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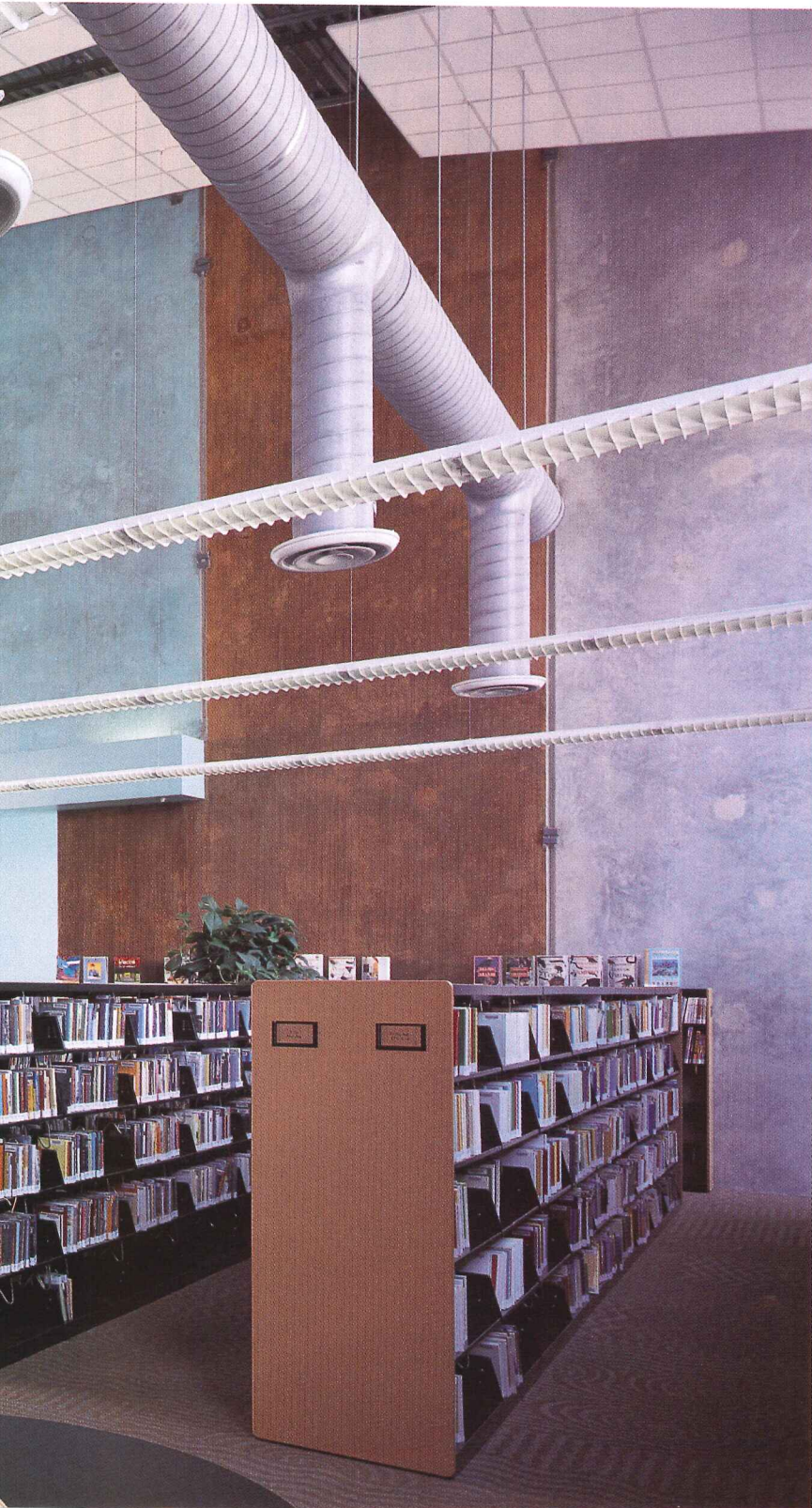


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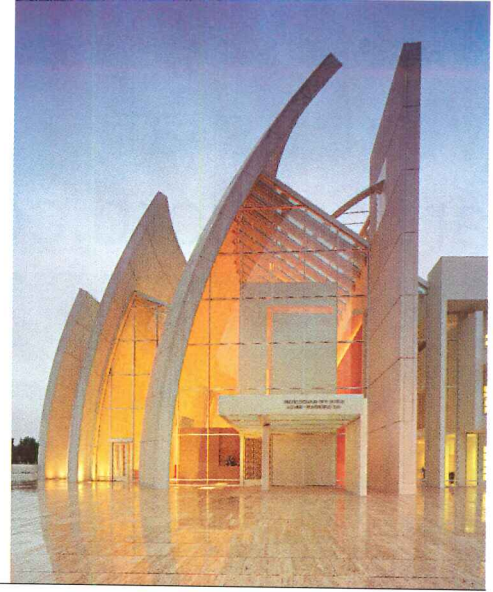
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ARCHITECTURAL RECORD

02.2004



On the Cover: *Opera House in Tenerife*, by Santiago Calatrava. Photograph by Alan Karchmer/ESTO
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The AIA/ARCHITECTURAL RECORD

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You can find these stories at www.architecturalrecord.com, including expanded coverage of Projects, Building Types Studies, and Web-only special features, such as "In the Cause of Architecture," and "Innovation," a section devoted to new materials and methods.

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February 2004



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Daily Headlines Get the latest scoop from the world of architecture.

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Building Types Studies: Adaptive Reuse

What do you do when the original use of a building has run its course but the structure still stands? Adaptive Reuse is explored in this month's BTS. Perhaps it's beyond the normal scope to turn an old fish salting factory into a visitor's center, but it's being done. Beyond the three buildings featured in the pages of our magazine, our Web site features seven additional projects from all over the world.

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Innovation

On the heels of our successful Innovation Conference, we present the Innovation section of archrecord.com. The purpose of this section is to expose the unnoticed and evaluate potential for major change. Both new materials and new ways of combining old ones are in development. Advances in materials science, increased private and public alliances, and the infiltration of digital technology into everything have conspired to create pockets of experimentation and unusual collaborations among architects, engineers, and manufacturers. We invite our readers to continue their own investigation.



Photography © Alberto Ferrero

Retail Interiors

Shopping – either you love it or you hate it. The architects of this month's retail interiors heighten the visual experience regardless of your stance on the activity. Whether you're buying high-end luggage, stylish clothing, or tile, the interiors of these stores beckon you to spend more time and money in these retail establishments. **Virtual tours** of this month's Retail Interiors are exclusive to our Web site.

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Lighting

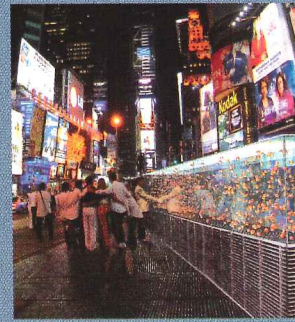
This quarterly section reveals how lighting designers and architects are using new lighting techniques in innovative ways to make lighting function as an integral component of space, whether as a signature visual element or an inherent wayfinding device.

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World Trade Center

Rebuilding News. Get the latest updated coverage on the rebuilding process with news and insight.



Courtesy Della Valle + Bernheimer Design

archrecord2

The architect-client relationship is a standard consideration in an architect's of work. This month's archrecord2 explores non-traditional relationships in the world of architecture. Design architects from DellaValle + Bernheimer Design have had their share of working ties. But in their newest project, they explore the familial side in a house extension. Work architect Linda Samuels takes her students for a ride and explores relationships formed on the move and on the road.

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Digital Practice

This quarterly digital section features the digital revolution in museums, research on digital fabrication, a green residential tower that has wireless Net power, and digital tools that aid carpet and textile design. Digital products include management tools, online resources, and design software.

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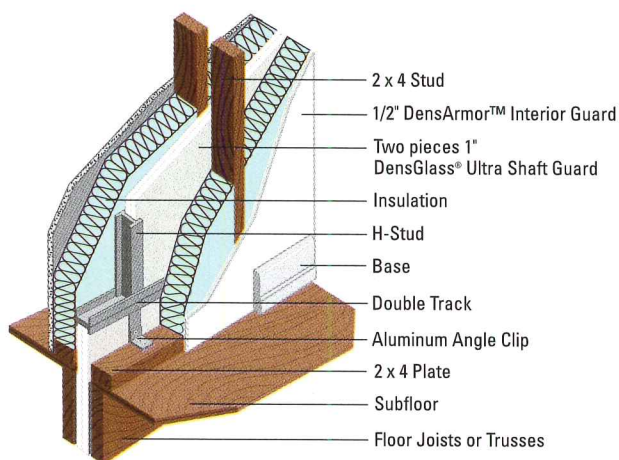
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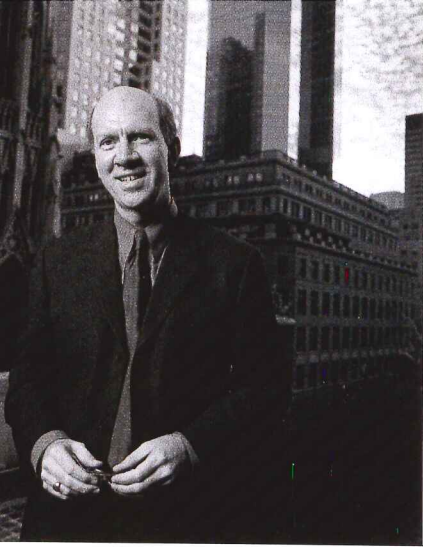
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Editorial

By Robert Ivy, FAIA

One of the most persistent complaints among architects concerns media attention to the so-called “stars.” The rap, a deep-seated unhappiness that so much attention is lavished on a very few, concerns the tiny sliver, perhaps 1 percent of all architects, who dominate the architectural airwaves. Why, the lament goes, do those familiar faces gobble up all the oxygen in the room and hog all the attention? Why do they get the plum jobs? Why not, the remarks imply, pick me?

Often their work seems willful or unrealistic, while your responsible work is bathed in regular, laborious effort to meet client needs or match excruciatingly tight budgets. They, it appears, inhabit a rarified realm of travertine and stainless steel, while your own projects may feel weighted down with the limits of concrete block. Repeated emphasis on individuals diminishes the role teamwork plays in contemporary practice; one-off, spectacular buildings draw attention away from careful urban planning. The list of complaints drones on, but it comes down to this: They get the glory, you do the work.

Historically, the star phenomenon is relatively new in America. After H.H. Richardson, Frank Lloyd Wright enlarged the burgeoning tradition, self-righteously invoking the title “genius,” a term with roots in the Renaissance and that flourished in 19th-century Romanticism, which is incomparable for the purpose of self-aggrandizement: Who could argue with genius? Today, the media feeding frenzy deepens the trend, projecting a familiar litany of names and images onto our pages and screens. Always the same names.

Why? Truthfully, we have to admit, fame doesn’t occur by happenstance. The stars, our stars, operating at a high level of accomplishment, often possess qualities we admire, including real talent, application of effort, organizational ability, savvy, media friendliness, and intellectual acumen. In addition, often these architects bring a sense of courage that most of us lack—exploring ideas, testing new systems, voyaging first where most of us dare not go. In a sense, they are our explorers.

Consider those represented in this issue. Lord Norman Foster defines the type, with buildings around the world soaring vertically or horizontally, con-

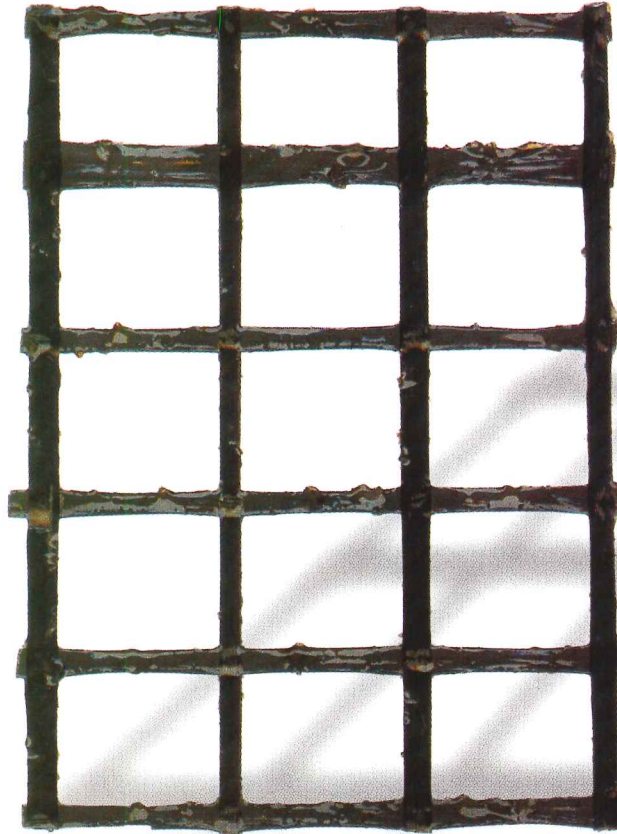
ceiving and creating structures that operate like animate laboratories, combining architecture, sociology, and biology. His work is capable of redirecting our thinking while offering clients and the larger public more comfortable, adaptable ways of living and working. Yet stars need not be flamboyant. Fumihiko Maki’s masterfully detailed and pared-down projects offer lessons in mannerly, urban restraint, rigorously detailed and consistently in harmony with their neighbors.

Santiago Calatrava, who has just unveiled his plans for New York’s new transit hub, continues to amaze and confound us with bold, expressive new forms that speak to us in an idiosyncratic voice, reflecting a consciousness both educated and individualistic. His urban projects, such as the opera house in Tenerife, often combine engineering prowess with artfulness, setting and memorably defining place. No one will forget the opera house, or Tenerife, again.

If you thought you had pegged Richard Meier, think again. This master of the Modern idiom continues to evolve as an architect. His Jubilee Church, a segmented spherical concrete structure, suggests new meaning for the term “building blocks.” Who might have expected these lyrical, curving forms from the master of the gridded block? The stars, it seems, can surprise and confound our preconceptions.

Not that we should diminish our concerns. All-too-human, the men and women occupying today’s architectural stardom cast different kinds of power, not all benign: Great stars can make bad buildings. At the best, as Cynthia Davidson proposed in this magazine [RECORD, May 2003, page 144], fame, like a flame, attracts. The public remains fickle, as do we. Yet you have to admit: Some individuals among us consistently produce work worth examining, in these pages and in the broader media. Their work, when it succeeds, attracts attention by widening audiences for architecture with a type of gravitational pull that might seem planetary. Call them stars, or call them what you will.

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Letters

A master plan that worked

I cannot agree more with Robert Ivy's January editorial [page 15]. Libeskind satisfied most of what the memorial should do. Why not give him the opportunity to create his idea? His design for the memorial space is very strong. I would not be surprised if his final version of the memorial would have been more compelling than his conceptual design.

—Jeffrey Silberstein, AIA
Delray Beach, Florida

Austria-lopithecus

I've not been to Graz, Austria, and seen the new Kunsthaus [January 2004, page 92] in person. But I found the photos of the building, like a grotesquely swollen larvae next to 18th-century, pastel-colored Baroque buildings, to be immensely sad. "Are museums suffering from architectural overload?" More like severe indigestion.

—Rupert Essinger
San Diego

Are we there yet?

I read with some interest the article in your December 2003 issue entitled "Thomas Speigelhalter turns neglected ruins into designs with a conscience" [page 64]. Now that you have shown us the before picture, perhaps next month will bring the after.

—Frederick Farmer
Seattle

I don't heart New York

Despite the fact that 70 percent of Manhattan's decidedly bland architecture was built before 1945; despite the fact that four out of the five boroughs of New York City continue to struggle with poverty and urban decay; and despite the fact that other major international cities actually provide architectural innovation instead of the perpetuation

of zoning, regulatory, union, and community restrictions, insular, introspective New Yorkers continue to tend toward self-aggrandizement. After four years of life in New York, it's clear to me that the PR is better than the product.

It is ironic, then, that your magazine should laud the New York grid system [Critique, December 2003, page 49], the very system that has strangled the city for 100 years and will no doubt continue to do so. If New Yorkers actually got out more (other than to Florida), they would realize what a dirty, run-down, repetitive, and vastly nondescript city they actually inhabit. They would realize that every major world city equal to New York in size, notably Moscow and Hong Kong, has the energy, artistic vitality, and eclecticism that comes from a congregation of a nation of people in one place. They might even realize that the very icons that keep New York architectural enthusiasm alive are holdovers from an era current architects want nothing to do with.

New York is not unique, or even especially pleasant to live in. Only New Yorkers think so. That, above all else, is what sets them apart.

—Seth Scott
AGM Architecture and Design
Millburn, New Jersey

Off the grid

Regarding Mr. Campbell's Critique of New York's genetic code, he seems to forget four fundamentally New York conditions that exist within this grid: (1) There is a big hole in the middle of this anonymous and interchangeable grid, i.e., Central Park; (2) There are extremely strong edges to this grid, i.e., the East River and the Hudson River; (3) There is a very long diagonal that runs through this grid and creates square after square, i.e., Broadway; (4) There are

fundamental differences between the nature and character of the vertical lines and the horizontal lines in this grid, i.e., streets and avenues. All of these conditions seemingly contradict Campbell's propositions that "there is no prominent location on a grid" (Times Square?); or that "every place is anonymous and interchangeable with every other place" (Central Park West equals 11th Avenue); or that "all sites are, in principle, equal." In principle, perhaps they are. In New York, they most definitely are not.

—Christopher Mulvey
Via e-mail

Safety first

As I was looking through the September 2003 issue of RECORD, I had to stop and write this letter after looking at the photographs of a live/work loft designed by Marpillero Pollack Architects [Record Interiors, page 148]. Not that I am picking on this design, as the space was architecturally stimulating. What I see constantly in your magazine are designs of buildings that appear to totally disregard the building code, particularly as it pertains to requirements for stairs. The Marpillero Pollack design, for example, shows interior stairs ascending to upper lofts with no handrails at either stair and one of the stairs completely open on one side. I realize that architects sometime struggle with elements that, although mandated by building codes, can sometimes interfere with the aesthetic achievement they are trying to reach in their buildings. However, as an architect who has been in code enforcement for the past 15 years, I find it disturbing when architects ignore these life-safety elements so critical to creating a safe building environment.

Perhaps in this design handrails were added after the photographs for publication were

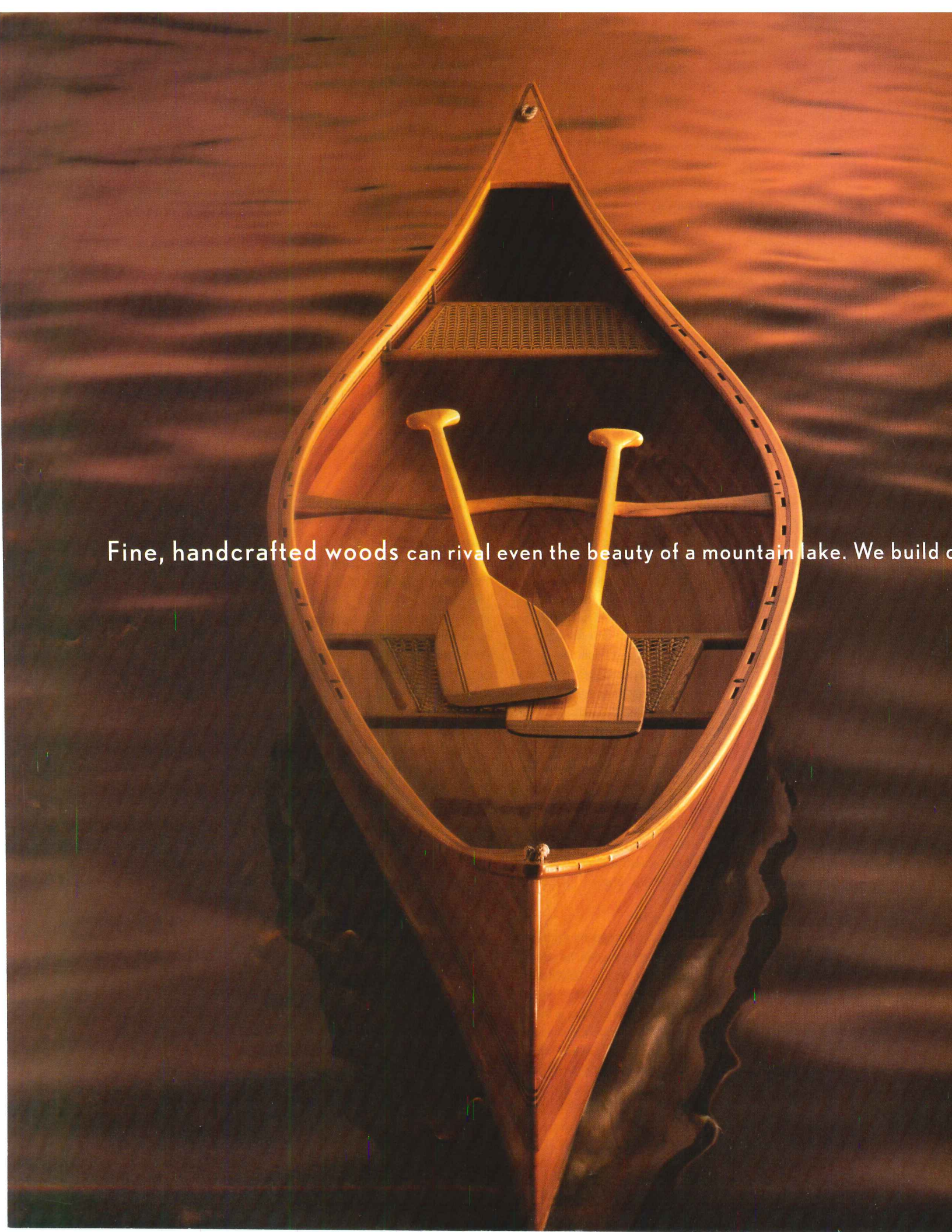
taken. If not, it would seem to me that there are serious flaws in the plan review and building inspection process within various jurisdictions. A noted architect who was the keynote speaker at an AIA chapter meeting I attended some years ago in Pennsylvania stated: "Architects are not sued because their buildings are ugly, they are sued because their buildings don't work." Buildings that fail to comply with nationally recognized standards for building safety adopted by the jurisdiction in which they are built won't work. Am I wrong?

—Reginald Fuller
Idaho Falls, Idaho

Corrections

In the January issue of RECORD, in the archrecord2 column [page 48], architect Tom Farrage's name was misspelled. Also in January, in News ["On the Boards," page 32], the story about Cincinnati's Underground Railroad Museum should have credited BOORA Architects of Portland, Oregon, as lead designer of the project. Victoria Newhouse's observation regarding the second-floor exhibition spaces at the Kunsthaus in Graz, Austria ["Are museums suffering from architectural overload?," January, on page 91], should read "curatorial and fire concerns resulted in a very dark space with insufficient lighting." Also in January, in the article about the Mori Art Center [page 107], the credit for photos on page 108 should have gone to Risaku Suzuki (top) and Mori Building (bottom). In December 2003 Product Reports [Digital Products, page 167], the cost of the ZPrinter 310 3D printer by Z Corporation was reported incorrectly. Its purchase price is around \$30,000, but the printer can be leased at a lower price.

We appreciate your comments. Send letters to editor in chief Robert Ivy at rivy@mcgraw-hill.com.

A top-down view of a wooden canoe on a lake at sunset. The canoe is centered, with two wooden paddles resting inside. The water is dark with golden reflections from the setting sun. The canoe's interior shows a woven mat at the bow and stern.

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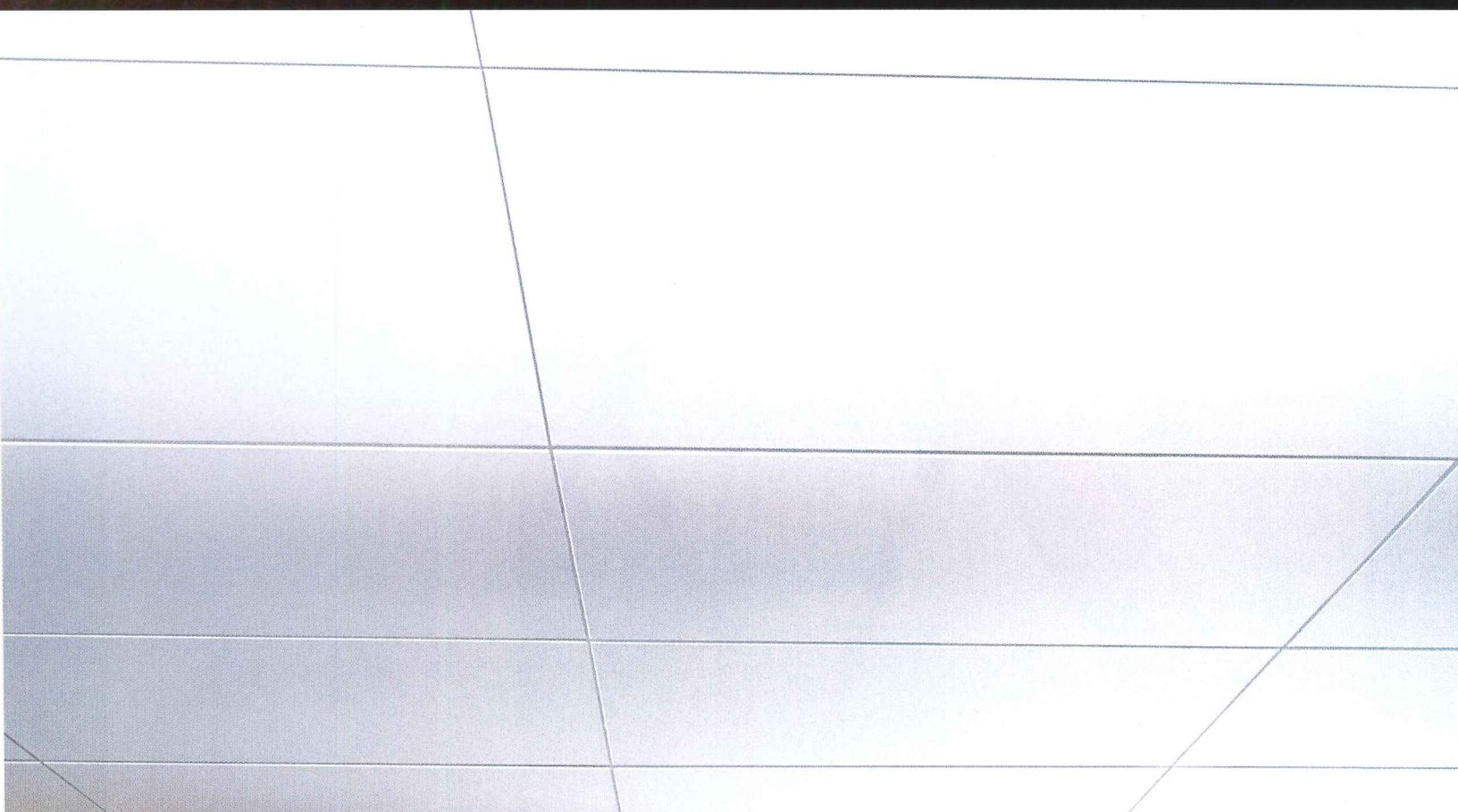
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REBUILDING LOWER MANHATTAN

Reflecting Absence chosen as World Trade Center memorial

On January 6, the Lower Manhattan Development Corporation selected *Reflecting Absence*, which uses the Twin Towers' footprints as sites for large, sunken reflecting pools, as the winning design for its World Trade Center Memorial Competition. An updated design was unveiled in downtown New York on January 14.

The original plan was conceived by Michael Arad, a young architect who works for the New York City Housing Authority's design department. Arad recently chose veteran landscape architect Peter Walker to help him refine the plan.

The reflecting pools in Arad's design sit 30 feet below street level within a large plaza, while a constant stream of water cascades down the pools' surrounding walls. Visitors can visit the pools, looking through a sheet of water, via descending ramps, while the names of victims are inscribed on short walls adjacent to each pool.

Jury chair Vartan Gregorian praised the plan's ability to "make the gaping voids left by the Towers' destruction the primary symbol of loss."

The updated design gives visitors access to the "slurry wall" of the original Trade Center buildings along the west side of Ground Zero. It also

features an underground interpretive center, which will include artifacts from the September 11 attacks; a small, skylit space under the northern reflecting pool, 70 feet below grade, housing the unidentified remains of September 11 victims; a dense grove of deciduous trees and plantings on the surface of the memorial plaza; a random ordering of the names surrounding the reflecting pools; and the removal of a large building that Arad had intended to be built to the west of the site.

Arad, 34, grew up in Israel, the U.S., and Mexico, and served in the Israeli Army. He attended Dartmouth College and studied architecture at Georgia Tech. He is now working on designs of two police stations in New York City.

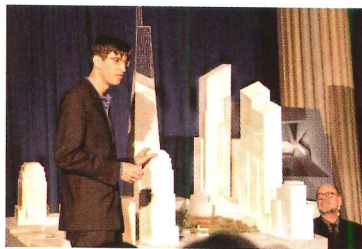
Walker, founder of Peter Walker and Partners Landscape Architecture in Berkeley, California, has contributed to the Millennium Park at the 2000 Olympic Games in Sydney and the Nasher Foundation in Dallas. He was brought on by Arad (at the suggestion of the memorial jury) only weeks ago, and helped form a far more lush, green-filled space than Arad had originally proposed.

Many of the victims' family members seemed pleased with the

updated plan, praising the additions of bedrock access, an interpretive museum, and a private space for unidentified remains.

Some complained that the street-level park (designed to integrate into the neighborhood, the jury explained) no longer provided a "buffer" between the memorial and the noise of the surrounding streets, as Daniel Libeskind's first sketches for

a sunken space had offered. Others felt the names in the plan (randomly ordered as the deaths occurred randomly, the jury said) should be grouped in a clearer order. And Mary Fetchet, who lost her son Bradley in the attacks, wished to have artifacts, such as part of the tower's steel skeleton, above ground, saying it would be an immediate reminder of the scale of the attacks. *Sam Lubell*



Arad presenting his plans (top left); the memorial from above (right); the view from the skylit space below (left).

WTC Briefs

Grimshaw and Arup working on Fulton Street Transit Station

Another A-list team is quietly working on a major public project in downtown New York. Nicholas Grimshaw and Partners (working with New York architect Lee Harris Pomeroy Architects) and engineering firm Arup are designing

the Metropolitan Transit Authority's Fulton Street Transit Center, which will connect twelve subway lines, currently accessible through six different stations, to the PATH Station at the World Trade Center site a block away. The corridor connecting the center to the PATH station will be one block long, approximately 40 feet wide, and 14 feet high. "We are very happy to be in the shadows,"

says David Palmer, Arup principal. *Alan G. Brake*

New York New Visions joining LMDC team

The Lower Manhattan Development Corporation announced that New York New Visions, a coalition of 21 architecture, planning, and design organizations that has made recommendations for Lower Manhattan

development, will work with the LMDC and the Port Authority to refine commercial design guidelines for the World Trade Center. *S.L.*

Memorial gets price estimate

An unidentified Manhattan development official told the *New York Post* that the World Trade Center Memorial will cost roughly \$350 million. *S.L.*

REBUILDING LOWER MANHATTAN

What they're saying

Responses to the World Trade Center Memorial and to the World Trade Center Freedom Tower:

WORLD TRADE CENTER MEMORIAL

"Oy Vey!" —*Frank O. Gehry, FAIA, commenting on all the finalists' designs*

"A frenzied week of sketching in a "forest" and adding color to computer images can't save *Reflecting Absence* from its obsessive morbidity." —*Steve Cuozzo, New York Post*

"Of the designs officially adopted for the site so far, this is the only one that approaches artistic stature." —*Herbert Muschamp, The New York Times*

"A classical World Trade Center memorial that honored the dead, the survivors, the heroes, and the city itself, rather than the architect alone, would only look ridiculous in the context of Libeskind's egotecture. So it is not altogether inappropriate that all of the memo-

rial finalists are Modernist abominations." —*David Brussat, The Providence Journal-Bulletin*

"At least and at last the news about the memorial is good: A very promising design, the best of the eight finalists, won ... With great clarity, Arad has counterintuitively cultivated the unfathomable—that it is difficult to put our minds and hearts around the events of that day. He has mystified the site." —*Joseph Giovannini, New York magazine*

"The World Trade Center memorial design is deeply flawed, both cluttered and minimalist to the point of meaninglessness." —*Inga Saffron, Philadelphia Inquirer*

"The transformation of plaza into park is at once welcome and necessary. It distances the sacred precinct of the sunken pools from the intense life of the surrounding city and yet, paradoxically, it also helps make the memorial grounds a more vivid part of everyday city life." —*Benjamin Forgey, The Washington Post*

"For years, the Twin Towers were

loathed as antiurban objects standing in a huge, windswept plaza. By overgreening the memorial plaza and suburbanizing what should be a sharply defined urban space, *Reflecting Absence* makes a new version of the same mistake."

—*Blair Kamin, Chicago Tribune*

"Of the eight finalists in the memorial competition, *Reflecting Absence*, by Michael Arad, was the blankest, the most forbidding, the most oppressively generic—and, in a way, the most faithful to the Modernist spirit of the World Trade Center.

—*Justin Davidson, Newsday*

"I would issue a timeout. None of the designs won the hearts and minds of the people." —*Rudolph Giuliani in The New York Times*

"There seems something almost haphazard about this process. Future generations will hold Governor George Pataki responsible—we can't sacrifice our heritage just to get something built quickly." —*Anthony Gardner, head of the Coalition of 9/11 Families, talking to the Associated Press*

FREEDOM TOWER

"In its present form, Freedom Tower is much closer to being a piece of architecture than the public had any right to expect." —*Herbert Muschamp, The New York Times*

"I find it very awkwardly proportioned. It seems to me little more than a slicked-up developers building with some vague echoes of Libeskind's original plan." —*Martin Filler, The New Republic*

"The design would produce a world's tallest building that would strive for—without reaching—great aesthetic heights ... This is not the skyline icon that New York and the nation deserve in the aftermath of the September 11, 2001, terrorist attacks." —*Blair Kamin, Chicago Tribune*

"The model presented yesterday is a start—closer to the hundredth draft than to the first, but still far from a finished work. It represents a hurried compromise between architects with radically different sources of inspiration." —*Justin Davidson, Newsday*

"The collective reaction to the design was "it's not as bad as we thought." Unfortunately, it's not as bad as we thought is about as good as it gets at Ground Zero. And it is not nearly good enough." —*James S. Russell in Arts Daily*

"It isn't the provocative line we hoped to see, yet it's still without a doubt the most imaginative tall building in the world." —*Douglas Davis, Newsday*



Progress at Ground Zero

The photo on the left depicts Ground Zero as it stood in July 2002. The next two pictures depict the site as it looked in January 2004.

PATH's World Trade Center Station, opened on November 23, can be seen in the foreground of the center image, while the canopied entrance to

the station can be seen on the right. The \$253 million temporary station includes five tracks and three platforms. The space is utilitarian but effective and light-filled. Visitors enter and exit via the center of Ground Zero, a very emotional experience for many first-time visitors.

At press time, Santiago Calatrava's \$2 billion permanent transit station's design was scheduled to be unveiled on January 22. S.L.

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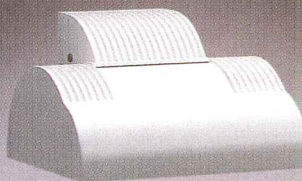
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REBUILDING LOWER MANHATTAN

OFF THE RECORD

Moshe Safdie has been selected by the Free Library of Philadelphia to design the renovation and expansion of its Central Library.

Gerard (Guy) Geier, AIA, is leaving his job as a principal at NBBJ to become the C.E.O. of Vitra USA.

The Museum of Contemporary Art/Denver has selected six finalists for the design of a new permanent building. The finalists are: TEN Arquitectos (Mexico) with Humphries Poli Architects (Colorado); Snohetta (Norway); Rick Joy Architects (Arizona); Predock_Frane (California); Gluckman Mayner Architects (New York); and Adjaye/Associates (UK).

Lord Norman Foster's former right-hand man, Ken Shuttleworth, who left Foster's firm last month, is starting his own practice, where he will be joined by three former colleagues.

Temple University has chosen Steven Holl of Steven Holl Architects in New York to design its new Tyler School of Art building in Philadelphia. The \$75 million project will relocate the art school from its current campus in Elkins Park, Pennsylvania, to Temple's main campus.

Indianapolis's Eiteljorg Museum has unveiled plans for a \$20 million expansion, bolstering its exhibition space and educational facilities. The 73,000-square-foot Eiteljorg opened in 1989 as the only Midwest museum with extensive collections of American Indian and Western art.

The Municipal Art Society, The Port Authority of New York and New Jersey, and JetBlue Airlines have reached a tentative agreement to use Eero Saarinen's TWA Terminal at JFK Airport as an entrance to a new terminal.

Inside the jury: An Interview with James Young

World Trade Center Memorial jury member James Young is professor and chair of Judaic Studies at the University of Massachusetts, Amherst. He has written several books about memorials, including The Texture of Memory (Yale University Press, 1994) and At Memory's Edge (Yale University Press, 2000).

ARCHITECTURAL RECORD: Why was Reflecting Absence chosen as the winner of the World Trade Center Memorial competition? Can you describe the process?

James Young: We kept bringing Reflecting Absence forward because we liked its simplicity, its Minimalist aesthetic, and how it wasn't too cluttered. The voids themselves really seemed to be in keeping with a postwar vocabulary that attempted to articulate absence, which is a very difficult thing to do. They made the footprints themselves the memorial, in their geometric form, and that was very important. We saw that as the most authentic reference to the site, even more authentic than bringing remnants back. The downward flow of the water seemed suddenly to remind you of the towers' implosion. It was all suggested in the design. Had the elements not been integrated or coordinated, then it would have been something else. But we thought that they worked and they balanced with something that all of us were looking for all along.

AR: What finalists did you also consider near the end?

JY: The last day came down to three finalists: *Memorial Cloud*, *Garden of Lights*, and *Reflecting Absence*. The

Garden of Lights idea became too complicated, and we thought they were doing too much. The cloud was the most visually exciting, but it didn't have the memorial logic in it that we felt the void had. It seemed to be more art and architecture for itself and less to do with the events. We were very sensitive in trying to anchor the form of the memorial as deeply as we could in the events, and *Reflecting Absence* did that the best.

AR: How and why was Peter Walker coupled with Michael Arad?

JY: The LMDC gave all the finalists a list of landscape architects, civil engineers, lighting architects, and others to choose from. We didn't say they had to do anything, but it was



The WTC Memorial Jury. James Young is second from left in the top row. Other jurors include Maya Lin (second row, far left) and Michael Van Valkenburgh (top row, far right).

strongly suggested. Michael chose Peter within about 10 days of the announcement of the finalists. At our suggestion, he had already begun working on some of the landscaping changes that Peter has helped add.

From the beginning, we saw the process as advise and consult, a proactive jury. We saw this as a dialogue and conversation from which eventually a design emerged. **AR:** Unlike Daniel Libeskind's original vision, which sunk virtually the entire site, much of the winning memorial's design, particularly its park, is at or above grade level. Why was this decision made?

JY: The jury felt quite strongly that we would encourage the designers to bring things to grade. We saw pretty big problems with leaving large parts of the slurry wall depressed. It would be a big canyon,

separated from the neighborhood. We wanted it to be part of the neighborhood. We still think the trees will provide a canopy that will buffer it from the rest of the neighborhood.

AR: Many have proposed putting artifacts above ground instead of in an underground museum. Was this considered?

JY: We thought scattering artifacts on the face wasn't in keeping with the entire project. They felt like additions. We thought these things would be better preserved and contextualized down below, where you could tell the stories, have a space for contemplative meditation, and control the environment. I think there is still a possibility of Michael scattering a few objects within the trees

or groves; we just want him to explain why he put those things there.

AR: Do you think this decision was made too soon?

JY: I think everyone on the jury thinks that we don't know what a memorial means yet, but we also know that as a centerpiece to redevelopment, this has to be done before anything can get built. Can you wait 10 years before it really sinks in and go ahead

and build? The answer was no. I think we all want to see memory accrue slowly over time, but there was a built-in tension to get it planned. We really don't know to this day what the larger historical meanings are. We know they will change over time. The memorial should be able to accommodate its own evolving meaning over time.

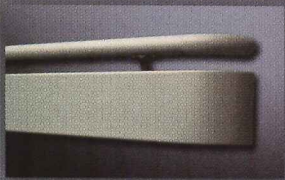
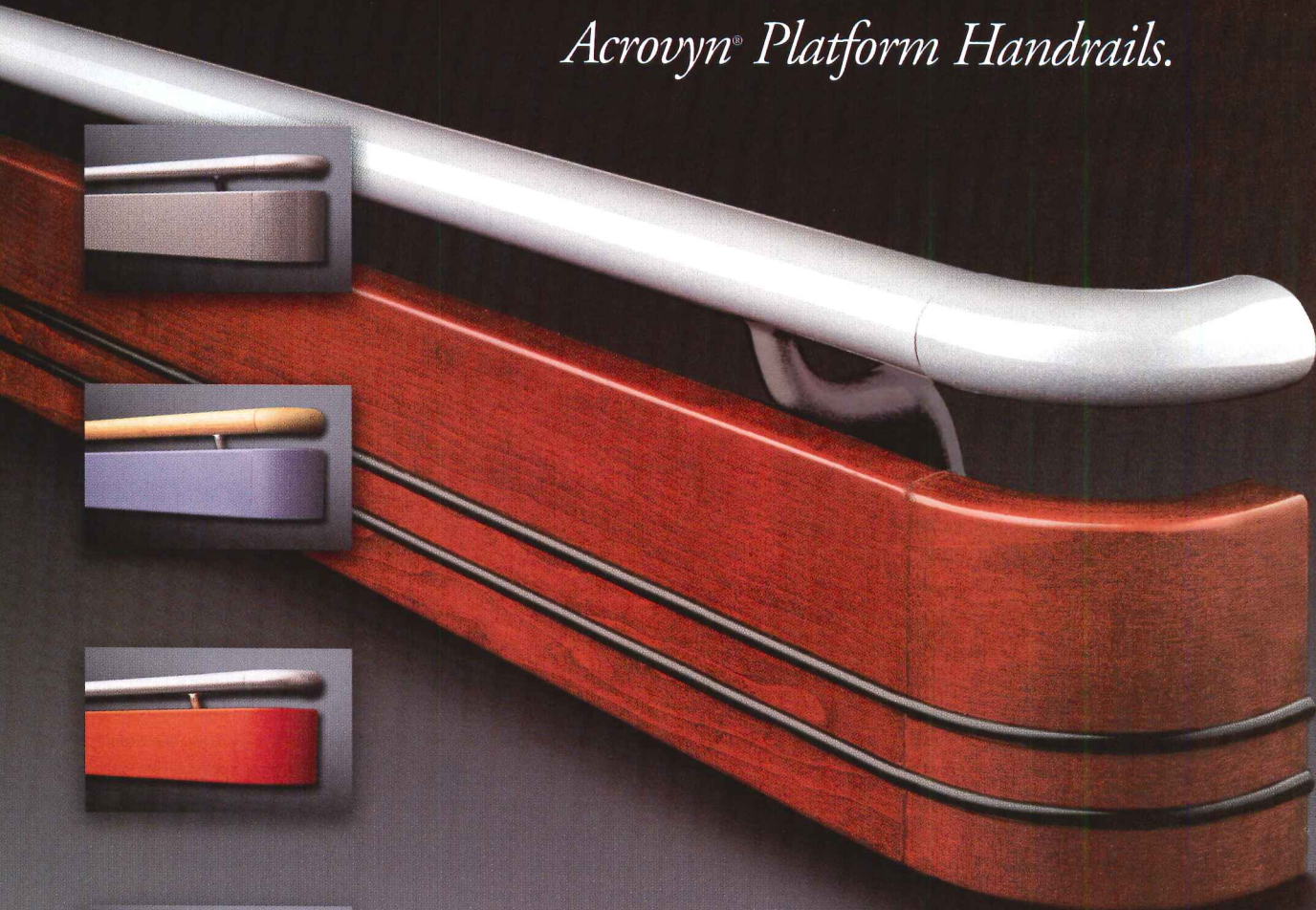
AR: So you didn't feel rushed by the LMDC or the governor?

JY: They let us take the time we wanted, and we weren't hurried by them. We could have taken even longer. S.L.

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Record News

Along with lives, architectural treasures lost in Bam, Iran, earthquake

The earthquake on December 26 centered near Bam, Iran, is estimated by the Red Cross to have killed more than 25,000 people, making it one of the most devastating tragedies in recent memory. Sad evidence of the disaster lies in the rubble of the city: The quake possibly destroyed as much as 85 percent of the town's buildings, including some of the most precious architectural monuments in the world.

Rated at 6.5 on the Richter scale by the U.S. Geological Survey, the earthquake rocked many of the city's historic structures, including the town's famed citadel, which was particularly badly damaged.

According to the Iranian Cultural Heritage Organization, the citadel, known as Arg-e Bam, at about 1,700-by-1,400 feet, covered approximately 2.3 square miles. Built on a huge rock, the towering complex contained unbaked mud-brick components dating back more than 2,000 years, and it had been continuously developed until about 180 years ago.

An International Council on

Monuments and Sites (ICOMOS) mission visited the city in early January, confirming the almost complete devastation of the citadel and 30 other historic monuments, including the town's famous bazaar.

Most eyewitnesses and experts, including Graham Payne, director of Rapid UK, in Hardwicke, Gloucester, a British search and rescue organization at the scene, claim that the worst-affected buildings were made of mud brick, which then reverted to mud. "As the buildings have collapsed, the mud has gone down to sand. This is what killed so many people," he said.

But Ed Crocker, a board member of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and head of Crocker Limited, a U.S. company specializing in restoration of earthen buildings, says that some ancient adobe buildings appear to have held up well, according to satellite photos. Worse hit, he says, were newer buildings made of soft brick, a construction he describes as "shoddy." He observes



Bam, Iran's once majestic citadel, which was all but destroyed by earthquake.

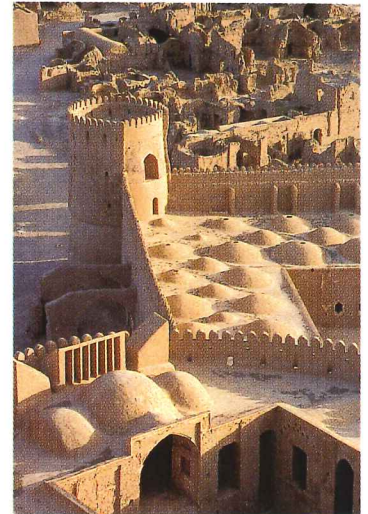
that, in the end, "It's proven that earthen buildings can survive extremely well in seismic zones."

Mohammad Ehsani, a professor of civil engineering at Arizona University who was in Bam just before the earthquake, agrees that many newer buildings crumbled, but thinks the older buildings didn't fare any better: "When you get near the epicenter of an earthquake of that magnitude, any structure that is not reinforced is going to crumble," he says.

Regardless of the reasons for the buildings' destruction, the Iranian preservation community and international preservation groups are working to help save what is left of Bam's historic fabric and are beginning to rebuild it. UNESCO, ICOMOS, and the World Monuments Fund (WMF) have all pledged money and expertise. Experts say they are encouraged because Iran, which has pledged to rebuild the citadel, has many skilled heritage experts, in sharp contrast to nearby Iraq, where most had fled the country under Saddam Hussein's rule.

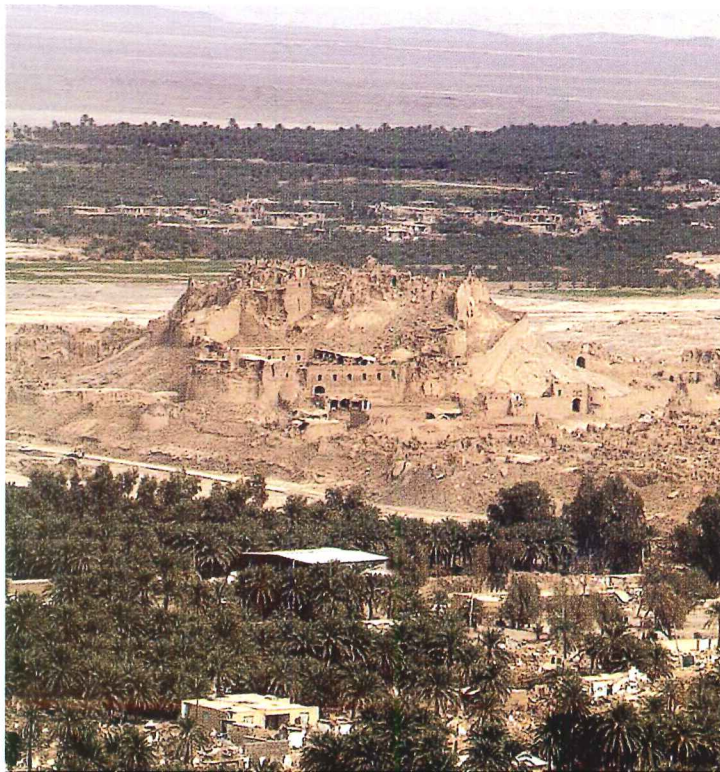
Groups like the WMF stress the importance of shoring up historic structures to prevent destruction. WMF President Bonnie Burnham notes that many "countries that have more historic urban fabric tend not to look at [seismic-safe construction] until a catastrophe occurs."

Ancient structures like the earthen bricks in Bam can be shored up with metal and wood, as well as products like "Quake Wrap," an adhesive, fiber-based polymer developed by Professor Ehsani that hardens soon after application.



Construction codes, adds Ehsani, need to be enforced in Iran, which has been notorious for looking the other way. Resulting poor construction techniques have prompted officials to consider relocating Iran's capital from Tehran, because many buildings there are vulnerable to a major quake. *S.L. and Peter Reina*

The ruined remains of the citadel, as seen from above.



Architecture for Humanity, a non-profit organization founded to promote architectural solutions to humanitarian crises, has put out a request for any architects, designers, or engineers, preferably locally based, to help design long-term transitional housing for Bam residents left homeless by the earthquake. The organization is also directing financial resources to aid in the rebuilding effort. Those interested in helping should e-mail info@architectureforhumanity.org, or go to www.architectureforhumanity.org. S.L.



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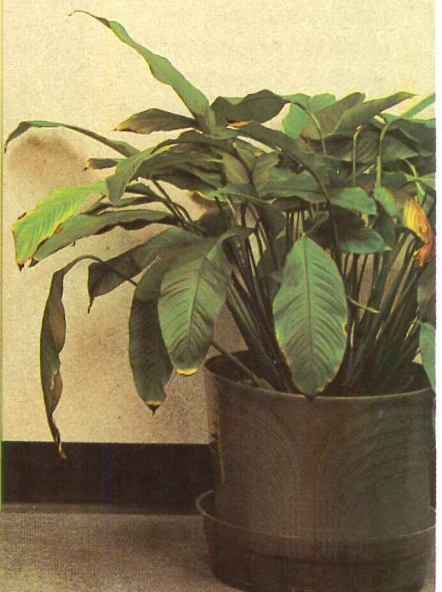
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Athens Olympics are in shape to be ready on time

Skeptics have long speculated that the Athens Olympics would be remembered not as a return to ancient Greek glory, but as the least-prepared Olympics ever. It almost happened: In 2000, the International Olympic Committee came close to moving the games away from Athens for fear that its venues would not be ready. But thanks to a last-minute push by the Athens Organizing Committee, it finally appears that construction will finish on time.

"We are following the program every day, and without a doubt it will be ready on time. It has to be," says architect Santiago Calatrava, who is playing a major role among architects involved with the games.

Calatrava is engaged not only in renovating the Olympic Stadium and designing its spectacular roof, but in planning much of the Athens Olympic Sporting Complex. This includes a long, disparate list of projects for the architect: "Nations Plaza," a gathering space for up to 200,000; the complex's main promenade, traveling east-west through the heart of the Olympics; the "Nations' Wall," an 80-foot-high, 600-foot-wide movable entrance to the complex; the 5,000-seat Velodrome, used for bicycling, which is being modernized and roofed; and the "Agora," a large promenade arcade that will shade the pedestrian path that winds through the complex.

Most Olympic venues—many of which are updates of older buildings—will likely finish in May, thanks to almost nonstop construction, which, according to reports, has in some cases led to workers' deaths. The games will begin in August.

Calatrava's update of the Olympic Stadium should open on time, as he announced to the

International Olympic Committee in December. The 75,000-seat stadium, originally built in 1979, first welcomed sporting events in 1982. Calatrava's \$132.3 million overhaul highlights a cable design roof with twin steel arches whose gray-blue (like the ocean) glass panels shield spectators from the intense Hellenic sun. Other renovations include new seating, new suite spaces, handicap accessibility, and replacement air-conditioning, electronic, and hydraulic systems.

On opening day, more than 35 venues will include:

- The \$16.3 million Olympic Water Sports Center in Oaka, which includes both indoor and outdoor swimming areas;
- The 14,000-seat, \$19.9 million update of the "Peace and Friendship" stadium for handball, in Pireaus, a curved pancake of a

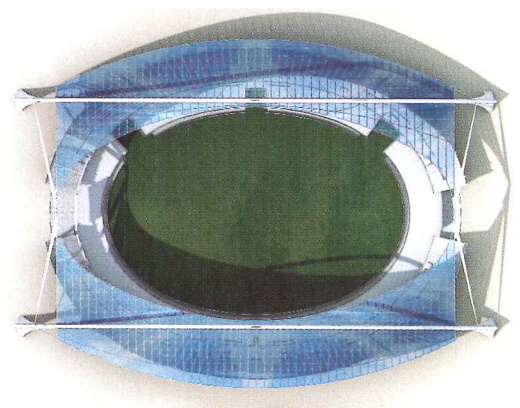


building that will include new seating, new electronic systems, and event space improvements;

- An improved, 45,000-spectator "Panathinkaikon" stadium in the center of Athens intended for archery and the conclusion of the marathon;
- The Olympic Village, housing 16,000 athletes and team officials in 2,292 apartments and 8,814 rooms, which is more than 80 percent complete and will be finished by the end of February, according to



Olympic venues include the central plaza (top); the Olympic Village (above); and the Olympic Stadium (construction, below left, and rendering, below right). Nonstop construction has increased the likelihood of a timely finish.




the Greek Ministry of Culture.

Many venues will be built within a \$95.6 million landscaped complex (master plan by Calatrava) that will include artificial lakes, waterfalls, cypresses, and olive trees.

One of the biggest expenses of the multibillion-dollar event will be security, beefed up significantly as a result of the uncertain political climate. According to the Athens Organizing Committee, the Greek government has secured a \$803

million budget for security infrastructure and equipment, more than double the security budgets of the Salt Lake and Sydney games.

Because the venues will be finishing so close to the beginning of the games, some worry that there will not be enough time to fine-tune and test them. But Calatrava asserts this is not the case: "We are all very conscious of this, and there will be plenty of time to check the systems," he says. S.L.



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Destroyed by fire, Venice's La Fenice opera house rises "as it was"

On December 14, 2003, as an uncommonly cold winter settled on the canals of Venice, historic La Fenice opera house—where five Verdi operas had their premieres—opened its doors for the first time since 1996, when an angry electrical contractor burned it nearly to the ground.

For one week, Italian celebrities and politicians attended star performances in the new hall as part of an acoustic test period before the finishing touches are put on the building this year. The official opening, scheduled for November 2004, will feature a performance of *La Traviata*, which debuted there in 1853.

From the moment the smoke cleared, Italian politicians declared that La Fenice would be rebuilt "dov'era, com'era,"—where it was, as it was.

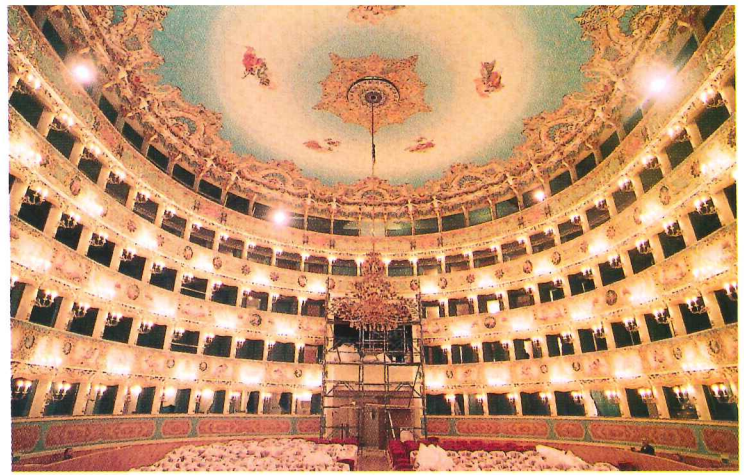
The rebuilding of the theater has taken seven years and been marred by long delays, work stoppages, and the internecine intrigues of Italian politics.

Milan architect Gae Aulenti won

the original design competition in May 1997. Under the auspices of Italian contractor Impregilo, work began on the reconstruction a month later. But within a year, a losing contractor in the initial bidding—Munich-based Philipp Holzmann—successfully argued that the commission had been unfairly awarded, and in the fall of 1998 the Italian government threw out Impregilo (and Aulenti's design) in favor of Holzmann, with a design prepared by Aldo Rossi, who had died the year before in a car accident.

Holzmann fared worse, completing only 5 percent of the work over the next three years before the firm was fired by Venice mayor Paolo Costa. A government-sponsored consortium was formed to finish the work, retaining the Rossi design, by 2004.

"We made very small changes," says Massimo Scheurer, a partner in Aldo Rossi's office in charge of the work since Rossi's death. The outward form of the theater and interior decoration are



La Fenice (view of the main hall) reopened on December 14, after years of squabbling among politicians, contractors, critics, and architects.

largely that of the original—which was built in 1792—as it was radically redesigned in 1837. "We had the original plans of the 1837 redesign, which was largely intact by 1996, as well as some very photographic documentation."

Scheurer says that Rossi approached the La Fenice project reverently, preferring to make only slight deviations from the original. The spatial organization of the new theater reflects modern realities: A subterranean set-storage and service room will allow La Fenice to stage modern, technologically challenging performances. In consultation with acoustic engineers from BBM Mueller, the interior decoration has also been modified to create four sets of movable panels

that Rossi hoped would improve the supposedly near-perfect acoustics of the original.

From the start, Italian critics have decried the restoration of La Fenice as a missed opportunity to give Venice a bold new work of architecture. The charge has been led by Antonino Saggio, a professor at La Sapienza, Rome's architecture school, and his student Marco Galofaro, whose 2001 book, *Riscatto Virtuale* (Virtual Redemption), details some of the nonrestorationist visions for La Fenice. "Architects need to have horizons," wrote Saggio in the online architecture journal *Arch'it*. "If we simply rebuild it 'as it was,' don't we lose the opportunity for regeneration?" *Paul Bennett*

Smithsonian opens addition to its Air and Space Museum

The Steven F. Udvar-Hazy Center rises next to Washington, D.C.'s Dulles Airport like a new terminal, replete with a 20-story control tower. The Dulles Annex, as it's also called, adds 760,000 square feet of exhibition space to the Smithsonian's 161,000-square-foot 1976 National Air and Space Museum on the National Mall. At the mid-December dedication, the annex displayed 82 aircraft and 61 major space artifacts, numbers that will more than double by 2007.

Architecturally, the main attraction of the complex, designed by HOK's Washington, D.C., office, is the aviation hangar, 986 feet long and 10 stories high at its apex. Constructed with 21 arched steel trusses, the wide-open structure is modeled on vaulted dirigible hangars of the 1930s. Three walkway levels give visitors up-close views of such airplanes as the first Air France Concorde; the Lockheed SR-71 Blackbird, the fastest plane ever built; and the Enola Gay, which A-bombed Hiroshima in 1945. Airplanes, rockets, and gliders are arranged

and hung from cables and risers, giving the impression of flight. A smaller spacecraft hangar features the Space Shuttle Enterprise, Gemini VII, and a variety of other space artifacts. The top of the observation tower provides views of runway activity at Dulles, while the first floor replicates an air controllers' working space. The center, built mainly with private funds, is named for the Hungarian refugee and aircraft leasing executive who contributed \$65 million. The total cost was \$311 million. *Andrea Oppenheimer Dean*



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Record News



Minnesota development boldly focuses on Modernist design

Mayo Woodlands, a unique residential development featuring Modernist-style homes on a wooded bluff overlooking the Zumbro River Valley near Rochester, Minnesota, is now taking shape. One hundred twenty innovative homes will be built on the 220-acre site.

Five homes are slated for construction this year, while phase I (60 houses) is expected to be done by 2006, and the entire development is projected for completion by 2010.

The land once belonged to Dr. Charles Mayo, cofounder of the Mayo Clinic, who was known for



Modernist houses at Mayo Woodlands (top and above) have drawn both critical raves and scorn .

his progressive thinking. The property now belongs to Mayo's six grandchildren.

Reflecting on the family's heritage of innovation in medicine and agriculture, the Mayo heirs brought in landscape architect Shane Coen of Coen + Partners, Minneapolis, to enhance a plan originally developed by local engineers. Coen has assembled a forward-thinking design team including David Salmela, of Salmela Architect, Duluth, Minnesota, and Tim Alt, of ALTUS Architecture, residential specialists, Minneapolis. "Our task was to make this more progressive and up-to-date," says Salmela.

Each house in the complex is purposely Modern and light-filled, with a Midwest farm character, yet sparked by original, emphatically Modern features like smooth lines, lack of adornment, and boxy shapes. Most appear to be

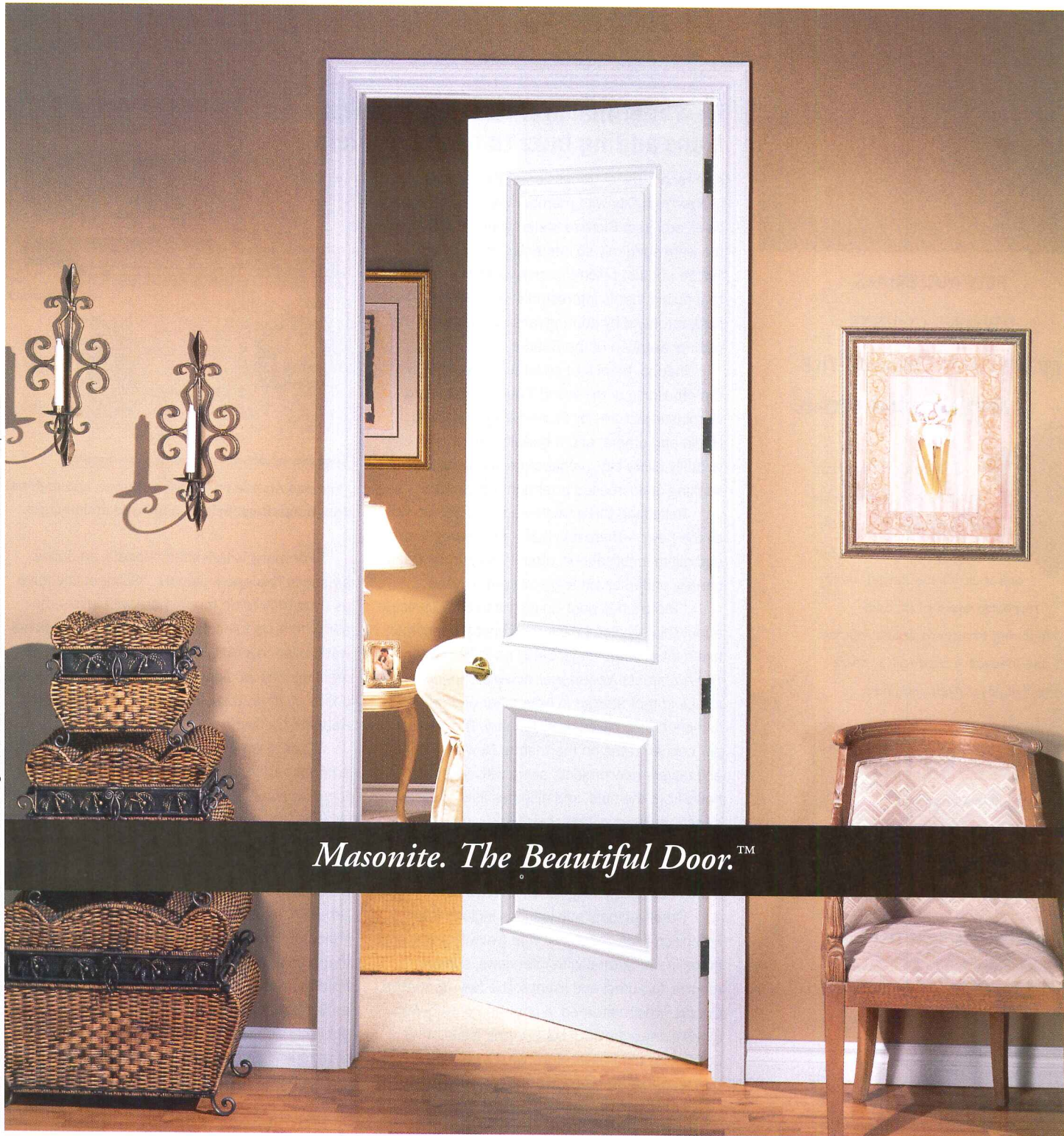
sitting in a field of prairie grass with optimum views of the unspoiled fields, meadows, and forest. No house is wider than 24 feet, and although each will have a different design, they share a common vocabulary—wood and stucco for exteriors, with metal roofs. The first completed home has floor-to-ceiling windows on the main level and a midnight-purple, detached three-stall garage.

"There are no architectural precedents up there. We used the classical elements in the barns in these Modern designs," says Shane Coen. Tim Alt adds that the plan was to break away from trends in today's housing developments: "We wanted them to be distinct from the New Urbanists' more traditional designs," he says.

The design team divided the plan into three distinct neighborhoods: the Village, the largest parcel, on flat, formerly cultivated land suitable for ¼-acre lots; the Prairie, gently rolling land bordered by trees, designed for 2- to 4-acre lots; and the Forest, a smaller, heavily wooded area overlooking the valley, best for the largest lots. To erase lot lines in the Village, designers planted tall prairie grasses throughout and, for privacy, added 1,000 pines east to west like traditional farm windbreaks.

To date, reaction to Mayo Woodlands' innovative, even revolutionary design, is mixed. Traditionally, the area around Rochester in southeastern Minnesota is conservative, yet the constant influx of professionals from all over the world is seen as a plus. "They find it really interesting, others are critical. I find that when you raise the bar above the norm, the critics come out. Our challenge is to provide new solutions that are viewed as opportunities," says Coen. All three designers are hopeful that as people continue to visit the site, they will recognize that houses here are actually part of the landscape.
Bette Hammel

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Record News

New regional architectural publications adding buzz to a buzzing field

At a recent panel discussion at the 92nd Street Y in New York City with members of the "New York Five," architect Richard Meier wondered how people were suddenly so interested in architecture. "We're not just talking to architects. We're talking to a public that is interested in architecture," he said, thronged by adoring fans as if he were the next incarnation of the Beatles.

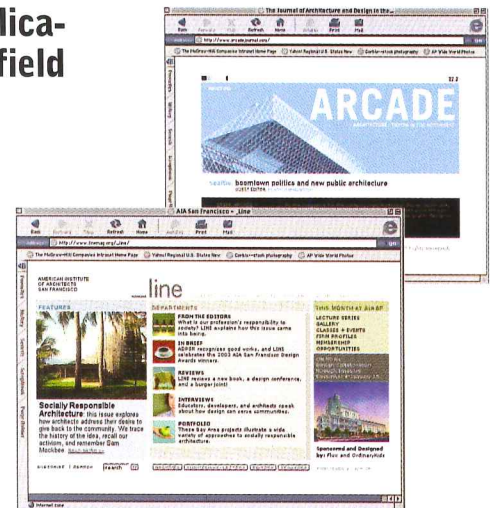
Indeed, thanks to architectural events like the rebuilding of the World Trade Center, mind-warping structures by Frank Gehry and Zaha Hadid and others, and a building boom affecting virtually every city, architecture seems to be soaking up increased attention nationwide.

Reflecting this growth—and to keep up with all the news—there has been an upsurge in print and digital publications, often honing in on traditionally underserved regional communities.

"There's this pent-up desire to communicate about this subject. I think the general population has a lot of input," says Cathy Lang Ho, editor of *The Architects Newspaper* (www.archpaper.com), a tabloid that started in November and officially launched as a biweekly in January. The newspaper concentrates on the tristate New York region and covers new projects along with breaking news from the field, and also has lists of events as well as reviews and classifieds.

"Other industries all have their own news sources, but strangely, the architecture world doesn't have anything like this," says Ho.

Other regional publications include San Francisco's AIA chapter's *_line* (www.linemag.org), an online magazine with interviews, special reports, features, and listings; the New York AIA's *Oculus*, which returned in print and on the Web (www.aiany.org/eOCULUS/Current_Issue.html) in 2002; and the Pacific Northwest's online information resource *Arcade* (www.arcadejournal.com).



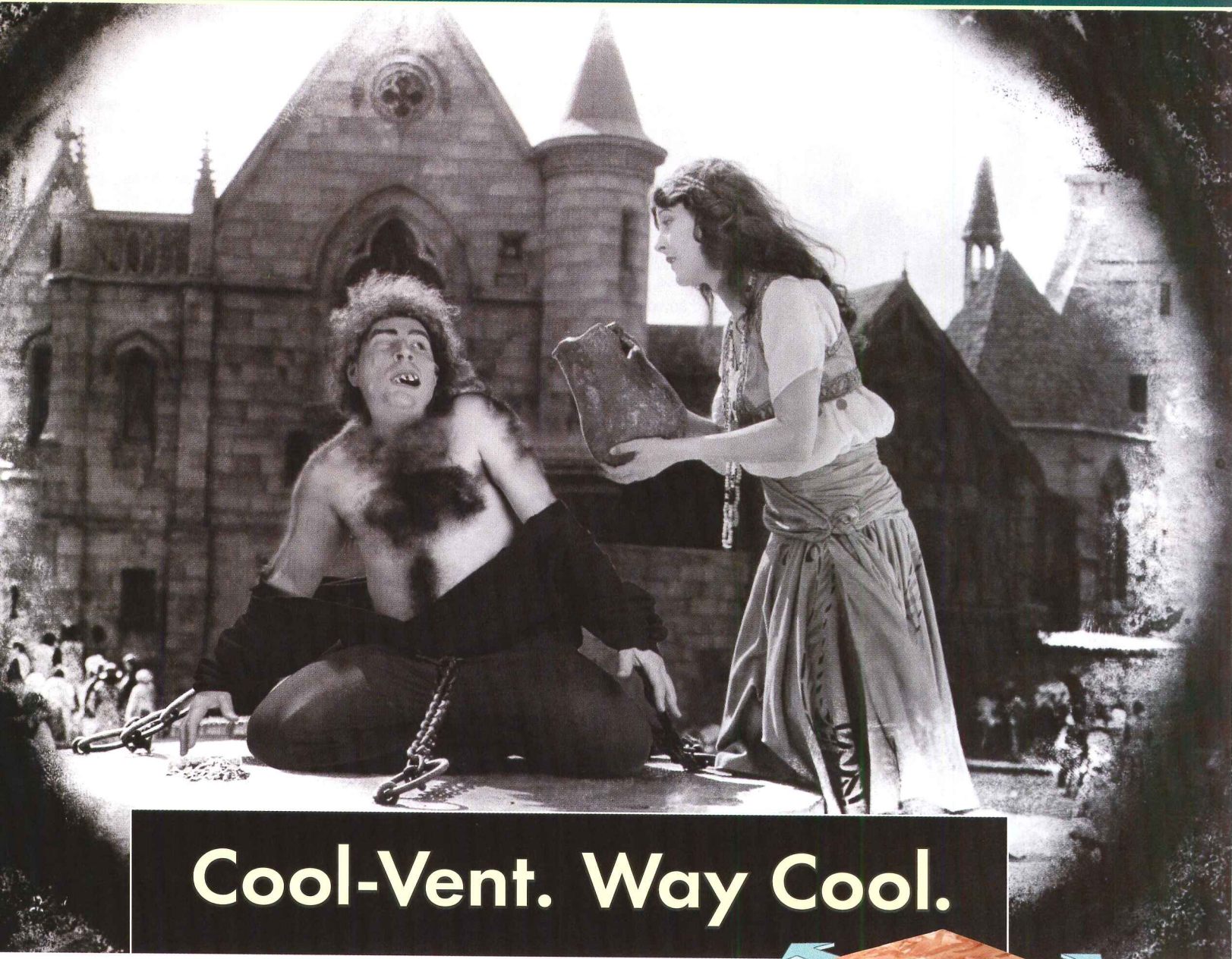
_line and *Arcade* on the Web (above), and regional print magazines (below), help hype architecture.

For many with limited budgets, an online presence has opened doors. "Going online gave us the ability to do much more with less—the ability to have full-color images and give regional work fuller coverage, and also the possibility of reaching new audiences," say the cofounders and chairs of *_line*, Yosh Asato, John Parman, and Kenneth Caldwell.

Other journals and magazines include *Next American City*, a thoughtful periodical dedicated to urban planning that started last spring. A recent issue examines how religion affects urban design, with articles about Christianity's effect on the environmental movement and how Hasidic Jews have stayed in primarily black Crown Heights, Brooklyn. Another is *Log*, a journal based in New York that explores architecture from an often theoretical view. The first issue includes discourse from members of architecture's intelligentsia, such as Bernard Tschumi and Cynthia Davidson (the publisher), and includes an article about the role of terrorists' architectural knowledge in the destruction of the World Trade Center. S.L.



THE BEST THING THAT'S HAPPENED TO CATHEDRAL ROOFS SINCE THE HUNCHBACK.

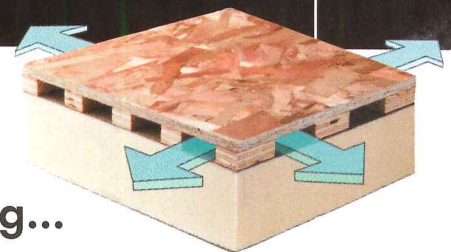


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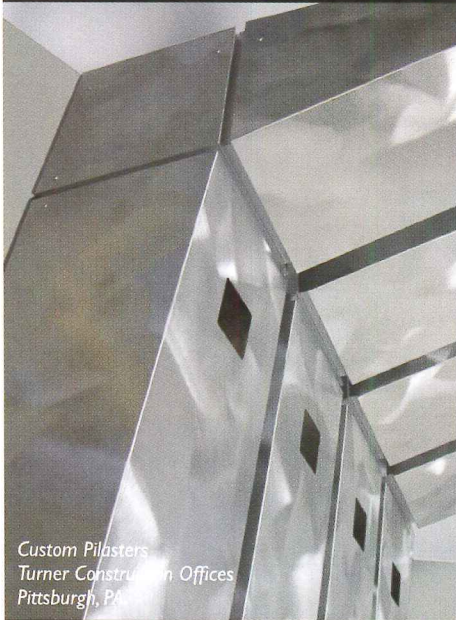
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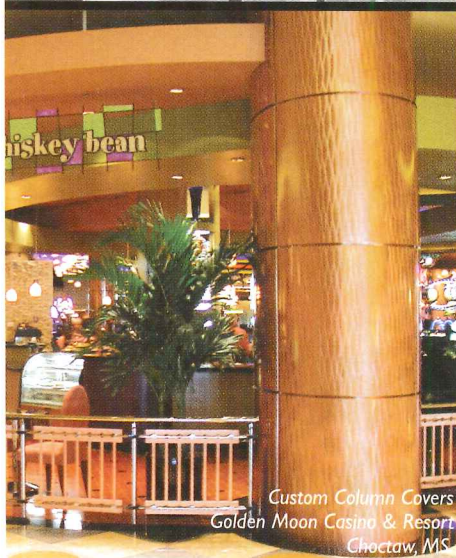
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Record News On the Boards

Preston Scott Cohen adding to Tel Aviv Museum of Art

Boston-based architect Preston Scott Cohen has won a competition to design a new building at the Tel Aviv Museum of Art.

The program for the addition includes large, flexible gallery spaces, an auditorium, restaurant, library, storage, restoration labs, administrative areas, and an education wing.

Cohen describes the project as being about "overcoming odds": Fitting the desired rectangular galleries onto the "clamorous geometries" of the triangular site and building a 247,000-square-foot building on a 38,000-square-foot site, with a stipu-

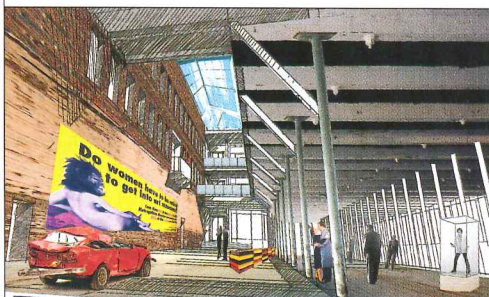


The addition to Tel Aviv museum.

lation not to exceed the 38-foot height of the existing building.

The resulting building is largely underground and full of volumes that appear almost to be in motion. A vast, light-filled atrium at the center brings light into the deepest parts of the structure.

Clad in precast-concrete panels and finished to look like the stone that covers parts of the existing 1971 Brutalist museum, the addition will be linked by a connector surrounded by gardens. The City of Tel Aviv/Yafo has committed almost half of the \$45 million budget for the project. *Elizabeth Kubany*



An artsy vision for the next phase of Mass MoCA.

housed the Sprague Electric Company. For phase one, completed in 1999, the firm renovated six of the site's 26 buildings. The expansion allocates 70,000 square feet for professional and commercial use and 120,000 square feet for exhibition space.

Bruner/Cott says it will continue to treat the factories as found objects, accentuating their industrial character. "We've let the existing conditions inform how we've designed and detailed the spaces," says partner in charge Simeon Bruner.

The new galleries, now in schematics, will progress as funding goals are met; the professional spaces, which will include law offices and a courthouse, are scheduled to be completed by spring 2005. The cost estimate is \$20 million.

Nancy Levinson

Stage two under way at Mass MoCA

Cambridge, Massachusetts-based Bruner/Cott and Associates is working on phase two of the Massachusetts Museum of Contemporary Art, or MASS MoCA. The museum, in North Adams, is located in a 13-acre complex of 19th-century red-brick factories and warehouses that until 1985

Performing arts getting a boost in D.C.

The Shakespeare Theatre in Washington, D.C., has unveiled designs for its new Sidney Harman Theatre.

Designed by Diamond & Schmitt Architects of Toronto, the downtown hall will be a \$77 million, 800-seat space that will accompany the Shakespeare's existing 451-seat Lansburgh Theatre. Together they will make up the new Harman Center for the Arts.

The building will occupy the first five-and-a-half floors of an 11-story office tower on 650 F Street NW.

Inside, the space is dramatically lit by a five-

level glass curtain wall with a projected bay window, which the firm calls the "urban window," while the centerpiece is a glass stair and balustrade in the theater lobby.

"Some people find Shakespeare, music, and dance remote, mysterious, and intimidating," says Diamond & Schmitt principal Jack Diamond. "That is why the design emphasizes a welcoming transparency." *S.L.*



Harman's glass curtain wall will keep it light.



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Lectures

February 5 Green Homes by Design

Angela M. Dean, AIA,
Salt Lake City, Utah

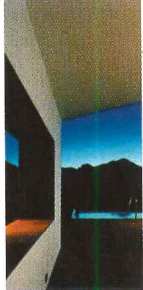


PHOTO © JEFF GOLDBERG/ESTO
RICK JOY ARCHITECTS

February 18 Rick Joy

Principal of Rick Joy
Architects, Tucson, Arizona

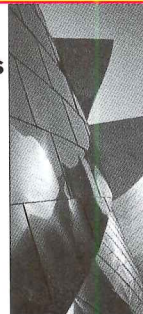
February 19 American Synagogues

Samuel D. Gruber, professor of Judaic
studies at Syracuse University

Exhibitions

Symphony in Steel: Ironworkers and the Walt Disney Concert Hall

through August 22



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through May 23

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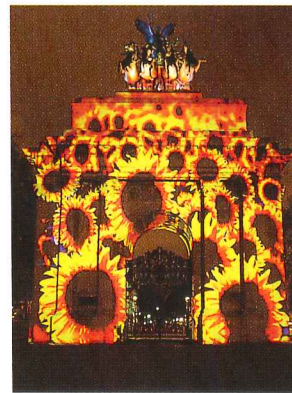
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News Briefs

London's buildings and monuments "brightened up" for Christmas

Nine of London's most famous buildings were spectacularly illuminated as part of the city's Christmas festivities, with images selected or created by celebrities. The first ever "Brightening Up London" project, instigated by the Orange mobile phone network, launched on December 2, 2003, with Sir Bob Geldof's message of Peace and Hope beamed onto Wellington Arch at Hyde Park Corner, using the world-renowned Band Aid album cover and sunflower imagery to symbolize hope.

Fashion designer Stella McCartney's image of time passing transformed the Queen's House by architect Inigo Jones in Greenwich, while the concrete planes of Denys Lasdun's Brutalist National Theatre were graced by Christmas fairies and baubles courtesy of Kylie Minogue and photographer David Bailey, and later, on New Year's Eve, by Nelson Mandela's New Year message. At the National Gallery, supermodel Naomi Campbell's winter and feast scenes temporarily upstaged the art collection. The sequence culminated in the queen's choice for Buckingham Palace, a giant Union Jack lit up on Christmas Eve. But two images put forward for London landmarks, one by artist Peter Kennard, of the Virgin Mary with a globe for a face and a CND logo in place of a halo, and Jesus with shopping bags by graffiti artist Banksy, were not selected because of wide popular protest. *Lucy Bullivant*



London lit up with sunflowers.

Big names vying to develop L.A.'s Grand Avenue

The Los Angeles Grand Avenue Authority has named five star-studded teams in a competition to develop 8 acres in downtown Los Angeles. The

estimated \$1.2 billion mixed-use undertaking will play a key role in revitalizing the city's urban core. The 3.2-million-square-foot mixed-use project calls for residential units, offices, shops, restaurants, and a 16-acre park.

The consortiums are Grand Avenue Development Alliance with Arquitectonica, Gary Edward Handel + Associates, MVE & Partners, and RTKL; Forest City Development, which will select an architect through a design competition; The Related Companies with David Childs, FAIA, of Skidmore, Owings & Merrill and Elkus/Manfredi; J.H. Snyder Company with The Jerde Partnership and Johnson Fain and Rios Associates; and Weintraub Financial Services with Gehry Partners.

The teams must submit detailed proposals for the site within two months. The Authority will then select a winner who must produce a comprehensive plan by September 2005. *Tony Illia*

Centre Court at Wimbledon to get retractable roof

Centre Court at Wimbledon, the jewel in the crown of the All England tennis club, is to have a new, lightweight, retractable roof, designed by HOK International. This will enable all-weather play during the championships and is part of an innovative scheme to maintain Wimbledon as one of the world's most recognizable and evocative sports arenas. The capacity of Centre Court will be increased from 13,800 to 15,000 spectators by the addition of new seating and brand-new catering facilities. The plans announced are the latest in a range of developments, including the new No. 1 Court, Broadcast Centre, Aorangi Picnic Terrace, and improved facilities for players, media, and officials.

The roof will provide a consistent and safe playing environment in both open and closed positions. Composed of a 55,972-square-foot folding fabric concertina, the roof can be compressed into a very small area when not in use, while being translucent enough to provide an open feel when it is closed over the court. Designed to close in under 10 minutes, it allows natural light to reach the grass. Positioned at 52.5 feet above the playing surface, the roof provides good clearance for high lobs. *Lucy Bullivant*



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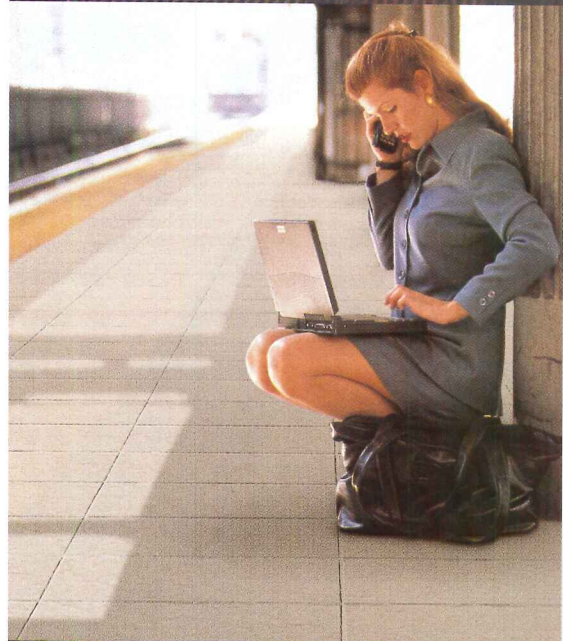
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Dates & Events

New & Upcoming Exhibitions

The Maine Perspective: Architectural Drawings, 1800–1870

Portland, Maine

February 7–May 22, 2004

The first of a three-part series that will examine the history of Maine architecture, this exhibition encompasses drawings made between 1800 and 1870. The 50 drawings on view range from the naive graphics of early local amateurs and builders to the sophisticated midcentury projections of trained designers from as far away as Boston, New York, and Washington, D.C. At the Portland Museum of Art. Call 207/775-6148 or visit www.portlandmuseumofart.org.

Louis I. Kahn: Built and Unbuilt Projects

New York City

February 12–28, 2004

This exhibition will feature project drawings and sketches by world-renowned architect Louis I. Kahn. Accompanying the drawings will be photographic prints by the famed architectural photographer Roberto Schezen, whose images of Kahn's buildings illustrate Joseph Rykwert's important monograph on the architect's work. At the Max Protetch Gallery. Call 212/691-4342 or visit www.maxprotetch.com.

Affordable Housing: Designing an American Asset

Washington, D.C.

February 28–August 8, 2004

This exhibition demonstrates that low-cost housing need not be of low quality and explores the potentially far-reaching benefits of good design for residents and their broader communities. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Bisazza: Italian Mosaic Design

Brooklyn, New York

March 1–May 31, 2004

More than a dozen pieces of art and furnishings by such design luminaries as architects Alessandro Mendini and Michael Graves, fashion designer Romeo Gigli, and painters Mimmo Rotella and Anna Gili will make their way from Italy to Brooklyn for the exhibition. At Urban Glass. Call 718/625-3685 or visit www.urbanglass.org.

Jorn Utzon: The Architect's Universe

Humblebaek, Denmark

April 2–August 29, 2004

This exhibition will illustrate Utzon's working method—the process—focusing on his work and his sources of inspiration. Utzon, best known for his design of the Sydney Opera House, was awarded the 2003 Pritzker Architecture Prize. At Louisiana. Call 45/4919-0719 or visit www.louisiana.dk.

Ongoing Exhibitions

Hopping Fences: Influences in Modern Living

Philadelphia

January 16–May 2, 2004

This project showcases five interdisciplinary design/build firms from the Philadelphia area. The multilayered exhibition is conceived as an alternative to traditional furniture or design shows by acting as a conceptual reflection on how design impacts on and is influenced by modern urban living. Call 215/545-0767 or visit www.philartalliance.org.

Timeless Experience: An Architectural Journey through Itria, Italy

Washington, D.C.

January 16–April 2, 2004

An evocative series of brown-toned black-and-white photographs by Rajesh Nair depicting the atmospheric buildings and landscapes of Italy's Itria Valley will be presented at the American Institute of Architects Headquarters Gallery. Call 202/626-7369 or visit www.theoctagon.org.

Mori on Wright

Buffalo, N.Y.

Through March 14, 2004

The architectural competition to choose a design for an interpretive center for the Frank Lloyd Wright Martin House is the subject of this extended installation. At the Albright Knox Gallery. Call 716/882-8700 or visit www.albrightknox.org.

Lectures, Conferences, Symposia

David Hertz: The Ecology of Architecture

Los Angeles

February 11, 2004

David Hertz, AIA, is the founder of Syndesis, a San Francisco-based firm involved in the design and construction of residential and commercial buildings, product design, furniture design, and public sculpture, as well as material development. The lecture will be held in the Gin D. Wong, FAIA Conference Center, Harris Hall, at the University of Southern California. Call 213/740-2092 or visit www.usc.edu.

Streets and Walkable Communities

Washington, D.C.

February 11, 2004

Dan Burden, executive director of Walkable Communities, is a nationally recognized authority on streets that work for people whether on foot, bike, or in a motor vehicle. Burden will explain his consensus-owned asset,

the public streets, and illustrate how successful streets support smart growth. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Men of Steel

Washington, D.C.

February 12, 2004

The Karl Koch Erecting Company was responsible for the construction of a number of historic structures, including the World Trade Center. Karl W. Koch III, co-owner of the company, will discuss the firm's history and tell the story of the creation of the WTC. He will also discuss his recommendation for establishing a national commission to oversee the designs of America's important buildings. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Rick Joy

Washington, D.C.

February 18, 2004

Tucson-based architect Rick Joy approaches his projects with the goal of making spaces that highlight the visitor's sensory experiences. His architecture specifically responds to the rugged Arizona landscape. Joy, who is principal of Rick Joy Architects, will discuss his body of work, which, through its simplicity and sensitivity, is very appropriate to the vast natural landscape it occupies. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Sustainable Design and Energy-Efficient Building Techniques for Existing Housing

Washington, D.C.

February 19, 2004

William Asdal, president of Asdal and Company Builders, is a nationally recognized builder active in the remodeling industry. In a number of case studies, he will illustrate the

Dates & Events

remodeling process and discuss several schemes for evaluating design options. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

American Synagogues Washington, D.C.

February 19, 2004

Samuel D. Gruber, professor of Judaic studies at Syracuse University, will discuss the nature and history of synagogues from biblical times through European and contemporary American forms. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Technology & Tradition in Japanese Contemporary Architecture New York City

February 26-28, 2004

Sponsored by Japan Society, ARCHITECTURAL RECORD, and the

Architectural League, this symposium features prominent contemporary Japanese and Western architects, architecture critics, curators, scholars, and engineers. Call 212/752-3015, e-mail gsnible@japansociety.org, or go to www.japansociety.org.

Captains of Industry: Daniel Libeskind New York City

March 4, 2004

This talk features Daniel Libeskind, architect of the former World Trade Center site, with *BusinessWeek* editor in chief Stephen B. Shepard. At the 92nd Street Y. Call 212/415-5500 or visit www.92Y.org.

Interiors '04: The ASID Conference on Design Savannah

March 4-7, 2004

The American Society of Interior Designers Conference on Design

is open to all designers of the built environment. At the Savannah International Trade and Convention Center. Visit www.asid.org.

Aesthetics and Architectural Composition: The Dresden International Symposium of Architecture

Dresden, Germany

June 16-19, 2004

Deadline for submission of abstracts: February 1, 2004

The theme of the symposium addresses architects, urban designers, and planners, as well as scientists, artists, philosophers, and theoreticians. Call 49 0 351/4633-4473 or visit www.tu-dresden.de.

2004 Kitchen and Bath Industry Show and Conference Chicago

April 1-4, 2004

This is traditionally the largest annual event of its kind, offering the latest in cutting-edge design, creative application of product lines, and new

products. At Chicago's McCormick Place. Call 800/933-8735 or visit www.kbis.com for further information.

AEC Systems: Technology for Design & Construction Orlando

February 17-19, 2004

Addressing all facets of the architectural design, engineering, and construction industries, this technology marketplace will showcase a multitrack educational conference, networking events, and exhibitions of cutting-edge trends. At the Orange County Convention Center. Call 800/451-1196 or visit www.AECSYSTEMS.com.

Competitions

Vietnam Veterans Memorial Education Center

Deadline: February 20, 2004

The Vietnam Veterans Memorial Fund seeks design teams interested in being considered for the design of an underground educational center on the National Mall in Washington, D.C.

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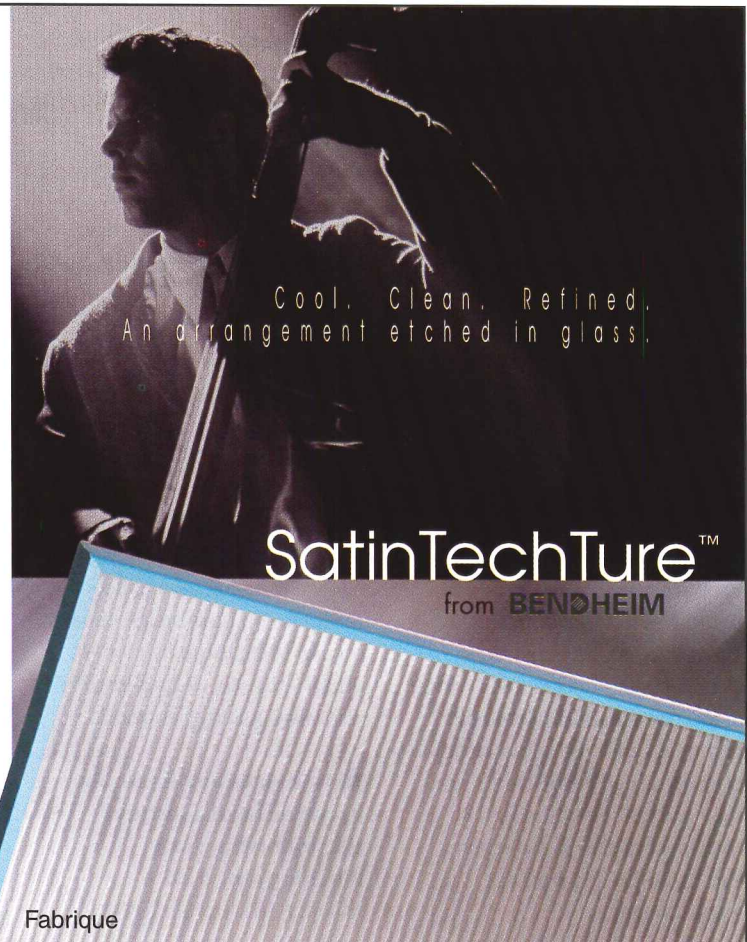
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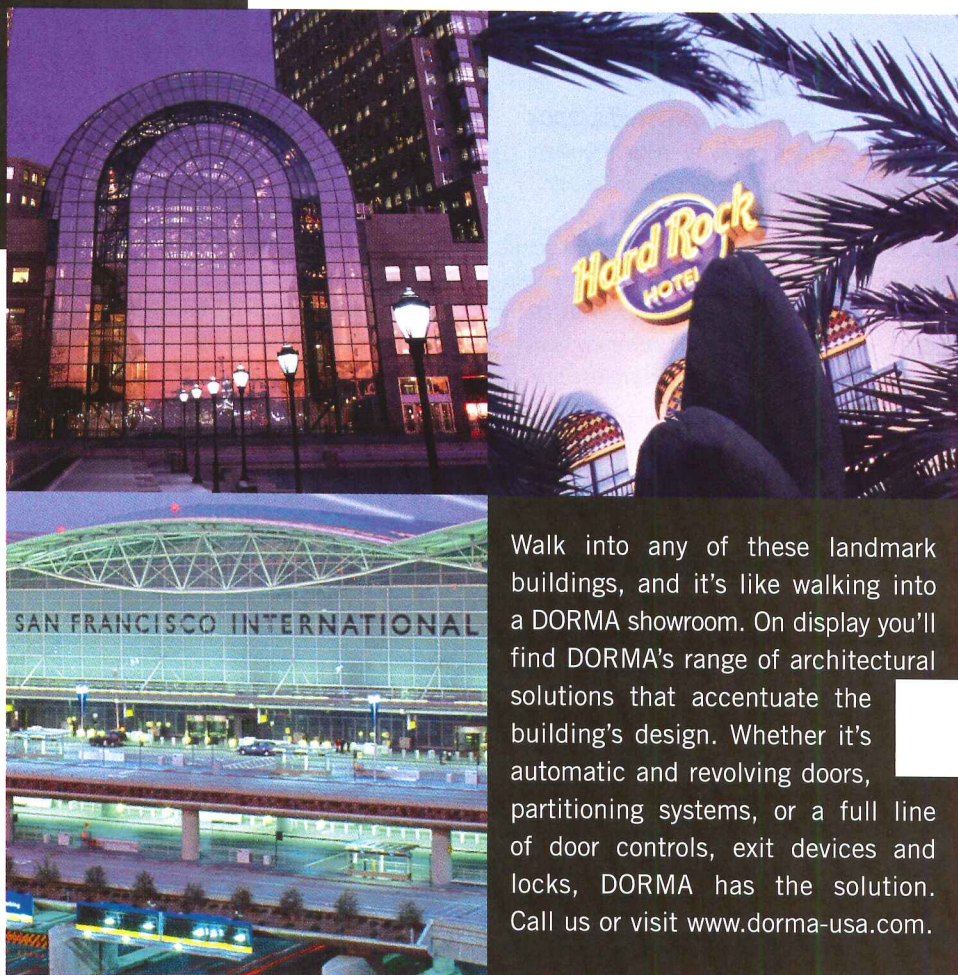
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Broadway Square Design Competition

Fargo, North Dakota

Deadline: March 15, 2004

The purpose of this competition is the development of a design for Broadway Square that will enhance the space and be compatible with the Broadway streetscape and surrounding features. Call 701/241-1474 or visit www.cityoffargo.com/broadwaysquare.

2004 AIA St. Louis Photography Competition

Deadline: March 15, 2004

Open to architects registered in the U.S., associate members of AIA, and student members of AIAS. Images must include a feature of the man-made environment. Call 314-621-3484 or visit www.aia-stlouis.org.

2004 Business Week/Architectural Record Awards Program

Deadline to order submission package: March 19, 2004

Deadline: April 16, 2004

These awards honor architectural solutions that help clients achieve business goals through measurable results and distinguished collaboration between architect and client. For more information, call 202/626-7524 or e-mail bwawards@aia.org.

2004 AIA San Francisco Design Awards

Deadline: February 12, 2004

Each category—Green Design, Unbuilt Design, Urban Design, Special Achievement and Excellence in Design (Architecture and Interiors)—recognizes innovation and excellence as well as the breadth of work currently being undertaken in the profession.

Open to small, medium, and large firms of architecture, interiors, and urban design in the Bay Area, projects must have been completed since January 1, 2000. Visit www.aiaf.org/awards.

2004 Spectrum Awards: Coverings

Alexandria, Virginia

Deadline: February 27, 2004

The competition is open to architects and other design professionals whose projects demonstrate creativity and achievement in the use of tile in residential and commercial design. Projects must have been completed within the past two years (January 2002–December 2003). Call 703/683-8500 or visit www.coverings.com.

The Frederick P. Rose Architectural Fellowship

Deadline: March 29, 2004

The Fellowship funds visionary partnerships between nonprofit organizations and new architects

with the goal of making improvements in struggling communities nationwide. Visit www.enterprise-foundation.org/RoseFellowship/.

International Ideas Competition 2004: Shrinking Cities—Reinventing the City Berlin

Deadline: April 15, 2004

The objective is to identify innovative approaches capable of qualifying the urban transformations associated with the phenomenon of shrinkage and to develop new ideas about the city based on the specific qualities of shrinkage itself. The territories of the competition comprise four urban regions: Detroit, Halle/Leipzig, Ivanovo, and Liverpool/Manchester, each of which has already served as a case study. Visit www.shrinkingcities.com.

E-mail events and competitions information two months ahead of event or submission deadline to ingrid_whitehead@mcgraw-hill.com.

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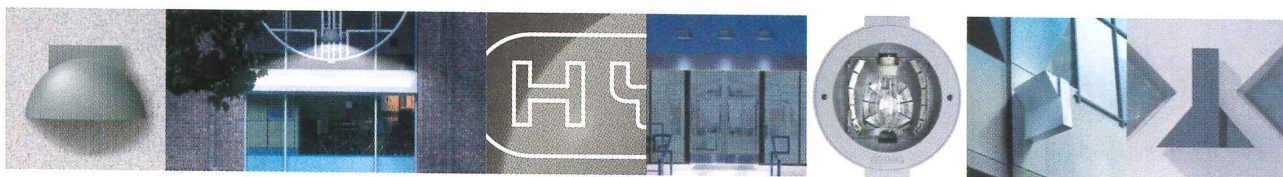


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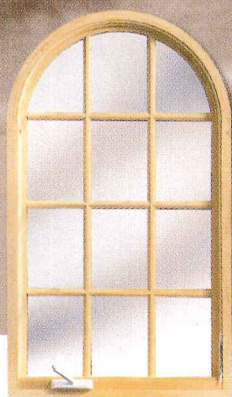
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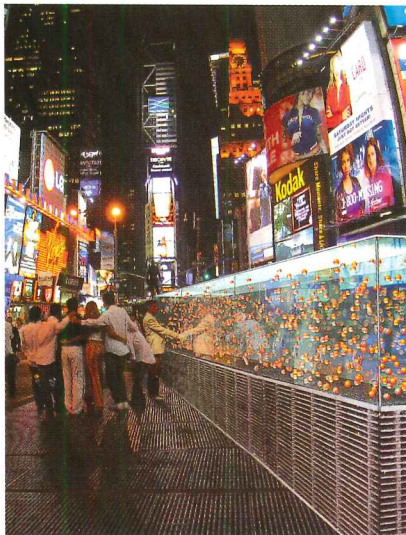
archrecord2

FOR THE EMERGING ARCHITECT

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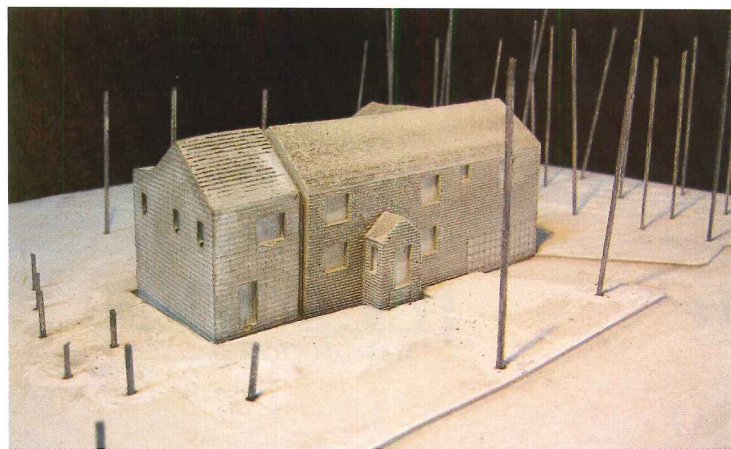
This month's ar2 examines two traditional relationships in architecture—architect-client and teacher-student—turned upside down. Design architecture firm Della Valle + Bernheimer Design challenges the former by taking on parents as clients. Work architect Linda Samuels reinvents the latter with a lesson in friendship. The moral of both stories is that relationships in architecture don't have to be traditional to work.

Creative Time Art Hub/Information Center, Times Square, New York City, 2003
Competition entry for Creative Time, a New York-based nonprofit organization that commissions and presents public arts projects.



Plaza Renovation at Phillip Burton Federal Office Building, San Francisco, 2000
Competition winner that addressed local issues of habitability, wind control, light, and security.

Residential Addition (under construction), Newton, Mass.
This zinc-clad addition is an extrusion of an existing Colonial. Construction is due to be completed in 2004.



DESIGN

Della Valle + Bernheimer Design

When your very first client is the United States government, it's safe to say you can handle just about any client after that—or is it? What happens when your new clients are your very own parents—every architect's dream or worst nightmare? Andrew Bernheimer (right) and Jared Della Valle (left) of the Brooklyn-based firm Della Valle + Bernheimer Design were about to find out.



The two met while studying architecture at Washington University in St. Louis and quickly formed an unexpected partnership when, barely out of school, they won an international competition to design a new Federal Plaza in San Francisco. "We call it the shotgun wedding," Della Valle recalls. "We had to start a business, so we did, and fortunately we've been able to work together quite well."

For the past several years, following completion of the plaza, the firm has found steady work on much smaller, interior projects, including a series of high-end loft renovations in New York City and Boston. And, like most young firms, they relied on word of mouth to find clients—sometimes friends of friends, relatives, even. Most recently, it was Bernheimer's own parents who approached them to build an extension to the family home in suburban Massachusetts.

Not your typical empty-nesters, the Bernheimers weren't looking to downsize. With four children and even more grandchildren, they needed extra space to accommodate the growing brood during their visits back home—and having an architect in the family made the decision to expand much easier. "Had I not been in the family, I don't know if they would have added to the house," Andy muses. "And they certainly would not have added this," he notes with a laugh.

The addition, though conventional in its layout, features a very unconventional choice of materials. "At first we proposed some ideas that were pretty radical," Andy explains. "But we kept thinking about the idea of shingling." The addition, which houses new sleeping quarters and additional wall space for the clients' art collection, is essentially an extrusion of the existing two-story Colonial shape. The architects' decision to use a zinc-coated copper cladding, however, mimics the scale of the existing siding but gives the house an entirely new aesthetic. "It's basically a roofing material," Della Valle elaborates. "But instead of stopping at the eaves, we wrapped it around the sides." There is a



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small reveal between the addition and the existing structure to articulate new from old.

"You always try to persuade your clients to do something interesting," Andy says. "This time, it involved having to convince my own parents. My mother, in particular, is a creature of habit, and I don't think she wanted too much change. It was a balancing act between creating something new and effectively replicating their living patterns."

Though Bernheimer is obviously uncomfortable talking about his parents, Della Valle doesn't hesitate to acknowledge the wonderful working experience they shared. "Andy's parents are dream clients in many ways. They have a wonderful sense about art and what looks good." According to Bernheimer, "When we first suggested the zinc cladding, we were actually surprised that they liked it."

This project also marks a milestone for the firm as their first occupiable building. And while it's now under construction, Della Valle + Bernheimer are at work on several other new buildings, including residences in Texas and on New York's Fire Island. They're also back to working for the government, this time in collaboration with New York City's Department of Housing Preservation and Development, designing much-needed affordable new housing in some of the city's poorest neighborhoods. *Josephine Minutillo*

Go to architecturalrecord.com/archrecord2 for more Della Valle + Bernheimer information, and to submit your own projects.



Public Swimming Facility, Aalborg, Denmark, 2001

This international competition entry presented the major space of the pool facility as a sheer sheet of water covering an undulating ground plane, the pool bottom.



P.S. 18 Elementary School Library Renovation, Staten Island, N.Y., 2000–2001

Part of the Robin Hood Foundation's Library Initiative, this building employs a clean, Modern sensibility.



WORK

Rolling with the Mobile Studio

Teaching is undeniably a rewarding experience. But it can be a very frustrating one, as well. What, then, would possess a professor and five of her students to spend eight weeks together traveling cross-country?

"You have to be passionate about the topic," explains Linda Samuels (photo, right), a professor of architecture at the University of North Carolina at Charlotte, who conceived of, and organized, the Mobile Studio, a mobile curriculum of studio, seminar, and photography that hit the road during the spring semester of 2002.

Samuels and fourth-year students

David Fish, Jedidiah Gant, Becky Joye, and Bill Sinkovic, and graduate student Couch Payne, traveled just under 9,000 miles during the course of their pedagogic experiment. Having already established a series of short-term collaborations with schools across the country, Samuels led her group from Charlotte and headed south, hooking up with students of the Rural Studio, Rice University, and Arizona State University, then up to Las Vegas for a short stay at UNLV and a trip to Los Angeles and another partnership with Woodbury University.

Samuels has always been interested in the subject of mobility. "As an undergraduate, I did a studio project on tourist housing, and I've always had this sort of tangential interest in postcards and souvenirs—the idea of collecting data." She went on to do her graduate thesis at Princeton on the New Jersey Turnpike. Samuels had a couple of goals for the trip. First, to get where she wanted to go and back. Not so simple when you've got six people crammed in an S.U.V. for hours on end—and even less so when you've got an enormous,

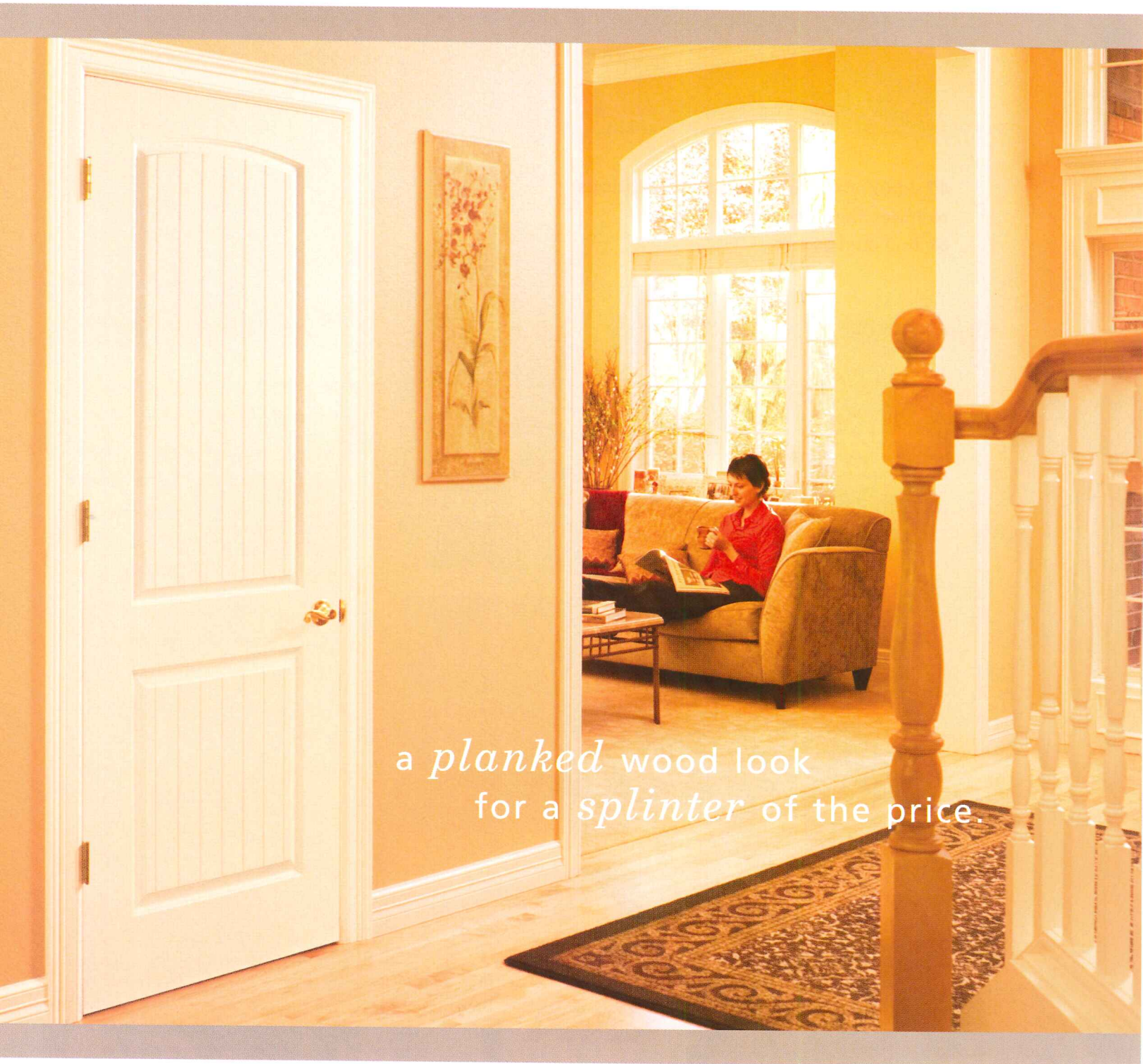
custom-built trailer—the "satellite," as it was called—hitched to the back. The other goal was to get past preconceived ideas about the road. "There are two big preconceptions about the road, neither of which is true," Samuels explains. "The first is a very romanticized notion that's been built up in literature and on film. The other is the idea of the road, or more specifically highways, as being this destructive force that's led to the devastation of so many American cities."

"I think we achieved our goals, and others we developed along the way," Samuels admits. The success of the studio is also evident in the students' heightened interest in issues of mobility. Most developed their own thesis projects

on topics as diverse as homelessness, multimodal transportation, and information technology and transportation. "Definitely!" is Samuels reply when asked if she's up for another eight weeks on the road—and as for her and her former students, "We still speak!" *Josephine Minutillo*

For more on the Mobile Studio, go to architecturalrecord.com/archrecord2





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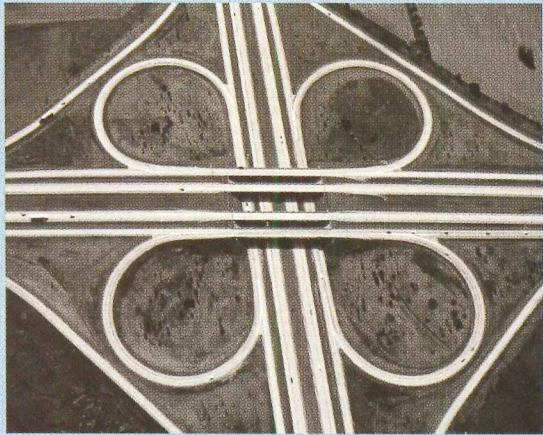
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Down at the WTC: Dissident thoughts amid the fanfare and boosterism

Commentary

By Paula Deitz

To begin with, the current World Trade Center site proposals are hampered by too much politics and too little vision. In addition, an unrealistic timetable and competitions skewed by preordained limitations have severely curtailed creativity. But with a steady diet of boosterism from the daily press during the past month (since the unveiling of the Freedom Tower and the announcement of the winner of the Memorial Competition), I wondered if I were alone in these opinions. I therefore sought out some of New York City's best-known public intellectuals and civic-minded professionals to see how they viewed the ongoing developments downtown. The results were stimulating, if disturbing. *The New Yorker* writer Adam Gopnik finds that the master plan for the World Trade Center site—including the proposals for the Freedom Tower and the *Reflecting Absence* memorial design—represents a failure of both imagination and leadership. "Right after the disaster, I had said, 'I hope they don't put up a group of office towers surrounding a cemetery,'" Gopnik comments. "But that is exactly what is happening—with nothing to elegize emotions in an orderly way."

Landscape architect Diana Balmori, who assisted in writing the specifications for the memorial

Paula Deitz is the editor of The Hudson Review and writes frequently on architecture, design, and art for The New York Times.

proposals, shares some of Gopnik's reservations, particularly with regard to the Memorial Competition. "I was disappointed with what appeared to be no better than student work that seriously needed a good 'crit,'" she said. Also, she felt the submissions strayed from the fundamental idea of ground-level public space. "In general, there was too much building without quality architecture," she elaborated, "and a roof over an underground space means it can be closed off and therefore no longer public."

Furthermore, Balmori adds about the pools on the memorial site, "What does water have to do with 9/11 or the footprints themselves?" She notes that the National Park Service, which will be charged with maintaining the memorial, is notoriously bad about keeping fountains running, even in Washington, D.C., across from the White House. Of course, her comments raise the additional question of why more landscape architects were not involved in this obvious proposal for design on the land. (Only one landscape architect, Michael Van Valkenburgh, was on the jury; and the winning competitor, Michael Arad, brought in landscape architect Peter Walker after his scheme was identified as a front-runner.)

Thomas Bender, a cultural historian who teaches at New York University, states the case more broadly: "We have gone too far with a missed opportunity," he asserts. In regarding the rebuilding as a restoration project, Bender believes no true thought has been given



Freedom Tower unveiled in December: (left to right) Governor George Pataki, Daniel Libeskind, Mayor Mike Bloomberg, Larry Silverstein, and David Childs.

to reconstructing downtown New York in truly urbanistic terms. He regards this as a failure not only to recognize transformations in the economy, but also to assess new forms of activity in adjoining neighborhoods. Why the rush for a new tower, he wonders? With the financial district dissolving per se, there is no market for office space. And, Bender argues, the memorial lacks the kind of distinction that should give it international dimension.

For future solutions, Bender looks to Paris, where establishing residential centers that attract artists and intellectuals is part of the urban policy to resurrect neighborhoods. As a more realistic solution, he wonders why the Port

Authority of New York and New Jersey doesn't simply buy back the lease to the WTC site from developer Larry A. Silverstein, since the income from it represents only 4 percent of its budget.

For models in other cities, New York could also look to Tokyo's recently completed Roppongi Hills, where developer Minoru Mori masterminded as part of his "Urban New Deal" a massive complex of high-rise commercial and residential buildings with a blend of multilevel street activity. Architect William Pedersen, whose firm, Kohn Pedersen Fox Architects, designed its centerpiece, the 54-story Mori Tower, topped by a museum designed by Gluckman Mayner

Commentary

[RECORD, January 2004, page 106], believes the success of this project is not necessarily the architecture, but the programmatic vision and the dynamic interaction of all its parts. "While Daniel Libeskind presented a forceful master plan for the World Trade Center site," Pedersen says, "his hierarchy of parts with a thematic basis has not been sustained in the emphasis on the aesthetics of individual pieces."

Bruce Fowle of Fox & Fowle Architects agrees. As one of the founders of the coalition New York New Visions, which now advises the Lower Manhattan Development Corporation (LMDC) and the Port Authority, Fowle chairs the committee reviewing the guidelines Libeskind is preparing for the agency. "My first reaction to the Freedom Tower [designed by David Childs of Skidmore, Owings & Merrill with Libeskind as a collaborating architect through conceptual and schematic stages] was that it was a powerful and viable design," he says. "But in reality, it's too strong for the

"LIBESKIND'S HIERARCHY OF PARTS WITH A THEMATIC BASIS HAS NOT BEEN SUSTAINED," SAYS WILLIAM PEDERSEN.

rest of the Libeskind master plan. Libeskind's plan called for a harmonious, spiraling crescendo of towers that was delicate and meaningful." Also, Fowle argues, this harmony will be further destroyed, since the other towers by different architects will probably not be completed for another 20 years.

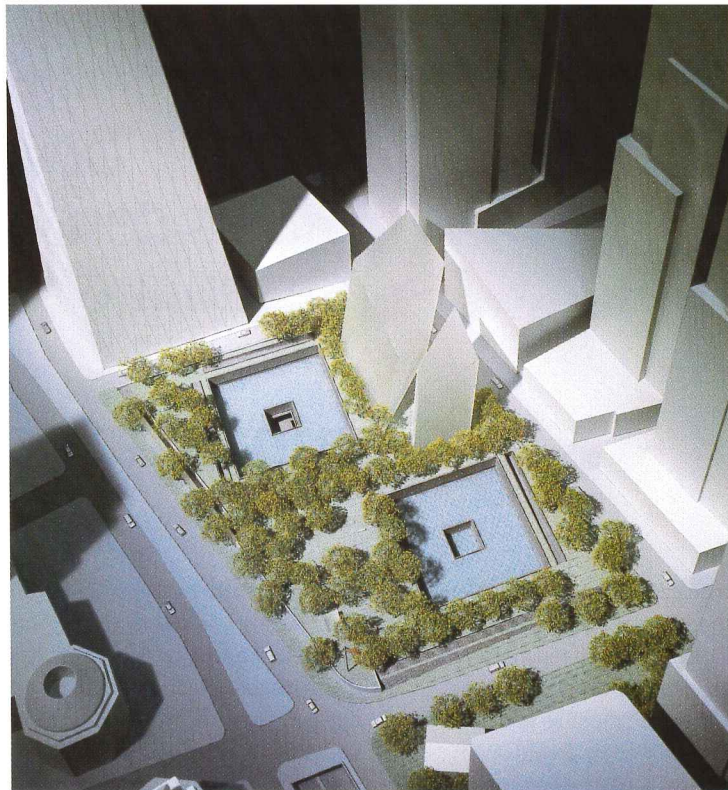
Fowle fears the impact on the street of such a massive tower with its spire of wind turbines. It exceeds the FAR for the area (the city's zoning restriction-owned land), as did the original overgrown Twin Towers and their windswept plaza. Also, since the turbines have never been tested technologically, their environmental impact is uncertain. A further consideration for Fowle is whether a green approach to all the buildings should

not be an essential part of the guidelines at this time. What does he consider to be positive? The Port Authority's selection of Spanish-born engineer and architect Santiago Calatrava to design the World Trade Center transportation hub (page 22).

As president of the Regional Plan Association, Robert D. Yaro agrees with Bruce Fowle about Calatrava and believes "the winged glass and steel structure is a brilliant, uplifting concept." Certainly, Calatrava's soaring transportation terminals and bridges have transformed cities all over Europe. Yaro considers it doubtful whether direct rail access to airports from this terminal can be achieved, since the Second Avenue subway would take precedence by the sheer number of people who would profit from it. In general, he has a more positive outlook about the current proposals. Nevertheless, Yaro fears that the plan could end up as a hash of commercial real estate, a whole less than the sum of its parts, and devoid of the symbolic architecture

he greatly admired in Libeskind's Jewish Museum in Berlin.

Everyone questions the ill-defined role of cultural institutions on the site, especially Mike Wallace, the founder of City University's Gotham Center for New York History and author of *A New Deal for New York* (2002). Wallace is generally against office space, and thinks a greensward with a shard from the Twin Towers would be an appropriate memorial for the next 10 years. Although the steel-mesh fence around the site now attracts thousands of visitors a day, how long into the future will this continue? Wallace favors placing a New York History Center at Ground Zero that would combine both the New-York Historical Society and the Museum



Reflecting Absence memorial by Michael Arad and Peter Walker, with Freedom Tower (top) and fragments from Libeskind's master plan (right).

of the City of New York in an effort to create a history museum that would attract international visitors to experience the cultural and historical life of the city through 9/11 and beyond.

A second proposal Wallace puts forth is for an International House of Culture offering residencies to artists, writers, musicians, dramatists, and filmmakers, with particular attention to artists from countries and cultures in conflict. He visualizes this center as an adjunct to a multi-purpose performing arts center already planned by the LMDC.

Such a performing arts center, which at present has been given too little consideration, would, according to my own view, be suitable even as a memorial in the great American tradition of memorial buildings honoring the war dead of their cities. These buildings traditionally doubled as great civic auditoriums and performance theaters attracting national and international audiences to their programs. The WTC site would be the best place for a New York Memorial Hall with a grand entrance directly on West Street. Inside, the names could be inscribed on legible bands along

public corridors and lobbies, not isolated underground, but in the mainstream of shared cultural experiences and community life. With cultural institutions like the New York City Opera and the Joyce Theater clamoring to come downtown, and with other cities ahead of us in building new concert halls housed in stunning architecture, New York appears to have fallen behind in its response. We should not forget how the war-torn cities of Europe exemplified the spirit of survival and renewal by building new institutions and neighborhoods.

Adam Gopnik cites other historic moments of urban recovery. In the 17th century, to fulfill a vow following the plague, the Venetians built the great Church of S. Maria della Salute at the entrance to the Grand Canal. In 1710, the completion of St. Paul's Cathedral symbolized the City of London's recovery from the Great Fire of 1666. A secular society, he believes, can produce its own equivalents to realize the full potential of what a building can do through "architectural energies that restate a city's belief in itself." All those who love New York should take heed. ■



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Where does inspiration come from, and why do architects often deny its source?

Critique

By Robert Campbell, FAIA

You can't visit Richard Meier's Getty Center in Los Angeles without thinking of Hadrian's Villa, the palace built near Tivoli, a few miles east of Rome, by the great Roman emperor in about the year 120.

Everything about the Getty reminds you of the villa. You can't look at the plan of one without thinking of the other. In both, grids collide at angles, often with round elements as knuckles where two grids meet. There are similarities in the water features and in the way white accents seem to gather the sun and bring it down to earth—accents that are mythological statues at Hadrian's Villa and abstract architectural elements at the Getty.

Of curves and axes

Sir Banister Fletcher's description of Hadrian's Villa, in his *A History of Architecture*, first published in 1896, could equally describe the Getty:

"It is still possible to experience ... the skillful way in which Hadrian and his architect have contrived the meetings of the axes, the surprises that await the turning of a corner, and the vistas that open to view. It was possible here to experiment with new forms and new types of spatial composition ... The most characteristic feature is a constant play upon curves and countercurves in place

Contributing editor Robert Campbell, FAIA, is the Pulitzer Prize-winning architecture critic of The Boston Globe and was a fellow in the National Arts Journalism program at Columbia University in 2003.

of the rectilinear shapes used in most earlier planning."

A few weeks before the Getty Center opened, I lunched with Richard Meier on one of its terraces. Architects, like other artists, can be deceptive about their sources. I decided I'd play a game with Meier. I would talk a circle all around Hadrian's Villa, but I would never mention it. Would he volunteer it as a source?

I'd once been architect in residence at the American Academy in Rome, where Meier is on the board of directors. So at our Getty lunch, I talked about the Academy. I'd visited the stonecutters' yard in Bagni di

Tivoli, only a few kilometers from Hadrian's Villa, where I saw the giant "guillotines" that split the travertine for the Getty, so I talked about that. I brought up the Villa d'Este and its gardens in Tivoli. And so on.

Meier mentioned other sources: Francesco Borromini, his favorite architect; South German Baroque churches; Sir John Soane. But he never mentioned Hadrian's Villa.

See, Absorb, Forget, Create

A few weeks later, I was again at the Getty. On that visit I spoke with Harold Williams, the Getty's director. I asked him whether, during the process of design, the subject of

Hadrian's Villa had ever come up.

Williams stared at me as if I were crazy. "Richard took us to Hadrian's Villa," he said. "We spent a whole day at Hadrian's Villa."

That's the mystery of the creative process. Scholars of the imagination write about four stages of creativity: To See, to Absorb, to Forget, and to Create. The creative person must forget his sources, lest he feel he is merely imitating them. They must become an integral part of him before he can use them. Yale professor Harold Bloom puts the thought another way. Talking of writers, he says the creative person unconsciously



At the Getty Center in Los Angeles, Meier played a Neoclassical game of connecting axes with curves.

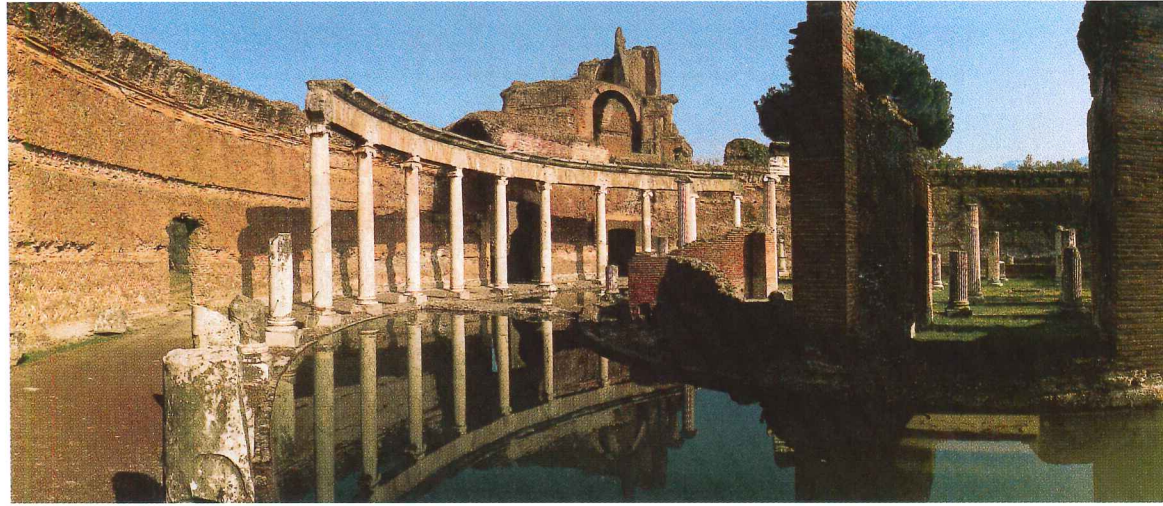
Critique

misinterprets and distorts his sources, with a sort of Oedipal combativeness, in order to develop an independent voice of his own.

I might have believed Richard Meier had forgotten Hadrian's Villa—if Harold Williams hadn't told me about the visit there. But maybe by the time we talked, Meier had half submerged his awareness of his primary source.

Creative denial

The truth is that any creative person is a sponge in denial. Frank Lloyd Wright sopped up architectural influences from the Arts and Crafts Movement and from Tuscany, Secessionist Vienna, and Bauhaus Cubism, not to mention Japan and Tibet. Yet he wrote, in *A Testament* in 1957, "No practice by any European architect to this day has influenced mine in the least." The poet T.S. Eliot was more candid. He



Were the curves and water features of Hadrian's Villa, circa 120 A.D., the inspiration for Meier's Getty?

wrote: "The bad poet borrows. The good poet steals."

There was one other memorable moment in my lunch with Meier. The Getty at that time consisted of five separate related organizations, the art museum being only the most public of them. Most were still in the process of formation during the time of design. Meier thus had the diffi-

cult—or maybe impossible—task of designing buildings for clients who hadn't yet quite figured out who they were and what was their program.

I asked him if things might not have turned out better if he'd done an overall master plan and then allowed the different parts of the complex to be designed by other architects, one by one over time, as

each subcenter came into clear focus. Each architect would then have a defined program to work from, and each architect (except the first) would have a context to relate to.

Meier paused a moment, then said, "If I hadn't got the commission, I might have said the same thing." It was the only time he seemed to drop his guard.

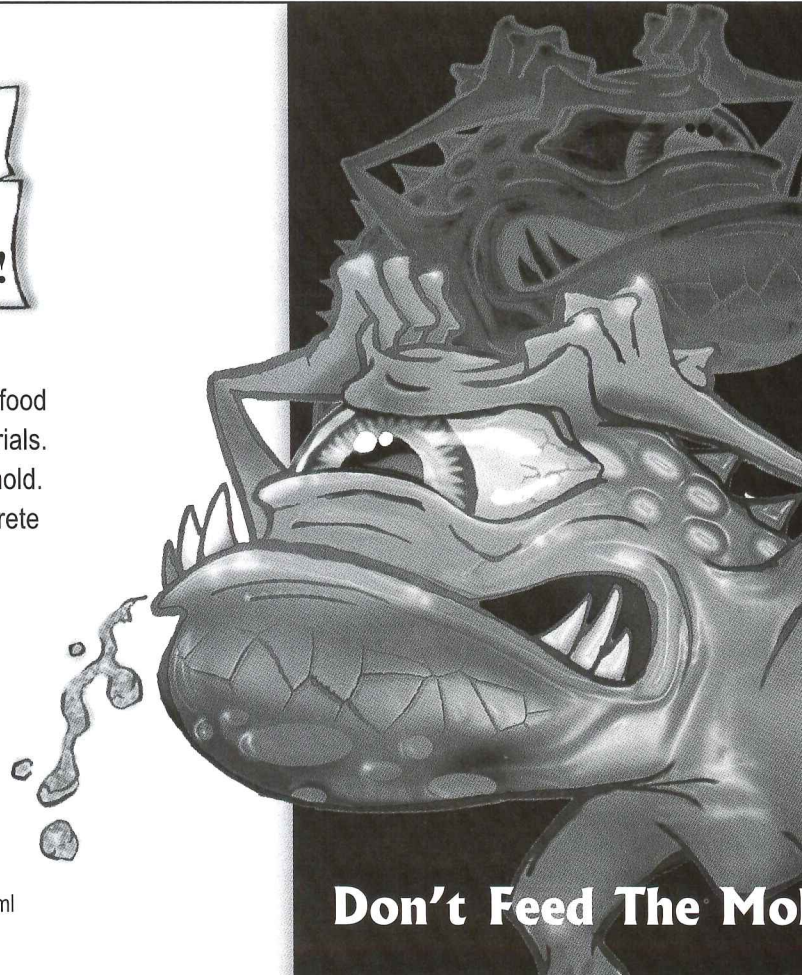
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Don't Feed The Mold

Washed up at 62

Going back for a moment to Wright: I've just been reading Lewis Mumford for another project, and it's interesting to note that around 1930 everyone but Mumford believed Wright, then 62, was washed up. Philip Johnson wrote to Mumford in 1931: "Wright was a great pioneer, but he is a romantic and has nothing to do with architecture today." But Mumford stuck to his belief that Wright was the greatest living architect. Gratefully, Wright called him "lieber L Lewis," doubling the L to honor Mumford with a Welsh name like his own. No one knew then that Fallingwater (note the F L L W in that name, too) and Johnson Wax were just over the horizon.

What's amazing is that the Johnsonian kind of bias against Wright still exists. A couple of years ago, Jerzy Soltan, an acolyte of Le Corbusier who for decades taught architecture at Harvard, said to me: "I despise Frank Lloyd Wright." Soltan, a very nice man, virtually hissed the verb. European elitists

like Soltan (born a Polish aristocrat) tend to view America in one of two ways. Sometimes they fall in love, in a patronizing manner, with its gamy frontier image—think of poets W.H. Auden and Christopher Isherwood and their fascination with gangsters and Los Angeles beaches, or of Reyner Banham, who dressed like a ranch boss and doted on grain elevators, or of French intellectuals and

ect for Boston, eventually built as International Place. I'd been architecture critic of *The Boston Globe* for only a couple of years and was the smallest possible dot on the great man's horizon. But when I called his office in New York, Johnson, master of marketing that he is, came to the phone himself and invited me to visit him at his famous Glass House in Connecticut.

THE CREATIVE PERSON MUST FORGET HIS SOURCES LEST HE MERELY IMITATE THEM. THEY MUST BECOME AN INTEGRAL PART OF HIM BEFORE HE CAN USE THEM.

their infatuation with the films of Jerry Lewis. At other times they view us, as does Soltan, and as did the young Europhile Johnson, with the snob disdain of an older culture.

A visit to the Glass House

I'll end with another anecdote of Philip Johnson. Back in the middle 1970s, Johnson and his partner were working on a huge office proj-

Talk about sources. As others have noted, Johnson's estate is modeled, in part, on Sir John Soane's house in London. Johnson explodes Soane's house across the landscape. Soane's glassy front room becomes the Glass House; both dwellings feature an art gallery with paintings on hinged panels; both include a cryptlike underground sculpture gallery; and

Soane's breakfast parlor, with its suspended vault, becomes Johnson's guesthouse. One wealthy architect-collector interprets another with wit and skill. But Johnson remains too conscious of his sources, I think, to be as truly creative as, say, Wright.

Johnson toured me through all this on an afternoon in late winter. There were no leaves on the trees and no clouds in the sky. The sun was low and bright. After the tour, we sat in the Glass House, with a single flower on the glass table, sipping two perfect martinis. The sun was invisible behind the brick cylinder that contains the bathroom and fireplace. But slowly, like a stalker, the sun was edging out of hiding. Suddenly it smashed our faces with the kind of appalling glare that can only be generated by the collision of a winter New England sun and a glass house.

"There's that bleeping thing again," said Johnson. And he rose and led us, and our martinis, to a shadier part of the room. ■

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Books

Global City Blues, by Daniel Solomon. Washington, D.C.: Island Press, 2003, 240 pages, \$24.

Daniel Solomon's new book reads as a kind of sermon in support of New Urbanism. While it's easy to criticize the movement, one must admire its naked evangelism: "Modern architecture, and its ideology about city planning," he writes, "should by now be as thoroughly discredited by 50 calamitous years of city building as any of the ideas in history." In this series of linked essays, he rails against the global city and its "soul-numbing environments of business parks, freeway commuting, and walled residential enclaves."

Many of his arguments against the postwar city are familiar: We were led astray by our love of the automobile, our contempt for the past, and, of course, a handful of bad men. The Modernists, in Solomon's view, are not merely poor architects, but villains. After Le Corbusier wrecked our cities,

he went on to "seduce" generations of students. Solomon condemns Rem Koolhaas as a kind of evil genius who gets "kinky thrills" from "foul air" and "nihilist chic."

The author believes "there is no denying the seductiveness of the spatial complexities, the technological materials, the inventiveness, and the dazzle of the best Modern buildings." But he accuses Modernists of ignoring basic human needs (why are our office desks, for instance, 75 feet from a window that doesn't open?) and ignoring the importance of history (the city is bigger, older, more important, and deeply loved than anything the individual architect can conceive on his own). What Solomon most deeply wants from architects is not simply good design, but a moral pledge to improve the quality of life for all citizens. Architects, he says, are the "foot soldiers in the remaking of the world."

Most of us would agree that Solomon might need to recruit more than architects if he hopes to cure the world of its "tasteless food ... porn shops ... global warming ... and half-ironic manipulations of media culture." Still, even if he does not present all the solutions to these problems, there is something refreshing about his insistence that intelligent design is a good first step. *Will Yandik*

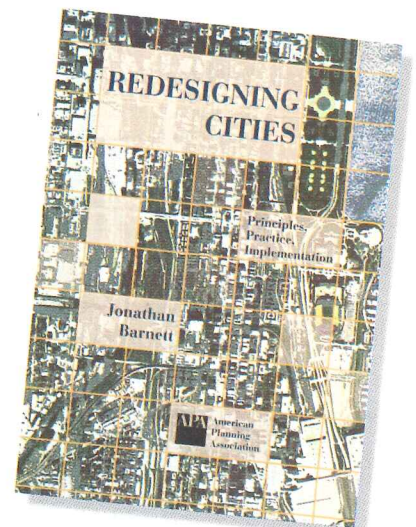
Redesigning Cities: Principles, Practice, Implementation, by Jonathan Barnett. Washington, D.C.: Planners Press/American Planning Association, 2003, 312 pages, \$46.

Few would dispute Jonathan Barnett's significant contributions to the field of planning. He helped define the relationships between the buildings we design and the sprawling regions we inhabit and has persistently advocated the need for enlightened government intervention in creating an orderly and attractive urbanism. Almost 30 years after the publication of his book *Urban Design as Public Policy*, his ideas have become part and parcel of the New Urbanists' credo, though Barnett would probably be the first to admit that he has learned as much from the New Urbanists as they from him.

In his previous books, Barnett deftly discerned the causes behind the countless decisions that define the modern city, for better or worse, and he again displays his talent for a seamless prose that distills and makes sense of complex forces. The question, however, is whether Barnett has come up with any ideas that aren't already on the agenda of most prominent planning and urban design firms, government entities, grass-roots advocacy groups, and even trade unions, which, along with the New Urbanists, are rallying under the banner of Smart Growth.

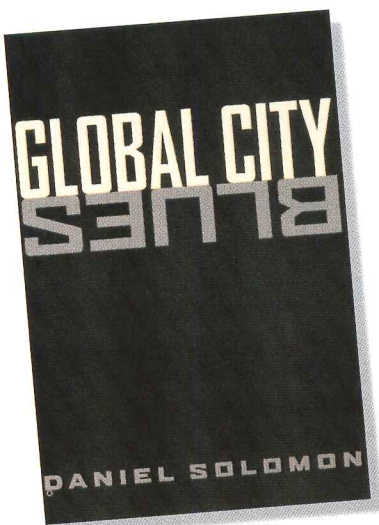
Much of the content of *Redesigning Cities* is common currency in the Smart Growth movement. To remedy ailing shopping malls, Barnett recommends increasing densities and inserting mixed uses. To alleviate traffic-clogged freeways and keep regional growth in check, he supports clus-

tering densities at mass-transit stops. In place of sprawling suburban tracts of single-family houses, he suggests mixing housing types and income levels, as in Montgomery County, Maryland, where local statutes place an affordable-housing quota on developers. For aging downtowns, he advocates the creation of major destinations, not unlike Cleveland,



with its two new stadiums, Rock and Roll Hall of Fame, and revitalized theater district.

Granted, Barnett has a flair for providing focus, making sense of seemingly contradictory issues, and suggesting actions that can move the Smart Growth agenda forward. But effectively working toward the same goal are the Sierra Club, the National Board of Realtors, the 1000 Friends of Oregon, www.planetizen.org, and others. In the final analysis, there is too much about this book that preaches to the choir. Too much is a resuscita-



Books

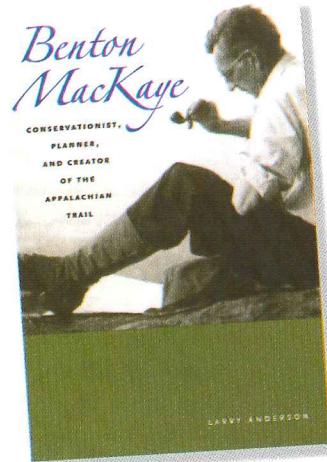
tion from Barnett's two earlier books or from writings by his peers. *Martin Zimmerman*

Benton MacKaye: Conservationist, Planner, and Creator of the Appalachian Trail, by *Larry Anderson*. Baltimore: Johns Hopkins University Press, 2002, Maryland. 452 pages, \$45.

Benton MacKaye, known for his role as power broker of the Appalachian Trail—the hiker's East Coast mecca—was a planner and naturalist who came to fame in the era of Clarence Stein, Lewis Mumford, Gifford Pinchot, and other planning and environmental forerunners. MacKaye's slogan, "Speak softly but carry a big map," said much of the man and more of the times. In a lifetime (1879–1975) that spanned the era of wilderness—from definer Teddy Roosevelt and New

Deal-builder Franklin Roosevelt, from the emergence of the car culture to the environmental movement—he hewed to his singular mission. The quiet, largely impoverished naturalist's work outlined a common path for the natural and the man-made world and made a profound mark on the American mind-set.

Drawn to the town of Shirley, Massachusetts, yet wintering in New York City in his youth, MacKaye described himself as an "amphibian between urban and rural life." And yet, however you choose to identify the soft-peddling prophet detailed in Larry Anderson's narrative, the fascination of this "conservationist, planner, and creator of the Appalachian Trail" lies less in his "between"-ness than in his very contemporary fusion of urban and wild or rural values so lacking in today's schizophrenic and traumatic treatment of the landscape.



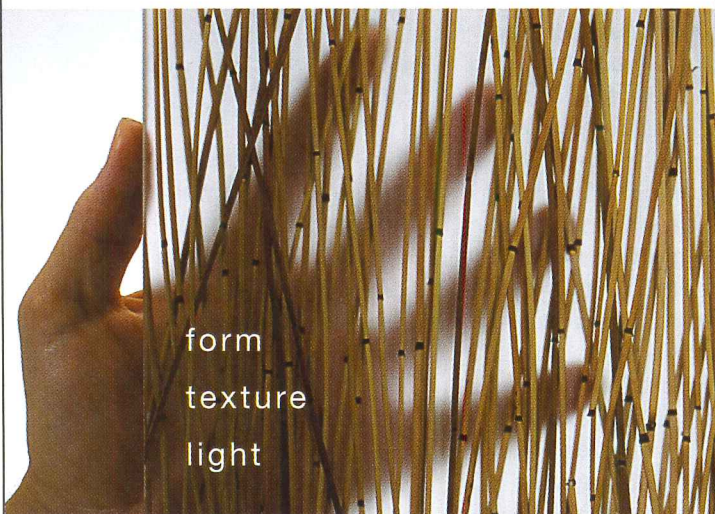
If MacKaye had a peripatetic childhood and was slow to come to his chosen—or rather created—mission, he was by age 15 already inspired by "geography, forestry, regional planning, and geotechnics." A half-dozen years later, his travels from Shirley to Harvard College had given him his enduring sense of cities as cities ("noisy streets, heaving crowds, and egotistical policemen"); wilderness as wilderness; and suburbs as a "deplorable 'half-way'" condition. Hence was

born his mission to connect the "highwayless towns and wilderness way" that would become the Appalachian Trail, along with his other governmental forays and leadership in creating the Wilderness Society and 1964 Wilderness Act.

Anderson's book, though perhaps more detailed than the average reader would prefer, provides fascinating glimpses of MacKaye's modus operandi, as well as the rich period and its cast of planners and politicians. Whatever MacKaye's exact trade—sometime forester, sometime writer, sometime trail propagandist—his aspirations read like a coda for regional planning: Using the "weapons of salvage," as he put it, he wanted to preserve a "balanced environment, townless highway, highwayless town, greenbelt, wilderness area, and regional city." Whatever today's distance from those dreams, at the least, the road he traveled and enabled us to travel should earn him a solid place in the creative canon. *Jane Holtz Kay*

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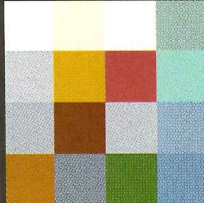
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Snapshot



By Sarah Amelar

Simultaneously simple and complex, the new Amsterdam Center for Architecture (ARCAM) building appears both still and dynamic, its smooth, calm, continuous skin wrapping a subtly soaring and twisting hulk. "I was asked to create a single form—perhaps like a stone," says its architect, René van Zuuk [RECORD, December 2002, page 102]. But given his admitted penchant for "intelligent distortion," the results are anything but inert.

Befitting ARCAM—Amsterdam's prime venue for architectural exhibitions, research, and educational programs—the structure embodies its occupants' mission to engage public interest in local architecture. Van Zuuk, whose previous work includes a curvy landscape-art center in nearby Zeewolde, was selected from a shortlist to adapt an existing pavilion by Italian architect Renzo Piano into ARCAM's new home. Piano's 1,450-square-foot structure, perched near a quay's edge, had been erected only a few years earlier as the companion piece to his green, prowlike NeMo science museum just across the water—but the modestly scaled pavilion remained unused and

Ahead of the curve: ARCAM in Amsterdam



Snapshot

incomplete. When Van Zuuk proposed demolishing it (save for the ground-floor plate, foundations, and several columns) to accommodate ARCAM's 6,450-square-foot program, the Italian, by all accounts, responded with good-natured aplomb.

As built, Van Zuuk's sleek, steel-framed form suggests the forces of wind and water. With a dynamically deformed geometry based on two perpendicular cones, the building seems to hold potential energy just beneath its taut, zinc-covered aluminum skin. And even the skin's outer surface implies motion, with seams in the metal evoking the flow lines of a liquid.

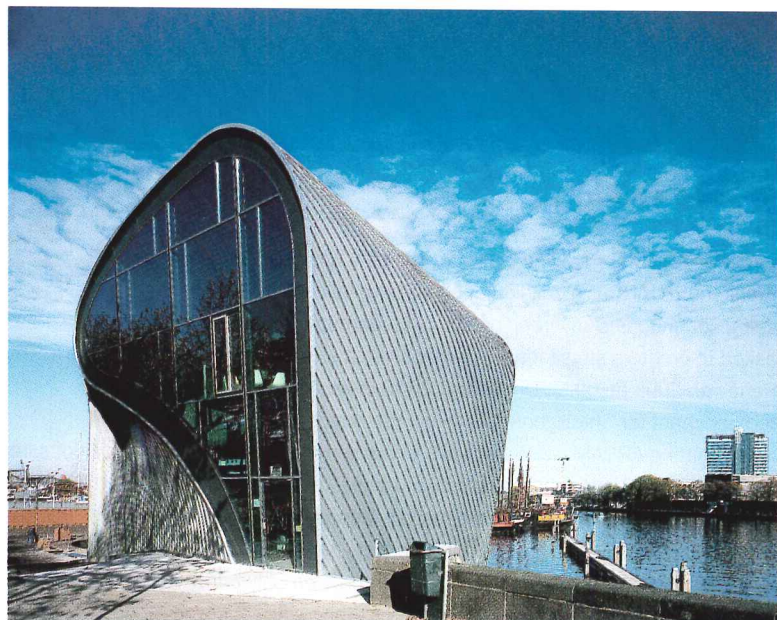
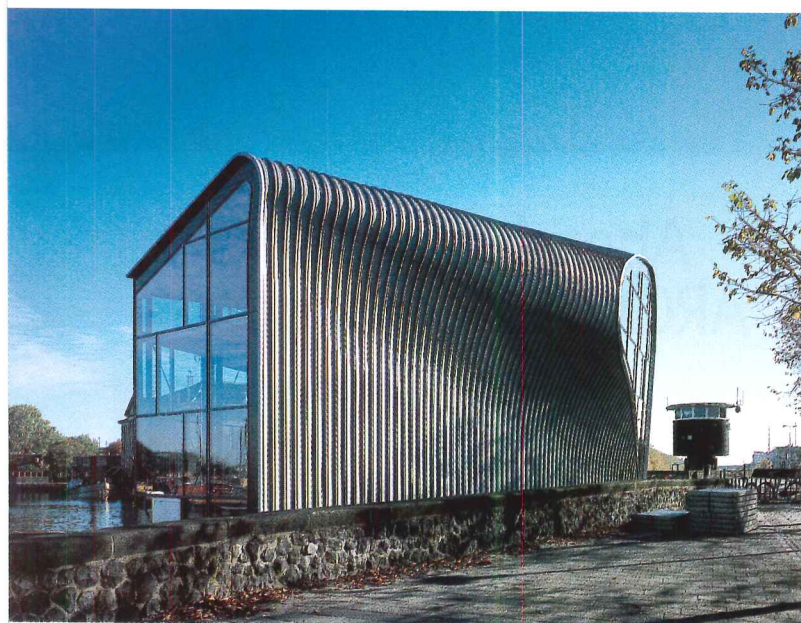
For the elevations facing the water, the architect held back the building's opaque, matte-gray sheath, opening the interior dramatically to light and views. Meanwhile, on the entry side, leading from the dense urban fabric around Amsterdam's central rail station, the building's curves give way to a flat plane of glass, revealing a literal architectural section—as if a knife had sliced open a huge loaf of bread, albeit a highly sculptural and expressively contoured one.

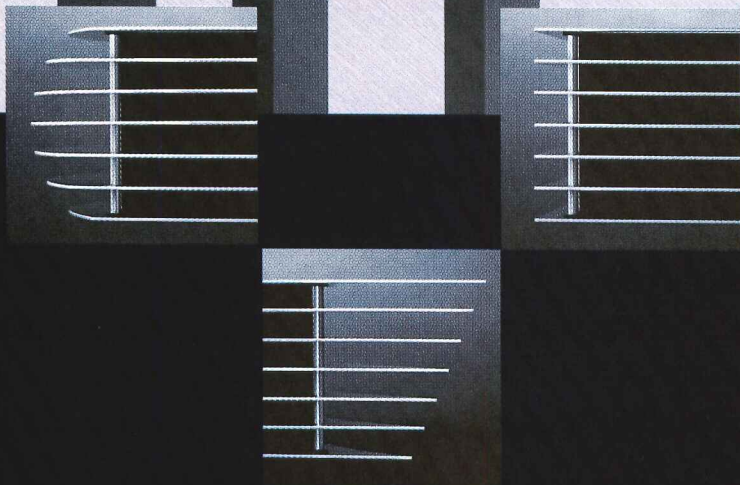
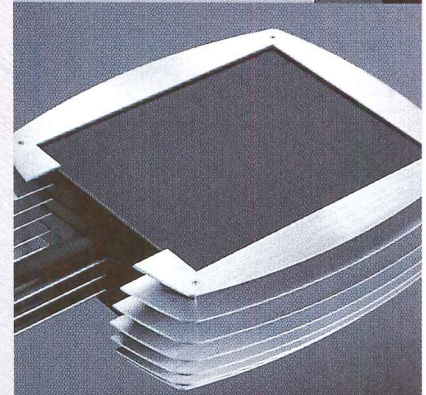
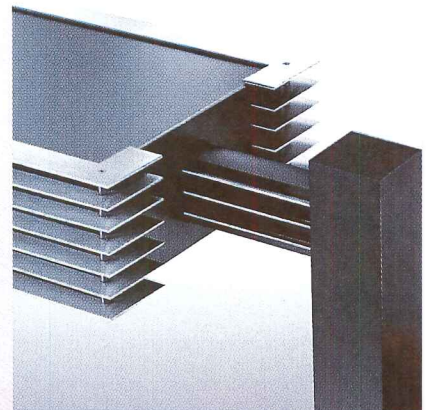
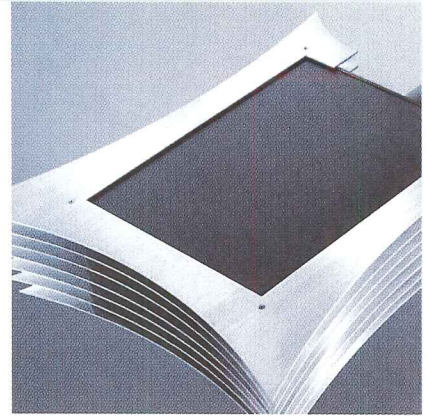
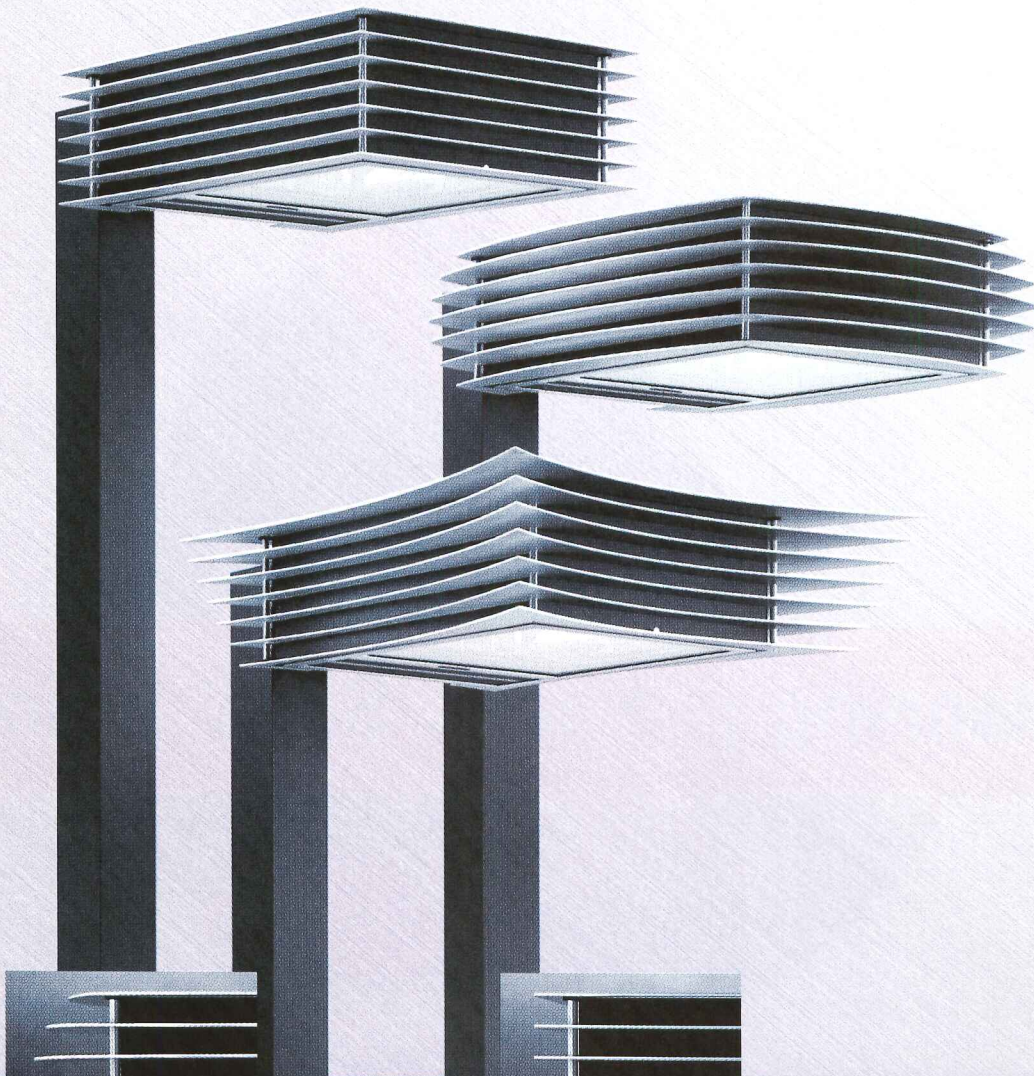
Having shared a single space at the center's previous location, the small ARCAM staff wanted its new quarters to maintain the original sense of unity and openness. Van Zuuk fulfilled this request while meeting the programmatic demands of gallery and office by minimizing interior partitions and creating balconies or mezzanines onto a three-story space. The building's glazed areas rise its full height, expanding the interior perceptually and merging ARCAM experientially with its subject matter: Amsterdam itself.

In a city where daringly shaped, idiosyncratic structures have become the norm—ranging from Meyer and Van Schooten's ING headquarters [RECORD, January 2003, page 92] to Frits von Dongen/Die Architekten Cie's *The Whale*—René van Zuuk's diminutive ARCAM building boldly holds its own. ■



The expressively folded skin (below, left and right) yields equally sculptural interior forms (above). The fenestration intensifies the experiential qualities.





EDGE



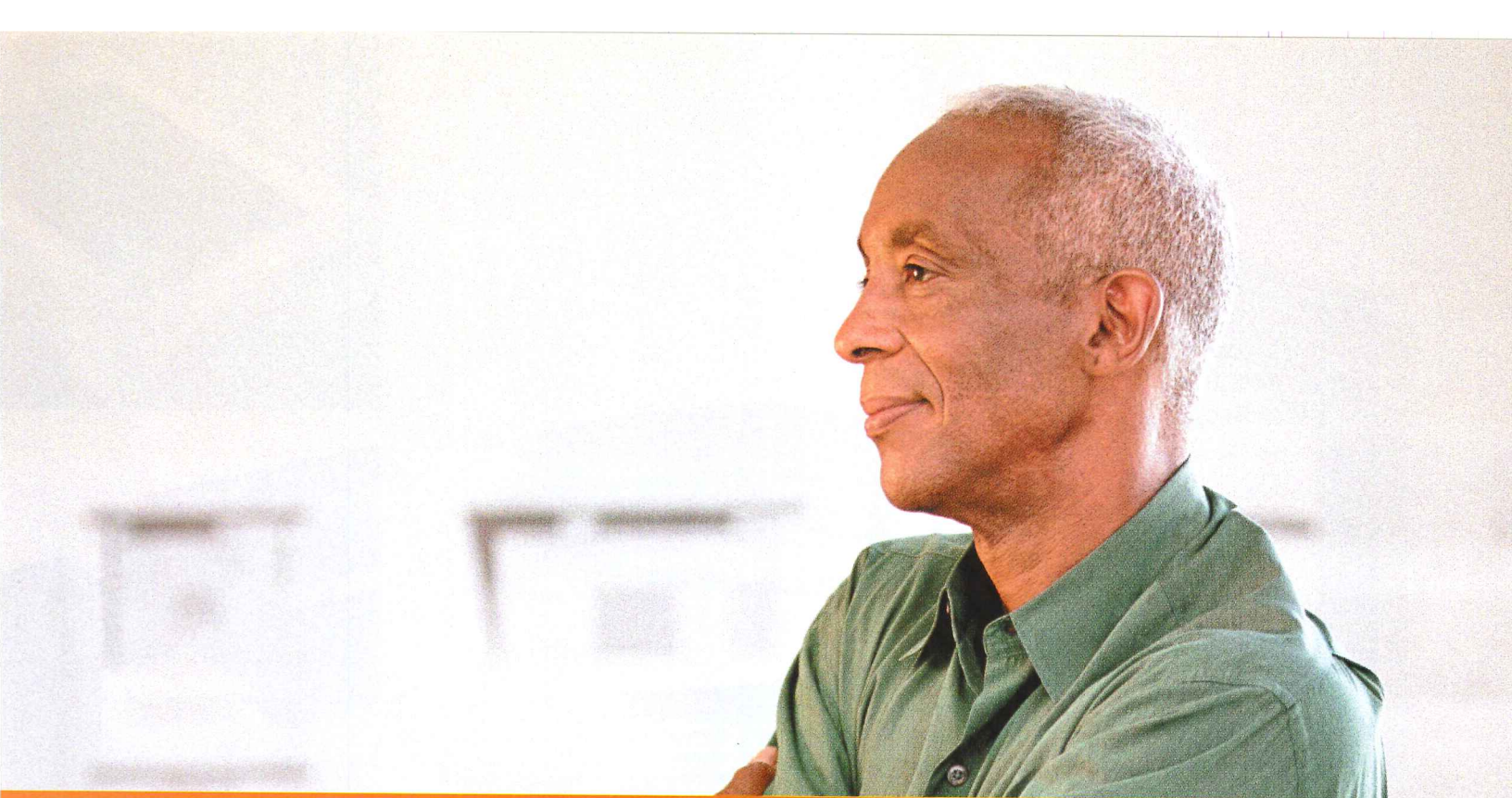
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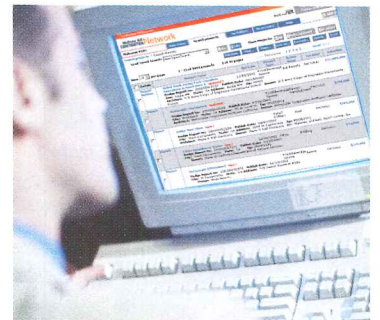
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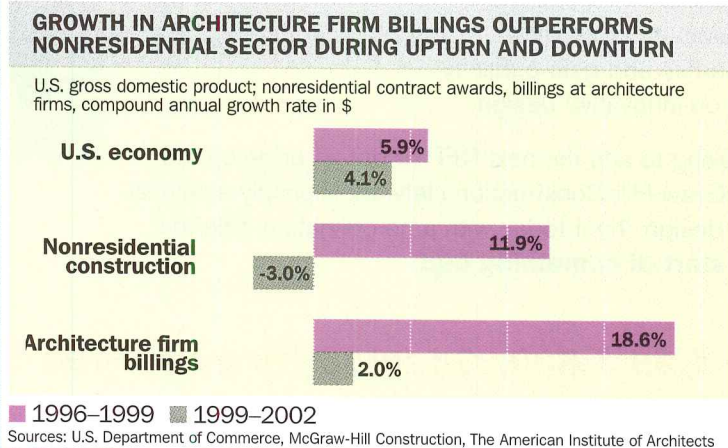
Looking at where architects are

By Charles Linn, FAIA

It's been five years since the beginning of the tech-market crash and the slowdown of the greatest bull market in construction history. The whiz-kid dot-com clients who were keeping architects busy in the late 1990s have gone out of business and back to school. The marketing department has rediscovered that face time is more important than bandwidth. They've updated the old brochures and sent them to the printer. The consultants who advised people to get out of their leases because telecommuting was making offices obsolete have rented themselves offices. Wet-behind-the-ears CAD jockeys aren't getting \$40K plus a signing bonus anymore. Now that we have our feet on the ground, it's a good time for the profession to pour itself a cup of coffee and reflect on where we've been and where we're going.

The Business of Architecture: 2003 AIA Firm Survey is one of the profession's best benchmarks, and this article draws heavily on data provided by it. The survey has been conducted by the AIA every three years since 1988. This year, invitations to participate in the survey were sent out to 9,620 AIA-member-owned firms, and 1,383 firms—more than 14 percent—returned usable questionnaires. The report was prepared under the direction of AIA chief economist Kermit Baker, Hon. AIA. TechnoMetrica Market Intelligence collected and tabulated the data.

Figure 1.



We're doing all right—most of us, anyway

According to the survey, financially we're not doing as badly as some might think. During the period between 1999 and 2002, the growth in the U.S. gross domestic product slowed to 4 percent per year, according to the survey, while growth in architecture firms' billings dropped to 2 percent. That doesn't sound so great. But when you consider that nonresidential construction contracts declined by an average of

Record editors Jane F. Kolleeny and Sam Lubell contributed Point of Reference sections to this report.

and where we're going

with the help of the *2003 AIA Firm Survey*

3 percent over this period, we're doing well (Figure 1). The survey also notes that in 2002 more than half of all firms showed profits in the double digits; only one in seven showed a loss.

It is also worthwhile to consider that between 1996 and 1999 our profession was coming out of a period of such unprecedented prosperity—bolstered by large gains in productivity—that our perspective may have become distorted. During that time firm billings grew 18.6 percent, while the U.S. gross domestic product grew by 6 percent. As many of us said back then, “It would be easy to get used to this,” and some did. To be fair, however, the current 2 percent growth in firm billings is a national average. Some architects who specialized in market sectors that have tanked, like commercial interiors, or who worked in areas of the country where tech and dot-coms were the big gorillas, have truly suffered. One architect in Southern California reports, “I’ve had my worst year ever—two years in a row.”

Why we're doing well

How is it possible that architecture firm billings could outperform nonresidential construction contracts over the past three years? This statement seems illogical, because traditionally, the amount of money architects billed was in lockstep with the value of construction contracts. If one fell off, the other followed. But there has been a major shift in the way we do business that has separated us, somewhat, from our hard-hatted cousins. Firms have become more multidisciplinary in nature. They're offering services like green design, urban design, historic preservation, and engineering. These are things that used to be subcontracted to consultants. And architects have started to charge for services that were once thrown in for free during the course of design development, like graphics and lighting. The movement toward putting lots of services under one roof started in the 1990s and has not slowed during this survey period, making it appear that the firm that offers a substantial menu of services is becoming the norm.

A second reason that firms are doing well is that broadening their service offerings has allowed them to generate income on work that is unrelated to construction, and this has helped improve cash flow. New service offerings that seem to have survived from the 1990s are Web-site design, product design, and brand consulting.

A third reason that architects are doing well is that they have kept busy doing work in the residential sector. An ocean of low-interest-mortgage and home-refinancing money has buoyed residential work up to 12 percent of billings for firms of all sizes. Some of that money has found its way into the coffers of larger firms that normally would not do residential work.

Layoffs, sole practitioners, and vanishing firms

Firms also controlled cost as the work slowed, in part by reducing staff size. Payrolls declined by 2 percent per year during the survey period as a result of attrition, layoffs, and unfortunately, firm closings. When payroll numbers shift, so do statistics on firm size, and here there were some startling changes: In this survey period (Figure 2), the number of sole practitioners *increased* significantly. In the 1999 firm survey, sole practitioners made up 23 percent of firms. In the current survey, that number rose dramatically, to 31 percent.

Some of these individual practitioners had been laid off from other companies. Experienced—and sometimes well-paid—individuals are often the first to go when firms cut back. Others once worked in firms that have closed. The new solos are surviving for now because there is an abundance of residential work, the sole practitioner's bread and butter. But if residential work slows, and the COBRA plans and 401k savings of these not-sole-practitioner-by-choice professionals start running out, the profession could again see some of its most experienced and valuable members leaving the field to do other work. This happened during the last recession, and the profession still misses those experienced people. Meredith Bertram, director of business develop-

Figure 2.

GAINS IN FIRM SIZE SLOW WITH RECENT RECESSION

Years	Percent of firms / Number of employees						
	1	2-4	5-9	10-19	20-49	50-99	100+
1990	30	36	20	9	5**	n/a	n/a
1993	31	35	20	8	6**	n/a	n/a
1996	34	26	21	10	6	3*	n/a
1999	23	30	23	11	8	3	2
2002	31	29	18	11	7	2	2

* includes all firms with 50 or more employees ** includes all firms with 20 or more employees

POINT OF REFERENCE

“We’ve been affected by the economy but not as much as some other firms. Firms that do developer work got hurt immediately. Most of our work is in the public sector, and because of the way public money is budgeted, if there is a shortfall it takes time for that to work its way to us. Almost all of the cities and states are hurting now, so getting new work funded is going to become a bigger challenge. On the other hand, if the economy turns around, architects who work for developers can start work immediately. Government work is at a whole different pace.” *Dennis Cusak, FAIA. Dennis Cusak is a principal of SRG Partnership, a firm of 83 employees with offices in Portland, Oregon, and in Seattle.*

ment at Gruzen Sampton Architects in New York, says that the lack of midlevel project managers puts “pressure on less-experienced staff and upper-level managers alike. You worry that if the firm loses money because work is mishandled, more people will lose their jobs.”

While the number of sole-practitioner firms increased, firms in the 5- to 9-employee range declined from 23 to 18 percent since the 1999 survey. One might assume that these firms have simply gotten a little bigger or a little smaller, but the number of firms in the ranges on either side has actually been steady—so apparently a number of these small firms have gone out of business. One theory is that small firms are disappearing because their business model just doesn’t work anymore. There is just not enough income per seat to cover rent, computers, software licenses, salaries, employment taxes, retirement, liability coverage, and especially employee health insurance, along with a modest profit for the principals.

Another theory is that some of the now-closed smaller firms were located in small towns. Stan Peterson, AIA, principal of Peterson Architectural Group, Topeka, and a member of the Kansas Board of Technical Professions, details some of the problems faced by rural practitioners, saying, “When towns lose population, the government and school work disappears, or you find you’re competing for it against big, out-of-town firms, and national retail and fast-food chains have their own designs and don’t use local talent.” Pre-engineered buildings are also a significant source of competition for architect-designed buildings. “It’s just impossible for architects to recruit young people to work in these small towns,” Peterson says.

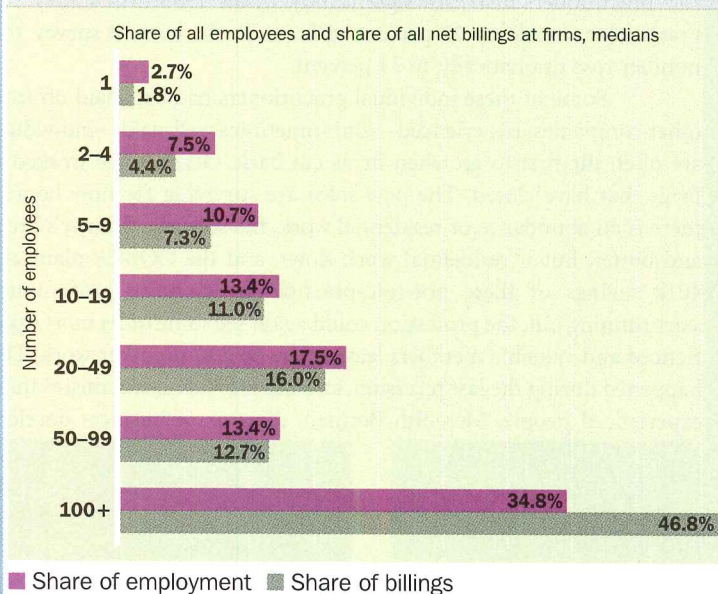
Midsized and large firms

The number of firms in the ranges of 10 to 19, 20 to 49, and 50 to 99 employees parallels the last survey, although they are each billing about 1½ percent less than they were in 1999. These firms are not as multidisciplinary as the largest firms, and they tend either to be generalists or to specialize in a particular kind of work. On the other hand, smaller firms are sometimes more nimble, and can get into and out of markets more quickly. Generally, this is because the projects they take on are smaller and likely to be less complicated than those targeted by the big boys and don’t require the depth of expertise. Midsized firms may also have an edge over larger firms when it comes to customer service.

At the far end of the spectrum, the number of large firms—those with more than 100 seats—is 2 percent, as it was in 1999. The large multidiscipline firm is here to stay because it can be quite profitable—they grabbed almost 47 percent of billings according to the 2003 survey (Figure 3). Large firms are also faring well now because they can develop the marketing contacts and expertise needed to create studios for multiple building types, and they can do a few signature buildings on short margins to establish a reputation. It takes years, a lot of money, and good management to get there. But the result is that the firm’s risk is distributed over several markets, and sometimes multiple offices, just as an investor creates a balanced investment portfolio. If one of the firm’s market sectors goes soft, personnel can be shifted from one studio to a more active one, balancing the equation.

Figure 3.

100-PLUS-EMPLOYEE FIRMS ACCOUNT FOR ALMOST HALF OF BILLINGS



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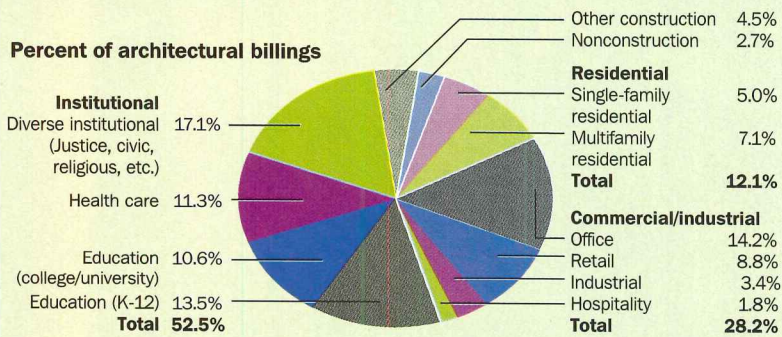
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Figure 4.

INSTITUTIONAL BUILDING SHARE IS OVER 50 PERCENT OF FIRM BILLINGS



Active building types, marketing, and fees

Good marketers are like good investors. They combine analysis with intuition to predict what building types are going to be hot in the future. Ideas emerge from listening to the news, looking at what essential buildings are coming up for replacement locally, even eavesdropping on the conversations of people outside the profession and weighing them against common sense. Of course, most marketers gather information from the construction-data services.

But long-term trends are still the backbone of most firm managers' market decisions, and figuring out where the work has been recently may help architects set their sights on where it will go. In 2002, according to the survey, about 52 percent of all firm billings came from the institutional building market: K-12, health care, and higher education grabbed 13.5, 11.3, and 10.6 percent, respectively (Figure 4). The other big markets are in the commercial sector. While office construction is hurting, at 14.2 percent, it still owns a big piece of the profession's billings. Consumers seem to be doing their part to support the economy, and retail carried 8.8 percent of billings. The other markets, like justice, civic, hotels, and religious, carry between 2 and 5 percent of firm billings.

Despite the fact that expanding service offerings seem to have given firms the economic edge they needed to stay profitable, 51 percent of the firms surveyed say that their greatest growth has come from basic services like design (Figure 5), and 48 percent say these are the most profitable services they offer. While architects often bemoan the fact that they have less control over what's happening on the construction site, they have given up this control knowing it was a losing business segment. According to the survey, 26 percent reported that they consider construction services to be the least profitable of all the services they offer. Instead, they put their time where it will yield the most benefits. Remarkably, 40 percent of firm billings came from rehabilitation projects. This supports the notion that when times are tough, clients remodel rather than build. It may also indicate that urban areas—where almost all of the work fits the into the rehab category—are making a comeback.

Architectural management consultant Mark Zweig of ZweigWhite, summing up what's going on with fees, says, "Right now, they're stuck or going down. It's simply a matter of supply and demand. There are fewer projects to go around and more firms with the capacity to do them. Fees are getting squeezed." Steven Ehrlich, FAIA, of Steve Ehrlich Architects, Culver City, California, echoes the sentiment, saying, "The times are making the fees incredibly tough. The amount of service demanded and the unknown variables make it hard."

When times get tough, marketing departments get busy. Meredith Berman says, "Firms are marketing more ferociously than ever—many marketing coordinators from across New York will tell you that this summer was the busiest ever in terms of ceaseless deadlines for

POINT OF REFERENCE

"While the economic news sounds good, we lag behind the general economy—when you get more work depends on when state government gets out of debt. What we've noticed, at least in public-sector work, is that in boom times there may have been six to 15 people submitting for a job. Now there are 40 or 50 firms submitting. I heard on one GSA job they got 80 submittals. How do they review 80 submittals?" *Jim Jankowski, FAIA. Jim Jankowski is a principal of Ross Barney + Jankowski, with 27 employees, in Chicago.*

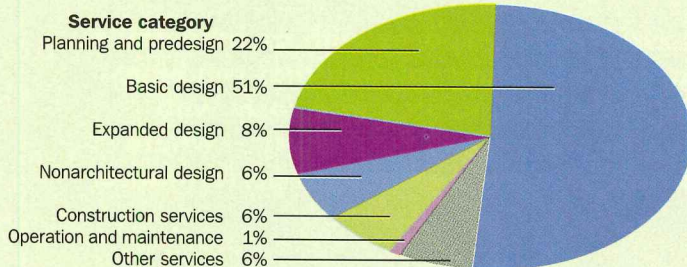
POINT OF REFERENCE

"Firms are seeing more commodity-level fees. It takes special business models to succeed with 5.5 percent fees, but these can work and be profitable, too, as long as the scope of work is properly defined and the firm is efficiently managed. It is possible for a firm to fail even with 17 percent fees. Business management excellence is especially needed in these uncertain economic times." *James P. Cramer, Hon. AIA. James P. Cramer is chairman and C.E.O. of the Greenway Group, Atlanta.*

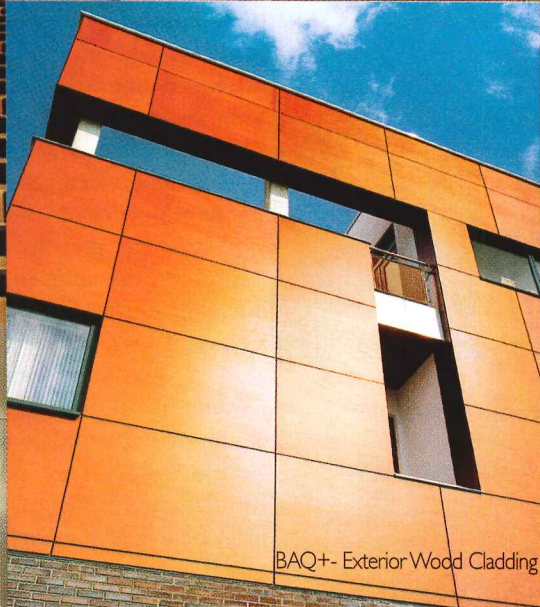
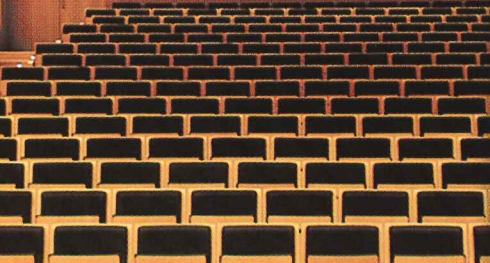
Figure 5.

MOST FIRMS REPORT GREATEST GROWTH IN BASIC SERVICES

Service category experiencing most growth in recent years, percent of firms

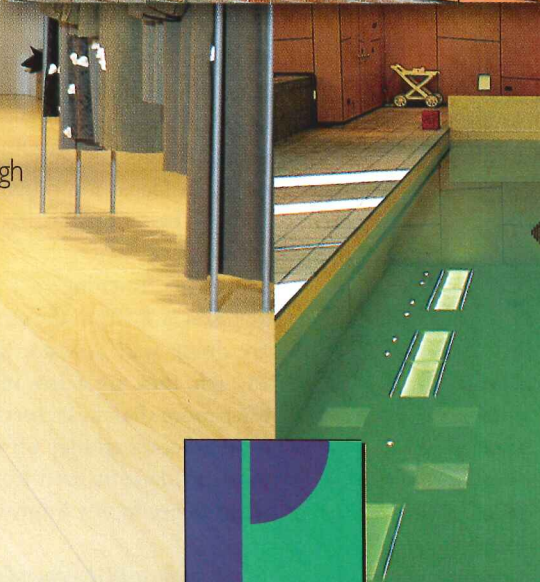


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Figure 6.

FIRMS RELY HEAVILY ON NONCOMPETITIVE SELECTION FOR PROJECTS

		Percent of billings by source of work, average across firms							
		ALL FIRMS	1	2-4	5-9	10-19	20-49	50-99	100+
Repeat clients, noncompetitive selection	47%	49%	46%	45%	44%	48%	42%	39%	
Repeat clients, competitive selection	12%	7%	10%	14%	21%	22%	23%	28%	
New clients, noncompetitive selection	22%	30%	24%	20%	14%	10%	9%	7%	
New clients, competitive selection	19%	14%	20%	21%	21%	20%	26%	26%	

proposals. Clients want more material in less time than ever.” Her employer, Gruzen Sampton Architects, has 140 employees, and large firms like hers get more than half their work through competitive selection. Smaller firms get as much as 79 percent of their work from noncompetitive selection—and much of this is from repeat clients (Figure 6).

Some part of every proposal for new work has to do with how the firm will be paid—at the time of the survey, firms were reporting that about 43 percent of billings came from fixed fees, and about 37 percent came from hourly rates (Figure 7). The use of flat percent-of-construction-cost agreements has declined in recent years to 14 percent. Clients have become much more intent on controlling how much they’re going to spend on fees up front, or they want precise accounting of how billable hours were used. Percent-of-cost agreements do not tend to give clients this kind of oversight.

POINT OF REFERENCE

“Architects are typically considered the canaries in the coal mine for the economy—they sniff the air to see if it’s lethal. Many architects have learned how to survive breathing the toxic air of economic change. We have. We think of an architectural practice as a table—if it has six legs, you can lose two and still be stable. Nobody predicted that corporate interiors would take such a dive. We were taken by surprise in 2002 and cut 6 or 7 percent of our firm’s personnel. To mitigate our losses, we aggressively pursued overseas work and made a significant effort to expand our practice in China. Now we keep 50 people busy with work in China alone.” **Brad Perkins, FAIA.** Brad Perkins is chairman and C.E.O. of Perkins Eastman Architects, with 400 employees, based in New York.

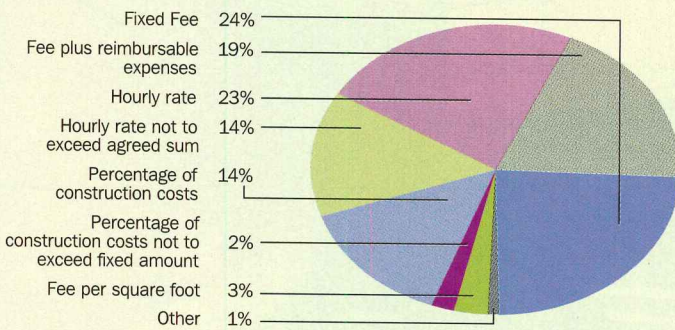
Uncertainty = opportunity?

Predicting what markets will present opportunity this year and the next is like shooting at a moving target. The only sure thing is that people seem uncertain about what’s ahead. According to Kermit Baker, the future “looks like a little bit of a seesaw.” According to his statistics, 30 to 40 percent of firms are predicting growth next year, but their level of certainty is extremely low. An almost equal number of firms, he says, are predicting no growth, with an extremely low level of certainty. Meanwhile, the numbers for his “Work on the Boards” surveys published monthly in *AIArchitect* have been constantly alternating between losses and gains this year, but are slowly edging up.

Figure 7.

OVER 40 PERCENT OF FIRM BILLINGS COME FROM FIXED-FEE PROJECTS, HOURLY RATE CLOSE BEHIND

Average percent of gross billings by contract billing method, averages across all firms



Things may be uncertain, but there are always firms who answer the door when opportunity knocks. Three principals of NBBJ Architects’ Seattle office decided to leave that firm earlier this year [see *RECORD*, November 2003, page 32] and opened an office in the city for SRG Partnership of Portland, Oregon. With growth in Seattle teetering, and virtually nonexistent in Oregon, it would take a group of pretty optimistic people to put such a deal together. Their leader, John Schluening, FAIA, was a founder of SRG 30 years ago, and he has seen a few recessions. However, his outlook is sunny: “The biggest opportunity for growth and to reposition your firm occurs in these kinds of times. Transitional periods are magnificent because clients are rethinking what they do. We want our clients to say to themselves, ‘This firm understands us, because they’re going through the same thing we are.’ When people were saying, ‘You ought to focus. You ought to do less rather than more,’ we said, ‘Let’s address the times by being good at being creative, not by being good at cutting back.’”

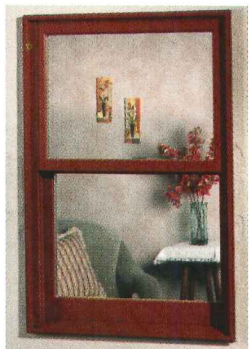
POINT OF REFERENCE

“Over the years our firm has survived a couple of significant economic downturns. I attribute this to our diverse portfolio of services and our ability to quickly adapt to market conditions. In a world full of specialty firms, clients want to know not only that you have experience in a particular market type, but how many of that type you have done. Specialty firms have an advantage in good times but suffer dramatically when work in that area dries up.” **Larry Scarpa, AIA.** Larry Scarpa is principal of Pugh + Scarpa, a firm of 20 employees located in Santa Monica, California.

Schluening’s is a position worth considering. If anything can be taken away from the current AIA firm survey, it is that the firms that are doing well now are those that take the long view. If they’re big enough, they are active in several locations and market sectors. They offer more than basic services. When work slows, firms often cut back on marketing and lay off experienced people. The cost-cutting measures can make it hard to take advantage of opportunities that occur when the economy improves. ■

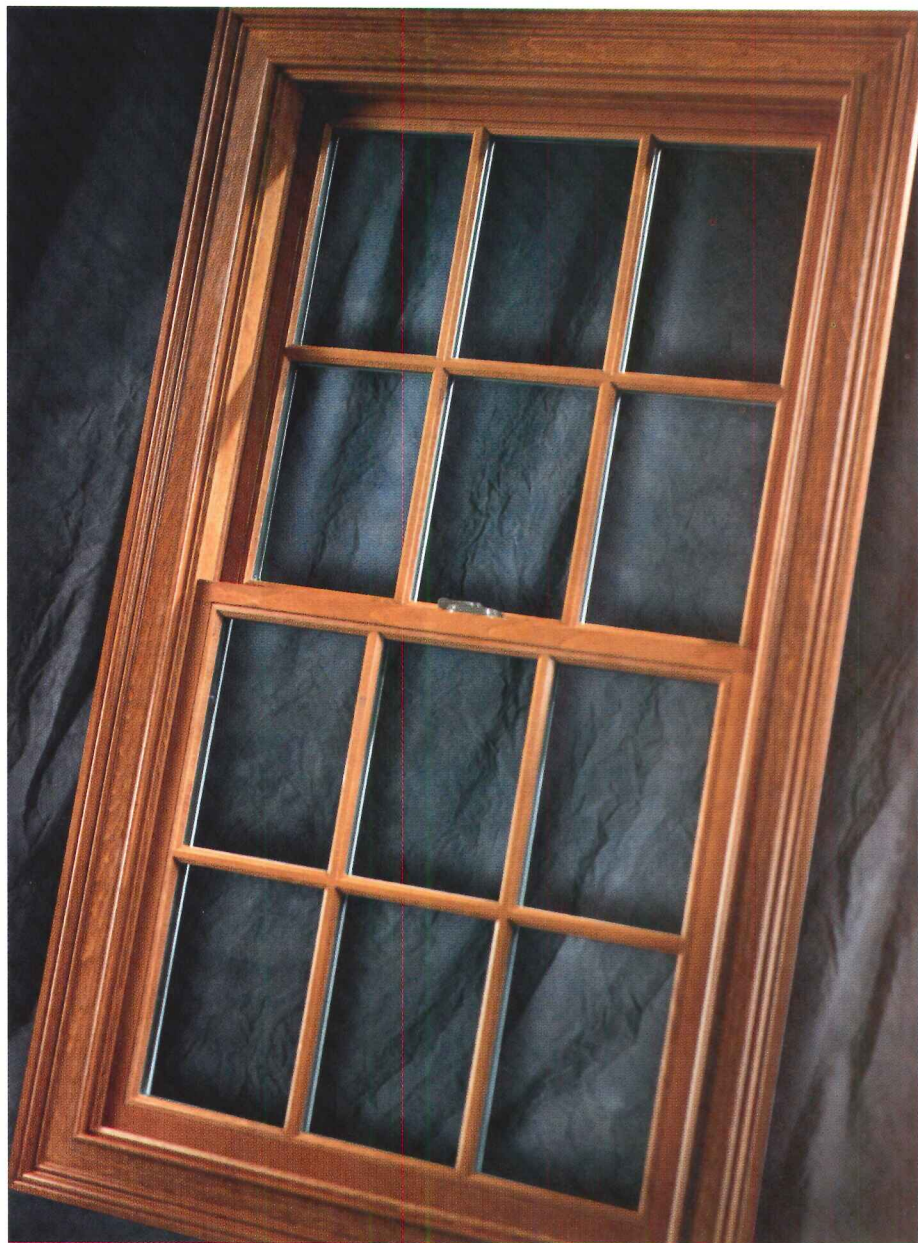
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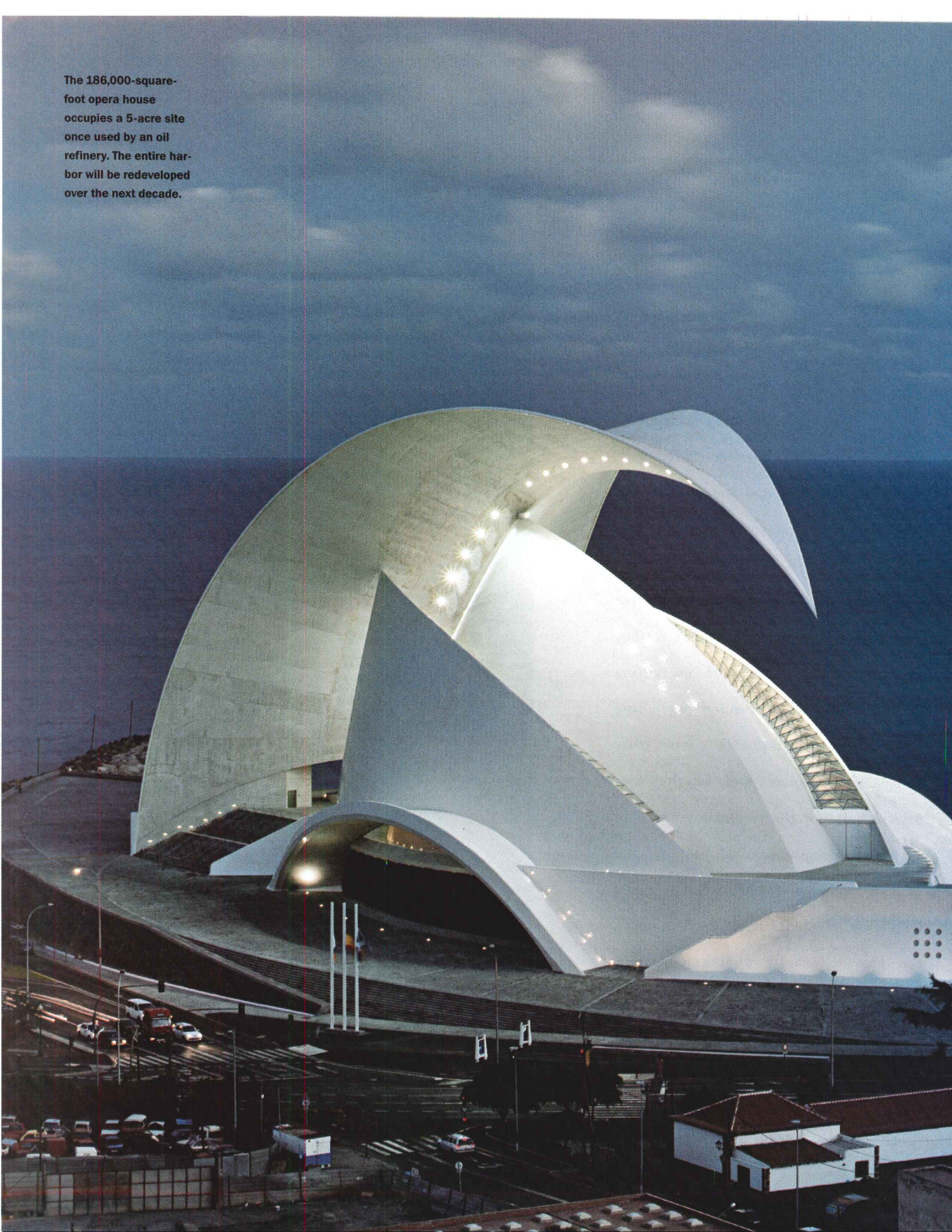
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The 186,000-square-foot opera house occupies a 5-acre site once used by an oil refinery. The entire harbor will be redeveloped over the next decade.





Santiago Calatrava

sets concrete in motion

at the AUDITORIO DE TENERIFE in the Canary Islands

By Clifford A. Pearson

Most of the debate about Santiago Calatrava's new opera house in Santa Cruz de Tenerife has focused on its imagery and form. Is it a giant eye, opening a sleepy lid, or a wave crashing against the shore? Is that enormous curving element bending over the concrete shells of the performing spaces a protective wing, a sensual leaf, or a threatening spike? Such talk is understandable, considering the building's larger-than-life, sculptural swagger. But its success or failure depends only partly on its role as an architectural object. The true test of this \$75 million project will be its impact on an even grander scheme: the transformation of Tenerife's industrialized waterfront into a 21st-century cultural district. The largest of the seven Canary Islands—volcanic outposts of Spanish rule off the coast of Morocco—Tenerife has flourished mostly as a place for European tourists to bake on beaches and party in discos. The opera house—officially called the Auditorio de Tenerife—aims to lure some of these vacationers away from the resorts and into town.

Built on land that had previously been occupied by an oil refinery, the Auditorio helps reconnect Santa Cruz (the largest city on Tenerife) to its old harbor and the great blue expanse of the Atlantic Ocean. Calatrava's 1996 convention center, with its 890-foot-long steel arch and ring of concrete buttresses, stands nearby, as does the Presidency Building, the ruggedly handsome government seat designed by the talented local firm AMP Arquitectos [RECORD, March 2001, page 100]. Using this cluster of civic structures as the foundation of a cultural hub, the island has hired Herzog & de Meuron to design the Museo Óscar Domínguez and develop a master plan for the harbor district known as Cabo Llanos. The idea is to create a vibrant mixed-use neighborhood that can accommodate the residents' love of music and the arts and give tourists something other than the sun to appreciate.

Residents of Tenerife had talked about building a concert hall

Project: Auditorio de Tenerife, Santa Cruz de Tenerife, Canary Islands, Spain

Client: Cabildo Insular de Tenerife (Tenerife Town Council)—Ricardo Melchior Navarro, head of council; Cabildo de Canario (government of the Canary Islands)—Adán Martín Menís, president; Auditorio de Tenerife—

Enrique Rojas Guillem, general manager

Architect: Santiago Calatrava

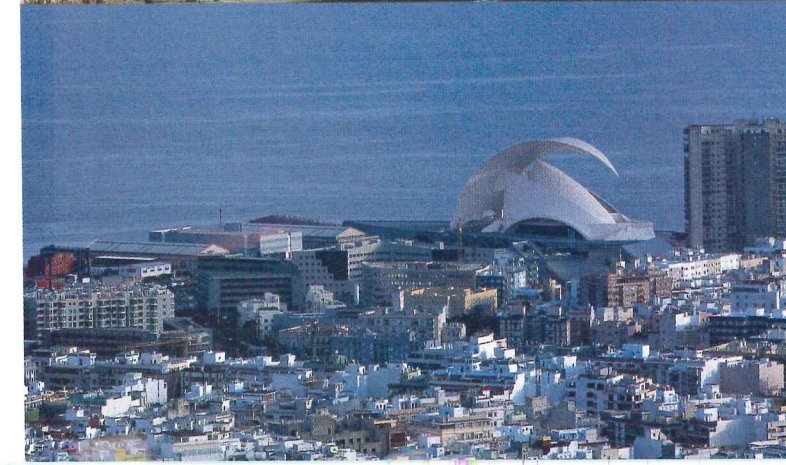
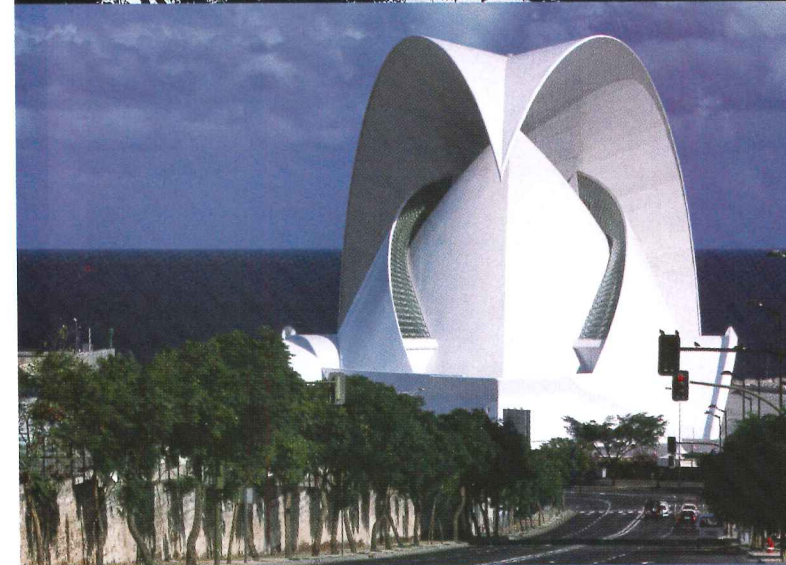
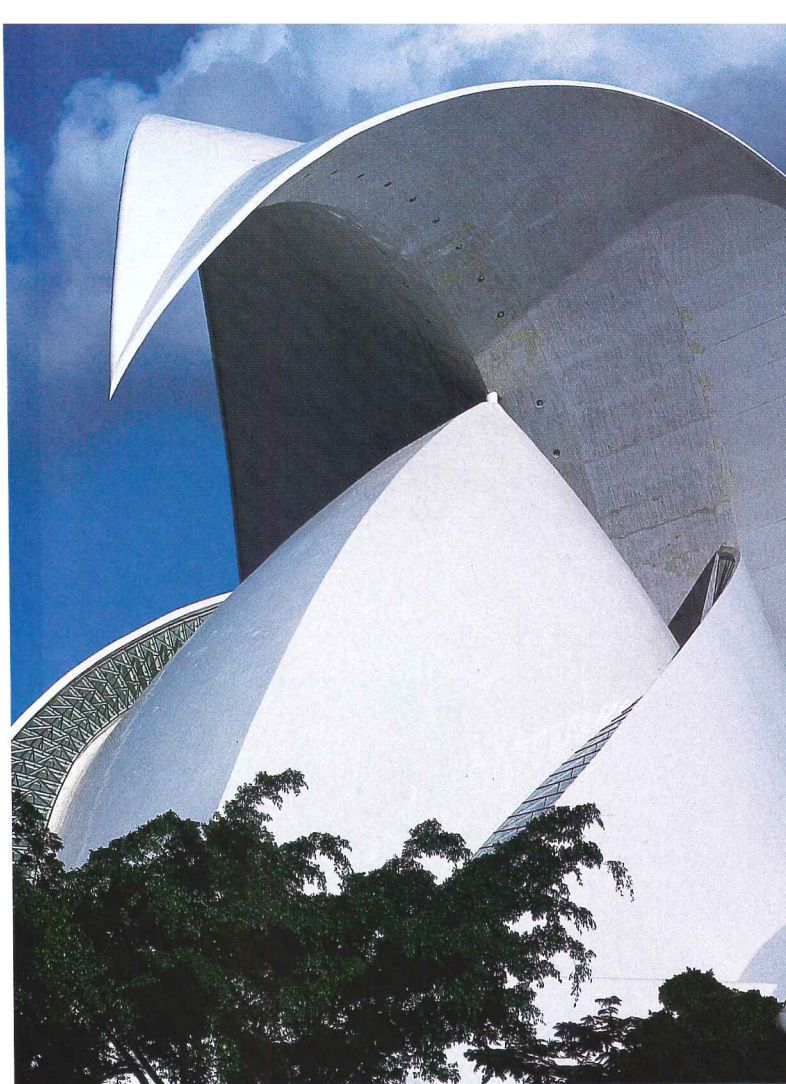
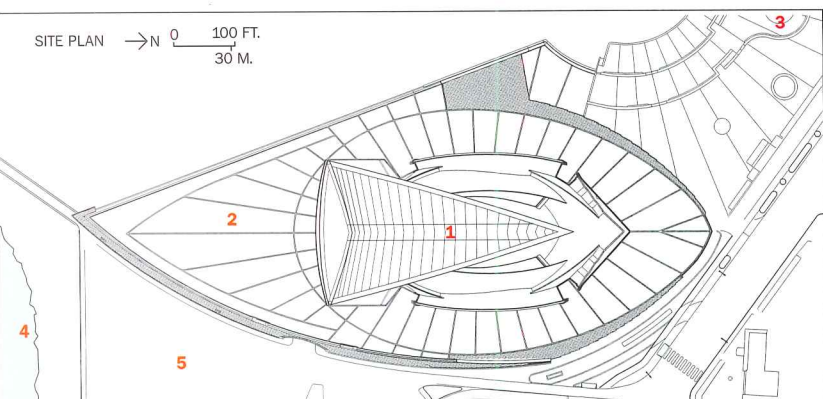
Consultants: García-BBM (acoustics)—Alfonso García

General contractor: Ute Auditorio de Tenerife (Necso, Entrecanales & Cubiertas; Dragados & Construcciones)

PHOTOGRAPHY: © ALAN KARCHMER/ESTO

PROJECTS

1. Auditorio
2. Plaza
3. Maritime park
4. Harbor
5. Cabo Llanos



since the mid-1970s, and the island's government had set aside funds for the project starting in 1984. After initially thinking small and quick, the authorities decided to expand the scope of the project and hire a star architect to create a world-class opera house. In 1992, Calatrava got the job. Over the course of the next four years, the project continued to grow in size and ambition, with the addition of a chamber music hall to go along with the main concert hall. In 1996, the government moved the project to a larger site closer to the water. Even after construction began in 1997, the program kept evolving, with the inclusion of a 250-car parking structure for the Auditorio, rehearsal and support facilities for the Tenerife Symphony Orchestra, and a 173,000-square-foot public plaza around the building. Finally, in September 2003, the project opened with an inaugural concert attended by Crown Prince Felipe of Spain.

The building displays a level of architectural showmanship that makes some people uncomfortable. A number of Spanish architects and writers have criticized Calatrava for creating a building where dramatic gestural elements seem unmoored from the discipline of function [see David Cohn's essay "Excess and Enthusiasm" at www.architecturalrecord.com/inthecauseofarchitecture/]. Observers accustomed to the spare geometries dominating much of today's Spanish architecture find it difficult, in particular, to accept the Auditorio's monumental cantilevered arch, which serves as the project's visual centerpiece but plays no structural role in supporting the hall itself. The Auditorio's critical position on an emerging waterfront and its role as urban catalyst, though, demand an iconic form that commands attention—much as the Sydney Opera House and Calatrava's own addition to the Milwaukee Art Museum do. And a certain amount of showiness seems appropriate for an opera house.

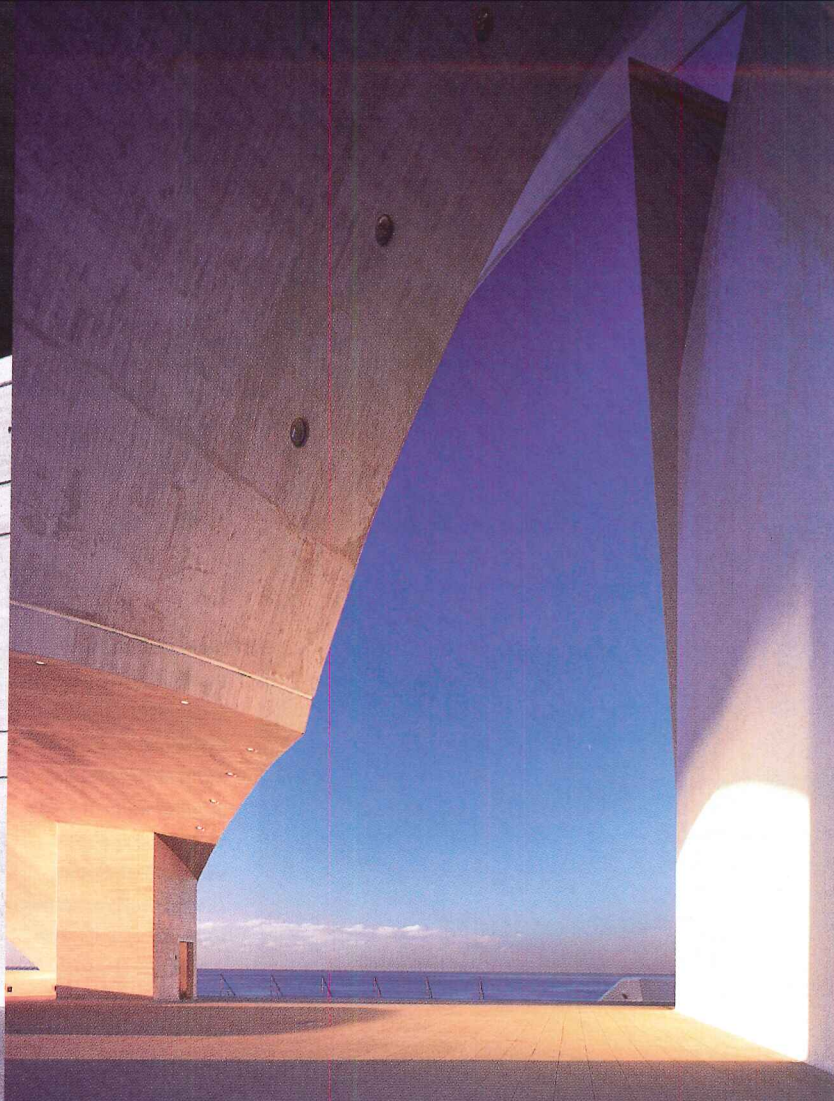
Although trained as both an engineer and architect in fastidious Switzerland, Calatrava shares certain emotional and intellectual concerns with Baroque masters such as Borromini: a love of mathematics and a belief in the transcendental power of complex geometries. The Auditorio's

The building employs a simple palette of materials that include poured concrete, broken ceramic tiles, and local basalt pavers. Calatrava designed the Auditorio to be on axis with a major avenue (opposite, middle) and serve as a landmark on the water and within the city (opposite, bottom).



The spaces between the concrete casings, or "sails," are some of the most exciting in the project, with daylight streaming in from above and partial views framed by the muscular structure.



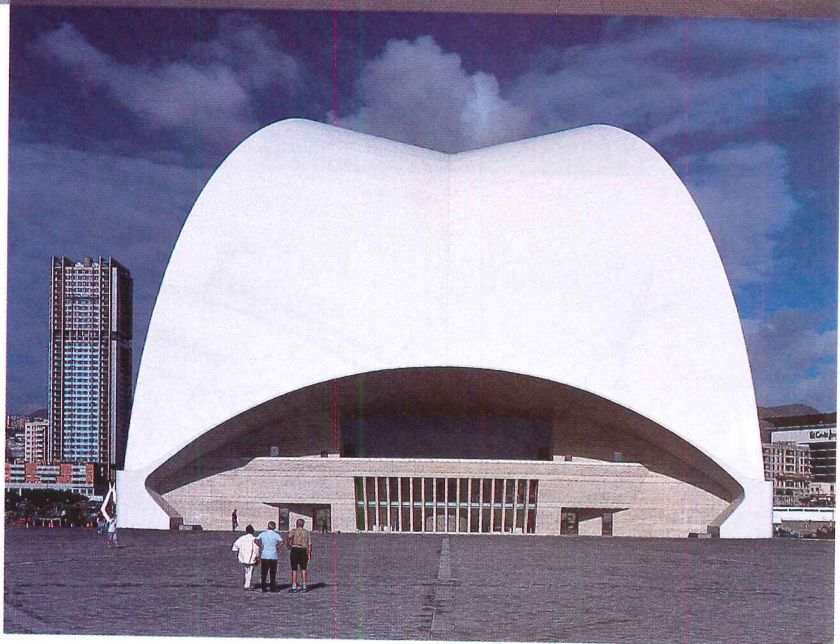


elongated oval plan and plastic approach to form recall the Baroque spirit, as does Calatrava's delight in using the static elements of architecture to create a sense of movement.

While critics want to pin down the building's imagery, Calatrava says he is happy with its "multiplicity of interpretations." Explaining the design, he says, "The shape of the building is suggestive of many things, just as music is suggestive of many things." Part of the reason the Auditorio seems so slippery in meaning is that it doesn't really have a front or rear facade. Instead, it is what Calatrava calls a "penetrable sculpture," sitting on a shiplike base and approached from a plaza that wraps all around it.

Inspired by the island's geology, the architect gathered the project's two main spaces—a 1,600-seat symphonic hall and a 428-seat chamber music hall—under a sloping concrete volcano and tucked support areas for the orchestra as well as parking below the plaza. The building's double layer of concrete casings, or "sails," which stand 98 feet high, ensures acoustic isolation for the concert halls. The Auditorio's trademark "wing," a steel-frame structure built in pieces in Seville then lifted into place by giant cranes, arches over the two halls and rests at three points on the concrete sails. Weighing 3,500 tons, the tapered and curved wing is anchored at its south end, rising nearly 200 feet and extending 320 feet from base to tip. To reduce costs, Calatrava used a simple palette of exterior materials: concrete and broken ceramic tiles known as *trencadis*. Nearly the same in color but different in texture, the two materials play off each other in fascinating ways, especially as the light changes during the day.

The Canary Islands enjoy a fairly constant, temperate climate, so Calatrava created a series of outdoor and protected spaces that turn out to

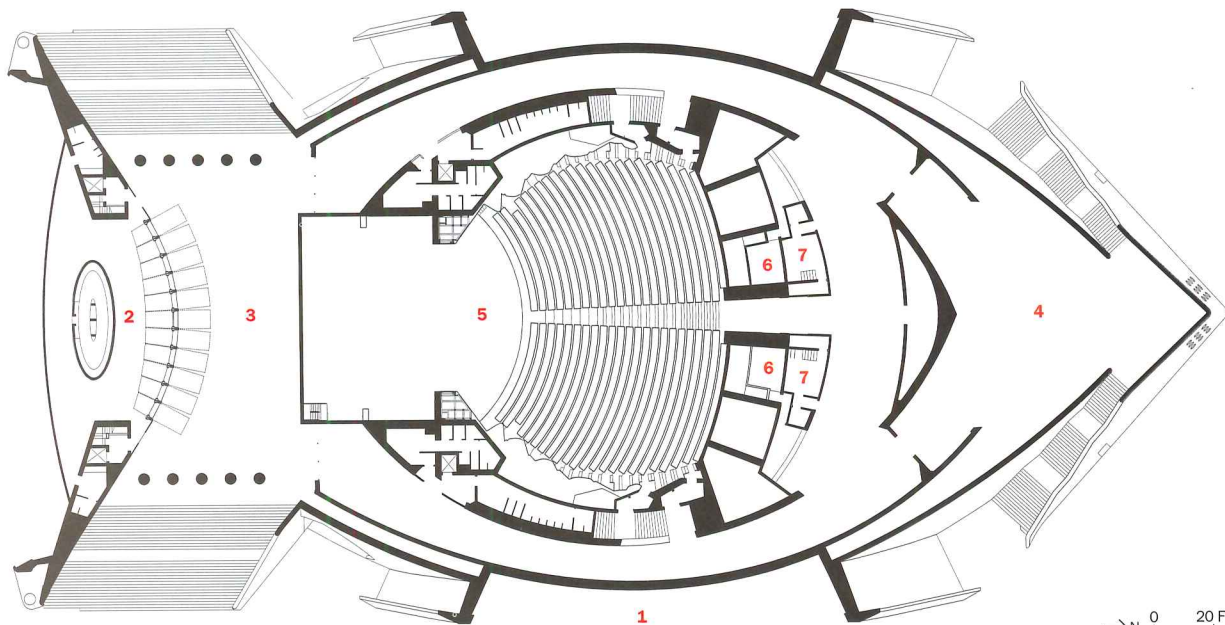


The building's relationship to the water, sky, and city informs the way it frames views (top right) and occupies its grand public plaza (above). Glass panels

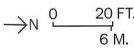
set in the plaza (top left) bring daylight into the parking structure below. The plaza connects with a maritime park to the southwest of the project.



Taking advantage of the Canary Islands' temperate climate, Calatrava designed the main entrances as curving walls of glass-and-wood that can swing up and open (bottom left) or remain closed (top left). The 4,000-square-foot lobby (opposite) serves both the symphony hall and the small chamber music hall. A stair to the upper seating levels of the symphony hall winds between the building's two concrete shells (right).



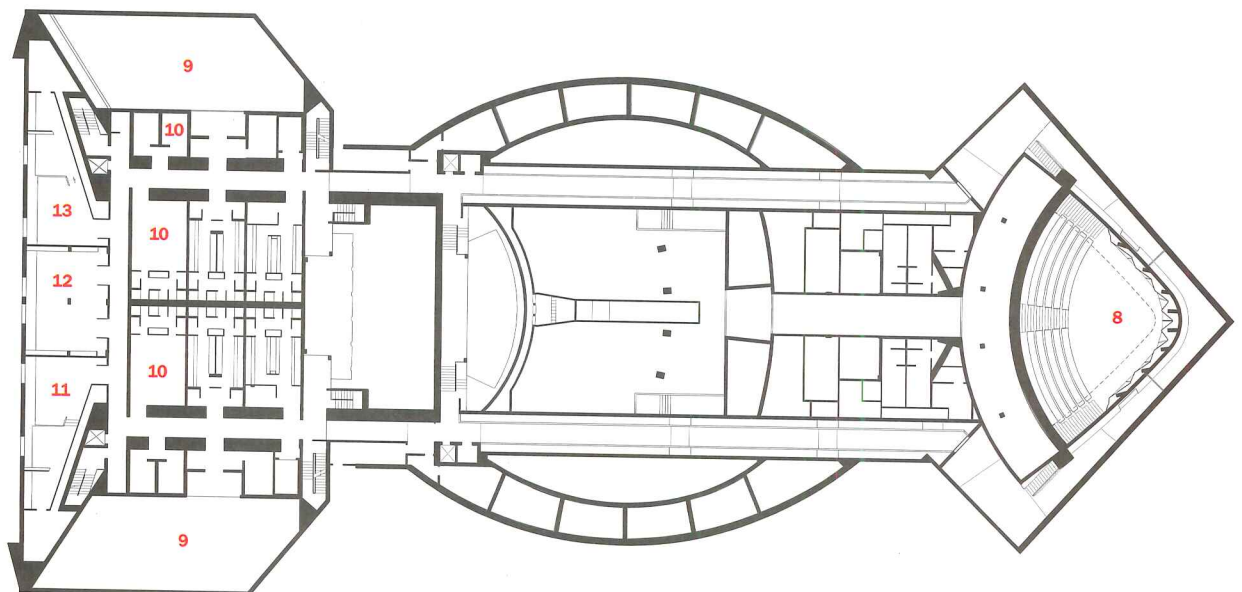
TERRACE LEVEL



1. Plaza
2. Bar/café
3. South terrace
4. North terrace
5. Symphony hall
6. Control room
7. VIP room



- 8. Chamber music hall
- 9. Rehearsal
- 10. Dressing room
- 11. Makeup room
- 12. Costumes
- 13. Hairdressing



MUSIC HALL LEVEL



be as dynamic as the now-famous wing. From the plaza, a grand flight of stairs on the north side of the building and its twin on the south take visitors to an upper terrace sheltered between the wing overhead and the concert hall structure to the west. From here, visitors can look in three directions—to the city, the mountains, and (through an arched opening in the base of the wing) the sea—while sipping wine procured from a strategically located granite bar. A second upper terrace on the city (west) side of the building offers open views to the sky. Even the 13,000-square-foot lobby shared by the two music halls can feel practically outdoors when the curving glass-and-wood entry walls at either end of the space swing up to form canopies. After buying their tickets, concertgoers enjoy another spatial treat—ascending the skylighted, curving stone stairs set between the building’s two concrete shells.

The chamber music hall, which can be used for a variety of shows and events, has a sleek Moderne feeling with an accordionlike ceiling inset with large porthole lights. Its semicircular stage covers 1,700 square feet with a maximum width of 60 feet.

After all the razzle-dazzle on the outside, the symphony hall needed to be a spectacular piece of architecture. Calatrava delivers with a grand room that sweeps skyward in a series of convex sound reflectors, culminating in a starburst skylight. The spatial effect recalls Borromini’s

remarkable interior of Sant’Ivo alla Sapienza in Rome. With a stage that is 50 feet wide, 45 feet deep, and more than 32 feet high, the hall can accommodate opera as well as philharmonic performances. A remarkable “curtain,” designed by Calatrava and made of a curving array of plaster-covered aluminum slats, rises to form a canopy over the orchestra pit.

With 150,000 inhabitants, Santa Cruz de Tenerife equals the population of Florence in the Middle Ages, notes Calatrava. Forsaking modesty, he says he envisioned the Auditorio as a cathedral rising above the city. Times may have changed and Filippo Brunelleschi may not be around to argue, but Calatrava has picked up the mantle of architect-engineer and created a memorable landmark for a city in the process of remaking itself. ■

Sources

Trencadís (broken ceramic tile):

Proy. Cerámico Trencadís

Basalt stone paving for plaza:

Guaramico

Concert hall and music hall seats:

Ezcaray, designed by Calatrava

Concert hall plaster: *Sistemas*

Romero

Carpentry, wood paneling, flooring:

Frapont

Formwork: *Encofrados Peri*

For more information on this project, go to Projects at

www.architecturalrecord.com.

The 1,600-seat concert hall has adjustable acoustic panels set within its folded ceiling (this page). The 428-seat chamber music hall (opposite, right) can be used for lectures. Rehearsal studios (opposite, left) sit below the plaza.





An island of low-rise elegance set within Tokyo's urban jumble (opposite), TV Asahi offers a sweeping glass

atrium to the north (below) and a raised plaza to the east (left), where seating and art engage the public.



Fumihiko Maki's new headquarters for TV ASAHI uses elegance and innovation rather than size or glitz to attract attention in sleepless, bustling Tokyo

By Naomi R. Pollock, AIA

TV Asahi's new headquarters is a building that never sleeps. Designed by one of Japan's modern masters, Fumihiko Maki, it transmits news and other programs 24 hours a day, 365 days a year. The new home of one of Japan's five major private networks, the state-of-the-art broadcasting center replaces and consolidates facilities that had been distributed among several nearby locations. Filling a corner of Roppongi Hills, Tokyo's flashiest new multiuse complex, the building bears Maki's trademark elegance yet is as dramatic as the made-for-TV period pieces staged inside. The building quietly steals the show from its glitzier office and retail neighbors at Roppongi Hills, especially at night when its bulk recedes into darkness but its glass-enclosed atrium continues to glow, a gentle reminder that the station teems with activity long after everyone else has gone to bed.

But how did a TV station end up in a 28-acre, \$2.5 billion mecca of consumerism in the middle of Tokyo? The most ambitious urban development in Tokyo's recent history, Roppongi Hills is the brainchild of real estate magnate Minoru Mori, who, with a consortium of landowners, leveled an existing residential neighborhood and replaced it with a 54-story office tower, several apartment buildings, dozens of restaurants, a multiplex movie theater, a Grand Hyatt hotel, and even a traditional Japanese garden, and tied them all together with mazelike shopping arcades. (See page 142 for the Louis Vuitton store at Roppongi Hills and *RECORD*, January 2004, page 106, for the Mori Art Museum at the complex.) It was the sale of the network's property—TV Asahi had been a major landowner in the area since the 1950s—that made Roppongi Hills possible and paid for the network's new building there.

TV Asahi could have had a tower of its own if it had built elsewhere, but the company chose a corner lot encumbered by height restrictions. In response, Maki created an 800,000-square-foot, keyhole-shaped building. Though only eight stories high (plus three basements), the unusually large floor plates (102,000 square feet) met the client's request for studios in the middle of the building, where they can be within easy reach of support functions and station executives. Forming the building core, the four main studios are encased in 3.3-foot-thick, reinforced-concrete walls that not only mute outside noise and seismic forces but also serve as the primary structural support for the whole building. "In the event of a large

Naomi R. Pollock, AIA, RECORD's special international correspondent, writes about architecture and design from Tokyo.



earthquake, a TV station must be able to transmit information continuously," explains the architect. In the studios, absolutely level floors stabilize images coming out of the camera, while walls tilted precisely three degrees and curved at the corners prevent flat echoes.

A spectacular, six-story-high atrium and entry lobby serves as the interface between station and city. On the other side of the building, shops and a gallery line a street edge, while offices wrap around studios upstairs. Where the building steps back at the seventh floor, it opens onto rooftop landscaping and city views. Because TV Asahi is one of the lowest

Project: TV Asahi Headquarters, Tokyo, Japan

Architect: Fumihiko Maki + Maki and Associates—Fumihiko Maki, principal; Tomoyoshi Fukunaga, associate in charge; Takao Masuda; project manager; Masahiro Chiba, Yasuo Nakata, project architects; Kazuo Sato, Masaru

Sasaki, design team

Engineers: Structural Design Group (structural); Sogo Consultants (mechanical)

Consultants: Studio On Site (roof garden); Lighting Planning Associates (lighting)

General contractor: Takenaka

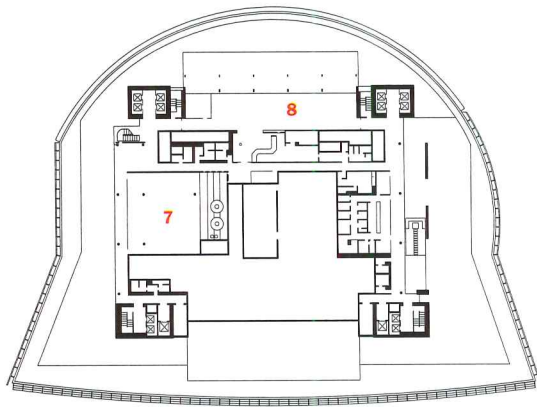
- 1. Atrium
- 2. Studio
- 3. Gallery
- 4. Shops
- 5. Newsroom
- 6. Greenroom
- 7. Offices
- 8. Cafeteria
- 9. Board members' area

The atrium looks onto a garden and outdoor stage (right). In the atrium, vierendeel trusses 396 feet long are held together by pin joints (drawing, opposite), recalling old Japanese post-and-beam construction.

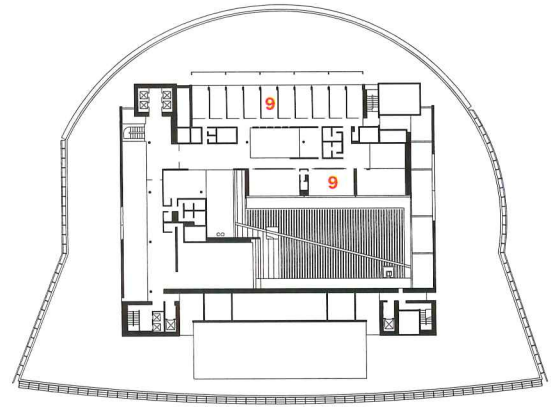


0 30 FT.
9 M.

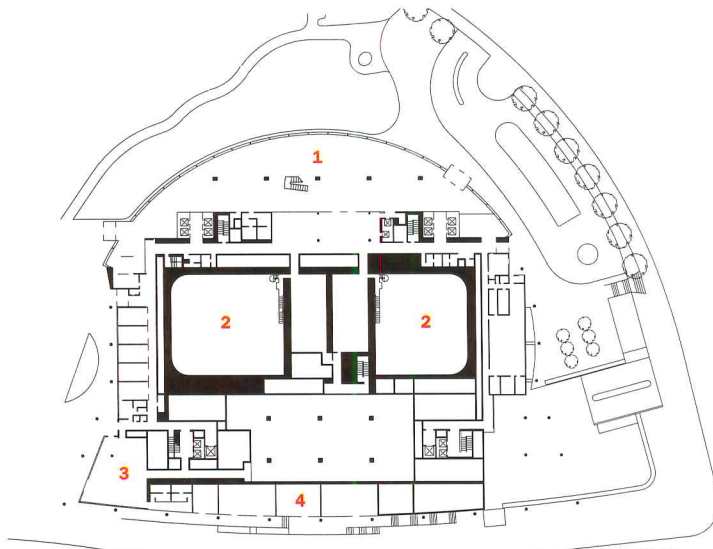
EAST-WEST SECTION



SEVENTH FLOOR

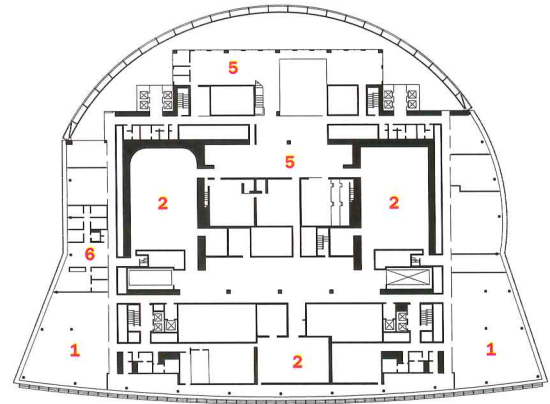


EIGHTH FLOOR

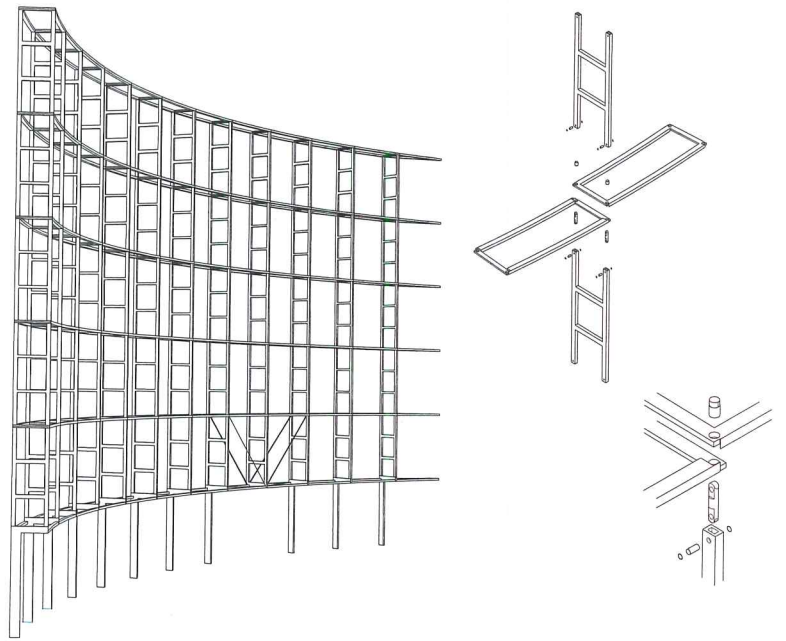


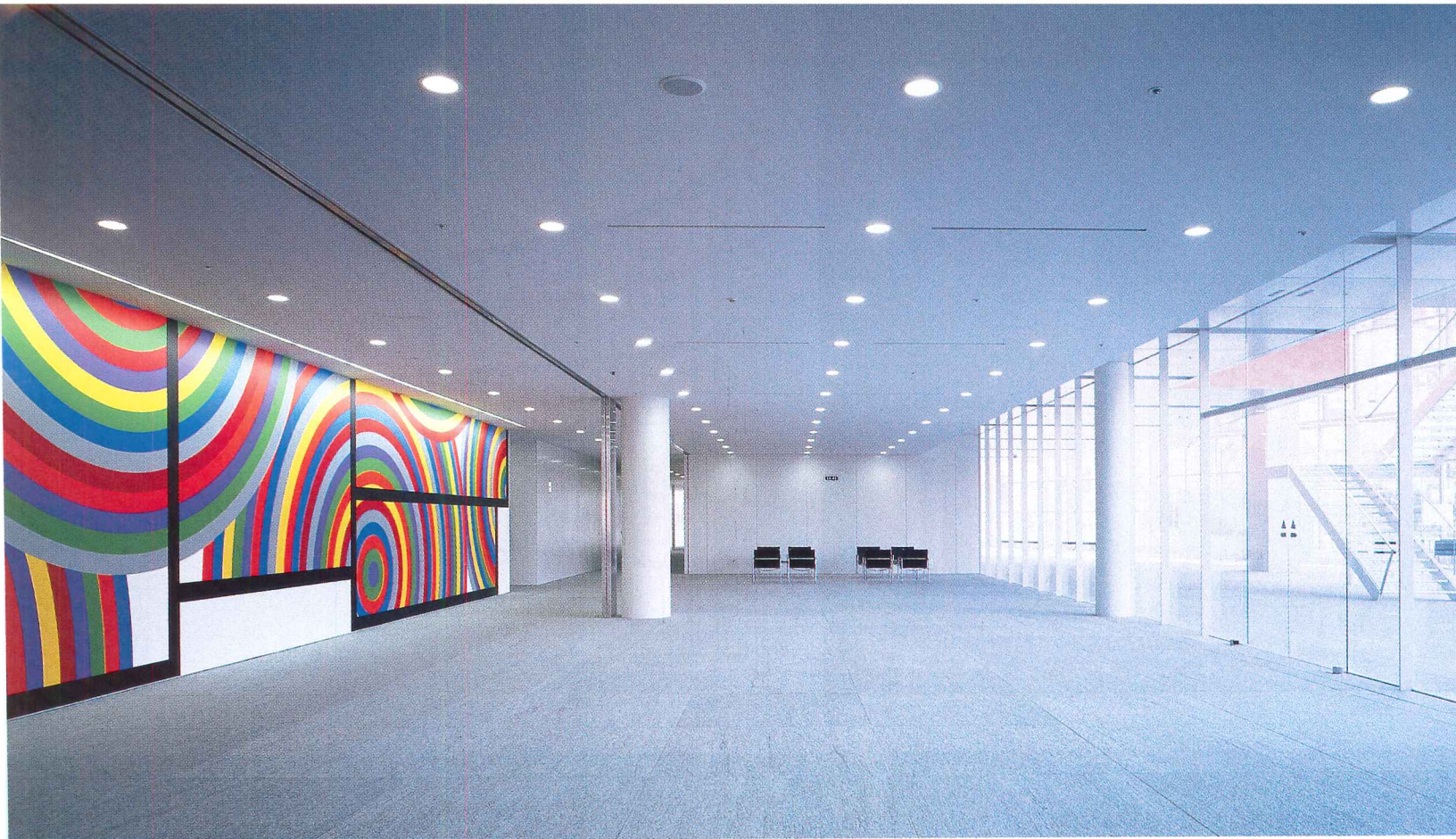
FIRST FLOOR

N 0 20 FT.
6 M.



FOURTH FLOOR





buildings in Roppongi Hills, Maki envisioned its roof as a “fifth facade” composed of abstract forms and greenery visible from surrounding towers. A hub of activity, the seventh floor contains a variety of employee amenities, including a cafeteria, medical clinic, and tatami-floored tea-room. By contrast, the eighth floor is a secluded world for top executives: a boardroom, offices, and areas for board members, interspersed with roof terraces, a garden, and a courtyard that frame views and forge a direct connection to the horizon and sky.

The architects developed TV Asahi’s sculptural form in response to complicated site conditions. “We faced both small freedom and lots of constraints,” says Maki. The building occupies a sloping site at the intersection of Keyakizaka Boulevard, a new boutique-lined artery that runs through Roppongi Hills, and an existing multilane thoroughfare where cars whip past day and night. Away from the streets, the building’s great curving atrium faces the complex’s traditional Japanese garden and the building’s “Entrance Square.”

The building’s base showcases Maki’s talent for integrating city and architecture, responding to the area’s jumble of low-scale residential and commercial development. While many of Maki’s earlier works blend internal and external spaces, TV Asahi engages the public with a colonnaded series of shops that step up the gently sloping south elevation, and with its grand, public atrium to the north. “We knew the upper part of Roppongi Hills would be filled with tremendous energy and a flood of people, so we wanted to make the atrium a quiet and contemplative place as a contrast,” says Maki.

Both monumental and welcoming, the 90-foot-high, crescent-shaped atrium is more urban than architectural in scale. Like a building within a building, it has two facades: one interior composed of red stucco and pink marble and one exterior made of glass and steel. “I always use a mixture of two material palettes: one warm and one cool,” explains Maki. The play between the two is largely what keeps this building looking alert around the clock. By night, the outer wall recedes and the inner wall, with

its dazzling Sol Lewitt mural, takes center stage. But once the sun comes up, the roles reverse and the curving glass wall comes into focus.

A remarkably homogeneous glass-and-steel screen, the wall is one of the finest examples of Maki’s integration of design, structural engineering, and craft. Reminiscent of traditional Japanese post-and-beam construction, a 396-foot-long Vierendeel truss—one of the largest in the world—holds the glass in place and diffuses the wall’s weight over a wide field. A web of straight vertical bars suspended from cantilevered beams at the top of the sixth floor, curved horizontal pieces, and supporting members, the truss is held together by mechanical pin joints rigid enough to make it freestanding, but flexible enough to withstand earthquakes. Though assembled on-site, it took 16 different manufacturers from all over Japan to make the components—no small feat, since each piece could tolerate errors of only 0.008 inches (0.2 millimeters).

Complementing the truss’s materials and visual texture, the building’s other elevations—exterior-mounted panels that offer protection from the sun—are also made of glass and metal. Where daylight comes in at a low angle on the east and west, vertical fins plus a horizontal overhang provide shade; on the south side, deep, horizontal louvers cut the impact of the sun.

Surrounded by the urban cacophony of Tokyo and the high-voltage commercialism of Roppongi Hills, the TV Asahi building shows Fumihiko Maki at his best: combining technical innovation with formal elegance in a way that grabs attention without ever having to yell. ■

Sources

Aluminum honeycomb panel:

Sumikei-Nikkei Engineering

Curtain wall:

Nihon Kentetsu; Sankyo Aluminum; Showa Koki;

YKK; Tostem

Metal roofing:

Yamaki Industry

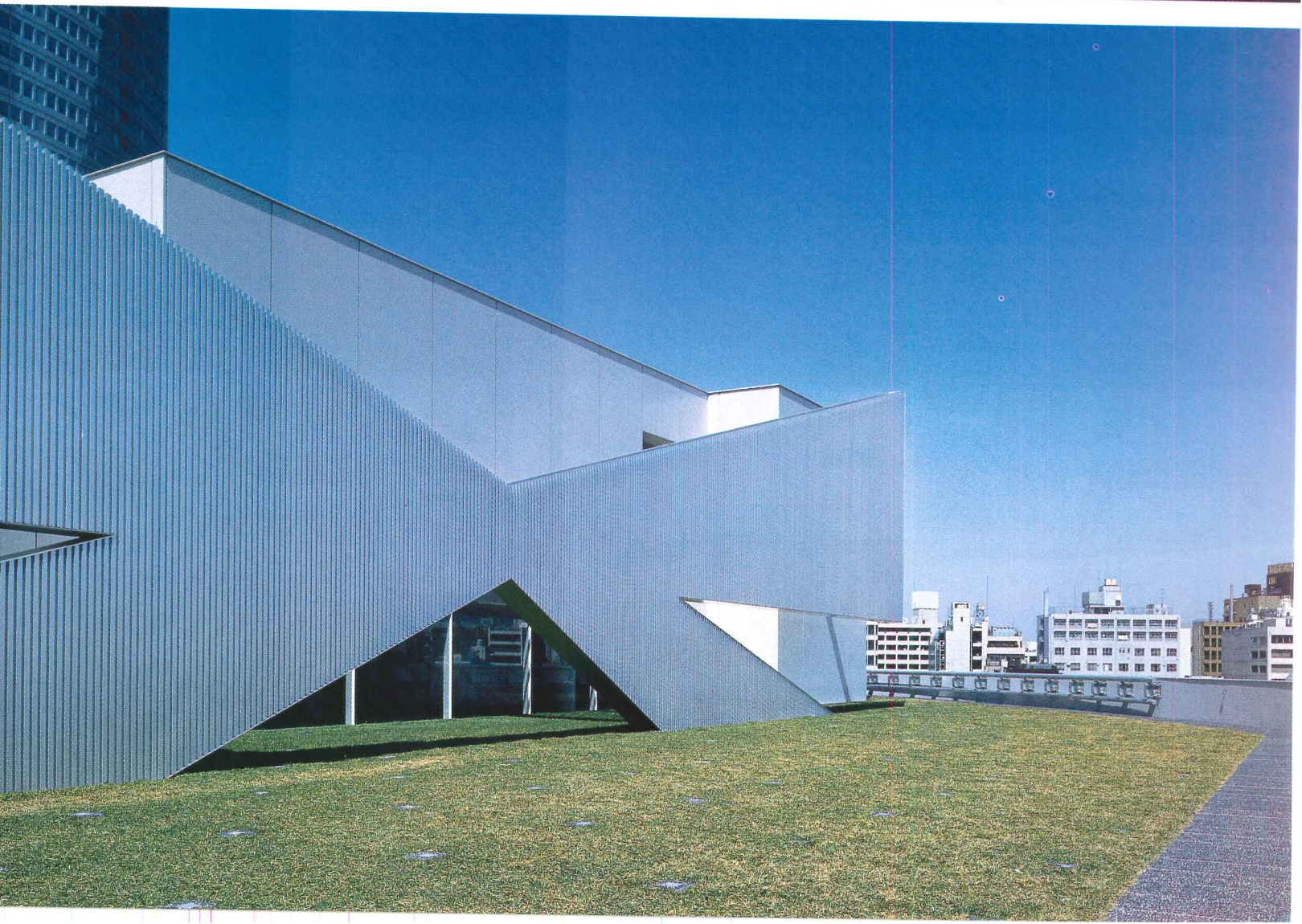
Glass: *Asahi Glass; Nihon Sheet Glass; Saint Gobain*

Movable partitions: *Okamura*

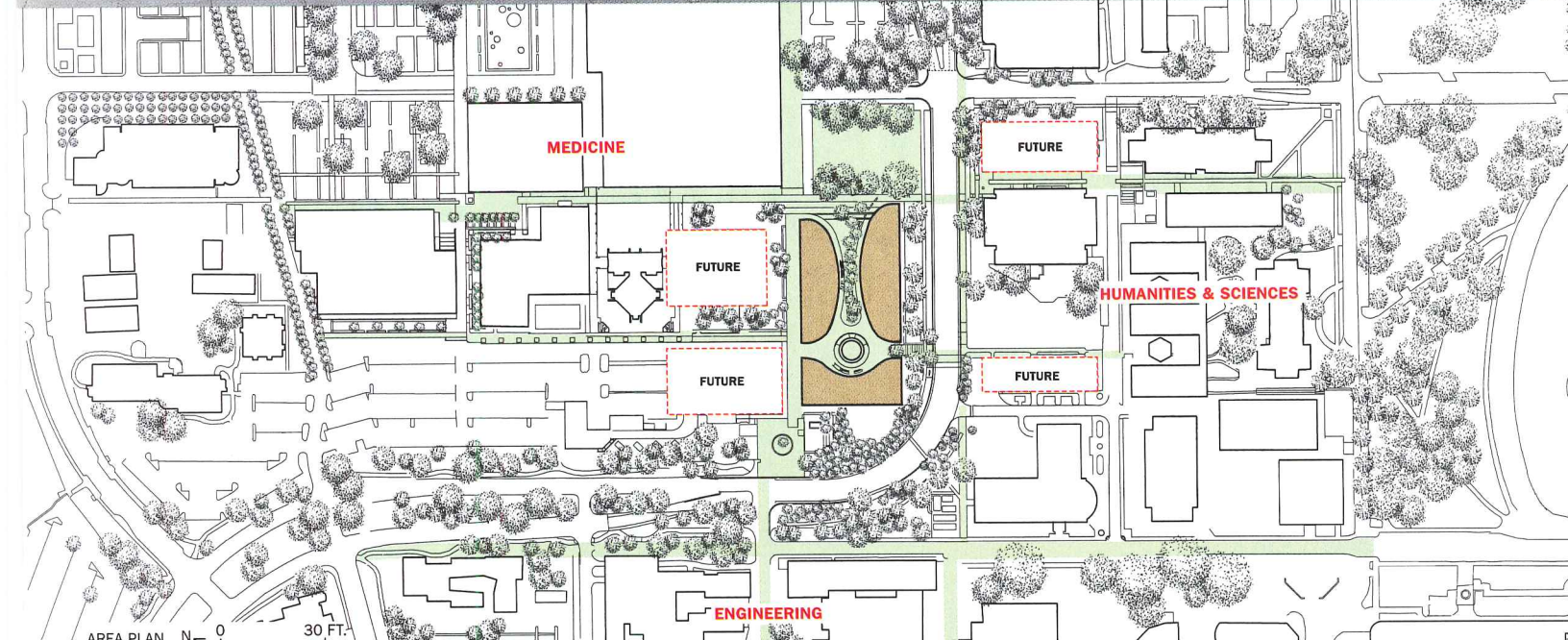
For more information on this project, go to Projects at

www.architecturalrecord.com.

A Sol Lewitt mural punctuates a lobby area off the atrium (opposite), while works by other contemporary artists animate outdoor spaces, such as a courtyard on the eighth floor (right) and a dining terrace on the seventh floor (below).



Departments feed the Clark Center from paths (site plan and opposite, bottom) that meet in its court (this page and opposite, top). Balconies and bridges offer additional meeting places.



In the **CLARK CENTER**, the task for **Foster and Partners** and **MBT** was no less than to redefine the way interdisciplinary research is done

By James S. Russell, AIA

DNA may have been sequenced and the human genome decoded, but turning these scientific advances into products and therapies people can use is today's great research challenge. Researchers themselves recognize that a linear approach within one's own discipline is no longer enough. "I'm a physicist, but most physicists don't look on what I do as physics," says Steven Chu, a member of a faculty group that spearheaded the formation of Stanford University's Bio-X program, adding, "I don't either."

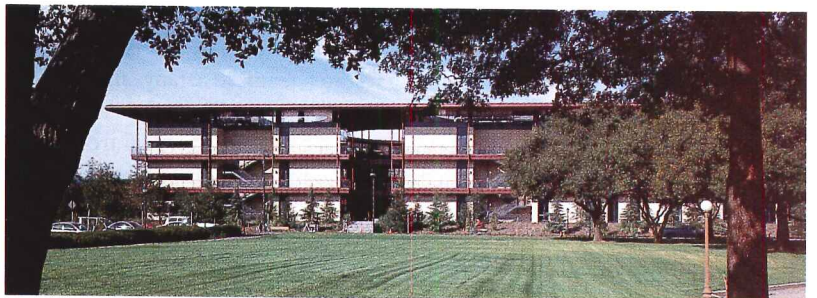
As traditional disciplinary boundaries dissolve and information explodes, Chu and many of his colleagues began to feel a whole new way of working was needed. "We keep to ourselves, to the groups, the fields, and the students we know," he says, which is fine when the research path is clear. "When you *don't* know where you are going, in my experience, is when chance encounters are very important." Chu joined a team that won a Nobel Prize in 1997 because of a casual conversation. The Stanford faculty steering committee, of which Chu was a member, convinced the university to form Bio-X, comprising 23 scientific disciplines brought together from the Medical School, the School of Engineering, and the School of Humanities and Sciences.

"Interact here!"

Facilities intended to foster cross-disciplinary collaboration in the life sciences are in construction or on the boards at universities across the country. Stanford, however, may be unique in the degree to which architecture is used to make the chance encounters Chu and his colleagues envisaged actually happen. For the scientists involved, the great ideas hatched in a cafeteria at Bell Laboratories or at a famous dining hall atop a lab building at Oxford University had already taken on a mythic quality.

Creating opportunities for researchers to interact is hardly new in science buildings. And yet architects' best social intentions frequently go awry. "We have toured lots of labs, and you would often come across a corner of the building laid out with Italian furniture and what might as well have been a sign that said 'Interact here!'" said David Nelson, the partner in charge at Foster and Partners, one of the Clark Center's two architects. No one, it seemed, ever did.

Foster was brought into the project because the Medical School liked the firm's Center for Clinical Sciences Research (CCSR) at



Stanford. It had created a pleasing social hub with simply a courtyard roofed by attractive sunshades. Its scientists enjoyed getting to know each other over a sandwich or a cup of coffee next to a lush stand of bamboo [RECORD, June 2001, page 130]. David Neuman, FAIA, Stanford's campus architect, united Foster with MBT, a firm with laboratory expertise that had enjoyed success with the Engineering School.

A single criterion ruled the selection of the site: "To pull people together," says Neuman. The location selected offered an ideal proximity to the schools feeding the project (site plan, opposite). Setting the build-

Project: James H. Clark Center, Palo Alto, California

Owner: Stanford University

Architects: Foster and Partners—Norman Foster, David Nelson, Nigel Dancy, Chris West, Ross Palmer; MBT Architecture—H. Russell Drinker, AIA, Tully Shelley III, AIA,

Seth Meisler, AIA, Karen Cribbins-Kuklin, Stan Vistica, Cord Struckmann, Harriet Chang

Consultants: Middlebrook & Louie (structural engineer); Alpha Tech (plumbing and mechanical)

Construction manager: Hathaway Dinwiddie

ing at a crossroads caused Foster to reverse the normal lab layout in which a core of technology-intensive functions is surrounded by dry labs and offices at the exterior. Instead, Nelson's team hollowed out the center, devoting it to a shaded courtyard surmounting an auditorium. They carved gaps in the sides to draw in existing pedestrian paths. "It was sited so you would go through, not around," explains Chu.

A lab layout game board

In the meantime, MBT worked closely to identify the needs of research teams. "We knew what the disciplines would be, but we did not know who would go into the building when we were designing," says Tully Shelley, AIA, MBT principal in charge. The MBT team did know they were dealing with diverse research cultures, with needs ranging from traditional wet-bench sinks and fume hoods to accommodations for specialized equipment—some of it in open labs and some in special rooms requiring close control of access, temperature, light, noise, contamination, and vibration. MBT looked for common ground among the disciplines as they tabulated equipment and linear feet of benches.

The architects invited researchers to a series of workshops, for which they had prepared little cardboard models of furniture and equipment. They urged scientists to arrange them to suit the work they intended to do, on boards printed with a schematic floor plan. The scientists began to realize that a bench needn't be in one part of a building, separated from a desk or from a specialized piece of equipment. "They discovered the immediacy of performing one operation, writing it up right there, then going on to the next piece of equipment," says Nelson. "That was the breakthrough."

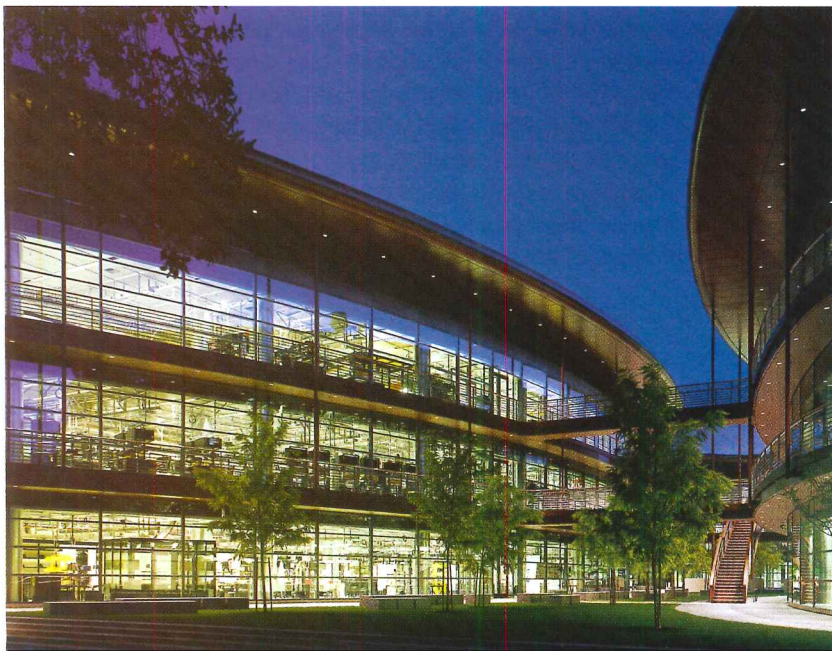
Out of these exercises emerged a new lab-layout concept. The architects placed enclosed spaces that would require specialized light and environmental conditions (many of which could be shared by teams from different disciplines) against one exterior wall. As the plan developed, the enclosed labs were accessed with corridors opening to daylight, interlaced with cores containing shafts, exit stairs, and bathrooms. The rest of the floor would be open, like a loft, permitting research teams to arrange their areas freely and change them easily. The open floor would also make each team's work visible. Everyone hopes that scientific investigators will frequently ask each other "how did you do that?" In this way, Chu explains, "you trade technologies and dreams."

The building section echoes the loft notion. Building utilities run through gaps in the massive steel sections of the 4-foot-deep floors above a fixed acoustic ceiling (page 98). Water, medical gasses, power, and

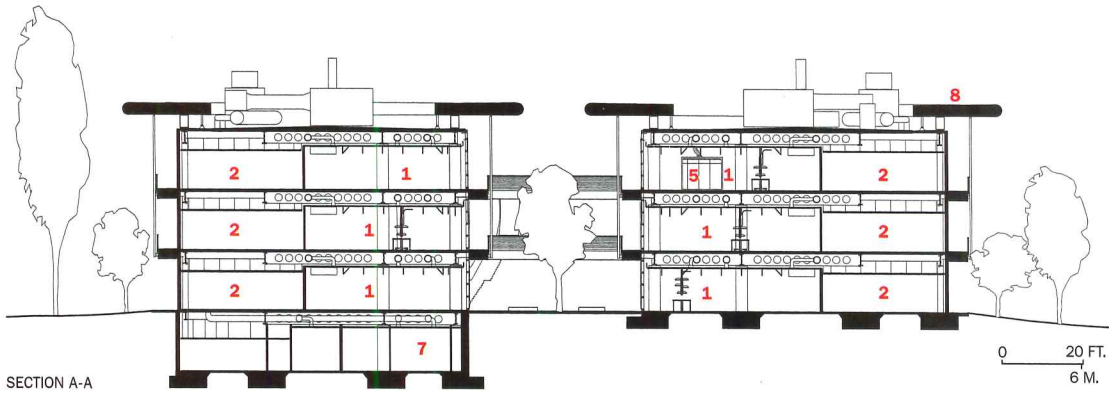


PHOTOGRAPHY: © NIGEL YOUNG (LEFT); ROBERT CANFIELD (RIGHT SPREAD)

The extensive glass (protected by a horizontal roof projection) brings light deep into the loftlike labs. The glazing also intentionally exposes work to passersby. Neatness does not count.



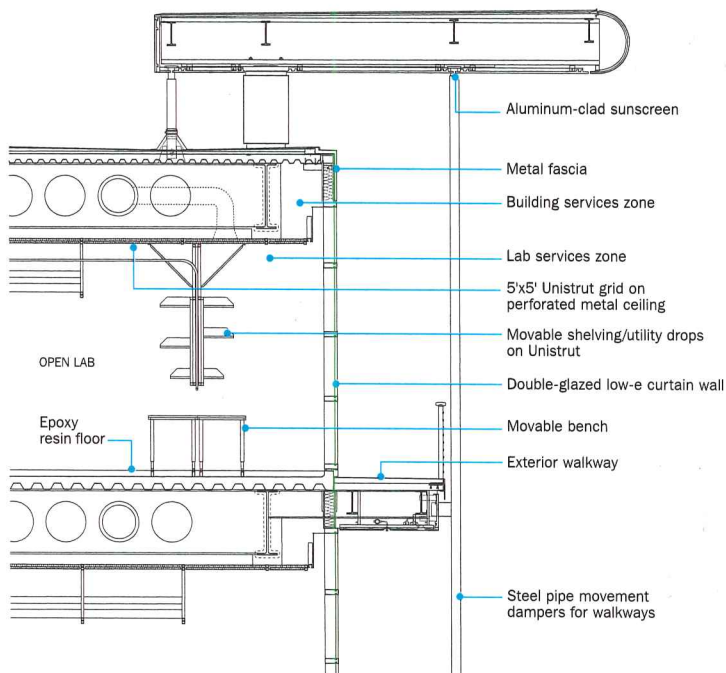




1. Open lab
2. Enclosed lab
3. Computer science
4. Meeting
5. Demountable office
6. View/exit corridor
7. Laser lab



Standard benches, tables, and other fixtures have been customized so that they can be mixed to suit the task at hand.



SECTION AT LAB



Daylight filters through the ceiling-mounted Unistrut grid that supports readily changed utility drops.

telecommunications intended for use by investigators run under the fixed ceiling along with a Unistrut grid that supports utility drops.

“The rawness of all this is part of how it ‘says’ it can be changed,” comments Nelson. The benches, tables, shelves, and other components are based on standard fixtures but have been customized to be easily moved. Casters were added to ease change, but special restraints were included because of the area’s high seismic risk. Demountable offices with translucent glazing give privacy to principal investigators.

When you stop for coffee, you don’t switch off”

There is little about the building that does not in some way serve the informal-collaboration agenda. It was cheaper to use open exterior balconies, stairs, and bridges for circulation, but they are also more appealing places to stop and chat. To emulate the eateries that had inspired so many collaborations elsewhere, an attractive food-service area was built into the ground floor. It includes refectory-style seating to invite conversations. “Just sitting next to someone who doesn’t do what you do forces you to describe what’s on your mind,” observes Chu. “And you learn about what they want to do.” A coffee shop has opened on the third floor. “When you stop for a coffee, you don’t actually switch off,” explains Nelson. “What you were doing is still in your head even if you are talking to someone else just a social way.”

It was clear on a recent visit that the research teams have taken heart the idea of arranging their own space. The tidiness visible in the early photographs accompanying this article has already vanished. Webs of pipes, cables, and Unistrut already hang in nearly impenetrable thicknesses from the ceiling above bubbling flasks and humming equipment.

Yellow-painted benches contrast with the prevailing black ones to denote teams housed in the center short-term. Some teams align their benches for easy access to enclosed labs; others place them at 90 degrees to keep a daylight vista open or for easy observation of a fume hood. While some people seem to enjoy the daylight pouring in through the floor-to-ceiling glass, others obscure the windows to avoid the distractions of passersby.

The Clark Center culture doesn’t work for everyone. Indeed, some desirable teams preferred to stick with their departments. Bio-X does not supplant the departments, it “stretches them,” according to Neuman, because the careers of investigators and postgraduate researchers are still defined by their disciplines even though they spend much of their time working outside them. “We’re concerned for junior faculty, because they need ties to their field’s senior people,” says Chu.

“This was a great opportunity to explore the idea of how people sensibly relate to each other,” says Nelson. “Great places usually evolve over a long period. The challenge today is to make a great place that works instantly. It’s tremendously difficult.” The scramble to build versions of Bio-X elsewhere, however, suggests just how high the rewards may be. ■

Sources

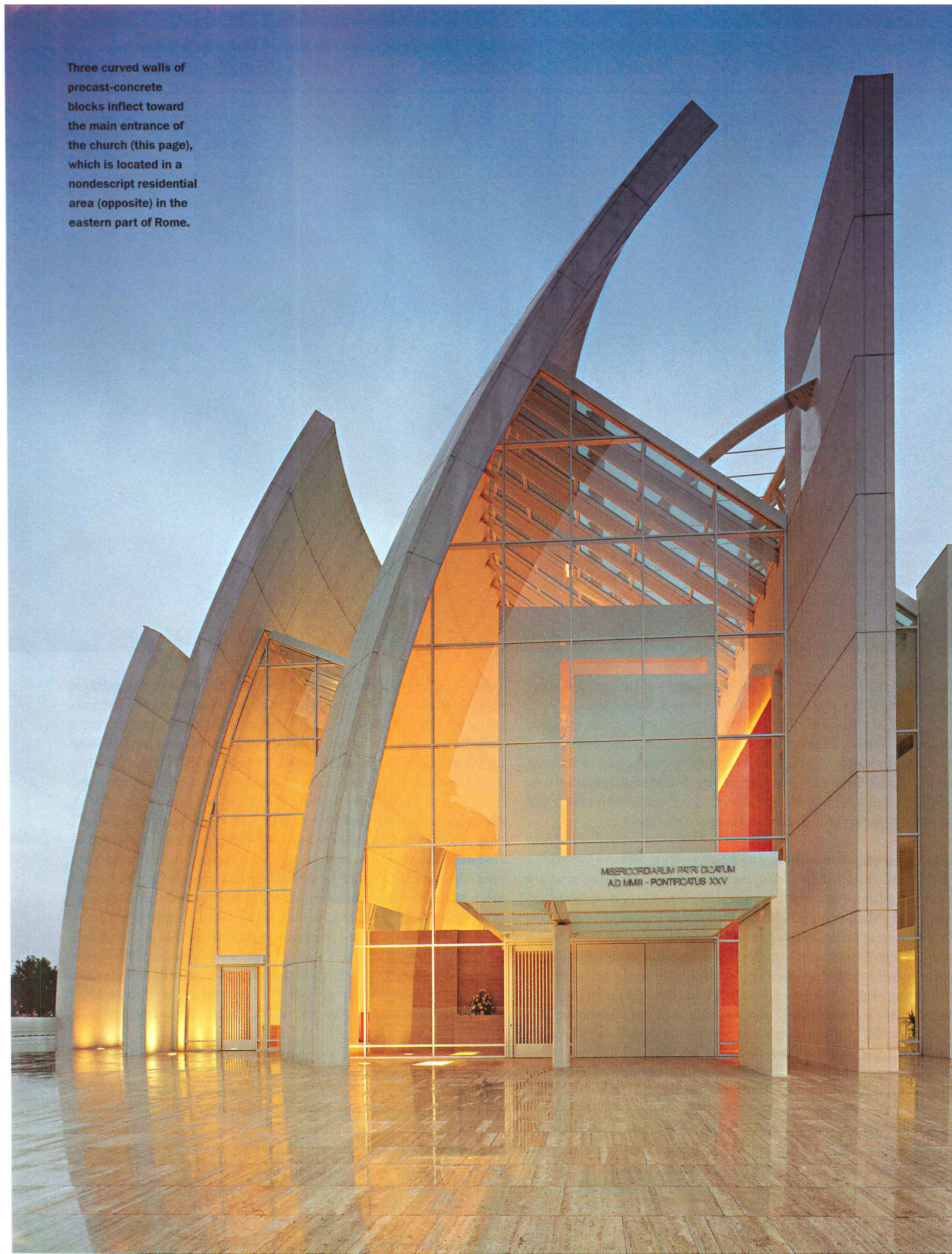
Curtain wall and metal cladding: Polhl USA
Glazing: Viracon (exterior); Firelite (rated interior)
Stone cladding: Rocamat France
Seismic joints: C/S Group
Ceiling panels: Armstrong (lab

support, acoustical); Unistrut (open lab perforated metal)

Lab casework/furnishings: Fisher Hamilton/ISEC; Werndl; Steelcase

For more information on this project, go to Projects at www.architecturalrecord.com.

Three curved walls of precast-concrete blocks inflect toward the main entrance of the church (this page), which is located in a nondescript residential area (opposite) in the eastern part of Rome.



Richard Meier achieves a Baroque sense of space and light with concrete construction in the **JUBILEE CHURCH** in Rome, Italy

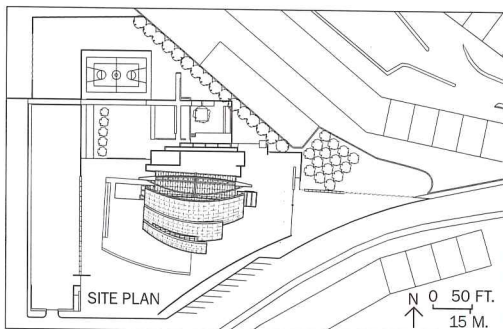
by Peter Popham

There is nothing new in the Roman Catholic Church in Italy commissioning a radically Modern design for a new church: The country is littered with such efforts, which, though architecturally modest, are evidence of postwar Catholicism's determination to stake a place in the contemporary world. Critics of the church designed by Richard Meier, FAIA, which opened last October in a suburb of Rome, have complained that it lacks many traditional attributes of a church—a pulpit, for example, or an altar rail, or any spatial distinction between nave and sanctuary. You might even say it makes little reference to traditional cruciform or basilica models. Yet in this abandonment of many hundreds of years of architectural prototypes, Meier is treading in the footsteps of lesser-known postwar Italian architects.

The novelty in this case—and the source of the project's triumph—is that the church intentionally commissioned a Modern design from a Modern master. When the list of architects invited to compete to create a church for the soulless outer Roman suburb of

Tre Teste was announced, the ambition was clear: Besides Meier, such top Modern architects as Tadao Ando, Gunter Behnisch, Santiago Calatrava, Peter Eisenman, and Frank Gehry were being considered. That ambition was in evidence again when Meier's design was selected and the architect was instructed to carry it through exactly as presented in the competition proposal. As Meier remarked, "An architect cannot ask for more support than that." Five years in construction, the new Dio Padre in Misericordioso (also called Dives in Misericordia) Church was inaugurated in October 2003. For the wait, the Diocese of Rome has got itself a stunning work, with a form of heroic simplicity that succeeds in harmonizing a number of disparate attributes and requirements.

Peter Popham is author of *Tokyo: The City at the End of the World (1985)* and is the Rome correspondent for *The Independent of London*.



separate the church from the side chapel. The soaring lines of the three walls powerfully suggest the verticality of a Gothic cathedral; the staggered, square openings in the two internal walls also evoke the traditional hierarchy of the walls of a Gothic nave. The Catholic Church sees in the three walls a symbol of the Holy Trinity, though Meier denies that was his specific intention.

Project: Jubilee Church (Dio Padre Misericordioso, or Dives in Misericordia), Rome, Italy
Architect: Richard Meier & Partners—Richard Meier, FAIA, principal; John Eisler, Alfonso D'Onofrio, Matteo Pericoli, design team; Nigel Ryan, representative in Rome

Engineers: Arup; Guy Nordenson and Associates (structural and m/e/p, design phase); Studio Tecnico Dottore Ingegnere Luigi Dell'Aquila (m/e/p, construction phase); Italcementi Gruppo (structural, construction phase)

Lighting: Fisher Marantz & Stone

With its three parallel curving walls constructed from 346 off-white blocks of posttensioned, precast concrete, which rise from 57 to 88 feet above the nave, the church is a dramatic and defining presence amid the suburb's large, nondescript apartment buildings. Yet its scale is so finely considered that it appears neither arrogantly grandiose nor sadly subservient to its surroundings.

Likewise, it is an awe-inspiring building to approach, yet the interior, flooded by top light from the enormous sloping skylights, is not dauntingly huge. At a mass on a recent Sunday morning, 80-odd worshippers made it feel like a true parish church, comfortably occupied. And thanks to those skylights, bathing the congregation uniformly in daylight, and given the ambivalent character of those high, almost toppling walls (exterior and interior at the same time), the effect is almost like worshipping out of doors.

The walls, the decisive element in the design, work in several different ways. Spatially they divide inside from outside with the simplest strokes, and with equal simplicity they

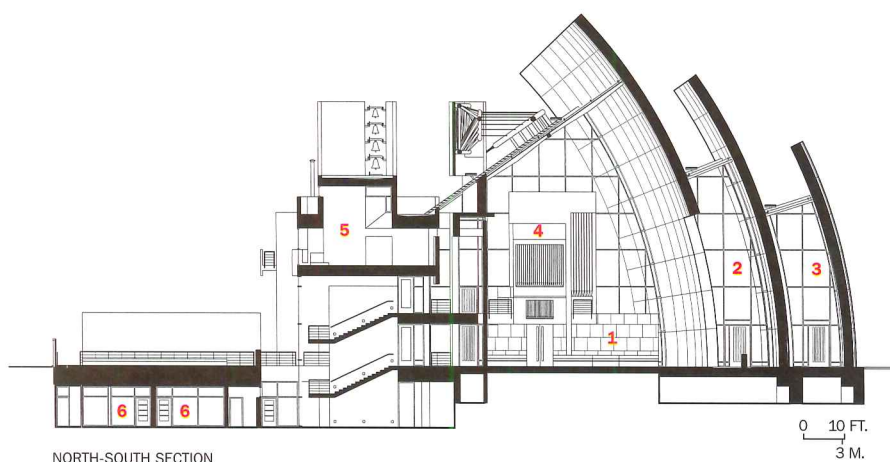
These walls have been described in the architectural press as “sails,” like those of Jorn Utzon’s Sydney Opera House. Meier says, “They’re very different from the Sydney Opera House in that these shells are cantilevered from the ground and are not part of a continuous structure. It’s a totally different idea in terms of the structural system and the way in which they enclose space.”

All three are perfect segments of circles with the same radius, so that worshippers find themselves at the core of a geometrical impossibility: three huge, virtual, intersecting spheres of the same size. Meanwhile, the secular community center on the north side is a rigidly rectilinear concrete frame structure. As Meier has described the project, “The circle is used to represent perfection, the dome of the heavens. The square represents the earth, the four elements and the rational intellect.” And inside the church, the sense of being embraced by the divine is no mere academic conceit. Once one has got over the feeling of being at the frozen moment of a cataclysmic earthquake—how did they get these incredible walls to stand up?—there is a palpable sense of being under the protection, under the great wings, of a very mighty force.

A few minor issues detract from what is in important respects a thunderously successful project. The large, travertine-clad piazza to the south of the church feels featureless and dead, bounded by a 6-foot-high fence that prevents the community having easy connection to the church precinct, especially since the building is only open for a few hours every day. The architect’s intention to fill a broad, shallow pool in this space with water, which would have yielded extraordinary reflections of the walls, has so far been ignored by the church authorities.

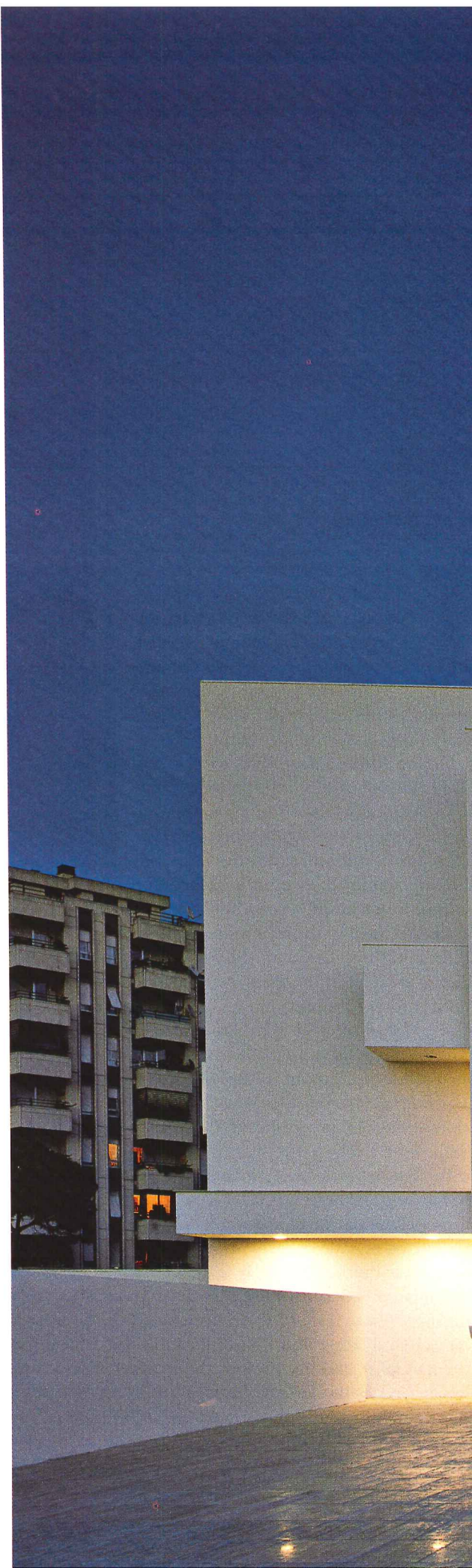
But the most glaring failing in the way the church functions is in the quality of sound. Great care, Meier says, was taken to give the church perfect acoustic properties, obviating the need for microphones and loudspeakers. But the parish went ahead and installed sound equipment anyway—perhaps as a gesture to modernity—with the result that in such an intimate space the voices of priests and readers sound as if they are coming out of a cheap radio. “We’ve had some problems since many things that we specified were changed, and substituted with gifts,” Meier commented. “And one of the gifts was the sound system.”

Meier is believed to be the first Jewish architect in history com-



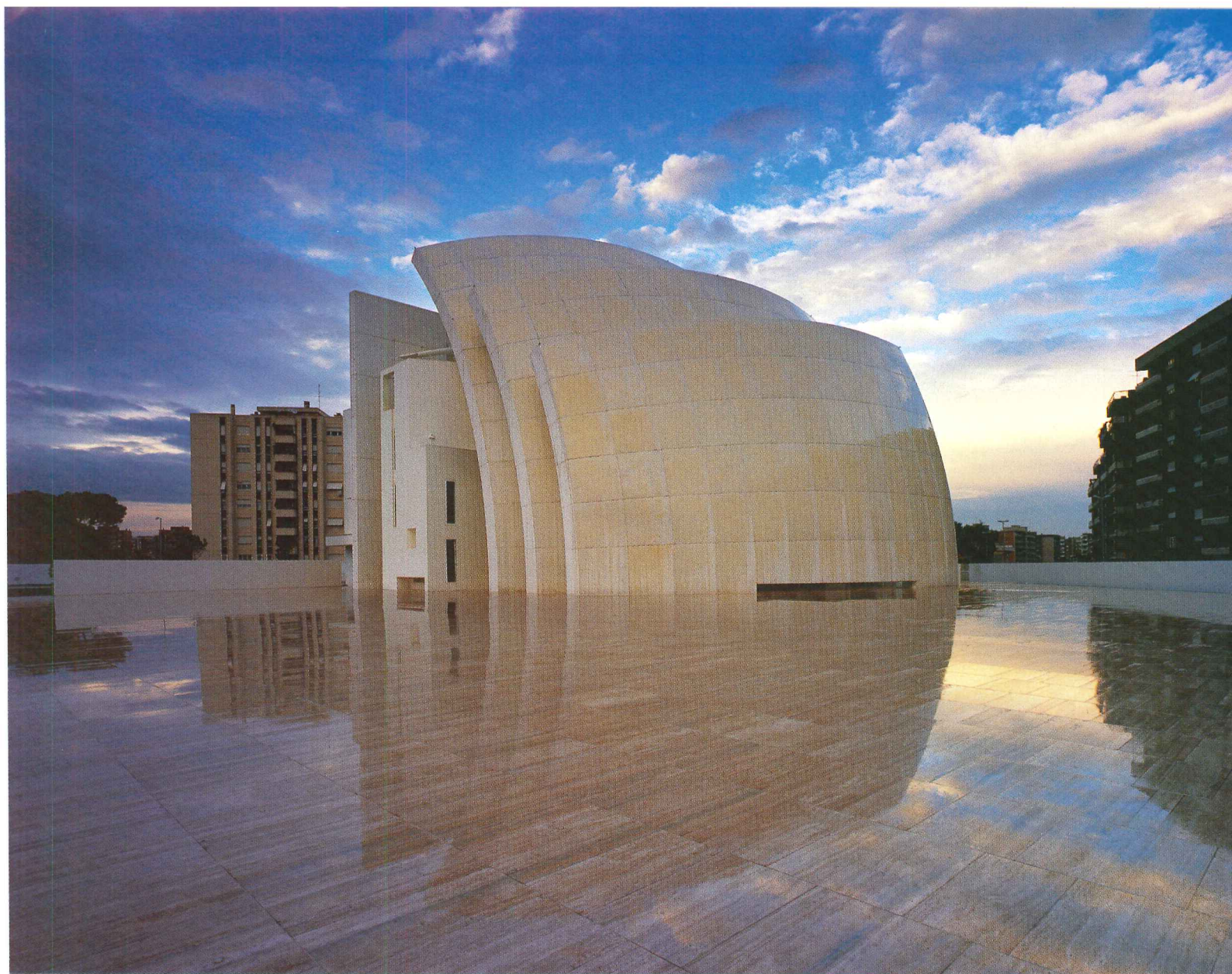
NORTH-SOUTH SECTION

1. Nave
2. Baptistry
3. Chapel
4. Organ loft
5. Priest's apartment
6. Meeting room

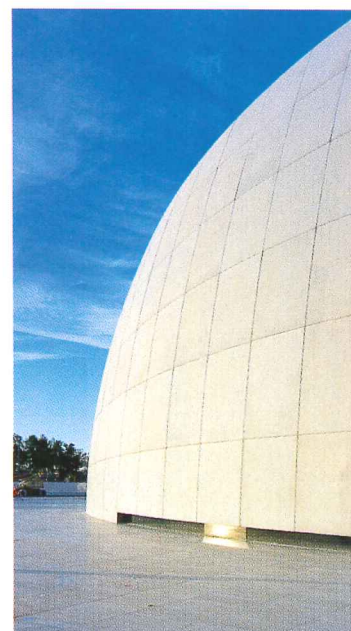
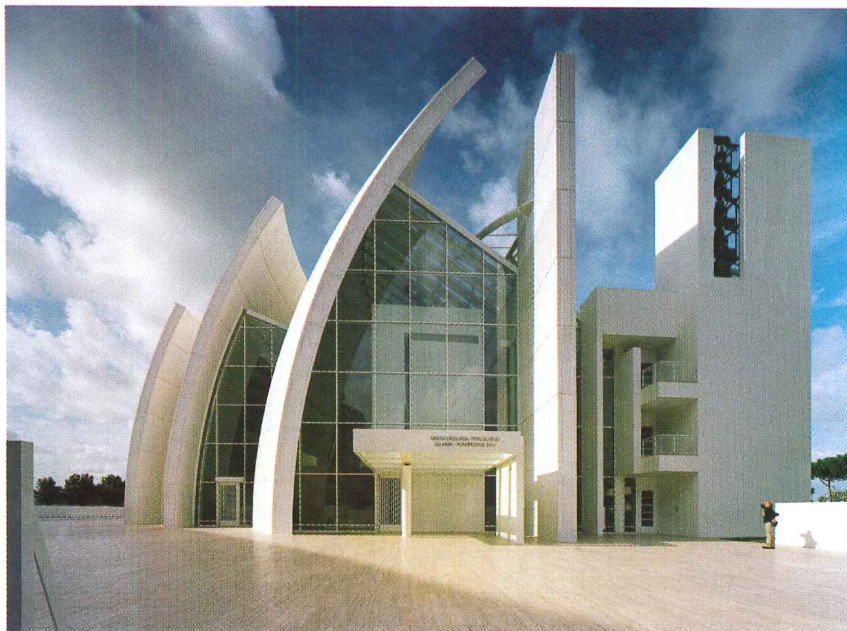


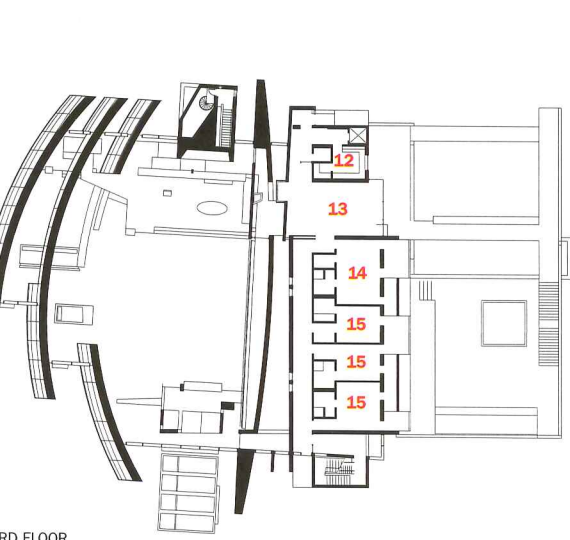
The sacristy on the west end of the church occupies a towerlike form between the curved segments and the community center. The concrete is made with a new white cement with photocatalytic particles that oxidize organic and inorganic pollutants, preventing degradation.





The 346 posttensioned, precast-concrete blocks, 30 inches thick, were made with a single stainless-steel form, adjustable on the ends only. The vertically cantilevered curved shells (above and right), with heights of 57 to 88 feet, were erected with a rolling gantry crane. This complex engineering resulted in a sanctuary of high spatial drama (opposite).





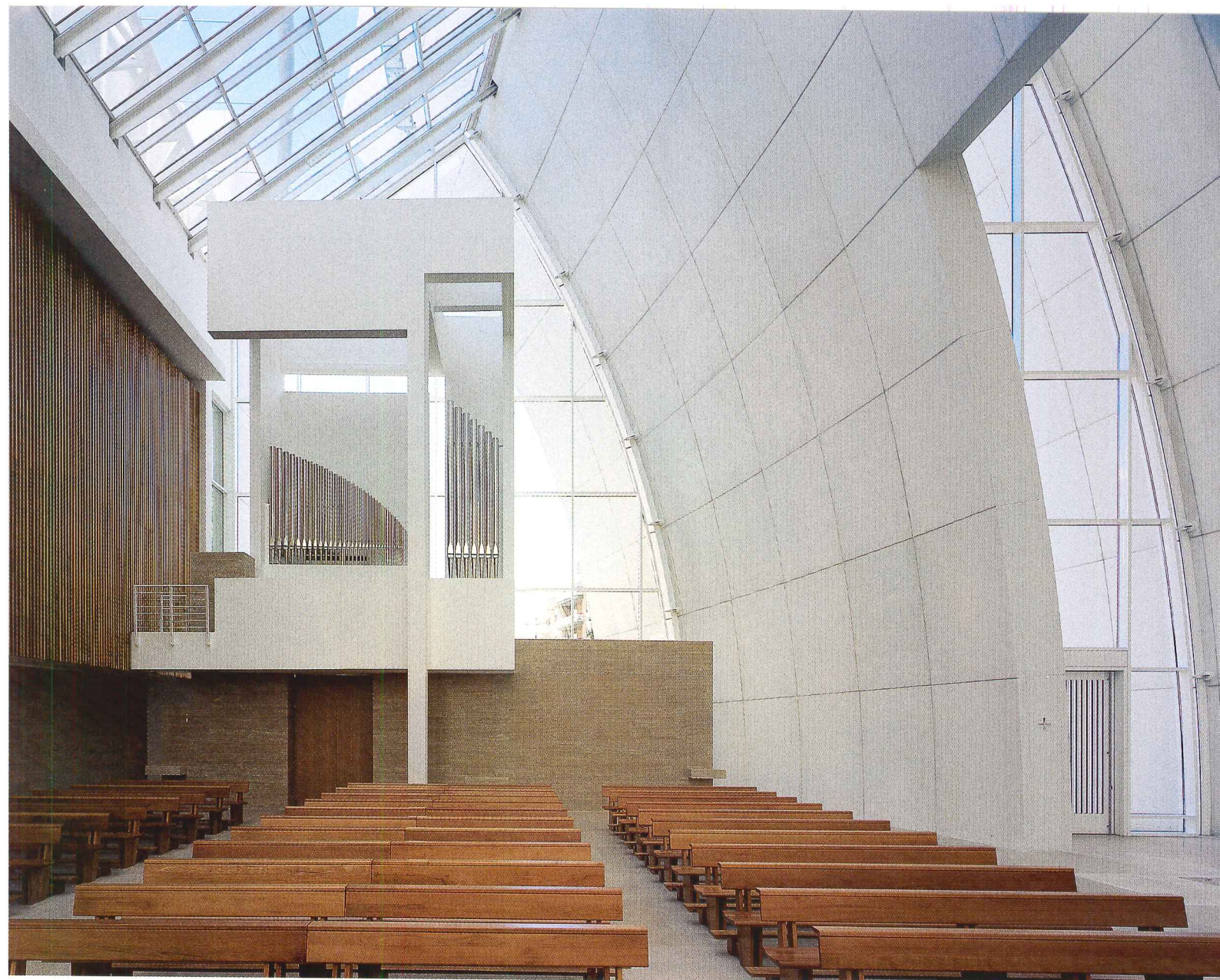
RD FLOOR



GROUND FLOOR

→ N 0 20 FT.
6 M.

1. Entrance
2. Nave
3. Altar
4. Sacristy
5. Baptistry
6. Chapel
7. Confessionals
8. Organ loft (above door)
9. Office
10. Catechism room
11. Garden
12. Priest's kitchen
13. Living/dining
14. Priest's bedroom
15. Bedroom



The natural light entering the skylights around the organ loft on the east (above) and at the entrance (right) bounces off Tivoli travertine marble floors and walls. The shells of precast concrete are made with an aggregate of Carrara marble.



missioned to design a Catholic church—and this in the pontificate of a pope who has worked hard for reconciliation between Christian and Jewish faiths. “I consider it a great honor to have been chosen,” Meier said. “It was an important responsibility in terms of the Church and its history with the Jewish people, as a kind of sign of reconciliation.”

Now work is under way on Meier’s second project in Rome, a museum close to the east bank of the Tiber containing the Ara Pacis (Altar of Peace), consecrated in 9 B.C. to mark Emperor Augustus’ military victories in the Gallic and Spanish campaigns. It is the first new building to be erected in the city’s heart in 70 years—and another first for Meier. ■

Sources

Stone (travertine): Carlo Mariotti & Figli

Curtain wall and skylight: Schüco International

Glass: Pilkington

Lighting: Erco

Stucco: MAPEI

Door hardware: Fusital for Valli and Valli

Church pews: Caloi Industria

For more information on this project, including construction details, go to Projects at

www.architecturalrecord.com.



For a parish of 8,000,
Meier designed the
9,000-square-foot
church with Borromini's
Sant'Ivo alla Sapienza
and San Carlo alle
Quattro Fontane in mind.

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ADAPTIVE REUSE

Keystones

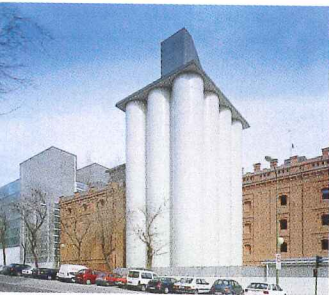
IN THREE FAR-FLUNG LOCALES, PLANNERS ENLISTED ARCHITECTS FOR CIVIC PROJECTS THAT BALANCED PRESERVATION, RENOVATION, AND NEW CONSTRUCTION—ALL WITH HAPPY RESULTS.

By Deborah Snoonian, P.E.

1.

Madrid

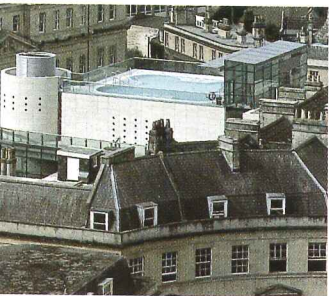
Mansilla + Tuñón Arquitectos anchors a growing cultural district with an archive and library where the public can browse historic documents.



2.

Bath, England

Grimshaw's sleek, orthogonal Bath Spa rises above the streetscape, allowing rooftop bathers spectacular vistas of this World Heritage locale.



3.

Minneapolis

The crumbling masonry of an old flour mill fronts Meyer, Scherer & Rockcastle's new Mill City Museum that chronicles the area's history.



Many adaptive-reuse projects cross our desks, and they represent such a polyglot of programs, scales, and aesthetic approaches that it can be challenging to find a common thread among them. For this month's building types study, however, a tale of three cities emerged. Each faced a familiar conundrum: how to resuscitate historic structures that had outlived their original function, yet were still viable—and desirable—places. What sets these projects apart is both design and civic import. Unlike, say, a neighborhood row-house-turned-restaurant, or even a warehouse-loft conversion, each was planned and paid for (at least in part) with public funds as a catalyst for renewal and growth. Programmatically, each one is linked to its location's heritage, and aesthetically, each seems poised to become a symbol of its host's identity.

First, take Madrid. In the southern part of the city, a 1912 brewery complex stood as an emblem of the area's industrial heritage, but the beer-making had ceased long ago, and surrounding areas had been converted largely to residential use. Planners recognized the complex as a possible springboard for the growth of a nascent cultural district and commissioned a public archive and library for Madrid's historic documents, which had never been accessible to residents. Mansilla + Tuñón's ambitious minicampus of more than 400,000 square feet, which occupies a full city block, is now paving the way for new investments in the area.

Then to Bath, England, where in the 1st century the Romans tapped into the mineral springs under the city to build its first public spa. Two millennia later, its Georgian bath houses in disrepair, Bath city officials and private investors chose Nicholas Grimshaw's firm to restore two of the older baths and build a new one. Though not a large building, the striking cube-and-tube monolith of the new spa carries enormous symbolic significance for a city renewing its reputation as a spa resort.

Back home in Minneapolis, the erstwhile seat of the nation's flour-milling industry, a fire that destroyed the Washburn A Mill in 1991 catalyzed a waterfront redevelopment effort already afoot. The site of the old mill is now the Mill City Museum, by Meyer, Scherer & Rockcastle, whose completion marks a milestone in the redevelopment, which includes loft residences by Minneapolis architect Julie Snow and Jean Nouvel's Guthrie Theater.

These three firms found different ways to blend existing structures with new buildings; each solution works for its own reasons. As notable examples of adaptive reuse, and as civic destinations, we believe these projects will live as long in the imagination as in the service of their communities. ■

For more information on these projects, go to Projects at www.architecturalrecord.com.

Regional Archive and Library Madrid

1

**MANSILLA + TUÑÓN ARQUITECTOS WRAPS NEW STRUCTURES AROUND OLD TO
CREATE A CITY BLOCK WITH AN ENLIGHTENED CIVIC PURPOSE.**

By David Cohn

Architect: *Mansilla + Tuñón Arquitectos—Luis Mansilla, Emilio Tuñón, principals in charge; Ainoa Prats, construction administration; Oscar Fernández-Aguayo, furniture and equipment manager; Matilde Peralta, Jaime Gimeno, Andrés Regueiro, Fernando García-Pino, María Linares, David Nadal, Robert Reiniger, project team*
Client: *Madrid Regional Government*
Engineers: *J.G. Asociados; Alfonso Gómez Gaite*
Consultants: *O.C.L. (structural); Patrick Artiga (structural system)*
Contractor: *Dragados Obras y Proyectos*

Size: 430,500 square feet

Cost: \$75.3 million

Completion date: April 2002

Sources

Brick facade restoration: *Artemón*

White concrete: *Hormigones Jarama*

Skylights, U-glass: *Alferglas*

Glazing: *Vitral*

Zinc roofing: *Cubranor*

Brise-soleils: *Entorno*

Windows: *La Navarra (wood); Gravent (glass)*

Doors: *Dacin (entrance); La Navarra (wood, sliding); Tecsesa (metal, fire control)*

Ceilings and partitions: *La Navarra*

Task lighting: *Louis Poulsen*

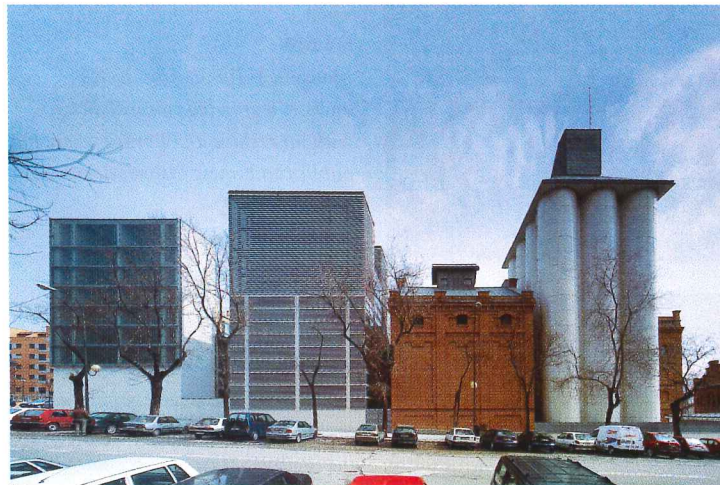
For more information on this project, go to Projects at www.architecturalrecord.com.

The abundance of historic architecture in Spain, including monasteries, churches, palaces, fortifications, barracks, and hospitals, and the need to adapt these works for new uses, has promoted an approach to preservation in which contemporary elements or additions are grafted onto to historic structures with great freedom. Well-known examples include Enric Sòria and Jordi Garcés's adaptation of a string of Gothic palaces for Barcelona's Picasso Museum, or Rafael Moneo's restructuring of a Neoclassical palace for the Thyssen-Bornemisza Museum in Madrid. For Spain's more recent industrial heritage, the case for a hearty mix of old and new is even stronger, as can be seen in Luis Mansilla and Emilio Tuñón's conversion of the former Águila Brewery into the Regional Archive and Library of Madrid.

Program

The Águila Brewery occupies a full block in Arganzuela, a former industrial district in the south of Madrid largely converted to residential use. The compound's existing structures ranged from the original buildings of 1914, finished in a high-relief ornamental brick, to additions dating from the 1960s and '70s. Mansilla and Tuñón won a competition in 1994 to convert the factory into an ambitious macrocultural center for

David Cohn is a RECORD contributing editor based in Spain.



Madrid's regional government; the program was later scaled back to house the region's main library and repository for its official documents.

Solution

Mansilla and Tuñón located the public reading rooms of the two institutions in the two major structures dating from 1914, located in the center of the block, and arranged book stacks, the archives, and other services in new and existing structures around them, ringing the block's perimeter. They thus maintained the factory compound's original spatial organization, with its cobbled interior alleys and entry court. Buildings dating from the 1960s on the northern and eastern perimeters were demolished to make way for new structures adequate to the technical requirements of the

archival handling areas, while a string of old and new ancillary structures serves as the new library, including former grain silos converted into book stacks, and a new office volume.

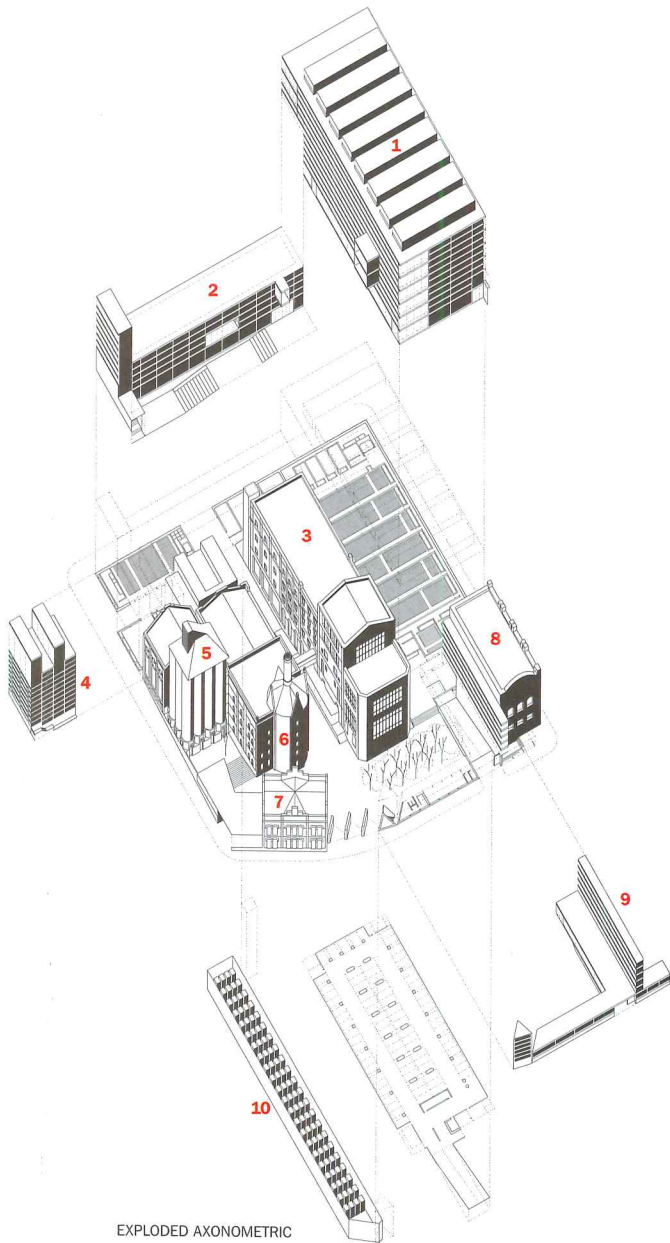
Throughout the project, the architects work with a palette of materials that maintains and updates the rugged aesthetic of the original compound. The new buildings are enclosed in a thick double-glass wall, with conventional wood-framed windows on the inside and an unsealed exterior sheathing of floor-to-floor panels of translucent glass. These U-glass panels transmit a diffuse, frosted luminosity similar to that of plastic fluorescent light diffusers, an effect enhanced by the structure's night lighting. Exposed concrete floor slabs and custom cast-aluminum ventilation grilles, as well as interior floors,

leek new walkways
nd ramps were added
n the cobbled alleyway
etween the existing
rick stalwarts. New
tructures of concrete,
eel, and glass rise
longside the former
rain silos, now used
or storage (opposite).



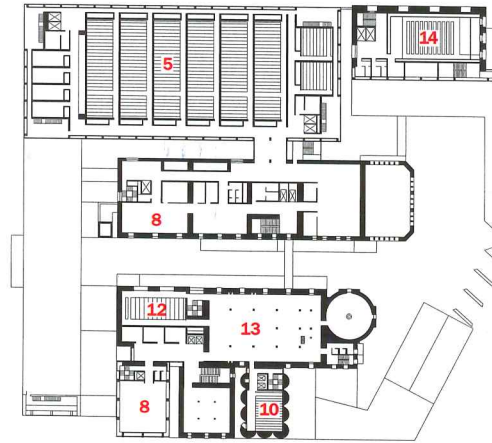
Biblioteca Regional
de Madrid Joaquín Leguina



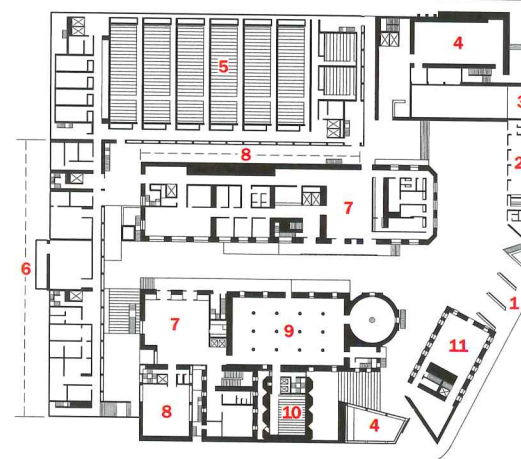


Plans

1. Main entry
2. Bar/café
3. Parking access
4. Exhibition hall
5. Document storage
6. Document restoration
7. Main hall
8. Offices
9. Library reading area
10. Book storage
11. Legal book repository
12. Electronic media storage
13. Electronic library/reading area
14. Auditorium



THIRD FLOOR

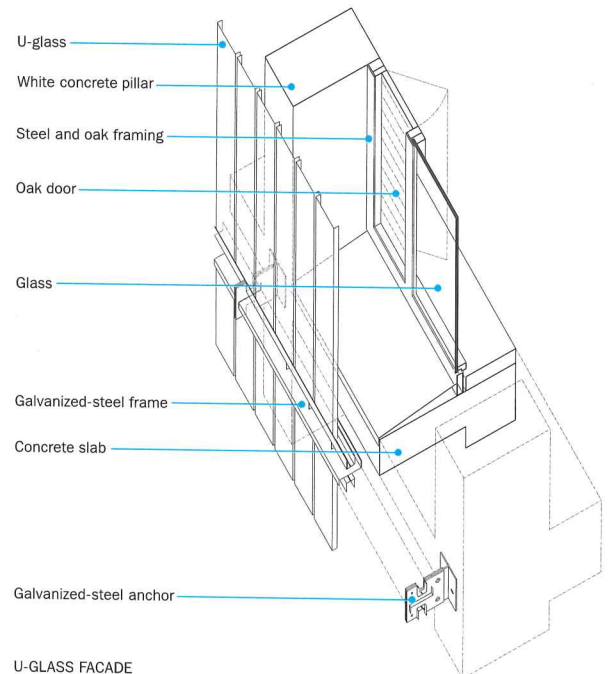
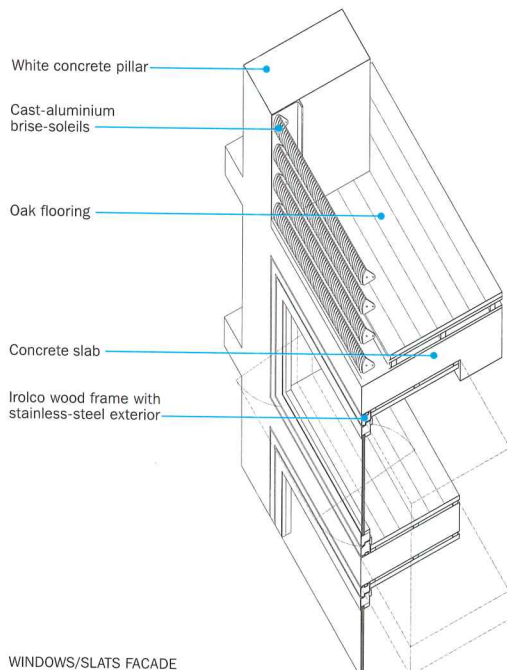


GROUND FLOOR



Axonometric

1. Archive repository
2. Workshop and admissions
3. Offices, reading rooms
4. Book processing
5. Book storage
6. Library reading rooms
7. Legal book repository
8. Exhibition hall
9. Circulation, exhibition space
10. Storage



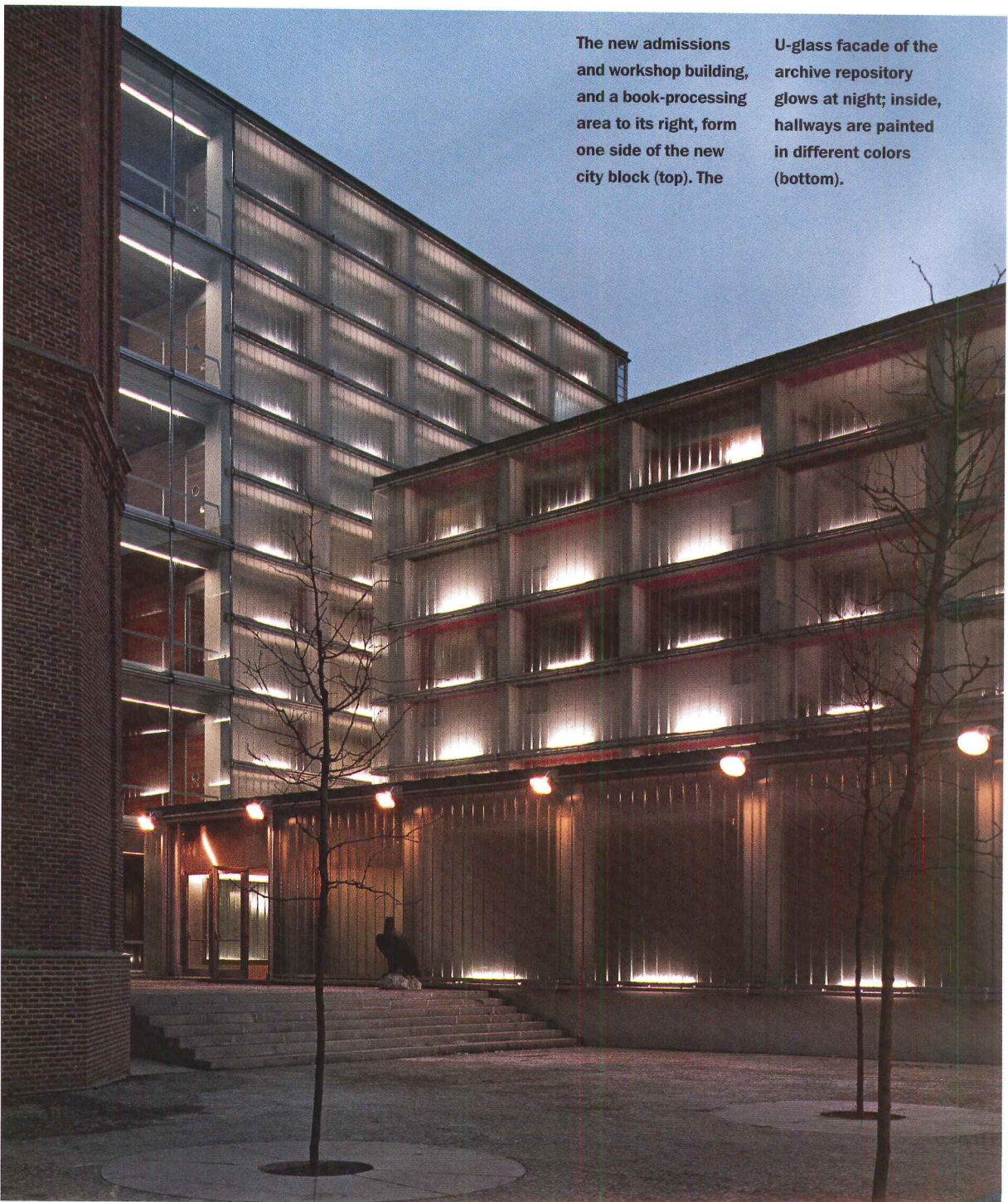
floor panels, and other surfaces of untreated oak from controlled-harvest forests, complete the palette.

The library reading rooms fill the brewery's old mash house, with its round brick oven and tall chimney. The soaring entry atrium at the opposite end of the structure occupies the high space where a "freezer" for drying barley was once located; its interior walls are also finished in U-glass panels, a clever inside-outside reversal that gives the atrium the feel of an outdoor plaza. The reading rooms are notable for the elegant fireproofing enclosures of their original cast-iron columns, whose undulating wood planes were inspired by Brancusi's sculpture *Endless Column*. The archive reading room occupies another former "freezer" area in the adjacent brewery, with exterior walls of open brick latticework that the architects enclosed in wood-framed glass.

Working with engineers from Arup, Mansilla and Tuñón developed energy-saving measures that were new in Spain at the time of the competition. Features include an underground "air lake" for tempering incoming air, gray-water recycling, highly insulated double-glazed walls, and a recycling program for demolition debris; the original 1914 buildings were restored with recycled brick from the site.

Commentary

In addition to its environmental responsibility and the sensuous honesty of its finishes, Mansilla and Tuñón's design carries out an important representative role, weaving together old and new structures to express the democratic values the center embodies. Mansilla explains, "The brick buildings transmit a sense of the stability and seriousness of the institution, while the new glass facades talk about its transparency. It's a place that guarantees the democratization of information. The official documents kept here are at the service of the people, something that is still a new idea in Spain." ■



The new admissions and workshop building, and a book-processing area to its right, form one side of the new city block (top). The U-glass facade of the archive repository glows at night; inside, hallways are painted in different colors (bottom).



The library's lobby (left) is a three-story volume ringed with the same U-glass used on the exterior of the buildings.



staircases and circulation for the archives are organized to provide views into the complex's courtyard (top). The old malt-house, its hoppers still present, is now a reading room for the library (near right). Robust wood columns, inspired by Brancusi's *Endless Column*, mark space in an archive research area (far right).



Bath Spa

Bath, England

2

GRIMSHAW GRACES THE GEORGIAN LANDSCAPE OF THIS WORLD-HERITAGE CITY WITH A WORLD-CLASS MODERN WORK OF LIMESTONE AND GLASS.

By Hugh Pearman

Architect: Grimshaw—Andrew Whalley, director in charge; Mark Middleton, associate director; David Pryce, project architect; Chris Butler, Simon Dickens, Graeme Dix, Florian Eames, Miriam Fitzpatrick, Nicholas Grimshaw, Neill McClements, Leonard Milford, Diane Murdoch, Benny O’Looney, Jerry Tate, project team

Conservation architect: Donald Insall Associates

Client: Bath & North East Somerset Council and Thermae Development

Engineers: Arup (structural, services); Thermelek Engineering Services (water treatment)

Consultants: Speirs & Major Associates (lighting); Arup (energy, facade); Dr. G. Kellaway (hydrogeology)

General contractor: Mowlems (Ernest Ireland)

Subcontractors: Skanska (services); MAG Hansen (glazing); Bath Stone Group (stone)

Size: 39,300 square feet

Cost: Withheld

Completion date: August 2003

Sources

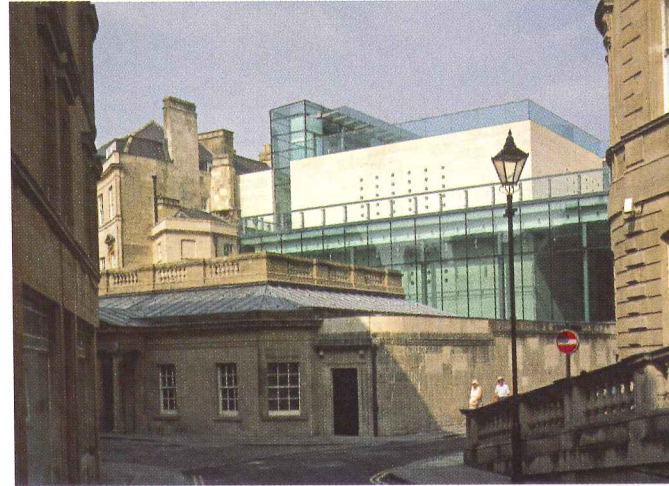
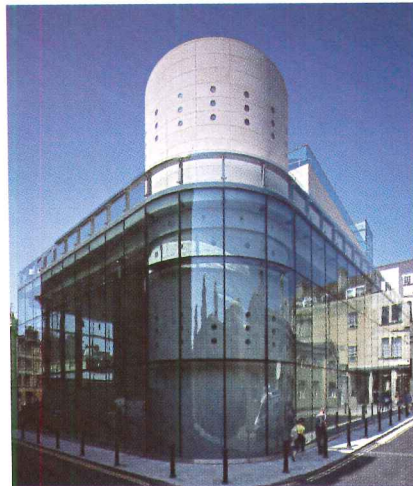
Glazed partitions: Prospec

Metalwork: McGrath Group

Interior stone: Bröls Natuursteen

For more information on this project, go to Projects at

www.architecturalrecord.com.



The city of Bath, 115 miles west of London, derives its identity from the hot mineral springs where ground-water bubbles to the surface at a temperature of 115 degrees Fahrenheit. The springs were long venerated by ancient Britons, and were discovered in turn by invading Romans in A.D. 43. The Romans were quick to exploit the potential of this riverside site surrounded by steep wooded hills, establishing the great public bath that is still to be found here. The city took on much of its present homogeneous form, however, over a short period in the 18th century when Bath became a fashionable spa resort, largely designed by architects John Wood

Hugh Pearman is architecture critic of The Sunday Times of London and author of Contemporary World Architecture (Phaidon Press).

the elder and younger. But the Georgian baths from that era had fallen into disuse by the end of the 20th century. By 1997, city leaders—ever cognizant of Bath’s status as a UNESCO World Heritage Site—were considering radical new approaches to revive the spas.

Program

Grimshaw won an invited competition to build a new spa building as part of a larger project involving the restoration of the adjacent 1775 Hot Bath by Wood the younger, and the exquisite 1790 Cross Bath by Thomas Baldwin, both at the city’s center. To exploit the hot mineral springs, the new site had to be very close to these existing buildings. Construction was made possible by the demolition of the 1927 Beau Street swimming pool, an unused building of little merit. The aim of

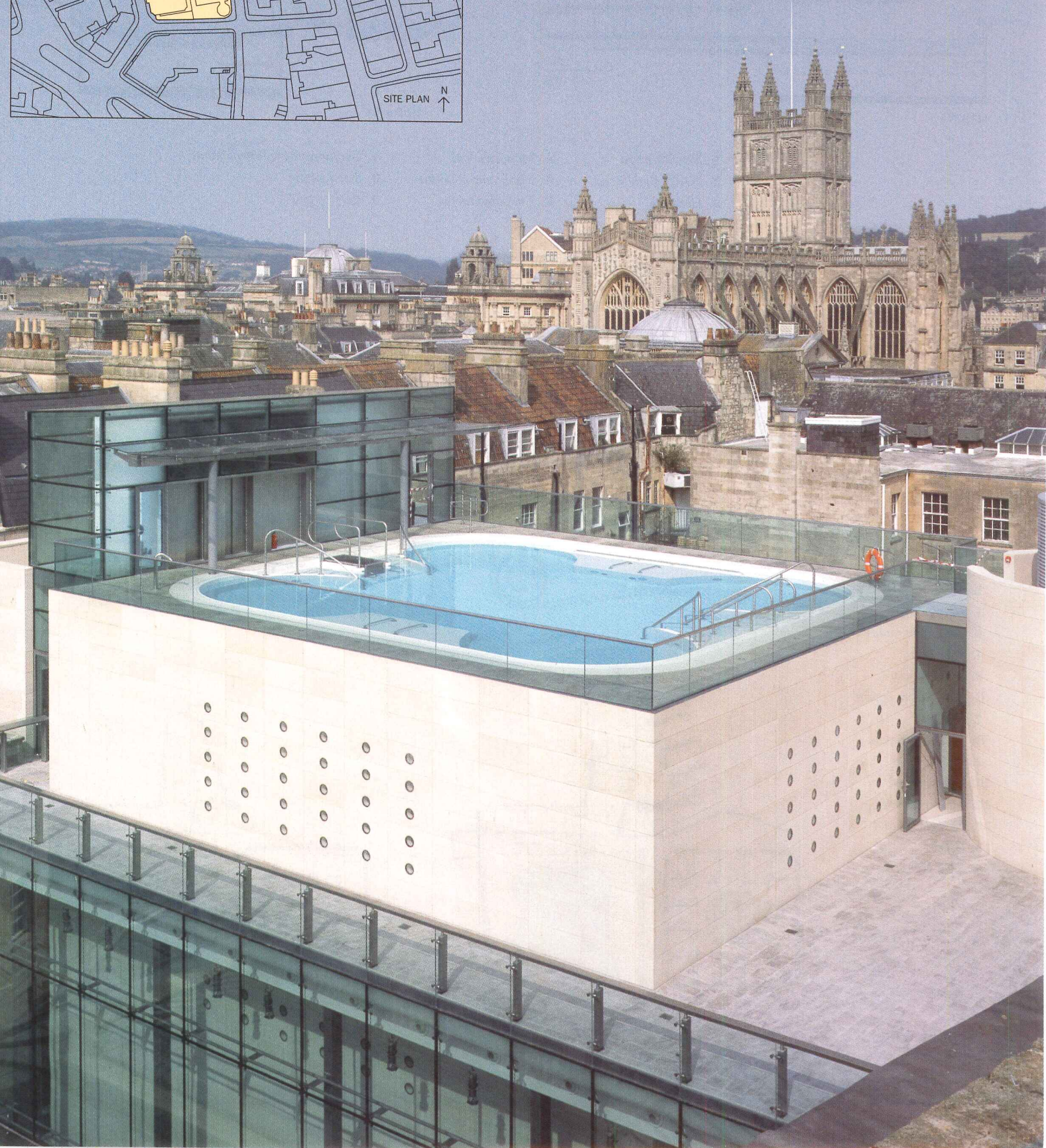
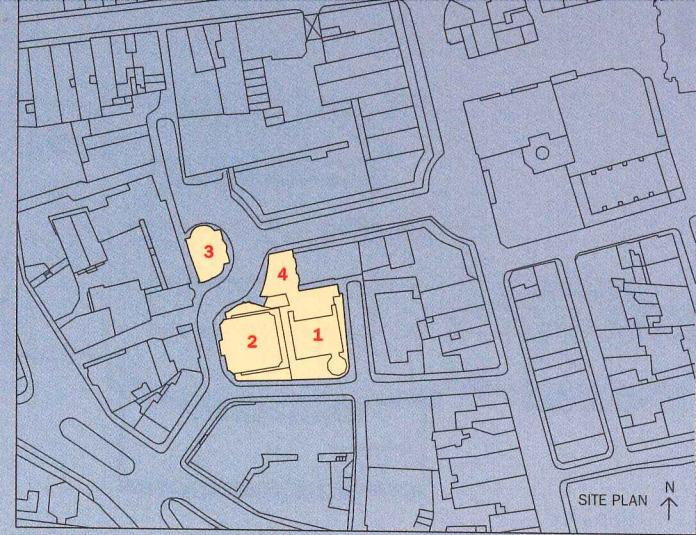
the project was nothing less than to reestablish Bath as a leading center for spa activities—sybaritic bathing, body conditioning, and aquatherapy—for the first time in more than 25 years. As a remarkably ambitious project of national importance, it was funded in part by the British government’s Millennium Commission.

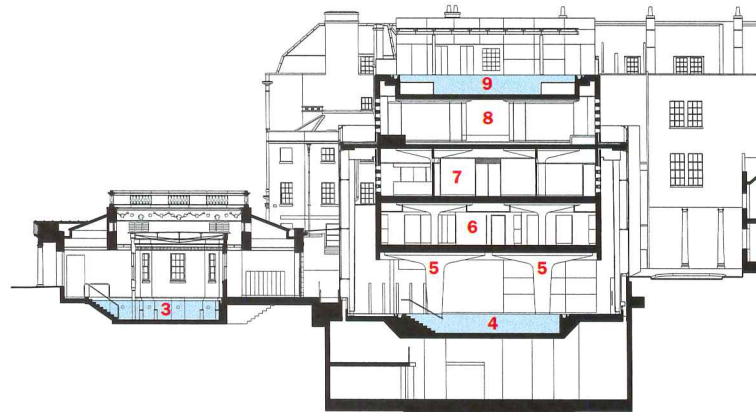
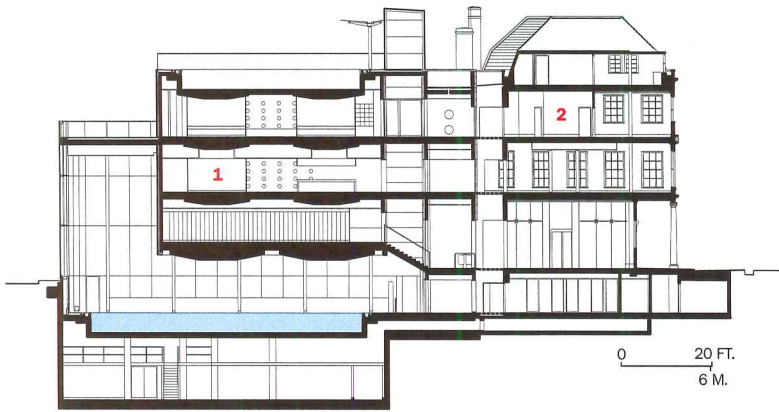
Solution

Sir Nicholas Grimshaw took Wood’s Hot Bath as his initial planning diagram for the new building. He worked with conservation architects Donald Insall Associates on the restoration and upgrading of the Georgian buildings, adding some classic Grimshaw touches, such as a new fully glazed roof to the Hot Bath, a cantilevered canopy to the Cross Bath, and a full glazed entrance to the entire complex, made in a corner of a Baldwin

1. Bath Spa
2. Hot Bath
3. Cross Bath
4. 7/7A/8 Bath Street

The Bath Spa, topped by an open-air pool, rises high above its neighbors (this page). The cylinder houses stairs and services; a glass skin wraps the building at its lowest levels (opposite, left and right).

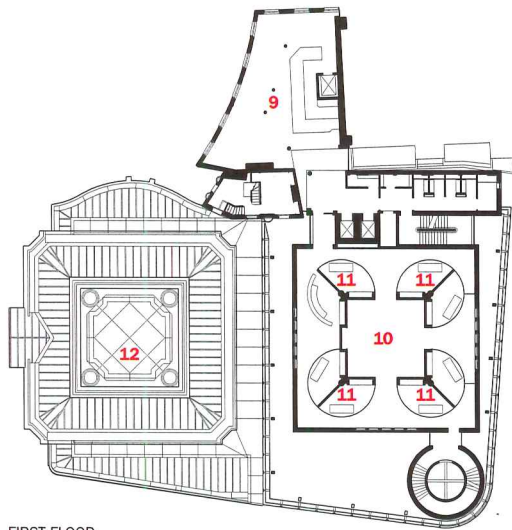




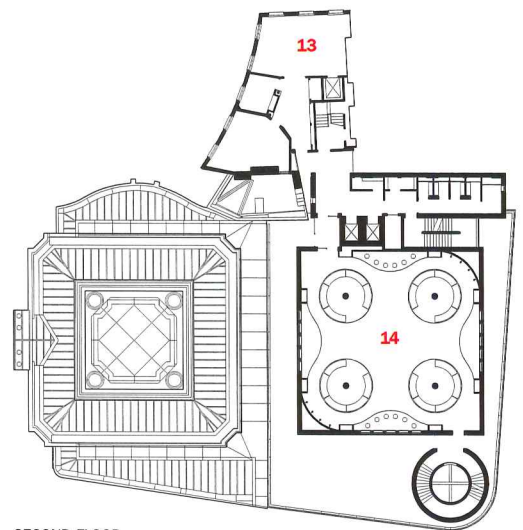
SECTION A-A

SECTION B-B

- | | | |
|-----------------------|---------------------|------------------------------|
| 1. New Bath Spa | 4. Main spa pool | 7. Gymnasium/treatment rooms |
| 2. 7/7A/8 Bath Street | 5. Mushroom columns | 8. Steam rooms |
| 3. Hot Bath | 6. Changing rooms | 9. Rooftop pool |

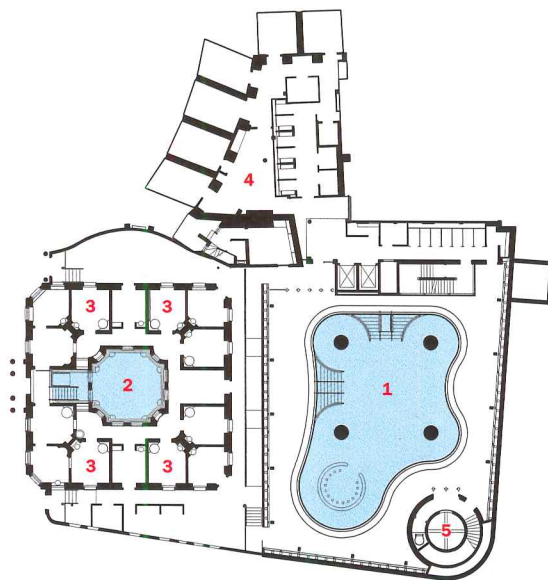


FIRST FLOOR

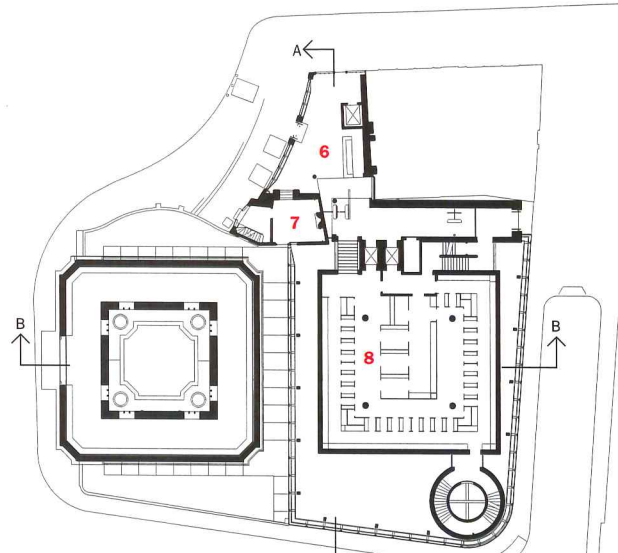


SECOND FLOOR

1. Main spa pool
2. Hot Bath
3. Treatment rooms
4. Staff area
5. Service tower
6. Entrance/reception
7. Gift shop
8. Changing rooms
9. Restaurant
10. Gymnasium
11. Massage rooms
12. New glazed roof
13. Offices
14. Steam rooms



LOWER GROUND FLOOR



UPPER GROUND FLOOR



colonnade on Bath Street. Interlinked old and new buildings are thus the essence of the new spa. But the new building does what the old could never do: It rises vertically, through five stories. It is conceived as a sandwich of water, with a large pool in its daylight semibasement, and a second one on the rooftop. The levels in between are filled with treatment areas such as steam, massage, and changing rooms.

The new building takes the form of a stone cube and freestanding pierced cylindrical drum, both enclosed at lower levels in a glass jacket. The stone is the famous golden Jurassic limestone from which Bath has always been built. The cube, identical in plan dimension with the Hot Bath next door, comprises the main space, with the cylinder its servant, containing stairs and service equipment. The taut glass skin resolves the geometric differences between the cube—aligned on axis with Wood's Hot Bath—and the narrow streets that form an irregular right angle against the site. The gap created by the plans is exploited to bring daylight into the semibasement's main pool.

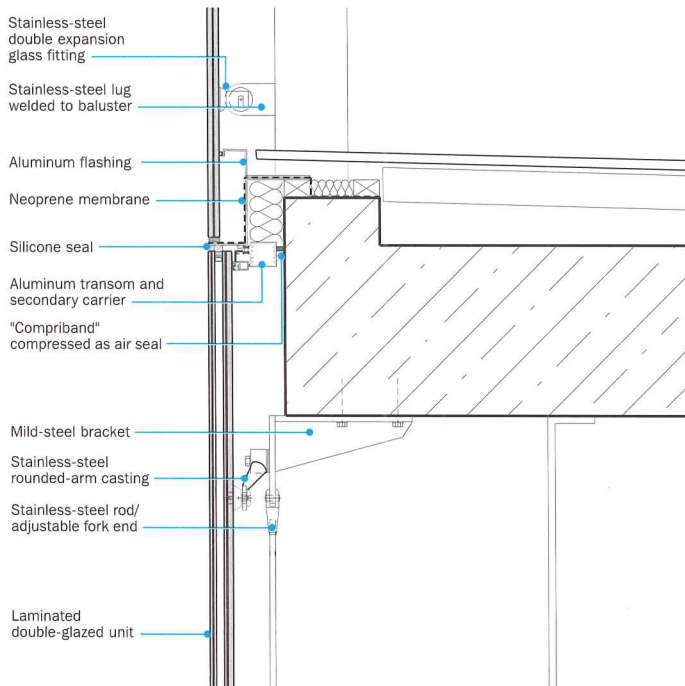
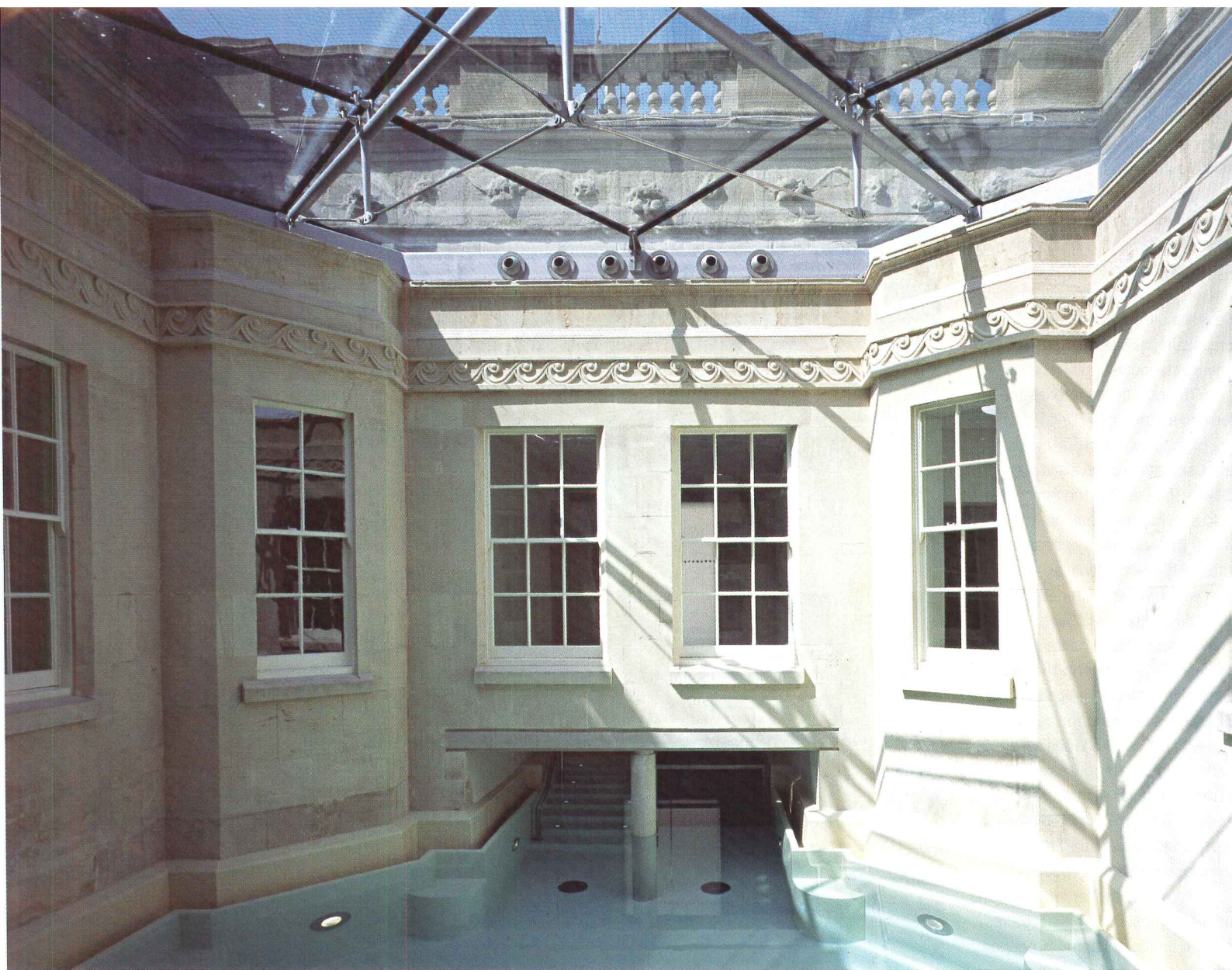
From that pool erupt one of the building's most distinctive features: four fat, flaring, mushroom-headed columns, repeated on each level. The diameters of their capitals generate a cloverleaf diagram that defines the zones on each floor, except on the changing-room level, where the client favored a conventional rectilinear layout that would accommodate more changing facilities. Reminiscent of Frank Lloyd Wright, these columns also have a muscular, Roman/Etruscan feel to them, an allusion perhaps to the history of the site. As with a Roman aqueduct, there is the sense of a great mass being borne aloft.

Atop the cube is Grimshaw's second piece of theater. The rooftop pool, ringed with only a delicate glass balustrade and a minimal enclosure to the elevators at one side, will become the enduring image of the new building. Grimshaw himself imagines lounging in its warm waters as snow falls around

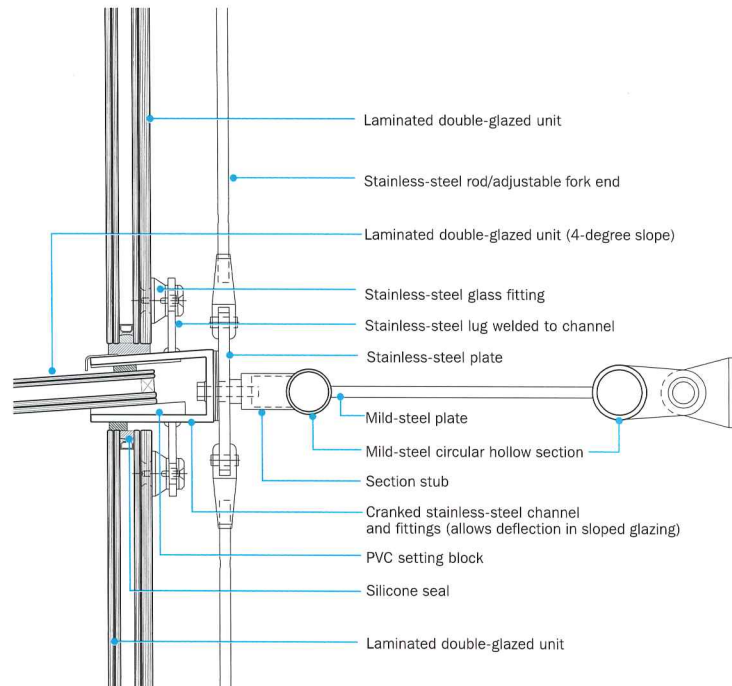


Columns with mushroom-shaped capitals sprout from the main spa pool in the basement. On the second floor, visitors can take a powder in the steam room (below).





CONNECTION OF GLAZING TO STRUCTURE OF NEW SPA

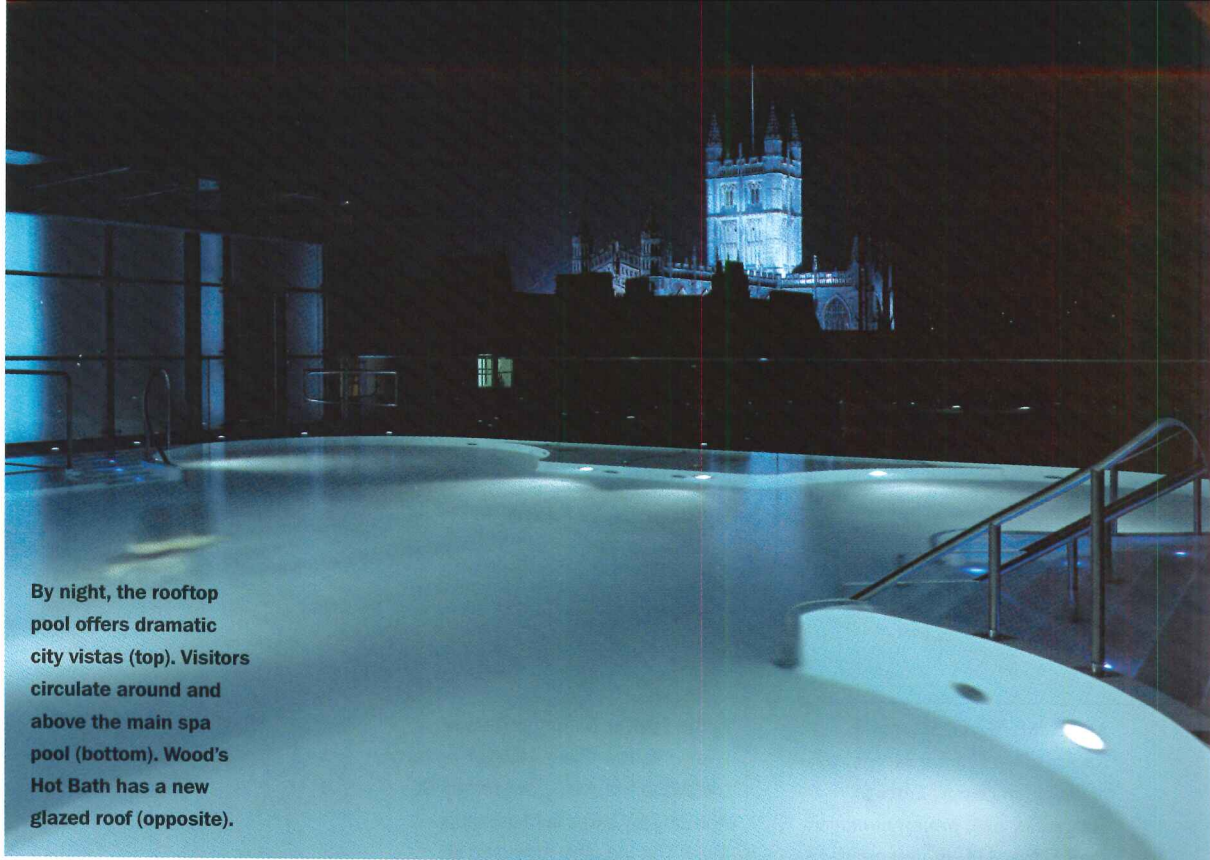


THREE-WAY GLASS JUNCTION (LINKING SKIN OF NEW SPA TO RESTORED HOT BATH)

im, gazing across the rooftops to
the surrounding hills.

Commentary

The actuality of that romantic
image has been delayed, as a
tedious contractual dispute over
the quality of the pools' coatings
has dragged on and postponed
the public opening to spring 2004.
More important to note is that
Grimshaw is palpably at ease
working in one of the world's most
sensitive historic contexts. He has
demonstrated that uncompromised
modern architecture can acknowl-
edge history and can exist fruitfully
alongside restored ancient build-
ings—and in doing so, both can
gain from each other. In realizing the
goals for the Bath Spa, Grimshaw
has done architecture a consider-
able service. This is clear-headed,
practical urbanism. ■



By night, the rooftop pool offers dramatic city vistas (top). Visitors circulate around and above the main spa pool (bottom). Wood's Hot Bath has a new glazed roof (opposite).



Mill City Museum Minneapolis

3

MEYER, SCHERER & ROCKCASTLE OVERHAULS A LANDMARKED SITE WITH A PROJECT THAT LOOKS TO A CITY'S FUTURE WHILE HONORING ITS HISTORY.

By Camille LeFevre

Architect: Meyer, Scherer & Rockcastle—Thomas Meyer, AIA, principal in charge; Patricia Fitzgerald, AIA, project manager; Paul Udrys, AIA, project architect (design); John Stark, AIA, project architect (construction administration); Leanne Larson (interior design); Carla Gallina (lighting design); Robert Adams, Steve Epley, Paul Yaggie, AIA, project team

Client: Minnesota Historical Society

Engineers: Bakke Kopp Ballou & McFarlin (structural, civil); Lundquist, Killeen, Potvin & Bender (mechanical, electrical)

Consultants: Damon Farber & Associates (landscape); Building Solutions (detailing)

Contractor: Sheehy Construction

Size: 100,000 square feet

Cost: \$20 million

Completion date: September 2003

Sources

Metal wall panels: Copper Sales

Roofing: Morin Corporation

Windows: Marvin (wood); Coast to Coast Manufacturing (steel); Efco (aluminum)

Glaazing and skylights: Pilkington

Doors: Curries

Cabinetwork and custom woodwork: Wilke Sanderson

For more information on this project, go to Projects at www.architecturalrecord.com.

In the 1880s, Minneapolis was known as the "Flour Milling Capital of the World," its mills powered by St. Anthony Falls in the Mississippi River. The industry attracted so many workers that the city's population grew by 350 percent in 10 years. At its zenith, 20 mills lined a river canal, including the Washburn A Mill. Designed by Austrian engineer William de la Barre and built in 1878 at the site of a former mill destroyed by an explosion, the A Mill was the largest, most technologically advanced facility of its time. At peak production, it ground enough flour for 12 million loaves of bread per day.

In 1928, the A Mill was rebuilt after another explosion. Following the decline of the milling industry after World War I, the A Mill closed in 1965. In 1971, the building was added to the National Register of Historic Places, and 12 years later it was designated a National Historic Landmark.

Program

In 1991, the A Mill was destroyed by fire again. As its shell smoldered, Nina Archabal, director of the Minnesota Historical Society (MHS) in St. Paul, convinced local authorities to move the fire hoses that were pushing against the stone walls, threatening their structural integrity. The ruin, she emphasized, had value as a historic site.

Camille LeFevre is the editor of Architecture Minnesota.



Weeks later, Meyer, Scherer & Rockcastle (MS&R) of Minneapolis, which had been consulting with the city and MHS on riverfront development, produced a model showing how the mill's north shell along the river could be preserved as a ruin and the rest of the building redeveloped. The firm got the job and began fortifying the ruin walls with a steel-stabilization structure designed to contrast with the existing remains through its red color and nonorthogonal geometry. Then renovation began.

Last September, the Washburn A Mill reopened, featuring the 80,000-square-foot Mill City Museum on the lower three levels and in the north ruin courtyard. The multipurpose building also houses 62,000 square feet of office space: MS&R's offices on the seventh and eighth floors, and The McKnight



Foundation (also designed by MS&R) on the fourth and fifth.

Solution

MS&R brought together the existing structure, milling artifacts, and new materials to create a building that, in itself, acts as a multilayered exhibition about the city's history. "The challenge was to draw out the meaning and purpose of the building and orchestrate that, not create it," says Tom Meyer, AIA, principal.

The ruin courtyard, with its

The old Washburn A Mill was partially destroyed by fire in 1991 (opposite, bottom), but its ruins remained intact and now front the Mill City Museum complex (opposite, top). Visitors to the observation deck can watch the Mississippi River slide by and view the city beyond.

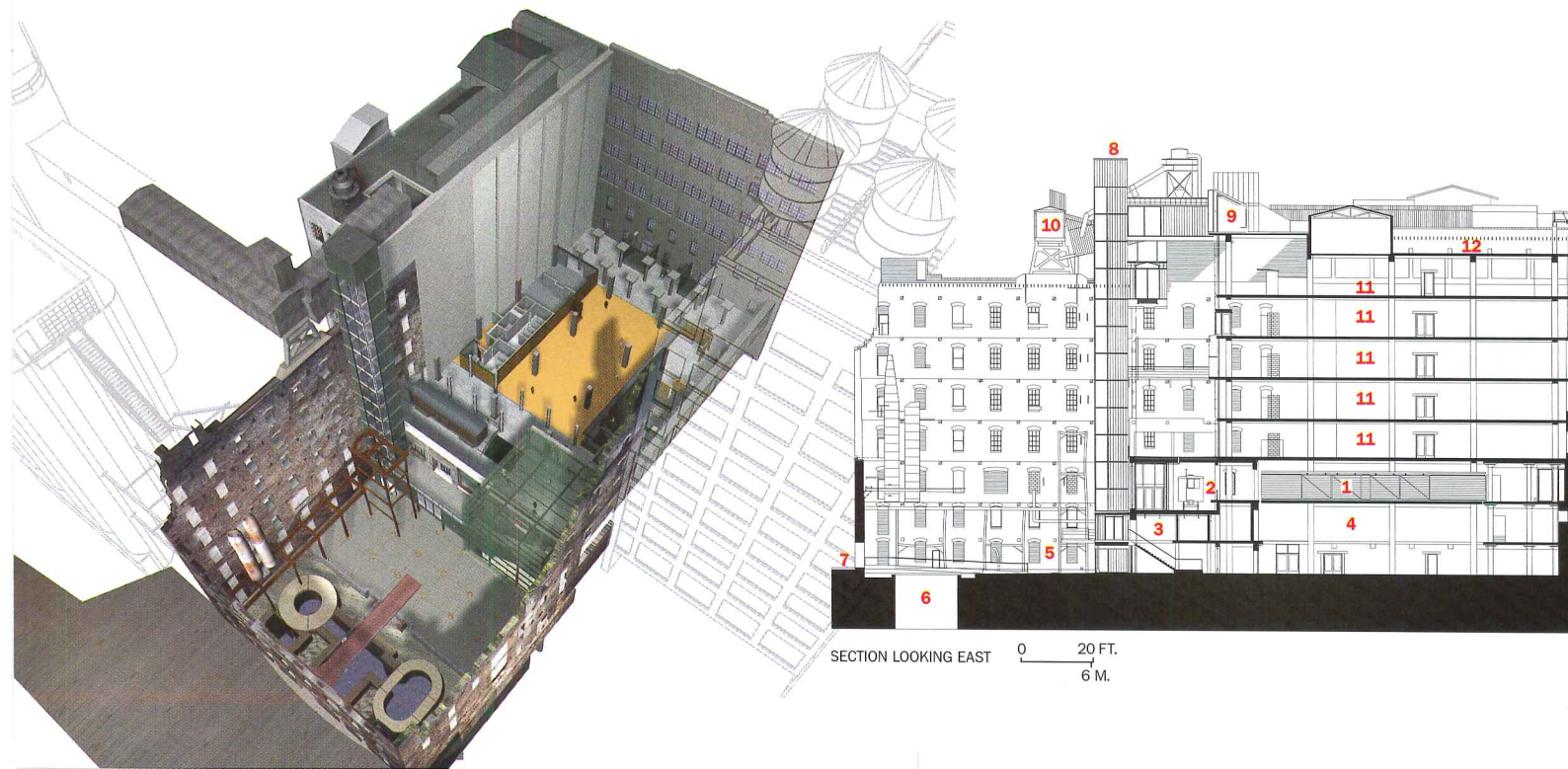




The ruin courtyard contains the remains of two turbine pits that once powered the mill (above). The staggered, glazed facade of the

infill structure is partially braced with a steel exoskeleton, and its lower portions are etched with machinery graphics (opposite).

- | | |
|----------------------|---------------------|
| 1. Lobby | 7. Canal |
| 2. Rail corridor | 8. Elevator |
| 3. Stair to exhibits | 9. Observation deck |
| 4. Exhibits | 10. Conveyor |
| 5. Ruin courtyard | 11. Offices |
| 6. Turbine pit | 12. Mechanical |



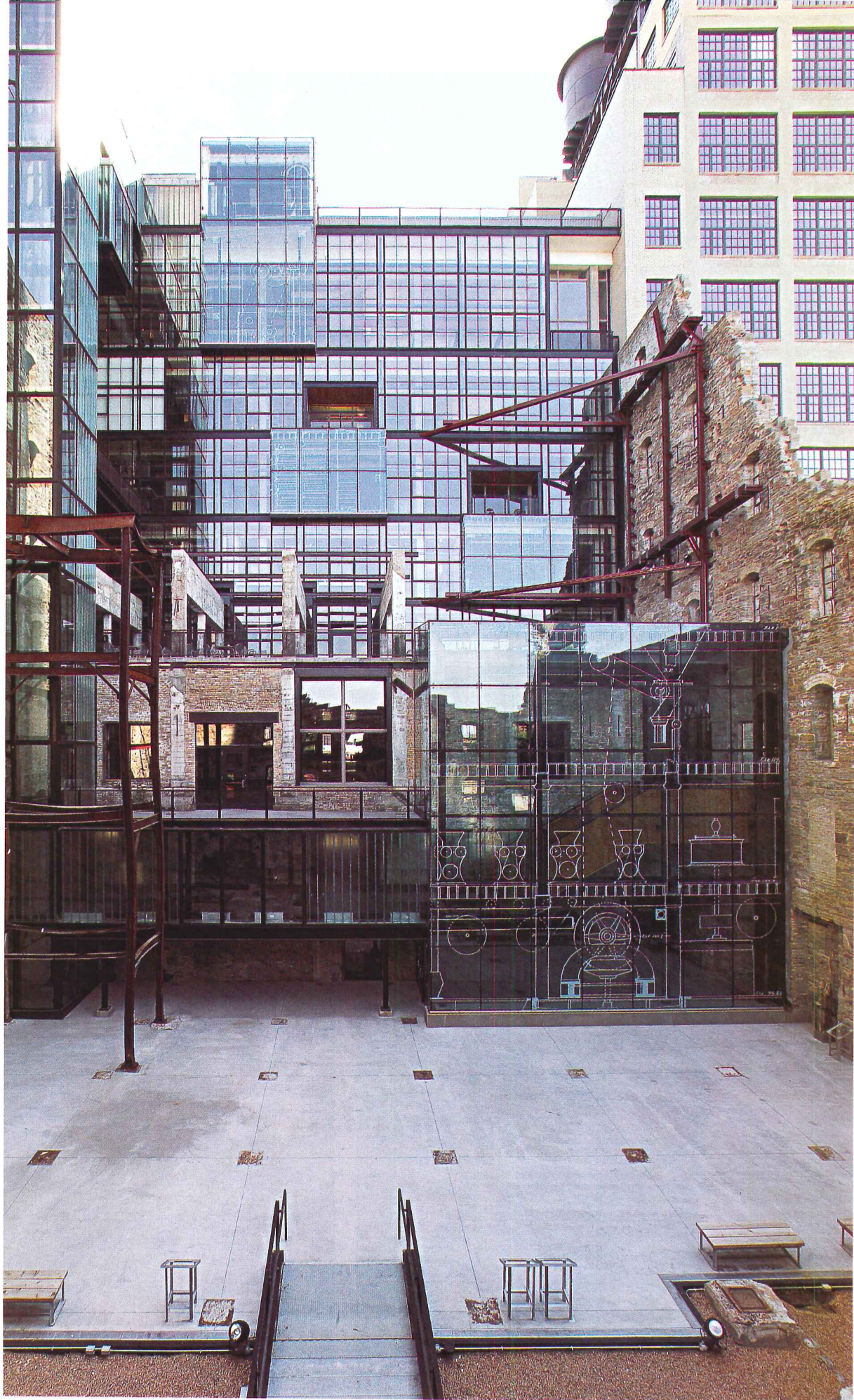
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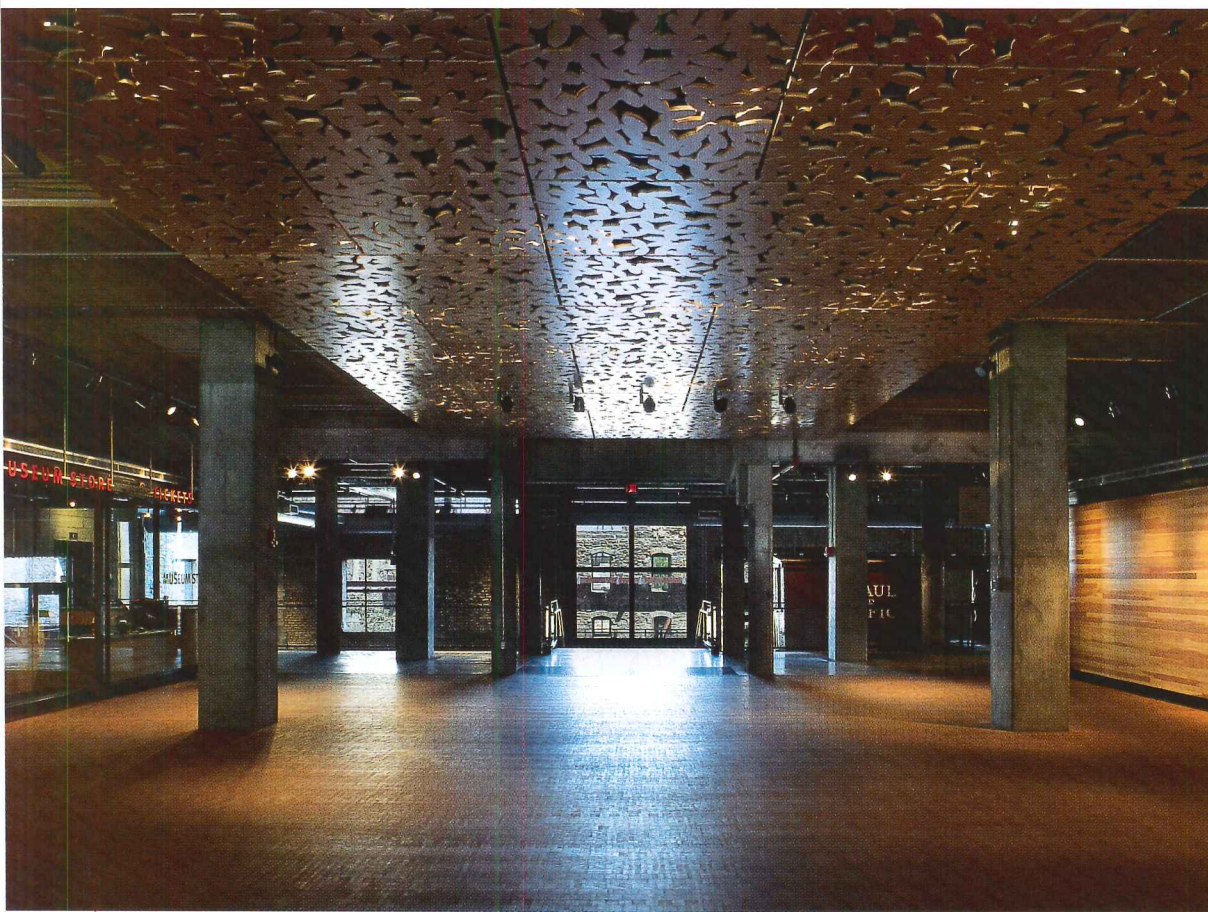
weathered brick walls, glassless windows framing views of St. Anthony Falls, and painted-steel support beams, includes two large pits where water turbines once churned. On the building's lower level, the mill's original columns, wood beams, and dust collectors were reinstalled as museum exhibits.

The interior is a series of vignettes derived from a field survey of the abandoned building. An existing rail corridor within the structure, complete with boxcar, is now a school-bus entrance. The east engine house, which once held gigantic boilers, now houses classrooms. A new freight elevator is called the Flour Tower and serves as an eight-story multimedia interpretive "ride" that provides views of whirling, clanking mill machinery as it rises through each floor.

In the exhibition space and lobby, 35 concrete columns in a restrictive, 13-foot-square grid, dating from after the 1928 fire, were removed and replaced by 16 columns at twice the spacing to increase flexibility. The lobby floor is composed of the same type of end-grain wood once used for nearby streets. A decorative pattern for the wood ceiling scrim was created by enlarging a photocopied image of wheat berries. Our design philosophy was to do everything the way the millers did—work with simple materials that are readily available: concrete, steel, wood, and glass," says project architect John Stark, AIA.

The building's south facade introduces layers of history: The stone on the lowest levels is from 1878, and the brick from the third floor up was added in 1928. But the project's tour de force is the fronting of the ruin courtyard with a new, north-facing, 8-story glass curtain-wall facade. "Our challenge was to decide what to do when putting a new facade on a National Historic landmark," notes Meyer. "How do we both respect the history and let the new have a voice of its own?" he asks rhetorically. The internal rail corridor was both the natural termination of the museum lobby and the logical location for the new facade, a grid of eight, 8-inch-wide flange beams at the



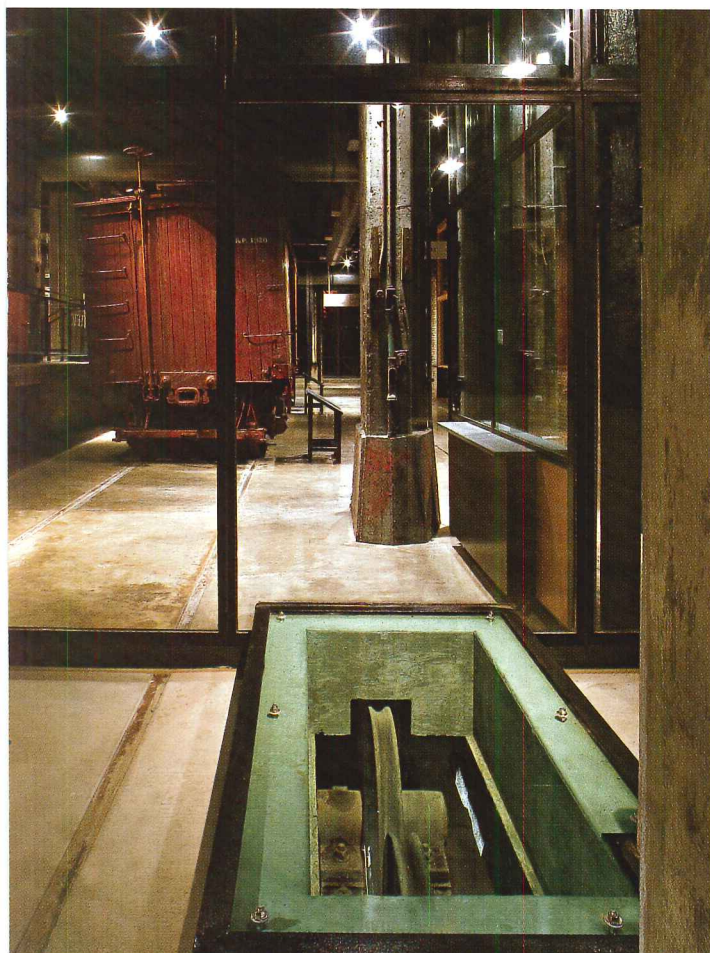


spacing of the original columns to provide wind resistance for the thin, steel industrial sash, floor-to-ceiling windows that are mounted 12 inches outward from these beams. From this basic enclosure, a mullionless glazing system projects out in four places, like bay windows, illustrated with machinery graphics.

Commentary

As the first project on the Historic Register to incorporate an existing ruin, the Mill City Museum sets a precedent with its seamless juxtaposition of the ruin's mystery and the raw energy of the historic building with a refined, respectful new structure. Sectional hieroglyphics from a long-ago era, combined with old support arches and brick walls, and the glass elevator and ninth-floor observation deck, create a composition that makes clear the interventions without disturbing the layers of history reflected in color, material, and texture.

Minneapolis's riverfront and mill district have been undergoing piecemeal restoration for the past decade. By 2005, the Mill City Museum complex will stand alongside the Guthrie Theater designed by Jean Nouvel. The project is the keystone in the riverfront's revitalization, as much an icon today as the old A Mill was in the Flour Capital's heyday. ■



Wood and concrete dominate the material palette in the museum's lobby (above); the ceiling scrimms were custom-made from a pattern created by the architect. Alongside

the rail corridor, equipment and artifacts are displayed from the old mill (left). A freight elevator serves as an interpretive "ride" for the mill's history (below).



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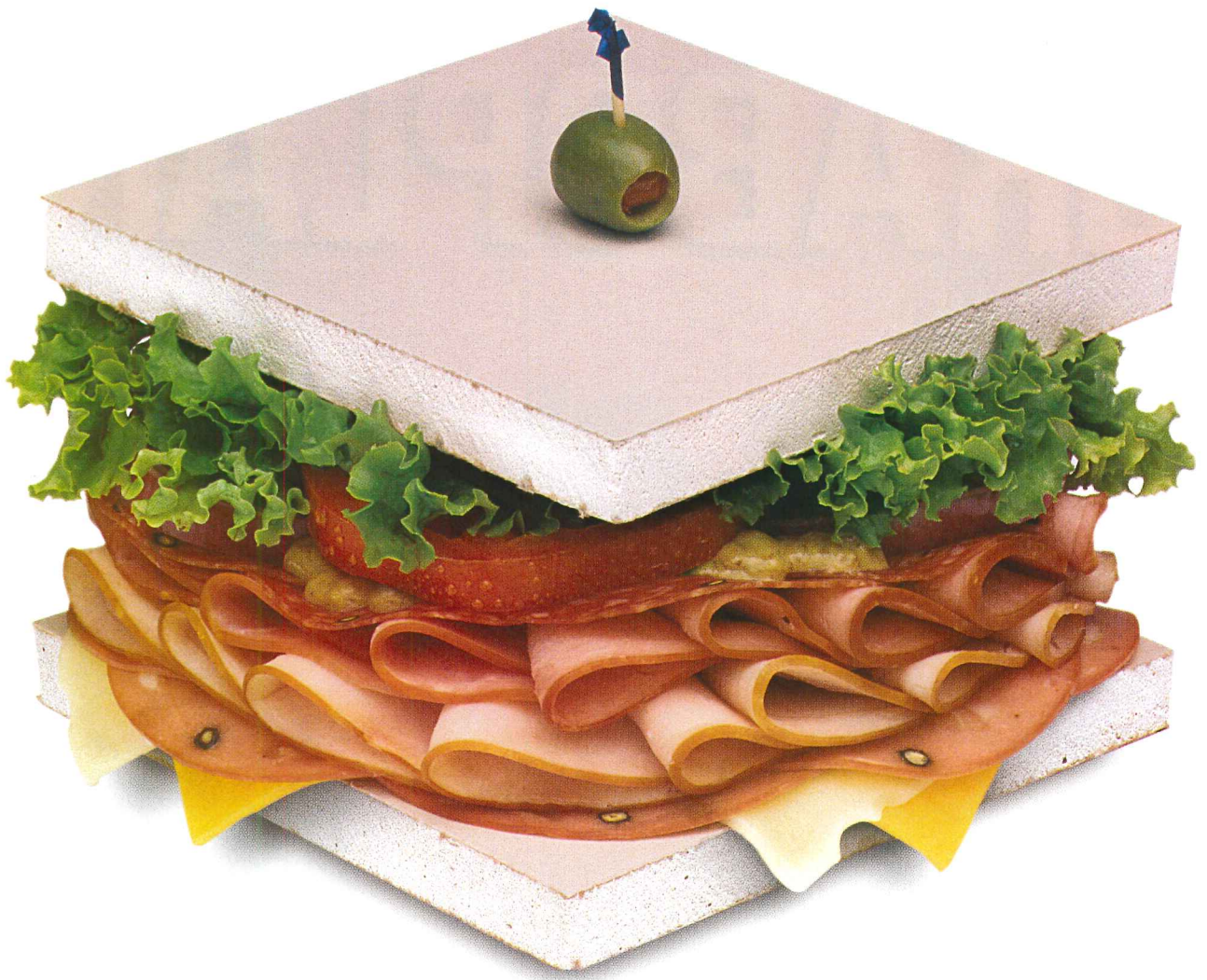
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Integrating Contemporary Systems into Historic Structures Without Destroying Significant Fabric

WITH A SOLID UNDERSTANDING OF BASIC BUILDING DYNAMICS, ARCHITECTS UPGRADE OLD BUILDINGS

By Nancy B. Solomon, AIA

In the early 1990s, architects and engineers at the forefront of the preservation movement were troubled by the problems still faced by historic buildings—particularly historic house museums. Unfamiliar with the dynamics of old construction and eager to satisfy a range of often conflicting requirements for artifacts and occupants, many well-intended owners and designers unwittingly undermined historic fabric when they inserted new systems into existing buildings. Discussions on this subject at preservation symposia in Montreal in 1990 and New Orleans in 1991 led to the formulation of “The New Orleans Charter for Joint Preservation of Historic Structures and Artifacts.” By 1992, this document was adopted by the American Institute for Conservation of Historic and Artistic Works, the Association for Preservation Technology International, and the National Conference of State Historic Preservation Officers.

The charter acknowledges the conflict that often arises between the needs of a historic building and the content it houses, and rejects strategies that support one at the expense of the other. Among other items, the charter calls for thorough understanding of the needs of both, an interdisciplinary design team that can work together to address the complex issues, actions that achieve the desired goals with the least intervention to either historic structure or artifacts, and a solution that can realistically be maintained over time by the client.

The charter gives the best guidelines for doing this work. While this approach should be applied to any historic project, the complexity will

Contributing editor Nancy B. Solomon, AIA, writes about computers, building technology, and topics of interest to the architectural profession.



In 2000, the College of William & Mary's Sir Christopher Wren Building, the oldest academic building in continuous operation in this country, was modernized.

BUILDING SCIENCE

be different for each building, depending on its construction and function. For example, because it must accommodate precious artifacts in addition to occupants, the renovation of a museum with a rare collection will be more challenging than that of an office building.

The topic of historic buildings appeared in the *ASHRAE Applications Handbook*—the standard reference of mechanical engineers—for the first time in Chapter 20 of the 1999 edition, entitled “Museums, Libraries, and Archives.” “Climate problems have been a constant in historic museums,” says mechanical engineer Ernest Conrad of Landmark Facilities Group in Norwalk, Connecticut, who contributed to the chapter. With this ASHRAE addition, he continues, “We finally got a chance to explain to engineers how these systems should be designed.”

The source of the problem lay in the fact that, in many historic museum designs, the needs of the collection took precedence over the needs of the building envelope. New forced-air mechanical systems were often designed to meet the strict levels of temperature and humidity once thought necessary by many curators—70 degrees Fahrenheit and 50 percent relative humidity year-round. This meant that the now-positive air within the interior pushed the more humid air through inevitable cracks in the older, more loosely constructed envelope. During cold months, the air vapor would condense and then freeze—resulting in spalling of masonry and other deterioration.

In contrast, the handbook explains that the mechanical design process should begin with an understanding of the capability of the existing building rather than the needs of the collection: “(1) Determine what tempering of the outdoor climate is already achieved by the building (including

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LEARNING OBJECTIVES

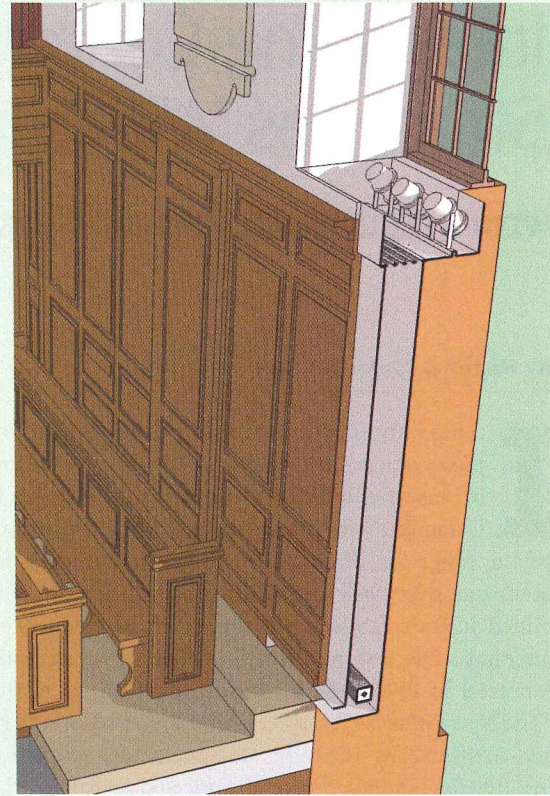
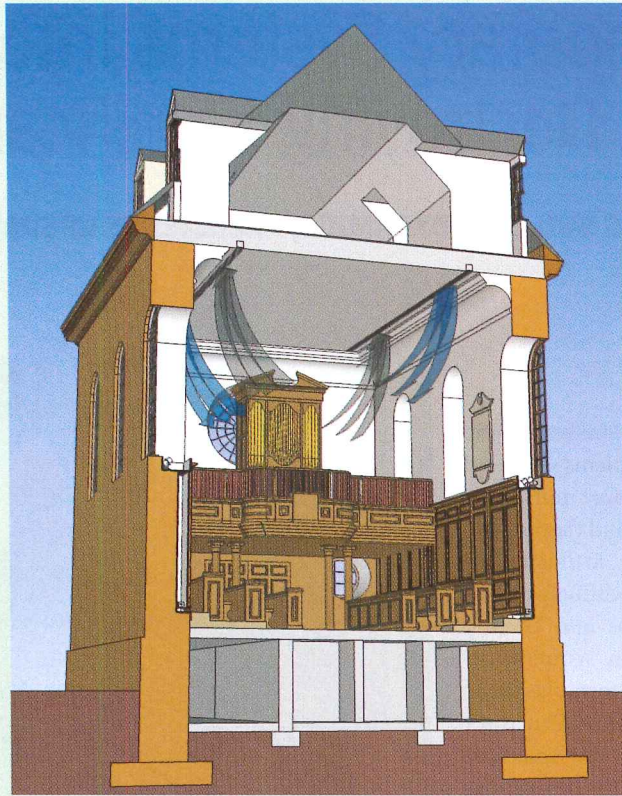
After reading this article, you should be able to:

1. Identify the problems associated with integrating building systems into historic structures.
2. Explain the humidity issue and its impact on the historic buildings.
3. Discuss the job of the preservation architect.

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

The Prototype

Quinn Evans Architects made every effort to retain the character of the chapel (right), the Wren Building's most significant historic space. Theatrical lighting (detail, far right) was installed at each windowsill. Hidden from view, this indirect lighting system allows for typical functions in a space that was once illuminated only by candlelight.



what fresh air requirements are provided by existing infiltration). (2) Determine what extremes of natural indoor climate swings are unacceptable. (3) Design mechanical services to prevent the undesirable extremes.”

According to William B. Rose, research architect at the Building Research Council, University of Illinois at Urbana-Champaign, and coauthor of Chapter 20, most older museums maintain acceptable standards with no intervention. And, despite previous misgivings of some curators, the slow change, or ramping, of humidity that naturally occurs between winter and summer can be tolerated in many locations by many types of artifacts. “If you just hold back and let nature take its course naturally, it will do what you need,” says Rose.

By starting with what the building delivers and intervening only to eliminate the extremes, those buildings that do require additional adjustments will be subjected to less stress, and the mechanical equipment will be smaller—an advantage in old buildings, which typically have little service space to spare—than would occur if the entire system were overhauled.

The handbook also recognizes that in some cases a structure cannot be converted into fully climate-controlled spaces. “Every building has limited capacity to it,” explains Skarmas. “If you cross the threshold, you create very expensive problems.”

Of all the building systems, HVAC clearly poses the greatest threat to a historic building because of the size of the equipment to be inserted; the changes it introduces to airflow patterns; the presence of water; and, although remote, the possibility of a furnace exploding. But the principles of the charter, and the message underlining the ASHRAE handbook Chapter 20, apply to all building systems, including fire safety, electrical, lighting, telecommunications, and security. Essentially, let the building be the guide to what is possible. “The job of the preservation architect,” says Skarmas, “is to become the voice of the building. The building will tell you what it can and cannot do, and the architect must convey that to the client and other stakeholders.”

As illustrated by the projects on these pages, experienced preser-

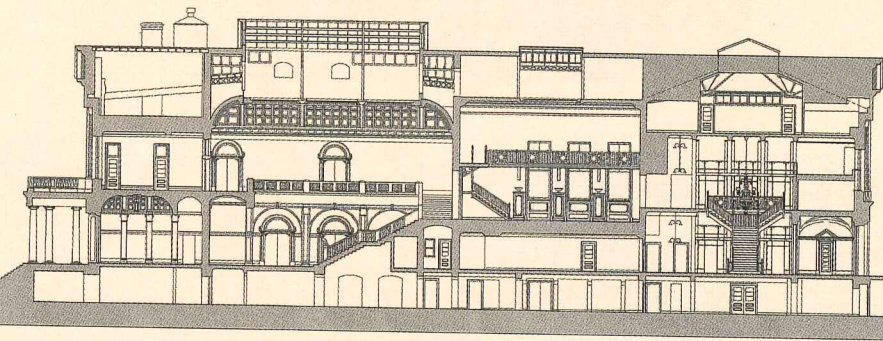
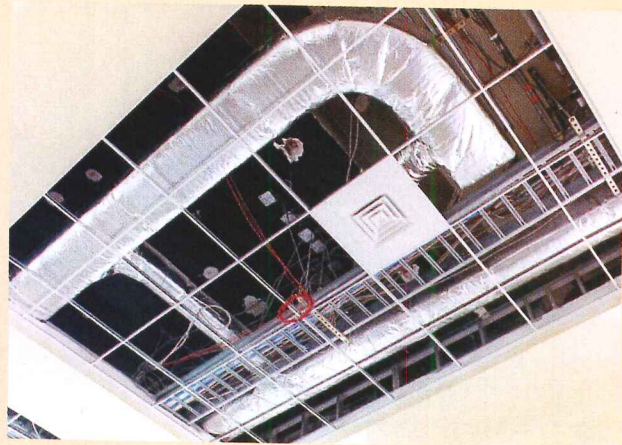
vation architects and engineers go to great lengths to study the building's existing conditions; analyze which areas are less significant and, therefore, can be reasonably disturbed; explore new technologies or alternative methods to avoid disruption of historic fabric, develop a patchwork of design solutions that fit the character and opportunities presented by each room; coordinate closely with all members of the design team to ensure that all systems mesh carefully within limited space; and work with clients to ensure that the painstaking planning and execution that has gone into preserving the historic property will not be undermined by uninformed users. It's an exercise in both passion and humility.

The Ryan Building

The Ryan Building, in Harrisburg, Pennsylvania, was originally constructed by the Commonwealth of Pennsylvania in 1893 to house the governor's executive offices, the state library, and the state museum. Designed by Philadelphia architect John T. Windrim, it is the oldest building in Harrisburg's Capitol Hill District, a historic area that includes the state capitol. The governor moved out by 1906, followed by the library and museum. Over the years, different tenants moved in and out, and with each turnover came more and more unfriendly, expedient modifications. The interior splendor of the original Neoclassical-style building had become so diminished that the building owner—Pennsylvania's Department of General Service—at one point considered flooring over the two-story central hall in the library in order to make the building more efficient.

In 1996, the Department of General Service hired Vitetta, an architecture and engineering firm in Philadelphia, to restore and adaptively reuse the structure for the state's legislative offices. Outgoing Speaker of the House Matthew J. Ryan, for whom the building was named, wanted the work to be historically respectful. But the architecture and engineering firm was also charged with doubling the building's occupancy. The project was completed in 1999.

“The key to the project,” notes Hyman Myers, AIA, director of



**Matthew J. Ryan Building,
Harrisburg, Pa., Vitetta Architect**

Instead of forced air, the architects chose a four-pipe system to replace the steam radiators and were able to conserve valuable ceiling space for a separate, ducted ventilation system,

sprinklers, and electrical wiring (above center). The new offices were framed to maximize ceiling heights (above right). Cable trays and wiring were routed elsewhere.

Historic preservation at Vitetta, “was the attic and the basement.” These had been used for storage, not offices, for good reason: The attic was dark and hard to access and the basement felt confining.

Vitetta reinstalled new skylights in the roof where old ones had long been removed, and divided the long attic space with translucent window-glass partitions to maximize light penetration between open office areas. A new elevator and two fire stairs were carefully inserted within the original footprint to reach the attic floor.

In the basement, the architects tore down a labyrinth of partition walls and lowered portions of the floor to ensure adequate ceiling height. An original brick arcade became the defining architectural element in the renovated space. Instead of a dark maze, the basement became an open area with natural light and distinctive features.

By reclaiming these underutilized upper and lower zones for administrative and technical support, Vitetta was able to retain the original architectural character of the public halls and offices on the main floors.

The building was originally heated with steam radiators, with a coal-fired boiler in the basement. To heat and cool, the design team chose a four-pipe system with hot and chilled water supplied from a central campus plant. Ventilation was handled with a separate ducted central system. By heating and cooling with a piping system rather than forced air, the design team reduced the needed number and size of ducts and mechanical units. As a result, the architects were able to retain much of the original ceiling heights and avoid large cuts for ductwork into historic fabric.

The four-pipe system offered flexibility in terms of how each space was conditioned. In the basement, the pipes were run along the perimeter walls. This significantly reduced the amount of ceiling space needed to conceal sprinkler pipes, electrical wiring, and ventilation ducts. By keeping the dropped ceiling to a minimum width, the architects made sure that ceilings adjacent to the brick arcade and exterior windows remained at the original height and were finished with historic plaster. Individually controlled fan-coil units were installed between the windows, above the workstations.

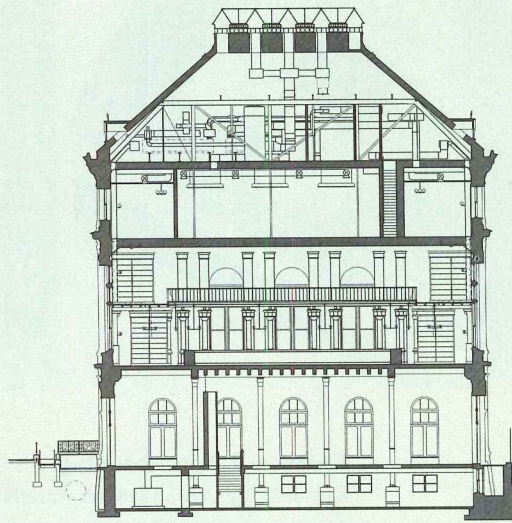
One set of pipes from the basement runs up the perimeter wall to serve fan-coil units in first-floor offices. Another set also rises along the perimeter wall from the basement, then travels across a shallow dropped ceiling on the first floor, to make its way to fan-coil units in second-floor offices. For most of the members’ offices, the fan-coil units fit nicely into existing recesses under the windows, behind grilles that once screened radiators. In the corners of two offices where the windows extend to the floor, the architects installed original radiators that had been recovered and restored.

Only minimal conditioning with ducts was provided to the West Stair Hall, a monumental public space. To provide more would have meant putting additional mechanical equipment in the basement, which would have taken up precious office space—or in the attic, which would have resulted in the insertion of too many noticeable grilles high up in the elegant space. Neither option was acceptable. Instead, the designers rationalized that because the great hall is an interior space that is typically not occupied, it was best to leave it be.

The four-pipe system serves air handlers and VAV boxes in the attic, where sufficient ceiling height allowed for more ductwork.

The design team also took pains to distribute the many other building systems with minimal disturbance to the original design concept. To maintain the relationship between the original ceiling and window heights in the legislative members’ offices, for example, cable trays and electrical wiring were routed within dropped ceilings in adjacent support-staff areas. The architects inserted rectangular fields of acoustic lay-in tiles periodically within a new plaster ceiling here, creating a classic-looking pattern while allowing access to these networks.

Vitetta’s varied solutions to different spaces is a reflection of what Myers has come to appreciate in his years of working with old structures: “The ‘one-size-fits-all’ concept cannot apply to a historic building. Each space has to be designed based on what it needs.” Admittedly, this requires much more time to design and to coordinate. “The premium is on the



Brooklyn Historical Society, N.Y., Jan Hird Pokorny Associates

The restored exterior is faithful to the original 1880s facade (top right). Before the mechanical equipment was installed, the historic iron trusses supported the roof and the attic floor. The fourth floor is suspended by iron rods (right). New mechani-

cal equipment overstressed the truss, so new structural steel was added to support the air-handling units (far right). Steel and equipment were delivered by crane through large holes cut into the existing slate roof, which was then repaired.



design team,” adds project manager Michael Holleman, AIA. “We need to have the stamina to get that kind of work to occur.”

Brooklyn Historical Society

Completed in 1881, this four-story, eclectic Queen Anne-style building was designed by George B. Post for the Long Island Historical Society. The institution changed its name to the Brooklyn Historical Society two decades ago as part of a plan to gain wider public exposure. Its library houses the largest collection of documents on Brooklyn history, plus important Brooklyn artifacts. The building has been designated, both nationally and locally, as a historic landmark for three major elements: exterior, four-story lobby and stairwell, and two-story library. The society hired the New York firm of Jan Hird Pokorny Associates to restore the exterior and public spaces, maximize space utilization, and upgrade all buildings systems—including a state-of-the-art climate-control system. This work was finished in the fall of 2003.

The original building featured a 600-seat auditorium that ramped down from the first floor. This had been covered up in 1917 to create commercial space. The two-story library has always occupied the second and third floors. The fourth floor was first designed as an exhibition gallery but more recently used as storage for the collection. Part of the attic was also used for storage.

Pokorny Associates removed the sloped auditorium floor and installed a new first floor. This made way for a gallery on grade and addi-

tional programming and mechanical space below. Three smaller exhibition rooms and one computer room were located along the northwest and southwest corners of the second and third floors. The collection storage of the fourth floor was organized within a windowless, climate-controlled room in the center, wrapped by administrative offices along the perimeter. An intrusive elevator shaft was removed from the historic stairwell, returning this space to its former grandeur. And a new elevator and upgraded toilet facilities were inserted to either side of the refurbished stairwell.

The entire building was originally heated with steam radiators. Commercial-grade air-conditioning units were subsequently installed for additional climate control at a first-floor gallery and fourth-floor storage area. The building lacked any humidification or particle-filtration system. According to mechanical engineer Philip C. Steiner, a principal of the mechanical and electrical engineering firm AltieriSeborWieber Norwalk, Connecticut, irreplaceable paper objects—including documents from the Revolutionary War—sat on library shelves in close proximity to leaky steam radiators, open windows, and grilles connected to roof vents. “All the dirt and grime was coming in,” recalls Steiner. Conditions in the storage area were not much better.

The project team selected forced air for the new mechanical system. The boiler and chiller, plus air handlers for three zones in the renovated basement and first floor, were fairly easily inserted into the basement.

Installing air-handling equipment in the attic for five zones in the upper floors, however, proved more challenging. Structural testing

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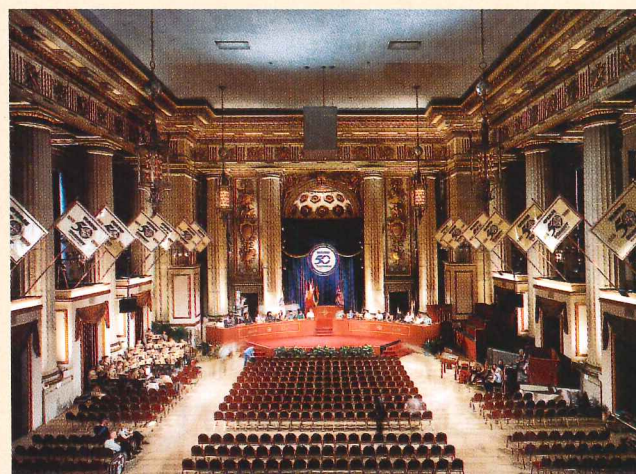
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Environmental Protection Agency, Washington, D.C., RTKL Associates

The agency consolidated its 7,000 employees into two seven-story buildings (above). Most of the historic spaces (right two) were in good condition, but in all cases the HVAC systems had to be upgraded or replaced. In the office areas, all the horizontal infrastructure was located in a ceiling soffit along the interior zone of the office walls. Workstations were placed under the soffit, and circulation was moved along the exterior wall.



revealed that the attic roof trusses could hold no more weight, so new structural steel beams were inserted between masonry bearing walls over the original attic floor. These beams support the new mechanical equipment. A roofing membrane was applied over the exposed wood floor to protect artifacts on the floors below from any potential leaks in the equipment.

Between the existing trusses and the new structural beams, the geometry of the attic became very tight. According to Robert Motzkin, principal at Pokorny Associates, fitting the equipment in was “like threading needles.” In some cases, the equipment had to be altered at the factory to make it work.

One set of ducts ran from the attic to the fourth floor, which was not designated as a historic space. These remained exposed in the archival storage room and were hidden above suspended ceilings in the administrative zone wing.

Greater effort had to be taken to conceal the ductwork for the historic reading room. Another set of ducts from the attic were boxed out between the windows on the fourth floor and then ran down into vertical chases carved out of existing bookcases on the library balcony. Diffusers at the back of each stack serve the upper zone of the library, and those along the underside of the balcony serve the library’s lower level.

The mechanical zones for the first-floor gallery, the double-height library, three exhibition rooms, and a fourth-floor storage room are conservation-grade: They are designed to create stable temperature and humidity and to remove gases and particulate matter. The design calls for a winter humidity level of 30 percent and a summer humidity level of 50 percent in these areas. The client had originally hoped that the winter humidity level would be maintained at 50 percent as well, but vapor migration analysis undertaken by the mechanical engineers indicated that, without the addition of a vapor barrier, a relative humidity higher than 30 percent could

lead to condensation within the load-bearing brick and terra-cotta masonry wall. Because of the building’s historic status, the interior wall finishes could not be removed to insert such a barrier. To moderate between the two levels of relative humidity, an automatic temperature control system incrementally adjusts the humidity levels over the course of six weeks between winter and summer.

Environmental Protection Agency

With the help of RTKL Associates in Washington, D.C., the Environmental Protection Agency consolidated most of its 7,000 employees within two seven-story buildings in the Federal Triangle, an assemblage of government buildings in the nation’s capital. One, the United States Customs Service Building, is actually a compilation of three interconnecting buildings—formerly known as the Department of Labor, Interstate Commerce Commission, and Connecting Wing—all designed by San Francisco architect Arthur Brown, Jr. The other, the Ariel Rios Federal Building, was originally called the New Post Office Building and designed by the New York City architectural firm of Delano and Aldrich. Both Classical Revival buildings were constructed between 1932 and 1934. They are included in the National Register of Historic Places as part of the Federal Triangle Historic District. RTKL’s restoration was completed in 2003.

“In general,” reports Karl Stumpf, AIA, director of preservation at RTKL, “the buildings were in very good condition. Preservation space had been maintained well, with no major modifications or destruction of special features. The minor modifications, such as carpet, partitions, and dropped ceilings, could be easily reversed.” But the building system needed to be modernized and brought up to code.

The buildings were originally heated by steam radiators. With narrow floor plates—a 12-foot-wide corridor with 22-foot-deep offices or

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either side—and operable transoms over the office doors, they were cooled by natural ventilation. But as expectations changed and office equipment multiplied, about 1,200 window air conditioners found their way into the Classical facades.

RTKL chose a split system: a four-pipe fan-coil unit under the windows along the exterior walls—where radiators once stood—for heating and cooling, plus a variable air volume (VAV) distribution system on the interior for cooling and ventilation, but not heat. “In new construction, the natural inclination would be to go with all VAV, but for that you need lots of shaft space to bring large ducts from the air-handler units to the VAV boxes on each floor.” A cooling-only VAV system requires less space for ductwork than does a full system. The VAV cooling is on most of the time, even in the winter.

The pipes were routed vertically within the interior face of the exterior wall in the general offices, which were not considered historically significant. The ducts are run vertically through new chases in nonhistoric rooms so as not to disturb historic fabric. The boilers are in a central utility plant in the subbasement level of the Connecting Wing building. The cooling towers are located in a new yard enclosure on the roof of the Interstate Commerce Commission building. Air handlers for the VAV system were installed at the attic level of the buildings.

Ductwork for the VAV boxes could not be hidden above a dropped ceiling in the corridor, as is often done, because this public circulation zone was deemed historically significant and therefore needed to be preserved. Instead, the project team routed all horizontal infrastructure, including ducts, cable trays, and electrical distribution, in a ceiling soffit along the interior wall of the office zone. RTKL located the workstations

under this soffit and a circulation path along the exterior wall. This strategy assures easy access to building distribution systems from the workstations while maximizing the ceiling height along the perimeter, thus permitting abundant daylight to penetrate the interior spaces.

As is the case for most buildings from the 1930s, the original corridor doubled as a return-air plenum. Air traveled through grills in the office doors, along the corridor, and into grills near each stair that led to vertical chases. According to current life-safety codes, notes Stumpf, “corridors can’t be used as a means of egress for return air. It has to be ducted

But there wasn’t enough room to run such ducts within the office soffits. RTKL was able to continue using the corridors as return-air plenums by offsetting that code deficiency with additional safety features. For example, they added diffusers with fire dampers within the corridor walls. In a fire emergency, dampers in the affected area would close, preventing smoke in that corridor from entering into the return-air supply. In addition, they buried accordion fire-rated partitions in recessed pockets at the midpoint of the corridors. These come out automatically when smoke detectors are triggered, dividing one end of the hall from the other, so that only half of the building is at risk. Passage is still possible through a door within this fire barricade.

The preservationists wanted to retain the original brass and glass doors although they did not have the fire rating required by today’s code. Fire modeling of the stairs, undertaken by a fire-protection consultant, indicated that by adding more sprinkler heads and gasketing at the existing doors, occupants would have adequate time to get down the stairwell to safety. So, with these additional measures in place, the old-fashioned doors were retained. ■



AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- ◆ Read the article “Integrating Contemporary Systems into Historic Structures Without Destroying Significant Fabric” using the learning objectives provided.
- ◆ Complete the questions below, then fill in your answers (page 176).
- ◆ Fill out and submit the AIA/CES education reporting form (page 176) or download the form at www.architecturalrecord.com to receive one AIA learning unit.

QUESTIONS

1. Which building system poses the greatest threat to a historic building?
 - a. HVAC
 - b. electrical
 - c. plumbing
 - d. sprinkler
2. The threats from heating systems to historic buildings include all except which?
 - a. presence of water
 - b. size of equipment
 - c. changes in airflow
 - d. increase in voltage
3. The job of the preservation architect includes all except which?
 - a. study the existing conditions of a building
 - b. become the voice of the building
 - c. bring the building into current technology operation
 - d. explore new technologies to avoid disruption of the historic fabric
4. Climate problems have been a constant source of trouble in historic buildings for which reason?
 - a. extremes in hot and cold were hard on buildings
 - b. the needs of the historic collection took precedence over the building’s needs
 - c. extremes between humidity and dryness were hard on buildings
 - d. architects did not intervene in the climatic conditions
5. The Brooklyn Historical Society building converted from and to which building systems?
 - a. steam to heat pump
 - b. forced air to VAV
 - c. steam to forced air
 - d. forced air to steam
6. The Brooklyn Historical Society building established its humidity at which level?
 - a. 50 percent year-round
 - b. 30 percent year-round
 - c. alternating monthly from 50 to 30 percent
 - d. 50 percent in summer, 30 percent in winter
7. The EPA buildings in Washington, D.C., use which method for return air?
 - a. building corridors as before
 - b. ceiling soffits along interior offices
 - c. corridors with addition of fire dampers
 - d. corridors with dropped ceilings
8. The EPA buildings in Washington, D.C., changed from and to which building systems?
 - a. steam to VAV heating and cooling
 - b. steam to forced air
 - c. natural ventilation to forced air
 - d. steam and natural ventilation to VAV for cooling only
9. In the Ryan Building, the character was retained by which alteration?
 - a. restoring skylights in the attic
 - b. moving administrative and tech support offices to the attic and basement
 - c. removing partitions in the basement
 - d. all of the above
10. The Ryan Building uses a heating and cooling pipe system rather than forced air with all except which benefit?
 - a. reduced number and size of ducts and mechanical grilles
 - b. quicker to design and coordinate
 - c. retain much of the original ceiling heights
 - d. avoid large cuts for ductwork in historic fabric

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As codes change, is automation the answer?

by Lindsay Audin and Deborah Snoonian, P.E.

A decade has now passed since the 1992 federal Energy Policy Act (EPAAct) mandated that all states upgrade their energy codes to meet the standard put forth by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), known as ASHRAE 90.1-1989. It's time to upgrade again: States have until July 15, 2004, to improve their own energy building codes, or explain why they can't (or won't) do so.

One of the biggest changes in the new codes may be coverage: Codes adhering to ASHRAE 90.1-1999 would apply not just to new buildings but also to minor upgrades and renovations previously outside the reach of such standards. Since far more square footage is renovated than built each year, this difference could—if enforced—have a greater impact than any prior legislation that applied only to new buildings. While a variety of exemptions are suggested (for example, casinos that run flat out 24 hours a day), watch for this type of change in your state's revised energy code.

Other changes may affect project costs for engineering and construction. Tighter standards on power and energy consumption may limit equipment choices for lighting

and HVAC, for instance. A greater degree of control for these systems may need to be built into designs as well—a strategy that may one day become standard practice for buildings of the future.

Uneven compliance

Under EPAAct, all states were required to enact or upgrade energy codes that met or exceeded ASHRAE 90.1-1989's recommendations, which set minimum acceptable levels of efficiency on fans, refrigeration systems, insulation, lighting design, and other major uses of energy in non-residential buildings. States were given time to comply, with the Department of Energy's assistance, and most did. Some states, like New York and California (which have higher energy costs than many others), already had codes in place that were more stringent than ASHRAE's—but the standard did bring attention to energy efficiency in parts of the U.S. where pricing was relatively low. However, fully a third of the states ignored the standard, either failing to create energy codes or maintaining standards weaker than EPAAct required.

For the coming upgrade, some states are ahead of the curve, with

codes that already go beyond ASHRAE 90.1-1999. California's Title 24 and New York's 2002 Energy Conservation Construction Code stand out in that regard. States are also realizing that it pays to go beyond minimum acceptable efficiencies. In the current political and economic climate, it's likely that follow-through and enforcement of the new codes will be greater than in the first go-around.

Buildings on autopilot?

How will today's buildings—which are more wired than ever, with their complicated nerve centers of HVAC,



lighting, security, life-safety, and computing systems—be capable of meeting the new codes? The answer may lie in advanced control technologies. Specially designed building automation systems (BASs) are net-

works of sensors, switches, and actuators that are connected to a central "brain," which makes automatic adjustments to indoor temperatures, lighting levels, and other systems as indoor conditions change (as when people arrive and leave, or during lower occupancy on nights and weekends, and so on).

Though energy-management systems are common in most new commercial construction, and separate lighting-control technologies have arisen as well, the new codes may demand better performance than current off-the-shelf systems are capable of delivering—particularly for renovations.

Furthermore, improving "plug-and-play" operation of controls equipment is making design and installation of BASs less complicated.

Some owners already know that it pays to automate. The Pentagon, for instance, has been installing a specially

designed BAS that will save more than \$5 million a year in energy costs [RECORD, February 2003, page 100], and universities such as Cornell have long used their own buildings to deploy and test BAS technologies.

What does this mean for architects? Besides getting a handle on the new codes (see sidebar), it might be time for a sit-down with an engineering outfit knowledgeable about BASs. Grasping the basics of their implementation isn't difficult—and, with energy codes poised to change, future clients will benefit from your technical know-how. ■

Lindsay Audin writes frequently for RECORD about energy issues and lighting technology.

For more information on technology for architects, including reviews, vendor lists, and links, go to Digital Architect at

www.architecturalrecord.com.

Online resources for energy-code changes

Visit the Web sites below for more information on ASHRAE 90.1-1999, as well as technical information and state-compliance issues.

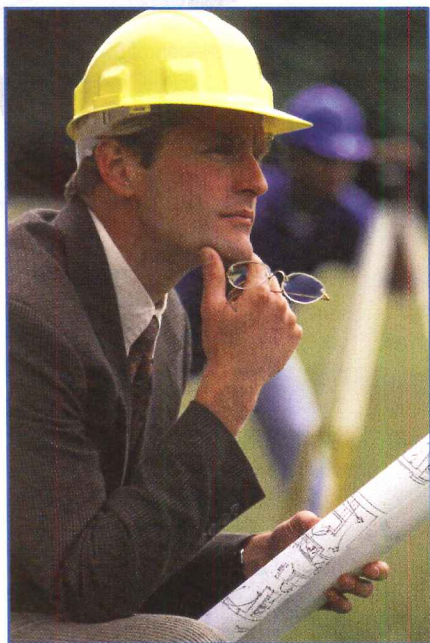
www.ashrae.org—Copies of ASHRAE standards (electronic and paper).

www.energycodes.gov—DOE's homepage for building energy codes.

www.energycodes.gov/web_tools.stm—Tools for implementing new codes.

www.naseo.org—The National Association of State Energy Officials.

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Interiors

New modes of materiality and display enhance international locations for high-style clothing and furniture brands

BRIEFS

Lord Norman Foster and interior designer David Mlinaric joined forces to design the New York City flagship of Asprey, another luxury retailer that is expanding its range of products to include ready-to-wear and home and fashion accessories. A contrast to the dated 1980s marble and gold look of the adjacent Trump Tower atrium, the 20,000-square-foot space places 18th-century antiques and mahogany shelves lined with leather-bound volumes against waxed plaster walls and a grand staircase paved with limestone. **In London, Asprey** reteams Foster and Mlinaric for a store that debuts this spring. Part of the A&G Group, Asprey's sister jeweler, Garrard, opened a new store in London in September 2003.

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From Barcelona to Berlin, Milan to Moscow, Bisazza has reinvented the way it sells tile. Rather than displaying mosaics and other samples in straightforward showroom settings, the Italian manufacturer decided four years ago to make the interior architecture of its new locations more of the marketing strategy. Bisazza enlisted designer Fabio Novembre—known for his splashy work with tile for fashion designer Anna Molinari and the Milan club Divina—to create colorful sales environments sparkling with miles of tile. The company also shrewdly elevated its image with consumers by selecting new prime locations with a strong street presence.

To launch its New York City flagship (below), Bisazza secured a storefront space on a chic block of SoHo's Greene Street. Twenty mosaicists traveled from Italy to cut and install tiles. And with other Italian design companies huddled along the same strip, it knits together a mini Milan furniture fair of sorts.

As Louis Vuitton celebrates its 150th anniversary in 2004, the luxury goods purveyor is performing a similar global makeover. A new store is being unveiled on New York City's Fifth Avenue this month, the first shop in Saudi Arabia has opened, and the original salon on the Champs Elysées in Paris will be enlarged and redesigned by year's end. A good example of Louis Vuitton's new architectural dynamism is the Tokyo location reviewed here, orchestrated by collaborators Jun Aoki, Aurelio Clementi, and Eric Carlson.

Offering moderately priced women's apparel and accessories, Los Angeles-based retailer MaxStudio.Com has created a consistent look for more than 50 new stores on main streets and in malls across the country. Versatile display components designed by architect George Yu creatively adapt to varied sites.

Back in New York City, after a short walk west from Bisazza to the Tribeca neighborhood, one encounters the sublime. A retail store and showroom built by Leven Betts Studio, Sublime American Design offers a wonderfully curated collection of home furnishings made in the U.S., from newly licensed Richard Neutra masterpieces to contemporary furniture handcrafted by hivemindesign in nearby Brooklyn. It's a light-filled showcase for domestic design at its best. *William Weathersby, Jr.*





Opening onto an urban plaza at the Roppongi Hills complex, the store features a 120-foot-long facade made of stacked glass tubes (this spread and opposite inset, top). Inside, layers of metal rings recall the brand's diamond-in-a-circle symbol (opposite inset, bottom three).

An international trio of architects collaborates to give Louis Vuitton a new high-tech face in Tokyo

By Clifford A. Pearson

Since 1999, when it opened a radically new store in Nagoya, Japan, Louis Vuitton has been busy reinventing itself, turning a venerable, somewhat stodgy brand into an ultra-hip object of consumer lust. To execute this transformation, the company has used the architecture and design of its shops as a primary instrument, and Japan as its most important laboratory. With the opening last September of its 9,700-square-foot store at the Roppongi Hills mixed-use complex in Tokyo, the company has shown how far it is willing to push the retail envelope to explore new ideas of materiality, transparency, and display. Now Vuitton is applying what it has learned in Japan to stores back home in Europe and the United States.

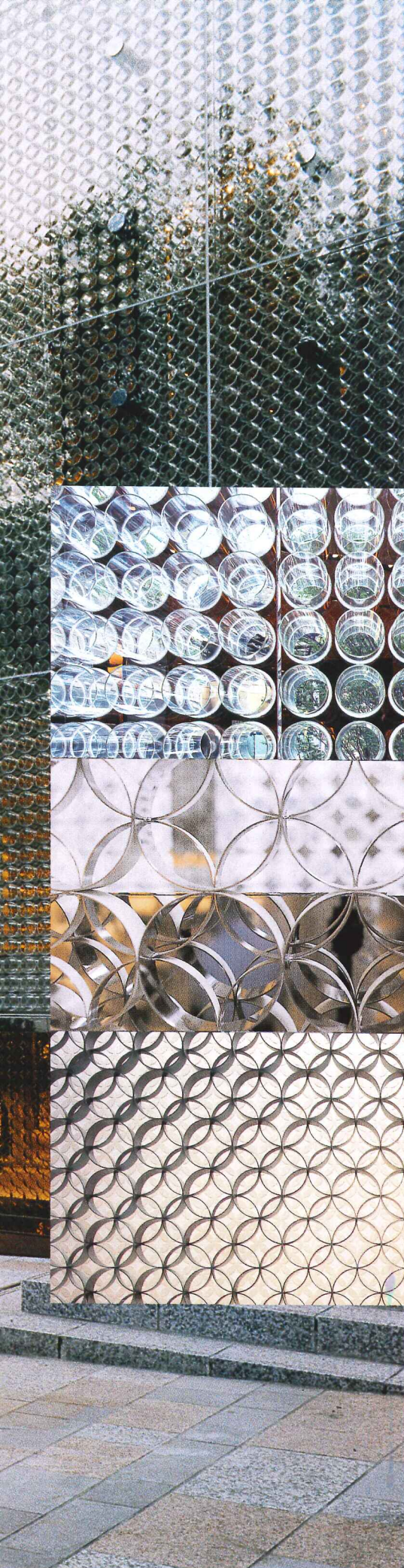
Like some of its other new outlets, the Roppongi Hills venue brought together the talents of designers in far-flung parts of the world: Jun Aoki in Tokyo, Aurelio Clementi in Italy, and Eric Carlson, who led the company's design group in Paris until he opened his own firm this year. Aoki (who designed the Nagoya store, several others in Japan, and a new flagship location opening this month in New York City) and Clementi are part of a loose stable of talented young architects that Louis Vuitton has employed in recent years. (Others include Kengo Kuma, who recently completed an office building in Tokyo for the company; Kumiko Inui, who once worked for Toyo Ito; and David McNulty, who works with Carlson in Paris.) Instead of parceling different tasks, such as exterior shell, interior space planning, and display design, to the Roppongi Hills architects, the company asked the three of them to work together on the entire project. "It was a real collaboration," explains Aoki.

Although each new store serves as a unique expression, all address a set of common design goals and employ shared tactics. Perhaps the most obvious is the use of long-established Louis Vuitton symbols—its monogram, the checkerboard pattern identified with its Damier brand, a four-stemmed flower, and a diamond motif—as integral elements in the stores' design. At Roppongi Hills, Aoki and his collaborators incorporated the diamond and flower icons in a stunning wall of 30,000 horizontal glass tubes stacked like a honeycomb between vertical glass

Project: Louis Vuitton, Roppongi Hills, Tokyo
Architects: Jun Aoki & Associates—Jun Aoki, Ryuji Nakamura; Louis Vuitton Architecture Department—Eric Carlson, Marie-Eve Bidard; Studio Aurelio Clementi—Aurelio Clementi, Irene Antolini, Cettina

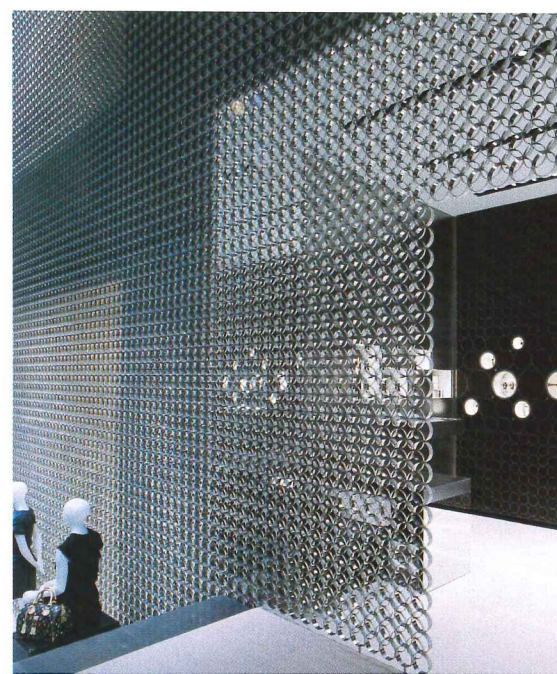
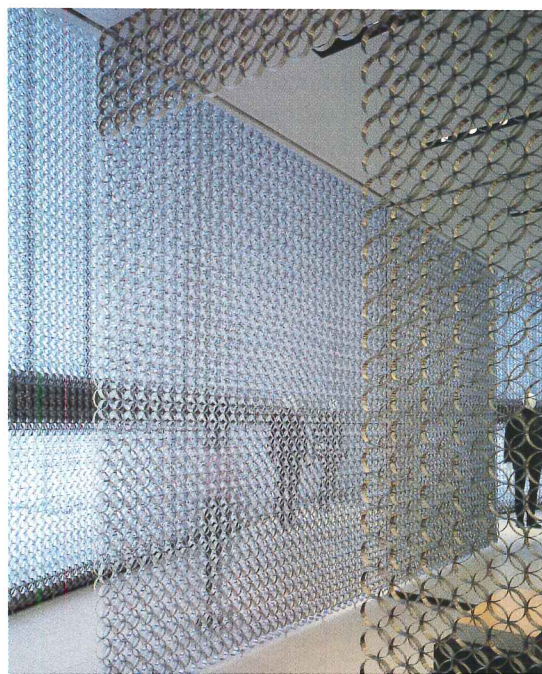
Schepis, Nestor Gonzalez
Consultants: George Sexton Associates (lighting); FLAME (graphics); Sun Design, Hiro Konoe (floor images); Nuno (fabric design)
Interior contractor: Takashimaya Space Create
General contractor: Shimizu

PHOTOGRAPHY: © JIMMY COHRSEN, EXCEPT AS NOTED; DAICI ANO (INSET, TOP AND BOTTOM)





The architects wrapped the store's "nave" with an interior skin of metal rings and glass (above) and hung the same materials from the ceiling to create translucent partitions (right and far right).



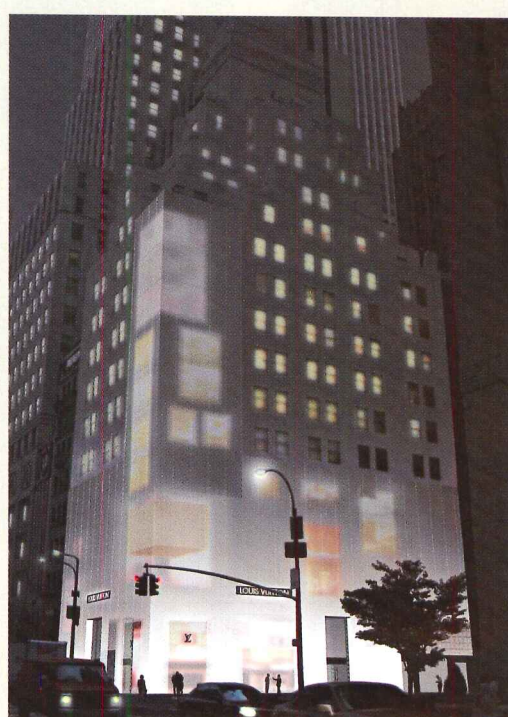
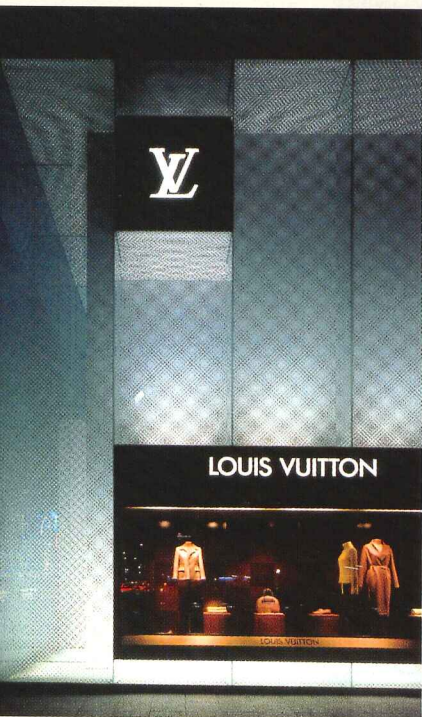
Creating a modern design vocabulary so a multinational brand can say many things

Multiplicity and brand identity are the key ideas driving Louis Vuitton's program of opening innovative stores worldwide. Although the concepts may seem contradictory, the high-end retailer of luggage, handbags, shoes, and leather goods has discovered that one-off store architecture can actually reinforce its image as a company concerned with quality and design. And by hiring young, edgy architects, the company has been able to expand its customer base to include younger, trendier shoppers.

Change in the company's approach to store design began in 1997, when it introduced ready-to-wear fashion and initiated a program of opening new outlets around the world. In 1999, it opened a store in Nagoya, Japan (below left), that presented a radically different face for Louis Vuitton. Designed by the Tokyo-based architect Jun Aoki, the store dazzled shoppers with a double glass skin whose misty appearance seemed to dematerialize

the facade and set it apart from its chaotic urban context.

Aoki then designed a six-story building for Louis Vuitton on Omotesando Avenue in Tokyo (below center), playing on the company's origins as a luggage retailer to devise a scheme based on stacks of "trunks," double-height spaces that inform both the facade and the store's floor plans. His latest design is for a flagship store in New York City on Fifth Avenue and 57th Street (below right), where he has created another remarkable skin that challenges traditional notions of boundaries. The glass facade rises 11 stories to encompass the entire corner of a 1930s stone building, even though the store occupies just the bottom three floors. Varying the size of the Damier checkerboards applied to the skin's glass layers and the amount of their overlap, Aoki was able to blur the boundaries between opaque and transparent sections as well as between store and office floors.



plates and a layer of perforated stainless steel. The idea was to create a "mirage," something that would be mysterious and shimmering, says Clementi. Stretching nearly 120 feet long and 43 feet high, the tubular-glass facade appears almost like a "pixelated screen," explains Carlson.

Since the store is part of a new \$2.2 billion development with an eclectic array of buildings—including an office tower with an art museum on top [RECORD, January 2004, page 106], apartment buildings, shops, restaurants, and a headquarters for a television network (see page 88), the Louis Vuitton architects wanted the facade of their store to quickly set it apart from its much larger neighbors. "We designed it as an alien within an alien," says Aoki.

The designers' innovative use of materials addresses another of the common themes found in all of Louis Vuitton's new stores: setting facades in motion. At other locations, including the new flagship store in New York, Aoki applies shifted and overlapping Damier grids to layers of glass, creating fascinating moiré patterns that seem to dance as visitors view them from different angles. While each store has its own way with materi-

als, all explore an architectural language of transparency and translucency that challenges established notions of indoors and out, solid and porous.

Inside the Roppongi Hills store, the designers clad the two-story-high space with a "skin" made of intersecting metal rings, again recalling the company's old symbols in a strikingly modern way. Veil-like partitions made from the same metal rings establish a sense of layering without

THE DESIGNERS OF THE STORE ENVISIONED THE INTERIORS AS AN EVOCATION OF ROPPONGI'S ACTIVE NIGHTLIFE.

blocking views through the space. Treating metal in this way, as if it were a fabric, creates an intriguing analogy between architecture and fashion, a strategy used at other Louis Vuitton stores, as well. At the one in the Omotesando area of Tokyo, for example, Aoki used large expanses of metal mesh as interior partitions and incorporated it in the building's facade.

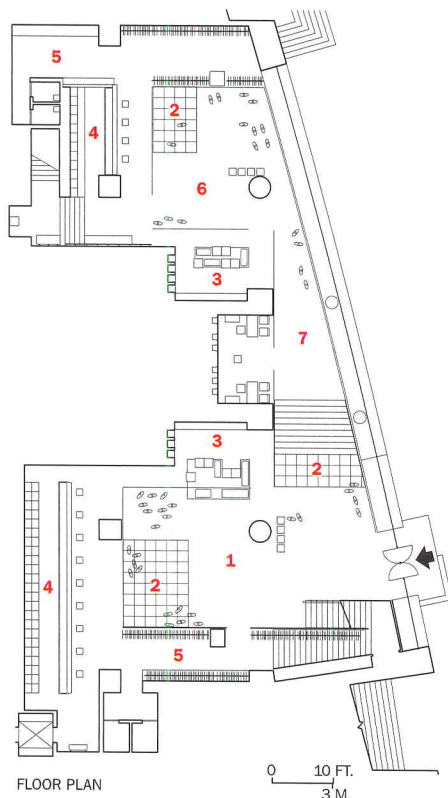
At Roppongi Hills, the designers envisioned the interiors as an



On entering the store (below), shoppers encounter an interior that alludes to Roppongi's active nightlife, with parts of the floor equipped with fiber optics to evoke a dance hall (left), as well as bag "bars," luggage "lounges," and shoe "salons" (left in photo at left).



1. Women's shop
2. Image floor
3. Shoe salon
4. Bag bar
5. Fitting/dressing
6. Men's shop
7. Unisex



evocation of the area's famous nightlife. So they created "bars" for buying handbags, "lounges" for checking out luggage and leather goods, "salons" for shoes, and "dance floors" embedded with tiny fiber-optic lights that can generate moving images. They also installed MP3 jukeboxes on the first and second floors, where customers can download selected songs from a DJ mix playing in the store.

Organized like a dumbbell with the women's department at one end and the men's at the other, the store keeps its long axis mostly free of merchandise and furniture. Aoki calls this long, processional element the "nave" and says its spare, open space—punctuated only by a set of wide

"WE WANTED THE STORE TO BE TRANSFORMABLE, SO IT COULD EVOLVE SEASONALLY OR EVEN DAILY," SAYS AOKI.

stairs and a series of mannequins—is perfect for special events. By keeping the nave free of all furniture and display cases and drawing attention both to the large scale of the space and to the detailed texture of the vertical surfaces, the store's designers eliminated almost all references to a medium scale. As a result, it has a dramatic quality quite different from traditional retail spaces filled with familiar objects such as chairs, sofas, and vitrines. Polished stainless-steel risers act as mirrors, dematerializing the stairs and adding another subtle layer to the spatial games at play here.

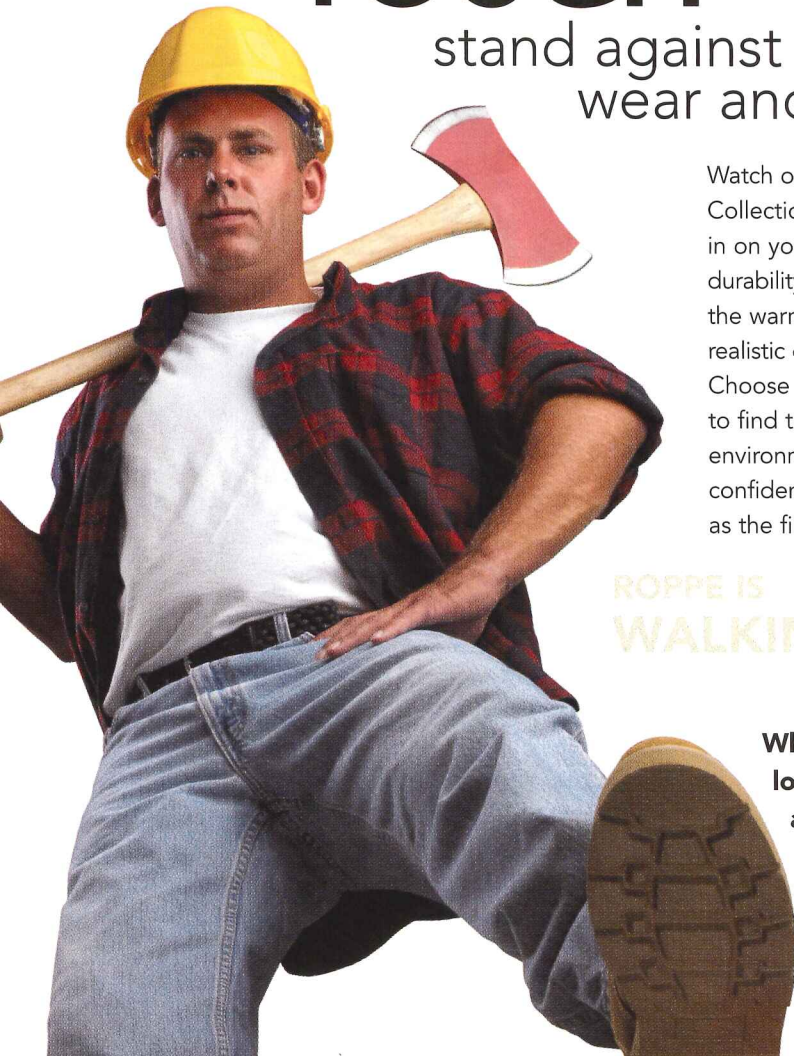
In the smaller spaces devoted to merchandise, the designers created more familiar environments using the palette of materials found in Louis

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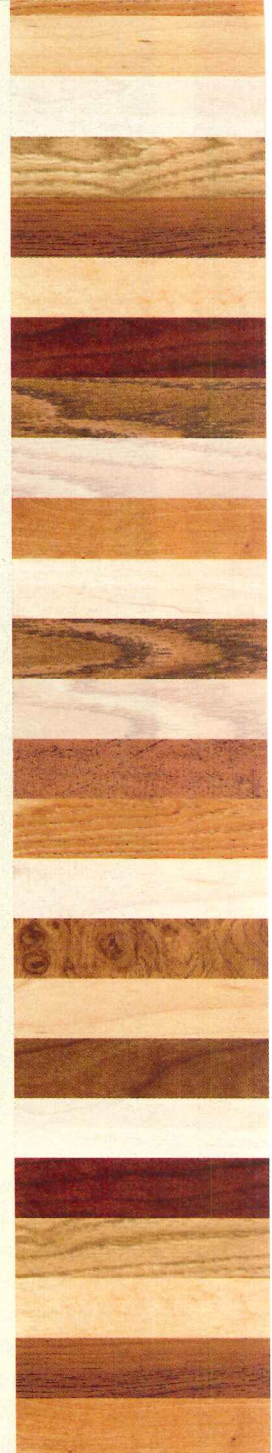
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Vuitton shops worldwide: anigre and wenge woods, leather, plaster, limestone, and teak. But in a break with the company's stores of the past 10 years or so, this one does not use furnishings designed by Peter Marino. Instead, the project's designers created a new collection of furniture, adapting the company's signature materials, such as brown leather, to more contemporary shapes. To reduce visual clutter, they treated display furniture and shelving as extrusions from the walls and floors. The simplified system of furnishings and product displays should allow greater flexibility in terms of merchandising, explains Aoki. "We wanted the store to be a transformable design, so it could evolve seasonally or even daily and reflect the pace of style," he adds.

Change is what Japan has been all about for Louis Vuitton, allowing the company to assume a younger, trendier identity and attract a new segment of the market. "You can push things a lot more in Japan, in terms of design and innovation," states Clementi. "What we've done in Japan is try to bring art, architecture, and fashion together in a way that hadn't been tried before." Taking what it has learned in Japan, Louis Vuitton is revamping its stores in other parts of the world, starting with its 18,000-square-foot location in New York this month and then pushing on to the Champs Elysées in Paris next year. ■

Mirrored risers (above) help dematerialize stairs and add to a storewide strategy of floating space and suspending see-through partitions. The architects used traditional

Louis Vuitton colors and woods to create new furniture and display cases in the leather-goods "lounge" (below) and handbag "bar" (top of photo below).

Sources

Lighting fixtures fabrication:

Yamagiwa

Fiber optics: *NTT DoCoMo*

MP3 jukebox: *NTT DoCoMo*

Speaking picture: *Jerome Olivier*

Fabrics: *Nuno*

For more information on this project, go to Projects at www.architecturalrecord.com.



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At the San Diego store, backlit translucent panels and laminate shelving create a neutral backdrop. Yu's kit of parts evolved to adapt to many mall locations (axonometric views, opposite).

George Yu creates a language of versatile components to fashion MaxStudio.Com stores across the country

by Leanne B. French

Six years ago, women's clothing designer and retailer Leon Max envisioned a major shift in strategy that relied on a revamped business plan supported by a new visual language for his retail environments. Max's long-range goal was to expand his Los Angeles-based fashion line with 70 new stores nationwide and to target the fledgling e-commerce market that inspired a name change from Max Studio to MaxStudio.Com. To refashion the chain's visual identity for this massive build-out, Los Angeles-based architect George Yu was asked to create a customer-friendly signature design that would unify the company's image at various retail sites of different sizes across the country, then take the branding beyond, into cyberspace.

The architectural balancing act of creating a design vocabulary for the company that fit the generic specifications of various retail tenant spaces turned into a yearlong experiment that resulted in a luminous, white-clad interior. "One of the biggest challenges was making a prototype design that could be adaptable to 70 or so stores," says principal architect Yu, whose team included former principal designer Jason King and project managers Andrew Lindley, Sandra Levesque, and Israel Kandarian. "The client also required that we devise a system that was not only elegant and beautiful, but economical, to fit the store's fixed budget [around \$150 per square foot]."

Leanne B. French is a freelance writer based in New York City. She is a frequent contributor to the interiors and lighting sections of ARCHITECTURAL RECORD.

Departing from the raw, industrial look of the store's early years in Los Angeles, the prototype design relied on a backdrop of cool, clean materials—epoxy-based terrazzo flooring, brushed stainless-steel racks, white plastic-laminate shelves and tabletops—which allowed the merchandise to take center stage. Incandescent lighting recessed in ceiling soffits and inside open-fronted display cabinets cast a theatrical play of light and shadow throughout the store, while the luminous focal point of the design was a light-box effect of translucent milky white Plexiglas walls backlit by fluorescents.

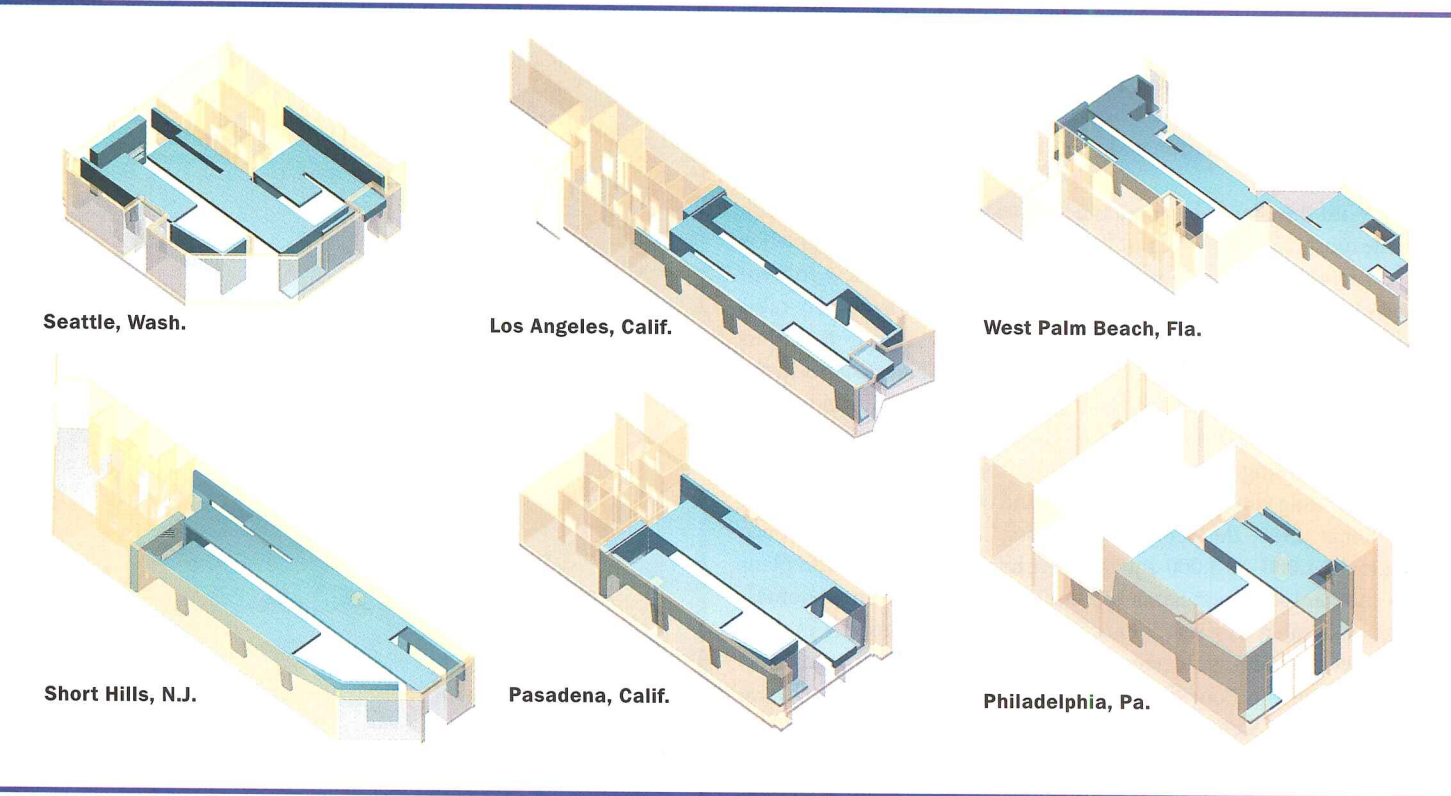
The prototype, retrofitted in a store in West Los Angeles and installed for the first time in San Diego, was well received by client and customers, according to Yu. "The store was very popular because it was so bright and people were drawn inside," he says. "The light-box effect was wonderful because there were no shadows, and customers look good when there are no shadows, but we could never get the system under

Projects: MaxStudio.Com, various locations

Architect: George Yu Architects—George Yu, principal; Jason King, former principal; Andrew Lindley, Sandra Levesque, Israel Kandarian, project designers/managers; Gavin

Farley, Barry Jacob, Leslie Barrett, Pierre Gendron, Se Young Choi, Steve Slaughter, Chris King, Toshi Nagura, Robert Fabianjiak, designers

Engineer: Thorson Baker & Associates; Hi-Tech Engineering
Graphic design: Alexei Tylevich





The Philadelphia store's light box (right) glows above epoxy-resin floors. The custom-fabricated display units in the Pasadena store (above) allow quick-change flexibility with a minimum of parts and assembly.

budget because the installation and operation of the lighting turned out to be very costly."

With the client's blessing, the architects readdressed the design and, while most materials were not lost in translation, the costly light-box effect was replaced with a "box within a box" design. The new concept involved a contiguous floor-to-ceiling wrapper of cutaway display cabinets and soffits that could be easily adapted and inserted into various retail locations. Constructed of cost-effective dry wall and steel studs, the wrapper is illuminated internally by fluorescent tubing that can be conventionally installed between layers of the wrapper. The redesign also requires fewer lighting fixtures, but doesn't skimp on atmosphere, casting its own captivating glow between the inner and outer skin of the wrapper.

Since 1998, the "box within a box" brand design has been adapted to 50, 2,000- to 3,000-square-foot stores nationwide, with plans to open another location in Santa Monica this spring. Four more domestic outlets will open this year, plus six more abroad, primarily in Asia. While the wrapper design is manipulated to individual site conditions, fixtures, lighting, and floor displays are consistent to convey a cohesive brand identity from store to store.

Beyond MaxStudio.Com's retail interiors, the architects also conceived an Internet presence with the design of an e-commerce kiosk.



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The facades of most MaxStudio.Com stores, such as the one in San Diego (left), feature steel-edged glazing and doors. Illuminated vitrines and soffits seem to float within the shell (bottom). A kiosk (below) adapts aerospace fabrication for Internet sales.



Once again, the team played with the idea of luminescence, collaborating with an aerospace design company, Performance Composites, to craft a glowing monolithic form that complements the brand design and encourages customers to purchase items virtually. "When we first visited the [Performance Composites] shop, there were ejection seats for F-18 fighter bombers lying around," Yu remembers. "They specialize in high-tech composite materials, but we asked them to do something unique for the kiosk—develop a technique for making parts out of translucent, fiberglass-reinforced resin with an integral color in the material that could then be sprayed into reusable molds."

While forging the visual identity for Leon Max's business vision (including plans for a 100,000-square-foot headquarters), Yu has also devoted the past four years working on his client's personal dream, designing a circular hillside villa in Malibu that is scheduled to begin construction this year. ■

Sources

Fixture fabrication: Orion Retail Services and Fixturing; Builders Furniture

Glazing: National Storefront Glass

Hardware: Schlage; Dorma; Forms + Surfaces

Acoustic ceiling: USG

Flooring: Floor Technology Group

Paint: Sherwin Williams

Paneling, laminates: Abet Laminati

Translucent surfacing: KB Manufacturing

Lighting: Lightolier; H.E. Williams

For more information on this project, go to Projects at

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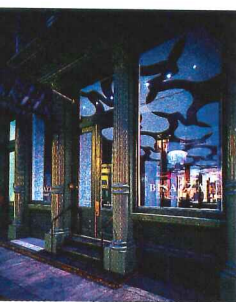
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Fabio Novembre wraps a SoHo loft with curves clad in mosaics for the new **Bisazza tile showroom**



by John Peter Radulski



With virtually every sinuous surface covered in mosaics, the new showroom for Bisazza tile in New York City's SoHo is a selling tool in itself. Conceived by Milanese designer Fabio Novembre with architect Ellen Honigstock, the 3,500-square-foot space creates an arresting street-level presence. Joining other Italian design brands—including Artemide, Boffi, Flou,

and Kartell—on the same block of Greene Street, Bisazza aims to broaden consumer awareness while serving the professional design community. The flagship is among the latest in a three-year rollout of new Bisazza showrooms directed by Studio Novembre in locations including Milan, Madrid, Barcelona, Berlin, and the manufacturer's home base of Vicenza, Italy. Bypassing the conventional arrangement of most tile cen-

John Peter Radulski is a freelance writer and editor based in Westport, Conn. He is a frequent contributor to ARCHITECTURAL RECORD.

ters, which typically present mock-ups of bathrooms and kitchens alongside racks of sample books, the new Bisazza sites are immersing fantasy environments showcasing Novembre's flamboyant use of mosaics.

Set within the envelope of an 1874 brick and cast-iron building, the SoHo showroom's ribbonlike forms and shimmering surfaces are a visual tour de force. Novembre says he wanted "to take Palladio to New York and filter him through a psychedelic lens." While a connection to Palladian virtues may be lost on many visitors, a sense of symmetry and chiaroscuro contrasts enliven the space.

Novembre has overlaid the rectangular footprint with one that approximates the shape of a wine glass. From the entrance, the symmet-

The new showroom creates a streetside presence (left) with views of its shimmering tile surfaces (above).

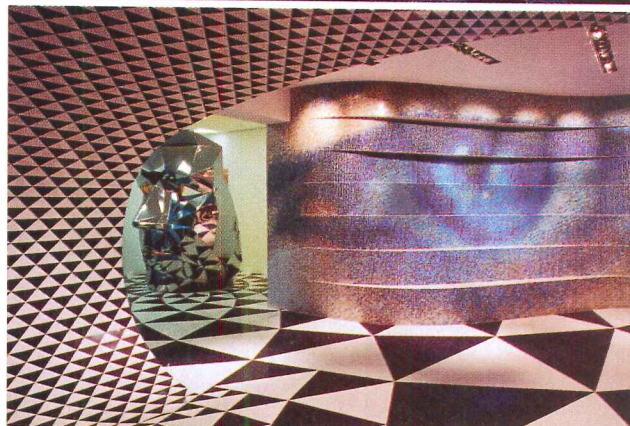
Project: *Bisazza Showroom, New York City*

Principal designer: *Studio Novembre—Fabio Novembre, principal*

Architect of record: *Ellen Honigstock Architect—Ellen Honigstock, principal; Aileen Iverson, project manager*
Mechanical engineer: *Matthew K. Bendix*



A skylit, raised area, paved with terrazzolike tile, facilitates meetings. The topiary is also made of tile. Swooping furniture and mosaic patterns define space (opposite, left two).



Novembre also employed graphic tile patterns in Bisazza's new Berlin showroom, which opened last fall (above and top).

rical concave walls narrow and then their curves expand outward to the back of the showroom. Overhead, a dropped ceiling slowly bows from the entrance height of 16.5 feet to 10 feet at the main room's midpoint, then rises back up at the rear. Six original cast-iron columns, all but one newly painted black with gilded trim, define the longitudinal axis.

The walls are sheathed in .4-inch-square glass tiles arranged in rectilinear patterns that alternate between predominantly black and blue, with darker areas echoing the structural columns. The ceiling, also faced with .4-inch-square tiles, displays an abstract, curvaceous pattern. On the floor, sheets of Bisazza's black and white, terrazzolike aggregate glass and polyester resin tile mirror the ceiling pattern. Modular seating designed by Novembre and upholstered in black and silver fabric can be arranged in a variety of configurations; its loop-the-loop design links visually to the floor and ceiling decoration.

Heading construction administration with Ellen Honigstock, project manager Aileen Iverson explains that installing new HVAC systems was a complex aspect of the renovation. Window-mounted air-conditioning units were replaced with a new system, and "cooperative apartments on the upper floors of the building required that there be zero vibration and noise." The solution was to run narrow, 6-foot-tall ducts between newly built interior walls and the existing brick walls.

A pair of apertures, each 7 feet tall by 15 inches wide, at the rear of the showroom showcase product lines. A total of 500 1-square-foot sample boards are mounted on automatic moving walls. An enclosed 434-square-foot office is tucked to one side of the showroom, opposite a break room and restrooms. These three areas all feature walls and floors covered with the company's tile in a basket-weave pattern, another opportunity to display creative design solutions to customers. ■

Sources

Tile: *Bisazza*

Lighting: *Bega; Galleria Jacopo Foggini; Griven; Modular International*

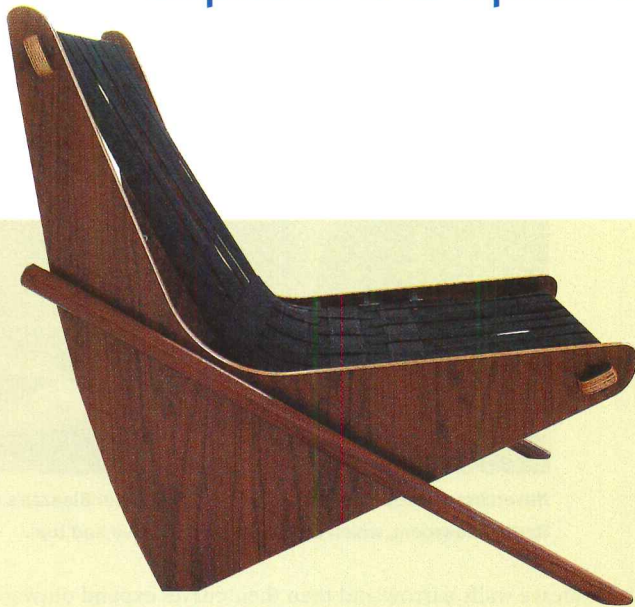
Furniture: *Studio Novembre;*

Cappellini; Knoll; ICF; Vitra

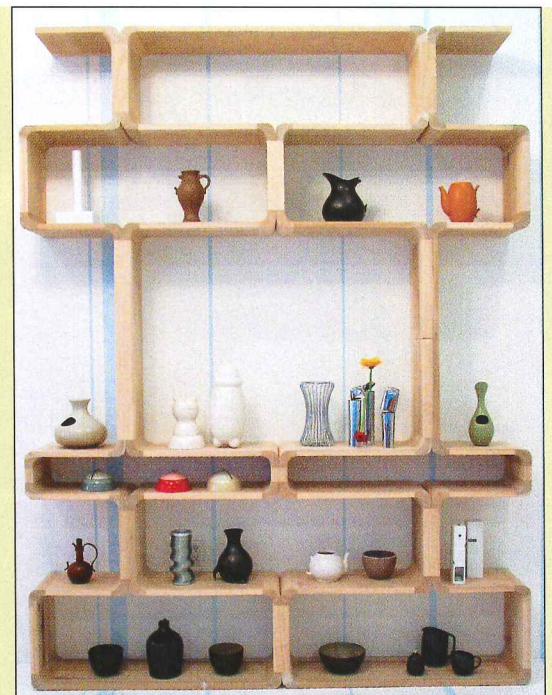
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Two furniture aficionados commission Leven Betts to capture the spirit of **Sublime American Design**



Richard Neutra's 1942 Boomerang chair is a limited-edition reissue.



With their simple rectilinear forms and rounded edges, the components of the Worm wall system designed by Ladislav Czernek can be stacked in customized patterns.



The showroom employs abstract stars and stripes as a sublime backdrop.

Rama Chorpash's rug depicts the topography of Central Park.

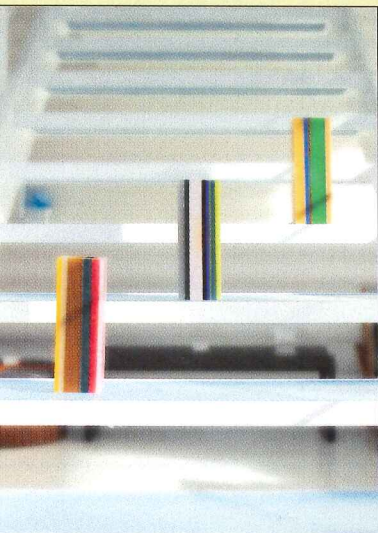


The interlocking, three-section sofa was designed by Rick Lee for Sublime.

Sublime is a tricky description for contemporary furniture and accessories. Whether a piece is judged sublimely beautiful or instead a short step away from the ridiculous is a verdict that rests in the eye of each connoisseur. A new retail store and showroom in New York City's Tribeca district, however, recently opened under the audacious banner Sublime American Design, presenting a collection of furnishings devoted to both emerging and established homegrown talent. (Just don't call it S.A.D.) The brainchild of partners Arthur Julian and Uri Litvak who also helm a culture-oriented advertising and marketing firm called Booklab, the store evolved from their shared lifelong passion for singular, spirited design objects. Leven Betts Studio designed the three-level, 3,300-

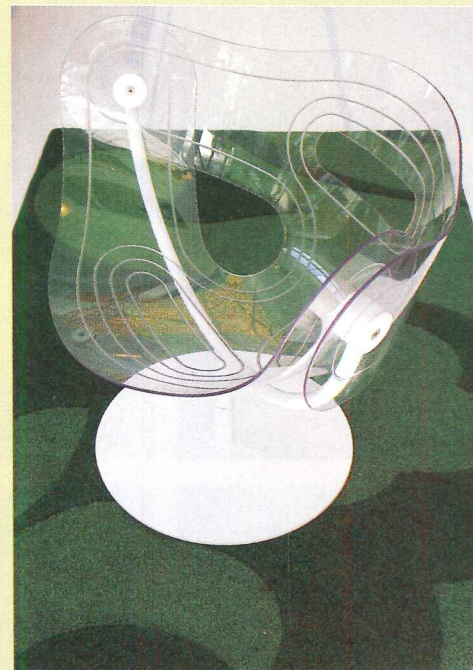
square-foot space to showcase the work of more than 50 artists in a sunny, loftlike setting. Subtle stripes and distorted stars punctuate the white walls and ceiling, the architects' homage to the paintings of Jasper Johns and Agnes Martin.

Among Sublime's roster of standout designers are Minimalist Elizabeth Paige Smith, ready-made experimenter/architect Alejo Ruocco de Luca, and ironists/architects Boym Partners. Groundbreaking classic pieces include R.M. Schindler's 1922 furniture created for his Los Angeles home (reproduced under license by Los Angeles architects Marmol Radziner) and Richard Neutra's midcentury Boomerang chairs. For more information and furniture images, go to www.sublimeamericandesign.com. ■



Colorful lamps by Henry Allen (shown on stairs, above) meld layers of molded rubber.

Elizabeth Paige Smith's table seals powder in acrylic.



The Diaper chair by Jeff Miller has a polycarbonate seat on a metal base.

Design Workshop's Petal chairs are made of plywood.



A table by Ali Tayar is built of lacquered MDF pieces assembled with slip joints.





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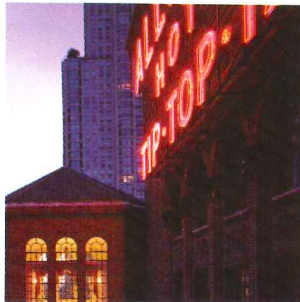
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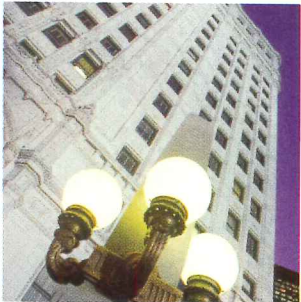
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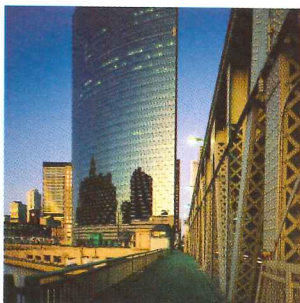
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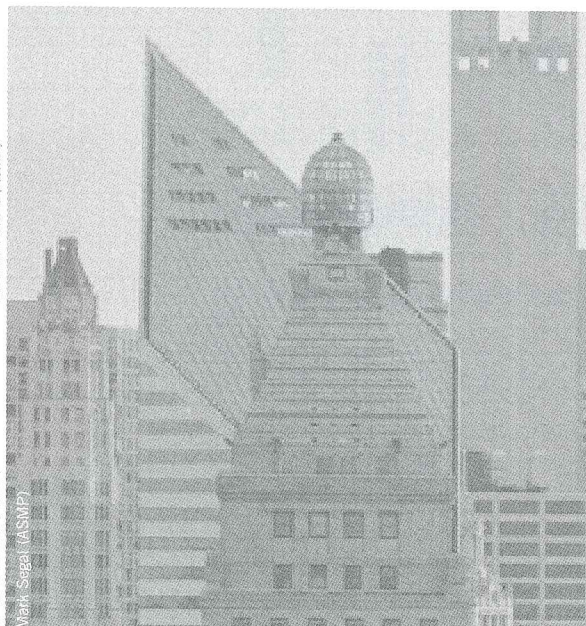
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Interiors Products

► First U.S. cast-glass tile

Crossville's new Illuminescence Glass for walls, floors, and countertops is the only cast-glass tile available in the U.S., according to the manufacturer. The program's three series are made of cast translucent glass textured front and back to capture and refract light. All of the tiles use a quantity of recycled glass and are available in nine water-inspired colors. Crossville Ceramics, Crossville, Tenn.

www.crossville-ceramics.com

CIRCLE 200



▼ New flooring showroom and collections

Amtico recently opened a 2,000-square-foot studio on the first floor of the New York Design Center. New products such as Aqua (right) are highlighted on the floor and display panels around the space. Inspired by Pop artist Bridget Riley, the 18" x 18" Aqua tiles use optical illusion, holographics, and the sheens of silks and brushed metals to offer a sense of movement and dimension underfoot.

Amtico, New York City. www.amtico.com **CIRCLE 201**



► Expand your desking options

Expansion Desking, new from Teknion, is a line of freestanding, desk-based office furniture for multiple applications in the open-office environment. Desk modules are constructed using a structurally integral metal frame, to which desired components such as work surfaces, storage, element fascias, gables, and modesty panels are added. The system can be easily reconfigured as individual workstations, reception stations, or clusters of workstations. Teknion, Toronto. www.teknion.com **CIRCLE 202**



► From Saville Row to your couch

After British fashion designer Paul Smith adopted various Maharam archival textiles for his menswear collection (he selected the whimsical I Morosi alla Finestra for a jacket lining), the firm invited him

to add his lighthearted take on traditional British tailoring to a line of seating upholstery. Bespoke Stripe is a collection of classic menswear fabrics designed for seating applications, and features a seemingly random pattern of multicolored stripes.

Constructed of 100 percent wool, the textiles meet all contract performance requirements. Maharam, New York City. www.maharam.com **CIRCLE 204**



◀ More than skin deep

Surface, a division of the Toronto art studio Moss and Lam, offers a line of specialty interior wall coatings that combine raw elements such as silica, crystal, and titanium flakes with high-grade acrylics. The low-VOC-rated finishes come in a range of colors and in five styles (including Flint, shown). Recent applications include Tokyo's Four Seasons Hotel and the Detroit Symphony Hall. Surface, Toronto.

www.surfaceinteriors.com **CIRCLE 203**



▼ The path to safety

StoneGlow floors, from Azrock by Tarkett, incorporate photoluminescent chips, dispersed evenly across the tiles, which absorb and store light energy. In normal lighting, the floor is an unobtrusive and integral part of the overall interior design, but in dark or smoke-filled conditions, the energy absorbed by the chips emits a bright glow and provides a lighted footpath for up to 2 hours. Tarkett Commercial, Houston.

www.azrock.com **CIRCLE 205**



Interiors Products



▲ Postproduction nylon yarn carpets

Mannington Commercial has introduced two new modular products to the ArtCraft Collection: String Works, a linear pattern, and Modern Primitive (shown), a large, random check pattern. The ArtCraft technology process uses color upon color with 100 percent postproduction nylon yarn (that in the past may have been sold or downcycled) in random combinations. The products can be installed in various modular configurations. Mannington Commercial, Calhoun, Ga. www.mannington.com

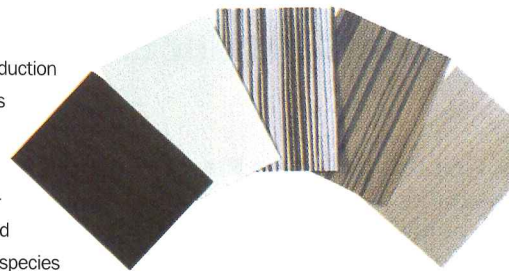
CIRCLE 206

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► Friendly veneer

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such as Obeche and Poplar, which are relatively inexpensive, fast-growing woods from managed forests. Tabu is currently involved in planting about 30,000 trees of various species to ensure its future supply. Tabu, Englewood Cliffs, N.J. www.tabu.com CIRCLE 207



◀ Handier paint palette

Master Coat Technologies has introduced the 2004 color palette for its Scuffmaster line of coordinated durable interior paints. The new Elemental Coordinates palette offers design professionals 140 new colors in six finish styles. The collection organizes the finish styles in a way that provides ideas and inspiration on how they might be specified together in a space. Master Coating Technologies, Minneapolis.

www.scuffmaster.com CIRCLE 208

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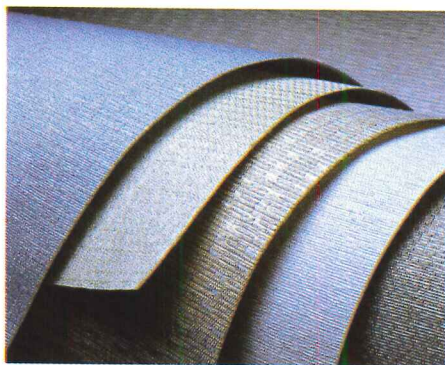
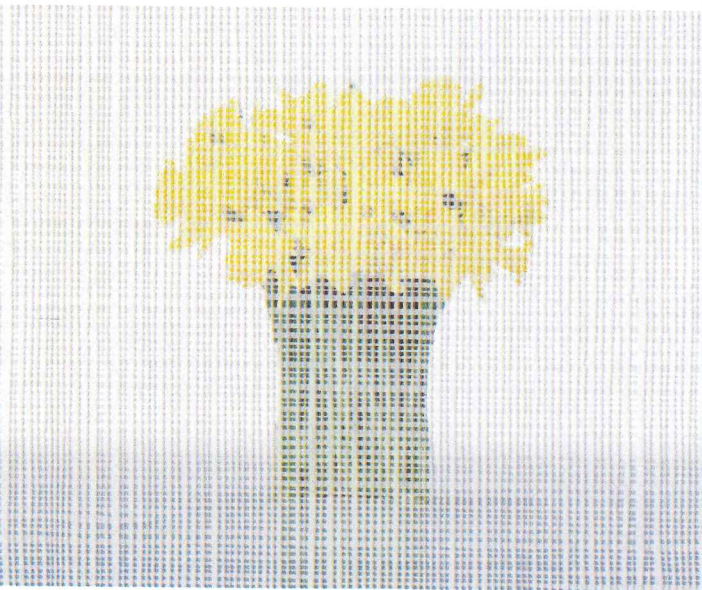
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Textile-inspired glass

The weaves+textures collection from Skyline Design was inspired by the everyday fabrics used by indigenous people from places such as Mexico and South Africa. Designers can choose from different colors, patterns, and etching options for side-lights, door lights, feature walls, signage, and horizontal surfaces. The collection comes in standard glass sizes and thicknesses and meets all glass-safety requirements. It can be used on tempered, laminated, low-iron, or clear glass. Skyline Design, Chicago. www.skydesign.com **CIRCLE 209**



generation in durable Hardwear materials from DesignTex. The Hardwear high-performance wall-covering textiles pioneered by DesignTex in the early 1990s has been enhanced with Microban antimicrobial protection. Distinct from surface coatings, Microban will not wash out or wear off, because the protection is

▲ One tough wall covering

Flip, Skip, and Zip are three new wall-covering patterns that represent the next

built in during the manufacturing process. The DesignTex Group, New York City. www.dtex.com **CIRCLE 210**

► Looks good, sounds good

Latitudes is a new textured ceiling with a geometric visual available from Armstrong. The new medium-textured ceiling combines a crosshatchlike design with a dimensional, sculptured visual. The 2' x 2' mineral fiber ceiling has excellent sound-absorption properties, including an NRC of .65 and a CAC of 37. Armstrong World Industries, Lancaster, Pa. www.armstrong.com/ceilings **CIRCLE 211**



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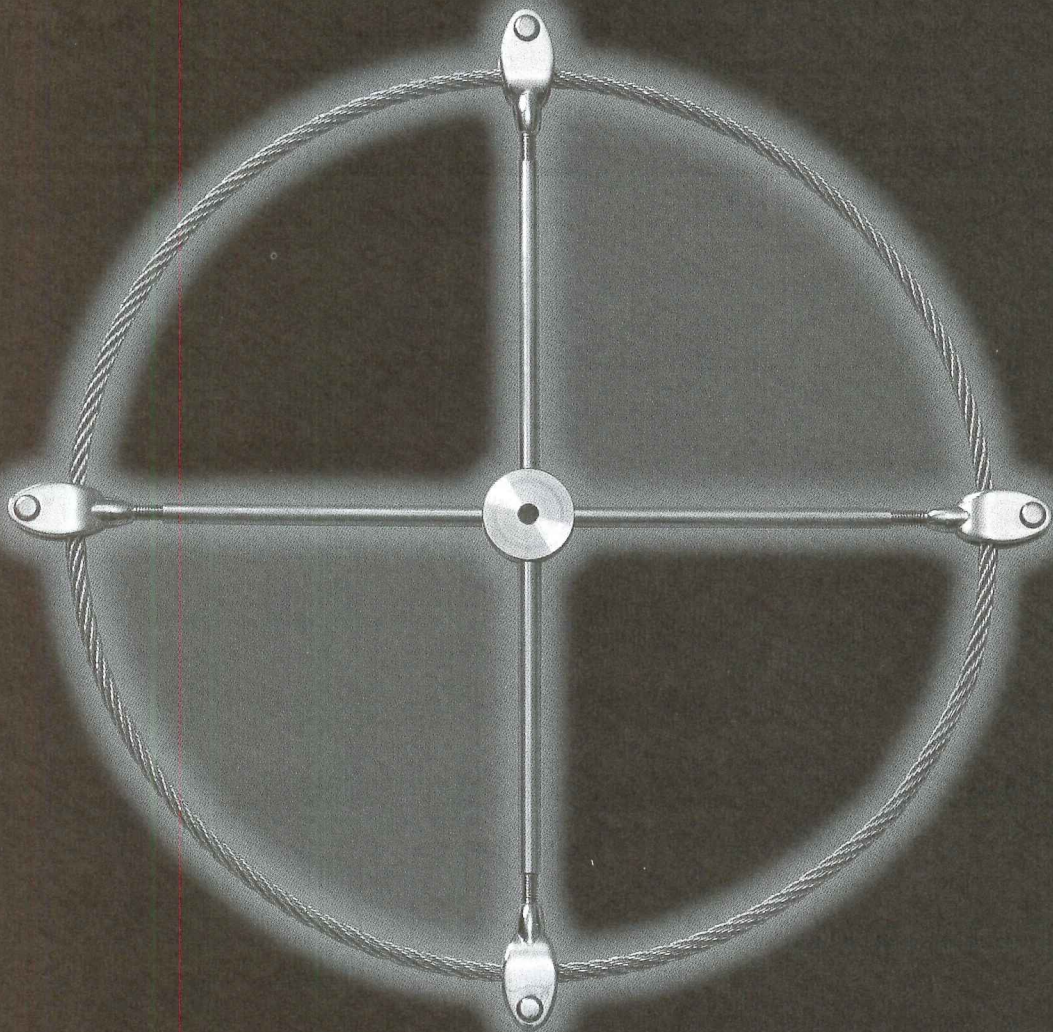
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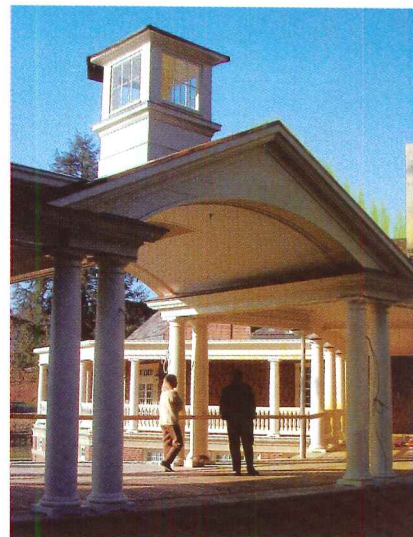
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Products **Roofing & Cladding**

Our focus on **roofing and exterior cladding** features a range of materials and product types—from a powered roof system to better engineered glass panels for the world's tallest building. For more roofing product info, visit the **NRCA's 117th Annual Convention & Exhibit**, held this month in San Diego. *Rita F. Catinella*

Turn-of-the-century mansion renovated for its latest incarnation

The Mansion at Turner Hill, in Ipswich, Massachusetts, was completed in 1903 by architect William Rantoul for the Rice family, who made a fortune in tanning and smelting. The mansion boasts plaster hand-molded ceilings, vivid wall friezes, oak hardwood floors, and hand-carved paneling, doors, and stairways. Shortly after Mr. Rice died in 1943, the estate was sold to the Missionaries of Our Lady of La Salette, and the property was converted for ministry and spiritual retreat uses. In 1997, the Raymond Property Company purchased Turner Hill from the order and have since been working to restore the property as a golf course and high-end residential community. The \$110 million project, by architect John Olson of Olson, Lewis, Dioli and Doktor Architects of Manchester-by-the-Sea,



Perimeter's Colonial gutter and cornice system is designed to complement high-quality residential homes.

Massachusetts, will reuse the 311-acre Turner Hill estate and its Edwardian-era mansion. The new portion of the mansion, along with the clubhouse, restaurant, and pro shop,

will use Perimeter Systems' 6" Colonial Designer Series Gutter and Cornice System with 3" x 4" downspouts and custom angled miters as part of the exterior cladding renova-

tion. Perimeter custom-matched the gutter system to Navajo White. The mansion is expected to open in spring 2004. Perimeter Systems, Sanford, N.C. www.saf.com/persys **CIRCLE 212**

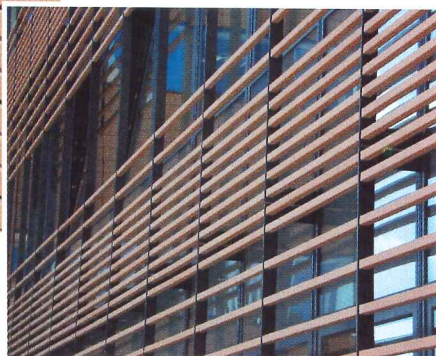


Ventilated terra-cotta facade system for a range of exterior cladding effects

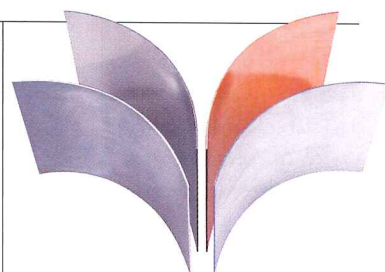
NBK Keramik GmbH first developed its modern terra-cotta facade system for Renzo Piano's Potsdamer Platz project in Berlin. Known as Terrart, NBK's suspended facade system is made from large-scale terra-cotta elements that are ventilated at the rear. By combining classic techniques along with the

latest technologies, the system can work with closed surfaces, open glass constructions, and to create transparent optical effects. Terrart is available in several variations, including Terrart-Large, Terrart-Mid, Terrart-Shingle, and Terrart-Solid. For each individual project, the specifier chooses dimensions, color, surface structures, and glazes along with the manufacturer; NBK's production plant can manufacture any form up to 150 centimeters in length. The Terrart-Flex system is a patented substructure consisting of 15 components that can integrate the facade into any classic or modern wall construction. NBK Keramik, Emmerich, Germany. www.nbk.de

CIRCLE 213



The system works with solid wall surfaces or open glass constructions to create a range of optical effects.



Improved natural metal cladding

Reynold Natural metals are an alternative for design professionals who want to design with natural metals but are dissuaded by the weight, inflexibility, and cost of heavy plate and sheet metal. Constructed of two sheets of corrosion-resistant zinc, brushed aluminum, copper, or stainless steel permanently bound to a thermoplastic core, the materials are strong, highly formable, and come in a variety of lengths. Alcoa Cladding Systems, Eastman, Ga. www.alcoacladdingsystems.com **CIRCLE 214**

Products **Roofing & Cladding**

▼ **Powered roof system**

Sarnafil and Solar Integrated Technologies (S.I.T.) completed the first of two integrated photovoltaic commercial roofing systems for two Frito Lay distribution facilities, located in Los Angeles and Sylmar, California. The SR-2001 photovoltaic roofing system,



manufactured by S.I.T., incorporated Sarnafil's thermoplastic roofing membrane and flexible photovoltaic cells manufactured by Uni-Solar, into an integrated roofing system that turns the roof into a power generator. Sarnafil, Canton, Mass. www.sarnafilus.com

CIRCLE 215

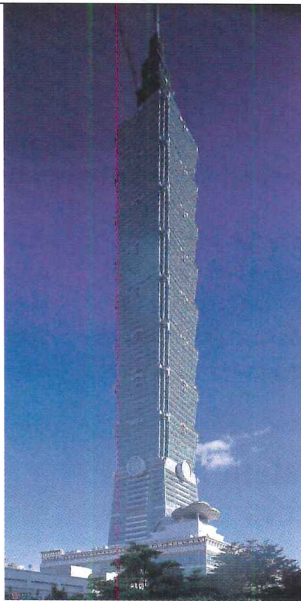


▲ **Keeping leaks out**

Grace Ice & Water Shield is a self-adhered waterproof membrane placed between the shingles and roof deck to provide protection against leaks. Another option from Grace is Vycor Plus, a self-adhered flashing membrane providing premium protection against water infiltration in all critical nonroof detail areas, such as door openings. Grace Construction Products, Cambridge, Mass. www.graceconstruction.com **CIRCLE 220**

► **Tough glass panels for a tall customer**

Viracon was selected over three years ago to supply the engineered glass products needed for the exterior facade of Taipei 101, the world's tallest building. Viracon faced the challenge of fabricating glass units to withstand the high wind conditions of a very tall building in a typhoon region. The team needed to fabricate glass panes proportioned to the structure's height, making them larger and thicker than standard glass applications. Viracon, Owatonna, Minn. www.viracon.com **CIRCLE 217**



▲ **Two tough metal roofing systems**

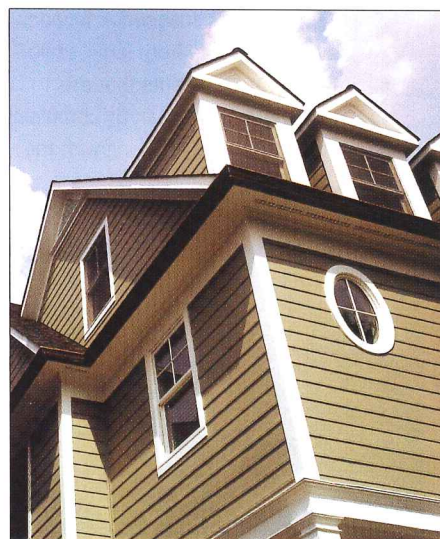
StoneCrest Slate brand metal shingles (left) have a Class 4 hail rating that can withstand 110-mile-per-hour winds and a four-way, locking weather-tight system for residential or light commercial projects. The StoneCrest Copper roofing system (right) is made from a 16 oz. copper substrate using a stucco embossed profile. Unlike traditional copper roofing, the system does not require special installation tools. MetalWorks, Moon Township, Pa. www.metalworksroof.com **CIRCLE 218**



▲ **Renovating without moving, to allow building movement**

Portsmouth City Hall, Portsmouth, Virginia, was in need of renovation to repair or replace its deteriorating brick facade but had to remain operational

during the process. A complete refacing of the facade was required because the existing brick, installed in the 1970s, was not designed to allow for movement of the building's primary structural framing. Architects Rodriguez Ripley Maddux Motley first completed design studies and then construction plans that specified two Centria products, Formawall Dimension Series metal panels and Formavue windows. The products were chosen for their ability to accommodate any movement of the building in the future. Centria, Moon Township, Pa. www.centria.com **CIRCLE 219**



◀ **Exterior trim boards**

Windsor Mill's WindsorONE Trim Boards are available for exterior applications including rake, fascia, corner boards, and bond boards. The boards are double primed and have smooth, knot-free surfaces on all four sides, and precision edges. Windsor Mill, Windsor Mill, Calif. www.windsormill.com **CIRCLE 216**

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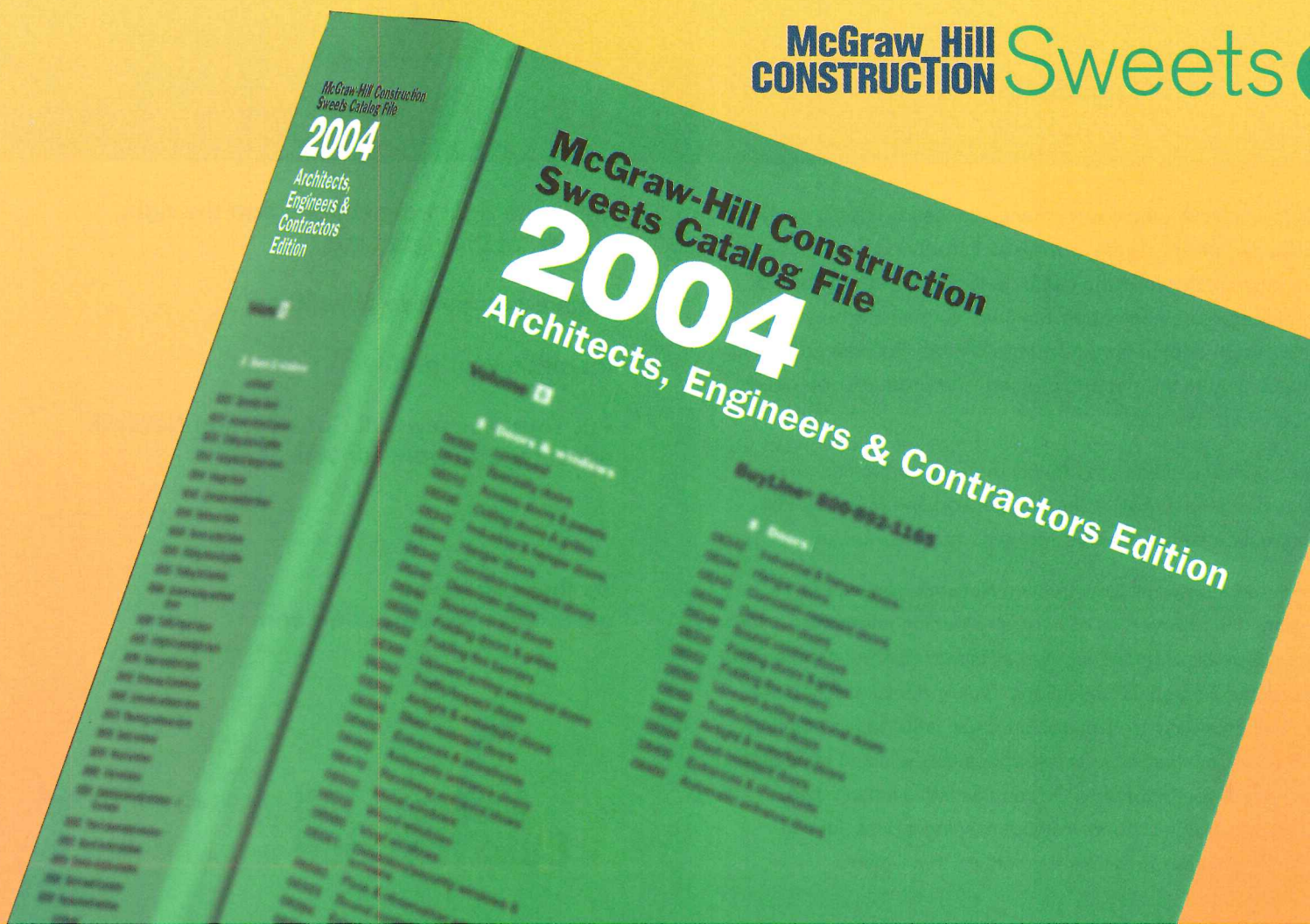
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Product Briefs

By George, they've done it!

Duron Paints & Wallcoverings has been granted the rights to manufacture paint in the colors of one of America's most prestigious homes—George Washington's Mount Vernon. For the first time in 150 years, the colors of Washington's home will be available to the public, with hues such as Prussian Blue, Large Dining Room Verdigris, and Burnt Umber.



Shown here is a contemporary dining room scene painted in two colors from the collection, Palladian White and Large Dining Room Frieze. Duron Paints & Wallcoverings, Beltsville, Md. www.duron.com

CIRCLE 221

90-minute-rated doors

Technical Glass Products (TGP) now offers fire-rated doors that carry ratings of up to 90 minutes. The UL-listed doors are available in sizes up to 48" x 96", depending on the fire rating. Combining Fireframes narrow profile steel framing with clear, wireless glazing such as FireLite Plus or Pilkington Pyrostop, the doors offer both fire protection and high-impact safety ratings. TGP, Kirkland, Wash. www.fireglass.com CIRCLE 223



Supple, textured textiles

Inspired by common industrial floor plates and corrugated craft paper, Suzanne Tick has created two new vinyl

upholstery fabrics for KnollTextiles. Instead of using traditional steel engraving rolls, which can limit flexibility, Tick discovered a new technology that can easily transfer any pattern onto a synthetic surface using a "vacuum draw" process. Both textiles are supple, pliable fabrics that smoothly follow the contours of soft seating with a pattern of pronounced surface

texture. Both are 54" wide and pass 75,000 double rubs on the Wyzenbeek test. KnollTextiles, East Greenville, Pa. www.knolltextiles.com CIRCLE 225

Product of the Month Eclipse Advantage Glass

According to Pilkington, many architects like tinted glass but want to avoid an outdated "1980s look" that is too reflective. On the other hand, some architects imagine a clear glass building without tint but sacrifice that aesthetic in favor of blinds



that control heat and glare, although they produce an uneven "checkerboard" look from the outside. Pilkington's solution to both issues is Eclipse Advantage Reflective Low-E Glass, the world's first architectural pyrolytic glass to combine subtle reflectivity with desired thermal and solar-control performance. In addition, for a reflective glass, the product offers a high level of visible light transmittance, which reduces the need and cost for artificial lighting. The composition that gives the glass its low emissivity, solar control, and subtle reflectance is an integral part of the glass surface, not just an applied coating. Unlike sputter glass (soft coat) products, Eclipse Advantage can be treated like standard glass. Pilkington North America, Atlanta. www.pilkington.com CIRCLE 222



Accessible kitchen and bath line

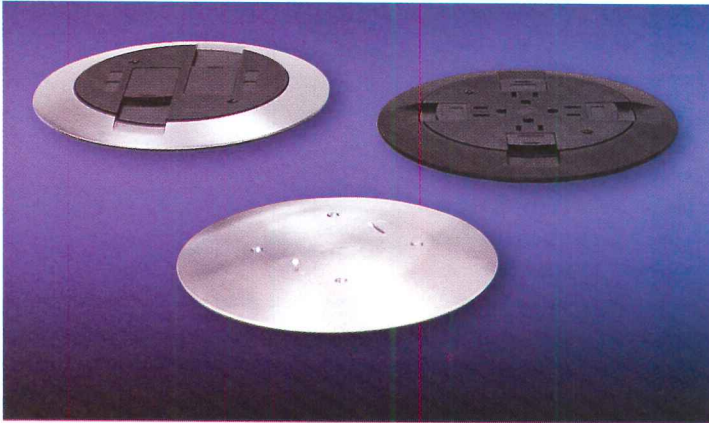
Delta has collaborated with AIA Gold Medal-winning architect Michael Graves, FAIA, to create a line of faucets, showers, and accessories for the kitchen and the bath that feature Graves's unique take on product design.



Faucets feature a high arc spout, while handles are oval shaped and easy to grasp. The entire Michael Graves Collection, from faucets to accessories, is available in three finish options and is ADA-compliant. Delta Faucet Company, Indianapolis. www.deltafaucet.com CIRCLE 224



Product Briefs



▲ Poke-thru-style fittings for underfloor duct

Wiremold has introduced flush, poke-thru-style service fittings for Walkerdect Pro Series underfloor duct systems that offer four power receptacles and four data jacks, as well as furniture feed options. The PSRC0 Series activation is based on the RC9 poke-thru device and offers individual slide covers with integral gaskets that protect receptacles and communication devices when not in use. Communication fittings have bezels that accept industry standard and proprietary devices from a wide range of manufacturers to provide a seamless interface for voice, data, audio, and video applications at the point of use. The fittings can be used in both new construction and retrofits. The Wiremold Company, West Hartford, Conn. www.wiremold.com **CIRCLE 226**



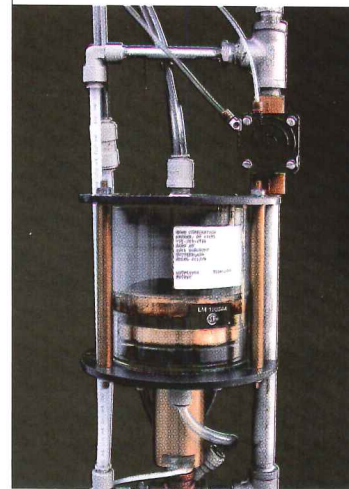
▲ Retooled receptacle

The Chase Park litter receptacles are part of the Kipp Stewart collection of outdoor products for Landscape Forms. Engineers have tooled out some manufacturing costs to lower the receptacle's price, and added a personalized logo option. The large capacity aluminum litter receptacle can be ordered at a 40-gallon size with a top opening, and a 36-gallon size with a side opening. Landscape Forms, Kalamazoo, Mich. www.landscapeforms.com **CIRCLE 227**

▼ No more frozen fountains

Haws has introduced a new freeze-proof valve for pedestal drinking fountains. The Model 6519FR valve allows customers to keep pedestal fountains operating during freezing conditions. While several manufacturers offer valves aimed at that application, the Haws valve is engineered to be oblivious to water-table conditions. Haws, Sparks, Nev. www.hawesco.com

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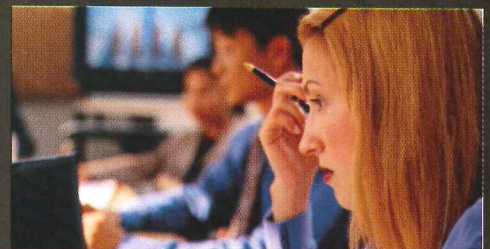
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▼ Natural insulating material

The French company Nap'tural offers a patented new insulating material called Batiplum. Made of 70 percent duck feathers, 20 percent thermofusible textile fibers, and 10 percent hygienic wool, the blanketlike material is available in two categories: Batiplum mur (for walls) and Batiplum toiture (for roofing). The textile fibers bond the wool and feathers, avoiding the need for resin. Last year, Batiplum won a silver medal at the Innovation Competition during the Batimat trade show held in Paris. Nap'tural, c/o French Technology Press Office, Chicago. www.infotechfrance.com **CIRCLE 229**



◀ Sacrificial surface shield

CPFilms introduces a new replaceable LLumar Graffiti film that is designed to provide a sacrificial shield for smooth surfaces that undergo the ravages of graffiti paint, mechanical etching, and acid attacks. The patented crystal-clear, scratch-resistant coating and film laminate absorbs scratches in its surface and helps prevent them from being transferred to the glass beneath. The film can be used to protect a variety of surfaces, including showroom or store windows, washroom mirrors, or pillars in a shopping mall (shown). CPFilms, Martinsville, Va. www.llumar.com **CIRCLE 230**

► Conventional stair line

Known primarily for the Alternating Tread Stair, Lapeyre Stair now designs and fabricates conventional industrial stairs. Customers can call in their building codes and specs to have industrial egress stairs or fixed industrial stairs designed and built to order. Available in carbon steel with a variety of finishes, the stairs may be ordered with grip, diamond tread plate, bar grating, or concrete pan treads, and they comply with OSHA and BOCA codes. Lapeyre Stair, New Orleans. www.lapeyrestair.com **CIRCLE 231**

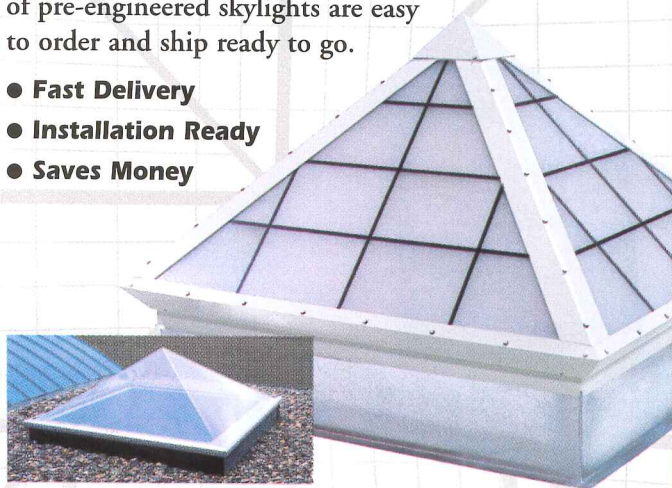


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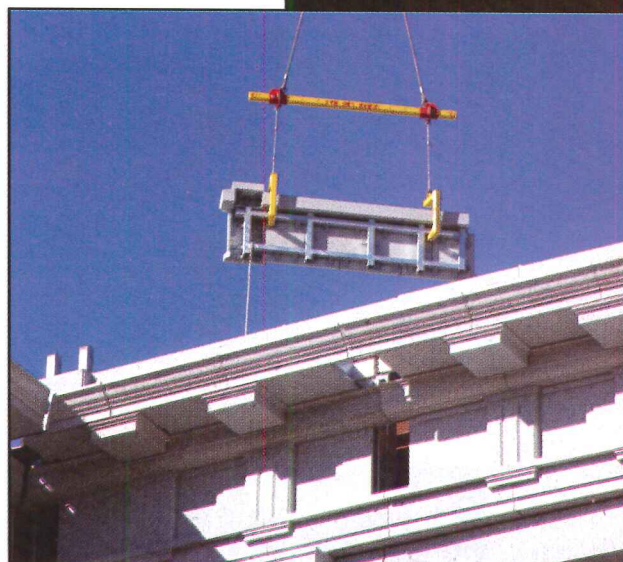
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Product Literature

New York design reference

The 2004 edition of *DESIGNnewyork* is a reference guide to architecture, fashion, graphic design, interior design, and product design in New York City. The book is divided into three categories, "What," "Where," and "When," which allow readers to find design-related information by topic, location, and time of year. Design Paradigm, New York City. www.designnewyork.info **CIRCLE 232**

Solid-surface guide

A 16-page commercial-products guide features a complete review of Swanstone's solid-surface and Veritek compression-molded products designed for commercial/institutional applications such as public restrooms, laundry rooms, and maintenance areas. The Swan Corporation, St. Louis, Mo. www.swanstone.com **CIRCLE 233**

Landscape lighting catalog

Catalog 03 contains application and specification information covering the broad range of Allscape products. The catalog is divided into sections for Specified Landscape, Step Lights, Low Level, Flood Lights, Building Mount, Architectural, and Area Lighting. Allscape, Santa Ana, Calif. www.allighting.com **CIRCLE 234**

NEW SITES FOR CYBERSURFING

New commercial rubber-floor-covering site www.norarubber.com



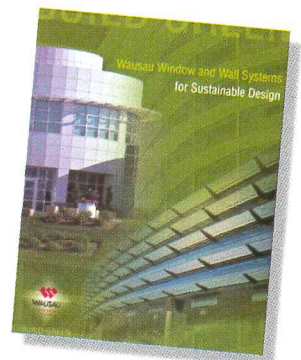
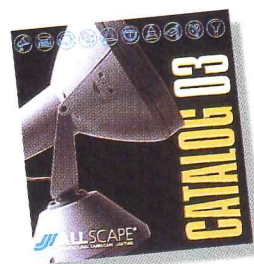
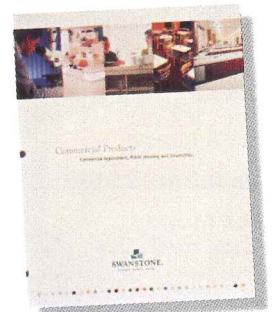
Wilsonart laminate has revamped its Web site www.wilsonart.com

Palmetto Brick's online estimation calculator increases the efficiency of brick and mortar needed for projects of all sizes www.palmettobrick.com

New site for manufacturer of wood components and profile wrapped products www.contactlumber.com

Sustainable position

Wausau Window and Wall Systems' *Build Green* brochure showcases Wausau's support of green building and sustainable design goals through product features such as energy-efficient glass and framing, natural daylighting, exterior sunshades, and occupant-controlled ventilation. The brochure also features examples of Wausau's contributions to LEED-certified projects. Wausau Window and Wall Systems, Wausau, Wis. www.wausauwindow.com **CIRCLE 235**



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Product Literature

Cypress certification

The Southern Cypress Manufacturers Association (SCMA) has published a new version of its *Versatile, Distinctive Cypress* brochure, with a new section devoted to the first-ever certified engineering design value for cypress. The certification means that cypress design values are recognized in model building codes across the U.S., making it easier for architects to specify cypress for structural applications. SCMA, Pittsburgh. www.cypressinfo.org **CIRCLE 236**

Decorative lighting catalog

W.A.C. Lighting is offering a new 28-page color catalog on its Glass Companions line of Counter Balance Adjustables, Wall Sconces, Monopoints, and Multipoints. W.A.C. Lighting, Garden City, N.Y. www.waclighting.com **CIRCLE 237**

Quick-ship seating program

BioFit Engineered Products offers a new catalog featuring ergonomic chairs in its quick-ship program for customers who need seating immediately. The new catalog showcases the hundreds of ergonomic chair models now available in BioFit's Ship Now! program. BioFit

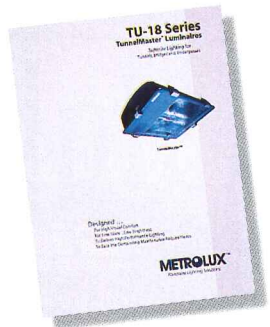
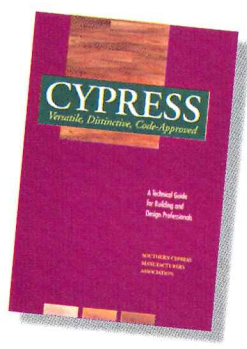
recently expanded its program to include a wider selection of chair models for industrial, laboratory, high-tech, and office applications. BioFit Engineering Products, Bowling Green, Ohio. www.biofit.com **CIRCLE 238**

Tunnel lighting brochure

Metrolux Lighting's new brochure focuses on the TunnelMaster TU-18 Series of high-performance luminaires designed specifically for demanding tunnel and underpass applications. The 12-page brochure provides an overview of the technical complexity inherent in properly illuminating tunnels and underpasses, and their approaches or exits, on a day-in, day-out basis. Metrolux Lighting, Franklin Park, Ill. www.metrolux.com **CIRCLE 239**

Furnishings brochure

Nucraft Furniture Company offers a new brochure for its Maya collection of occasional tables, consoles, and benches. The four-page document features photography, product illustrations, and descriptions of the line. Nucraft Furniture, Grand Rapids, Mich. www.nucraft.com **CIRCLE 240**



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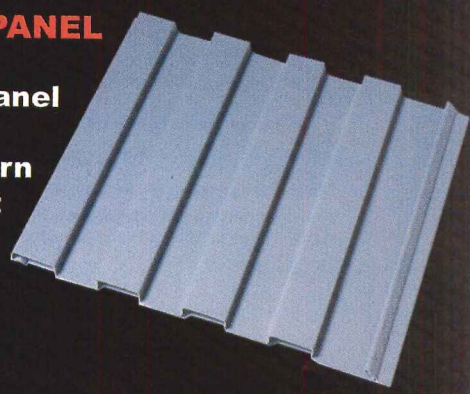
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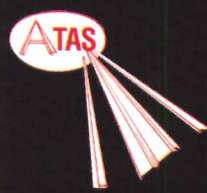
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Program title: "Integrating Contemporary Systems into Historic Structures Without Destroying Significant Fabric," *Architectural Record* (02/04, page 129).

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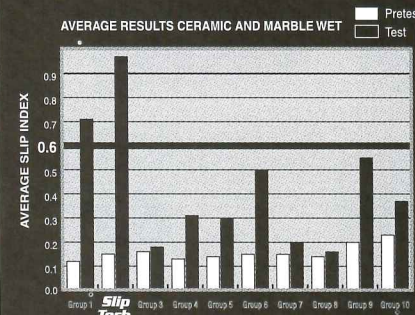
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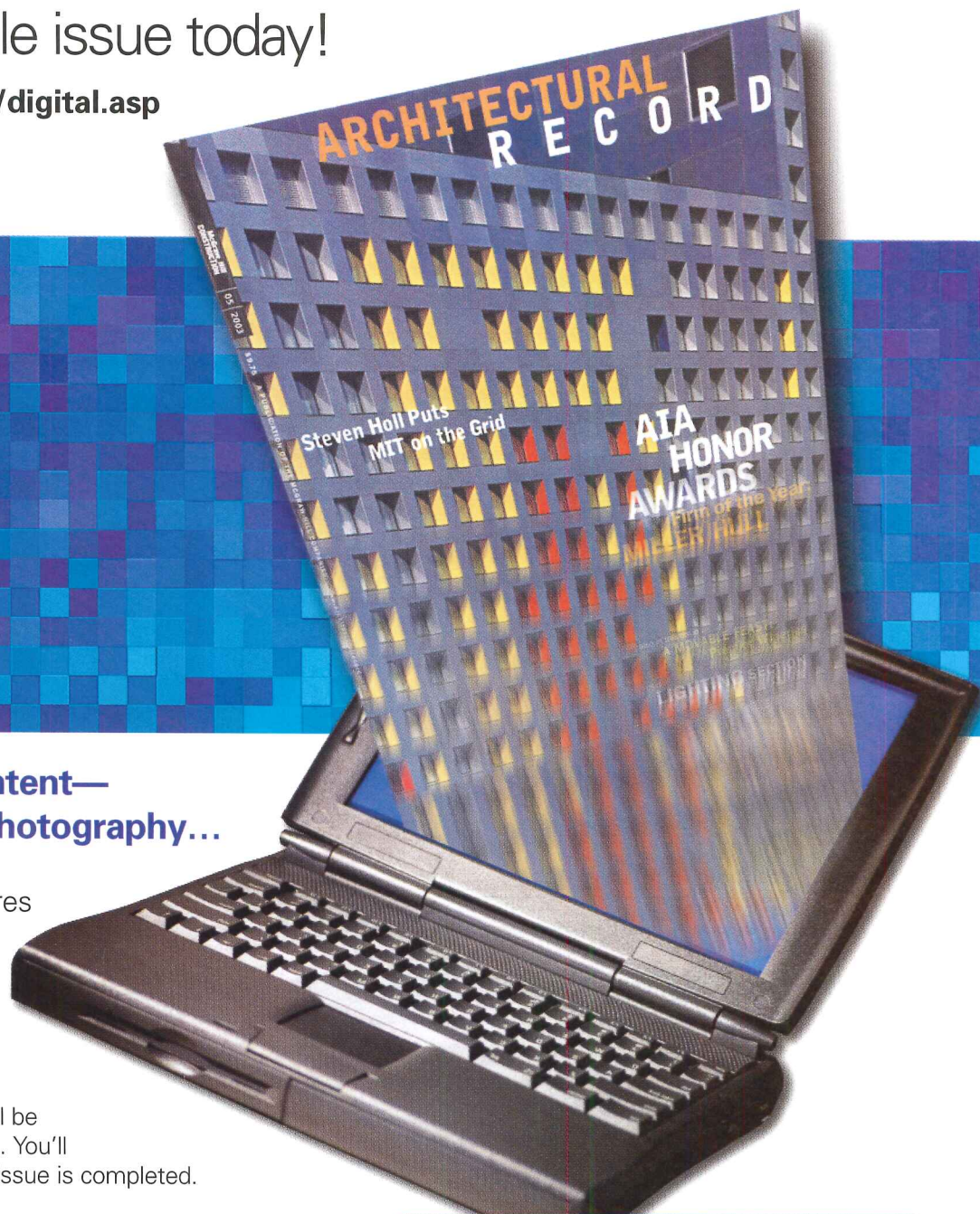
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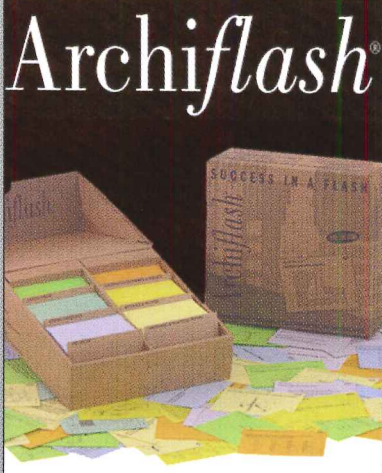

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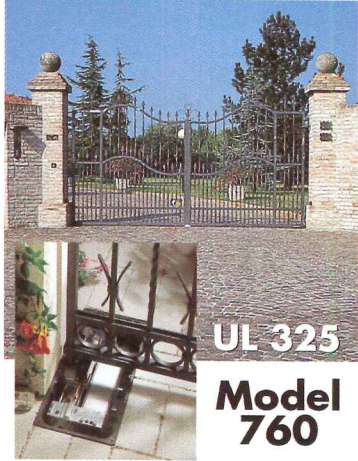

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	<p>www.scofield.com</p> <p> 153</p>



FAAC International, Inc.	
Invisible Swing Gate Operators	
	<p>2 Site construction</p> <p>FAAC is the world's largest specialized manufacturer of operators for swing, slide, and barrier gate systems. The Model 760 hydraulic swing gate operator is designed specifically for in-ground residential applications. Its power and invisibility make the 760 ideal for large, ornate gates. For more information of the 760 and other FAAC products, visit its Web site.</p>
	<p>www.faacusa.com</p> <p> 151</p>

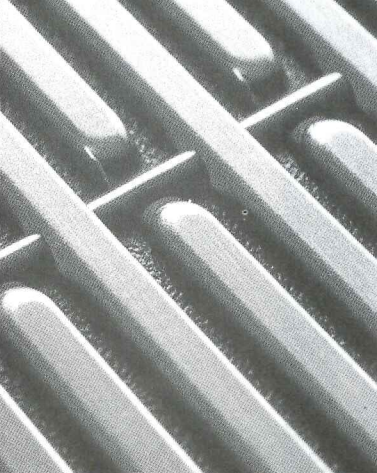

Vermont Structural Slate Company, Inc.	
Natural Vermont Slates	800-343-1900
	<p>4 Masonry</p> <p>For almost 150 years, Vermont Structural Slate Company has quarried and fabricated top-quality natural Vermont slates, producing all types of architectural, flooring, and roofing slate products. The company complements its range of local materials with unique slates, quartzites, sandstones, and limestones from around the world. It specializes in architectural projects and can help architects evaluate, detail, and specify natural stone. Architect: Bohlin Cywinski Jackson. Project: Princeton University, Wallace Hall. Stone: Unfading Green Slate.</p>
	<p>www.vermontstructuralslate.com</p> <p> 154</p>

Master Halco	
Decorative Wire Fencing	
	<p>2 Site construction</p> <p>Master Halco's new Series 300™ Decorative Wire fencing incorporates some of the best design elements of its industry-leading ornamental iron and color chain-link. Its steel and wire mesh construction in a special twin wire design creates unique joint strength and durability. Series 300 is available in four colors: tan, bronze, white, and black. Decorative wire fencing complements a variety of architectural styles and is backed by a 12-year limited warranty. With more than 60 locations across North America, Master Halco has the products and services to satisfy your project requirements. Visit Master Halco's Web site to view its extensive product offering and download specifications and drawings. (Black decorative wire fencing as seen in the 2003 Sunset Idea House.)</p>
	<p>www.FenceOnline.com</p> <p> 152</p>

Cleveland City Forge	
Framing & Metal Fastening Systems	800-431-4350
	<p>5 Metals</p> <p>Cleveland City Forge supplies structural components for framing and metal fastening systems on new construction and renovation projects. For over 130 years, CCF has supplied components used in athletic arenas, tunnels, commercial buildings, bridge construction, and even nuclear power plants. CCF features an extensive line of clevises, pins (headed or straight), turnbuckles, threaded or upset rods, eye-nuts, and yokes; they also combine products to create complete assemblies. Materials range from carbon, alloy, and stainless steel. Finish options include plain, galvanized, plated, or polished. CCF clevis and turnbuckle forging specifications were used to develop ASTM national industry standards.</p>
	<p>www.clevelandcityforge.com</p> <p> 155</p>


Fry Reglet Architectural Metals	
Metal Column Covers	5 Metals
	<p>To borrow an old slogan for a new trend in design, "support can be beautiful," thanks to Fry Reglet. A new line of metal column covers, available in a wide variety of metals, colors, and textures, provides the solution to mask unsightly concrete or structural steel columns. Each column is factory fabricated to exact project specifications to ensure ease of installation while providing a precise, aesthetically pleasing appearance. Five different column cover configurations are available allowing design professionals to select the ideal solution for their interior and exterior column requirements. Covers can be permanently mounted for security or can be removable for access to electrical or data wiring.</p>
www.fryreglet.com	 156

Wylie Metals	
Custom Metal & Railing Design	5 Metals
	<p>Wylie Metals is a leading innovator in custom metal and railing design. From standard proprietary products and shapes to extensive custom capabilities and designs, manufacturing with the latest computer technology, you can count on Wylie's extensive knowledge of materials and manufacturing techniques. Wylie products are specified internationally for hundreds of prestigious properties. As a family-owned business with a strong commitment to the future, they have established an industry-wide reputation for knowledgeable service and for meeting delivery dates as only a single-source factory manufacturer can. Wylie services include an in-house architect and design department, assistance with planning and budgeting, value engineering, and more.</p>
www.wyliemetals.com	 159

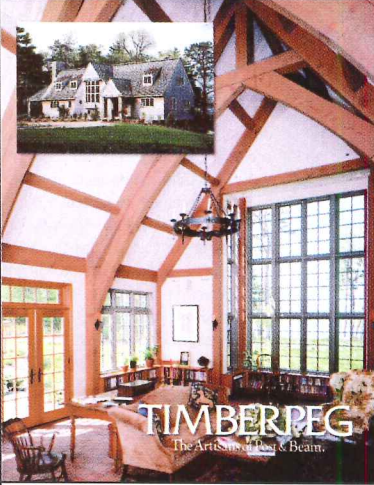

Gage Corporation	
Cast Metal Wall Surfacing	5 Metals
	<p>Gagecast™ is a cast metal wall surfacing material suitable for a variety of interior architectural applications where patterns that feature high luster, relief, durability, and cost-effective installation are a requirement. Twenty-four designs are standard; however, custom collaboration is encouraged. Gagecast is one component of Gage Vertical Surfacing. Contact the factory for product literature and selected samples.</p>
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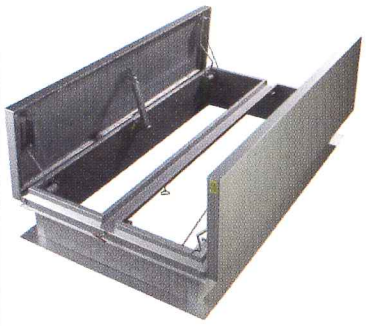

Melton Classics, Inc.	
Architectural Products	6 Wood & plastics
	<p>Melton Classics provides the design professional with one of the most comprehensive selections of quality architectural products in the industry, including architectural columns and cornice moldings; balustrade systems; polyurethane moldings, window features, and architectural elements; and cast stone balustrades and architectural elements. Architectural columns available in fiberglass, polymer/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Columns available plain or fluted, load-bearing or non-load-bearing, round or square, in all designs and sizes. Melton Classics low-maintenance balustrades for any application are available in synthetic stone, cast stone, polyurethane, fiberglass, and polymer/marble composite.</p>
www.meltonclassics.com	 160



HDI Railing Systems	
Railing System	717-285-4088
	<p>The high-end d line™ railing system from Denmark is now available in the U.S. exclusively through HDI. d line is made of the highest-quality stainless (AISI 316) for use in any environment. Features include custom bending, modular engineering for fast on-site installation, and quick order turnaround to meet construction deadlines. Email: info@hdirailings.com.</p>
www.hdirailings.com	 158

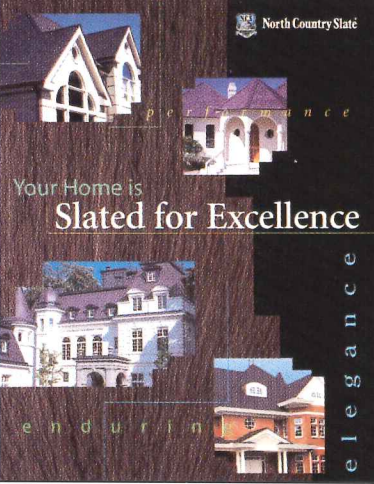

Melton Classics, Inc.	
Maintenance-Free Synthetic Stone Balustrades	6 Wood & plastics
	<p>Announcing BALUSTRADES.COM. Melton Classics new balustrades.com Web site provides the design professional with the industry's most comprehensive selection of maintenance-free and low-maintenance balustrade products, allowing the design professional to select the ideal product for any design, application, and budget. Classic balustrade systems are available in integrally pigmented synthetic stone, marble/resin composite, cast stone, high density polyurethane, and fiberglass in an extensive selection of sizes and designs. Custom balusters, radius railings, and radius stairs are available. MarbleTex™ synthetic stone balustrades have integral color, require no painting, offer the substantial feel of stone, and are light enough for elevated applications.</p>
Balustrades.com	 161

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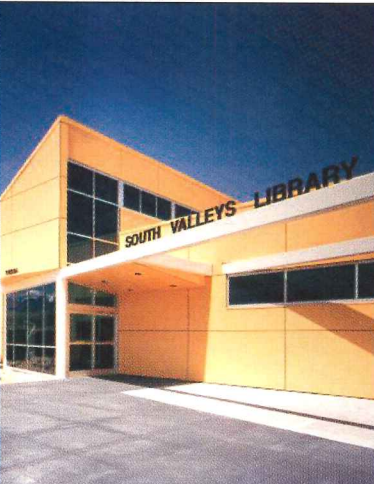

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	<p>www.timberpeg.com</p> <p> 162</p>

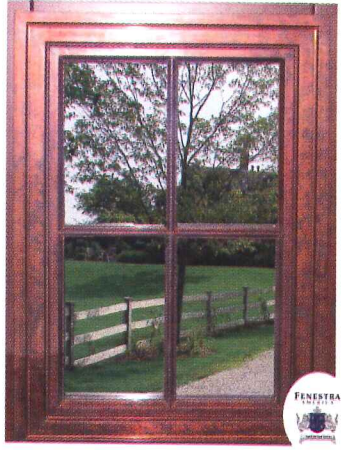

J.L. Industries, Inc.	
Smoke Vents	
	<p>7 Thermal & moisture protection</p> <p>J.L. Industries introduces a new line of UL-listed, FM-approved fire vents. These fire vents are equipped with UL-listed 165° fusible link for automatic operation. J.L. Industries fire vents are manufactured with 14-ga. galvanized steel curb and frame and 11-ga. aluminum covers. J.L. Industries now offers a full line of domed fire vents, equipment hatches, and skylights in addition to galvanized steel and aluminum roof hatches and aluminum floor doors.</p>
	<p>www.jlindustries.com</p> <p> 165</p>



CertainTeed Corporation, Roofing Products Group	
Carriage House Shingle	
	<p>7 Thermal & moisture protection</p> <p>With an ingenious construction that combines two full-sized base shingles, CertainTeed's Carriage House Shingle™ simulates the depth of natural slate, an illusion enhanced by wide scalloped corners, a deep shadow line and an oversized 8-inch exposure. Thanks to premium-grade materials and CertainTeed's exclusive Super Shingle® construction, a Carriage House roof provides four full layers of weather protection once applied.</p>
	<p>www.certainteed.com</p> <p> 163</p>

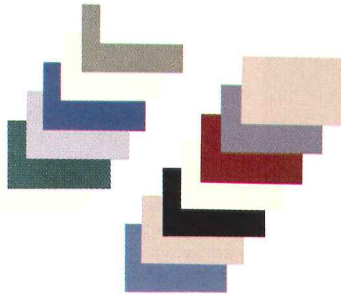

North Country Slate	
Slate Roofing Brochure	800-975-2835
	<p>7 Thermal & moisture protection</p> <p>North Country Slate offers a new brochure explaining the design and performance advantages of their remarkable roofing material to your residential customers. In six glossy pages, "Slated for Excellence" presents all the features and benefits to your client, the homeowner. Make sure you have this brochure on hand for your next discussion on slate roofing. Email info@ncslate.com.</p>
	<p>www.northcountyslate.com</p> <p> 166</p>



EcoStar	
Cedar Shake Tiles	
	<p>7 Thermal & moisture protection</p> <p>Seneca Cedar Shake Tiles are produced using the most flexible recycled materials, which emulate the exact look of wood shakes, yet are durable and lightweight. Seneca Cedar Shake Tiles are manufactured at random widths of 6-in., 9-in., and 12-in. to create the traditional look of a wood shake roof. Unlike traditional wood, the tiles are available in nine different colors offering a unique architectural opportunity. Like all EcoStar premium steep slope-roofing products, Seneca Cedar Shake Tiles offer excellent advantages including class 4 impact resistance, the availability of a 50-year warranty, and a 100 mph wind warranty.</p>
	<p>www.ecostar.com</p> <p> 164</p>



Trespa North America, Ltd.	
Exterior Cladding Systems	800-487-3772
	<p>7 Thermal & moisture protection</p> <p>Trespa Meteon® is a unique exterior facade cladding system suitable for both new construction and re-cladding projects. Its weather resistance, high color stability, impact resistance, and non-porous surface structure make it the perfect material for a wide range of exterior applications. Trespa Meteon is available in a variety of standard solid colors, natural prints, and rich metallic hues as well as satin, gloss, and rock textures. Trespa is BEES listed and a member of USGBC.</p>
	<p>www.trespana.com</p> <p> 167</p>



Fenestra America, LLC	
Architectural Wood Windows	800-397-6060
Bronze Clad Casement	
	<p>8 Doors & windows</p> <p>Magnificent and stately, Fenestra America bronze sheathing offers the ultimate in look and feel with the added benefit of zero maintenance for the life of your home. The bronze cladding is attached to the wood frame via a unique precision mounting system, allowing the underlying wood to "breathe" naturally, while protecting the internal components from the harsh elements of nature. Underneath this exquisite architectural finish, the extraordinary wood window and door frame structures are built to the same exacting specifications as Fenestra's stained or aluminum clad products. Products are IBC and Dade County Approved. Email: info@fenestra-america.com.</p>
	<p>www.fenestra-america.com</p> <p> 168</p>

SCHOTT Corporation	
Anti-Reflective Glass	914-381-2241
 <p>Ordinary Glass AMIRAN Anti-Reflective Glass</p>	<p>8 Doors & windows</p> <p>Give residential clients clear nighttime views. Once used primarily for commercial applications, AMIRAN anti-reflective glass is now readily available for residential projects. It reduces reflection in insulated glass from 16% to as little as 2%, even at night. AMIRAN anti-reflective glass can be installed in any standard frame or glazing system and is also perfect for retrofits.</p>
	<p>www.us.schott.com</p> <p> 171</p>



Marvin Windows and Doors	
Cladding Colors	888-537-8266
	<p>8 Doors & windows</p> <p>Marvin Windows and Doors has introduced nine new select clad colors, expanding the company's total clad color offerings to 19 options. New hues in Marvin's select clad color palette include: Cobalt Blue, Cascade Blue, Cadet Gray, Cumulus Gray, Sherwood Green, Hampton Sage, Cashmere Beige, Coconut Cream, and Sierra White. Marvin currently offers five standard clad colors: Stone White, Pebble Gray, Bronze, Evergreen, and Bahama Brown; as well as a virtually unlimited number of custom colors. For more information, please call Marvin Windows and Doors.</p>
	<p>www.marvin.com</p> <p> 169</p>



Superseal Window & Door Company	
Vinyl Windows & Patio Doors	8 Doors & windows
	<p>From a STC-36 to a DP-50 and everything in between, Superseal has your codes and requirements covered with the right products at the right price. Superseal provides a full line of maintenance-free vinyl windows and patio doors, offering an extensive selection of features, options, colors, stock programs, and custom shapes and sizes. Superseal's energy efficient windows and doors carry the ENERGY STAR® label, guaranteeing the highest level of energy efficiency without sacrificing comfort, versatility, or style. Superseal is committed to providing the highest level of service and sales support, only deliver complete orders and get you what you need when you need it.</p>
	<p>www.supersealwindows.com</p> <p> 172</p>

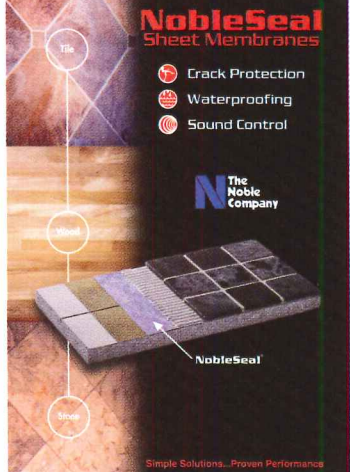

Nathan Allan Glass Studios Inc.	
Cast Glass Products	604-277-8533
 <p>Antique Serpentine</p> <p>only at Nathan Allan</p>	<p>8 Doors & windows</p> <p>New to Nathan Allan's Venetian Series, "Antique Serpentine" glass is just one in its long list of brand new products available at Nathan Allan. Replacing old style glass that the owner could no longer locate, Nathan Allan was able to cast and shape new panels to replicate the existing glasswork. View Nathan Allan's Web site to see 10 brand new products available for 2004. Fax number 604-277-1515. Email: bm@nathanallan.com.</p>
	<p>www.nathanallan.com</p> <p> 170</p>

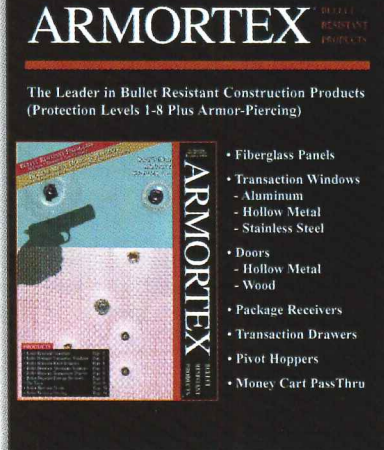

BurkeMercer Flooring Products	
Carpet Tile: A New Look In Luxury Vinyl Tile	800-447-8442
 <p>BurkeMercer FLOORING PRODUCTS A DIVISION OF BURKE INDUSTRIES, INC.</p>	<p>9 Finishes</p> <p>Look twice when you see BurkeMercer's new Carpet Tile-Look, part of the new line of luxury solid vinyl tile and wood planks. In six pleasing colors, the carpet tile-look imitates the look and pattern of carpet tile while providing a durable, maintenance-free resilient floor. Manufactured with a unique surface treatment that gives it superior anti-slip and stain-resistance properties the 18-in. by 18-in. tiles will stand up to heavy traffic day-in and day-out with only light maintenance. The new Carpet Tile-Look faux finishes are achieved with state-of-the-art imagery combined with durable, solid 1/8-in. gauge vinyl tile. Whether it's in commercial spaces such as a department store, school or studio, BurkeMercer's quality Luxury Solid Vinyl Tile will provide long-lasting beauty and easy care.</p>
	<p>www.BurkeMercer.com</p> <p> 173</p>

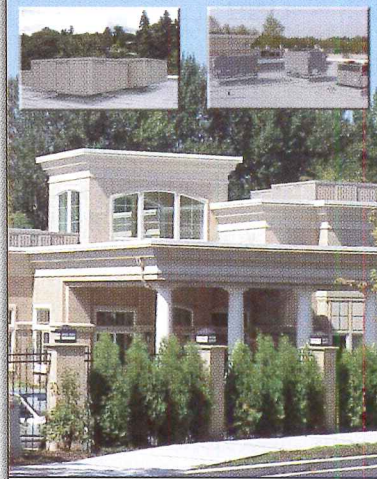

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L.M. Scofield Company	
Concrete & Cementitious Flooring	800-800-9900
	<p>9 Finishes</p> <p>Stylish Scofield flooring systems: For beauty and durability, concrete and cementitious toppings provide stylish flooring for high traffic areas in offices, lobbies, public spaces, food service, and retail areas. Scofield Systems offer diverse choices—ranging from monochromatic toppings to translucent, antique stains for faux finishes and dramatic graphics.</p>
	<p>www.scofield.com</p> <p> 174</p>


Panelfold, Inc.	
Decorative Accents	10 Specialties
	<p>Caned panel inserts may be open or opaque; translucent inserts clear or amber; transparent inserts allow view through the panels; mirrored inserts and carved detailing are available one or both sides. A wide variety of surfacing materials is available. Panelfold Electronic Library Version 3 on CD Rom available upon request. E-mail: sales@panelfold.com. Fax number 305-688-0185.</p>
	<p>www.panelfold.com</p> <p> 177</p>

The Noble Company	
Protection for Hard Surface Flooring	800-878-5788
	<p>9 Finishes</p> <p>The Noble Company produces NobleSeal® Sheet Membranes to protect thin-set tile or marble installations and hardwood floors. Products are time-tested with millions of square feet installed. Applications include waterproofing, crack isolation/joint bridging, and sound control. NobleSeal sheet membranes are lightweight, flexible, and guaranteed to last. They can be installed over all common substrates, including gypsum-based concrete, radiant heating systems, and many wood sub floors. The company offers many unique products including Noble Deck™ exterior thin-set waterproofing/ crack isolation, and NobleSeal SIS, a thin (3/64-in. thick) sheet that significantly reduces floor-to-floor impact sound.</p>
	<p>www.noblecompany.com</p> <p> 175</p>

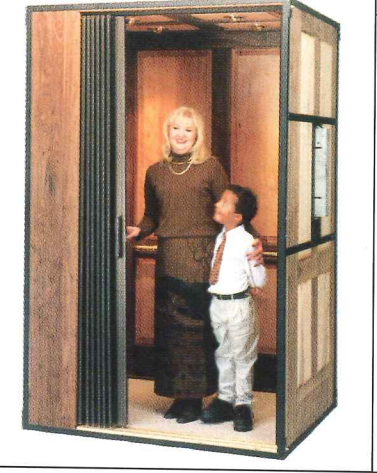
Armortex, Safeguard Security Services, Ltd.	
Bullet-Resistant Products	800-880-8306
	<p>13 Special construction</p> <p>Safeguard Security Services, Ltd. has been manufacturing bullet resistant products for over 20 years under the brand name of ARMORTEX. They specialize in providing bullet resistant fiberglass panels, wood and hollow metal doors and transaction, operable and fixed windows. They also manufacture package receivers, transaction drawers, dip trays, speakers and gun ports. A choice of materials ranging from aluminum, stainless steel and primed steel is available. Benefits include design assistance, same day shipments, UL listed products, factory technical support, and a rigorous quality control program.</p>
	<p>www.armortex.com</p> <p> 178</p>

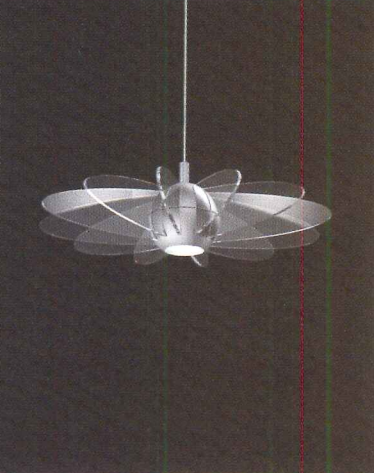
Advanced Visual Solutions	
Equipment Screens	10 Specialties
	<p>Envisor equipment screens can be installed without penetrating membrane roofs. AVS's turnkey screening system attaches directly to RTU equipment. Product applications include a wide variety of HVAC units, chillers, and air handlers. Multiple panel designs are available and finishes include 19 standard colors or custom color matches. Product installations are applicable for new or remodel construction. Envisor pre-engineered products can make allowances for RTU performance enhancements. Service access is accomplished by simply sliding one panel behind the other. Project profiles, specifications, and drawings are available in a binder or online. U.S. Patent No. 5,664,384.</p>
	<p>www.avsus.com</p> <p> 176</p>

FabriTec Structures	
Tensile Fabric Structures	866-275-9710
	<p>13 Special construction</p> <p>Fabritec Structures introduces a new generation of tensile fabric technology. Its highly specialized fabric structures utilize the most advanced architectural materials available and are non-combustible, both thermal- and UV-resistant, and can offer full weather protection. With virtually unlimited design options and applications, FabriTec's products are both practical and often visually spectacular. Designers can choose fabrics from a wide range of color and translucency and enjoy a cost effective and "fast-track" alternative to conventional building systems. FabriTec Structures provides clients with complete design/build services, including concept development, engineering, fabrication, project management, and installation.</p>
	<p>www.fabritecstructures.com</p> <p> 179</p>


OpenAire Inc.	
Retractable Roof Enclosures & Operable Skylights	800-267-4877
	<p>13 Special construction</p> <p>Custom designed retractable roof structures and operable skylights capable of spanning up to 140-ft. At the touch of a button, motorized panels retract to open up to 50% or more of the roof area. OpenAire can span up to 140-ft. and do custom designs (domes, barrel vaults, biparting, etc.) using its exclusive maintenance-free, thermally broken aluminum framing. These enclosures and operable skylights are perfect for indoor waterparks, pools, atria, anywhere that you want to bring the outside in. Email sales@openaire.com.</p>
www.openaire.com	180

G Squared Art	
Architectural Ceiling Fans & Lighting	877-858-5333
	<p>15 Mechanical</p> <p>Balanced design that pleases the eye, creates a mood, a gentle breeze. Moving sculpture. The San Francisco ceiling fan—a GOOD DESIGN Award winner. Whisper quiet, powerful, and beautifully made, this timeless design is available with or without a light. Versatile—can be used on 8-ft. ceilings with optional 6-in. downrod or on cathedral ceilings with downrods up to 6-ft.-long. Suitable for sloped ceilings of up to 29°. Lifetime warranty. To buy high-design architectural fans and lighting, please visit G Squared's Web site or call between 6 A.M. and 6 P.M. PST.</p>
www.g2art.com	183

Waupaca Elevator Co., Inc.	
Elevators & Dumbwaiters	800-238-8739
	<p>14 Conveying systems</p> <p>Waupaca Elevator specializes in the manufacture of customized winding drum and hydraulic elevators exclusively for residential use as well as in the manufacture of residential and light-duty commercial dumbwaiters. Waupaca Elevator prides itself on its craftsmanship and variety of options available to the homeowner. Call or visit Waupaca's Web site. Fax number 920-991-9087.</p>
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work, and names and addresses of three references. Review of applications will begin on March 2004, and will continue until a candidate is chosen. Material should be sent to: Mark Wigley, Interim Dean Graduate School of Architecture, Planning and Preservation 402 Avery Hall 1172 Amsterdam Avenue Columbia University New York, New York 10027. Columbia University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

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A New Generation of Windows and Doors is Taking the Coast by Storm.

It has been a decade, still, we are talking about Hurricane Andrew. Andrew, upgraded last month by federal researchers from a Class 4 to a Class 5 storm, was the deadliest natural disaster in U.S. history. In the past century, only two other hurricanes of similar magnitude have struck the U.S. mainland. Casualty in 1962, the unnamed storm that hit the Florida Keys in 1935.

Andrew peaked winds of 140 mph and came within 20 miles of a direct strike on downtown Miami. It was directly responsible for \$20.7 billion in damage. More than 175,000 high-density homes were destroyed or damaged; 162,000 people were left homeless.

Subsequent studies verified the observations that up to a quarter of the losses attributed to Andrew were attributable to construction that failed to meet codes, poor understanding of codes, and deficiencies in the order of installation.

In the 12-year since Andrew, building codes in Florida, Texas, the Caribbean and other coastal areas have undergone significant overhauls, many of them focused on vulnerable window openings.

Windows and doors were historically found to be the weakest building link, and their failure has been shown to lead to a domino effect that ends in catastrophe, home-shattering debris.

The highest priority amendment for all windows and door construction, according to code officials here Florida is that they are impact resistant windows and doors.

This continuing education session is intended to familiarize readers with the new code demands and details of a new generation of impact-resistant glass products with which to meet the new codes.

Florida Lead the Change

Florida recently implemented the nation's first statewide building code. The most dramatic change to the new Florida Building Code requires approved impact-resistant glazing on windows and doors on other production structures. Just a few months later, the Florida Chapter, Inc. issued International Code Council, a body created in 1994 by officials of Building Officials and Code Administrators International (BOCA), International Conference of Building Officials (ICBO), and the Southern Building Code Congress International (SBCCI), developers of the three model codes used throughout the U.S., issued a similar window and door code that would be required to be amended later this year.

The strengthened codes are intended to improve construction techniques in order to prevent losses during natural disasters.

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Learning Objectives

At the end of this article you will be able to:

- Understand the codes that apply to hurricane and other severe weather regions
- Identify the features and benefits of a window system designed to resist
- Know how to correctly select and specify impact-resistant window & door systems

Instructions

Refer to the learning objectives above. Complete the questions below. Refer to the article on page 274. Before the reporting instructions, answer the test questions and indicate the form. Use the Continuing Education self-report form in the magazine or the professional.com website or AIA/CE Learning Unit Reporting Form for health safety welfare credit.

Questions

- Analysis of Hurricane Andrew yield that up to how much of the losses were attributable to inadequate construction codes.
 - a. 1%
 - b. 1%
 - c. 10%
 - d. 5%
- In studies, what was shown to be the weakest building link in a hurricane?
 - a. Windows and doors
 - b. Roof structure
 - c. Exterior walls
 - d. A large percentage of hurricane damage is not done by the wind itself, but from
- What was the opening of only _____ percent on the windward side of a structure with full penetration of the impact, resulting in full pressure on the roof and lateral pressure against interior walls.
 - a. 5%
 - b. 10%
- The new impact resistant window code is _____ layers of _____ sandwiched between two sheets of _____ or _____ glass.
 - a. Polycarbonate
 - b. Polycarbonate
 - c. Polycarbonate
 - d. Polycarbonate
- The window frame is included in the testing of a product to be certified as an impact resistant window door system.
 - a. True
 - b. False
- Code approved window systems can be about _____% less expensive than windows with accordion shutters.
 - a. 15
 - b. 27
 - c. 22
 - d. 25
- Category 4 hurricanes can cause "extreme" damage with winds at:
 - a. 111 - 130 mph
 - b. 111 - 130 mph
 - c. Greater than 130 mph

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Program 100 - **New and Improved Advances in Seismic Technologies: Prisma Saker Buildings** (30-02, page 182)

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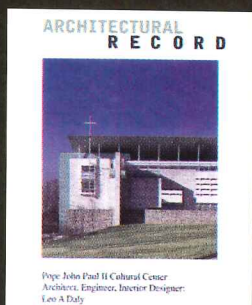
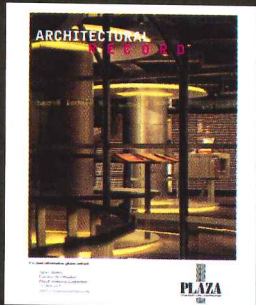
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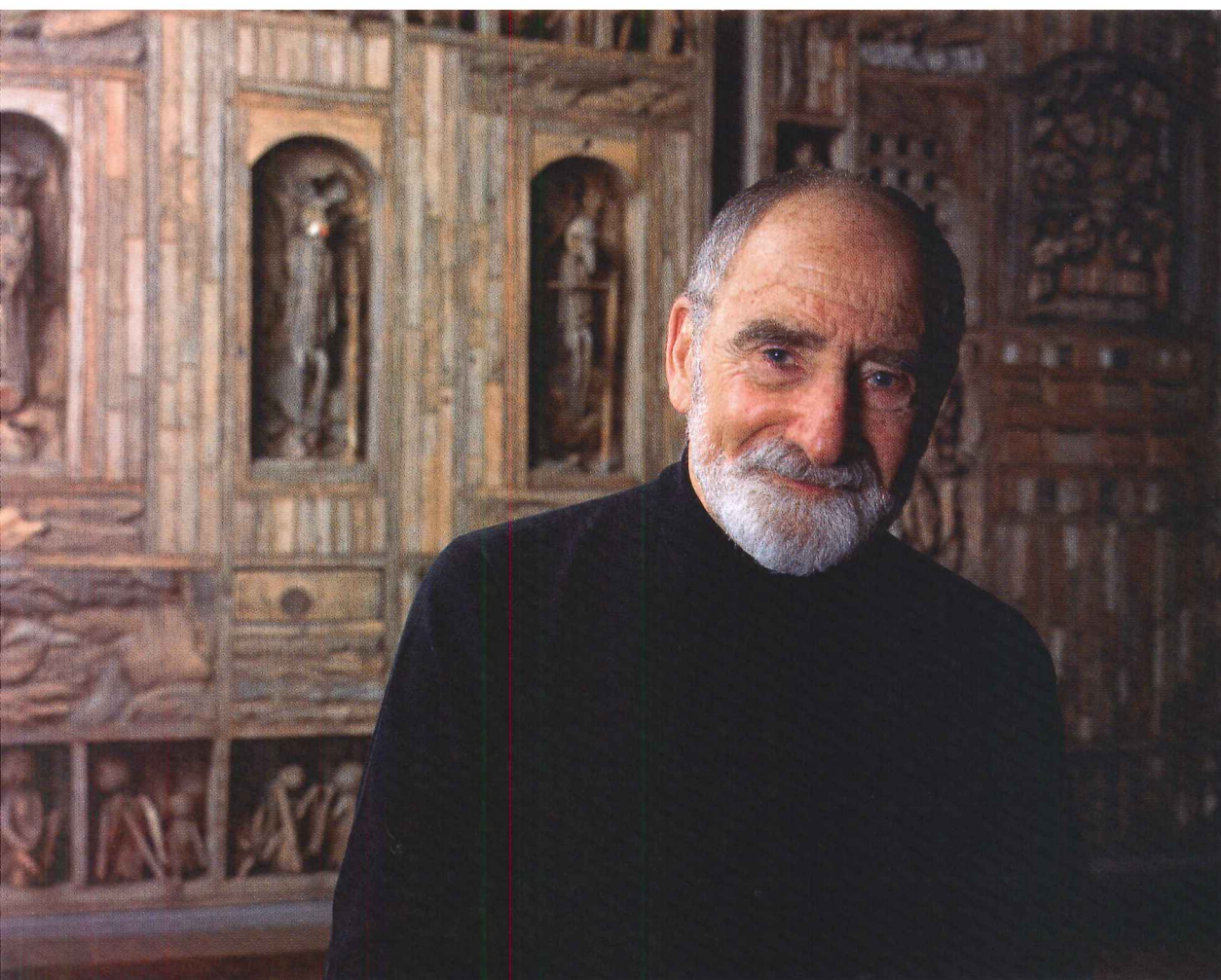
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Sam Farber's recipe for business success relies on design sensitivity

Interviewed by Jane F. Kolleeny

Entrepreneur, collector of art, and appreciator of architecture, Sam Farber has in the course of his career created and later sold COPCO and OXO International, both highly successful and innovative houseware companies, and recently founded yet another, WOVO. Farber has also served in various academic capacities, lecturing on design to business students and mentoring design programs at graduate business schools. He is director of the Corporate Design Foundation and a trustee of the American Folk Art Museum in New York City. For years he has pursued his interest in Outsider Art and is a director of the magazine Raw Vision, which covers it.

Q: *How did your role as chairman of the building committee for the new American Folk Art Museum come about?* The museum knew of my interest in and collection of Outsider Art, which is art executed by untrained artists who are often institutionalized: isolates or eccentrics who create art from the visions of the world they come to know, not the world as we know it. The museum wanted to develop a presence in the area of contemporary folk art, to which Outsider Art belongs. Shortly after I joined the museum, I was asked to chair the building committee. They asked me because of my enthusiastic pursuit of design in my career, and I have cultivated a particular interest in architecture for many years.

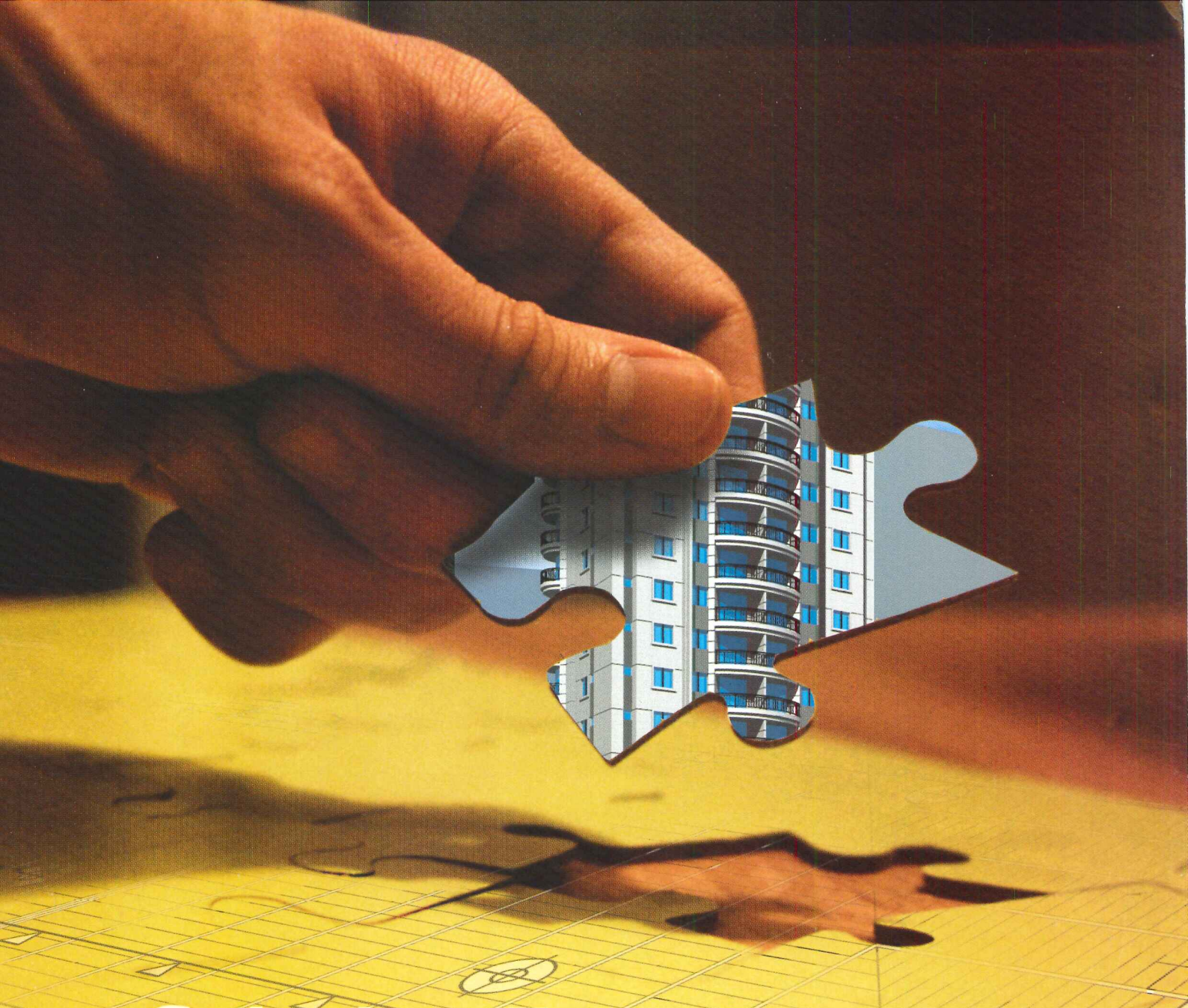
Our building committee went through the typical processes involved in selecting an architect, and when I and two other trustees saw Tod Williams

Billie Tsien & Associates' Neurosciences Institute in La Jolla, California, we immediately felt a strong resonance. We also appreciated their approach in the interview. Instead of coming to us with design ideas, they talked about their philosophy, saying that a design could not be clarified without first seeing the art that the building would hold. We were impressed by that.

How did you become a design entrepreneur? I am what I call a "serial entrepreneur," and I got into it purely by accident. The quality most evident in an entrepreneur is naïveté—I think Tom Peters calls it stupidity—the impulse to take risks. I was inspired to develop COPCO because I observed that enameled cast-iron cookware was very traditional in appearance. I wished to create something new and modern in design. Another serendipitous invention was OXO, which was inspired by my wife Betsy's question when chopping vegetables in the kitchen: Why couldn't common kitchen tools be comfortable to use? We explored that question by playing around with clay and the handles of kitchen tools, and voilà, we invented a product line and later a company.

What parting words would you share with our readers? Innovation is only meaningful when it enhances the human experience. Too many times, in both the worlds of product design and architecture, the designer and architect forget that in the final analysis, it's about the user.

Photograph by Jeremiah Jones at Sam Farber's home in New York City. The featured art is Holocaust, by Verbena, 1988, from Farber's collection.



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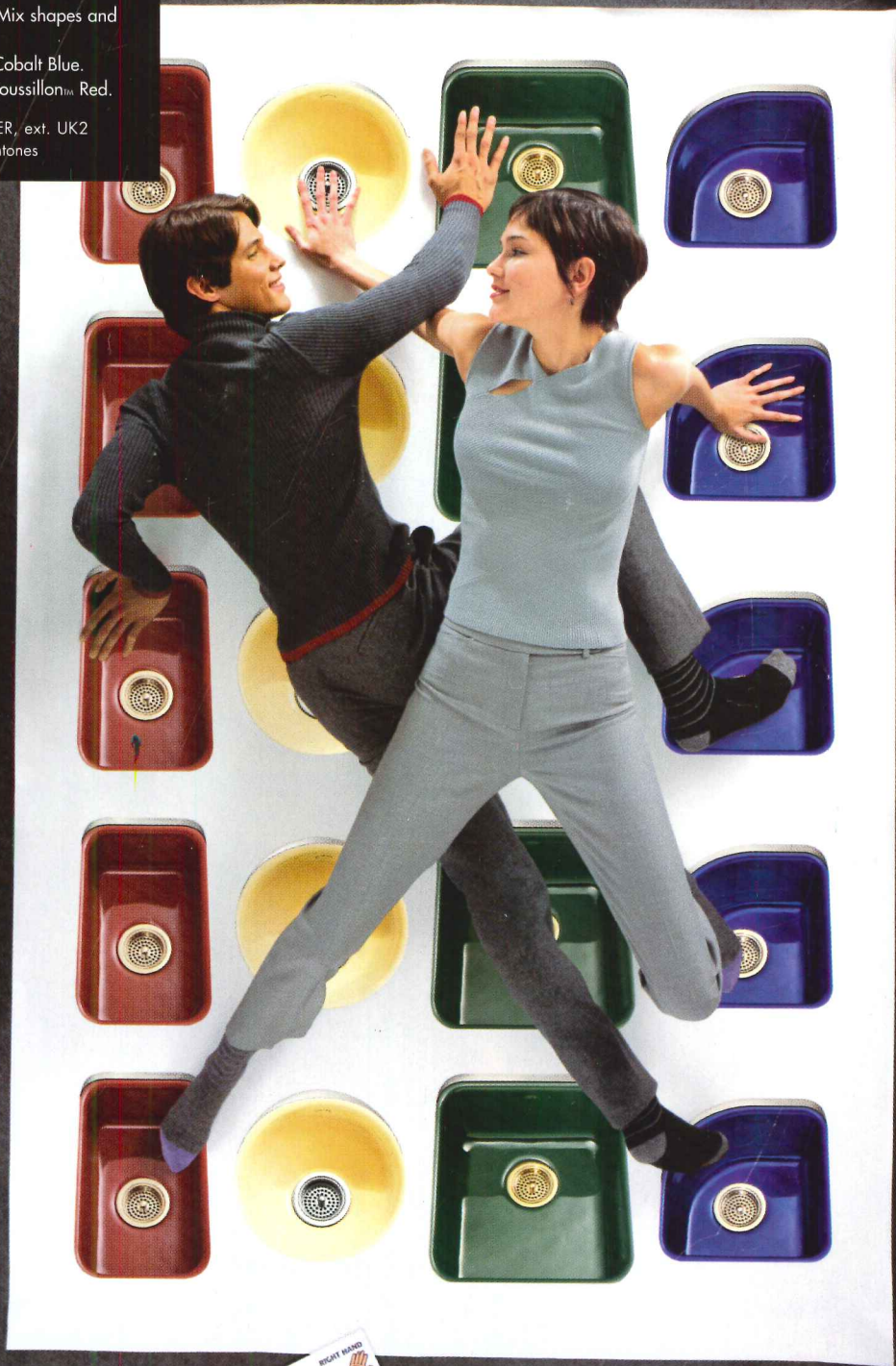
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