; James C. Patton, AIA, construction administrator*

**Consultants:** *Datum Engineering (structural); Charles Gojer and Associates (structural/civil); G and S Consulting Engineers (mechanical); Mateo Consulting Engineers (electrical/plumbing); Caye Cook (landscape architecture); Smith Duncan Associates (lighting)*

**Size:** 70,000 gross square feet

**Cost:** \$11,500,000

### Sources

**Security devices:** *Von Duprin*

**Acoustical ceilings and grid:** *Armstrong World Industries*

**Paints and stains:** *Benjamin Moore; Master Coating Technologies*

### WWW

For more preservation projects and information on the people and products involved in this project, go to Building Types Study at [www.architecturalrecord.com](http://www.architecturalrecord.com)

The Women's Museum: An Institute for the Future is the first comprehensive center for women's studies in the country. Organized by a cadre of A-type Texas women and built almost entirely with private funds, it has a national agenda that belies its regional roots.

### Context

The \$11.5 million building occupies a restored 1909 coliseum in Dallas' Fair Park, a National Historic Landmark. From a distance it looks like just another foursquare stucco box, except for a sublimely kitschy statue of Venus emerging from a cactus at the front door.

### Solution

The interiors are all steel and glass and slashing diagonals, like a turn-of-the-century train shed redesigned for the computer age. "I wanted a dialogue and a feeling of continuity between old and new, like the Musée d'Orsay," explained design architect Wendy Evans Joseph, who associated with F&S Partners of Dallas, the firm that restored the building.

Yet the comparison is somewhat misleading. The Musée d'Orsay has an extensive permanent collection and vast storage and temporary exhibition spaces, whereas the Women's Museum has none of these. It was

*Contributing editor David Dillon is the architecture critic for the Dallas Morning News, and the author of six books.*



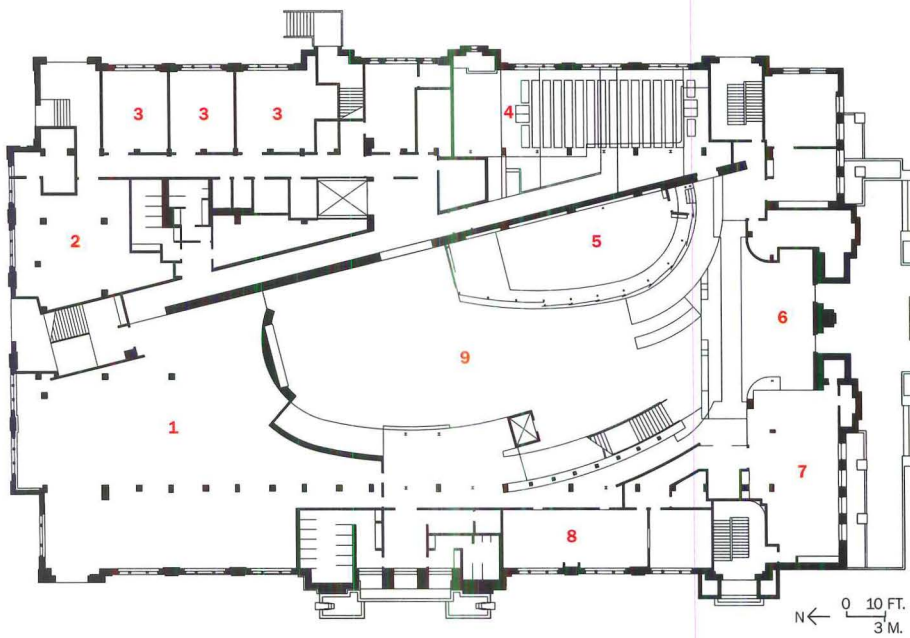
conceived as a large interactive classroom in which engagement rather than the passive contemplation of exquisite objects is the goal. Visitors passing through the Art Deco lobby, added for the 1936 Texas Centennial, see virtually the entire building at a glance: the historic brick shell with its arched windows and exposed steel trusses; a soaring central space called "The Gathering," punctuated by a 35-foot electronic quilt; the museum shop wrapped in glass and

perforated copper screens; and a cantilevered staircase leading to exhibits on the upper floors.

### Commentary

As in the U.S. Holocaust Memorial in Washington, D.C.—for which Ms. Joseph was senior designer during her tenure at Pei Cobb Freed & Partners—visitors start at the top of the building and descend gradually to the bottom, moving from past to present, reflective to interactive





1. Permanent exhibitions
2. Mechanical space
3. Exhibit support
4. Auditorium
5. Shop
6. Foyer
7. Institute
8. Meeting rooms
9. The Gathering

**The Women's Museum: An Institute for the Future occupies a restored 1909 state fair pavilion. Visitors enter a space architect**

**Wendy Evans Joseph calls "The Gathering." An "electronic quilt" can be seen in the center of the photo below.**







In some areas, the new architecture plays aggressively off the old (above and right); in others, it steps back to allow history to have a voice. The result is a tension between old and new, underscoring that the past is important, but the future is the place to be.



installations. At points they can step away from the exhibits onto balconies and bridges to take in the entire building. In some places—the steel suspension bridge at the west end of The Gathering, or the sliding copper screens around the museum shop—the new architecture plays aggressively off the old. In others, it steps back to let history have a voice, as in the restrained wood ceiling and the deferential treatment of the original arched windows. The result is a subtle tension between old and new, a sense of things shifting and intertwining, that underscores the museum's message: The past is important, but the future is the place to be.

The core of that message is in the exhibits, designed by Whirlwind & Company of New York. They range from static displays of artifacts in glass cases to an entertaining film on female comedians and informative presentations about women's health, women artists and athletes, and female entrepreneurship. The overall focus is on profession and career choices, with a strong emphasis on American women and a calculated avoidance of controversy. Divisive ethical and political issues such as abortion receive minimal attention.

Unfortunately, restoration of the 1936 Art Deco lobby was forced on the museum by local preservationists. In its restored state, it looks more like an abandoned stage set than an introduction to a major museum. Likewise, turning Ms. Joseph's dramatic copper and glass "egg," the most distinctive space in the building, into a backdrop for T-shirts and tote bags does not make as much sense as the original plan of using the space for a theater or a digital classroom.

Yet, for the most part the design is both striking and common sensical. Little remained of C.D. Hill's 1909 coliseum except steel trusses and a few windows, and most of the interior modifications from 1936 had been demolished to create warehouse and studio space. Consequently, Ms. Joseph put her own stamp on things instead of genuflecting before a vanished past. The Women's Museum calls itself "an institute for the future," and the design says precisely that. ■



# Healing Exteriors Injured by Time

**IN THE CAPABLE HANDS OF TWO NEW YORK ARCHITECTURE FIRMS, A PAIR OF HISTORIC BUILDINGS ARE RETURNED TO THEIR ORIGINAL STATE OF GRACE.**

**By Sara Hart**

Interiors, unless located at Versailles or in other such critically historic spaces, are generally at the mercy of their owners, inasmuch as they exist in the private realm of individuals or institutions. Interior alterations, therefore, generally reflect the needs and tastes of the inhabitants. Exteriors, on the other hand, play a civic role, since they exist in the public realm. The mass, articulation, and condition of a building's facades contribute to or detract from its surrounding environment. In a city as thickly settled as New York, elegant landmarked exteriors sometimes butt up against each other, but more often they stand in troubling contrast to the bland and mediocre structures around them. Two case studies in Manhattan, different in scope but similar in approach, show how issues of architectural authenticity spread beyond the lot lines into the neighborhood. Both efforts required exhaustive research into each building's history, so that the restorations would not only heal the battered facades but also recover the original architects' intentions.

## **A reputation to uphold**

The Cooper Union for the Advancement of Science and Art Foundation Building has a well-deserved reputation for excellence. Frederick A. Peterson designed the massive palazzo in 1858 for inventor-industrialist Peter Cooper. A self-made man, Cooper envisioned a tuition-free institution of higher learning in the disciplines of art, architecture, and engineering. While the headquarters is an icon in New York's East Village, it has suffered from an obstreperous past of both benign neglect and careless repair. All that changed in 1998 when the trustees of Cooper Union hired New York architecture firm Platt Byard Dovell to renovate the damaged exterior of the iconic landmark.

The building's structure is comprised of exterior masonry bearing walls with iron railroad tee beams (invented by Cooper) and cast-iron columns. Peterson composed a facade of pilasters, arches, and simple cor-



## **CONTINUING EDUCATION**



Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/AIA Continuing Education article. To receive credit, turn to page 228 and follow the instructions.

## **LEARNING OBJECTIVES**

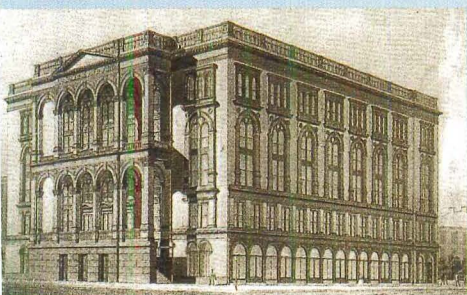
After reading this article, you should be able to:

1. Discuss the effects of neglect and careless repairs on building exteriors.
2. Describe types of damage that is found on exterior masonry.
3. Describe methods of determining the condition of a building.
4. Discuss procedures in restoring the exterior of a masonry building.

**WWW** For this story and more continuing education, as well as links to sources, white papers, and products, go to [www.architecturalrecord.com](http://www.architecturalrecord.com)

The facades of Cooper Union (top) and Harperley Hall (above) before undergoing extensive repairs and restorations.





**The Cooper Union for the Advancement of Science and Art, New York, N.Y.**

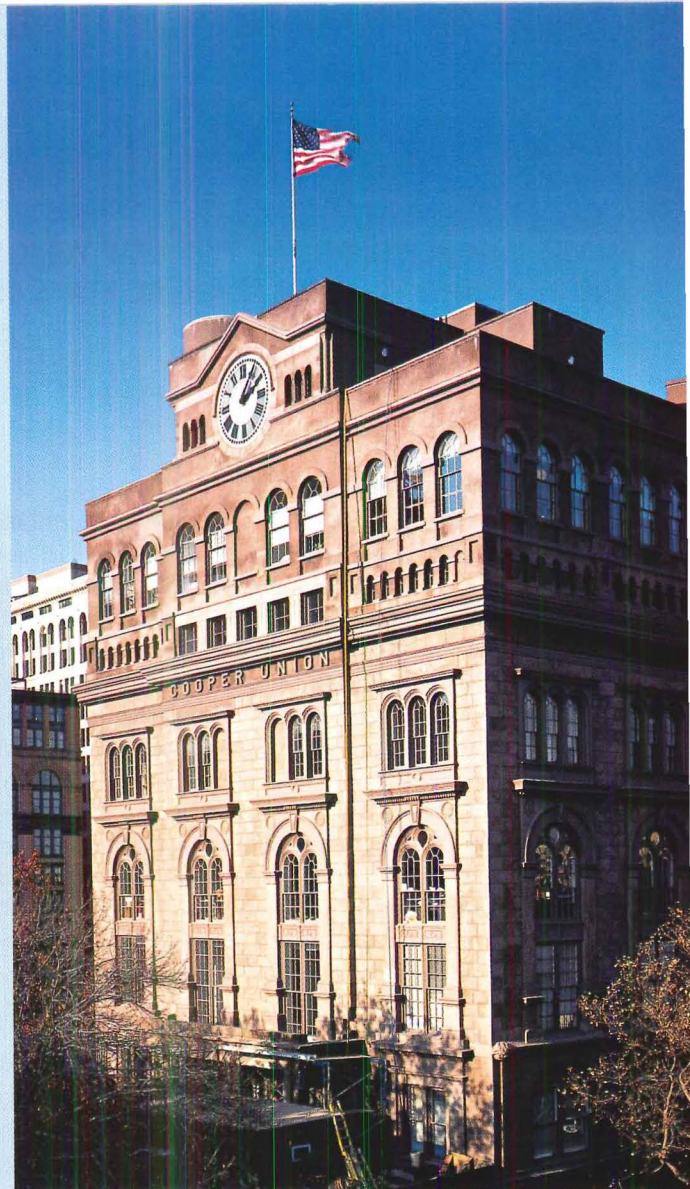
**Architect:** Platt Byard Dovell Architects (Paul Spencer Byard, FAIA, principal; Anne Holford-Smith, AIA, project manager)

**Date of completion:** Fall 2001

**Consultants:** Nicholson & Galloway (exterior contractor); Robert Silman Associates (structural engineer); Ivan Myjer, Nicholas Micros (stonework); AM&G Waterproofing (roof)



The original building (top) had a flat roof profile. Sawtooth skylights and other additions (above) were added at the end of the nineteenth century. The south facade (right) after the recent restoration.



nices with minimal ornamentation and rendered it in smooth-hewn Portland Connecticut brownstone. In the beginning, the facade had a masculine elegance and legibility that expressed Cooper's idealism. Over the next 140 years, however, the building underwent a series of alterations, not all of them laudable. An observatory built on the roof overstressed the masonry walls so that in 1885 architect Leopold Eidlitz was called in to reconstruct the second-story walls and the building's underpinnings. At the end of the nineteenth century, three great skylights were added to the roof to bring more light into the envelope, but their saw-toothed profiles changed the character significantly. Then in 1974, when then dean John Hejduk modernized the interior, he also replaced some of the exterior column capitals with aluminum and projected a top onto a shaft of the Cooper's famous round elevator.

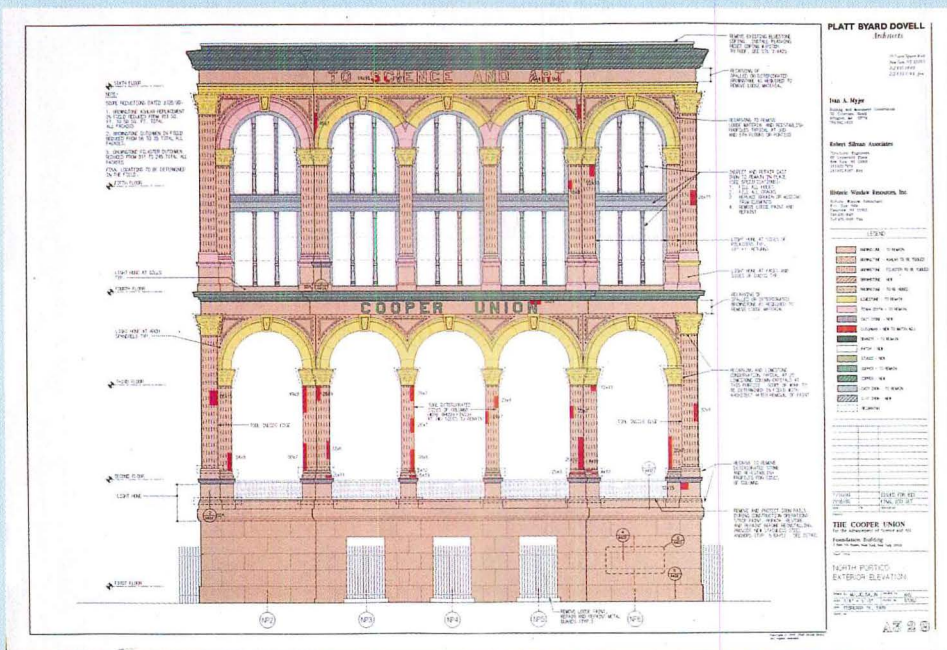
Even without the alterations and additions, the natural aging process had taken a toll on the exterior. It was common in the nineteenth century to set brownstone for vertical elements, such as pilasters, with the bedding planes running perpendicular to the ground (face-bedded).

Because face-bedded brownstone contains a large amount of mica within the bedding planes, the surface sparkles beautifully, especially when honed flat. Face-bedded stone, however, does not weather as well as naturally bedded stone (the bedding planes are set parallel to the ground rather than vertical). Water easily penetrates face-bedded brownstone through weakened mortar joints and flashings. Clay within the beds expands when wet,

## WATER EASILY PENETRATES FACE-BEDDED BROWNSTONE THROUGH WEAKENED MORTAR JOINTS AND FLASHINGS.

causing the stone to spall or exfoliate. Over the years, this is what happened to Cooper Union's facade. In the pre-preservation-movement days of the 1950s, a nearly ruinous nostrum was adopted to protect the streets and passersby from falling stone. Without regard for the design, workers removed layers of delaminating stone with the lacerating strokes of jackhammers and chisels. Not only did their attack increase water penetration,





Color working drawings (left) made it easy to distinguish between the diverse stones and other materials, each in various stages of disrepair. The facades had been neglected and carelessly repaired (below left) for 140 years. After the restoration (below), the original crispness is back in the details, but the natural aging process is still evident.



it disfigured the once smooth ashlar and reduced the crisp lines of the Classical elements to a visually dissipated blur.

“The failure of the stone was this delamination,” explains project manager Anne Holford-Smith. “Thin layers of stone  $\frac{1}{16}$  inch thick can flake from the surface. Since the stone is 6 inches thick at the ashlar and much thicker at the pilasters, this is a superficial failure. The only concern besides appearance is the possibility of too much stone loss over the iron anchors, which were set  $1\frac{1}{2}$  to 2 inches behind the surface.” Rusted anchors were discovered on the north and east facades, where the weather is more severe, but the damage was mostly local.

Principal Paul Byard understands that restoration is no less a design process than new construction and, as such, demands a thoughtfully conceived philosophy about authenticity. The question then becomes: Restore to which incarnation? “Our job was the outside envelope, the wrapper that protects and represents it, and within that, with the original expression—Cooper and Peterson’s expression—of what Cooper Union was about,” says Byard. “We had to get that back as near as we could so you

could read again what Cooper had in mind, sticking with the much-abused surviving original stone. We got a lot of it, obviously softened by the passage of time, but the real thing is just the same to the neighborhood.”

Every state-of-the-art technique was used to determine the scope of the work, which in restoration means deciding what can be restored and what must be replaced. Infrared photography helped the architects map and assess the condition of the old iron anchors. Holford-Smith with Ivan Myjer and Nick Micros of Building and Monument Conservation “sounded” all the stones with rubber mallets and stone chisels to determine each stone’s condition, since many were stuccoed, painted, or covered with copper to conceal deterioration. A hollow sound suggested at least some deterioration. Paint had also concealed the fact that the facade was not entirely brownstone, but a little limestone here, some terra-cotta there. These additional materials had cracked and spalled more than the brownstone. Employing a color plotter to make color working drawings, the architects created an effective graphical system for distinguishing between materials, labeling existing

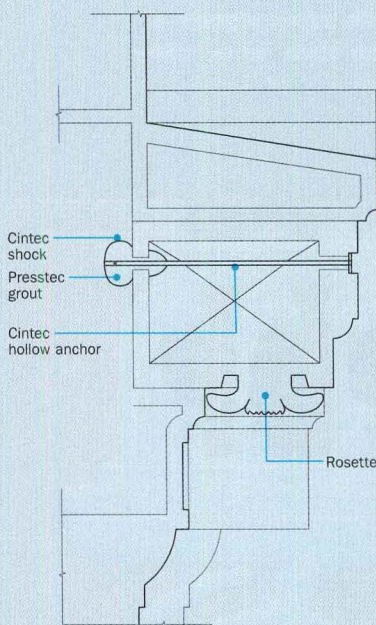
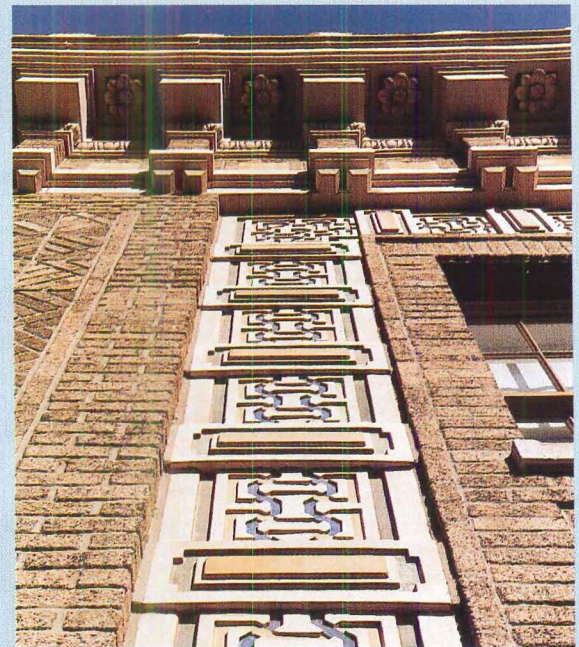


## Harperley Hall New York, N.Y.

**Architect:** Murno and Veneziale Architects (Cosmo Veneziale, principal)  
**Date of completion:** June 2001  
**Consultants:** Stevemar Construction (contractor); Wayman C. Wing (structural engineer); Thomann-Henry (facade cleaning); Dixie Enterprises (fenestration); Jablonski Berkowitz (conservator); Alfred T. Tebbens Steel (structural and ornamental steel)



Before restoration of the facades (above), the 1911 brick and terra-cotta apartment building was covered in soot and grime. New fiberglass reinforced concrete rosettes (below) match the originals. After completion, the terra-cotta is restored and new windows installed.



NEW ANCHOR AT EXISTING TERRA COTTA CORNICE



conditions, and specifying areas to be repaired, restored, or replaced.

Cooper Union wanted as much as possible of the building's original materials and composition to remain; however, most of the ashlar on the north portico had to be replaced. The south portico was disassembled and reassembled using a combination of original and new stones, called dutchmen, that fill in where the carved details were too damaged to restore. In a stroke of luck, the Portland Connecticut Brownstone Quarries, providers of the original stone, had reopened in 1992 after having closed its operations in the 1930s. This auspicious coincidence allowed near-perfect matching of the new stone with the old. In areas that were to be painted or that were concealed from view, the architect specified cast stone as a less expensive alternative.

When focus switched to the surfaces mangled by previous repairs with jackhammers and chisels, master stone masons Miroslav Maler and later Nick Micros built full-scale mock-ups to help find a strategy to smooth the deeply scarred stone without removing so much material that the iron anchors would be at risk to exposure and corrosion. The contrac-

tor suggested wet honing the ashlar first to remove loose surface delamination. The final retooling was accomplished using carbon-tipped pneumatic chisels, which yielded a mottled surface that disguised the scarring but did not hide the age of the 143-year-old building.

### First, do no harm

Cosmo Veneziale is clear on what makes any kind of restoration authentic: research. In-depth, methodical research prior to making any assumptions leads to better decision making along the way. Veneziale's New York-based firm, Murno and Veneziale, won the commission to restore the facades of Harperley Hall, a tony residential building on Manhattan's Central Park West. A handsome 1911 Arts and Crafts building, Harperley Hall, designed by Henry Wilhelm Wilkinson, had not aged gracefully; its grand ornamentation and detailing had been obscured and damaged by decades of soot and grime.

The facades had never been cleaned, which prompted Veneziale to wonder at the start what degree of surface deterioration or structural





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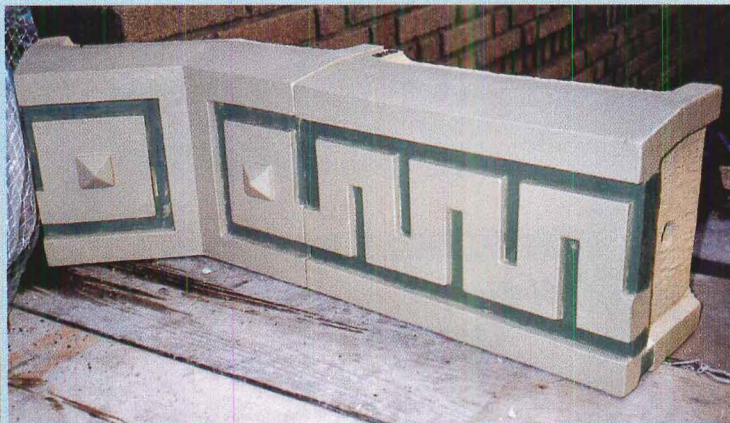
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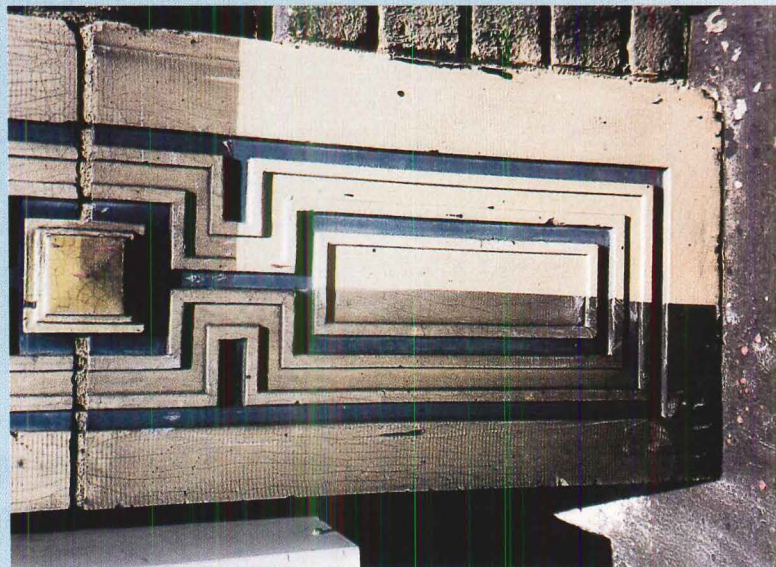
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The *façade gommage* method uses a fine powder under low pressure to gently remove dirt from exterior surfaces (right and below). Craftsmen replicated the existing terra-cotta details (above right) to match and replace the damaged original ones (above left).



failures were also hidden below the dirt. He stressed to the client that the most important initial action would be to determine through careful investigation the scope of work, which would, in turn, ensure proper bidding by subcontractors. "If this is done thoroughly and accurately, there will be few extras to inflate the construction costs in the end," he says. "We had very few change orders." The second action of any successful renovation project is to hire a contractor with exterior restoration experience. There are new methods and materials on the market that require that the contractor's workers be certified by the manufacturer. Finally, a good conservator is needed in the laboratory to check everything from the mortar mix to the species of the woods to the original colors.

In this case, research meant documenting, photographing, and sketching every square foot of the 12-story building. In order to determine the extent of damage as well as the actual materials, the entire envelope first had to be cleaned. Fearing that the numerous cracks in the masonry would put the interiors at risk for damage from a high-pressure water cleaning system, the architect specified a gentler method called

*façade gommage*, a proprietary process developed by the Paris-based firm Thomann-Hanry and performed by a team from its New York branch. *Gommage* (French for erase) is an ecologically sound cleaning process, which removes dirt and pollution particles by projecting a fine powder under low pressure onto the facade. No chemicals, water, or detergents are used. The size of the nontoxic organic or mineral-based powder particles are selected according to the type of masonry and nature of the dirt.

Trained technicians control the airflow with a back and forth movement, which resembles a rubbing process more than a blasting operation. Workers at Harperley Hall were enclosed on the scaffolding in a cabin equipped with vacuums, which immediately recovered dust and dirt, then sprayed the particles with water, and flushed them through a hose into a container on the ground. After a thorough cleaning, architect and contractor took to the scaffolding and covered every inch, sketching and photographing each injury to the masonry, lintels, sills, balconies, and ornamentation. Each was repaired, restored, or replicated, depending on individual circumstances, by trained craftsmen.



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Veneziale's meticulous research efforts extended to the fenestration. The original windows were Southern Yellow Pine beneath as many as 20 coats of paint. Replacement of all 812 windows and 33 pairs of French doors would have come at considerable cost. After investigating and rejecting aluminum replacement fenestration as not in keeping with the character of the building, the client agreed to custom-built, solid Honduras mahogany frames, painted to match the terra-cotta.

Two inconspicuous details varied from the originals in the window specifications. Instead of using weights and chain pockets to balance the operable sashes, the architect specified a Class 5 spring-type balance. This choice allowed the windows and doors to be installed from the interior of the building rather than from scaffolding on the exterior. Not only were the balances less expensive, a difficult installation process became easier. Tolerances were quite small. Even minimum racking would have interfered with operation. "The windows are like fine furniture and had to be treated as such," says Veneziale. The second detail change involved the true-divided lites. Most windows today are comprised of two panes separated by an air space. Such a thickness would have changed the profile of frames, so the architect specified 1/4-inch laminated safety glass.

Although circumstances and building types differed, strategies in both projects were based on a desire to reestablish the soul of each building. Even with a plethora of new products that can imitate stone, terra-cotta, and bronze, authenticity still seems to come not from a perfect prosthesis, but from the continuity that the original bones bring to the next generation. ■



The balconies were removed, refurbished, and the steel structure replaced.



## AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

### INSTRUCTIONS

- ◆ Read the article "Healing Exteriors Injured by Time" using the learning objectives provided.
- ◆ Complete the questions below, then fill in your answers [page 228].
- ◆ Fill out and submit the AIA/CES education reporting form [page 228] or download the form at [www.architecturalrecord.com](http://www.architecturalrecord.com) to receive one AIA learning unit.

### QUESTIONS

1. Why does face-bedded brownstone not weather as well as naturally bedded stone?
  - a. The bedding planes are set parallel to the ground rather than vertical.
  - b. Brownstone contains a large amount of mica within the bedding planes.
  - c. Clay protects naturally bedded stone by expanding when it is wet.
  - d. Face-bedded brownstone allows water to penetrate mortar joints.
2. Which of the following was not accomplished by workers removing layers of delaminating stone from Cooper Union's facade?
  - a. Water penetration increased.
  - b. It disfigured the once smooth ashlar.
  - c. The stone failure went several inches deep into the stone.
  - d. The lines of the Classical decoration were blurred.
3. Which of these technologies was not used to document Cooper Union's scope of restoration work?
  - a. infrared photography to determine what type of stone was under the paint
  - b. infrared photography to assess the condition of the old iron anchors
  - c. sounding with rubber mallets and stone chisels to determine each stone's condition
  - d. color-plotted working drawings to distinguish between materials and label existing conditions
4. At Cooper Union there was a near-perfect matching of the new stone with the old because of which of the following?
  - a. They used brownstone from Portland.
  - b. They used dutchmen.
  - c. They used cast stone.
  - d. They used stone from a quarry that had been closed for 70 years.
5. Which method was not included as research at Harperley Hall?
  - a. painting
  - b. photographing
  - c. sketching
  - d. measuring
6. Why was a high-pressure water cleaning system not used at Harperley Hall?
  - a. Fear that cracks in the masonry would put the interiors at risk for damage.
  - b. Fear that it would cause debris to fall on people in the area.
  - c. The building owners owned a *gommage* cleaning company.
  - d. They could not get enough water pressure at this location.
7. How does *gommage* work?
  - a. by vacuuming the facade
  - b. by spraying the facade with chemicals
  - c. by projecting a fine powder onto the facade
  - d. by washing the facade with detergents
8. What was used to replace the yellow pine windows at Harperley Hall?
  - a. vinyl clad pine frames
  - b. solid mahogany frames
  - c. extruded aluminum frames
  - d. solid vinyl frames
9. Why were the windows changed from weights and chain-pocket balance to spring-type balance?
  - a. It allowed less effort in raising the windows for emergency egress.
  - b. It allowed the windows to be installed from the exterior.
  - c. It allowed the use of better technology.
  - d. It allowed the windows to be installed from the interior.
10. Why were the masonry walls at Cooper Union overstressed so that they needed reconstruction in 1885?
  - a. The brownstone used was too soft.
  - b. An observatory was added on the roof.
  - c. The cast-iron columns had rusted.
  - d. Three skylights had been added to the roof.



# Digital Architect

## Digital technologies aid in adaptive reuse

By Jerry Laiserin, FAIA

The digital revolution reshaped the operation, organization, and service offerings of entire industries, perhaps none more so than financial services—banking, insurance, and securities trading. As a consequence, downtown office buildings built to suit the pre-digital needs of financial institutions were rendered obsolete. Many of these buildings have floor plates too small to be utilized efficiently by information-age businesses, and their electrical and mechanical systems cannot tolerate the demands of high-density, high-bandwidth computer environments. By the mid-1990s, the central business districts of many American cities were dotted with vacant relics abandoned by the financial organizations that built them. Structurally sound and often architecturally significant, these crucial pieces of the urban landscape seemed to have no economically viable future.

But the times changed, and shifting economics of downtown development in the late 1990s created a new demand for centrally located businesses, shopping areas, and other services, including hotels. As an occupancy type, hotels can take advantage of smaller floor plates with relatively shallow depth from windows to core. And while a

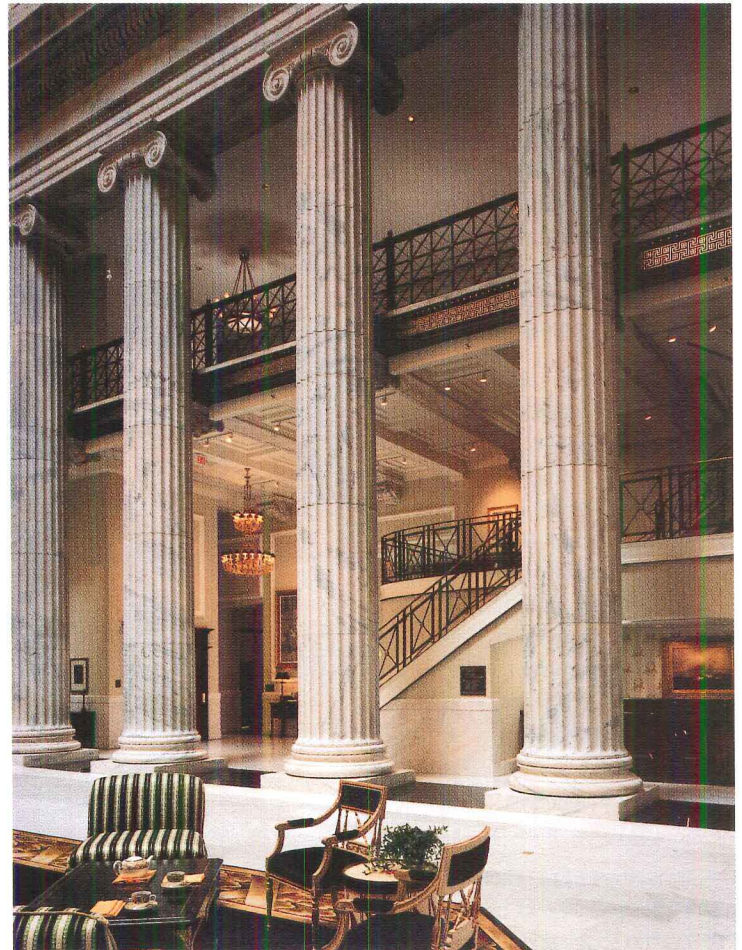
*Contributing editor Jerry Laiserin, FAIA, provides strategic consulting services to architects and their technology providers.*

**WWW** For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at [www.architecturalrecord.com](http://www.architecturalrecord.com)

floor of hotel rooms requires more plumbing than the same size floor of offices, hotel layouts are much less demanding of electrical services, total HVAC loads, and elevator capacity. Historic building features that might be costly encumbrances for a modern office can be transformed into revenue-enhancing amenities for an upscale hotel. Ironically, the digital technologies that rendered these buildings obsolete for their original purposes now enable architects to efficiently adapt them for reuse as hotels.

### The old, rendered new

Examples of office-to-hotel conversions abound nationwide, from Denver's Hotel Teatro (1998, built as the Tramway Tower in 1911) to Chicago's Burnham (1999, formerly the Reliance building, built in 1894) and New York's W Union Square (2000, in the 1911 headquarters of Guardian Life). But few locales can match the cluster of hotels that debuted in Center City Philadelphia in 2000. The much-beloved PSFS building, a 1932 Howe & Lescaze landmark of early Modernism, was converted to a Loews Hotel by Philadelphia architects Bower Lewis Thrower, working with interior designer Daroff Design Inc. [RECORD, October 2000, pages 136–147]. Just a few blocks away, a new Ritz-Carlton hotel was carved out of the 1908 and 1931 buildings of McKim, Meade and White's Girard Trust and Mellon Bank (MMW had teamed with canonic Philadelphia architects Furness, Evans and Company on the 1908 building) by the historic preservation studio of The Hillier Group (THG), based in Princeton,



**New marble, steel, and glass components were fabricated directly from the architects' CAD files, ensuring consistency with historic details in adapting a 1908 banking hall as the lobby of Philadelphia's new Ritz-Carlton hotel.**

N.J., with an office in Philadelphia. And a few blocks further on, Vincent G. Kling's 1964 Philadelphia Stock Exchange Building was transformed into the Hotel Sofitel by New York architects Brennan Beer Gorman, with Brennan Beer Gorman Monk Interiors (BBG-BBGM).

By reviewing the ways each firm used computers to accomplish its objectives—with building programs that were similar in size,

use, and location—it is possible to identify key contributions of digital technology to the success of these projects.

### Old prints and new methods

Although the architects on these projects were able to rely on extensive and accurate sets of existing blueprints, all three firms chose to redraw existing conditions in their CAD software rather than scanning



## Digital Architect

and converting the paper originals into digital form. Mario LaGuardia, AIA, the BBG-BBGM partner-in-charge on the Sofitel project, points out that financial institutions typically leave behind good documentation of their facilities, but the amount of manual cleanup required to derive CAD files from scanned paper plans makes scanning too time-consuming and costly. BBG-BBGM also needed to verify critical building features on-site as they redrew the plans. At BLT architects, principal-in-charge Andrew Jones, AIA, also chose to redraw in CAD for reasons of speed and accuracy, despite having access to working drawings and shop drawings of the PSFS building in the Lescaze archives at Syracuse

University. Garrison was confident that the MicroGDS model accurately reflected the structural conditions behind valuable historic materials, such as Georgia marble walls and ornamental plaster moldings, so the firm avoided invasive testing [RECORD, July 2000, pages 189–190]. Similarly, although Garrison had extensive experience with tools such as 3D laser scanning (by Quantapoint) and photogrammetry (deriving 3D computer models from photographs, a service provided by Frazier Associates) often used in renovations, these measures were unnecessary because of the high quality of existing documentation of fine details and hard-to-reach ele-

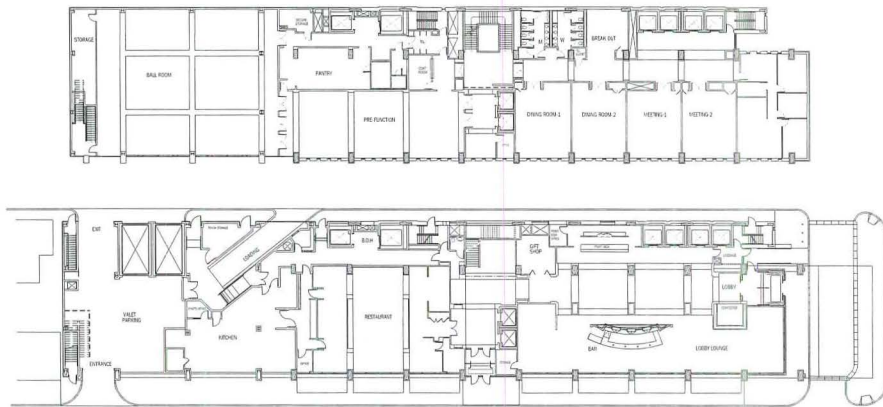
pool's eccentric loading and also proved that the original framing conformed to Philadelphia's current seismic requirements. BBG-BBGM, who also worked with Cagley Harman Associates during the Hotel Sofitel project, regularly exchanged AutoCAD files with them to coordinate the alignment of a guest room tower addition—one without an expansion joint between the new and existing buildings.

The Ritz-Carlton program called for a new staircase—a curved, 25-foot-wide, marble, steel, and glass affair leading to the lobby and reception area (formerly the banking hall). THG architects modeled the stair in MicroGDS, then converted the model to AutoCAD drawings for fabrication. A quarry in Italy cut the marble using computer numerical control machines driven directly from the CAD files, which

around on decisions such as treatment of historic details or the profile of replacement windows.

Although Web-based project collaboration networks were on the market when these adaptations were underway [RECORD, September 1999, pages 53–54; March 2001, pages 173–174], none of the architects used them, although some have explored these tools since. Roger Sparling, AIA, director of MIS at BBG-BBGM, finds that e-mail is sufficient for tracking communication and design decisions; for the firm's international projects, e-mail is often the least common denominator for communication. Jones at BLT relied on file sharing with consultants for the early phases of the Loews project, although in 1998, the design team was making the transition from mailing floppy disks to e-mailing files. BLT is now using a client-funded project collaboration network for a hotel project in Atlantic City. Similarly, the Ritz-Carlton teamed the architects at THG with interior designers in Los Angeles, making the project heavily dependent on e-mail, but THG has since experimented with a wide range of online collaboration tools.

**Despite the availability of complete sets of old drawings, the architects for the Hotel Sofitel Philadelphia achieved greater accuracy, efficiency, and integration of new and existing construction by redrawing all plans of the former Philadelphia Stock Exchange in AutoCAD.**



### Lessons learned

Even with high-quality

University. The Loews Hotel required a small addition on a lot adjoining PSFS to the south, and Jones was able to import the digital file of that site survey into his new drawings.

In addition to regular working drawings, Jim Garrison, AIA, the project architect for THG on the Ritz-Carlton job, was fortunate to find a complete set of steel shop drawings and an old steel manual in a basement storeroom of the Mellon Bank. Using data from the old manual, THG sized and detailed the antique steel sections using MicroGDS CAD software. Relying on a scrapbook of construction administration sketches and photos discovered in the MMW archives at Columbia

ments such as the coffered dome in the 1908 building's rotunda.

### Role models

Beyond merely replacing paper drawings, digital models support analytic and design techniques not possible with paper. For example, the Loews Hotel program called for a swimming pool on the fifth floor, which entailed the removal of three girders. BLT's structural engineering consultants, Cagley Harman Associates of Philadelphia, used the existing steel shop drawings to create a 3D AutoCAD model of the building's framing and connections. From this model, they calculated the additional bracing needed for the

eliminated the need for shop drawings. The Canadian fabricators of the stair's steel and glass components derived their shop drawings from CAD files, and the fabrication was coordinated via e-mail.

### A picture is worth ...

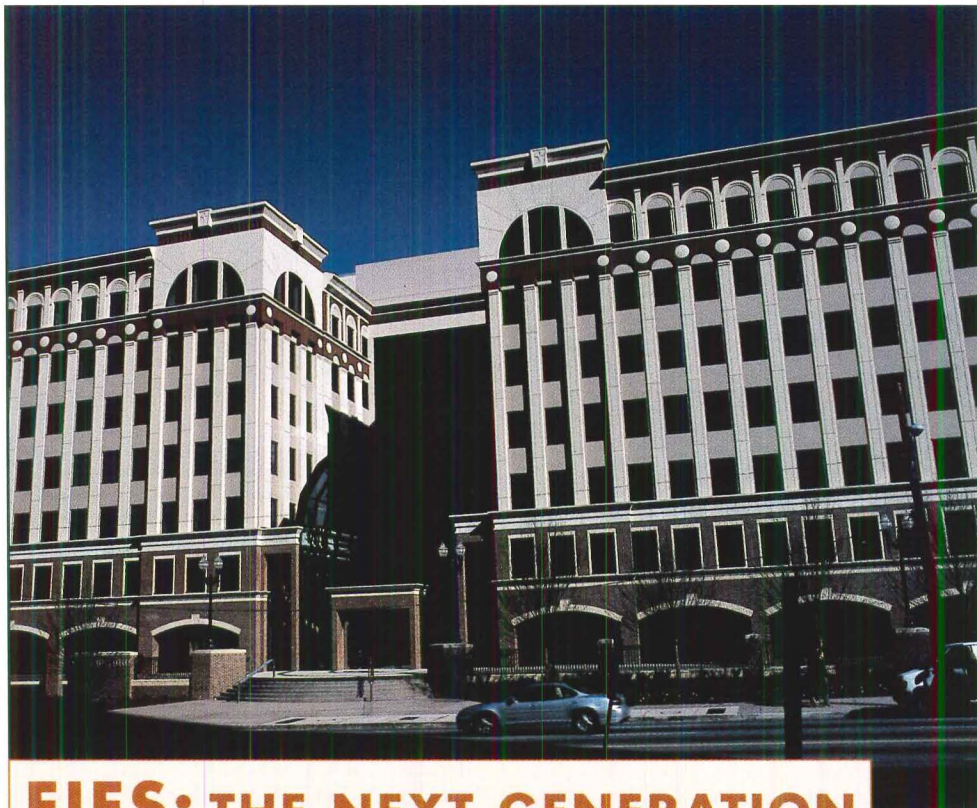
Both the Loews and Ritz-Carlton projects qualified for historic preservation tax credits [RECORD, October 2000, pages 63–64], which required close coordination between the architects and Pennsylvania's State Historic Preservation Office (SHPO) for approvals and certifications. Both firms relied on digital photography e-mailed to SHPO for quick turn-

paper documentation, redrawing existing conditions in CAD proved faster than scanning and correcting the scans. Once building information is in digital form, modeling techniques allow for analysis, design, and coordination more quickly and at a much more sophisticated level than paper-based processes. Digital photography, e-mail, and online file sharing can accelerate decision making and approvals. As Jones said, "We did adaptive reuse projects before we had computers, but CAD and related tools make it easier, faster, and more economical." Digital tools will continue to help architects breathe new life into old buildings. ■



## EIFS (EXTERIOR INSULATION AND FINISH SYSTEM)

is an insulating, decorative and protective finish system for exterior walls that can be installed on any type of construction. It is the only exterior wall covering that insulates and provides weather protection in a selection of shapes, colors, and textures that can replicate almost any architectural style or finish material, or stand by itself as an architectural finish. In 1952, two significant developments took place that led to the development of EIFS in Europe. The first patent was granted for expanded polystyrene (EPS) insulation board and the first synthetic plaster, an organic plaster using water based binders, was developed. The use of EPS and synthetic resin materials together began in the late 1950s and in 1963 EIFS was marketed in Europe. EIFS answered a need in the European construction market for a material that could insulate older masonry structures and enhance their appearance. The technology for EIFS was transferred to the United States in 1969. EIMA<sup>1</sup> was formed in 1981 to represent the common interests of the industry. By 1995 nearly 200 million square feet (18,580,608 m<sup>2</sup>) of EIFS were being installed annually on exterior walls in North America. In 1995, the industry suffered a setback when a number of EIFS clad homes in the Wilmington, North Carolina area were discovered with moisture damage behind the cladding. The damage was caused by poor construction detailing and practices, principally, the omission or improper installation of flashing in violation of minimum standards of construction set forth in building codes. A federal and several state class action lawsuits were filed, only one of which was certified (in the State of North Carolina). The North Carolina class action was settled by manufacturers. In the year 2000, EIFS—the next generation, was launched to propel EIFS into the next century.



## EIFS: THE NEXT GENERATION

### TRADITIONAL EIFS

A traditional EIFS (Figure 1) is a non-load bearing cladding and consists of five components: an insulation board, an adhesive and/or mechanical fastener to attach the insulation board to a substrate, reinforcing mesh for impact resistance, a base coat to embed the reinforcing mesh and to provide weather resistance, and a decorative and protective finish coat. This is the most popular type of EIFS and is classified as a Class PB (polymer based) System by EIMA. It is lightweight, easily accommodates aesthetic features such as decorative trim and reveals, and, in general, it does not require expansion and control joints like conventional stucco or masonry veneer. Its main limitations are impact resistance, and it is a barrier, or face seal wall design, which, in tandem with other barrier components—windows and sealants—resists water penetration at its outer surface.

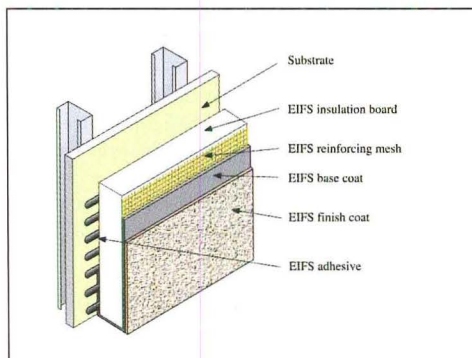


Figure 1. A Class PB EIFS consists of five components: adhesive, insulation board, base coat, reinforcing mesh and finish coat. Together they function as a decorative and protective insulating wall covering.

### EIFS AND BUILDING CODES

While EIFS have been in use in the United States for more than 30 years, they are not explicitly covered in model building codes. For materials or methods of construction that are not covered, building codes generally permit the use of alternates by providing the building code official with the authority to approve alternates with justification such as testing, engineering analysis, or some other evidence of compliance with the intent of the code. Such approval is generally granted on the basis of evaluation reports written by model code evaluation services. The evaluation report establishes the method in which a system or product is to be used, limitations associated with its use, and that it is an equivalent to the construction materials/methods of the code. The evaluation report should always be consulted when considering EIFS as the exterior wall covering, as it not only provides a means to verify compliance with the applicable code, but it is also evidence that the product has been thoroughly tested and evaluated.

To obtain an evaluation report manufacturers must satisfy numerous criteria published by evaluation services that verify system durability, structural and fire performance, as well as compliance with quality control programs. The use of foam plastic insulation in wall construction, in particular, requires extensive testing to verify performance. The IBC<sup>2</sup> presents the most comprehensive set of requirements, as it essentially merges the requirements of other model codes into one book. The basic requirements for the use of foam plastic in walls are established in Chapter 26. This includes:

- Labeling
- Separation from the interior.
- Fire performance testing (see Tables ID and IE in this article)



### AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION Series

Use the learning objectives below to focus your study as you read guidelines for **EIFS: THE NEXT GENERATION**. To earn one AIA/CES Learning Unit including one hour of health safety credit, answer the questions on page 185, and follow the reporting instructions on page 228 or, use the Continuing Education reporting form located at [www.architecturalrecord.com](http://www.architecturalrecord.com).

#### LEARNING OBJECTIVES

- Compare traditional EIFS to EIFS/the next generation.
- Describe the main drawback of EIFS/with traditional moisture protection
- Identify construction detailing to avoid water intrusion problems in EIFS.



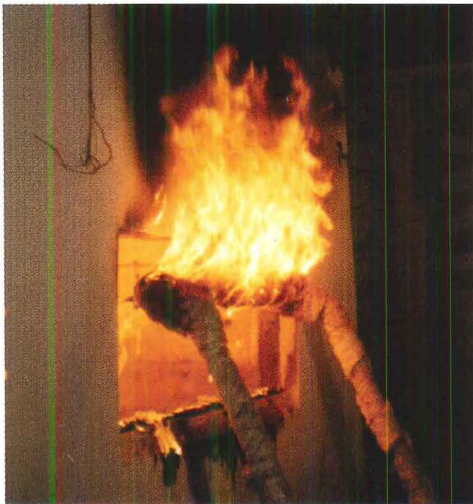


Figure 2. The photo illustrates testing in accordance with UBC Standard 26-9. The test replicates a two story structure with a fire in an interior compartment and examines lateral and vertical flame spread. The test is one of many criteria set forth in model codes to evaluate the performance of foam plastic-based wall assemblies. It is one of a series of fire tests that qualifies EIFS for use on buildings of noncombustible construction.

## EIFS—THE NEXT GENERATION

Class PB EIFS have been the predominant type of EIFS sold in North America, mainly because they combine low installed cost in an attractive multi-functional exterior wall covering. In recent years, as a result of building code requirements, several types of EIFS have been developed that incorporate traditional moisture protection, asphalt saturated felt, behind the EIFS. In most cases these newer types of EIFS require mechanical attachment, because EIFS adhesives will not stick to sheet goods. Mechanical fasteners have drawbacks. They act as thermal short circuits, which cause heat loss and can cause ghosting or telegraphing of the fasteners through the finished wall surface. They may also limit wind load resistance of the assembly. More recently, EIFS—the next generation, was developed to overcome the limitations of traditional moisture protection and mechanical fasteners. EIFS—the next generation incorporates a fluid applied membrane behind the EIFS wall covering on the substrate (Figure 3). The membrane has two functions:

- Air infiltration and exfiltration resistance
- Secondary moisture protection

As an air barrier the fluid applied membrane minimizes the risk of condensation within the building envelope by eliminating mass transfer of warm moisture laden interior air (in cold climates) to the exterior. As a secondary moisture barrier it provides a second line of defense in the event of a breach in the EIFS caused by impact damage or abuse. In combination with vertical ribbons of adhesive and starter tack with weepholes, the assembly provides both primary and secondary moisture protection and a means for incidental moisture to weep to the exterior. Unlike traditional moisture protection prescribed in the code (asphalt saturated felt) or housewraps, the fluid applied membrane is structural once it is applied to the substrate, since it essentially coats and adheres to the substrate. This eliminates the pitfalls associated with felt or fabric

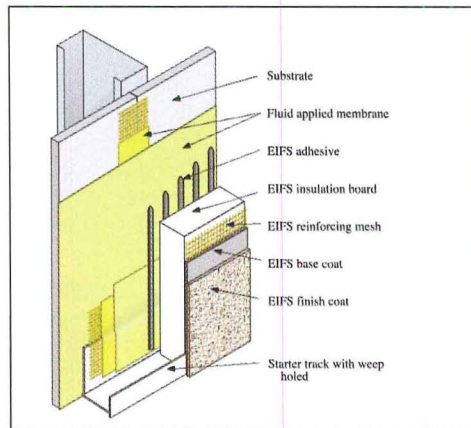


Figure 3. EIFS—the next generation incorporates a fluid applied membrane that functions as an air barrier and secondary moisture barrier in the wall assembly. Weepholes (not shown) behind the drip edge of the starter track direct water to the exterior in the event of a breach in the EIFS wall covering caused by impact or abuse.

moisture protection—punctures, and the potential for tearing and mis-lapping during installation. It also optimizes performance as an air and moisture barrier. Since the membrane is seamless and bonded to the substrate it won't leak water through holes or tears, and it won't flutter and compromise air barrier performance in the presence of air pressure differences or fluctuations, as do sheet goods<sup>3</sup>. The membrane is fully compatible with EIFS adhesives, and thus eliminates any need for mechanical attachment of insulation board, normally required over sheet goods. Thus thermal bridging is eliminated and negative wind load resistance, often limited by pull through of the EPS insulation board through the fasteners in mechanically attached systems, is no longer a limiting factor.

**Performance criteria for EIFS—the next generation** have been established by model code agencies. In particular stringent criteria for fluid applied membranes are established by SBCCI<sup>4</sup> and ICBO<sup>5</sup>. The SBCCI criteria require the membrane to sustain a static head of 21.6 inches (55 cm) of water for a period of at least 5 hours before and after aging. They also require resistance to air infiltration not to exceed 0.06 cfm/ft<sup>2</sup> (0.305 L/s·m<sup>2</sup>) at a pressure differential across the wall section of 0.3 inches (7.6 mm) of water. ICBO acceptance criteria require no water leakage after exposure to cyclic wind loading followed by 75 minutes of water spray with simultaneous air-pressure differential that approximates a sustained 50 mph (80 km/h) wind. In essence, these performance criteria require the wall to be waterproof and resistant to air infiltration before the EIFS wall covering is put in place. They also require the membrane to be resistant to the affects of UV aging even though it will not be subjected to UV exposure while in service. This substantially exceeds the performance requirements for conventional water-resistive barriers prescribed in the code. Refer to Table I for a complete listing of performance criteria for EIFS—the next generation.

## EIFS DESIGN AND DETAILING

Regardless of whether one chooses to design with a traditional Class PB EIFS or with EIFS—the next generation, a vital component for long term durability and life safety is construction detailing. "As much as

90 percent of all water intrusion problems occur within 1 percent of the total building exterior surface area. The 1 percent of the structure's façade contains the terminations and transition detailing that all too frequently lead to envelope failures."<sup>6</sup> With this in mind, design criteria and detailing considerations for EIFS are listed below:

1. **Wind Load**—design for maximum allowable system deflection, normal to the plane of the wall, of L/240. This is a basic requirement for stiffness of the supporting wall construction. The EIFS manufacturers code evaluation report and/or independent tests should be checked to determine design pressure limits.
2. **Moisture Control**—prevent the accumulation of water behind the EIF system, either by condensation or leakage into the wall construction, in the design and detailing of the wall assembly. This is accomplished in three ways:

- i.) by providing flashing above window and door heads, beneath window and door sills (Figure 4), at roof/wall intersections (Figure 5), decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall, such that water is directed to the exterior, not into the wall.

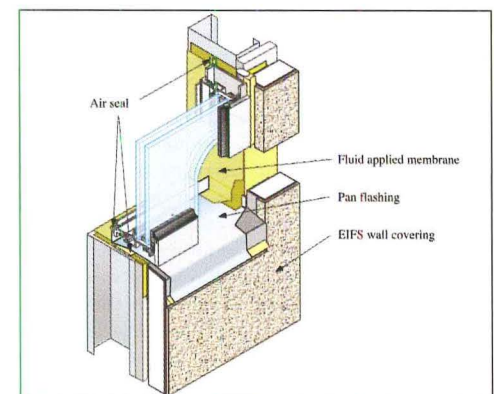


Figure 4. Sill flashing is provided beneath potential leak sources such as windows to direct water to the exterior, not into the wall assembly. The fluid applied membrane protects the rough opening. The inner seals beneath the window, at the back leg of the pan flashing, and along the jamb interface, function as air seals to reduce the effect of pressure differential, one of the driving forces of water intrusion, at seams in the construction.

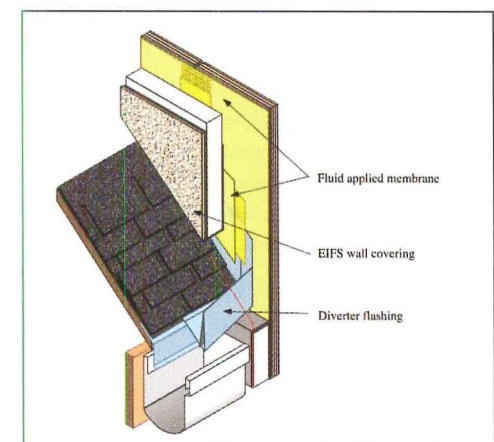


Figure 5—critical details such as roof/wall intersections must include diverter flashing that integrates with the exterior wall covering such that rain water is directed to the exterior, not into or behind the exterior wall covering.



ii.) by controlling air leakage in cold climates to prevent water vapor in moist air from condensing and being deposited inside the wall assembly. EIFS—the next generation includes an air barrier behind the EIFS on the supporting construction. Note, however, that air barrier continuity is necessary to prevent excess air leakage. Thus, adjoining components in the building envelope assembly—windows, doors, and roof membranes—must be connected to the EIFS air barrier. The effects of air tightness on mechanical ventilation requirements and indoor air quality should also be considered in the overall project evaluation.

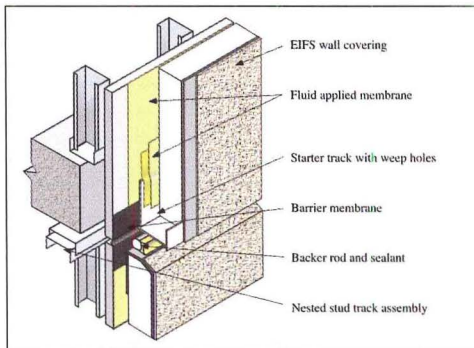


Figure 6. Expansion joints are required at floor lines in construction where floor line deflection is anticipated. In this case a nested stud in the structural frame assembly accommodates deflection. The EIFS wall covering must also include a joint to accommodate the movement. In wood frame construction joints are similarly required to accommodate anticipated movement caused by cross grain shrinkage of wood joists.

iii.) by minimizing the risk of condensation in the wall assembly caused by water vapor diffusion. In the event condensation is identified in the wall assembly, increasing the thickness of insulation will generally move the dew point outward to a safer location in the wall assembly or eliminate it altogether. In any event one should generally avoid the use of vapor retarders on the interior side of the wall in warm, humid climates. The vapor retarder has the effect of inhibiting drying in the event of incidental moisture intrusion, and can potentially cause damage to interior wall components should water vapor condense behind them. In general condensation has not been a significant source of moisture accumulation in EIFS clad walls. By far, the largest risk of water damage in walls is bulk water entry from rainfall and leaks associated with poorly designed or improperly constructed details.

3. **Impact Resistance**—EIFS impact resistance can be greatly enhanced by adding a layer of reinforcing mesh to the standard grade of mesh. Areas subject to abuse such as ground floors, entrances, columns at carports, etc., should receive the extra mesh layer to a minimum height of 6'-0" (1.8 m) above finished grade. Impact resistance is classified by EIMA as Levels 1-4, with 4 being the highest impact resistance level. Where additional impact resistance is required, contract drawings should indicate the locations on elevations.

4. **Color Selection**—select finish coat with a light reflectance value of 20 or greater.

Light reflectance is a relative measure of lightness of a color. The higher the number on a scale of 1-100 the lighter the color. The use of dark colors (lightness value of less than 20) is not recommended with EIF Systems that incorporate EPS. EPS has a service temperature limitation of approximately 160°F (71°C) and sustained exposure at this level or higher could result in deformation of the EPS and delamination of the EIFS coatings. Consideration should also be given to light reflective surfaces such as mirrored glass, or white concrete in full sun, which can reflect sunlight onto an EIFS wall surface and increase surface temperatures.

5. **Joints are required at the following locations in EIFS wall assemblies:**

- i.) where they exist in the substrate or supporting construction
- ii.) where the EIFS adjoins dissimilar construction or materials (Figure 7)
- iii.) where pre-fabricated panels abut one another
- iv.) where the substrate changes
- v.) at changes in building height or where other significant changes in building shape or structural system occur that could cause differential movement
- vi.) at floor lines in multi-level wood frame construction (Figure 6)

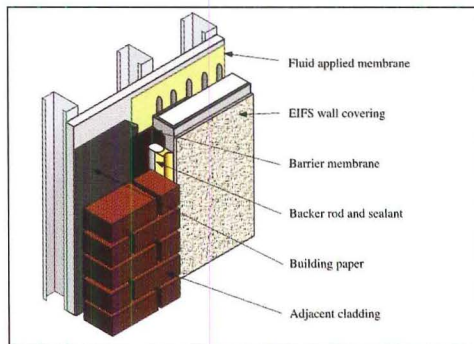


Figure 7. A two stage joint sealant design can be accomplished with a primary outer seal and secondary inner seal (barrier membrane). Note, the fluid applied membrane, although not shown behind the adjacent cladding in this case, can also take the place of the traditional moisture protection behind the adjacent cladding.

In addition to the above joint locations, wherever the EIFS terminates at abutting elements such as windows, doors, fixture penetrations, and dissimilar materials, a joint must be provided between the adjoining materials (Figure 4). Joints should be sealed with compatible backer rod and sealant that has been evaluated in accordance with ASTM C 1382<sup>7</sup>. Joint sealants tested in accordance with this method are subjected to harsh exposures that enable the specifier to verify joint performance under an array of environmental conditions. Consideration should also be given to joint designs with secondary moisture protection and drainage to the exterior (Figure 7). Such two stage joint designs can minimize maintenance associated with sealants, particularly on mid or high-rise structures.

6. **Grade Condition**—do not specify EIFS below grade (unless the system is especially designed for use below grade) or for use on surfaces subject to continuous or intermittent water immersion or hydrostatic pressure. EIFS is a finish material intended for use as a vertical above grade wall covering. It should be noted that in recent years some codes have prohibited the use of foam plastic below grade because of the potential for termites to migrate undetected behind foam plastic insulation.

7. **Trim, Projecting Architectural Features and Reveals**—all trim and projecting architectural features must have a minimum 1:2 [27°] slope along their top surface. All horizontal reveals must have a minimum 1:2 [27°] slope along their bottom surface. Slope should be increased for northern climates to prevent accumulation of ice/snow and water on the surface. Where the trim/feature or bottom surface of the reveal projects more than 2 inches (51 mm) from the face of the EIFS wall plane, the top surface should be protected with waterproof base coat to supplement the standard base coat. The use of trim and features that exceed the maximum allowable thickness of EPS permitted by code (typically 4 inches [100 mm]) should be avoided. Periodic inspections and increased maintenance may be required to maintain the surface integrity of EIFS on weather exposed sloped surfaces. Therefore limit projecting features to easily accessible areas and limit total area to facilitate maintenance and to minimize the maintenance burden that can be associated with such features.

Lastly, for large weather exposed projecting features such as ledges or cornices, the feature should be built out with framing or other structural support and protected with metal coping or flashing.

8. **Fire Protection**—for Types I, II, III and IV construction do not use foam plastic in excess of 4 inches (100 mm) thick unless it is specifically recognized in the EIFS manufacturers code evaluation report or approved by the code official. Where a fire-resistance rating is required use EIFS over an existing rated assembly and refer to the manufacturer's applicable evaluation report for limitations that may apply. EIFS is considered not to add or detract from the fire-resistance of a rated assembly. ■

## CONCLUSION:

EIFS have been in use worldwide for nearly half a century, and in North America for more than 30 years. They offer excellent thermal and moisture protection and a wide variety of aesthetic possibilities for exterior walls at an affordable cost. When choosing EIFS as an exterior wall covering it is important to consider code compliance, which can generally be verified with the manufacturer's model code evaluation report. EIFS—the next generation includes a fluid applied membrane material applied to the substrate as an air and moisture barrier. It affords additional levels of moisture protection and air infiltration resistance at a modest cost increase without limiting aesthetic design choices. Criteria are in place that measure the performance of these systems and demonstrate that they exceed the performance of traditional moisture protection prescribed in model codes. An essential component for long term durability of EIFS and other exterior wall coverings is sound design and construction detailing.



**TABLE 1: EIFS—THE NEXT GENERATION PERFORMANCE SPECIFICATIONS**

<b>TABLE 1A—AIR/MOISTURE BARRIER PERFORMANCE</b>		
<b>TEST</b>	<b>METHOD</b>	<b>CRITERIA</b>
1. Water Penetration Resistance	AATCC 127(Water Column)	Resist 21.6 in (55 cm) water for 5 hours before and after aging
2. Water Penetration Testing	ASTM E 1233 / ASTM E 331	No water at exterior plane of sheathing. (exterior gypsum, Dens-Glass Gold, plywood, OSB) after 10 cycles @ 80% design load and 75 minutes water spray at 6.24 psf (299 Pa) differential
3. Water Resistance Testing	ASTM D 2247	Absence of deleterious effects after 14 day exposure
4. Water Vapor Transmission	ASTM E 96Method B (Water Method)	Measure
5. Air Leakage	ASTM E 283	<0.06 cfm/ft <sup>2</sup> (0.305 L/s·m <sup>2</sup> )
6. Structural Integrity	ASTM E 330	2 inches (51 mm) water pressure (positive & negative) for 1 hour.
7. Dry Tensile Strength	ASTM D 882	20 lbs/in (3503 N/m) minimum before and after aging
8. Pliability	ASTM D 522	No cracking or delamination using 1/8" (3 mm) mandrel at 14°F (-10°C) before and after aging
9. Surface Burning	ASTM E 84	Flame Spread: <25 Smoke Developed: <450
10. Tensile Adhesion	ASTM C 297	>15 psi (103 kPa)

<b>TABLE 1B—EIFS WEATHER RESISTANCE AND DURABILITY PERFORMANCE</b>		
<b>TEST</b>	<b>METHOD</b>	<b>CRITERIA</b>
1. Accelerated Weathering	ASTM G-23	No deleterious effects at 2000 hours when viewed under 5x magnification
	ASTM G-53	No deleterious effects at 2000 hours when viewed under 5x magnification
2. Freeze/Thaw Resistance	EIMA 101.01 (Modified ASTM C-67)	No deleterious effects at 60 cycles
3. Water Penetration	EIMA 101.02 (Modified ASTM E 331)	No water penetration beyond the plane of the base coat/EPS board interface after 15 minutes at 6.24 psf (299 Pa) or 20% of design wind pressure, whichever is greater
4. Drainage Efficiency	EIMA 200.02	90% minimum
5. Tensile Adhesion	EIMA 101.03 (modified ASTM C-297)	No failure in the adhesive, base coat, or finish coat. Minimum 5 psi (34 kPa) tensile strength before/after accelerated weathering and freeze/thaw exposure
6. Water Resistance	ASTM D-2247	No deleterious effects* at 14 day exposure
7. Salt Spray	ASTM B-117	No deleterious effects* at 300 hours
8. Abrasion Resistance	ASTM D-968	No cracking or loss of film integrity at 528 quarts (500 L) of sand
9. Mildew Resistance	ASTM D-3273	No growth supported during 28 day exposure period

\*No deleterious effects: no cracking, checking, crazing, erosion, rusting, blistering, peeling or delamination

<b>TABLE 1C—EIFS COMPONENT PERFORMANCE</b>		
<b>TEST</b>	<b>METHOD</b>	<b>CRITERIA</b>
1. Alkali Resistance of Reinforcing Mesh	EIMA 105.01	Greater than 120 pli (21 dN/cm) retained tensile strength
2. Physical properties and Requirements for EPS Board	ASTM C-578	Refer to EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board
3. Requirements for Rigid PVC Accessories	ASTM D-1784	Meets cell classification 13244C

<b>TABLE 1D—EIFS AND AIR/MOISTURE BARRIER FIRE PERFORMANCE</b>		
<b>TEST</b>	<b>METHOD</b>	<b>CRITERIA</b>
1. Fire Endurance	ASTM E119	Maintain fire resistance of existing rated assembly
2. Intermediate Scale Multi-Story Fire Test	UBC Standard 26-4 or 26-9	1. Resistance to vertical spread of flame within the core of the panel from one story to the next 2. Resistance to flame propagation over the exterior surface 3. Resistance to vertical spread of flame over the interior surface from one story to the next 4. Resistance to significant lateral spread of flame from the compartment of the fire origin to adjacent spaces
3. Radiant Heat Ignition	1996 National Building Code, Section 1406.0 (NFPA 268) 1997 Standard Building Code, Section 2603.4.7 (NFPA 268)	No ignition @ 20 minutes No ignition @ 20 minutes

<b>TABLE 1E—COMPONENT FIRE PERFORMANCE</b>		
<b>TEST</b>	<b>METHOD</b>	<b>CRITERIA</b>
Surface Burning	ASTM E 84	Insulation board and reinforced coating system shall each have a flame spread of 25 or less, and smoke developed of 450 or less

<b>TABLE 1F—IMPACT RESISTANCE PERFORMANCE</b>		
<b>TEST</b>	<b>METHOD</b>	<b>CRITERIA</b>
1. Impact Resistance	EIMA 101.86	Level 1: 25-49 in-lbs (2.83-5.54 J) Level 2: 50-89 in-lbs (5.65-10.1 J) Level 3: 90-150 in-lbs (10.2-17 J) Level 4: >150 in-lbs (>17 J)

<b>TABLE 1G—STRUCTURAL PERFORMANCE TEST</b>		
<b>TEST</b>	<b>METHOD</b>	<b>CRITERIA</b>
1. Wind Load	ASTM E-330	Withstand negative and positive wind loads required by prevailing building code



### NOTES

1. EIMA, EIFS Industry Members Association. This acronym for the EIFS industry trade association stood for Exterior Insulation Manufacturers Association in 1981.
2. *International Building Code*, (Falls Church: International Code Council, 2002), pp. 627–630.
3. Bosack, Edward J. III, and Burnett, Eric F.P., "The Use of Housewrap in Walls: Installation, Performance and Implications," Research Series Report NO. 59, (University Park: Pennsylvania Housing Research Center, 1998), pp. 14–20, 41–42.
4. "Southern Building Code Congress International Public Safety Testing and Evaluation Services, Inc. Evaluation Guide I19, Evaluation Guide on Floor, Wall, and Roof Systems (Testing for Moisture Protection Barriers)," (Birmingham: Southern Building Code Congress International Public Safety Testing and Evaluation Services, Inc., 1995), pp. 1--2.
5. "International Conference of Building Officials Evaluation Services, Inc. Acceptance Criteria 24, Acceptance Criteria for Exterior Insulation and Finish Systems," (Whittier: International Conference of Building Officials Evaluation Services, Inc., 1999), pp. 5-6.
6. Kubal, Michael, T., *Waterproofing the Building Envelope*, (McGraw-Hill, Inc., 1993), pp.4.
7. "American Society of Testing and Materials C 1382, Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints," (West Conshohocken: American Society of Testing and Materials, 1997).

### LEARNING OBJECTIVES

- Compare traditional EIFS to EIFS/the next generation.
- Describe the main drawback of EIFS/with traditional moisture protection
- Identify construction detailing to avoid water intrusion problems in EIFS.

### INSTRUCTIONS:

Refer to the learning objectives above. Complete the questions below. Then answer test questions and fill out the reporting form on page 228 and submit it or use the Continuing Education self report form on *Record's* web site - [www.architecturalrecord.com](http://www.architecturalrecord.com) - to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

### QUESTIONS:

**Q: 1. Class PB EIFS does not contain which of these?**

**A:** a. insulation board; b. fluid applied membrane; c. reinforcing mesh; d. base and finish coat

**Q: 2. What is the primary purpose of an evaluation report?**

**A:** a. It verifies that a system is equivalent to the construction materials/methods of the code.; b. It verifies that a system or product has passed a performance test.; c. It verifies the durability of a system or product.; d. It verifies the structural and fire performance of a system or product.

**Q: 3. What is a limitation of traditional EIFS?**

**A:** a. They did not typically incorporate moisture protection materials behind the EIFS on the substrate.; b. They did not use a fastening device.; c. The heated up to dangerous temperatures.; d. They were subject to cracking like conventional stucco.

**Q: 4. Which is not an important construction detail or design criteria for EIFS?**

**A:** a. Control joints for expansion and contraction like stucco or masonry veneer.; b. Deflection from wind load.; c. Light reflection.; d. Joint design for drainage to the exterior.

**Q: 5. Which is true of EIFS/the next generation?**

**A:** a. It requires mechanical fasteners.; b. It limits wind load resistance.; c. It incorporates a moisture protection on the substrate.; d. It is used primarily below grade.

**Q: 6. What percent of water intrusion problems occur within one percent of the building exterior?**

**A:** a. 90%; b. 80%; c. 50%; d. 40%

**Q: 7. Which is true of traditional EIFS?**

**A:** a. It does not require adhesive or mechanical fasteners to attach it to the substrate.; b. It is polymer based.; c. It is difficult to install.; d. It is used primarily below grade.

**Q: 8. What are the advantages of a fluid applied membrane?**

**A:** a. It flutters in the wind to allow air into the system.; b. It accelerates thermal bridging.; c. Its seams are lapped to prevent moisture penetration.; d. It is bonded to the substrate to prevent tears.

**Q: 9. Which performance criteria is required for EIFS/the next generation?**

**A:** a. The wall must be waterproof before the EIFS wall covering is put in place.; b. The wall must be resistant to air infiltration before the the EIFS wall covering is put in place.; c. The fluid applied membrane must be resistant to the affects of UV aging.; d. All of the above.

**Q: 10. The specification for minimum drainage efficiency of EIFS/the next generation is which?**

**A:** a. 60%; b. 70%; c. 90%; d. 100%



FOR MORE INFORMATION ON EIFS NEXT, PLEASE CONTACT:

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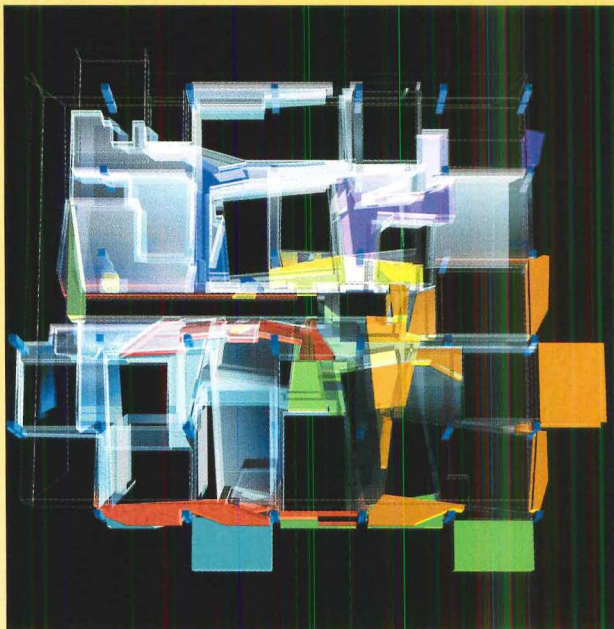
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# LIGHTING

Inspired by a student **Web site**, a collage of light transforms a **Paris campus**



“If we all did the things we are capable of doing, we would literally astound ourselves,” wrote Thomas Alva Edison, the father of electric light. This inspiring maxim—to harness our collective talent and creativity—is advice we can all take to heart, particularly in light of today’s challenging

global outlook. One peer group remains primed to capture such promise held within the clean slate: college students. Granted, they can be a notoriously contrarian bunch (you remember campus sit-ins, don’t you?), but fertile experimentation and discourse often yields creative solutions in the classroom and in the “real-life” world beyond.

Outside Paris, a recently renovated university building is dedicated to a cross-pollination of creative disciplines. Students of music, dance, film, theater, photography, and graphic design pursue a mutual passion for making art. When asked to transform the school’s sterile ’70s building into a vibrant center for arts education, architects Bernard Dufournet and Jacques Moussafr were inspired by a landscape created by the students themselves: the virtual world of the school’s Web site ([www-artweb.univ-paris8.fr](http://www-artweb.univ-paris8.fr)). Taking their cue from the movement and color dancing across the computer screen, the architects decided to literally break out of the box: The staid rectangular footprint of the building has been freed by sun-washed classrooms cantilevered out into the landscape. And a layering of colored light patterned after the Web site’s hues wraps the corridors and classrooms like a three-dimensional collage (the breathtaking rendering for the lighting plan is at left).

For design professionals or students discouraged by the slow ebb of a current project, perhaps another illuminating Edison remark (in today’s parlance, a sound bite) is apt: “I speak without exaggeration when I say I have constructed 3,000 different theories in connection with the electric light, yet in only two cases did my experiments prove the truth of my theory.” Rare is the appearance of such genius, of course, but perseverance at the drafting table or PC can bring sustained accomplishment. Go ahead, astound yourself. *William Weathersby, Jr.*

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## 191 Creative uses

### 195 Universal CityWalk, Orlando

*Sussman/Prejza & Company;  
Kaplan Partners Architectural  
Lighting; Lightswitch*

## 202 University of

### Saint-Denis, Paris

*Dufournet and Moussafr*

## 208 Technology: A fixture for the next century

## 211 Lighting resources



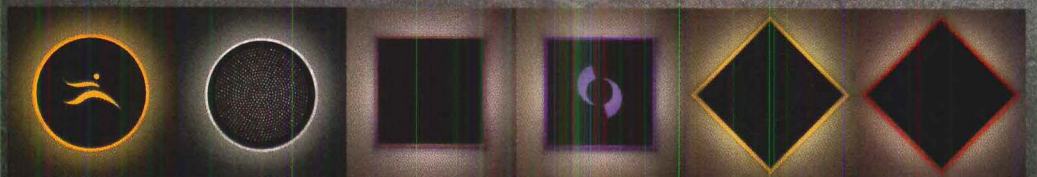


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CIRCLE 72 ON INQUIRY CARD



# Creative Uses



## For the RECORD: A house that appeared in this magazine in 1969 returns in a new light

Built in 1969 for the National Home Builders Association Convention, the Steelwood House in Houston has shown remarkable longevity. It is one of three townhouses designed by Wilson, Morris, Crain & Anderson Architects (now Morris Architects)—which also designed the Astrodome, the convention site—that were influenced by domestic Modernist milestones such as Mies van der Rohe's Farnsworth House and Philip Johnson's Glass House. The structures were framed entirely in steel

and built southwest of downtown to demonstrate the use of steel in residential construction. Appearing as RECORD HOUSES in May 1969, they were called "unusually effective and elegant examples of the spaciousness and livability that can be achieved on a small urban lot." The Houston chapter of the AIA bestowed on the project its 25-Year Award in 1998.

Three decades later, architect and lighting consultant Michael John Smith, AIA, IALD, is completing a

careful restoration of Steelwood as his own residence. Working with life partner Malcolm McKinney Perry, Smith has employed lighting to enhance the local landmark.

"Houston is not a city that has generally valued the Modernist residential aesthetic," Smith says. "Buildings like this are torn down or remodeled as ersatz Mediterranean villas all the time. We respect the house's integrity, and the lighting aids in revealing its special character."

Illumination circa '69 was bare

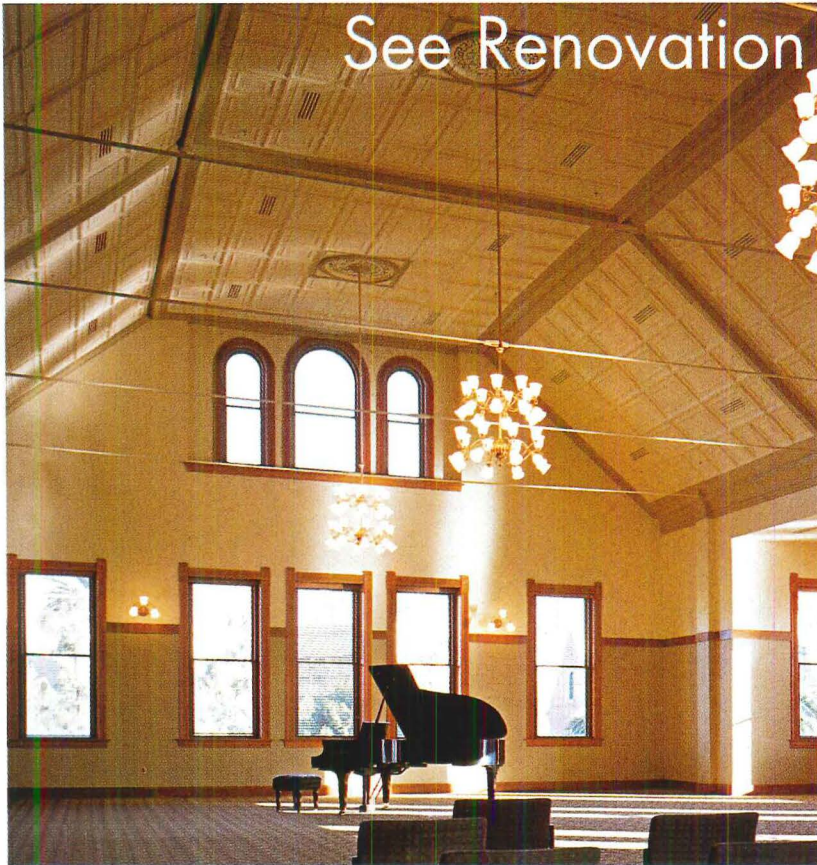
bones: floodlights blasted the facade, while table lamps dimly illuminated most rooms. Today, Smith's multilayered lighting plan incorporates (clockwise from above left) a light sculpture as a dining room canopy near a colored light wall; blue dichroic lenses spotlighting a credenza; and a Zen garden lit by 13 roof-mounted AR111 spots.

For more lighting details, plus RECORD's 1969 article on the house, visit [www.architecturalrecord.com](http://www.architecturalrecord.com).  
*William Weathersby, Jr.*



Visit [www.architecturalrecord.com](http://www.architecturalrecord.com)

## See Renovation **Building Types Studies**

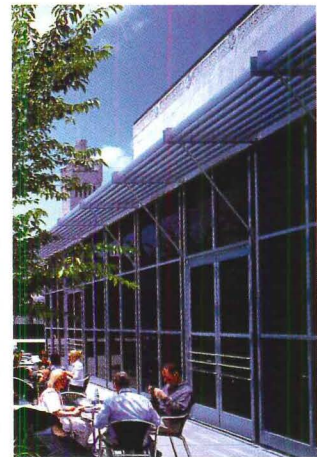


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A simple click transports you to eight diverse renovation projects in **November's Expanded Renovation Building Types Study section**—found only at [Architecturalrecord.com](http://Architecturalrecord.com). That's in addition to the five renovation projects featured in this issue of the magazine.

Featured projects include Thebaud Hall, Fordham University, Buttrick White & Burtis; Hotel Teatro, Denver, CO, David Owen Tryba Architects; New York Historical Society, Beyer Blinder Belle Architects; Arizona State University's Old Main, Van Dijk Pace Westlake; Barn studio in Orient, New York, Studio A/B; Frist Centre for the Visual Arts, Tuck Hinton Architects; Blackwell House, London, Allies and Morrison; The State Education Building, Albany, Collins + Scoville Architects. Get on the inside track with informative descriptions, plans, specs, photos, and links to key people and products involved in each renovation project.

Since the January 2001 issue, every month's Building Type Study features a wealth of additional projects on the web.

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# Flashy graphics, signage, and lighting work in concert to enliven an entertainment promenade in Florida

by Catherine McHugh

One word has become synonymous with the American theme park: Orlando. Among the Florida city's most prominent vacation destinations is Universal Orlando, which encompasses both the Universal Studios and the Islands of Adventure. Universal recently broadened its reach—and consolidated its sprawling site—with the addition of CityWalk, a new gateway for its pair of parks. CityWalk also stands alone as its own entertainment destination for tourists and locals alike. The 30-acre complex features outdoor stages and common areas offering concerts, arts festivals, cooking demonstrations, celebrity appearances, street performances, and other activities to draw patrons around the clock. Set beside a man-made lagoon, a new plaza is framed by an array of restaurants, nightclubs, shops, a cineplex, and live entertainment venues.

While an earlier CityWalk project at Universal's Los Angeles location (with a master plan by Jerde Partnership) was an idealized, small-scale collage of that city's pop-cultural landscape, the Orlando promenade conveys a more layered, regionally inspired vernacular style dubbed by the design team "tropical urbanism." Working with an in-house team led by Universal vice president of design Richard Orne, the multidisciplinary design firm Sussman/Prejza & Company has created a series of streetscape elements—beautifully articulated totems, towers, and signs—that define and unify the public promenade.

Three distinctive, metal-clad towers form the landmarks of CityWalk's skyline, enhanced by a network of satellite totems: seven within the plaza, 13 at the waterfront, and nine for the entryway. "The streetscape elements play a central role within CityWalk's urban design," says Sussman/Prejza principal architect and project designer John Johnston. "The vertical elements provide armatures for lighting, sound, shading, and graphic iconography. At the same time, they create a coherent civic presence."

To ensure that all of CityWalk comes alive at night, the architects joined with lighting designers Joe Kaplan of Kaplan Partners Architectural Lighting and Norm Schwab of Lightswitch.

*Catherine McHugh, a freelance writer and editor based in New York City, has specialized in architectural and entertainment lighting for 11 years.*

**Project:** Universal CityWalk, Orlando, Fla.

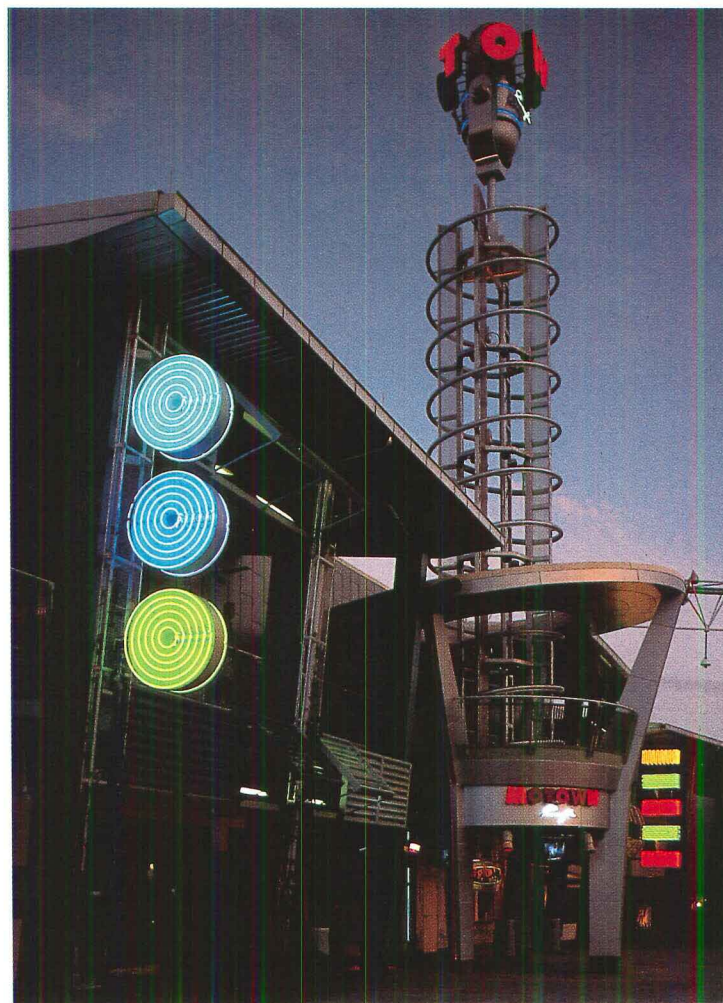
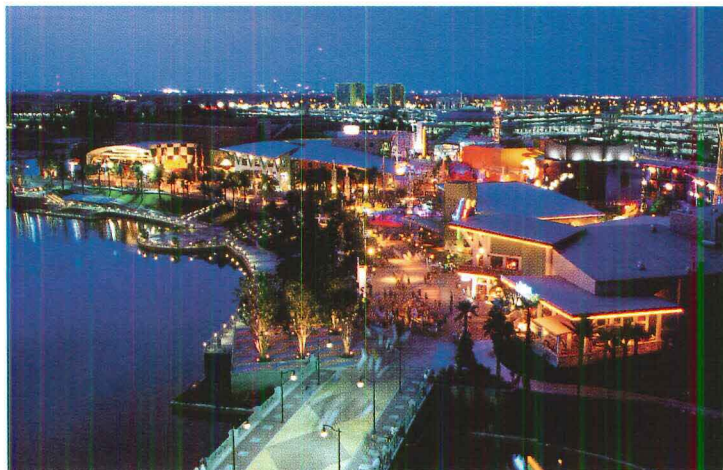
**Architect/designer:** Sussman/Prejza & Co.—John Johnston, project architect; Angela Lam, Julius Bhang, Paula Loh, Paul Nagakura, Paul Novacek, Joy Sih, Jeeun Kim, Robert Chacko, John Colter, project team

**Architect of record:** HOK Studio E, Orlando (base buildings)

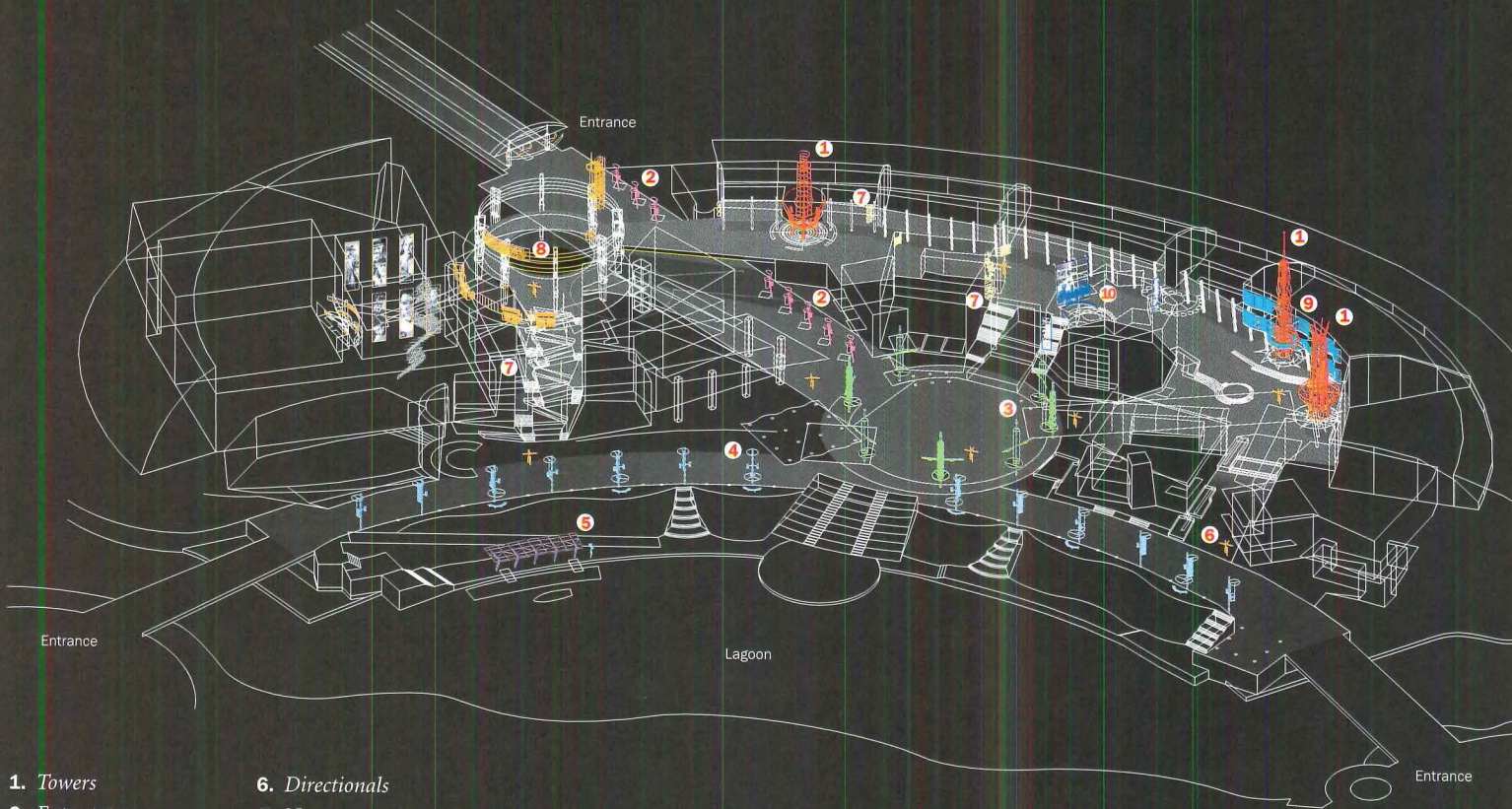
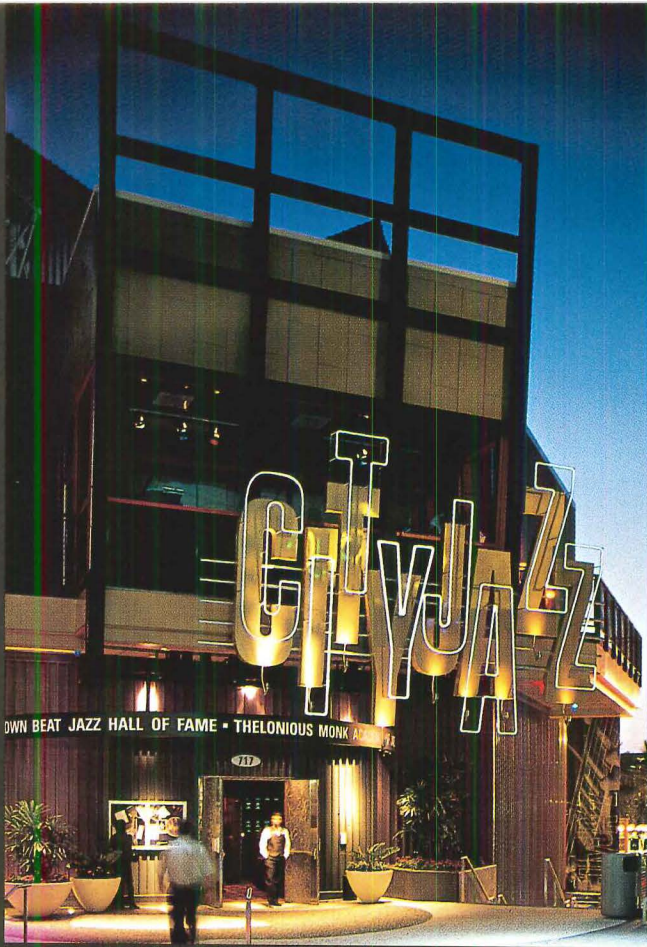
**Lighting designers:** Kaplan Partners Architectural Lighting—Joe Kaplan, Chris Coe; Lightswitch (theatrical lighting)—Norm Schwab, principal

**In-house designer:** Universal Creative/CityWalk Orlando

**The Universal CityWalk in Orlando (right) connects two theme parks. Neon signage and lighted towers aid wayfinding (bottom).**

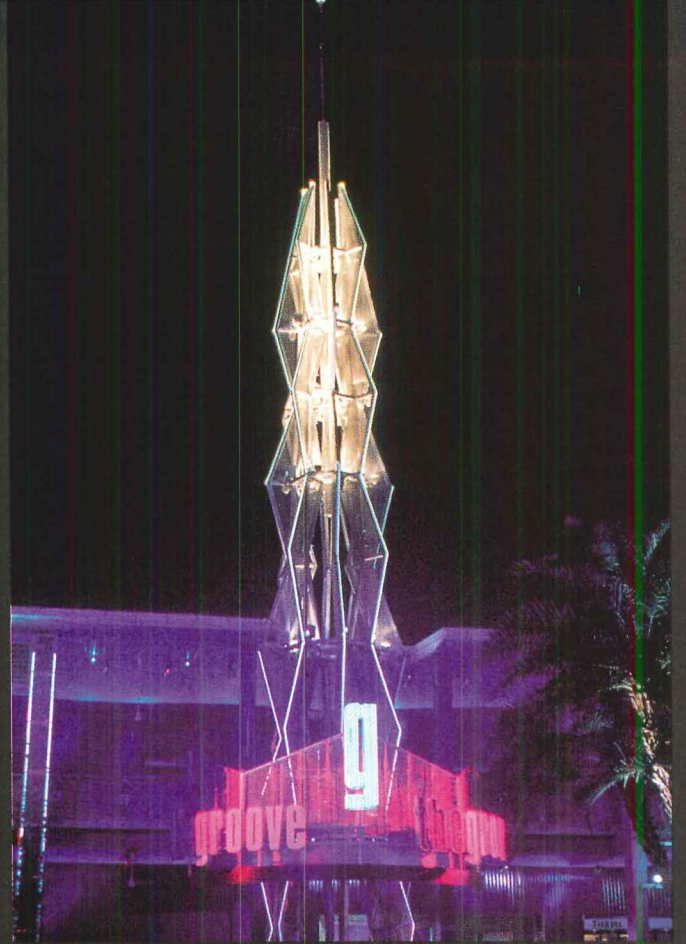






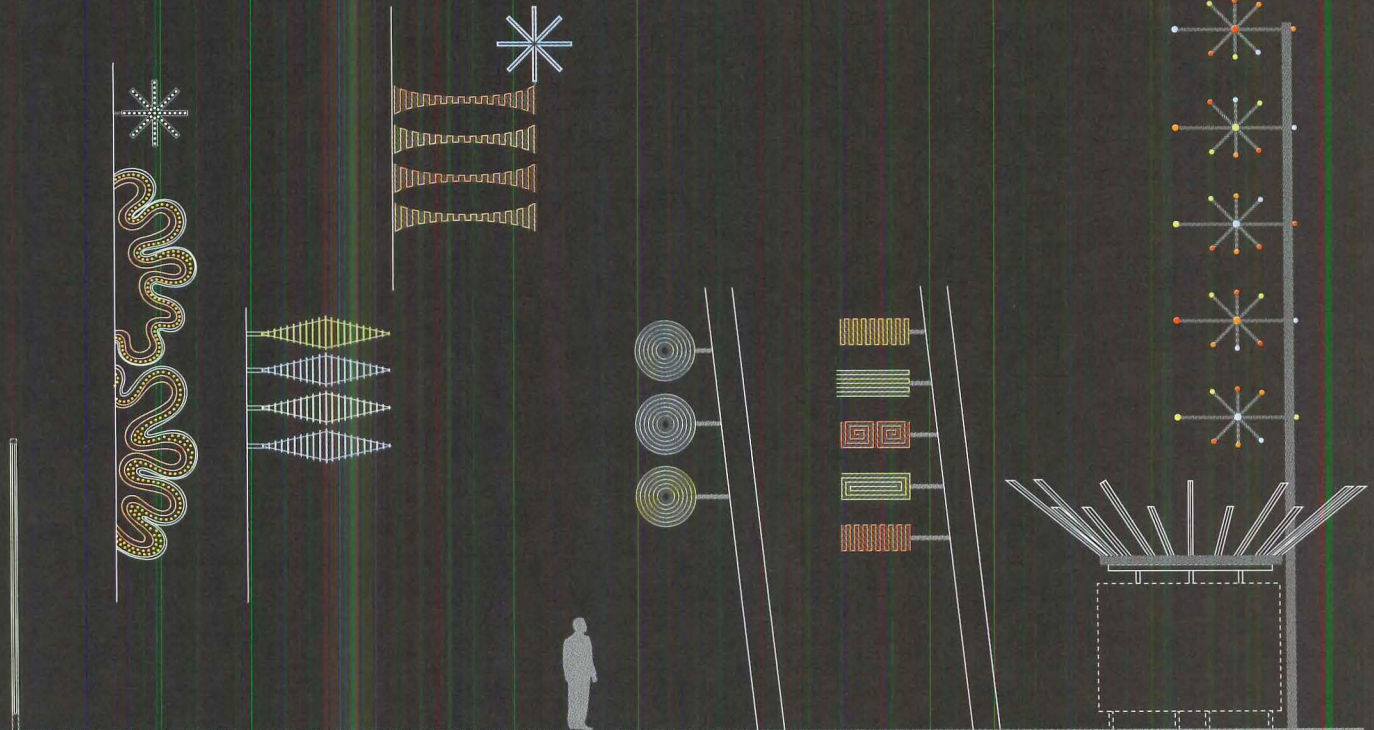
- 1. Towers
- 2. Entry totems
- 3. Plaza totems
- 4. Waterfront totems
- 5. Boat landing
- 6. Directionals
- 7. Neon
- 8. Cineplex
- 9. Dance club
- 10. Jazz club





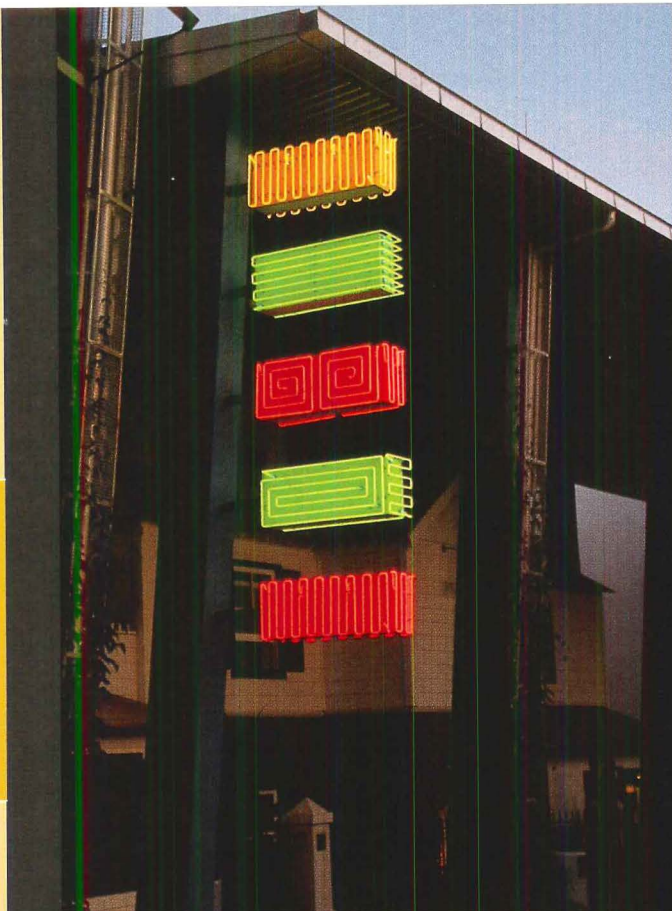
An axonometric (facing page, bottom) conveys the layered composition of graphic and lighting elements. Entertainment venues employ totems, towers,

and signs (photos facing page and above; illustration below) that feature a range of neon, fiber optics, automated luminaires, and PAR lamps.

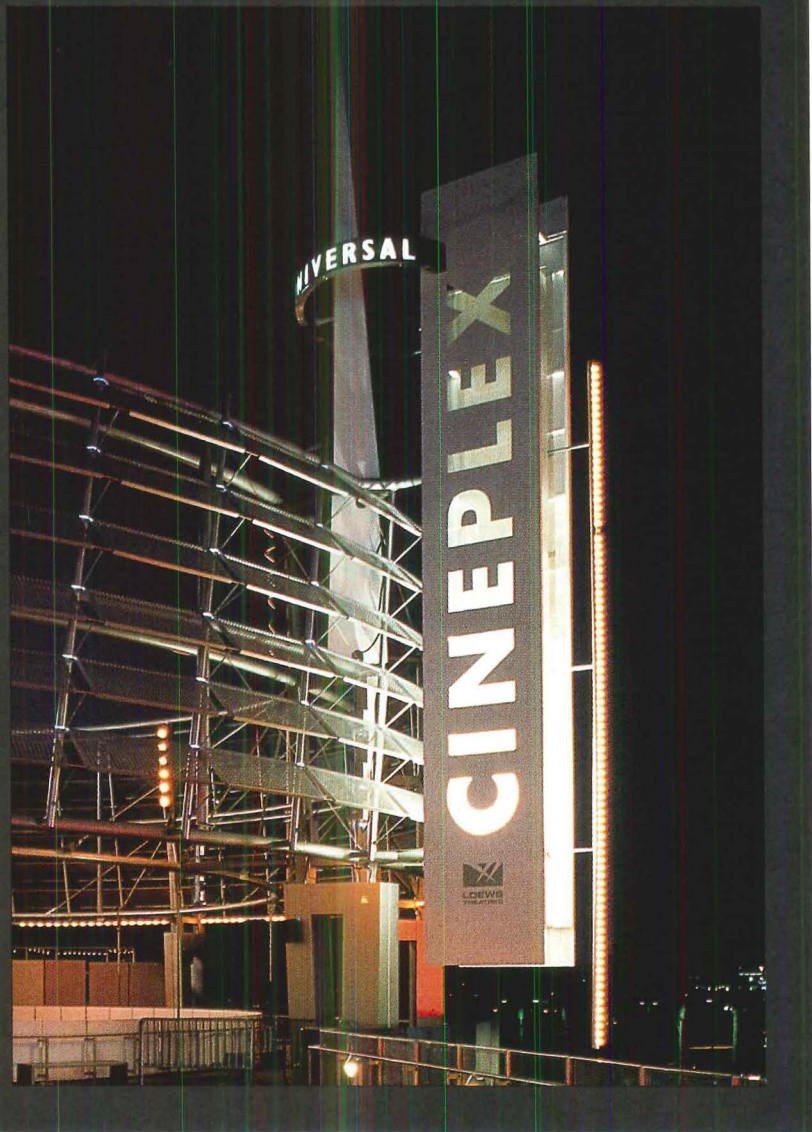


NEON STREET ENHANCEMENT





Custom-designed signs for each tenant lend exuberance to the streetscape (above). A towering exterior sign marks the entrance to the cineplex (right).



was overseeing the project's theatrical lighting components, he and Johnston collaborated on an animation program to give the vertical structures a kinetic edge. The implied motions of the animated lighting, inspired by and synchronized to the various musical beats emanating from the clubs—from salsa to jazz—help connect the visual and aural landscapes. The lighting provides a counterpoint to the forms of the totems, which in turn serve as signposts cuing CityWalk's offerings.

"We wanted to engage the viewer, evoking an emotional response through color, motion, and hyper three-dimensionality," Kaplan says. Because theme park patrons arrive already primed for an entertaining experience, "our goal was to try to make magic with basic lighting parts used creatively."

Each tower (ranging from 65 to 100 feet tall) or totem (at 20 to 45 feet) functions as a kind of oversize filament within which architectural and entertainment lighting styles merge. Beyond providing wayfinding cues, the vertical elements in themselves act as entertaining stops along the boulevard.

"Lighting supports different looks for the vertical structures from day to night," Johnston says. "That ambiguity of form is at the heart of the design." In sunlight, the *Metropolis*-like towers appear as sculptural forms, while at night they become objects reflecting animated, colored light. Each skeletal tower features fins, orbital rings, and a distinctive apex.

The designers employed a low-tech approach for animated "lantern" effects within the more diminutive plaza totems. Painted metallic silver on the outside, each perforated metal cylinder is coated inside with one of the site's signature colors: green, orange, blue, or white. While the hues can be glimpsed during the day, at night an internal wash illuminates each totem for a strong glow. Colored rays spill out to graze the cladding and patrons below. Animated lighting envelops both totems and towers, with lighting effects choreographed to crescendo on the hour.

The cast fixtures stand up to Florida's fierce humidity. The designers also specified inexpensive, stock gear that is easily replaced by park maintenance staff. Inspired by the district's clubs and cabarets, additional neon along the main corridor and side avenues supplements individual tenant signage. Like CityWalk itself, the neon elements suggest a hybrid of the streetscape's civic function and the eye-catching language of commerce. ■

#### Sources

**Promenade and plaza lighting:** ETC/Irideon; High End System; LTM; Sterner; Stonco

**Tower lighting:** Stonco

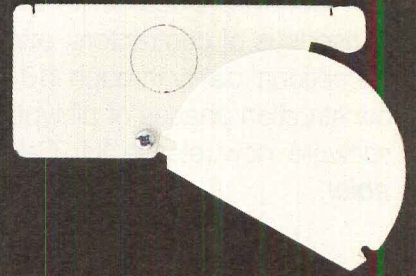
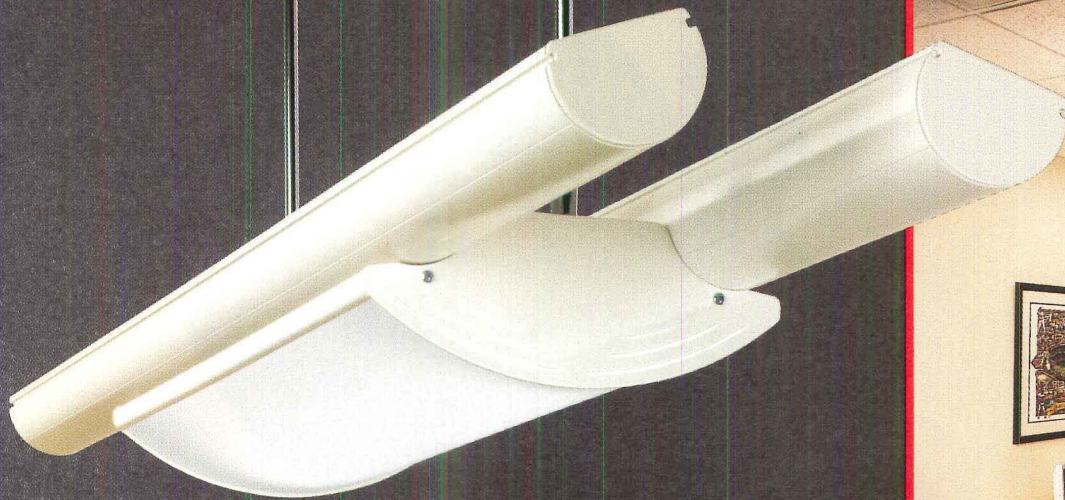
**Fiber optics:** SuperVision

**Lighting controls, dimmers:** ETC

**Fabricators:** Architectural Graphics; Carlson & Co.; ISD

**WWW** For more information on the people and products involved in this project, go to Lighting at [www.architecturalrecord.com](http://www.architecturalrecord.com)





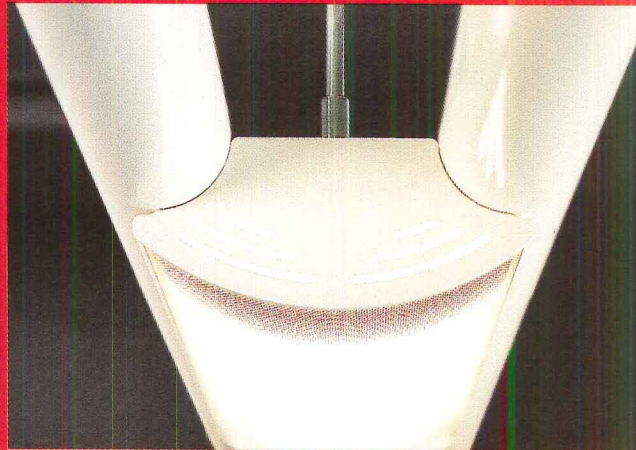
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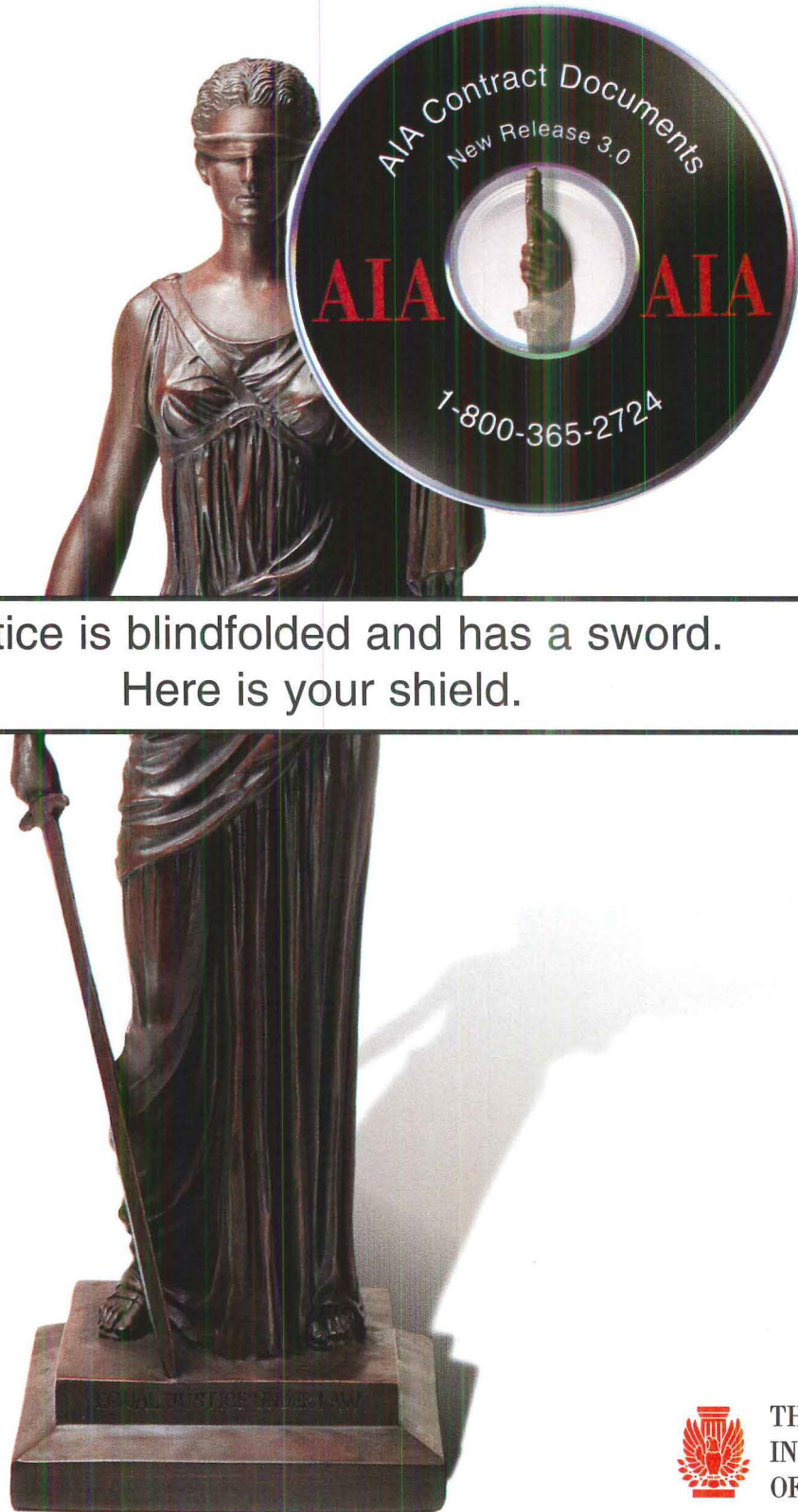
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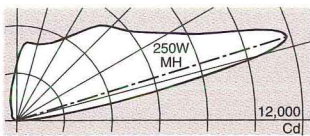


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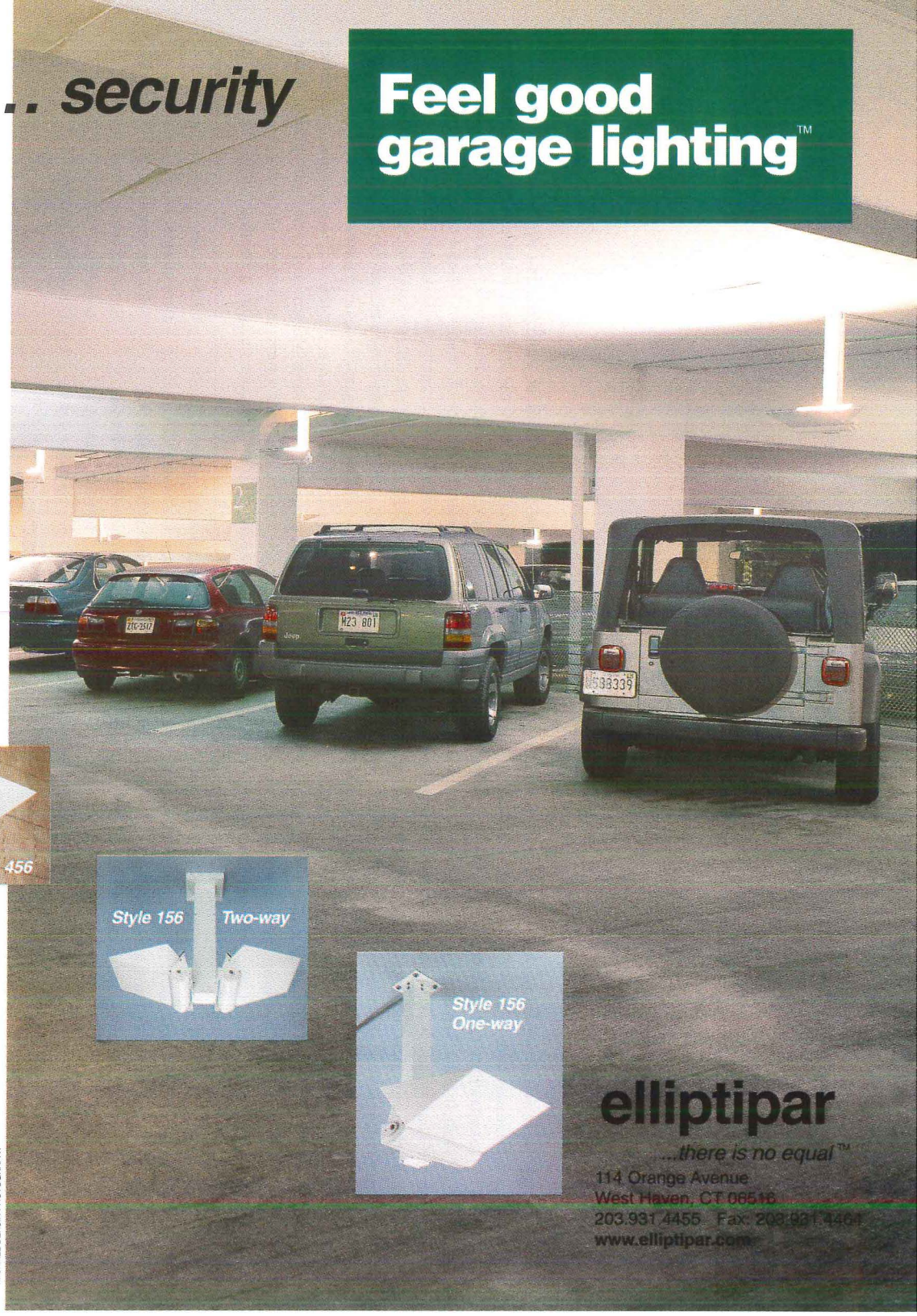
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# Cantilevered classrooms and color fields of light bring a French university campus into focus

by **Claire Downey**

**T**he University of Saint-Denis is not an attractive campus. Most buildings date to the 1970s when the school had a reputation for spawning radical French intellectuals. Located in what the French call a “sensitive” urban zone, just north of Paris, classrooms are kept tightly locked and mazelike corridors are covered in graffiti. With an airy new subway station and dormitories now also under construction, however, the university is working hard to improve its image. One successful transformation is the new school for arts research by architects Bernard Dufournet and Jacques Moussafir.

Dufournet and Moussafir won a 1997 university competition with a project that broke free from the rigors of the existing buildings on campus. They wanted to elicit an emotional response and even shake up the students who would inhabit the space. With a budget of \$1.5 million (11 million Fr) for 26,910 square feet (2,500 square meters), much of the emotional resonance would come from simple materials enhanced by an elegant juxtaposition of color and lighting. The project consists of studios and classrooms for art, theory, dance, music, film, and photography, as well

as administrative offices, all set within the first two floors of a three-story building. From the outset, the architects realized that the allotted area, which once housed a library, was too small to accommodate such a diverse program without sacrificing circulation. When a cinema and a dance studio were later added to the program, logic dictated much more circulation and congregating space. The perimeter was also problematic: Floors were very deep, with only two exterior walls pierced by daylight, but altering the two corner facades was not part of the university mandate.

Breaking free of the program, the architects proposed stretching beyond the structure’s elevations. Windows of varied sizes now protrude from a new steel facade, with rooms cantilevered out over the sloping site to gain space. The new facades brought a greater transparency to the

**Project:** *University of Saint-Denis (U.F.R. Arts Université Paris 8), Paris*

**Architects, lighting designers:** *Bernard Dufournet and Jacques Moussafir (Moussafir Architects Associates), principal architects; Shinwon Huang, Christian Felix,*

*Claire Petetin, project team*

**Consultants:** *AGIRS (electrical); ICR Champagne (HVAC, plumbing); SNEDF (facades); Jean-Paul Lamoureux (acoustics); BET; Qualiconsult; Milaprat*

*Claire Downey, ARCHITECTURAL RECORD’s contributing editor based in Paris, frequently writes about architecture and the arts.*

**Renovating a 1970s university arts building outside Paris that was dark and uninviting, architects Dufournet and Moussafir thrust students into the daylight via cantilevered classrooms.**





At night, the facade comes alive with color fields of light casting an ethereal glow.







Fitted with color filters, compact fluorescents illuminate interior light boxes (left and below). As night falls, a can-

tilevered classroom lit with standard fluorescents is a beacon within the campus landscape (bottom).



building, telegraphing the role of each department from the inside out.

What Moussafir calls “passage and window” became the generating idea of the redesign. By skewing the large rectangular classes within the existing column grid, thick walls were created into which brightly colored light boxes were inserted. At the same time, oddly shaped voids off the central corridor became entry vestibules for each discipline.

A specific color, used within both window/light box and vestibule, identifies each discipline, such as red for the dance department, green for music, and so on. In between, central hallways are painted a dark gray and illuminated by conservative runs of ceiling-recessed fluorescent spotlights and accent fixtures, which cast enough ambient light for navigating the halls without competing with the colored planes.

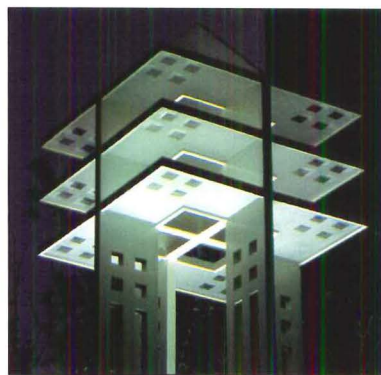
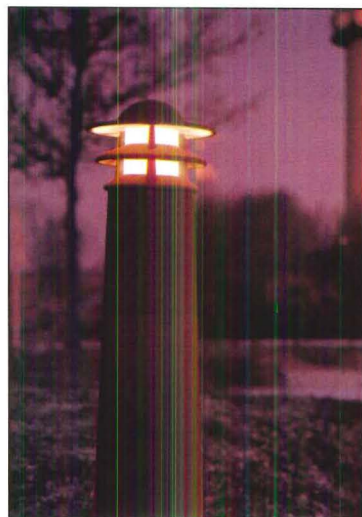
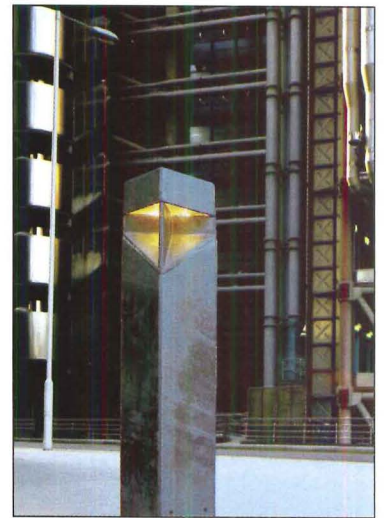
When contemplating a color palette, the architects turned to the Web site created by the school’s students. The design team wanted to use acid colors like those a computer generates—hues they thought would work well with electric light. Implementing this palette architecturally called for paint, compact fluorescents, and colored filters. Interior window boxes vary in depth and form, but each has two glass faces and two interior compact fluorescent tubes—one set horizontally, one vertically. Transparent glass placed on the corridor-facing side meets fire regulations. On the classroom-facing side, the architects specified colored film sandwiched between two layers of glass. To achieve the desired colors, the team special-ordered the glazing system, which was an extra, but worthwhile, expense, Moussafir asserts. Glass on the classroom side is lightly





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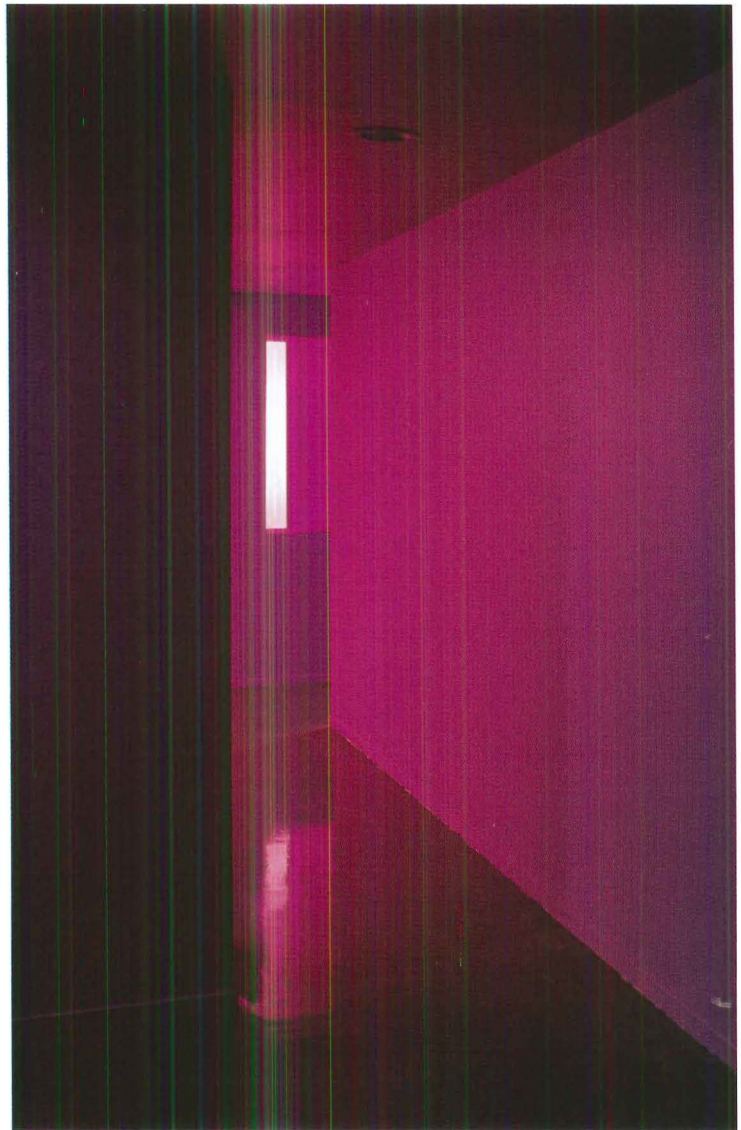
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Painted walls and color-filtered compact fluorescents let each arts department show its true colors.

(Clockwise from above): Red denotes dance, purple calls out graphic design, and orange, practice space.



sanded to slightly obscure activities within. The fluorescents are wrapped with inexpensive colored plastic film, the same type used to tint theatrical lights. The interior of each window box is painted to match its corresponding film color. While the tinted compact fluorescents are left on even when classes are not in session, the vibrancy of the monochromatic planes becomes even more striking when backlit by the activated ceiling-mounted standard fluorescents within the classrooms.

Previously, Moussafir, 43, had worked on some of Paris' most prominent projects, for architects as diverse as Henri Gaudin and Dominique Perrault, before joining forces with Dufournet and eventually founding his own firm. Long interested in lighting, he did not consult a lighting engineer for the Saint-Denis university project. Instead, he says he was inspired by artists including James Turrell, an American master working within the medium of colorful lighting installations. Passing from color field to color field within the transformed Saint-Denis arts building, it is easy for students, faculty, and guests to place themselves, if not quite within the realm of art, then certainly inside a very sophisticated computer rendering come to life. ■

**Sources**

- Compact fluorescents:** Philips
- Color filters:** Lee Color Filters
- Ceiling fluorescents:** RIDI

**WWW** For more information on the people and products involved in this project, go to Lighting at [www.architecturalrecord.com](http://www.architecturalrecord.com)







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CIRCLE 77 ON INQUIRY CARD



# A brainy luminaire for the 21st century

THE DESIGNERS OF AN INGENIOUS NEW FIXTURE SEEM TO HAVE OVERLOOKED NOTHING.

By Lindsay Audin

**T**he Ergolight seems to incorporate every designer's wish-list of energy management and optical control options in one package: variable levels of direct and indirect lighting, occupancy sensing, daylighting, load shedding, remote scheduling, low glare, high efficiency, easy relocation, and simple installation.

The fixture is manufactured by Ledalite, of Vancouver, British Columbia. It is a sleek, 4-foot, pendant-mounted, direct/indirect fixture, with three T8 lamps. The lamps have two separate electronic dimming ballasts, one for the two lamps that produce the fixture's downlight and another for the single lamp that produces its uplight. Each fixture has a built-in infrared occupancy sensor and a daylighting sensor, and each

to communicate with the BMS computer over the building's existing local-area network. After the BMS receives these instructions, it directs the ballasts to dim the fixture using standard data wiring—essentially telephone cable—networked to each fixture. Although occupants can dim the downlighting in the fixture over their desk, they do not have any control over the occupancy or daylight sensors. This is reserved for the building's energy managers.

When sunlight makes a room or cubicle too bright, the daylight sensor instructs the fixture's "brain" to slowly dim all three of the unit's lamps so the room's initial brightness level is maintained, down to 50 percent of the fixture's output. The dimming takes place very gradually. If the room's occupants leave, the occupancy sensors operate in a manner that is similar to the daylight sensors—rather than shutting off the lights in one step, they slowly dim the downlights to five percent. After a space has been unoccupied for an additional time period, the downlights are shut off completely. Gradual dimming prevents lights from going on and off frequently, which is distracting. In one test facility, an additional benefit was noted: A darkened cubicle meant that no one was in. If a room has no PC, a phone call to the BMS computer operator will allow control of the fixtures in that space. Rooms can be equipped with a separate wall-mounted manual dimmer to control lighting levels irrespective of occupant motion or ambient light level.

## Major energy savings, reasonable first cost

In one study, Ledalite claimed an 87 percent savings relative to an existing two-lamp, T12, magnetically ballasted, 2-foot-by-4-foot troffer system. While some air-conditioning reduction credit was taken in that calculation, no assumption was made for occupant dimming below standard light levels. A post-installation survey at that same facility found, however, that half the staff used their PC-based control to drop their light levels to less than 50 percent, adding even greater savings. But there is a possible downside: One occupant dropped his light level to only 25 percent and used a desk lamp for task lighting. One hopes it wasn't an incandescent lamp—avoiding that scenario may require also providing occupants with compact fluorescent task lighting.

While every facility is different, early installations in typical offices ranged in cost between \$2.80 and \$3.60 per square foot, which is comparable to good-quality, 2-foot-by-4-foot troffer setups. That price does not include the central computer (because an existing BMS or PC might suffice) or the cost of LAN connections, as most offices already have a LAN in place.

## Watch for more smart fixtures soon

While the Ergolight is presently unique, expect smart fixture manufacturers to copy a lot of its capabilities and to add new ones. Many highly controllable systems will soon be available for lighting and energy management. ■



An Ergolight installation (above). Daylight and occupancy sensors are mounted on the fixture's underside (right).

interfaces with a communications system that allows individual user control from PCs as well as a central, Windows-based building management system (BMS). A T5 high-output version will be available later this year.

A single Ergolight is designed to illuminate one typical office cubicle. Light from two of the lamps is reflected downward to illuminate the task area; louvers control downlight-source glare. The third lamp produces uplight that is bounced off the ceiling. Based on Ledalite's data, overall fixture efficiency exceeds 85 percent, with a coefficient of utilization of .52 (at typical 80 percent ceiling/50 percent wall/20 percent floor reflectances and a room cavity ratio of 4.0, common for a cubicle). An 8-foot-by-10-foot space with a 9-foot ceiling height would have an average 48.6-foot candlelight level, bright enough for most offices.

Ledalite has worked out many control options for Ergolight. For example, an individual can dim the fixture over his or her desk using a PC

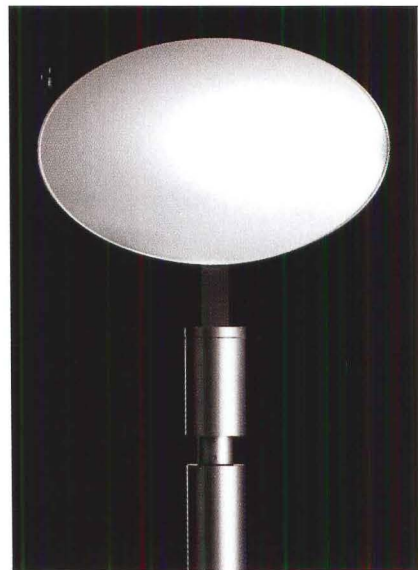
*Lindsay Audin is the president of Energywiz, an energy and technology consulting firm ([www.energywiz.com](http://www.energywiz.com)). With this article, we join Mr. Audin in celebrating his 10th anniversary as an ARCHITECTURAL RECORD columnist.*





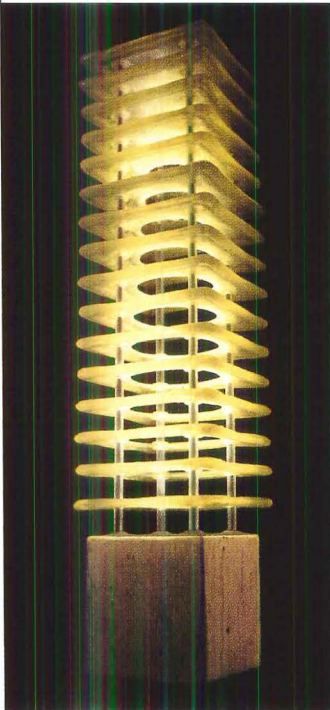
### ▲ Something about Mary

Every light in Resolute's Glass Lights Collection is blown by hand in Seattle using techniques usually reserved for art glass. The finely detailed Mary pendant is illuminated by a low-voltage MR11 lamp. Mary's transparent glass shade is available in a choice of wheat, steel, clear, and aqua (shown here). The pendant comes in 120 volts, 230 volts, and 277 volts, with a dimmable electronic transformer. 206/343-9323. Resolute, Seattle. **CIRCLE 200**



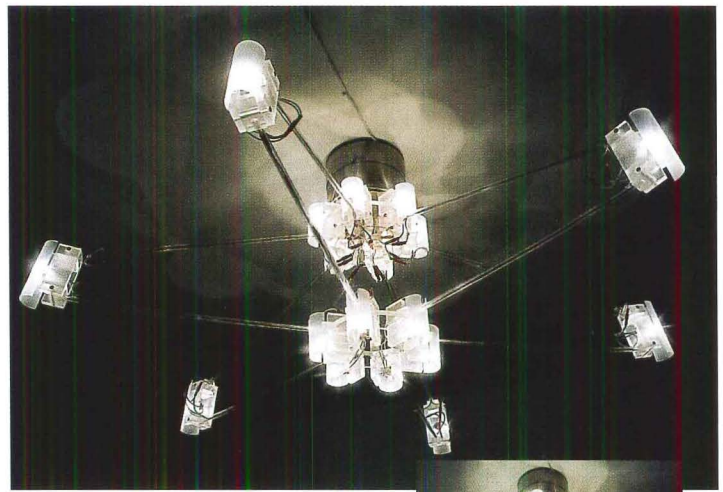
### ◀ Indirect illumination

The new 8208MH luminaire features the reflector component fixed at 30 degrees. The reflective surface is a spherically domed oval, which gathers more light from the concealed optical system. The light source is a 150-watt G12 T6 ceramic metal halide. Compatible designed poles are available for mounting heights from 16 to 20 feet. 805/684-0533. Bega/USA, Carpinteria, Calif. **CIRCLE 203**



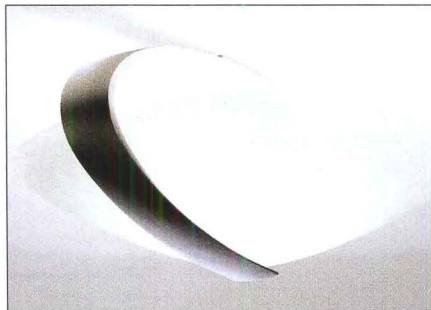
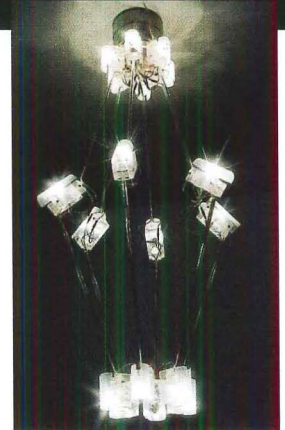
### ▼ Northern light

Icelandic designer Olafur Thordarson explains that his new UL 2 lamp "combines the structural concept of a building with a spatiality defined by a light beam." The light features 16 cast-resin slabs that are vertically suspended off a cast-concrete base. Each slab gives off a similar amount of light, due to its interaction with the light source. 212/979-2325. Dingaling Studio, New York City. **CIRCLE 201**



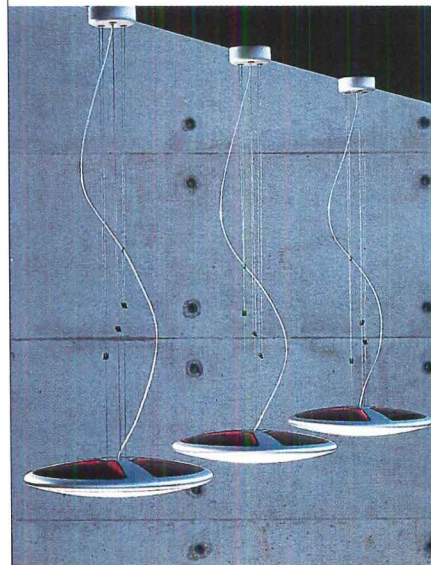
### ▲ Pulsating pendant

The designers at Amsterdam-based Opera Nuda eloquently describe the A.I.D.A. light as a "pure mechanism with wires functioning as 'blood vessels,' pumping electric energy through the whole corpus." Made of Plexiglass and stainless steel, A.I.D.A. requires 18 five-watt halogen lamps. By switching on an electric motor, the lamp slowly moves from the open to closed position. 0031 20 3300747. Opera Nuda, Amsterdam. **CIRCLE 202**



### ◀ Here and Grau

Included in the recent expansion of Atlanta's Domus International Design Center is German lighting manufacturer Tobias Grau's first-ever U.S. showroom. Managed by Tobias Grau and his wife, Franziska, the company was established in Germany in 1984 and has since been presented at EuroLuce in Milan and the International Furniture Fair in Cologne. Shown here are the Project X lamp (bottom) and the Saturn 50 lamp (top). Grau has mastered a labor-intensive metal-casting process of sand casting. All metalwork is fabricated at his factory in Germany. Saturn 50 is U.L. listed, Project X is not. 800/432-2713. Domus International Design Center, Atlanta. **CIRCLE 204**





## Lighting Briefs

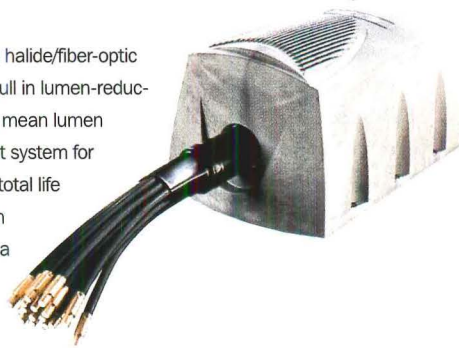
### ► Ceiling with a view

The OptiView diffuser reflects the sky's image, creating an overhead window effect that helps connect the building's occupant with the outside environment. The diffuser, which features a high-performance fresnel lens material, is available on all Solatube skylight products. 800/966-SOLA. Solatube International, Vista, Calif. **CIRCLE 205**



### ► Fanless fiber optics

The Imagine 68-watt fanless metal halide/fiber-optic lighting component has no fan to pull in lumen-reducing dust and dirt. The system gives mean lumen levels equal to a standard 150-watt system for less than half the energy for lower total life cycle costs. It combines a Uni-Form pulse-start metal halide lamp with a cool-running electronic power supply. 440/248-3510. Venture Lighting, Solon, Ohio. **CIRCLE 206**



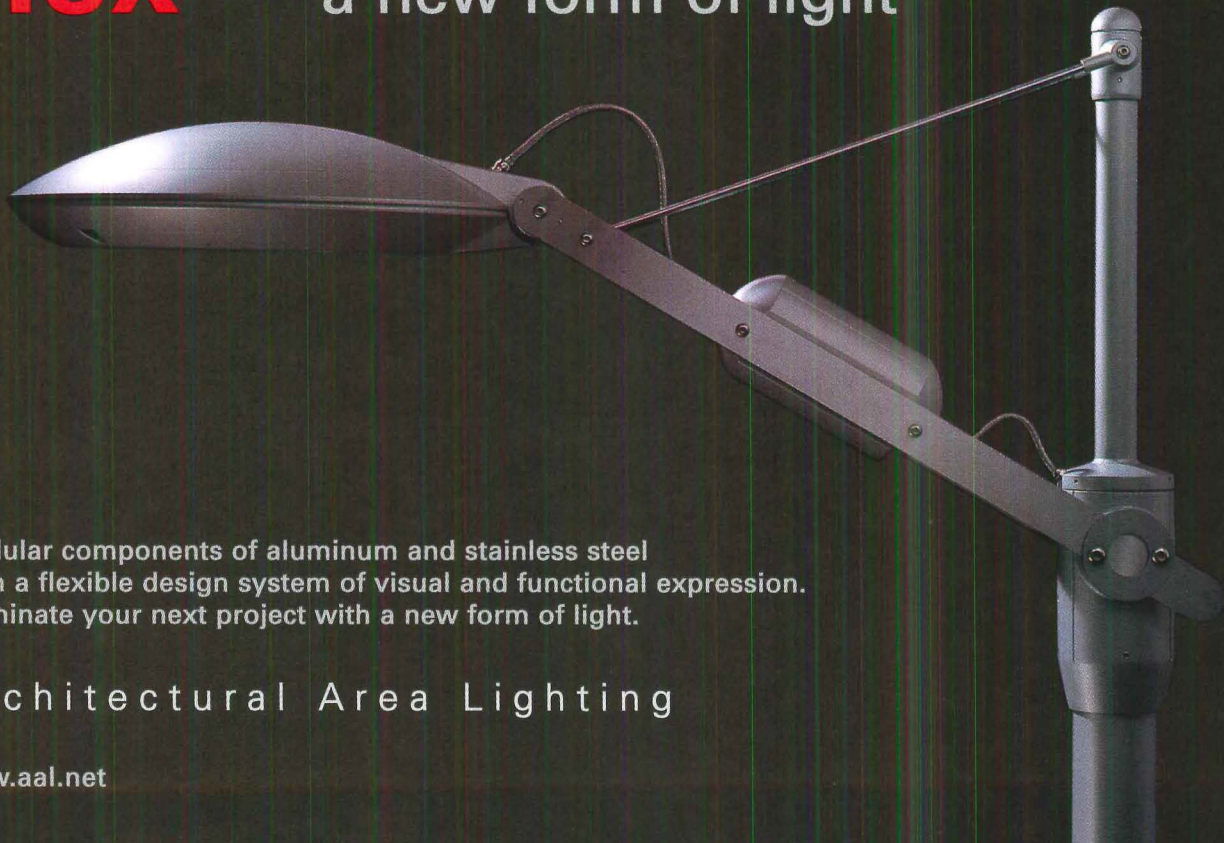
### ▲ Cherry up the desktop

Cherry Tree Design introduces the L7 Aurora double pendant desk lamp to complement a desk or end table. The lamp, an addition to Cherry Tree's Aurora Collection, features cherry with a natural slate base, double pendants with wood pull and chain, and a variety of facing options. Shown here with a natural Mica shade, the lamp requires one 60-watt bulb per pendant. Also available is the L6 Aurora table lamp, a mixture of cherry and walnut accents. A variety of different facing options are also available for the L6 lamp. 800/634-3268. Cherry Tree Design, Bozeman, Mont. **CIRCLE 207**

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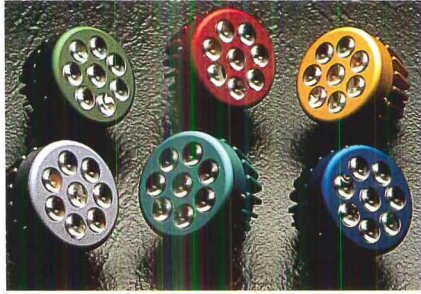
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# Lighting Briefs

## ► Colored LEDs

A new family of high-output LED products from GELcore provides colored illumination for architectural, retail, and mood-lighting applications. At less than 8 watts, several products within this family of energy-efficient modules are planned to deliver the equivalent lumen performance of 35-watt filtered halogen lamps. 216/606-6595. GELcore, Valley View, Ohio. **CIRCLE 208**



## ◀ Blue mood lighting

Light from GE Lighting's Reveal bulb makes objects appear richer in color and more vivid. Adding the natural earth element, Neodymium, to the glass gives Reveal a distinctive powder-blue color when unlit and allows it to provide a pure, true light by filtering out much of the dulling yellow cast common in ordinary light bulbs. Reveal will be available in 22 different bulb types. 800/GE-LAMPS. GE Lighting, Cleveland. **CIRCLE 210**

## ► Look of silver, strength of iron

Nambé's nontarnishing metal alloy was discovered in 1951. The material contains no silver, lead, or pewter, but has the look and luster of silver and the strength of iron. Nambé has introduced its first line of decorative lighting using this material created by designers Karim Rashid and Brian Lintner. Rashid's Martini lamp (right) fuses metal and wood in the conical base for a distinctive contrast of color and material. Link, from Lintner, is a geometrical abstraction of bamboo represented in a combination of Nambé's special alloy and a choice of warm, dark woods. 505/471-2912. Nambé, Santa Fe, N.Mex. **CIRCLE 209**



## ▲ On the move

The Mobilé track-lighting system can be easily suspended from any type of ceiling.

A three-circuit track accommodates variable switchable combinations of energy-efficient T5 linear fluorescent uplighting with diffused downlighting, and aimable low- or line-voltage accent lighting. Mobilé's housing is lightweight

extruded aluminum in a semigloss silver finish. 847/451-0700. Alkco, Franklin Park, Ill. **CIRCLE 211**

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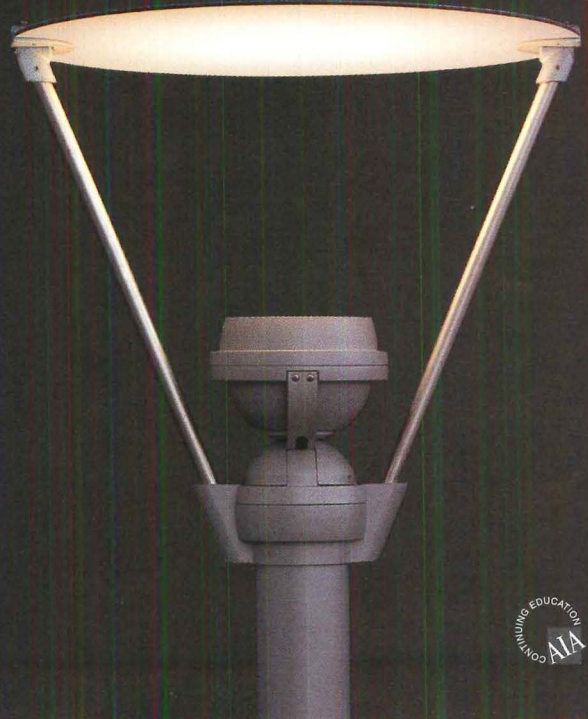
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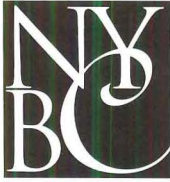
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## New York Building Congress

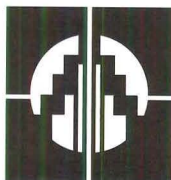
*announces*

# World Trade Center Memorial Fund

In response to the tragic consequences of the attack on the World Trade Center on September 11, 2001, and the outpouring of offers of support from representatives of the design, construction and real estate industry, the New York Building Congress has established a World Trade Center Memorial Fund through its New York Building Foundation. The Fund will accept contributions from firms, organizations and individuals who wish to direct their support to the families of victims who served the industry and to area restoration. To most effectively administer the Fund, contributions will be disbursed in consultation with contributors and other industry organizations sponsoring similar efforts, and will be guided by the Building Foundation's Board of Governors.

The New York Building Foundation was formed in 1998 to promote the long-term growth and well being of the industry through a program of research, education and philanthropic activities. The Foundation's World Trade Center Memorial Fund is accepting donations effective immediately. Checks should be made payable to NYBF World Trade Center Memorial Fund and mailed to the New York Building Foundation c/o New York Building Congress, 44 West 28th Street, 12th Floor, New York, New York 10001.

For more information, contact  
Richard T. Anderson, President, at 212.481.9230.

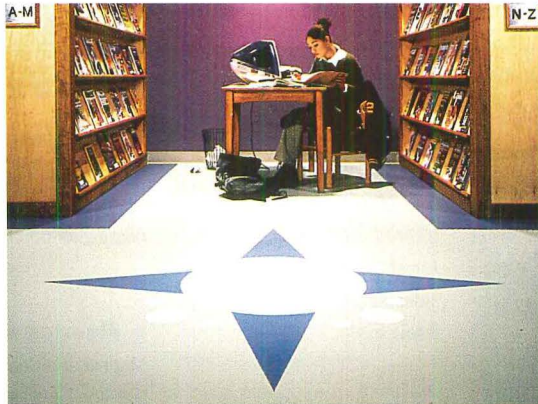




# New Products

Specifying resilient and laminate flooring requires a balance between beauty and brawn. While resilient flooring needs to provide comfort and safety, it also should offer fresh colors and styles. Makers of high-performance laminate flooring are developing new techniques to reflect the influence of natural materials such as stone and wood. *Rita F. Catinella*

## New offerings in speckled rubber tile and cushioned flooring



Roundel Vibrance in a day care application, top left; ComforTech Fountain in an education environment, top right.

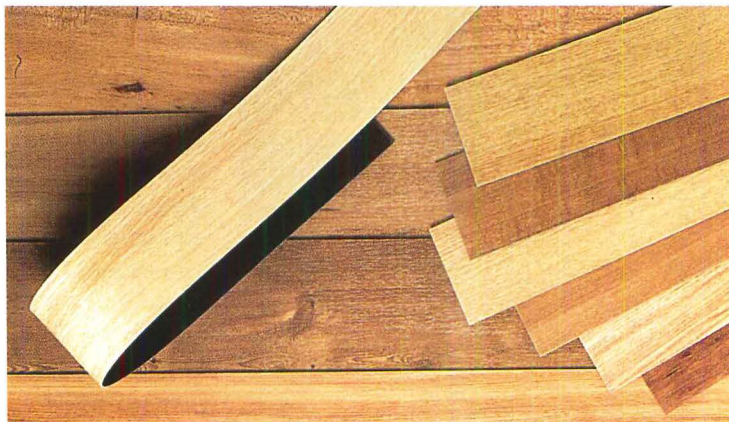
New from Johnsonite is the Roundel Vibrance speckled rubber tile line in a variety of color combinations. The initial Vibrance offering consists of a colorful palette of eight multicolored designs offered in four surface treatment options for day care, health care, retail, or hospitality environments. Colors include names such as Sunburst, Blue Skies, and Watermelon. Vibrance is wear resist-

ant, and the formulation of the tile self-heals most scratches and abrasions. A heavy-duty rubber composition provides slip resistance.

Also new from Johnsonite is the ComforTech Fountain cushioned flooring line. ComforTech Fountain is comprised of earth-tone colors that coordinate with the ColorMatch System of wall base, transitions, corner guards, and other flooring

solutions for a totally integrated space. The cushioned inner layer of ComforTech Fountain offers thermal protection in all seasons and provides comfort underfoot, helping to reduce foot and leg fatigue. It also absorbs noise from rolling and pedestrian traffic, making it a good substitute for carpet. 800/899-8916. Johnsonite, Chagrin Falls, Ohio. **CIRCLE 212**

## Thicker vinyl flooring in wood and stone styles



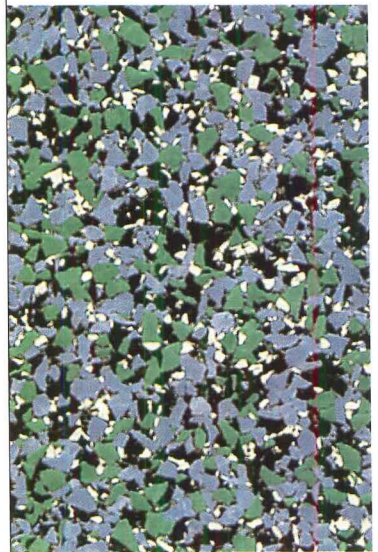
Polyflor Kudos is a new alternative to decorative vinyl flooring. Distributed by Bonar Floors U.S., Polyflor Kudos was introduced to

the American market this summer. The vinyl planks in the Polyflor Kudos collection come in 10 different wood tones and can be cut to

create patterns and various floor designs. Actual images of natural materials are used to create the 14 different stone designs also offered in the collection. Available as tiles, these marble, slate, and stone motifs can be cut to create patterns and various floor designs. Polyflor Kudos is constructed with a 21 millimeter wear layer, which is 1 millimeter more than the recognized standard for vinyl flooring. It is manufactured according to ISO 14001 environmental management standards. Polyflor Kudos is part of the Polyflor vinyl flooring collection manufactured in the United Kingdom and distributed by Bonar Floors U.S., 800/852-8292. Bonar Floors, Newnan, Ga. **CIRCLE 213**

## Rubber the right way

Atmosphere recycled rubber flooring's high-density composition consists of Styrene-Butadiene Rubber (SBR) recycled from post-consumer auto tires and is combined with colored granules of Ethylene-Propylene Diene Monomer (EPDM) rubber homogeneously mixed throughout. Atmosphere provides excellent indoor-air-quality benefits, has little or no volatile organic compounds, and will not promote microbial or fungal growth. Atmosphere offers antifatigue qualities, shock attenuation, vibration dampening for foot or rolling traffic noise, and resistance to stains from ammonia, bleach, ink, and lipstick. End-use applications include educational, institutional, health care, retail, and office environments. A testimony to its resilience is the ability to withstand golf spikes, ice skate blades, and barbell indentations. No rubber trees were harmed in the production of this nonlaminated flooring product. 877/843-8184. To Market, Los Angeles. **CIRCLE 214**





## New Products



### ◀ Natural perspective

While Perspective high-performance flooring is influenced by real materials, it is not intended to directly replicate them. The new line is available in 12 colors in both sheet (6'6" wide) and tile (nominal 24" x 24") formats. The color line includes Antiqued Metal, Brushed Concrete, Granite Blue, and Quarry Stone, among others. It is recommended for high-profile hospitality,

retail, entertainment, health care, office, and education applications. 877/ARMSTRONG.

Armstrong World Industries, Lancaster, Pa.

**CIRCLE 215**

### ▶ Classix laminate

Formica Flooring's Stone Classix laminate flooring collection captures the look of real grouted stone in a durable surface. Three of the six new designs feature a random block arrangement offering a mixture of square and rectangular stone images sized from small 8" x 8" blocks to a giant 24" x 24" block.



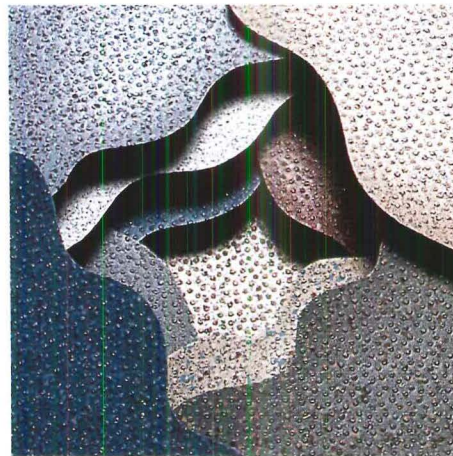
The other three designs capture the clean chiseled edges and subtle marbled veining of classic marble looks. Four 12" x 12" blocks are designed within the standard 24" x 24" module. 800/FORMICA. Formica Corporation, Cincinnati. **circle 217**



### ◀ Wood planks, stone tiles

Wilsonart Classic flooring is a collection of high-performance laminate including a grouping of 12 planks representing rich wood grain styles and 18 tiles representing natural slate, marble, and stone designs. Wilsonart completes the Classic Collection with coordinated molding and trims, as well as a step-down molding that adds the finishing touch to exposed edges of stairs and landings. 800/710-8846. Wilsonart International, Temple, Texas.

**CIRCLE 219**



### ▲ Stay grounded

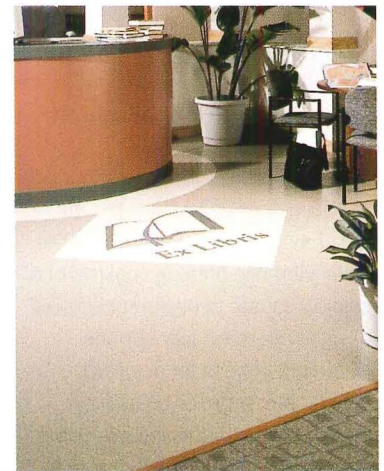
Altro has updated the colors in their Altro Marine 20 collection of textured safety flooring for barefoot applications. Altro

Marine 20 incorporates a bacteriostat and is suited for use in showers and bathrooms in hotels, schools, and hospitals; around swimming pools, whirlpools, and therapy tanks; and in walk-in showers for the physically disabled and elderly where hygiene is an important consideration. Like all Altro high-performance flooring products, the Altro 20 Marine range meets the

current slip-resistant static coefficient of friction requirements of the ADA and OSHA. 905/564-1330. Altro, Mississauga, Ontario. **CIRCLE 216**

### ▶ Flooring updates

Mannington Commercial is updating the Fine Fields inlaid sheet flooring line with 12 new colors, while the BioSpec homogeneous sheet flooring line receives nine new colors, including six low-contrast colors that make it easier to see dropped items. Both may be heat welded or chemically welded to seal out germs and moisture. Solid-color and camouflaged weld rods are available. 800/241-2262. Mannington Commercial, Salem, N.J. **CIRCLE 218**



### ▲ Tough as stone

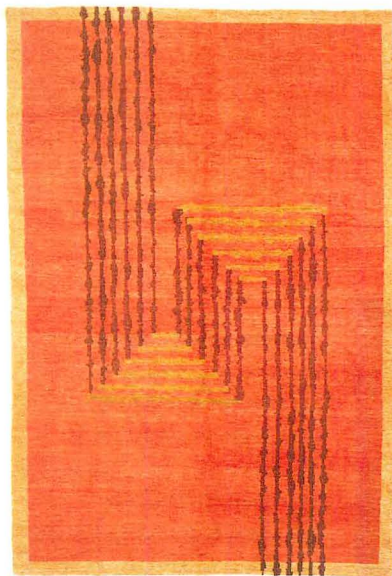
DuraStone HPF (high-performance flooring) comes in a 16" x 16" tile size and features a hefty, extra-thick .16" overall

construction, micro-ground edges, and a limestone composite base that provides stability. Congoleum utilizes a patent-pending nano-composite technology in the creation of the product: Nylon particles and aluminum oxide are suspended in the surface glaze. DuraStone's new surface glaze technology features a satin-gloss acrylic polymer matrix for stain resistance in

addition to performance against scratches, scuffs, and fading. 609/584-3000. Congoleum Corporation, Mercerville, N.J. **CIRCLE 220**



## Product Briefs



### ◀ Hand-knotted rugs

The concept behind the new collection of rugs designed by Maria Churchill for Michaelian & Kohlberg was to create a coordinated group using the same 15-color palette. The Churchill Collection is made in China of hand-spun and hand-knotted wool. The knot structure of these carpets has been engineered to reduce the number of knots per inch, saving both material and labor costs. All of the 10 patterns come in three sizes: 4' x 6', 6' x 8½', or 8½' x 11½'. 212/431-9009. Michaelian & Kohlberg, New York City. **CIRCLE 221**

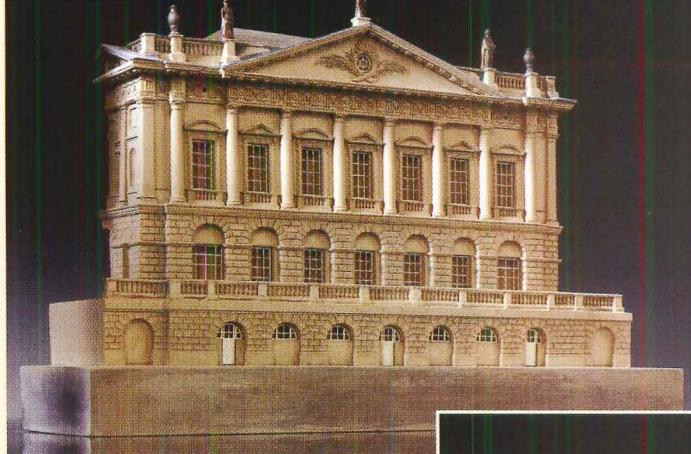


### ▲ Evolved laminate

The Evolv collection of Wilsonart laminate reflects the theme of "compressed" materials, with references to paper fiber, glass filament, and metallic flecks. Evolv's 12 colors break down into four thematic families: light, glow, accent, and bright. Ten new designs in the MesaGranite Collection are intended to offer the look and tactile quality of granite. 800/433-3222. Wilsonart Intl., Temple, Texas. **CIRCLE 223**

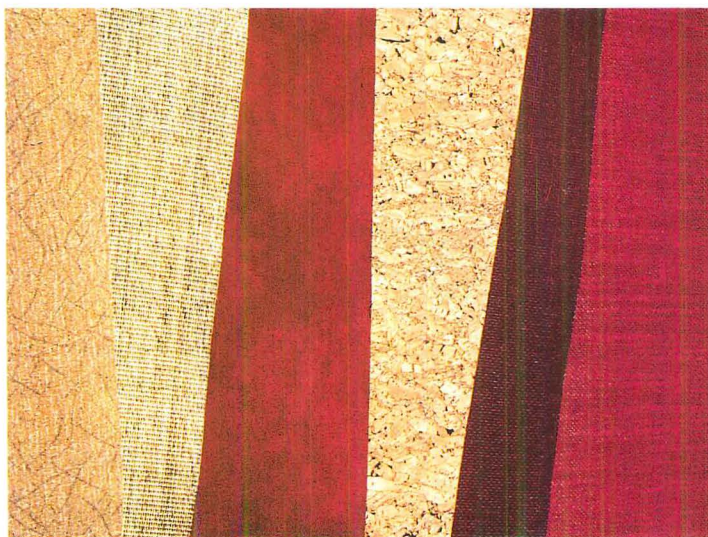
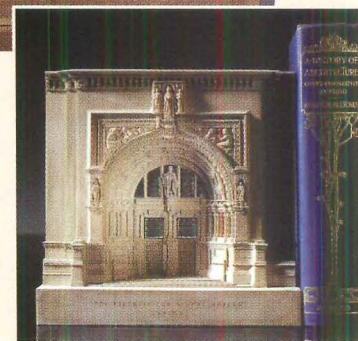
### ▶ Melted in there

Villiglas tile is made by melting colored metal pigments directly into glass. Manufactured in Austria, Villiglas is available in 45 colors in a variety of sizes and finishes. Like ceramic tiles, the eight millimeter Villiglas can be cut and shaped using traditional tile-setting methods. No special tools or setting materials are required for installation. Mosaic tiles, mounted on net backing are available in three sizes. The River Mosaic comes in a solid colored, 12" square. 866/EURO-TILE. Euro-Tile, Fort Myers, Fla. **CIRCLE 224**



## Product of the Month Architectural models

For the past 13 years, Timothy Richards has painstakingly created architectural models and bookends relying on thorough research, using a combination of original plans, where available, and detailed photographs. Richards has been commissioned by the Victoria & Albert Museum, Sir Terence Conran, and the Royal Ontario Museum. His repertoire in miniature includes precise replications of such famous architectural structures as 10 Downing Street, Twin Towers of Wembley, Kensington Palace, The Hoover Building, Charlotte Square, and the Temple of Four Winds, along with the homes of Sherlock Holmes, Jane Austen, and Charles Dickens. His latest work, Dexter Gate, was commissioned by Harvard University to celebrate the centenary of the historic landmark. 303/448-8842. House of Ascot, Boulder. **CIRCLE 222**



### ▲ Nature has it covered

The Premier Collection III is a two-volume set of high quality textile and specialty wallcoverings for commercial interiors. The Wovens binder includes linens, woven blends, silks, and suedes, while the Naturals binder offers woven papers, grass cloths, rice papers, and corks. A special "Earth Safe" icon is printed on the tip cards of those items that are manufactured with materials and processes that are environmentally friendly. 800/347-0550. Wolf-Gordon, Long Island City, N.Y. **CIRCLE 225**



## Product Briefs

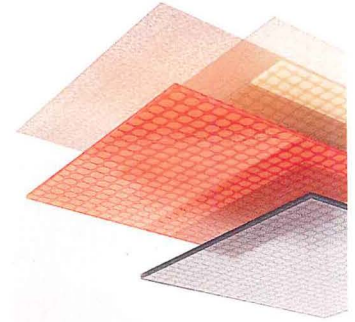
### ► Nonprofit workshop

Alpha Workshops is a nonprofit decorative painting and design company employing in-house-trained designers living with HIV and AIDS. Conceived by Ken Wampler in 1994 to improve the quality of life for people living longer and healthier with HIV/AIDS, Alpha Workshops was designed to form a bridge between the for-profit and not-for-profit worlds. Through an intense 10-week training period, Alpha Workshops introduces potential employees to a wide range of creative arts, including all types of ornamental painting for surfaces such as wood and fabric. Alpha then employs the graduates of its training program to create wallpaper, to restore and refinish furniture, and to make everything from tables to lamps to greeting cards for its shop. 212/594-7320. The Alpha Workshops, New York City. **CIRCLE 226**



### ► Imago that

Three new patterns have been added to the Imago hard surface collection. Limelight has a waxy, translucent finish and delicate moiré effect; Ozone transforms a puckered window fabric into a tone-on-tone graphic with an icy smooth finish; and Mirage encapsulates a metallic mesh fabric and offers a pronounced embossed rib pattern. 800/343-5665. Knoll, East Greenville, Pa. **CIRCLE 227**



### ◀ Attic adjustment

Blue cross-rib block panels from Hy-Lite Products were used to create a room divider for the kitchen and a private bathroom area in the attic of this historic 1912 home in Providence, Rhode Island. The acrylic blocks were roughly 70 percent lighter than installed glass blocks. The lightweight aspects of the blocks eliminated the need to restructure the entire floor. 800/827-3691. Hy-Lite Products, Beaumont, Calif. **CIRCLE 228**

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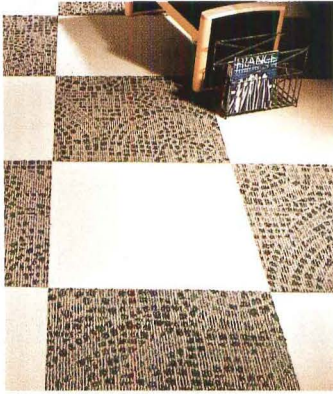
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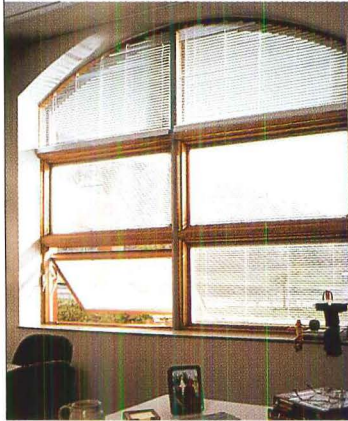


### ▲ Expansive studio

To simplify the often lengthy customization process and offer a tool with which to create custom modular carpeting, Lees Squared launched the Design Studio, a grouping of 19 new custom designs and 10 running line patterns available in 18" carpet tiles. 336/379-2000. Lees, Greensboro, N.C. **CIRCLE 229**

### ▼ Got to wear shades

Pella's Designer Series offers options such as between-the-glass Slimshade blinds, pleated shades, or real wood muntin bars. Ideal for hospitals, schools, or office buildings, the between-the-glass options can increase both energy efficiency and comfort. 888/84-PELLA. Pella Corporation, Pella, Iowa. **CIRCLE 230**



### ◀ Mix and match

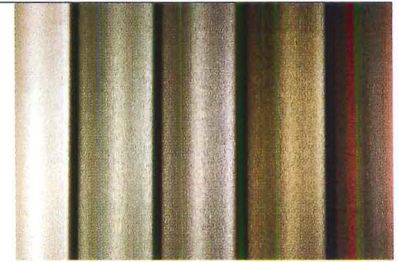
In Haworth's Mix project, two spaces are created using elements from the company's if and Premise lines. Conceived and designed by Ideation's Ralph Reddig, the Mix prototype spaces were created in four weeks. Mix 3x6 (shown) maximizes a tiny footprint without sacrificing standard amenities of storage, seating, worksurfaces, white boards, and technology support. 800/344-2600. Haworth, Holland, Mich. **CIRCLE 232**

### ► Leather that is not

Leather or Not faux leather upholstery features a technologically advanced polyurethane coating that is offered in an assortment of rich colors and a soft luminescent sheen that gently picks up the light.

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Not is appropriate for a wide range of commercial, residential, or hospitality applications. 518/235-2828. Gretchen Bellinger, Cohoes, N.Y. **CIRCLE 231**



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## How would you feel if someone copied your designs?



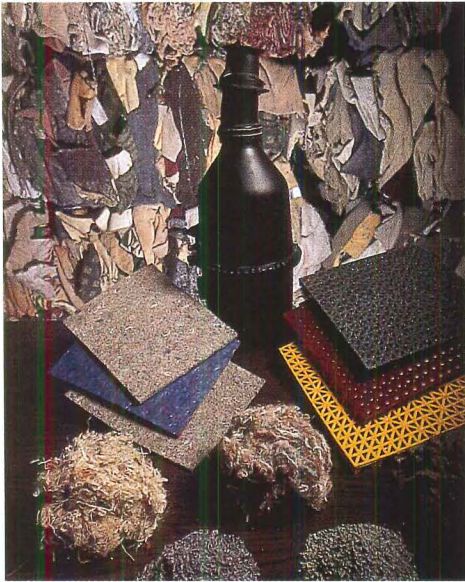
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## Product Briefs



### ▲ Conscientious carpeting

DuPont, the world's largest recycler of nylon since 1991, has announced the successful completion of an environmental initiative to upgrade and expand

its nylon carpet reclamation center in Calhoun, Georgia. In addition to receiving, sorting, baling, and packaging used carpet, DuPont has added equipment to recover nylon at the facility. In August, the facility reached its full operational potential of producing 1,000 pounds of recovered nylon per hour. The process involves recovering a clean nylon 6,6 resin from used nylon carpet recovered in the DuPont Carpet Reclamation

Program. Carpet is recycled into other materials such as resilient flooring, carpet cushion, sod reinforcement, automobile parts, and new carpet. 800/4-DUPONT. DuPont, Atlanta. **CIRCLE 233**

### ► Show what you got

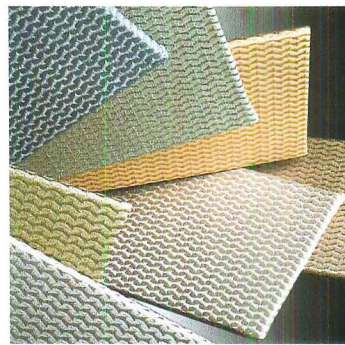
The bin and small bookshelf accessories to ALU's Reed and Autopole systems are designed to provide effective presentation and storage for a variety of merchandise. ALU is specified by architects and designers for museums, showrooms, spas, and salons. ALU offers a diverse range of solutions for clients who need to display eyewear, jewelry, cosmetics, and accessories. 212/924-8713. ALU, New York City.

**CIRCLE 234**



### ◀ Friendlier panel fabric

Textus offers three vertical surface Terratex fabrics for use on furniture systems, as wrapped panels, or wall covering. Terratex is a family of ecologically conscious fabrics produced by Interface. Terratex products are manufactured with continuously improving methods to reduce waste, emissions, energy, and water usage. 212/343-9858. Textus, New York City. **CIRCLE 235**



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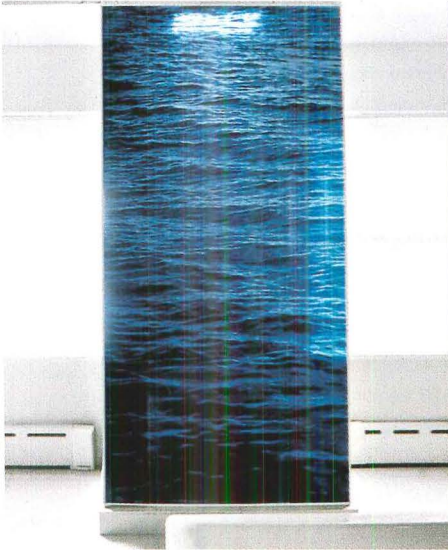
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# Product Briefs

## ► Translucent photography

Photographer Amanda Weil, of Weil Studio in New York City, collaborates with architects and designers to create customized installations using Cesar Color Glass. "The combination of glass and translucent photography creates a very powerful medium," says Weil. GlassFresco is a patented technology that permanently bonds a digitally printed plastic interlayer between two lines of safety glass. It is capable of reproducing an exacting photographic image of virtually any size (shown above is Weil's Water Wall). Weil has collaborated with notable architects and designers, including Butler Rogers Baskett and Belmont Freeman Architects. Projects that Weil Studio and Cesar Color have worked on include Grand Central Optical in New York, Tuscan Steak restaurant in New York, and a restaurant at the Wyndham Hotel in Chicago. 602/437-1201. Cesar Color, Phoenix. **CIRCLE 236**



## ► Efficient options

At Simonton Windows, multichambered construction and dual-tower glazing legs help increase condensation resistance and overall structure of the window. Intercept Spacer, constructed of tin-plated steel in a U-channel design, is less conductive than aluminum. The Super Spacer system is made of nonmetallic solid silicone foam containing millions of small, insulating air pockets. 800/SIMONTON. Simonton Windows, Parkersburg, W.Va. **CIRCLE 237**



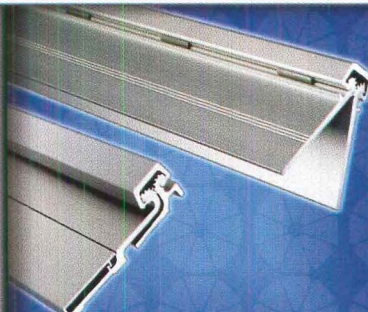
## ◀ Structural bonding gel

Aboweld 55-22 epoxy adhesive gel bonds to stone, concrete, masonry, wood, metal, ceramics, fiberglass, and virtually all rigid surfaces. As a filling and patching compound it forms a hard, translucent surface which, when mixed with fillers, even resists sagging on vertical surfaces. 800/445-1754. Abatron, Kenosha, Wash. **CIRCLE 238**

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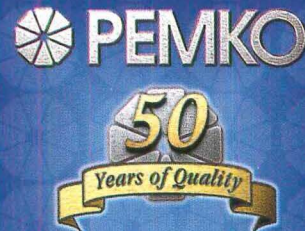
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## Product Literature

### Sound transmission

Zero International is offering a guide to understanding the science of sound and how it applies to door openings titled *Sound Solutions from Zero: High-Performance Acoustical Gasketing Systems*. The new 20-page brochure discusses the basic principles of acoustics and explains the mechanics of sound transmission with an emphasis on how sound transmission through barriers is measured and compared. 800/635-5335. Zero International, Bronx, N.Y.

CIRCLE 240

### Metallic door frame catalog

Chicago Metallic's new door frame catalog details the standard three-sided knockdown frame, sidelights, and borrowed lights. The ten standard priced color selections are shown in the catalog. 800/323-7164. Chicago Metallic, Chicago. CIRCLE 241

### Wiring devices

A 12-page brochure describing its new, redesigned industrial series 309 water-tight Pin & Sleeve Devices, including electrical plugs, connectors, receptacles, inlets, and both fused and unfused mechanical interlocks, has been issued

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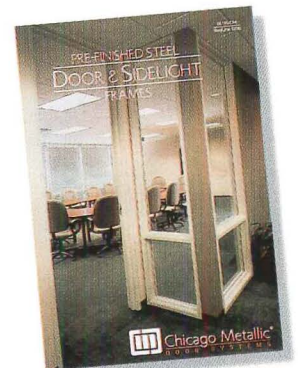
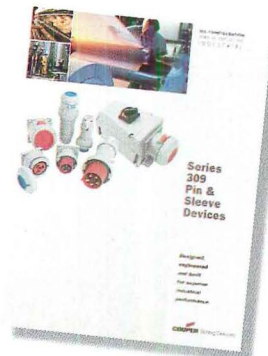
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Italian floor, ceiling, wall, table, and suspension lighting [www.foscarini.com](http://www.foscarini.com)

by Cooper. 800/366-6789. Cooper Wiring Devices, L.I.C., N.Y. CIRCLE 242

### Architectural joint systems

The JointMaster USA architectural binder provides drawings and three-part specifications and installation instructions on architectural joint systems. Each architectural joint system has a dedicated page containing features, specifications, drawings, and installation instructions. 800/222-5556. InPro Corporation, Muskego, Wis. CIRCLE 243



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## Product Literature

### Steel joist manual

The Steel Joist Institute's 318-page *60-Year Joist Manual* contains a chronological compilation of all specifications and load tables of SJI steel joists manufactured between 1928 and 1988. 843/626-1995. Steel Joist Institute, Myrtle Beach, S.C. **CIRCLE 244**

### Seating and table collections

Kron USA has introduced a brochure detailing their new Sistema Collection by the award-winning Spanish industrial designer, Ramon Benedito. 800/566-KRON. Kron USA, Pompano Beach, Fla. **CIRCLE 245**

### Lighting product binder

TSAO Designs has announced the availability of a comprehensive new product binder. The binder features tabbed sections to easily locate TSAO's Designer Series pendant lights and wall sconces; work-surface, wall, and floor task lighting products; new suspended track lighting systems; and custom-design capabilities. 877/966-9559. TSAO Designs, Bridgeport, Conn. **CIRCLE 246**

### Theater/auditorium lighting

Targetti North America has announced

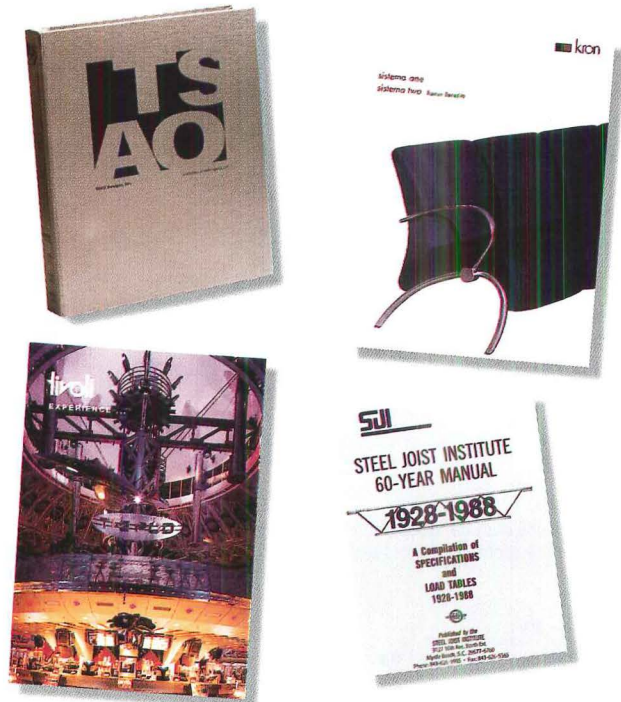
the availability of a comprehensive new brochure detailing their Tivoli division's theater and auditorium lighting products. The 16-page, full-color brochure provides an overview of the company's lines of modular wall, seat, step, and aisle lighting products. 714/957-6101. Targetti North America, Santa Ana, Calif. **CIRCLE 247**

### Roof-edge system CD

Metal-Era, a manufacturer of tested and approved roof-edge systems, announces the release of its full product manual on CD-ROM. The manual features detailed information and drawings on the company's entire line of fascia, coping, and gutter systems, including its new specialty edge products. 800/558-2162. Metal-Era, Waukesha, Wis. **CIRCLE 248**

### Window fashions

Hunter Douglas has published *Beautiful Windows: Stylish Solutions from Hunter Douglas Window Fashions*. The 144-page, full-color book focuses on how Hunter Douglas products helped 19 homeowners meet their needs for privacy and light control. 800/937-STYLE. Hunter Douglas Window Fashions, Upper Saddle River, N.J. **CIRCLE 249**



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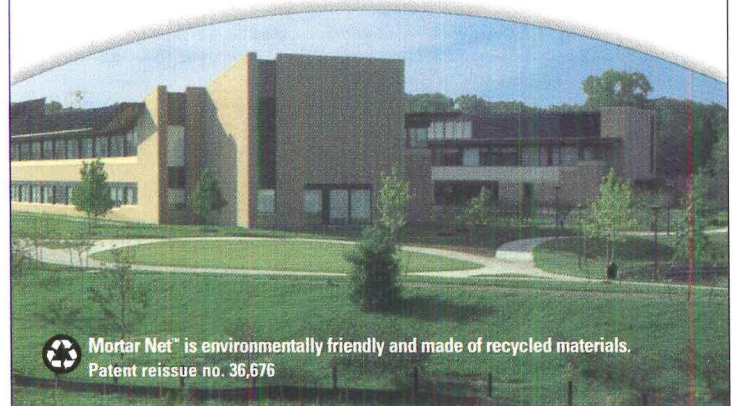
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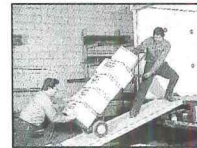
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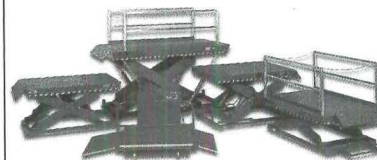


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**Program/project title: Healing Exteriors Injured by Time, Architectural Record (11.01, page 167)**

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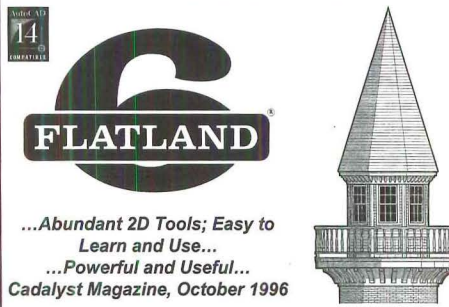
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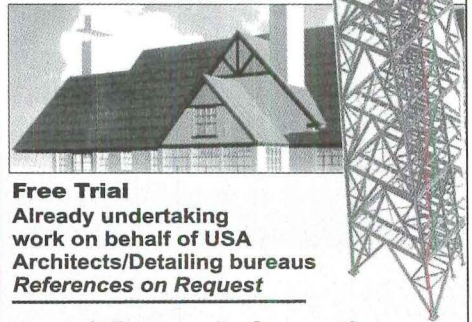
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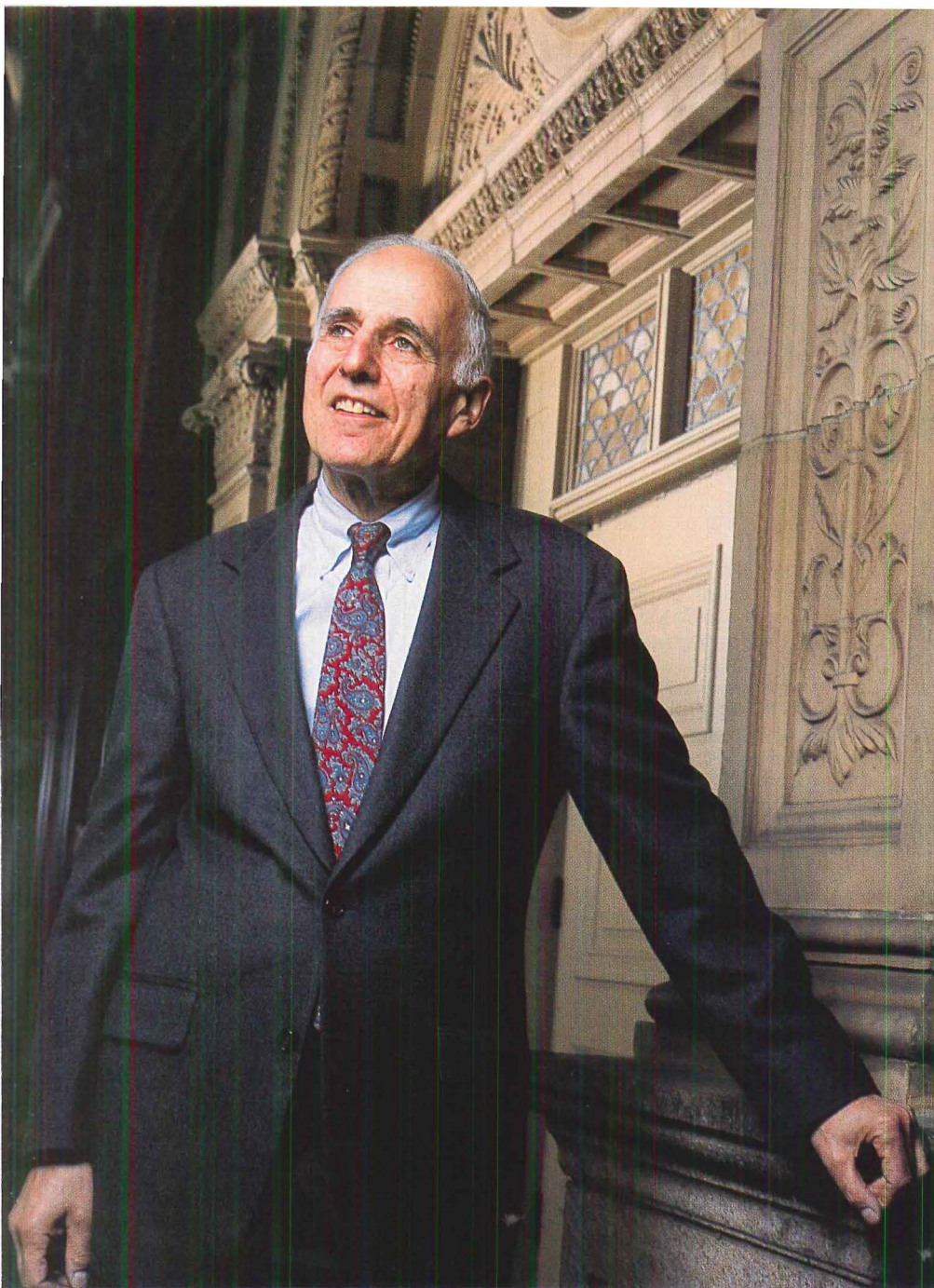


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## Robert Silman: Reengineering the historical

Interviewed by Clifford A. Pearson

*Like an orthopedic surgeon revered by the elderly, Robert Silman has reset the bones of some great old buildings: Carnegie Hall, Ellis Island, Radio City Music Hall, Wingspread, and Fallingwater. A structural engineer who studied architecture for one year and later worked for Ove Arup in London, Silman opened his own office in New York in 1966 just as the preservation movement was emerging as a force on the urban landscape. Although his firm designs new structures (mostly for institutional clients such as schools, hospitals, and churches), it has worked on more than 250 designated landmarks, devising ways of repairing them without altering their essential character.*

**Q:** *Before we talk about preservation, tell me briefly about your work at the World Trade Center site. We are just one part of a group effort organized by the Structural Engineers Association of New York, in which 30 firms are helping out. Each firm sends over a three-person team for a 12-hour shift every couple of days. It's very scary. We need senior people there because they have to make immediate decisions that could mean life or death for the rescue workers.*

*How did you decide to become a structural engineer? I read an article by Peter Blake in *Architectural Forum* sometime around 1957, in which he discussed the dearth of creativity in structural engineering in the United States. The point of the article was that we didn't have anyone in the U.S. on a par with people like Nervi in Europe. I took it as a challenge. It inspired me. So I went back to school at night and got my degree. In the '60s when I was at Ove Arup's office in London, I worked on the British Embassy in Rome and got the chance to work with Nervi and his sons. Nervi was a remarkable man.*

*How did you get into preservation work? When I started my firm, I took a lot of jobs rehabilitating tenements in the South Bronx and Brooklyn. Then in 1971, Jim Polshek asked if I would help out with Carnegie Hall, with fire egress. It wasn't glamorous work. Most engineers had no interest in these kinds of projects. Everybody wanted to do high-rises. When I got started, there weren't any university programs in historic preservation. So everything I learned about preservation, I learned on the job.*

*Does your work on new buildings influence your preservation jobs? We apply a lot of new technologies in our preservation projects. Some of that involves diagnostic technologies—radar, magnetic detection, infrared thermography, fiber optics. But I'm not afraid of using new materials in historic buildings. At Wingspread [a Frank Lloyd Wright house in Racine, Wis.] we used carbon fiber [as a protective interstitial layer] in the roof. No one can see it. But it wasn't part of Wright's design. So I asked a director at Taliesin what he thought. He said, "If carbon fiber were*

*around when Mr. Wright lived, you can be sure he would have used it."*

*What about the notion of authenticity in historic buildings? We try to get at the original intent of a designer and preserve what Walter Benjamin called a building's "aura" If you maintain that, it doesn't really matter if there's an unseen layer of carbon fiber or extra steel in the concrete. I'm even a fan of moving historic buildings to preserve them. For example, we moved the Empire Theater 175 feet farther west on 42nd Street. It remained on the same block and didn't lose any of its sense of authenticity. ■*

**Photograph by André Souroujon**

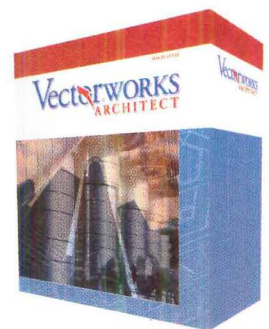


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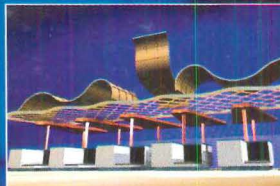
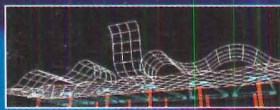
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