

ARCHITECTURAL RECORD

Provocative Encounter

Libeskind's Jewish Museum

THE WORLDS TALLEST: Petronas Towers

What Do Architectural Critics Think?

Building Types Study: Merchant-Built Housing

ARCHITECTURAL RECORD

01.1999



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Speaking to a history that is both rich and tragic, a controversial new museum offers a passionate and complex design but no simple explanations.
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Continuing Education: The
AIA/ARCHITECTURAL RECORD continuing education opportunities this month are "Metal Flashing on Low-Slope Roofs" (page 135) and the sponsored section "New Standard Promotes More Precise Specification of Resilient Wall Base" (page 142).

Cover: The Jewish Museum, Berlin.
Studio Daniel Libeskind. Photograph © Bitter + Bredt.

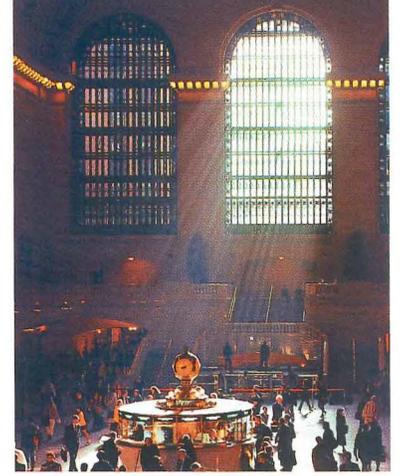
Above: Petronas Towers, Kuala Lumpur, Malaysia.
Cesar Pelli & Associates. Photograph © Jeff Goldberg/ESTO.

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Tadao Ando Architect & Associates
A corporate retreat overlooking the ocean in southern Japan is a world apart, beckoning to earth and sky.
- 104 Trivida, Culver City, California**
Eric Owen Moss Architects
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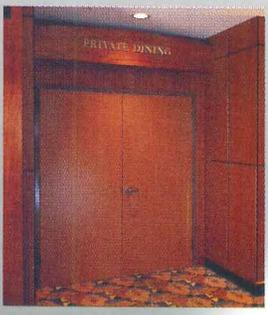


Continuing Education: The AIA/ARCHITECTURAL RECORD continuing education opportunities are the article "Bringing Back 1960s Buildings" (page 137), and "Specifying Fire Doors and Windows" (page 147), a section sponsored by the Window & Door Manufacturers Association.

Cover: Sky Ceiling, Grand Central Terminal, New York City. Beyer Blinder Belle Architects & Planners. Photograph © Peter Aaron/Esto.
Above: Main Concourse, Grand Central Terminal, New York City. Beyer Blinder Belle Architects & Planners. Photograph © Peter Aaron/Esto

INNOVATIVE

Innovative
Design



ARCHITECTURAL RECORD

04.1999



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- 82 **Portfolio**
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 **Continuing Education: The AIA/ARCHITECTURAL RECORD continuing education opportunity this month is "Siting Houses in Hard Places" (page 153). The education self-report form appears on page 182.**

Cover: House at Leymen, Haut Rhine, France. Herzog & de Meuron. Photograph © Margherita Spiluttini.
Above: The GucklHüpf, Mondsee, Austria. Hans Peter Wörndl. Photograph © Paul Ott. See page 82.

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Technology

- 153 **Siting Houses in Hard Places** 
Much of the best land has already been built on, leaving environmentally sensitive or otherwise difficult sites for architects to grapple with.

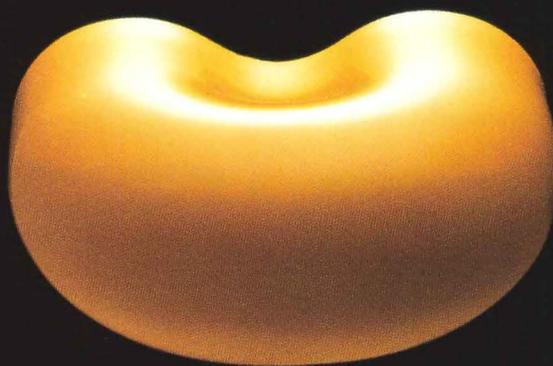
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Part No.
537.1 B



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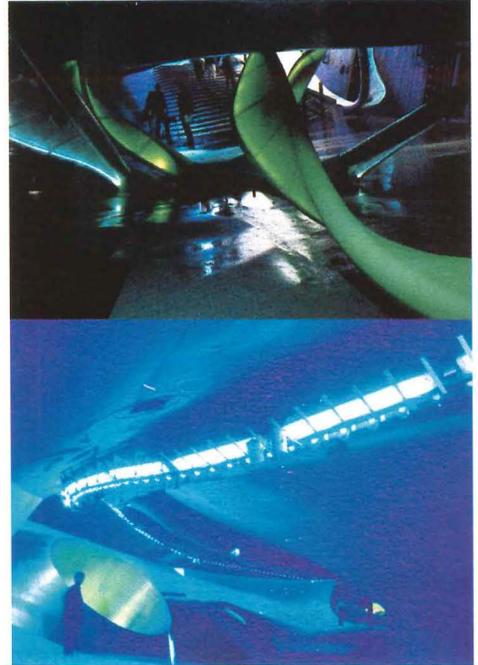
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CIRCLE 3 ON INQUIRY CARD

ARCHITECTURAL RECORD

05.1999



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Continuing Education:

The AIA/ARCHITECTURAL

RECORD continuing-education opportunities this month are "The Art and Science of Sound" (page 255) and "Indoor Environmental Management: Thoughtful Design Elevates Indoor Air Quality" (page 276), a section sponsored by Dupont.

Cover: Portrait of Frank Gehry taken in his studio by Bob Seidemann.

Above: (Top photo) Saltwater Pavilion, The Netherlands, Oosterhuis Associates. Photograph © Oosterhuis Associates.
(Bottom photo) Freshwater Pavilion, NOX Architects, The Netherlands. Photograph © NOX Architects.

Features

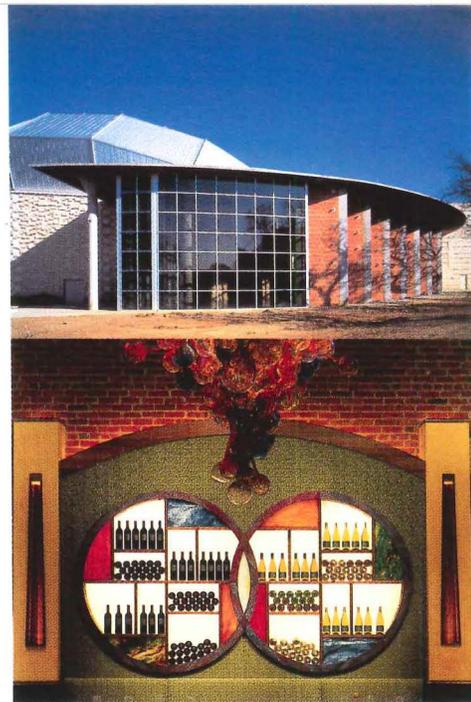
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A quintessential American success story, Perkins & Will takes this year's crown as Firm of the Year for six decades of accomplishment.
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Right: Murchison Performing Arts Center, University of North Texas, Hardy Holzman Pfeiffer Associates. Photo © Craig Blackmon (top). Lidia's, Kansas City, Missouri. David Rockwell, architect. Focus Lighting, lighting designer. Photo © Paul Warchol (bottom).



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Cities worldwide hope that new and renovated performing arts centers will weave culture and dollars into worn urban fabric.
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Architects and acousticians must listen to one another to integrate design and sound successfully in performing arts centers.
- 267 Building a Technology Staff** by Jerry Laiserin, AIA
Firms must develop multilevel strategies to foster computer skills among design, technical, and administrative staff.
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Call for Entries:

The submission deadline for our September 1999 issue of RECORD INTERIORS has been extended to May 31.

Please observe other submission rules as outlined in the Call for Entries on page 383.

Lighting

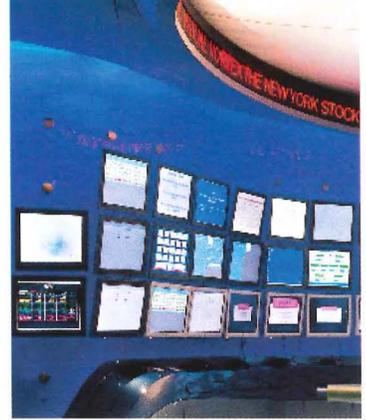
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96 Remembering the Future by Michael Sorkin
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102 A Century of Products Gone By
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106 Digital Visions: Buildings Never Built by B.J. Novitski
Three-dimensional computer modeling is helping to realize what were once just architects' rendered dreams.

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A Mexican entrepreneur is betting \$200 million that 10 star architects can design a cultural and commercial center that will attract worldwide attention.
140 New York Stock Exchange, New York
Animated computer screens and architecture spanning the cyber and real worlds brings this 207-year-old institution's new command center into a new age.



The AIA/ARCHITECTURAL RECORD continuing-education opportunity this month is "Battling Water Above and Below" (page 179). The education self-report form appears on page 208.

Shown on Cover: Four of the 10 projects

at the JVC Center in Guadalajara, Mexico: (clockwise from bottom) Morphosis, Libeskind, Nouvel, and Holl. Above: New York Stock Exchange, New York, Asymptote Architecture. Photograph © Arch Photo, Inc./Eduard Hueber. See page 140.

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Putting research labs under the microscope.
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158 Chiron Corp. Life Science Center, Emeryville, Calif.
Legorreta Arquitectos/Flad & Associates, architect of record
162 Estuarine Habitats and Coastal Fisheries Center, Lafayette, La.
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MBT Architecture

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- 179 Battling Water Above and Below*  by Rich Binsacca
To prevent moisture from penetrating sub- or above-grade walls and slabs, architects can select from the five basic types of waterproofing materials described here.

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Wherever you see this icon you know you've found a Millennium feature.



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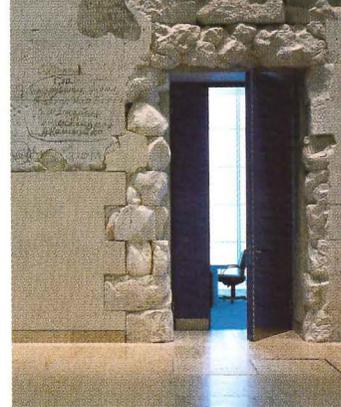
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ARCHITECTURAL RECORD

07.1999



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88 Dramatic Days for the U.K. *by Hugh Pearman*
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94 Norman Conquest
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Berlin's new capitol, rehabilitated and glass-domed, embodies a people's hope for the future without erasing the past.
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- 147 Timber Trusses for Big Spans**  *by Eliot W. Goldstein, AIA*
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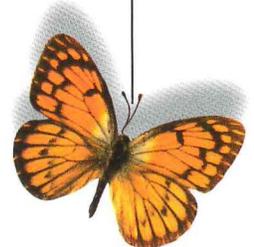
The AIA/ARCHITECTURAL RECORD continuing-education opportunity this month is "Timber Trusses for Big Spans" (page 147). The education self-report form appears on page 176.

Cover: Rendering of Oxford Street Christmas Illuminations by Birds Portchmouth Russum Architects.
Above: Preserved graffiti at the Reichstag. Photograph © Richard Bryant/ARCAID. See page 104.

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CIRCLE 3 ON INQUIRY CARD

ARCHITECTURAL RECORD

08.1999



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- 96 3COM Corporation, Chicago**
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A computer company's new office building shakes up a midwestern suburb we call Silicon Prairie.
- 102 TBWA/Chiat/Day Offices, Los Angeles**
Clive Wilkinson Architects
After trying the virtual, an office building gets risky and real.

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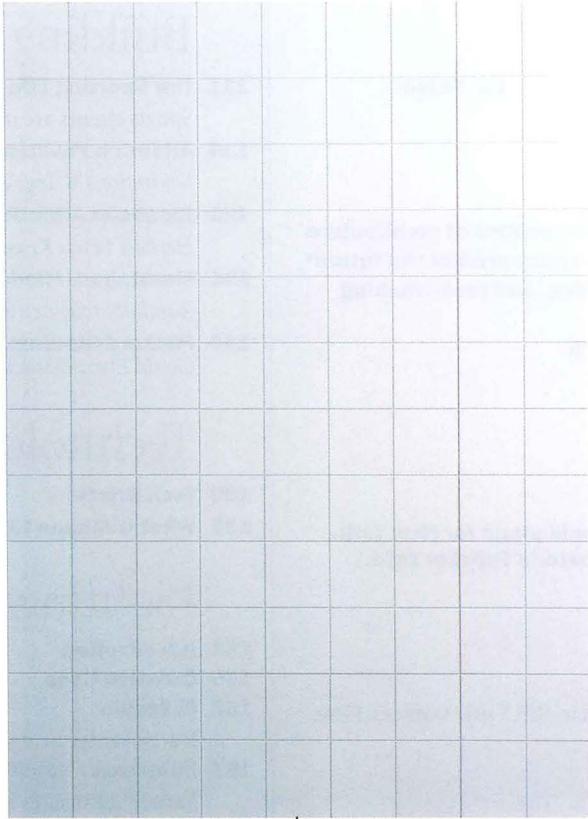
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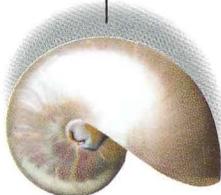
 The AIA/ARCHITECTURAL RECORD continuing-education opportunity is "What It Means to Be Green" [page 137], and a section sponsored by Marvin Windows & Doors [page 146]. The education self-report form appears on page 144.

Cover: Facade from the Library of the Eberswalde Technical School, Eberswalde, Germany, designed by Herzog & de Meuron. Photograph: © Margherita Spiluttini **Above:** The offices of TBWA/Chiat/Day, Los Angeles. Photograph: © Benny Chan

Natural instincts



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The song of a bird. The rush of the tide. The sweet smells of summer linger in the back of our minds. And the delicate hues of the natural world around us serve to color our thinking.

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ARCHITECTURAL RECORD

09.1999



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- 102 Ingenious Interventions** *by Suzanne Stephens*
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- 112 Back to School** *by Lee D. Mitgang*
As the century's final school year begins, are architects ready to make peace with the institutions that educated them?

 The AIA/ARCHITECTURAL RECORD continuing-education opportunity is "The Open Kitchen as Theater" [page 171], and "New Solutions for Design Challenges: Acrylic-Based Solid Surface Materials," a section sponsored by DuPont CORIAN [page 180].

Cover: Benedikt Rejt Gallery, Czech Republic, designed by Emil Prikryl. Photograph: © Jan Maly
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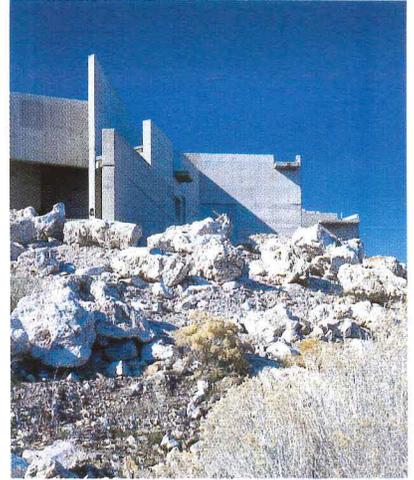
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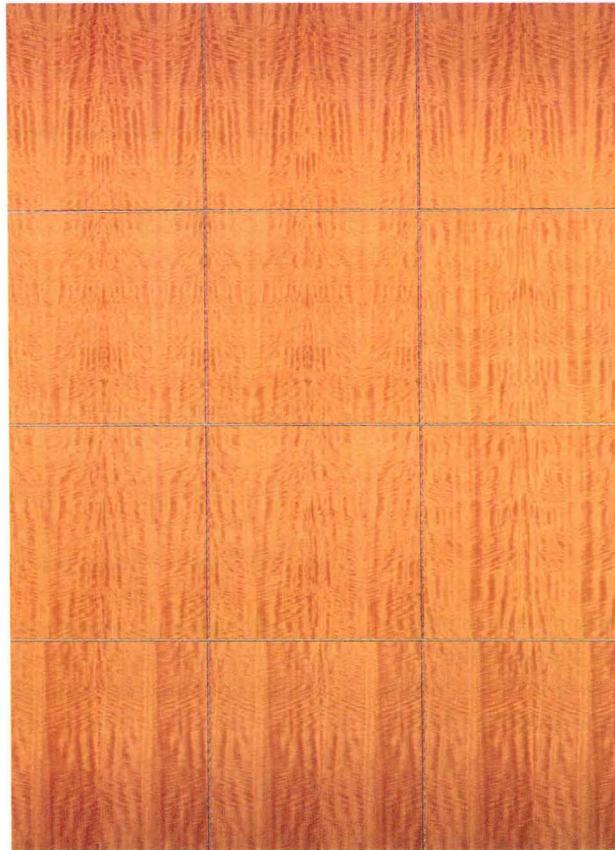


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Cover: Alcoa Corporate Center, Pittsburgh, The Design Alliance

Architects. Photography © Steve Hall, Hedrich Blessing. Above: Antelope Island State Park Visitor Center, Great Salt Lake, near Salt Lake City. Edwards & Daniels Architects. Photography © Scot Zimmerman.

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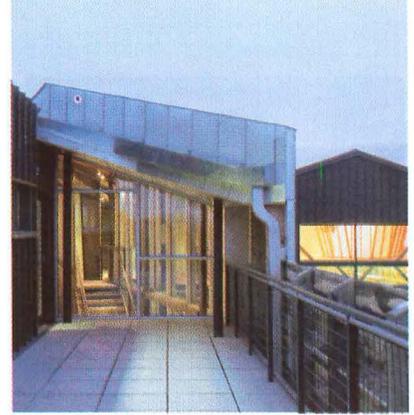
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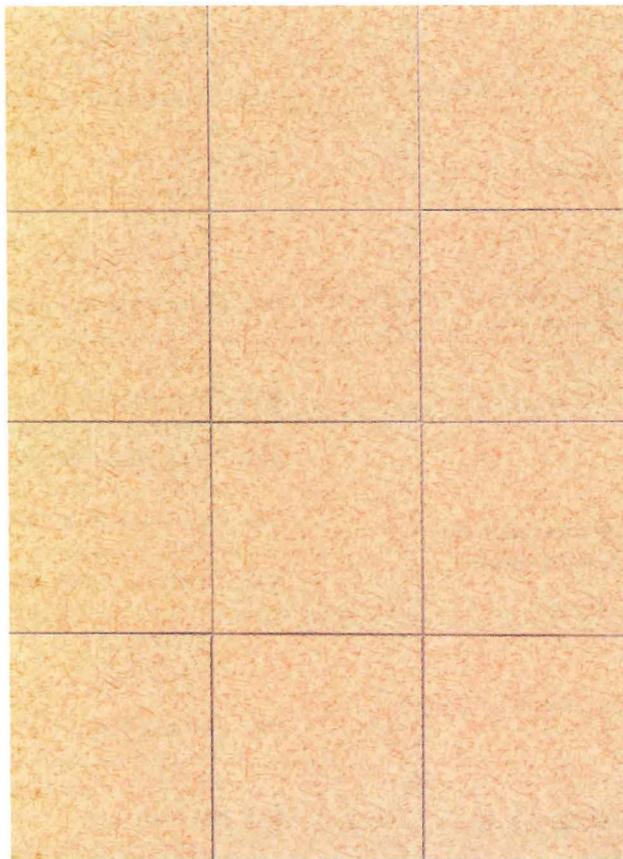
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The AIA/ARCHITECTURAL RECORD continuing-education opportunities are "Giving Back to the Environment" [page 199] and "Finishing Outside Walls With Ceramic Tile" [page 212], sponsored

by the Italian Trade Commission.
Cover: Context studies of the Museum of Technology Culture, New York, by Asymptote Architecture.
Above: The Cine, New York, by Hariri & Hariri.

Natural instincts



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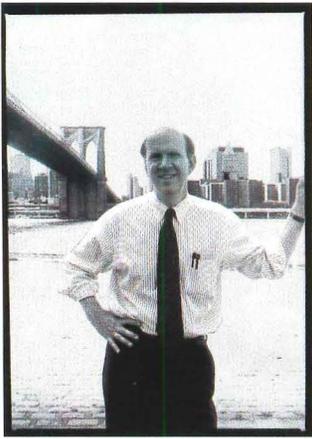
The most subtle hint of texture. The softest tones from nature's palette. An element of environmental interest and intrigue. It speaks to us. And it becomes part of us.

CIRCLE 3 ON INQUIRY CARD

EDITORIAL

Standing Up to Sprawl

BY ROBERT IVY, FAIA



Sustainability, the rallying cry of a generation of architects, has faded to a shade of bland, scarred over with 1960s moralism and overwhelmed by today's cheap oil and a backlog of work. Besides, we architects are having too much fun with zooming forms and theoretical debate to obsess over houses made out of wheat.

So how can we invest sustainability with new meaning? In the abstract, sustainability may not be sexy enough, but consider one aspect of the term that has caught fire, politically—land use. The world remains finite in its girth and resources, increasingly pressured by population and commerce to yield up its wealth; open land continues to vanish. We are, in effect, spending our natural capital in sprawl, with potentially dire consequences for our children and ourselves.

Look out the window of any aircraft at night. Streetlights have spread like galaxies across this continent, reaching far out into farmland and desert, claiming rural spaces that once seemed infinite. Atlanta and Houston are exploding out in concentric rings deep into the temperate South; California and the Northeast resemble massive rivers of light. Despite the successful revitalization of urban centers like New York, our national hunger for land continues to propel us outward with gale force. Who can prevail against such a powerful social and economic force?

There are some reasons for hope, though. More and more people are becoming fed up and are finally adopting arguments against sprawl. This past November, "slow growth initiatives" appeared on more than 200 state and local ballots, and in most cases succeeded. The results have been significant: in New Jersey, the state will appropriate \$1 billion to protect open land; despite howls of protest from farmers and other landowners, Ventura County, just north of traffic-choked Los Angeles, voted to limit development of its golden farmland.

A curious mixture of constituencies has picked up the cry. Planning advocates and ecology groups decry deforestation. In the West, slow growth

often takes a conservative bent, focused on issues like grazing or property rights. But some blue ribbon national institutions have extended the debate, such as the National Trust for Historic Preservation, a group that has put fighting unmediated growth on its list of priorities.

What can architects do about sprawl? Roger Stone, the head of the Sustainable Development Institute in Washington, D.C., believes that the time has come for proper planning. "There is a real need for architects to think beyond the individual building or compound, to think about larger issues," he says. He cites the need to adjust our zoning, land-use regulations, and the entire regulatory environment. As proof, he points to increasing traffic from (and in) the ever-burgeoning suburbs, a symptom of a land-use disease that will not abate without controls; the hours lost in congestion cost employers, commuters, and merchants in productivity and peace of mind.

Proper planning demands leadership, a credible voice that can sort through conflicting points of view. It also demands alliances of architects with landscape architects and planners, engineers, politicians, and entire communities, offering new opportunities for us to gain visibility and prominence as spokespersons for the built environment. Regarding public concern for more careful land use, the Washington Post recently noted the emergence of "a possibly new fixture in American political life: aesthetics." What an opportunity! A more educated populace cares how their world looks, and architects hold the key.

Our best response to the debate may not be "no growth" or even "slow growth." Instead, we can champion "smart growth," a strategy that uses our professional skills and our instincts for sustainability to strike a balance between vibrant cities and the natural world. It is time to stand up to sprawl.

Next Door Nobu, New York City, Designer: Rockwell Group



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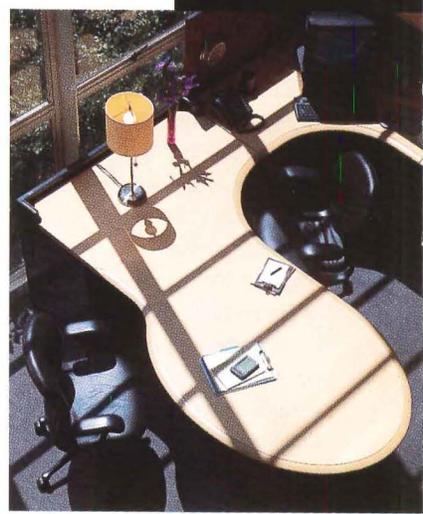
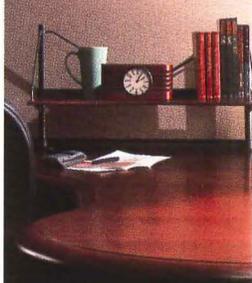
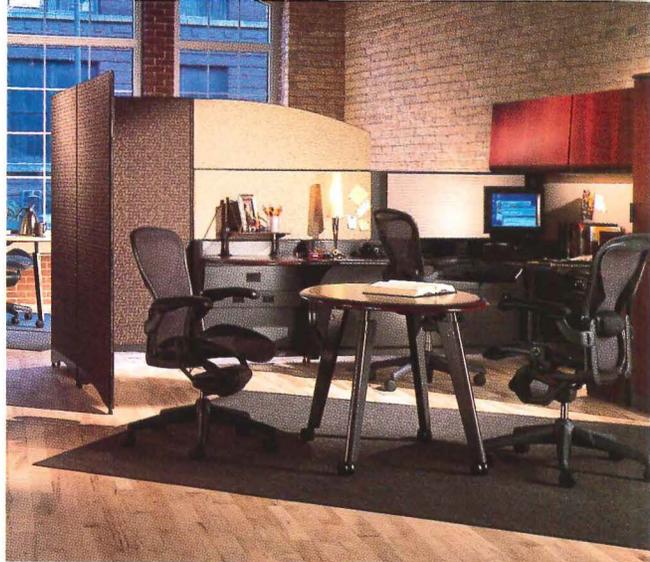
The plank is overlaid with melamine resins containing hard particles for wear resistance.

Core papers for increased indentation resistance and heat dispersion.

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Backing, engineered to provide balance and stability for the installed plank.





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LETTERS

Do ethics get in the way?

Ava J. Abramowitz's November Speak Out on ethics [page 24] argues, in essence, that architects shouldn't let their conscience or the needs of society get in the way of satisfying a client's wishes. This may be a profitable and popular business strategy, but it is certainly not good counsel.

—Tom Houg, AIA
Seattle

The ethics of our craft supersedes the mundane occurrences of practical business, right? Please, come down from the pedestal. Ava Abramowitz is right when she suggests that it is perhaps more unethical for architects to ignore the desires of their clients in pursuit of a higher ideal, whatever *that* might be.

The greatest satisfaction of practicing architecture should be the symbiosis of architect and client in the creation of a successful project. When this happens, the certain result is that the client is satisfied, the architect fulfills his or her civic responsibility, and the sound ethics of our profession are reinforced.

—John VanderSyde, AIA
Construction Coordinator
Chesterfield County Public Schools
Chesterfield, Va.

If architects were to follow Ava Abramowitz's recommendations, they would avoid making moral decisions at all, except as a last resort. In writing about what she thinks should be the architect's approach to ethics, Ms. Abramowitz may have written herself out of her position on the National Architectural Accrediting Board.

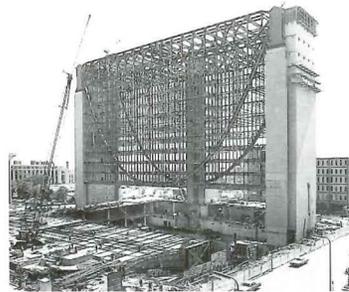
—Marcia P. Roberts, AIA, CSI
Conservation Specialist
Lower Colorado River Authority
Austin, Tex.

Don't save icon by changing it

On page 52 of the November news, Bette Hammel reports on proposed changes to the Federal Reserve

Bank of Minneapolis [original construction photo below].

She withholds editorial comment, but it is inconceivable that any architectural mind would consider filling the space below the catenary structure. It is not necessary to pay homage to the building. Save the image for memory, put a hood over it, but do not adulterate it.
—Gunnar Birkerts, FAIA
Bloomfield Hills, Mich.



Gunnar Birkerts's Federal Reserve Bank of Minneapolis, circa 1973.

Talent is not measured by fame

I enjoyed Wendy Moonan's November article on the megahouse trend [page 74] until the closing paragraphs. She wonders "whether clients are choosing America's better architects to design their modern megahouses" and concludes that they are not, since few "big-name" architects are identified in the *Palm Beach Post* story on the subject.

We're led to believe that when it comes to successful architecture, fame equals quality. Like most of your readers, I am not a famous architect and am disappointed to read a comment like this in your magazine.

—Philip Weiner, AIA
Lost Lodge Architects
Westport, Conn.

I would like to applaud you for publishing one of the most thoughtful and well-written articles I have ever read in your magazine, "The Aga Khan Award: Honoring Substance Over Style" [November, page 68]. It should be required reading for any and all practicing architects. But how could you have printed the last

paragraphs of the article on megahouses which followed?

In only a few words, you served notice to all "non-name" architects that they are not the "better" architects and therefore not capable of producing anything other than common, ordinary buildings. Shame on you.

—Michael J. Cohen
Michael J. Cohen Interiors
New York City

Any architect who secures a commission for a megahouse has earned the right to attempt to make his "name" with it, and should not be scorned for his lack of notoriety. Perhaps America's "better" architects are at work on such projects right now, and have simply yet to receive recognition for their achievements.

—Richard L. Taylor, AIA
Richard Taylor Architects Inc.
Dublin, Ohio

The design-build dilemma

While no one "can afford to ignore design-build today," as you say in your October editorial [page 15], it would be interesting to read some comments from you on how the architect can continue to promote the public's health, safety, and welfare when he or she has a financial interest in the outcome of the project. This ethical dilemma seems to be ignored in most commentaries, which appear to rely on the assumption that people will behave ethically as a way of promoting future business.

—Gerald Gamliel Weisbach, FAIA
Long & Levit
San Francisco

We applaud the courage of your October editorial on design-build. Rather than give the subject of design-led design-build the profession's usual patronizing lip service, you have challenged the architectural community to explore the opportunities that this process can offer. We've been crusading for this same cause for many years now, and have heard the same well-

intended ignorance: too much liability and too little quality.

Although traditional design-build may not be the answer, we cannot continue to rub our eyes and wait for the concept of design-build to disappear like a bad dream. A client-driven phenomenon, it has changed our industry forever. In the future, it will be an even more evolved process: efficient, proactive, and versatile. We should embrace these opportunities and stop mourning the passing of our traditional practice.

—Clifford W. Bedar, AIA
Michael W. Behm, AIA
HDR Architecture Inc.
Chicago

Credits/Corrections

In the October coverage of the Business Week/Architectural Record Awards, the images of the New York Times Printing Plant on page 100 should have been credited to Jeff Goldberg/ESTO and the images of the McNitt Building on page 101 should have been credited to Bob Shimer/Hedrich-Blessing. This is the reverse of what was printed.

In the same article, the description of the Gap Inc. headquarters (page 94) erroneously identified Sierra-Pine's formaldehyde-free medium-density fiberboard, Medite II, as particle board.

The AP Photo accompanying the essay on juvenile detention in the December issue (page 69) was taken by Rob Wythe of the *Plano Star Courier*.

The design architect for the Newport Aquarium (Correspondent's File, November, page 39) was GBBN Architects and the interior architect was Deutsch Associates. HOK Sport was incorrectly credited with the project. ■

Letters may be E-mailed by visiting our Web site at www.archrecord.com and clicking on News/Features/Dialogue. RECORD may edit letters for grammar, style, and length.

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PAC-CLAD High Snap-On Standing Seam Panels are featured prominently in the recently completed Grand Concourse of Chicago's McCormick Place. The barrel-vaulted roof serves to draw attention to the main entrance of this huge convention center.

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CIRCLE 10 ON INQUIRY CARD

SPEAK OUT Awards and honors programs provide a prime opportunity to support innovation and involve communities.

MARGA ROSE HANCOCK, HON. AIA

Marga Rose Hancock, Hon. AIA, is executive vice president of AIA Seattle. She recently served on the AIA Honors and Awards Task Force.



Robert Ivy's editorial on awards programs (November, page 15) begs further thought on how architectural honors can gain local relevance and attention. We at AIA Seattle recently celebrated the Honor Awards for Washington Architecture—a meaningful evening of observation and discourse. An articulate jury with members in architectural practice, education, and the arts reviewed 105 entries, visited a dozen or more of them, selected 15 “completed” and three “conceptual” ones for citation, and offered an assessment of Washington design.

Our experience over the years has generated a few guidelines that can help local awards programs grow into bigger, more important and resonant community events, at a time when many people in architecture are questioning the importance of awards and tend to dismiss them as empty exercises.

When done right, honors and awards have both internal and external value. Across the country, design awards programs are often *the* annual occasion when architects put forward their work for review and comparison. They provide the opportunity to consider not just the quality of individual achievement but the cumulative meaning and impact of the design community's recent work. Why waste a valuable opportunity? Those seeking to maximize the effects of an honors program may want to consider these suggestions:

Create discourse within and beyond the profession. Challenge juries to not just select but also present their findings, preferably in an

interactive format. In addition to clients and users, juries in Seattle have included children, artists, public officials, journalists, teachers, builders, and others from the extended family of design disciplines. Both local and national programs can generate further ongoing dialogue, extending worldwide via the Internet.

Include conceptual work, to encourage and recognize innovation. AIA Seattle has nurtured its awards program's conceptual category, surveyed by the same jury that considers completed work. This category attracts fresh and well-expressed design solutions, and the participation of those whose work won't or hasn't yet become manifest in built form. And sometimes these dreams do come true.

Learn from the work. Good juries offer accessible insight that bears repeating long after the blue and red ribbons tatter. Also, the teams that create successful projects have stories to tell and lessons to teach. How to capture them? AIA Seattle has created an annual seminar series based on winning projects. This year, we asked the architects of selected projects to describe “managing for design excellence.” Next year, we've invited honored clients to offer perspective.

Acknowledge collective achievement as well as winners. No one should lose anything by submitting work for review. More than that, though, all participants should gain value from comparing their own work with that of peers and from assessing the cumulative effect of their professional community. Even

the brightest and broadest juries will admit they select not the best but the most provocative. Although projects selected by a jury take the spotlight at least temporarily, all entries should receive recognition as part of a body of work representing the accomplishments of the design industry and the embodiment of aesthetic and economic trends.

Take advantage of having a collection of works. Like other AIA chapters, AIA Seattle publishes every entry in a magazine-style volume widely distributed within and beyond the design community. Further, we use the entries as a source for other recognition programs and to respond to media inquiries and the many requests we receive for information about the work of local architects.

Pause to take pride. Our society of hard-working individuals can use the occasion of an awards program to extend mutual support and understanding without being too insular. A good awards program can unify, edify, glorify, and enlarge a community. Let's keep talking and learning from each other. ■

Contributions: *If you would like to express your opinion in this column, please send submissions by mail (with a disk) to Speak Out, Architectural Record, Two Penn Plaza, New York, N.Y. 10121; by fax to 212/904-4256; or by E-mail by visiting www.archrecord.com and clicking on News/Features/Dialogue. Essays must not exceed 700 words. The editors reserve the right to edit for space and clarity. Where substantial editing occurs, the author will receive text approval.*

SLOAN

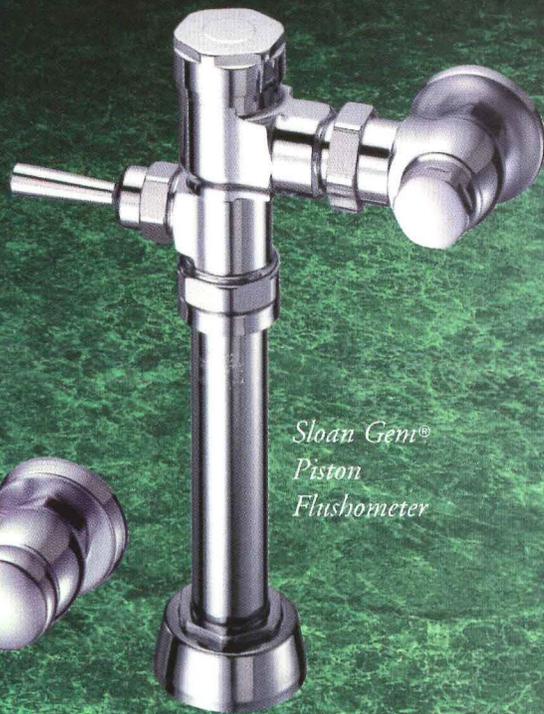
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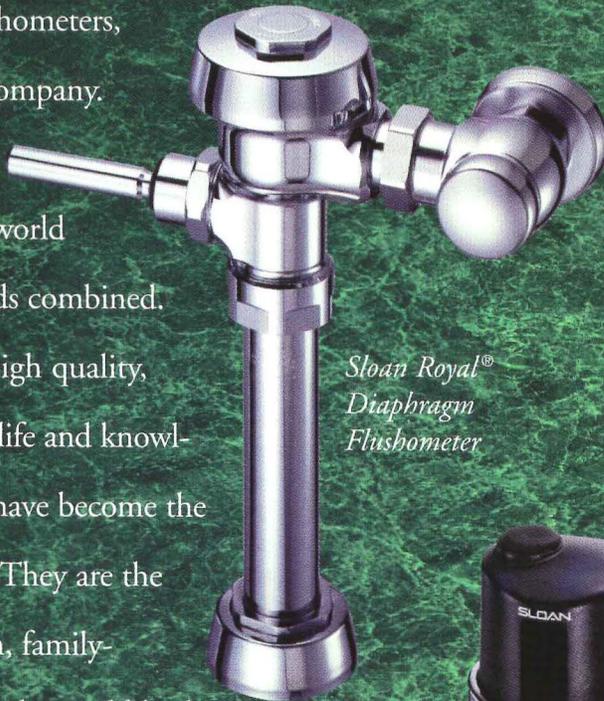
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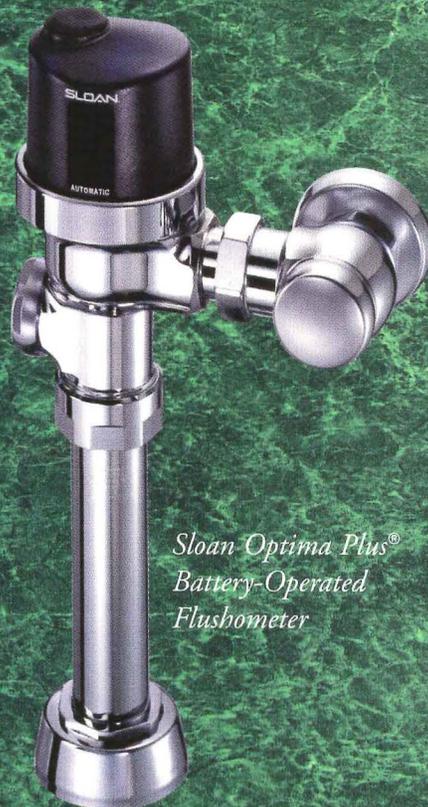
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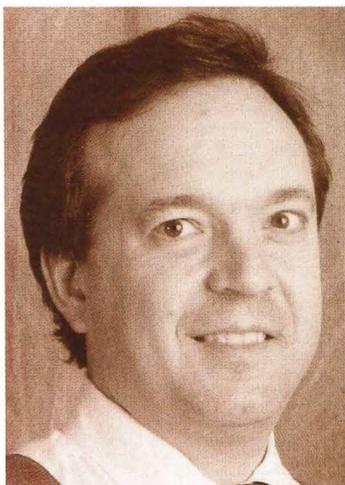
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CIRCLE 11 ON INQUIRY CARD

MENTORS Since 1990, architectural works, whether buildings, plans, or drawings, have been protected under copyright law.

Gregory T. Gronholm is a partner in Jones & Askew LLP, an intellectual property law firm in Atlanta.



Imagine that your architectural design for a recently completed “dream house” is being copied by another architect across town. This could obviously be detrimental to your practice, but what could you do about it? What if you wanted to use the same or a similar design for another client? Would that be a problem? And what if this situation occurred with a commercial building instead of a residential one?

Such questions are addressed by laws that protect architects’ designs. On December 1, 1990, the U.S. Copyright Act was changed to include “architectural works.” Before then, copyright law did not protect designs of buildings other than non-functional monuments. Building plans were covered, but the law only prohibited actual copying of the plans themselves.

The revised copyright law protects “the design of a building as embodied in any tangible medium of expression, including a building, architectural plans, or drawings.” The protected work includes “the overall form as well as the arrangement and composition of spaces and elements in the design, but does not include individual standard features.”

A building is defined as a structure “habitable by humans and intended to be permanent and stationary, such as houses and office buildings, and other permanent and stationary structures designed for human occupancy.” There is no distinction between commercial and residential structures. The crux of the definition appears to be the “habitability” of the structure—if you

can get inside it and it wasn’t built to be moved, it is probably protected.

While the designs of most habitable buildings are protected, not all designs are. The law specifically excludes certain “structures, features, or works” such as bridges, dams, walkways, and mobile homes from being registered as architectural works. The excluded features include standard configurations of spaces and individual standard features, such as windows, doors, and other staple building components. Finally, building designs published or built before December 1, 1990, are excluded.

But for current work, the news is good: copyright protection exists for architectural works from the time they are created. Of course, the work has to be original and not copied from something else. For infringement to occur, some copying must take place; no infringement exists if the alleged copier can show he or she did not mimic the original work, such as by proving there was no access to the design.

While architects’ works are generally protected from the time of their creation, it is still necessary to register the copyright in order to file suit and enforce your legal rights. A copyright lawyer can readily do this, or you can file your own application with the U.S. Copyright Office.

Infringement of a copyright in an architectural work can require the guilty party to pay damages. Although the courts usually will not require completed buildings to be razed, they may stop further construction or require that a building’s

appearance be modified.

Architects sometimes find themselves in a sticky situation when building owners incorrectly assume that they automatically own the copyright to the designs of their buildings. This is a common misunderstanding. It’s true that work produced when one is employed by someone else is typically “work for hire” and the property of the employer, but this situation doesn’t apply to a building owner. Most copyrighted work produced under an independent contract will remain in the name of the independent contractor—in this case the architect—unless there is an explicit agreement to the contrary.

If the question of who owns the copyright—you or your client—has been addressed by agreement, the agreement will be the controlling factor. However, if no agreement is in place, it is likely that you, the architect, will own the copyright.

The law is clear. Once you register a copyright of one of your designs, you are able to sue anyone who is copying your work. Even without registration, it’s likely you can use the same or similar designs for your other clients. ■

Questions: *If you have a question about your career, professional ethics, the law, or any other facet of architecture, design, and construction, please send submissions by mail to Mentors, Architectural Record, Two Penn Plaza, New York, N.Y. 10121; by fax to 212/904-4256; or by E-mail by visiting www.archrecord.com and clicking on News/Features/Dialogue. Submissions may be edited for space and clarity.*

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CIRCLE 12 ON INQUIRY CARD



PULSE RECORD readers were asked: Who is the world's greatest living architect, and why?

Richard Meier excels in the three areas that distinguish a great architect: timelessness, quality in detail, and human sensibility. I have heard him accused of creating cold, inhumane spaces. To the contrary: after having walked through some of his wonderfully lighted spaces, I realized that I had not felt as warmed and emotionally charged since being in some of Palladio's buildings.

—Bob Taylor
Houston

Norman Foster's work is always fresh, innovative, and energy-efficient. More important, buildings such as the Commerzbank in Frankfurt and the HongKong and Shanghai Bank in Hong Kong respond extremely well to environmental and programmatic issues. This quality, in addition to his lean-and-mean high-tech aesthetic,

keeps him on the cutting edge. Many people may not be aware of this, but Foster and Partners also has a reputation for bringing projects in ahead of schedule and under budget, which is no small task.

—Michael Hyatt
Drexel Architecture Society
Philadelphia

I. M. Pei is the most dynamic architect of our time. His work fits perfectly with site and program without sacrificing any aesthetic qualities. When you progress through one of Pei's buildings, the details tell a story that keeps the public enthralled.

—Deborah Boal
Clemson, S.C.

Pushing design and engineering to new, unforeseen places is the mark of a great architect. **Santiago**

Calatrava is the world's best. He is the creator of an incredibly diverse body of work, full of exciting architectural and engineering wonder. His buildings not only move the spirit, but are also often in motion themselves.

—Eric Mersmann
Hancock + Hancock Inc.
Chicago

A consistent Modernist, **Jean Nouvel** is my nomination for the greatest living architect. He brings together art and technology with flair and a sense of permanence.

—Sven Erik Alstrom, AIA
AlstromGroup
Aspen, Colo.

Is greatness determined by consistency of theory and practice? Then we must choose between

Venturi Scott Brown Associates,

Agrest and Gandelsonas, Peter Eisenman, and others. Is greatness determined by irrational exuberance, a.k.a. sheer delight? **Frank Gehry, Richard Meier, and Renzo Piano** come to mind. Some architects push our architectural heritage to new places, among them

Michael Graves, Williams and Tsien, and Steven Holl. We should perhaps replace the question of what makes a good architect with a discussion of what makes a good building. Only then can we judge architects with a standard yardstick.

—William I. Kline
Tobey + Davis
Reston, Va.

Wake up! Individual figures can't take sole credit anymore.

—Lawrence Carcoana
MBA P.C.
Fargo, N.D.

This Month's Question

What do you think?

Jewish Museum, Berlin

Daniel Libeskind's magnum opus opened this month (see page 76). Even without displays installed, architecture aficionados are anxious to tour its challenging spaces. What do you think of the building?



May an editor contact you for comments?

Yes No

Name _____

Company _____

Phone _____

City, State _____

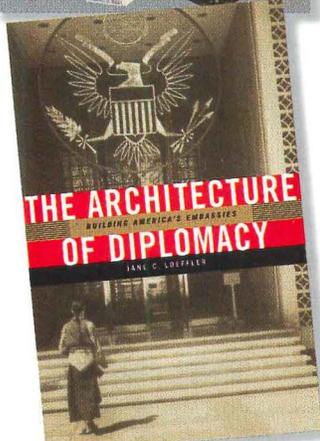
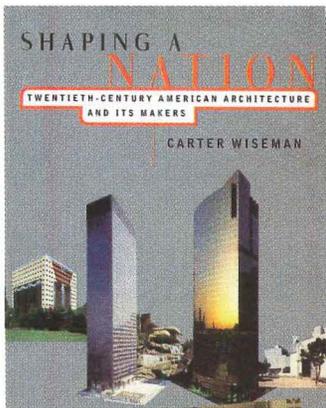
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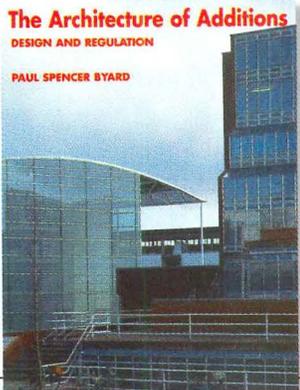
BOOKS A pair of titles survey American architects at home and abroad, while a third examines the history of building additions.

Christine Liotta Sheridan is a New York-based writer and book reviewer.

Mildred F. Schmertz, FAIA, is a former editor in chief of ARCHITECTURAL RECORD.



The Architecture of Additions
DESIGN AND REGULATION
PAUL SPENCER BYARD



Shaping a Nation: Twentieth-Century American Architecture and Its Makers, by Carter Wiseman. New York: W. W. Norton, 1998, 412 pages, \$40.

In this insightful survey of 20th-century American architecture, critic Carter Wiseman profiles some 200 architects—from Louis Sullivan and Frank Lloyd Wright to Louis Kahn and Frank Gehry—and examines their work. Yet despite its encyclopedic scope and value as a reference, this is not a dry, scholarly book. Covering all the major movements from 1900 to the present—including industrialization, Modernism, Postmodernism, architectural preservation, even the proliferation of computer-aided design—Wiseman traces the development of the American built environment in the context of a constantly changing and evolving society. Writing with depth and good humor, Wiseman deftly chronicles one of the most dramatic and spectacular periods of this country's architectural history. *Christine Liotta Sheridan*

The Architecture of Diplomacy: Building America's Embassies, by Jane C. Loeffler. New York: Princeton Architectural Press, 1998, 306 pages, \$28.

An architect's ability to compromise with a client can be a welcome attribute. In the complex world of embassy design, it's a necessity. Insightful and meticulously researched, this fascinating history of America's embassy-building program is filled with stories of interna-

tional intrigue and bureaucratic snarls. Beginning with the dawn of the Cold War, Loeffler explores the forces and challenges—political, financial, social, symbolic—that affect such projects. For instance, the United States Embassy in Stockholm, Sweden (1951–54), which has floor-to-ceiling glass walls and which Swedish architects described as an “architectural Marilyn Monroe,” is both visually and literally open, expressing American optimism about democracy itself. More recently, however, the threat of terrorism has led to increased security and more defensive design. Building an embassy is a supremely complicated feat, this book ably shows, one requiring as much diplomacy as design. *C.L.S.*

The Architecture of Additions: Design and Regulation, by Paul Spencer Byard. New York: W. W. Norton, 1998, 191 pages, \$40.

This excellent book emerges from Paul Spencer Byard's double career as an architect and a lawyer. Combining wide-ranging scholarship in the field of architectural history and a deep understanding of design and construction as art, Byard examines expansions to outstanding European and American buildings from the 14th century to the present. His purpose is to demonstrate with 58 examples how additions can sustain or even enhance the beauty and symbolic power of buildings, while accommodating changing functions.

Byard begins with three masterworks, taking the reader on a

splendid tour through the centuries. First up is Saint Peter's in Rome, which represents the successive efforts of late Renaissance and Baroque masters: Bramante, Michelangelo, Maderno, and Bernini. Next is the Queen's House and the Greenwich Royal Naval Hospital in Greenwich, England, which began as a 17th-century Palladian country house by Inigo Jones, was added to by John Webb, and was completed in the early 18th century by Christopher Wren. Finally, Byard presents the 14th-century Castelvecchio in Verona, which was transformed into a museum by Carlo Scarpa in 1964.

Byard's survey of 20th-century additions explores the expressive possibilities of Modernism, and includes a critique of such controversial late-20th-century works as Peter Eisenman's Wexner Center in Columbus, Ohio, Frank Gehry's “Fred and Ginger” building in Prague, and two projects by Daniel Libeskind—the Jewish Museum in Berlin and the Boilerhouse at London's Victoria & Albert Museum.

Looking at these examples, Byard says, “Every act of preservation is inescapably an act of renewal in the light of a later time, a set of decisions about what we think something was and about what we want it to be and to say about ourselves today.” He adds that “the value of preservation is only partly in the accuracy and breadth of its understanding of the past.” It is also, Byard says, the dialogue between old and new and what that says “about continuity and difference” that interests us.

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EXHIBITIONS A series of shows in Madrid underscores design dichotomies between Iberia and its former colonies.

BY DAVID COHN

Ibero-American Biennial of Architecture and Civil Engineering.

Madrid, Spain. October–November 1998.

The first Ibero-American Biennial of Architecture and Civil Engineering, held in Madrid in October and November, was a bundle of incongruities.

In the first place, it brought together, on theoretically equal terms, work from the former colonial powers of Spain and Portugal and from many of their former colonies in South and Central America—13 countries that are by no means equal in terms of economic development or resources. Second, it brought together architecture and civil engineering, exhibiting museums and historic restorations beside gas lines and highway interchanges, evidence perhaps that displaying the fruits of public spending interested the participating countries more than the specific concerns of the two professions.

The event and its related conferences were organized by the Spanish government in collaboration with Spain's professional associations and five of its public universities. It coincided with a conference of Ibero-American leaders held in Porto, Portugal, in October.

The inequality of the relationship between colonial powers and former colonies was evident in the main exhibit, with works by Spain and Portugal's most renowned names (including Alvaro Siza, Rafael Moneo, and Juan Navarro Baldeweg) lined up beside modest works such as a \$100,000 effort to restore original earth pigment colors to the

David Cohn is an international correspondent for ARCHITECTURAL RECORD. He lives in Madrid.



González de León and Zabłudovsky's National Auditorium (above) and González de León's Arcos Bosques (below), both in Mexico City.

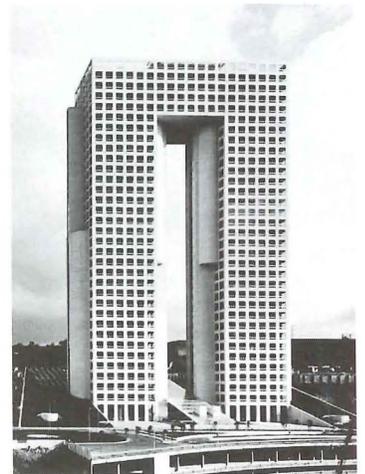
houses of Potosí, Bolivia, by architect Luis Prado Rios. Except for Mexico, no Central American countries were present, and other Latin American countries did not always bring their most ambitious work.

Among the outstanding projects showcased were the Locomotive Division Hospital by João Figueiras Lima in Salvador Bahia, Brazil, winner of a Biennial award; the No Guarujá House on the Brazilian coast, by Marcos Acayaba; and an office building in Santiago by Enrique Browne and Borja Huidobro.

The two disciplines found a point of encounter in an exhibition on Uruguayan architect and engineer Eladio Dieste (1917–96), an inventor of thin-shell vaulted structures composed solely of clay tiles, reinforcing rods, and mortar. One showcased example was the parallel catenary vaults of the Turlit Omni-

bus Station in Salto, Uruguay, that are 3½ inches thick and form a light canopy spanning 55 yards. Another was the 1979 Port Depository in Montevideo, whose undulating vaults break like waves to admit central skylights. Dieste's sophisticated, sculptural forms are low-cost, low-tech, and highly efficient in their use of materials, making them ideally suited to developing economies.

Three other exhibitions focused



on Mexican architecture. The work of veterans Ricardo Legoretta and former partners Teodoro González de León and Abraham Zabludovsky was featured in two monographic shows. Forty works by 10 younger firms were shown under the title *New Mexican Architecture*, including projects by Enrique Norten, Isaac Broid, the LBC Group (Alfonso López Baz and Javier Calleja), and the team of Albin, Vasconcelos, and Elizondio.

González de León, Zabludovsky, and Legoretta have built careers with large-scale corporate and institutional commissions. They practice a Modernism adapted to the climate and cultures of Mexico, with works that often feature large patios partially shaded by trellises and cooled with pools and fountains; solid sculptural volumes, opaque walls, and deep chamfered windows; and monumental gateways, terraces, and forms recalling pre-Columbian and colonial grandeur.

While Legoretta is known for saturated colors in stucco, González



Mexico's Papalote—Museo del Niño, by Legoretta Arquitectos.

de León and Zabludovsky have perfected, over the last 30 years, the use of rugged concrete finishes. González de León worked briefly with Le Corbusier in the 1940s. But in contrast to the raw urban grit of the French master's Brutalist followers, the buildings he designed with

Zabludovsky, such as the 1973 Mexican Embassy in Brasília, are expansive and sensual, embracing the landscape and drenched in sun and shadow.

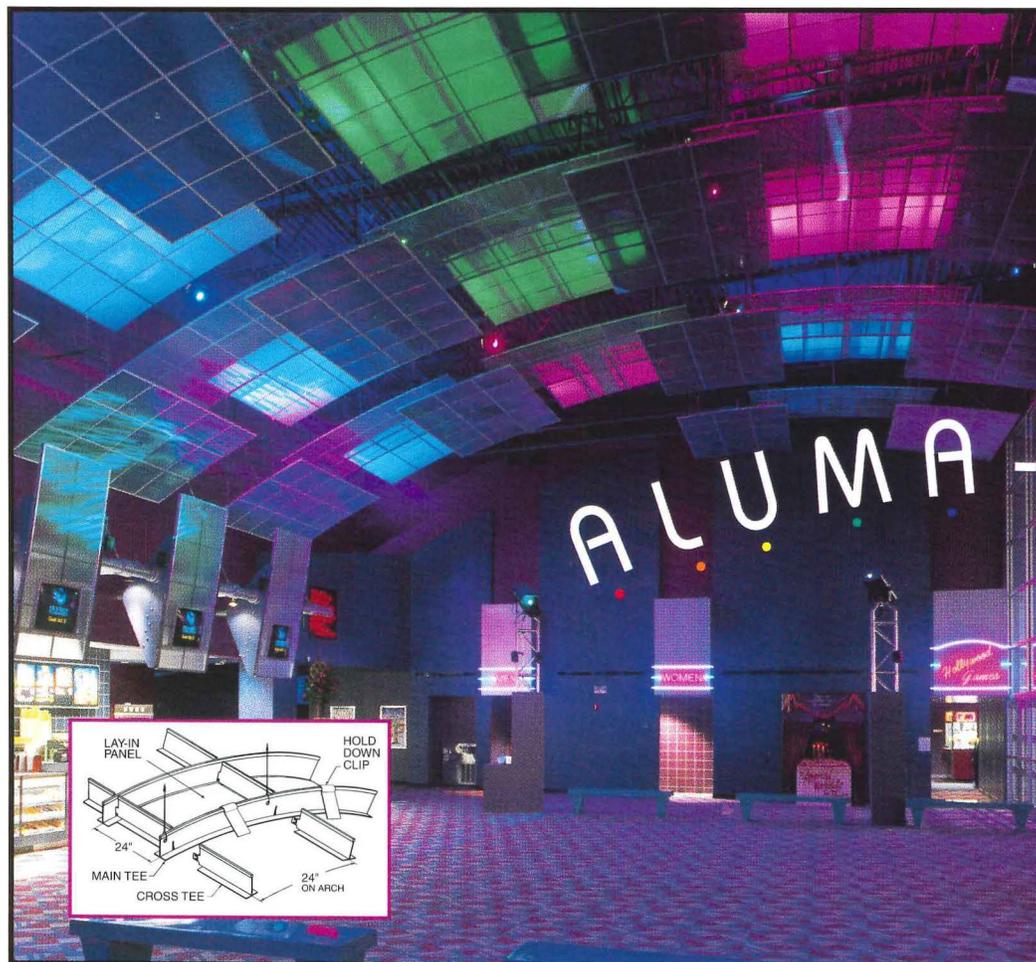
The exhibition revealed that González de León's impressive independent commissions of the 1990s, such as the Federal Justice Center, the National Music Conservatory, and the 32-story Arcos Bosques

offices, are composed with a loose inventiveness and an economy of gesture.

Legoretta's equally expansive designs feature intuitive, experience-based compositions of geometric forms amid gardenlike patios. Examples include the 1981 Hotel Camino Real in Ixtapa, where terraced rooms cascade down a hillside, Mexico City's National School of Plastic Arts, and the Televisa administrative complex. His works in progress in the United States, such as the Mexican Museum in San Francisco and the Dallas Latin Arts Cultural Center, both on tight urban sites and nonprofit budgets, haven't allowed him such freedom.

An exhibited photograph of a private commission in California, the Rancho Santa Fe House of 1987, captures Legoretta's spirit more fully: an ample pool, extending into the landscape, is engulfed in the airy shaded volumes of the house by high trellises and monumental piers, like a Roman bath. ■

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CORRESPONDENT'S FILE As construction continues to boom in Seattle, a mayor and a mogul are shaping the future look of the city.

BY SHERI OLSON, AIA

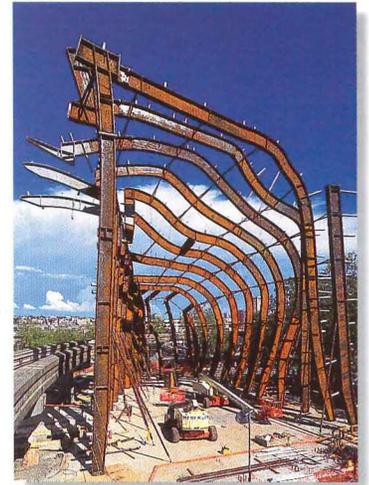
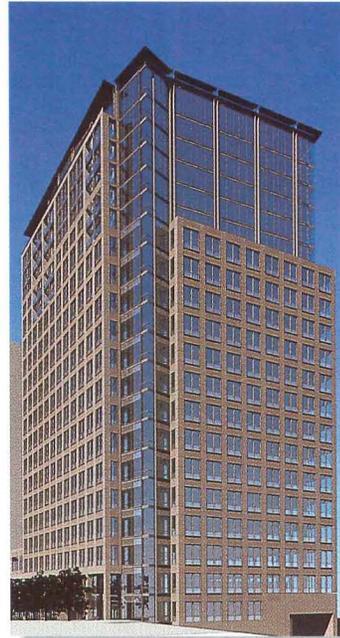
Sheri Olson, AIA, is a contributing editor at RECORD.

Over the past decade, few—if any—American cities have grown in size and cachet as quickly as Seattle. And the rapid expansion shows no sign of abating. A high-water mark in the city's building boom—a record-breaking \$1 billion worth of building permits in 1997—turned out to be just a drop in the bucket, as the value of permits for 1998 surpassed that figure by some 20 percent.

Local residents and architects are wondering how long this phenomenon can last. But a better question might be: What will Seattle look like when it is over? Two individuals are in unique positions to shape the reply: Mayor Paul Schell, Hon. AIA, and Microsoft cofounder (and billionaire) Paul Allen.

Schell's plan to manage the region's growth was a decisive factor in his election, in 1997. During his campaign, Schell promoted increased in-city densities as a way to combat sprawl—a difficult battle in a region that has experienced an almost 30 percent increase in population in less than 20 years. While past public housing policies concentrated on the homeless and the poor, Schell expanded the focus to include moderate-income families who are being priced out of the market. (The shortfall between supply and demand has driven the median price of a single-family home in Seattle up to \$209,950, an estimated 20 percent increase over last year.)

Schell's background gives him a unique understanding of the role design can play in addressing urban problems (see interview, page 52). As Port Commissioner, he was



Millennium Tower, a mixed-use project downtown (left); Frank Gehry's Experience Music Project taking shape (above).

involved in the development of the waterfront and the popular Bell Street Pier, designed by Hewitt Architects (then known as Hewitt Isley). As a developer, he pioneered downtown living with several projects. In a city known for its reserve, Schell is outspoken and not afraid of proposing untested ideas.

The Housing Action Agenda, Schell's first major initiative as mayor, outlined ways to increase the city's housing supply, from streamlining the building permit process to providing incentives for "good, Seattle-specific" design. A city ordinance was passed to promote design demonstration projects as a means to develop housing solutions.

Heeding the call, AIA Seattle mounted a competition calling for proposals for housing that would be unbuildable under existing codes. The schemes were not as surprising

as the low number of entries. Jerry Finrow, a juror and the dean of the University of Washington's College of Architecture, believes the turnout was less an indication of lack of interest than of the hot economy; architects were simply too busy to compete.

For his part, Schell points to the new symphony building, Benaroya Hall (RECORD, February 1998, page 36), designed by Loschky, Marquardt & Nesholm (LMN) of Seattle, as an example of an appropriate expression for the city's urban architecture. "It shows a friendly face to the neighbors and avoids ostentation," he explains.

This tendency toward self-effacement has produced a series of sturdy but otherwise uninspired public buildings. But the new Civic Center planned for downtown may finally buck that trend. Seattle firms

A low-angle, upward-looking photograph of the Petronas Twin Towers in Kuala Lumpur, Malaysia. The towers are made of a complex, repetitive pattern of steel and glass, creating a strong sense of height and verticality. The sky is a clear, bright blue with a few wispy clouds. The towers are the central focus of the image, with one tower on the left and the other on the right, both reaching towards the top of the frame.

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Weinstein Copeland Architects and Hewitt Architects are working on a master plan for almost 200,000 square feet of administration space, a municipal courthouse, a city hall, and a large public gathering space.

Schell has also called on Seattle's high-tech millionaires to help create a "city of modern-day Carnegies." Microsoft chairman Bill Gates recently stepped up with a \$20 million donation to the Seattle Public Library. Apparently, Gates was inspired by the overwhelming public support for a bond measure that provides almost \$200 million to replace the central library downtown, open three new branches, and

renovate two dozen others. Gates's gift will help build a state-of-the-art facility on the site of the existing outdated, under-sized library.

While Gates and his \$50 million Lake Washington home get the lion's share of Microsoft-fortune notoriety, it is Paul Allen who may become Seattle's Baron Haussmann. Allen's spokespeople shy away from any suggestion that he has a grand plan for Seattle, but three projects he is developing hold the potential to transform the city.

Allen's First & Goal Inc., which owns the Seattle Seahawks, is picking up a portion of the \$425 million tab for a new football stadium. Voters approved \$300 million in public financing for the project in an unusual referendum that was actually



Paul Allen (left) is financing many new projects, including the new Seahawks Stadium (below), designed by Ellerbe Becket and slated to open in 2002.

underwritten by Allen. Ellerbe Becket of Kansas City is the designer of the 72,000-seat stadium, which should be ready for kickoff in 2002. The 23-year-old Kingdome will be demolished to make way for the stadium and an exhibition center by LMN. Now under construction across the street is Safeco Field, NBBJ's \$500 million retractable-roof baseball stadium, where the Mariners will play.

Low rents have historically drawn artists and galleries to the neighborhood around the stadium, and there is concern that the changing economics are a threat to the area's quirky character. With prodding from the city, First & Goal

recently signed an agreement giving it the option to develop market-rate housing north of Seahawks Stadium in what would have been a parking lot and staging area.

Across the railroad tracks that border the eastern edge of the new stadium site, Allen's Vulcan Northwest Inc. (another of his many development firms) is renovating Union Station as the centerpiece of a \$250 million development. Located at the point where freight, commuter, and light-rail lines converge, this area is fast becoming the heart of a new downtown transportation district. When it is completed, Allen will sell the 90-year-old station for \$1 to Sound Transit—the agency building the \$3.9 billion regional light-rail, commuter rail, and express bus system—to house its headquarters. NBBJ is designing over a million square feet of office, retail, and hotel space in five new buildings surrounding the station.

King Street Station, a block



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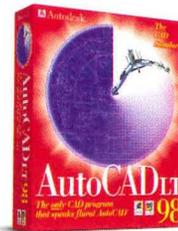
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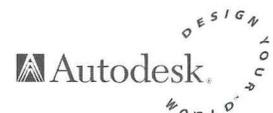


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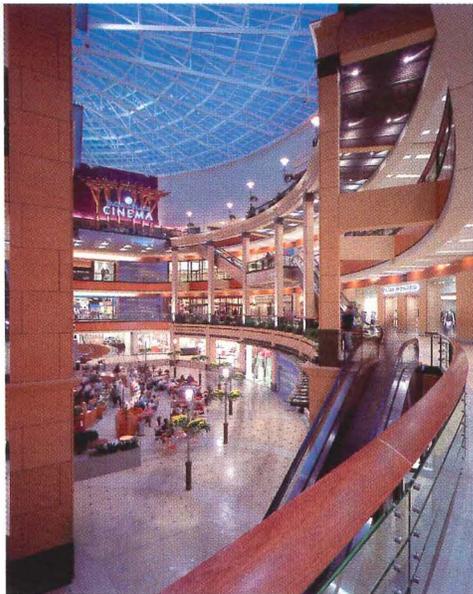


north of Seahawks Stadium and a block west of Union Station, is being renovated by Hardy Holzman Pfeiffer's Los Angeles office, in association with local architects Otak, as a hub for Amtrak service and the new commuter rail. Over 17,000 passengers a day are expected to pass through this neo-classical station.

While Allen's office and stadium projects are in the realm of a typical wealthy developer, his Frank Gehry-designed homage to Jimi Hendrix expresses an exuberance that comes only with vast resources. The \$100 million Experience Music Project (EMP), located at the base of the Space Needle and pierced by the monorail (both built for the World's Fair in 1962), will feature traditional and interactive exhibition spaces, as well as performance halls. The opening has been pushed past its original date of next summer, but the warped steel beam structure is in place and already grabbing attention. The 140,000-square-foot

museum will ultimately be enclosed by more than 250,000 square feet of undulating red, gold, and blue stainless-steel panels.

Catering to the nouveau riche has transformed Seattle's downtown



NBBJ's Pacific Place, part of Seattle's rejuvenated downtown.

retail scene from the bleak picture of only 10 years ago, when several major department stores closed their doors. This summer, when Nordstrom moved into its new flagship store and corporate headquarters downtown—a \$100 million renovation project by local firm Callison Architecture—the epicenter of the shopping district shifted with it. Across the street is the posh Pacific Place mall, designed by NBBJ and Elkus Manfredi of Boston, which opened last year. A block away is the site for One Convention Place, a 16-story office tower designed by Callison. The construction of this project, along with the 20-story mixed-use Millennium Tower by Zimmer Gunsul Frasca, will mark the end of

a seven-year drought in office space construction.

To meet pent-up demand, five million square feet of new office space is planned for downtown, along with over 2,000 residential units. Among the projects is Hewitt Architects' Harbor Steps, which will add 750 housing units and link the city's cultural spine to the waterfront with a dramatic urban staircase.

Though excitement for all this growth is still high, it may prove costly. In a recent study, Seattle tied with Los Angeles for the country's worst traffic congestion. The Sierra Club says that sprawl around Puget Sound is threatening the Chinook salmon. The same conditions that endanger salmon are eroding the quality of life that makes the region so attractive. It is clear that to address the environmental implications of an expanding city, public officials like Mayor Schell and private developers like Paul Allen must find new and innovative ways to work together. ■

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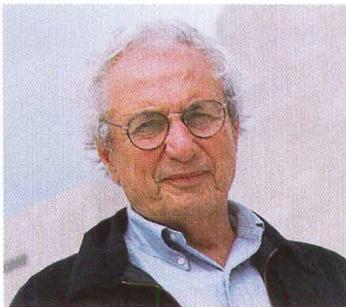
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MAJOR MUSEUMS AND MEDALS: FRANK GEHRY'S BIG YEAR

After a two-year hiatus, the American Institute of Architects has a new Gold Medalist: Frank O. Gehry, FAIA, will receive the AIA's highest individual honor at Accent on Architecture in Washington, D.C., on February 6. Gehry, the Santa Monica, California, architect who has created a body of provocative, expressionistic work, becomes the 57th recipient of the medal. His name will be etched in stone at the AIA headquarters beside those of previous winners, including Thomas Jefferson, Louis Kahn, and Frank Lloyd Wright.

The Gold Medal comes on the heels of Gehry being given the National Medal of the Arts, pre-



sented at the White House this fall by President and Mrs. Clinton. The Pritzker Prize, which included a significant cash award, came almost 10 years ago, in 1989. After all this, how does it feel to get the AIA Gold Medal? Has the glory from multiple sources begun to blur?

Shortly after the Gold Medal announcement, I traveled to Santa Monica to find out. Gehry and I met in two locations: his office, which sprawls factory-like through a two-story, Holiday Inn-esque building along an alley; and Gehry's favorite breakfast haunt, a deli on Wilshire Boulevard. On a cool December morning, Gehry wheels into the parking lot of the deli in a black Lexus. It is his only extravagant gesture.

Dressed modestly in an open-collared shirt, he banters with the

waitress, resembling not so much a highly touted genius as one of the usual crowd ordering veggie omelets and coffee. He has recently returned from Panama, his wife's birthplace and the site of a charrette he conducted for undeveloped property along the Panama Canal. Relaxed and in a positive frame of mind, Gehry is primed for conversation.

He wants the question about the Gold Medal asked; he has obviously been mulling it over. He speaks quietly and, in a customary way, looks downward. "I never thought I'd get it, because I thought my work was weird," he says. He wonders out loud whether other architects think he's "a fraud . . . [that] I don't know anything about structure and I wouldn't know how to run an architectural business and I wouldn't be a realist." The Toronto native sees himself as an iconoclast, outside the mainstream of convention and the profession.

Gehry's reservations come from his earlier years; for a long time, when other architects were being discussed as the "blacks, the whites, or the grays," he had no thematic or coloristic cachet attached to his name. He remembers building a firm in which everyone got paid on time and that didn't borrow money—and wasn't considered chic. He expresses admiration for another group of outsiders he identifies with: artists, who have been frequent collaborators and have provided him with inspiration.

Gehry's growing recognition among the cognoscenti and the opening of the Guggenheim Bilbao, a seminal project, dramatically changed his status, propelling his work and his name onto magazine covers. Success, however, hasn't altered his calm demeanor. Characteristically, Gehry maintains his poise in triumph or difficulty. He



Gehry's model for the Walt Disney Concert Hall in Los Angeles.

seems disappointed but unfazed by temporary setbacks, such as Bard College's reservations about his design for a new performing arts center or the Guggenheim's currently thwarted intentions for a major new facility in Manhattan. "I still leave at six o'clock and I don't work on weekends." In fact, he's taking flying lessons—for jets.

In describing Gehry's contributions, the press has often resorted to hyperbole—provoked, in part, by the endorsement of tastemakers such as Philip Johnson, who reported weeping repeatedly on visiting the Bilbao museum. As for Gehry, he has returned to Bilbao and is pleased by the way the museum showcases a variety of art; but rather than basking in its accomplishment, he "sees all the mistakes." While he thinks the museum's large gallery space is not fully resolved—that it swallows all but the most monumental pieces—he believes that "the kid has to grow up on its own."

Clearly, for Gehry the joy lies not in what people say but in the doing. He professes to lose interest once client involvement ceases, stating that he "loves the process most of all. It's a people process that is better than the final building." So much so, he says, that there are three completed projects he has never visited: "There was nobody to celebrate with, so I didn't go."

Gehry's "freedom to play," the essential creative expression that characterizes his architecture, comes from pragmatic underpinnings. His office, which prides itself on innovative practice, tends to the details, taking pains to translate his sculptural forms into technical draw-

ings for real buildings. "They don't leak," he says.

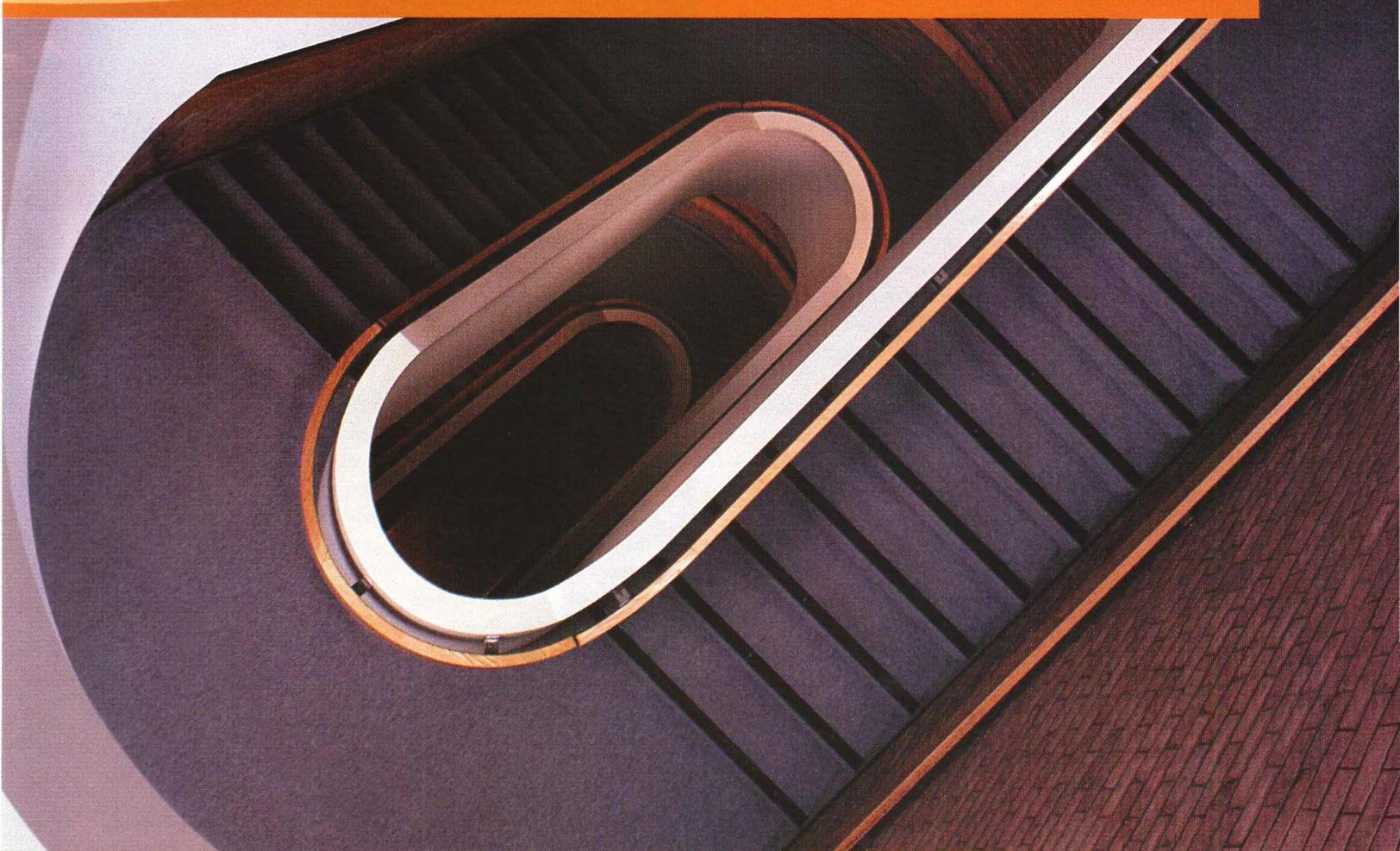
He repeatedly cites the work of his two partners, James Glymph and Randy Jefferson, in preparing production documents. Because of them, he says, "I sleep at night." In addition, his wife works with him and handles the checkbook, and "that gives me comfort." His team of 120 employees is made up of a young crowd in blue jeans that gathers in small groups to scrutinize the small models Gehry uses to study every project. The office is experimenting at the intersection of computer technology and design.

Gehry's fame has increased even though he stopped entering design award competitions years ago. "I won a lot of them and then I realized that I was pushing the young kids out."

But this most recent honor has special meaning for him. Taking a moment to consider the Gold Medal, Gehry looks up from his cup of coffee and, with soft emphasis, makes his point: "It's a wonderful honor because it is like in your family: you think your brothers don't think much of you, and then you find out they really love you. That's how it feels." *Robert Ivy, FAIA*

For a more complete transcript of RECORD's interview with Frank Gehry, visit www.archrecord.com after January 18. A comprehensive overview of Gehry's contributions and his new work will be published in the May issue of RECORD, together with longer excerpts from the interview.

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CIRCLE 26 ON INQUIRY CARD

ITALY HOLDS ARCHITECTURE FESTIVAL TO BOOST INTEREST AND DIALOGUE

The Italian government is taking real action to promote good design. The country's first Architecture Festival was held in late November, with the goal of renewing interest in architecture, opening dialogue between the public and government administrations, and asserting the importance of architecture in the European political arena. In cities and towns throughout Italy, local chapters of the National Architecture Council organized exhibits and conventions, covering topics ranging from architecture in cinema to the restoration of historic buildings.

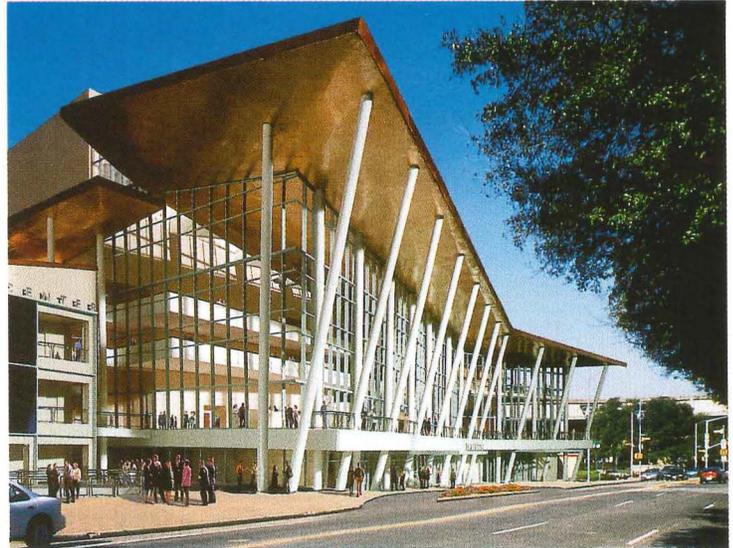
Other events and activities included "monument adoption," educational programs for children, the lighting of significant public spaces and buildings, and topical window displays in bookstores. To publicize Italy's modern architectural heritage, participating city mayors put plaques on noteworthy works from this century, such as Giuseppe Vaccaro's post office in Naples and Adalberto Libera's Villa Malaparte.

Before the festival, a series of events was held in Assisi, near the epicenter of last year's big earth-

quake. The National Prize for Architecture was awarded to one of architecture's elder statesmen, Ignazio Gardella, best known for his Antituberculosis Dispensary in Alessandria, dating from 1933.

The following day, during the First Conference for Architecture Policy in Europe, Italy's newly appointed Culture Minister, Giovanna Melandri, followed the lead of her predecessor, Walter Veltroni, by underscoring her commitment to drafting new legislation regarding architecture.

Critic and historian Bruno Zevi asserted that legislation would be a necessary step in removing architecture "from the humiliating conditions in which it finds itself today." Melandri defined architecture as being in the public interest and would like the new law to mandate the commissioning of an architect for all building activity. This would be a drastic change from the current situation, which involves a conflicting superimposition of the professional practices of architects, engineers, and surveyors. *Ilene Steingut*



THE LATEST IN THE LONE STAR LINEUP: STERN'S HOUSTON ARTS CENTER

As part of what is becoming a Texas performing arts center sweepstakes, the Houston Music Hall Foundation has unveiled plans for the Hobby Center for the Performing Arts, to be designed by Robert A.M. Stern, FAIA. The announcement follows the opening of Fort Worth's Bass Performance Hall in May and the announcement of a proposed \$250 million performing arts center in downtown Dallas.

The Hobby Center will include a 2,650-seat theater for Broadway-

style musicals and a 500-seat proscenium theater for smaller arts groups. A second building, containing administrative offices and a school of musical theater, will be located next door. "We want to recreate the festive quality of the old New York theaters, where there's a show before the show, but also preserve the intimacy," says Stern.

The center features a monumental steel and glass facade, bent slightly to set off the two theaters and covered by a hovering copper roof. In the middle sits a three-story, trapezoidal lobby with walls that aren't parallel and columns that actually hold something up—exotic elements in Stern's resolutely historicist work. "Houston is a new town, so to come in and propose a classical building here would not be appropriate," he told reporters.

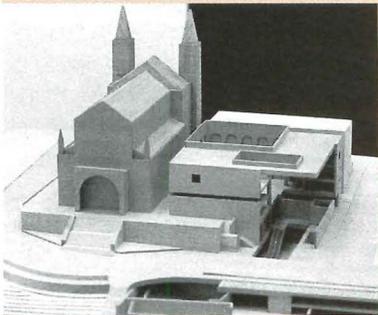
The main theater incorporates fanciful borrowings from the "atmospheric" Broadway theaters of the past, Stern says, including fiber-optic stars to create the illusion of an outdoor garden at night. The Hobby Center, named for one of Houston's leading philanthropic families, is being built largely with private funds. Around \$65 million of the \$85 million budget has already been raised. Construction will begin next spring, with completion anticipated in 2001. *David Dillon*

MONEO'S PLAN FOR THE PRADO Spanish architect Rafael Moneo has won the second competition to build an addition to the Prado Museum in Madrid, Spain's Ministry of Culture has announced (RECORD, December 1998, page 44). His design was selected from projects by nine of the 10 finalists in a 1996 open international competition that ended without a winner. Moneo's red brick building will be located behind the museum on the site of a ruined 18th-century cloister. It will contain temporary exhibition galleries, restoration studios, underground storerooms, and a library—with a reading room occupying a portion of the restored, skylit cloister. An underground connection below an existing street will lead to the back of the main building, where a 400-seat auditorium, cafeteria, and other visitor services will be added under a glass and steel roof. The budget for the project is \$25 million, and construction is scheduled to be completed in two years.

Moneo's building is the main element of a larger expansion program. Administrative offices were moved to an existing building early this year, freeing space in the museum for new galleries. The Casón del Buen Retiro, long a Prado dependency, will be restored by architect

Jaime Tarruel for the collections of 19th-century art, and the nearby Army Museum, which occupies a remnant of a 17th-century royal palace, will be taken over to allow restoration of the throne room of King Philip IV.

While the 1996 competition sought an overall solution for the museum's dependencies and urban surroundings, the newer contest won by Moneo was based on a carefully defined program and volumetric organization for a single intervention. Moneo told the press that "the museum's planners evidently learned a great deal" from the first event; his new design is more reserved than his first submission, which featured a large portico spanning the street between the original building and his addition. *David Cohn*

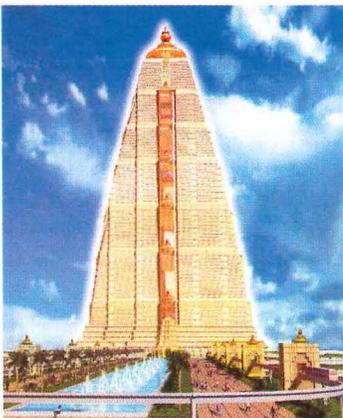




WORLD'S TALLEST TOWER, SIKH CENTER AMONG INDIA'S NEWEST AMBITIONS

India is a country of many languages and ethnicities, and its architectural projects are no less diverse. In November, ground was broken in the state of Punjab for the Khalsa Heritage Memorial, a new museum complex showcasing Sikh history and culture, with a design by Moshe Safdie and Associates of Boston. Meanwhile, the Maharishi Mahesh Yogi has announced his own towering goal: a center for his followers that, if constructed, would be the world's tallest building.

The 250,000-square-foot Khalsa complex (above) is situated on a 75-acre site straddling a ravine and will include two main buildings. The first will house a library, exhibition galleries, an auditorium, and a meeting room, while a second structure will contain permanent galleries devoted to an exhibition on the history of the Sikh people and a memorial to the Khalsa, a religious doctrine developed 300 years ago.



(The Sikh religion, founded over 500 years ago, has a following of over 20 million people worldwide.)

A pedestrian bridge will connect the two parts and will also house a public restaurant. At the bottom of the ravine, a series of small dams will create a network of reflecting pools, surrounded by arcades, outdoor exhibits, picnic grounds, and a park. The museum is slated to open in three years.

The Maharishi Mahesh Yogi, the transcendental meditation guru who came to fame in the West as the Beatles' sometime spiritual leader, is intent on leaving his mark: plans call for a 2,222-foot skyscraper dedicated to his teachings. Minoru Yamasaki Associates (MYA) of Rochester Hills, Michigan, is designing the building, though not much else has been decided. Part of a foundation was laid in November, but the construction schedule is still being determined and a budget hasn't been revealed.

MYA—which designed New York's World Trade Center—has envisioned a pyramidal building (left) that would go up on the outskirts of Jabalpur, an industrial city in central India. If completed, it would be 729 feet taller than Malaysia's Petronas Towers, currently the tallest-building titleholder. About 60,000 disciples of the Maharishi (who says he has some five million followers overall) would occupy the enormous edifice. *Soren Larson*

HAGUE MUSEUM FINISHES OVERHAUL, BUT NOT WITHOUT CONTROVERSY

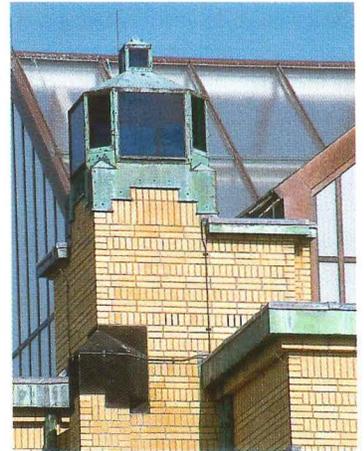
After three years and an investment of more than \$25 million, the Haags Gemeentemuseum (Municipal Museum of The Hague) is open to the public once again. The museum was the last major work of Hendrik Berlage, considered to be one of the greatest Dutch architects of the modern era.

Berlage died in 1934, a year before the museum was completed, but his design has withstood the test of time and influenced generations of museum planners. By removing the barriers between art and viewer and dividing the exhibition space into small, intimate rooms, Berlage aspired to an accessibility that departed from the norms of his time. For his strongly horizontal, two-story scheme, Berlage made extensive use of daylight by capping large expanses of the museum with glass and by devising elaborate systems for controlling lighting conditions.

In restoring the museum, architect Job Roos of the firm Braaksma & Roos was especially challenged by the difficulty of replicating the materials of the 1930s. Considerable experimentation was required, for example, to develop acceptable replacements for more than 100,000 yellow bricks for the exterior walls and thousands of brick-red, mustard, and gray-green floor and wall tiles on the interior.

Custom-designed features, such as brass window frames and the glass roof, required custom solutions during the restoration. "The building is itself a part of the collection," says Roos. The most far-reaching and costliest aspect of the project was the creation of a new exhibition space for the museum's costume collection under the existing sculpture garden. Construction was complicated by a high water table and the sandy ground on which the museum rests.

The reopening of the museum in October was also the occasion for the unveiling of its newest acquisi-



tion, Dutch painter Piet Mondrian's *Victory Boogie Woogie*, purchased for about \$40 million by the Dutch National Bank earlier this year as a gift to the Dutch people.

The high price paid for the Mondrian provoked a lively debate, but no sooner had it died down than the Gemeentemuseum was embroiled in a new controversy: during the renovation, *Wall Drawing 373*, a fresco by American conceptual artist Sol LeWitt installed in 1985 in a stairway, was destroyed. Works by three other artists were also removed.

LeWitt says that the museum broke a promise to maintain *Wall Drawing* on permanent display—a claim supported by former museum director Theo van Velzen. But current director Hans Locher says LeWitt's work was "conceptual" in nature and can be easily re-created. Locher told the Dutch newspaper *De Volkskrant* that a decision was made to highlight the original architecture, that restoration of LeWitt's work isn't a priority, and that, in any case, no funding is available at this time.

Another former director, Rudi Fuchs, told *De Volkskrant* that "you can defend Locher's decision to let the architecture speak for itself, since the building is part of the collection. But seeing how the work of Sol LeWitt and the architecture have become one, I think I would have done things differently." *Jim Wake*

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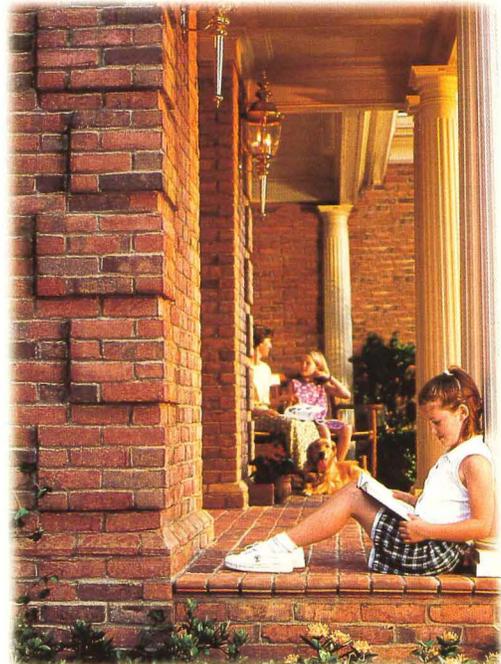
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CIRCLE 27 ON INQUIRY CARD



JAPANESE-AMERICAN MUSEUM ENLIVENS DOWNTOWN LOS ANGELES

A new 85,000-square-foot addition to the Japanese American National Museum (JANM) will open on January 23 in downtown Los Angeles's Little Tokyo district. Designed by architect Guy Obata of HOK, the \$22 million building will house galleries, a resource center, a large meeting hall, and a Japanese-American hall of fame. Total gallery space will be increased by 300 percent at the museum, which opened in 1992.

The new structure will also perform several important urban functions. A large paved courtyard connects it to the original facility (a renovated Japanese Buddhist temple) and allows pedestrian access between Little Tokyo and the downtown business district. It acts as a gateway to Frank Gehry's Geffen Temporary Contemporary Museum, completing the area's transformation into a new hub of artistic and cultural activity.

The red sandstone used in the project brings to mind that used by Arata Isozaki in his nearby Museum of Contemporary Art. In addition, the new JANM building's glass and stone facade along First Street provides a strong visual anchor at the gritty urban edge of Little Tokyo.

Because the institution's primary goal is to share the Japanese-American experience through oral histories, it relies extensively on film and video presentations. They are exhibited in conjunction with art-

work and artifacts such as a reconstructed house from a World War II Japanese-American internment camp.

The digital interfacing provided by the resource center at the hub of the new building is another key element. One can "visit" the JANM from anywhere in the world and access its collection via the Internet. While viewing the museum's artifacts on a computer screen might not be optimal, for a distant multitude it becomes a lifeline. *Alice Y. Kimm*

PITCHING A NEW TENT ON THE PLAYGROUND OF THE RICH

Aspen, Colorado, may be the nation's glitziest ski resort, but for nearly 50 years it has also hosted the annual Aspen Music Festival, a nine-week summer event that attracts some of the world's best classical musicians.

Many of the concerts are held outdoors under a tent designed by Herbert Bayer, the onetime Bauhaus instructor and longtime Aspen resident. Bayer's amphitheater, built in 1964 to replace a tent designed by Eero Saarinen, is considered an icon in Aspen—but it leaks, and musicians have long complained about its poor acoustics.

As a result, Music Associates of Aspen, which oversees the festival, has turned to local architect Harry Teague, AIA, to design a new amphitheater. Teague was a logical choice—five years ago, his firm designed a much-praised concert hall for the festival.

This time, the stakes are high. "Saarinen and Bayer—those are some pretty awesome footsteps to follow," Teague acknowledges. Also,

many people in Aspen have a sentimental attachment to the 1,700-seat Bayer tent; some residents urged for it to be left alone. But in October the city council, which had final say, voted unanimously in favor of a new structure.

Teague's design is not a radical departure from Bayer's. The theater will be nearly the same size but will feature a larger stage and expanded backstage area. The tent itself will be made of Teflon-coated fiberglass, supported by a wood and glass "acoustical disk" that will reflect sound and filter daylight. Unlike the Bayer tent, the new one will remain in place year-round. It will cost about \$10 million and will open in summer 2000.

"The biggest challenge," Teague says, "is to make a tent that sounds good." To that end, he is consulting with acoustician R. Lawrence Kirkegaard, who is responsible for sound design in a number of concert halls, including Denver's Buell Theatre and Tanglewood's Ozawa Hall. *David Hill*

SAN FRANCISCO TO BUILD GAY CULTURE CENTER Amid continuing reports of anti-gay violence across the nation, plans are proceeding in San Francisco for a project that may offer sanctuary and hope. In November, San Francisco's Planning Commission approved the Lesbian Gay Bisexual Transgender Community Center in the gay neighborhood known as the Castro. The 40,000-square-foot center, designed by the Cee/Pfau Collaborative, is believed to be the first new building in the nation dedicated to the needs of the gay community. City officials and gay community leaders intend the center to be an alternative gathering place and a site of orientation for new arrivals in town. The city has contributed \$6 million of the project's \$10 million budget.

The Cee/Pfau Collaborative, a joint venture formed by Peter Pfau, formerly of Holt Hinshaw Pfau Jones, and Jane Cee, an openly gay architect and former HHPJ associate, won the commission with a design that makes a bold statement on Market Street, San Francisco's main commercial thoroughfare, while incorporating a historic building on the corner.



Cee/Pfau used transparency and translucency to explore aspects of sexual identity and gay experience. Pfau points to the double curtain wall on Market Street as "a strong statement of openness" that also blurs physical distinctions between inside and out. The wall accommodates a system of sliding metal mesh screens that doubles as a sunscreen and a way to project graphic iconography onto the building's facade.

When the center opens in 2001, it will take its place among several other signs of the Castro's newfound confidence. At the corner of Castro and Market, the conversion of a landmark bank to the home for the Gay Men's Chorus, a historic street car line, and a huge rainbow flag reaffirm the Castro's place as one of San Francisco's most vibrant cultural and commercial districts. *Eric C.Y. Fang*



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CIRCLE 28 ON INQUIRY CARD

MAYOR SCHELL, HON. AIA: DESIGN VISIONS FOR A CITY IN FLUX



The new mayor of Seattle, Paul Schell, Hon. AIA, has a closer relationship with the design community than most politicians. As the city's Port Commissioner, he oversaw the development of the waterfront; he was involved in several projects as a private developer; and he has served as dean of the University of Washington's College of Architecture and Urban Planning. As his city continues to expand rapidly (see *Correspondent's File*, page 37), Schell has a unique opportunity to influence the aesthetics of an urban environment. He discusses philosophy and strategy in the following interview.

RECORD: Seattle faces the dilemma of finding ways to grow that are acceptable to citizens but without increasing sprawl. How do you plan to make denser development palatable? What role can architects play?
Schell: I like to use the phrase "growing with grace." One way to do this is on a neighborhood-by-neighborhood basis, in incremental steps. I'm against grand strategies. They're rarely successful since they don't account for the serendipity that makes a real city work. My goal is to look at the whole picture and understand that transportation, housing density, quality of life, and neighborhood revitalization are all pieces of a larger puzzle.

We're looking at "great" streets: public transportation corridors with housing along them, often over

retail or office space. By replacing strip shopping malls with mixed-use projects, we can introduce densities into a neighborhood without negatively impacting its single-family character.

Architects need to learn to sublimate their own desires to create sculpture and recognize the value of their role as facilitators in creating a sense of community.
RECORD: You've named housing as one of the most critical concerns of the region. Could you describe the area's housing problems and the steps you propose to address it?
Schell: Housing costs are rising faster than incomes, in large part due to the imbalance between supply and demand. To address this issue, we're focusing on ways to quickly increase the housing supply. We've made changes in the building permit process so that 55 percent of applications are processed within 24 hours. The market is there for the private sector to build more housing.

We're also actively identifying parcels where we would like to introduce more housing. We don't let a single project go by without asking if there is a chance to add housing.

RECORD: You've proposed a small-houses-for-small-lots design competition, with winning plans available for free to builders. On a larger scale, would you consider demonstration projects—like Berlin's International Building Exhibition in the 1980s—to explore means for increasing density?
Schell: I have an aversion to megaprojects. They might make for good reading in architecture journals, but they aren't viable solutions for Seattle. What we need is a better understanding of how people live and work. In the past there were lots of reasons for separating work and home, but now the nature of work is changing. The question might more accurately be: "How do we create interesting places to work?" This might mean going back

to the old model of the company town. What we really need are illustrations of new ideas for workplaces.

RECORD: You've mentioned that the current zoning and permit process rewards "big box"—style buildings. How do you propose removing the barriers to good design?

Schell: Next year I'm declaring war on process. Seattle seems more content with a good process than with results. This doesn't mean we shouldn't have an open and participatory governmental design process, but how long does it have to go on? Too often we reward those with the staying power to attend meetings. The door will remain open for everyone, but at some point we have to say it's time to get on with

in the long term. We're still trying to figure out a Northwest expression for urban architecture—we've done a good job on that with housing—but I think we have a chance to explore this further with these projects.

We'll have an international search for the architects for the new central library, but I'd like to see the new city hall designed by a local firm. The work of international architects in Seattle has been somewhat disappointing—except for Steven Holl, who is in a sense a local guy anyway. Frank Gehry may have something really interesting for us with the Experience Music Project. I love good architecture, but it has to be an expression of our community.



it. I expect this will be controversial.

RECORD: You're a proponent of introducing mixed-use components into new civic projects. What constitutes appropriate civic expression?
Schell: In addition to a new central library downtown, Seattle will also be building a new city hall and justice center. I don't think this new civic center should include mixed-use, but there are plans to include a gathering space for political rallies and public discourse. We need to develop a government center that will have the scale, quality, and open space to meet the needs of our citizens. We've gone beyond the frontier notion of being totally focused on the lowest cost and the fastest way to build—which usually turns out not to be the lowest cost

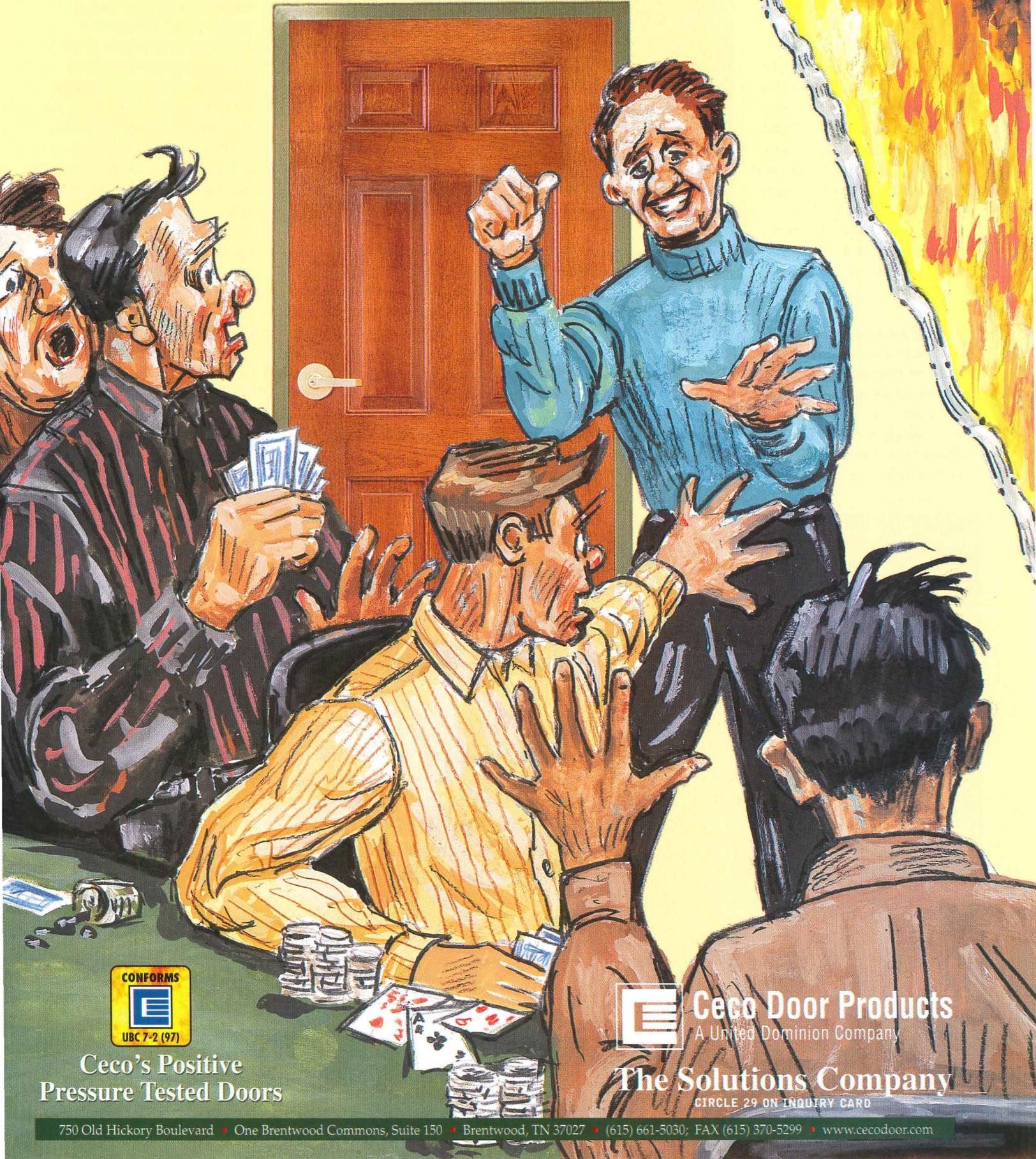
Schell has lauded LMN's design for Benaroya Hall.

The architect has to help accomplish this and not just sell us a piece of art.

RECORD: If you could do anything to maintain the quality of life around Puget Sound, what would it be?

Schell: When we celebrate the millennium I'm going to urge people to recommit to volunteerism, diversity, and harmony with the environment. Seattle's natural setting is what makes it unique. We can set a mark for the country on how to add density while celebrating our natural setting. We need to make sure that the spirit of Seattle remains intact, because once that's gone you can't build it back. *Sheri Olson*

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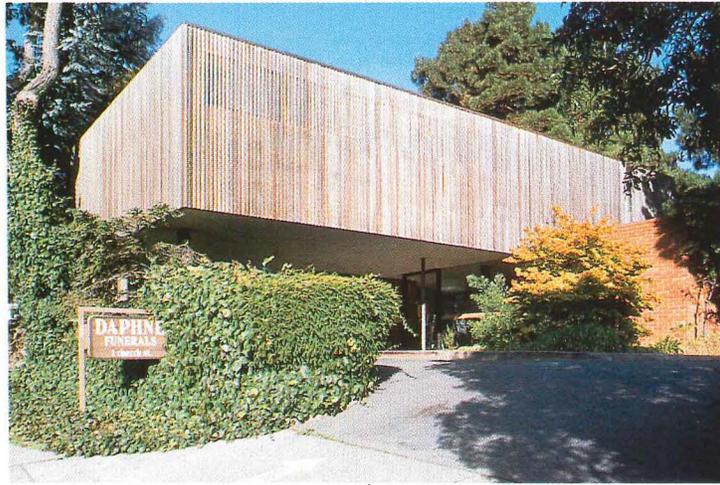
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CIRCLE 29 ON INQUIRY CARD

NEWS BRIEFS

Still strong Despite economic turmoil, the global construction market continues to be solid, according to *Engineering News-Record*. More than \$3 trillion was spent on construction in 1998. The U.S. (buoyed by residential construction) was the largest market for the second year in a row, with a tally of \$650 billion. Japan was second (though its numbers were flat), followed by Germany and China. Though Europe is struggling with unification, Russia is staggering, and many Asian countries are depressed, construction companies in these areas are on the whole bullish, according to *ENR*.

Awarding innovation The Canadian Centre for Architecture has created an international competition to encourage unique urban design. A \$100,000 prize will be awarded every three years and will focus on a different site in a major city each time. The initial cycle involves devel-



A group is trying to save A. Quincy Jones's Daphne Funeral Home.

opment schemes for Manhattan's west side.

White Housecleaning The White House has no shortage of problems: an outdated pressroom, lack of meeting space, a dearth of parking. Now, the National Park Service has prepared a plan to modernize the

First House's infrastructure, expand meeting and storage space, and add facilities for the press. In addition, the visitors' center in the neighboring Commerce Building will be expanded to include a museum and new exhibits; a comprehensive landscaping plan will correct problems in President's Park; and garages will be built underneath Pennsylvania Avenue and the Ellipse. Hundreds of architects, planners, and historians

worked on the plan, which will take 20 years and \$300 million to implement.

Keeping the Daphne alive

A group of San Franciscans is attempting to block plans to knock down the Daphne Funeral Home, a local Modernist icon designed in the early 1950s by A. Quincy Jones. The problem is compounded by the fact that the developer is a non-profit organization, Bridge, that wants to build much-needed affordable housing—making the battle not an easy choice for preservationists. Still, the Coalition to Save the Daphne continues to fight the razing.

Carnegie digs deep New York's Carnegie Hall, built in 1889 by Andrew Carnegie for less than \$1 million, is still changing. Plans call for turning an underground recital hall from 1891 into a high-tech performance space, designed by James Stewart Polshek, to be used for small operas and other

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productions. The new 800-seat hall could be in operation as early as the 2000–2001 season. About \$20 million of the estimated \$50 million budget has been raised, about a third from public sources (New York City owns the hall).

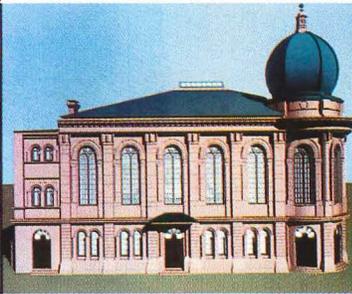
Keating emerges Richard Keating, FAIA, who left a high-profile design post at DMJM earlier this year, has joined NBBJ as design principal, where he will be based in the firm's Los Angeles studio. Keating began his career with Skidmore, Owings & Merrill in 1968 and eventually formed his own firm in 1990; that operation merged with DMJM in 1994.

Preserving memories Students at Darmstadt Technical University in Germany have virtually rebuilt synagogues destroyed by the Nazis; the reconstructions are viewable on the Internet (www.cad.architektur.tu.darmstadt.de). The re-creations are in part a protest at the rise in vio-



Frankfurt's Haupt Synagogue (left) and Borneplatz Synagogue.

lence against foreigners in Germany and were the idea of Marc Grellert, a student-turned-lecturer at DTU. More than 1,000 synagogues were destroyed in 1938 alone; the students have selected several of these buildings and made highly detailed three-dimensional renderings, put together from blueprints, photos, and first-hand descriptions. The synagogues were chosen for their distinctive genres, such as a Moorish *shul* in Cologne, a Bauhaus example in Plauen, and a neo-Romantic temple in Hanover.



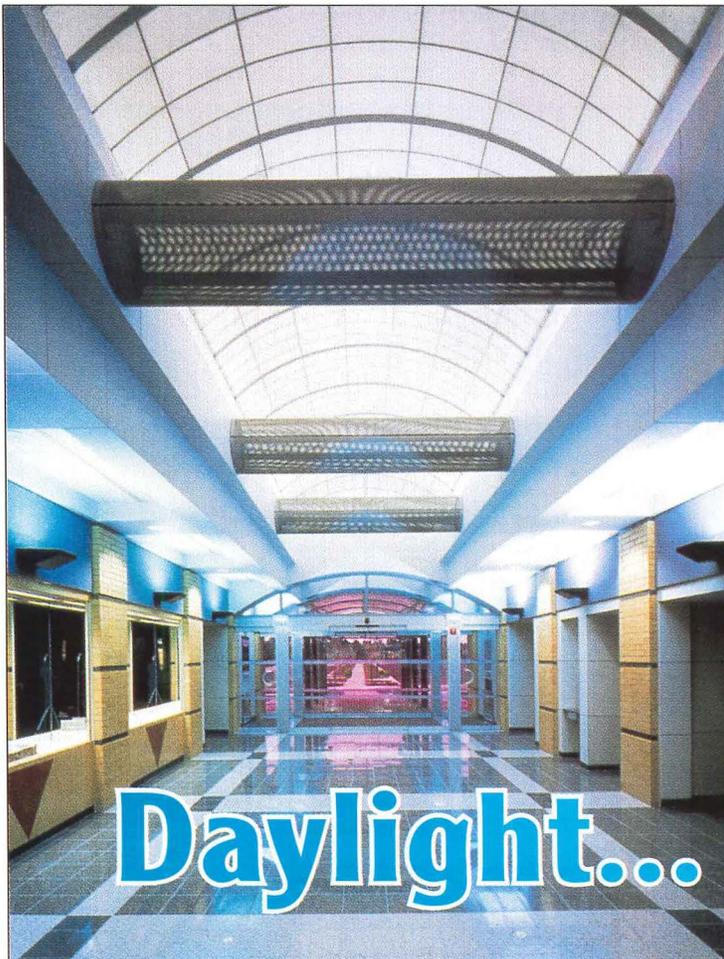
A happy HUD Just a few years after the Department of Housing and Urban Development seemed in danger of being dissolved, the latest Federal budget boosts HUD by \$2 billion, putting HUD "back in the housing business," according to HUD secretary Andrew Cuomo. The agency will continue to work on transforming public housing, including replacing the worst facilities.

Pelli's new plan Cesar Pelli and acoustician Russell Johnson have been chosen to lead the design team for new concert spaces at the Orange County Performing Arts Center in Costa Mesa, California.

The Segerstrom Center for the Arts, named for the center's leading donors, will include two concert halls, a visual arts center, and a central plaza.

Wright again The Frank Lloyd Wright Home and Studio Foundation has completed a plan for the restoration and adaptive use of Wright's Robie House in Chicago. The 10-year, multimillion dollar project will restore the 1909 structure to its original condition while creating new uses for it as a museum.

Blanton's choice Herzog & de Meuron Architekten of Basel, Switzerland—designer of the new Tate Gallery in London—has been picked to design a building for the Jack S. Blanton Museum of Art at the University of Texas. The addition, slated to open in 2002, is Herzog & de Meuron's first major museum commission in the United States. Booziotis & Company of Dallas will be project architect. ■



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NEW CAD Selection Tables, based on Bradley Holt's comprehensive book, "The CAD Rating Guide," for design

DATESEVENTS

Calendar

All Wright: The Dana-Thomas House
Chicago*Through January 31*

An exhibition showcasing the most complete and best-preserved example of Frank Lloyd Wright's early Prairie houses. Chicago Architecture Foundation. Call 312/922-3432.

Main Street Five-and-Dimes
Miami Beach*Through January 31*

Photographs, drawings, and architectural fragments document the architectural history of one of America's foremost chain stores, S. H. Kress. The Wolfsonian, Florida International University. 305/535-2631.

Cities on the Move
New York City*Through February 7*

This exhibition brings together artists, architects, filmmakers, and other "creators" who explore the shapes and forms of Asian cities. P.S.1 Contemporary Art Center. 718/784-2084.

Monuments of the Future: Designs by El Lissitzky
Los Angeles*Through February 21*

An exhibition of works by the early-20th-century Russian artist, including designs for utopian skyscrapers. Getty Center. 310/440-7300.

The Cartoons of Roger K. Lewis
Washington, D.C.*Through February 28*

More than 100 cartoons satirizing the state of architecture and urban design, originally published in the *Washington Post*. National Building Museum. 202/272-2448.

Design Ideas for New York's East River
New York City*Through February 28*

On display are entries to the Van

Alen Institute's ideas competition to transform the East River into public space, and the New East River Park Project by Reiser + Umemoto Architects. Van Alen Institute. 212/924-7000.

Unlimited by Design
New York City*Through March 21*

An exhibition of products, services, and environments designed to meet the needs of people throughout their life spans, from toddlers to the elderly, demonstrating the effect design can have on the quality of life. Cooper-Hewitt National Design Museum. 212/849-8300.

Forgotten Gateway: The Abandoned Buildings of Ellis Island
Washington, D.C.*Through March 28*

A photographic exhibition documenting the deterioration of the historic hospital complex on Ellis Island, which was untouched by the renovation that transformed the north side of the island. National Building Museum. 202/272-2448.

The Little Apple: Souvenir Buildings
New York City*Through March 28*

On display is a collection of 125 miniature New York buildings, with the oldest souvenir dating from 1800. Museum of the City of New York. 212/534-1672.

Zigzags and Speed Stripes: The Art Deco Style
Pittsburgh*Through March 28*

An exhibition surveying the impact of the Art Deco style on architecture and design, tracing the interwar phenomenon from zigzag moderne to streamlined moderne. The exhibition complements the permanent installation of *The Chariot of Aurora*, a gilded and lacquered relief from the SS *Normandie*. Carnegie Museum of Art. 412/622-3131.

Building the Empire State
New York City*Through March 31*

A documentary look at the design and construction of Shreve, Lamb & Harmon's 1931 Empire State Building. Skyscraper Museum. 212/968-1961.

Architecture on the Rise: Renderings by Hughson Hawley
New York City*Through April 4*

Watercolor drawings from 1880 to 1931 by a master renderer who offered a vision of the developing city. Museum of the City of New York. 212/534-1672.

Photography and Transformations: Venezia-Marghera
Montreal*Through April 25*

The work of 15 Italian photographers who explore the relationship between historic Venice and the modern, industrialized, and polluted mainland port of Marghera nearby. Canadian Centre for Architecture. 514/939-7000.

Marion Mahony and Walter Burley Griffin
Sydney, Australia*Through May 2*

This exhibition explores the professional and spiritual journey of architects Mahony and Griffin, from their years in Frank Lloyd Wright's office at the turn of the century through their work in Australia and India in the 1920s and 1930s. Powerhouse Museum. 011/61/2/217-0111.

International Builders' Show
Dallas*January 15-18*

The world's largest convention and exposition geared to the homebuilding and construction industry will also include, for the first time, the International Commercial Construction Exposition. Dallas Convention Center. Call Jason Lowe at 202/861-2104 or E-mail jlowe@nahb.com for details.

Transformations: Mixed-Media Assemblages by Keith Krueger
Washington, D.C.*January 15-February 26*

An exhibition of works by a local architect who uses discarded elements from buildings and construction sites in his compositions. AIA Headquarters Gallery. 202/638-3221.

World of Concrete USA
Las Vegas*January 18-22*

An exposition focusing on materials, equipment, and technology for the concrete construction, repair, and refurbishment industries. Las Vegas Convention Center. For more information call Maria Prior at 630/705-2578 or visit www.wocexpos.com.

Solid Surface '99
Las Vegas*January 21-23*

The International Solid Surface Fabricators Association's annual event will attract more than 100 exhibitors and 5,000 attendees. Riviera Hotel. Call 702/567-8150 for more information.

Restoration & Renovation
Washington, D.C.*January 28-30*

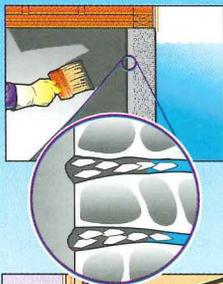
This year's International Exhibition and Conference for Traditional Buildings, Homes, Design and Craft will be held in the nation's capital to encourage networking with the public sector. Sheraton Washington Hotel. Call 978/664-6455 or visit www.egjexhib.com for more information.

Community Built Association Conference
Santa Barbara, Calif.*January 29-February 1*

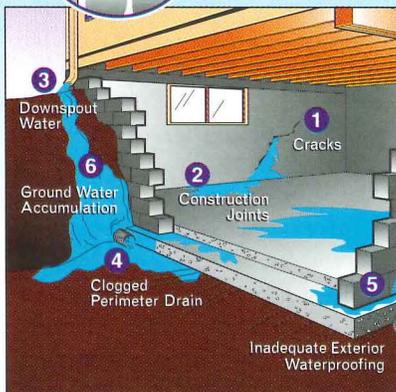
A conference run by an organization devoted to involving local residents in the building process. Attendees will include artists, architects, landscape architects, designers, builders, community gardeners, park and recreation officials, and community development specialists. La Casa de Maria. For more

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National Roofing Contractors Association Convention Phoenix

February 7-10

The NRCA hosts the largest roofing convention in the United States, attracting more than 8,000 attendees and 390 exhibitors. Phoenix Civic Plaza. For registration materials, call 800/323-9545 or visit www.roofonline.org. For fax-on-demand, call 888/455-6722 and request document 1203.

Greenprints '99: Sustainable Communities by Design Decatur, Ga.

February 22-23

A conference and trade show on environmentally appropriate building technology and sustainable community design, hosted by Southface Energy Institute and the Georgia Environmental Facilities Authority. Atlanta-Decatur Hotel and Conference Plaza. Call the Morningstar Management Group at 404/653-0606 for more information, or visit www.southface.org.

Inter Con '99 Orlando

February 24-28

A convention and trade show for the commercial interiors construction industry, sponsored by the Ceilings and Interior Systems Construction Association and *Interior Construction* magazine. Walt Disney World Coronado Springs Resort. For information, call 630/584-1919 or visit www.CISCA.org

Coverings '99 Orlando

March 23-26

The largest trade show in the western hemisphere devoted to ceramic tile and stone products for walls and floors. Orange County Convention Center. For more information, call 800/881-9400, E-mail info@coverings.com, or visit www.coverings.com.

American Institute of Architects National Convention Dallas

May 6-9

The theme of this year's AIA convention, expected to draw as many as 14,000 people, is "Think Big, Make It Happen: Leadership in the New Millennium." Architects can earn all 36 Learning Units needed for AIA accreditation by attending

seminars and exhibitor education sessions. Dallas Convention Center. For information, visit the convention Web site at www.aiaexpo.com (not yet online). For information on exhibiting, contact Hill, Holliday Exhibition Services at 617/572-3553.

Competitions

London AIA Excellence in Design Awards Submission deadline: January 15

The awards program honors excellence in architectural design for work completed between January 1, 1993, and December 31, 1998. Eligible are projects by U.K.-based architects working anywhere in the world; projects in the U.K. by architects from anywhere in the world; and projects in the U.K. by U.K.-based students. For more information, write AIA, Kent House, 14-17 Market Place, London W1N 7AJ, or fax 011/44/171/636-1987.

James Beard Foundation/Interior Design Magazine Awards Submission deadline: January 29

Established in 1995 to honor excellence in interior and graphic design for restaurants, these awards are given for projects in the United States and Canada. For more information, write the James Beard Foundation, 6 West 18th Street, 10th floor, New York, N.Y. 10011 or visit www.jamesbeard.org.

Assopiastrelle Design Award Submission deadline: January 30

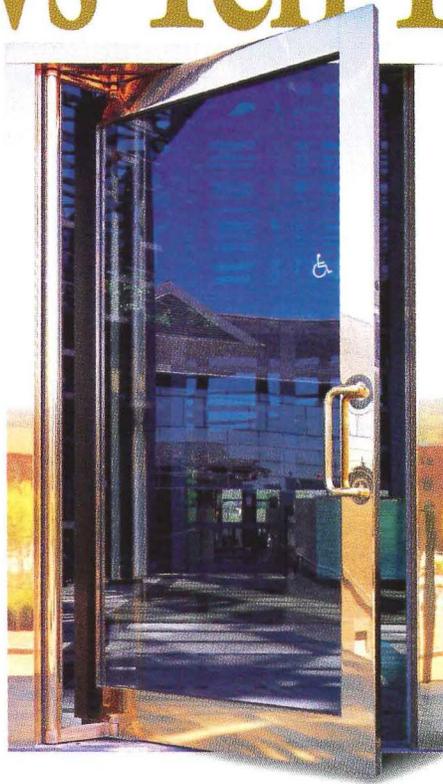
Sponsored by the Association of Italian Ceramic Tile Manufacturers, this award honors American designers or architects who have created interesting and innovative settings using Italian ceramic tiles. Tile dealers may submit projects on behalf of their clients. For further information, contact Christine Abbate at 718/783-3160 or fax 718/398-2591.

Library for the Information Age Submission deadline: January 31

The first international Web-based architectural design competition, sponsored by the Association for Computer-Aided Design in Architecture (ACADIA), calls for the design of a library that takes full advantage of information technology while still serving the library's roles in culture and society. Proposals may incorporate spatial simulations and/or physical solutions. Open to both student and professional designers worldwide. Visit www.acadia.org/competition/ for more information.

(continued on page 178)

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CIRCLE 38 ON INQUIRY CARD

LISTENING TO:

Critics

THE STAGE IS SET

by Andrea Oppenheimer Dean Illustration by Michael Sorkin Studio

Beginning next month, ARCHITECTURAL RECORD will add a wide-ranging critical column to its editorial mix. The column will offer ideas, insights, and opinions from influential and controversial thinkers in a variety of disciplines. As a springboard for the column, ARCHITECTURAL RECORD recently invited five architecture critics to its New York offices to exchange ideas. The panelists discussed the role of criticism, star-making, partisanship, the prevailing emphasis on form rather than social and environmental issues, and the ultimate impact of their profession. The discussion was moderated by Andrea Oppenheimer Dean, who will serve as editor of the monthly column.

Although all five critics who participated in RECORD's roundtable are based in New York, they represent different tendencies in criticism, shaped, in part, by the expectations of the publications where their work appears. Writing for newspapers or general circulation magazines, whose editors and readers tend to have only a marginal interest in architecture, is different from writing for an architecture magazine that addresses an audience already convinced of design's significance.

Paul Goldberger, a staff writer and architecture critic at the New Yorker and from 1973 to 1997 an architecture critic for the New York Times, has written almost exclusively for lay readerships, albeit sophisticated ones. Michael Sorkin wrote for an informed general audience as architecture critic for the Village Voice (1981–91), and now is a contributing editor of this magazine and of Metropolis. He heads his own New York design practice, and has taught at a number of schools of architecture. Jayne Merkel was the architecture critic for the Cincinnati Inquirer (1977–88) and now edits Oculus, the monthly publication of the AIA New York Chapter. She is also a former director of the graduate program in architecture and design criticism at the Parsons School of Design. Suzanne Stephens is a special correspondent for ARCHITECTURAL RECORD and is completing her doctoral dissertation on American architectural criticism at Cornell University. She was a longtime staffer at Progressive Architecture and has extensive experience writing for general interest magazines. Cynthia Davidson, a former editor of Chicago-based Inland Architect (1982–90), launched and became editor in 1993 of the theory-oriented bimonthly ANY (Architecture New York) as well as the books that have grown out of the magazine's annual conferences (Anyone, Anyway, Anybody, Anyhow, etc.).

What is criticism's role? Why should architects bother reading it? "To read what they usually know but often don't want to admit to themselves," said Suzanne Stephens. "You rarely tell them anything they don't know deep down. In many ways you're just bringing out invisible or hidden insights." In other words, criticism enables a clearer understanding of designs whose strengths and shortcomings architects and those interested in their work may otherwise only intuit or comprehend incompletely.

Criticism's most important role, the panelists agreed, is in placing architecture and urban design into a larger intellectual, social, and cultural context. "If we don't do that," Paul Goldberger insisted, "we're just comparing shapes." Cynthia Davidson said, "you want to wake people up," not only to individual building projects but also to ingrained ways of thinking about larger issues. "You want to prevent them from reacting in an automatic knee-jerk fashion."

Michael Sorkin, while expressing skepticism about criticism's ability to effect change, insisted that architecture can't do without it. "If we accept that there's some notion of progress abroad in the world, then the only way to guarantee it is through vigorous criticism," he said. A belief in the power of criticism, according to Sorkin, underlay Robert Venturi's reexamination of vernacular architecture in the 1950s and 1960s, a time when Modernism's rejection of all traditional forms was unquestionably accepted. The critics of Postmodernism, he argued, then resurrected Modernism, stripped it of its antiurbanism, and transformed it into city-sensitive neo-Modernist architecture.

The bigger picture

According to Sorkin, the way architecture comes into being is misrepresented unless critics recognize (and communicate) "delimiting circumstances in culture, which have to do with technology, with social relations, with the economy, and other conditions that undergird architectural expression." Davidson interpreted Sorkin's statement as being about criticism's role as a harbinger of the future of architectural practice, and responded that the professional press already devotes too many pages to the business of architecture and the changes (economic, social, technological) affecting it. Jayne Merkel agreed, pointing out that architects are

interested in practice-oriented issues but *passionate* only about design. She said practice workshops, usually organized by the AIA, draw a respectable dozen or so people, but “if Zaha Hadid comes to town, 800 people crush into a little auditorium.”

The star system

With that, the discussion shifted from criticism’s role in illuminating larger developments to the much-reviled star culture in architecture. If we hate it so much, why doesn’t it disappear? Does criticism promote it? Does criticism create stars? Should it?

For publications geared toward a general audience, explained Stephens, “if there isn’t a celebrity to hang a story on, they’re not interested. Editors don’t think people want to read about inanimate objects, *per se*. The problem is, they’re right.” When you are writing for the architectural press you have a captive audience, she said, but at such magazines as *Vanity Fair*, to which Stephens was a contributor in the early ’80s, “the editor has to be sold on how important and interesting architecture is; they want ‘Prominent Rakish Architect Murdered by Socialite in Madison Square Garden.’”

Architecture needs its celebrities, its heroes, argued Davidson. “Star power—which is not particular to architecture, it’s our culture—makes the profession look like it has dynamic leaders. Every profession needs its Steven Spielbergs to make it seem lively and dynamic, whether it

is or not. We’ve always had them in architecture. We had Corb, Sullivan, Burnham, Frank Lloyd Wright.”

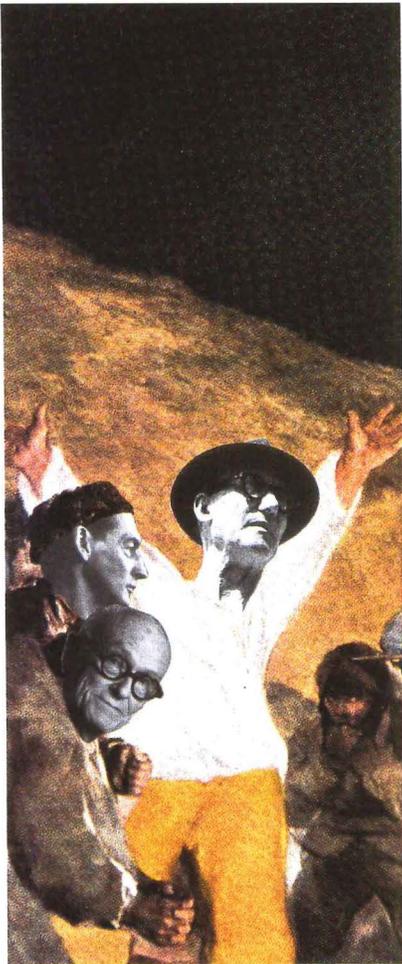
But the ability of criticism to create stars is vastly exaggerated, the panelists agreed. Stephens proffered that stars come into being by a process she described as “the rubbing molecules syndrome,” in which “you get a bunch of people who are teaching and talking to each other and writing for magazines, and ideas percolate, bubble up.” Younger designers, she added, have become increasingly adept at attracting media attention.

For better or worse, the media and critics continue to be seduced by eye-popping images; architectural criticism is perennially chided for placing too much emphasis on form and fashion. But, noted Sorkin, “You’ve got to do it. That’s what’s nice; that’s what’s interesting. That’s what makes the architecture great.” Memorable form is also what

Panel members, left to right, in the firing squad of Goya’s *The Third of May 1808*: Paul Goldberger, Cynthia Davidson, Michael Sorkin, Suzanne Stephens, Andrea Oppenheimer Dean, and Jayne Merkel. They are firing on Peter Eisenman, Philip Johnson, Rem Koolhaas, Frank Gehry, Le Corbusier, and Zaha Hadid.

will identify a period of architectural history, and it’s what readers of architectural magazines seem to want. As evidence, Stephens cited surveys conducted while she was at *Progressive Architecture* that showed readers bypassing articles about socially significant but visually bland buildings. “The problem with social architecture is that





much of it just isn't visually arresting," she concluded.

A related issue: Shouldn't architectural journalism—and criticism—devote more ink to ordinary buildings and settlement patterns that are ruining the landscape? Goldberger said he's trying to do more of that in his stories for the *New Yorker*. He also contended that while he lamented cultural homogenization, shopping mall and commercial-strip developments have improved living standards for many Americans. The small towns we remember so affectionately just couldn't provide the variety or affordable prices of today's suburban strips, he said.

So, why haven't architectural standards risen along with living standards? Why have they in fact plummeted, and with them the amount of space newspapers and magazines devote to criticism? (For a larger discussion

of this issue, see Suzanne Stephens's article, "Assessing the State of Architectural Criticism in Today's Press," in the March 1998 RECORD.) The obvious answer, according to the panelists, is that Americans don't care much about architecture. They perceive it merely as a product, a form of shelter, or an indication of status, rather than as art or an expression of culture. Which is why, Goldberger observed, this era has failed to produce an estimable vernacular style.

The critical stance

Our five panelists vary widely in their interests, inclinations, and self-

"STAR POWER IS NOT PARTICULAR TO ARCHITECTURE. EVERY PROFESSION NEEDS ITS STEVEN SPIELBERGS TO MAKE IT SEEM LIVELY AND DYNAMIC, WHETHER IT IS OR NOT." —CYNTHIA DAVIDSON

defined missions. At one end of the spectrum is the theory-oriented academic critic, who writes mainly for such specialized journals as Davidson's *ANY*; at the other is the critic as newspaper journalist, as Merkel was during the 1980s. But Michael Sorkin noted that there's another critical phenomenon not represented by the panel. Martha Stewart, he said, "offers a form of critical writing, the lowest form admittedly; but she's a visionary, after her fashion. The vision is nauseating, but nevertheless internally consistent. It's undergirded by a whole set of social arrangements; it's quite comprehensive in its way."

The diversity of critical perspective raised the question of partisanship. Should the critic be an advocate? Opinions differed. Of the five

panelists, the one who defined himself most clearly as partisan was Sorkin. Partisanship, he insisted, "comes with the territory." He sees himself as a protagonist acting for the environment and for "a criticism that frames an alternative, that encourages the work of alternative practices." In her present role at *ANY*, Davidson has positioned herself as an advocate for a small group of avant-garde designers. "But I don't think it's about partisanship," she said, "as much as letting people know what you're interested in. I'm more interested in aesthetics."

The other three critics all described their roles as surmounting partisanship, though in different ways. Merkel, who views herself as primarily a journalist, says she is "a partisan for objectivity." "If you believe in architecture and that public spaces make a difference, you can't help but be a partisan, but very few issues are black and white," she said. Goldberger, similarly, believes that "critics need a certain degree of catholicity" but maintained that they should "still represent a definable set of values and principles." While taking a strong stand against cultural homogenization, he recognized that critics who appear to be pushing narrow agendas will eventually offend or bore their readers. But those who "come across as being all over the lot confuse readers and appear to stand for nothing," he added.

Elaborating on this theme, Stephens emphasized the importance of being honest and taking unambiguous stands. She admired Ada Louise Huxtable, who now writes for the *Wall Street Journal*, "for being clear-cut in every position she takes, even about being ambivalent. She has certain things she advocates, such as preservation and Modernism, but when you read something by her you don't know what she is going to come out with." For herself as a critic, Stephens said partisanship consists in being "pro-criticism, remaining open, not embracing something just because it's new or rejecting something because I haven't seen it before." Equally important for her, she said, is being fair.

That raised the issue of the critic's relationships to architects. Davidson said she thought little could be gained "by distancing yourself from the maker of a design," while Goldberger questioned whether "one can maintain a critical distance while having any kind of relationship with an architect." "There's the risk," he said, "that one becomes a little too protective of the architect's point of view." Stephens added that knowing a designer can make you understand his or her work better, though one has to be ready to recognize how that relationship can affect criticism.

Sorkin faulted architecture magazines for having "lost that critical sense," initiating a discussion about the magazines' reluctance to criticize for fear architects will deny future access to their work. Sorkin

dismissed that position: "If you can create a magazine that everyone is reading, I wonder." Architects, of course, want favorable reviews to send to prospective clients, a problem, said Stephens, that *Progressive Architecture* sometimes solved by running a reported (i.e., fact-driven) article followed by an independent critique.

Elitism and relativism: the critic's pitfalls?

The panel identified green building technologies and the digital information revolution as occupying the center of current critical discourse. Sorkin said that critics tend to be infatuated in particular with architects who are able to use the computer as an "almost purely artistic medium."

He regrets that “there’s so much formal radicalism around and so little social radicalism; that disquiets a ’60s guy like me.” He also laments that many buildings regarded as radical speak only to cognoscenti and not at all to passersby. Part of the problem, he said—and it is not a new one—is the arcane language of all elites, not just architects.

Particular to many of today’s so-called elites, especially those in academia, is an acceptance of a multiculturalism that questions the valid-

“CAN ONE MAINTAIN A CRITICAL DISTANCE WHILE HAVING ANY KIND OF RELATIONSHIP WITH AN ARCHITECT? THERE’S THE RISK THAT ONE BECOMES TOO PROTECTIVE OF THE ARCHITECT’S POINT OF VIEW.” —PAUL GOLDBERGER

ity of any standard of evaluation on grounds that all are culture-bound and elitist. Sorkin related this to a healthy “interrogation of received structures of argument and quality to a larger agenda of loosening architecture from a series of familiar restraints. That’s part of the process of refreshing criticism, the questioning of motives and criteria.”

Stephens, suspicious of both relativism that validates all work and absolutism that lacks flexibility, said, “There’s some place in between that we have to be. It requires constantly questioning and interrogating our assumptions and criteria.” Sorkin contended that there is, in fact, a series of tests that can be applied to architecture, especially urban architecture, to measure its real-world impact. “We’re still mired in the notion that our job is to test the product against a set of intentions,” he said. “I’m much more interested in effects and results.” In the end the panelists agreed that if one restaurant can be judged as excellent and better than others, the same should be true of a building, as based on a complex and subtle combination of factors, the most important of which is evidence of creative talent.

Impact

Do critics make a difference? What can be learned, for example, from the legacies of legendary critics Jane Jacobs and the late Lewis Mumford? Merkel pointed out that because Jacobs based her conclusions on common sense and intuition, she developed a viewpoint that contradicted “all the things better-educated people said and thought.” What made Jacobs’s ideas so credible, Merkel said, was that they resonated with the life experiences of ordinary people. Goldberger reminded his colleagues that Jacobs’s writings and then her “act of stepping out from behind her typewriter to intervene in the construction of the Lower Manhattan Expressway constituted an extraordinary radical act.”

Although the impact of her writings on American planning was for a long time unambiguously positive, Goldberger added, “like the work of most original thinkers, Jacobs’s [body of thought] allowed itself to be codified into a formula, and we suddenly became suspicious of anything new and different and big.” Sorkin, while praising Jacobs’s influence on urban ideas and policies and her creation of “a kind of oppositional culture,” observed that her belief in grassroots and incremental development has “robbed us of the extravagance of experiment, has imprisoned us in a culture of diminished expectations.”

Mumford’s influence, less tangible perhaps than Jacobs’s, was in creating “a moral foundation for architectural criticism that underlies what we have all been saying about the essential mission of connecting architecture to a social and cultural context,” said Goldberger. He noted that only Mumford, for example, recognized Wallace Harrison’s United Nations Secretariat building of 1949 as an icon of its time for symbolizing the triumph of bureaucracy. The panelists expressed ambivalence about

Mumford, finding him utterly admirable, often utterly wrong, but always dazzlingly articulate. “He was so clear, and often eloquent. So what if he was often wrong?” said Goldberger.

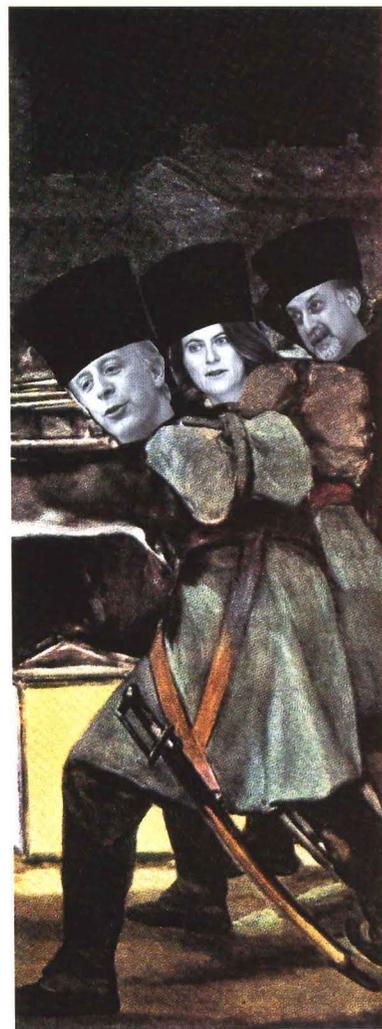
A third presence hovered over the discussion, one to which the panelists continually returned: Frank Gehry’s Guggenheim Museum in Bilbao, Spain. They agreed that no other recent building has been so unequivocally championed by both the public and the profession. It has

become a tourist magnet even for people usually uninterested in architecture, has worked wonders for the city’s image and economy, and has pried designers loose from the ingrained notion that a building must reflect its surroundings in an obvious way. As Goldberger pointed out, “Bilbao carries contextualism to a new and much less literal level.” Yet critical discourse about Gehry’s building was, for all intents and purposes, nonexistent, though media of all descriptions embraced the building’s waving shiny shapes. Goldberger concluded that, “as in all fields, a great work in architecture has this way of bursting through. It can neither be created by nor restrained by critical rhetoric.”

One could also argue that the Guggenheim building itself served as an act of criticism that altered expectations, “nudged people’s views,” in Merkel’s words. It is eloquent, engaging, straightforward, forward-looking, and forceful—qualities shared, the panel agreed, by the best architectural criticism.

Writing well, the panelists agreed, is the first necessity for critics. “Too many of us become too fast and efficient and stop asking why and learning more,” Stephens said. “That’s death. The main thing is to continually question your own assumptions.” Davidson added that what’s missing in contemporary criticism is “great writing” free of the insular language of architecture. “Criticism,” she said, “shouldn’t just be instructional; it should be entertaining. It should be engaging, have a point of view.”

That’s exactly what ARCHITECTURAL RECORD hopes to provide in its upcoming monthly criticism column. There is also the hope that calling attention to inspired new creations and to new social, cultural, and economic conditions will leaven the architect’s creative process. ■

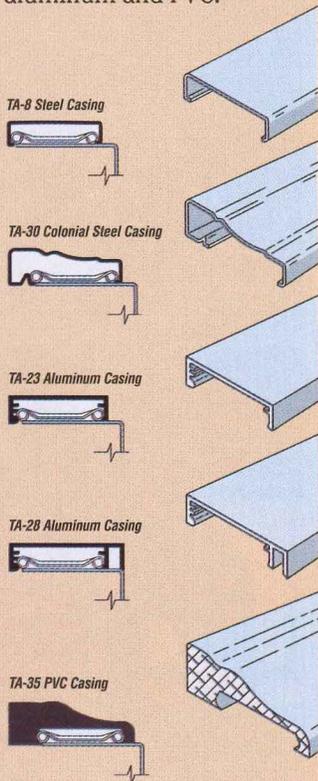


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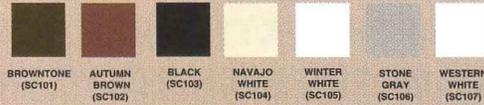


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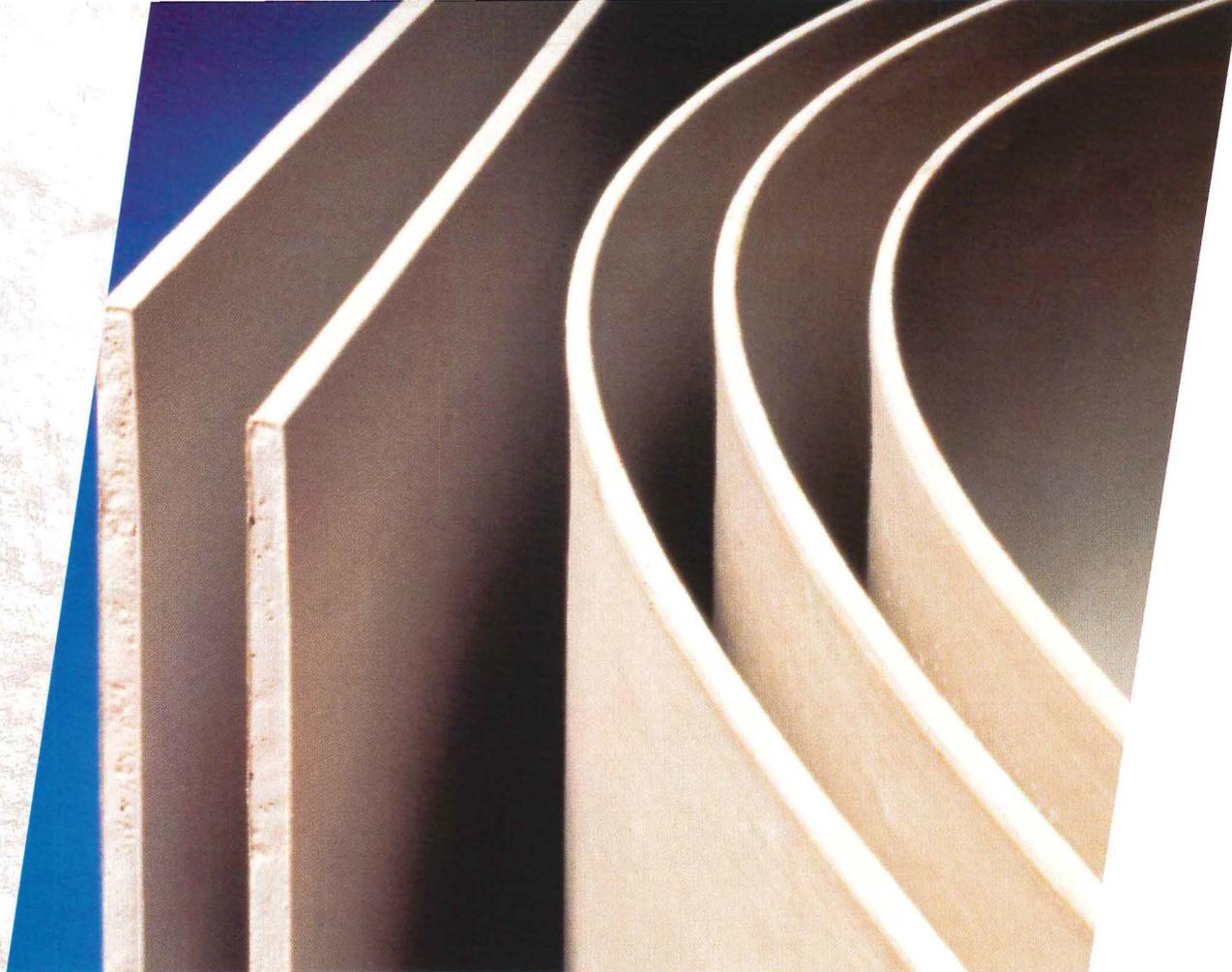


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CIRCLE 42 ON INQUIRY CARD

PROJECT DIARY Daniel Libeskind's
JEWISH MUSEUM in Berlin speaks to a
history that is both rich and tragic.



The Jewish Museum is an architectural dagger plunged into the heart of complacency. Critics have argued that this passionate and complex design is impossible from a curatorial perspective. But even empty—the building opens this month without displays—the museum asks a profound question: Can architecture and art help us come to terms with the enormous accomplishments and unfathomable evil experienced by a culture? After 10 years of controversy, visitors will offer their own answers.



Underground passages link Libeskind's metal-clad addition with the red-roofed original, the concrete-framed Holocaust Tower, and the canted, concrete "forest" of the E.T.A. Hoffmann garden.

1988 A competition is announced for a new wing to the Berlin Museum. On its face the addition seems much like any other. It will accommodate growth in such departments as theater, fashion, and toys. But there is a more compelling aspect to the project: realizing a long-held dream, it will create a distinct and united Jewish Department.

Once numerous, prominent, and successful in Berlin, Jews had succeeded in creating a museum to celebrate their contributions to the city in 1933, just as Adolf Hitler consolidated his power. It closed in 1938. Though almost all Berlin's Jews either fled or were sent to death camps in the Holocaust, discussion of a new Jewish Museum went on for decades after World War II. The nonexistent museum's collection swelled with acquisitions and donations. In West Berlin, the idea of a Jewish Department was incorporated into the city museum of Berlin, and a number of sites for displaying the collection were considered. By the 1980s, the Jewish Department comprised two rooms in two locations.

The competition site is on Lindenstrasse at the southern end of the historic heart of Berlin. It's an area of the city somewhat isolated by wobbles in the path of the Berlin Wall. The Berlin Museum, founded only in 1962—the earlier collections remain in the Märkisches Museum, in the East—is housed in the Collegienhaus, a reconstructed 1735 Baroque palace. The program for the addition recognizes that the treatment of Jews requires resolution within the larger goals of the museum. The curatorial program for the Jewish Department proposes organizing the displays under the categories Religion, Community, Jews in Society 1750–1870, and Jews in Society 1870–1945. Anti-Semitism and Hitler's Final Solution are to be dealt with in the History Department.

1989 The jury, a group of prominent architects and special assessors, begins deliberating in May, completing their work on June 23. "The obvious thing may have been to build a normal museum," comments the jury, "had not one entry put forward a quite extraordinary, completely autonomous solution." This is Daniel Libeskind's submission, which is granted first prize. The jury calls the entry "a profound response" to the competition requirements.

Libeskind's triumph is all the more impressive because the jurors initially found the scheme "impossible to interpret." Libeskind did not feel constrained by the surroundings, for example. Though a few historic structures survived wartime bombing, slab-sided buildings—the fruits of various postwar planning fads—litter the surrounding blocks, which had been originally laid out on Baroque principles.

What drove Libeskind's solution was the intertwined history of Jews, many of whom were significant historical figures, and Berlin. Although physical traces of this history, such as synagogues, are all but gone, Libeskind explored the history of important Berliners, both Jewish and non-Jewish. He looked up their addresses, plotted them on a city map, and traced lines among them, making what he called "an irrational matrix" in the form of a system of squared triangles, yielding distorted versions of the Star of David that Jews were forced to wear during the Nazi era.

Libeskind was also inspired by the composer Arnold Schoenberg, a key figure in modern music, who attempted but failed to complete his only opera, *Moses and Aaron*, as Hitler rose to power. After the spectacular musical edifice of the first two acts, the third act is recited, and is only minutes long. Libeskind was drawn to this monumental absence, the power inherent in uncompletion. He also stirred into his mix inspiration derived from art and literary critic Walter Benjamin's essay "One Way Street," which Libeskind calls an "apocalyptic guidebook."

The sense that the tragic history of Berlin's Jews was too large for art was amplified when Libeskind discovered the voluminous records of the deported. The government sent him two large volumes, which contain Berlin's Jews' names, dates of birth, dates of deportation, and places—not the places where these people had lived, but where most were put to death.

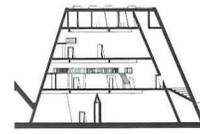
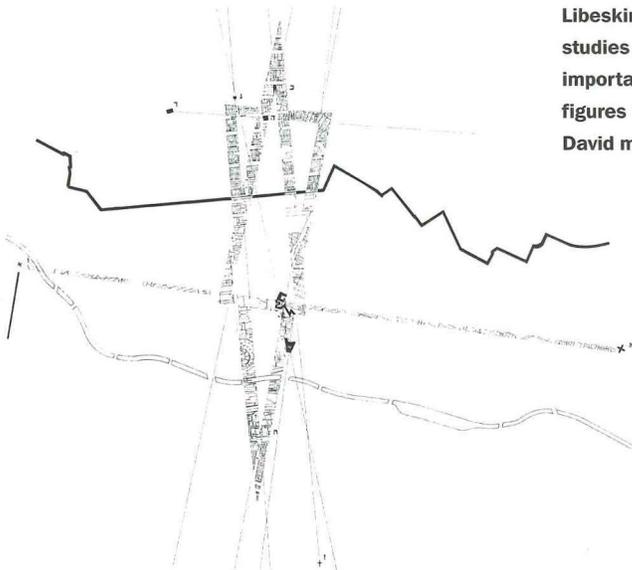
Libeskind does not articulate the alchemy by which he transformed this heady mix into architecture. He names his scheme, cryptically, "Between the Lines." One line is the slablike form of the building, the northern end of which holds tight and orthogonal to the street and the Collegienhaus. To the south, the lines of the building uncoil explosively: walls tilt crazily in a shattered and broken-open version of the Star of David.

Galleries documenting the achievements of Berliners, Jewish and non-Jewish, follow this zigzag. Slashing across the galleries in a straight line perpendicular to the street is another line, this one of empty, raw-concrete space, lit dimly by indirect slitlike windows and skylights. These are void spaces, free of artifacts, that cut obliquely through the galleries. These empty voids represent the inexpressible "absence" of Jewish lives lost in the Holocaust. Schoenberg's music is in the proportions of the void; the connections Libeskind mapped are scribed in the lines on the elevations. It is the architectural intertwining of the parallel "stories" of Jews and Berlin that wins over the jury.

Since the program requires that the addition be entered from the existing building, Libeskind carries visitors down to enter the new building underground, offering no bridge or other above-ground visual

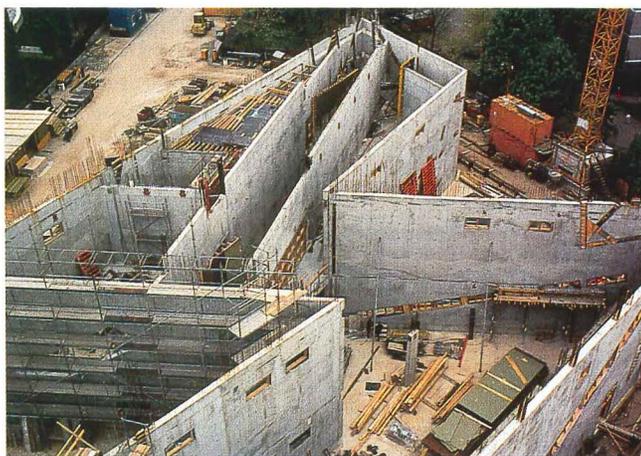
Libeskind played out studies of Berlin's important historical figures in a Star of David map of Berlin

(drawing left). In the original massing of the project, some walls were skewed (sections below).





By 1994, the form of the linear voids crossing the galleries had become clear (above, left and right). The design placed extraordinary demands on the builders of the concrete formwork (right).



connection between the two. Arriving at the addition, visitors are confronted with three corridors. Moving straight ahead takes them to the main stair, which in a single run ascends through the entire museum, allowing visitors to choose one or all the levels.

Another axial corridor leads to a heavy metal door that opens to the base of a dark, echoing tower. It “represents the end of Berlin as we knew it,” Libeskind has written, “the apocalyptic void.” He calls it the Holocaust Tower, a singular gesture that recognizes the hundreds of thousands murdered, their names dutifully recorded in the city archives.

It is one of four towers that stand guard on the site, surrounding a tilted plane surmounted by 48 square columns, filled with dirt and planted with vegetation that spills out and downward. (The number represents the year of Israel’s founding.) The columns are a garden named for writer E.T.A. Hoffmann, which culminates a third axial corridor representing the exile and emigration of Berliners—to New York, to Tel Aviv, and elsewhere.

As visitors move through the exhibit spaces, they encounter narrow passages, which prove to be bridges across the empty, inaccessible voids. The voids intrude, creating oblique corners, reminding the visitor of the Holocaust’s profound interruption of the exhibition narrative. The bridges are marked with the 60 “stations” Benjamin describes in his “guidebook.” Visitors return to the basement to exit, either the way they came in or through the garden. “There’s no final space that ends the story or puts it together for the visitor,” says Libeskind. “It should continue in their minds.”

Though the program called for a Jewish Department, Libeskind responded that “it is not possible to compartmentalize Jewish culture, business, politics. It’s not just another department; it is fused with the whole history of the city.”

The Libeskind team’s joy at winning such a prominent competition doesn’t last long. Libeskind confesses that “most interesting competi-

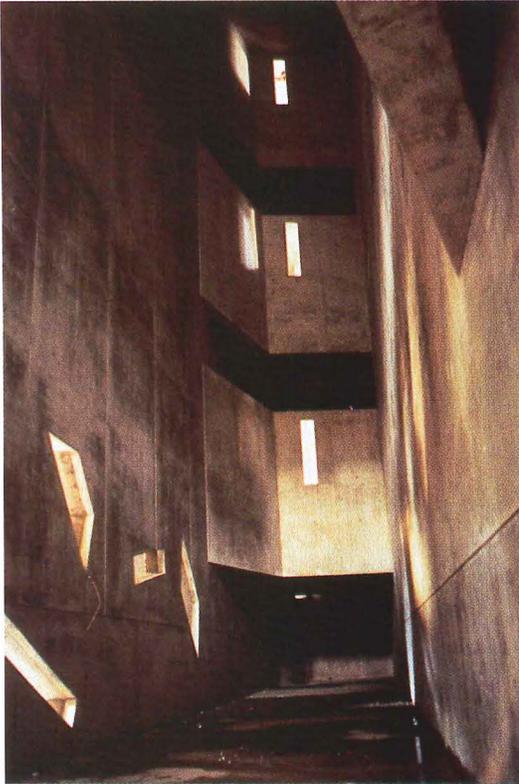
tions are tickets to oblivion. The problem was not to win the competition but to build it.” No one anticipated that the fall of the Berlin Wall (it is pulled down in November) and the reunification of Germany, undreamed of when the commitment to the addition was made, would so complicate realization of the decades-long dream of a Jewish museum in Berlin.

1990 Officials consider abandoning the Berlin Museum addition. They argue that the funds are better spent on knitting the divided city’s infrastructure together. Also, reconstruction of the 1866 Neues Synagogue in East Berlin is already under way (under architect Bernhard Leisering’s direction), which, they argue, could accommodate the Jewish Department. An enormous neo-Moorish pile, the synagogue was once Berlin’s most important, holding 3,200 worshippers. After being burned by the Nazis and bombed by the Allies in World War II, its ruins were demolished in 1958.

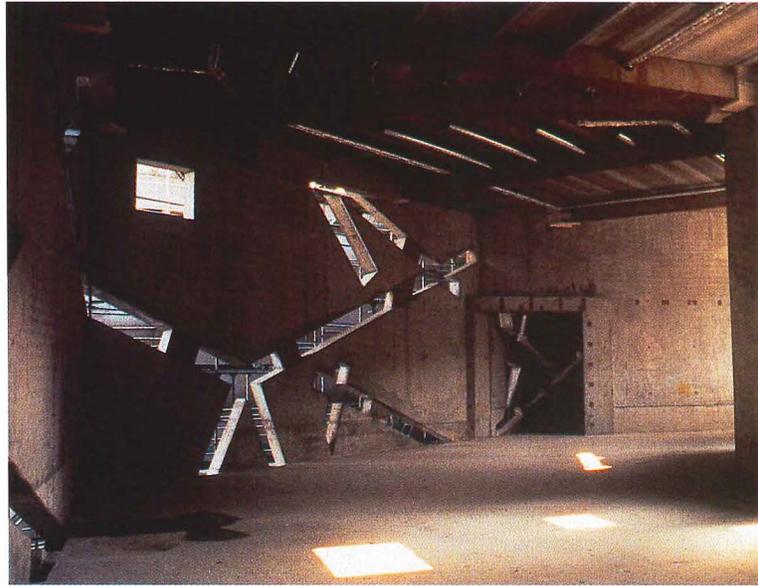
Libeskind’s daring conception has already received international attention; it is an extremely powerful statement that Germany recognizes the enormity of the Holocaust and is attempting reconciliation. A letter-writing campaign saves the building, but the schedule is extended to stretch out the cost to the government.

In October, the two Germanies are officially reunited; a year later, Parliament votes to move the capital back to Berlin by 2000.

1991-92 A second threat to the project comes in the form of the budget. Estimates to build the design come in at DM 178.5 million. The budgeted amount is only DM 77 million (about \$45.3 million in today’s dollars). Reworking the design, Libeskind shrinks the floor area (to 162,000 square feet), straightens the tilted walls, simplifies the garden (the plants now grow upward), and



The raw power of the design was visible in 1995 as the scaffolding was removed: a light-dappled void space (left) and a gallery (below).



deletes all the separate towers except the one representing the Holocaust. The revised budget is DM 117 million. In 1992 the Berlin museums are reorganized. The history of the city up to 1871, the year modern Germany was formed, with Berlin as its capital, is to be depicted in the Märkisches Museum. The Berlin Museum, including the new extension, will cover the period after 1871, but has a much larger trove of artifacts from the Märkisches collection to draw on. With reconstruction of the Neues Synagogue, renamed the Centrum Judaicum, under way, officials also consider whether the mission of the Jewish Department is redundant.

A debate about how Jewish history will be portrayed in the museum addition ensues. Consultants look into whether the idea of compartmentalizing the story of Berlin's Jews, as anticipated in the program, should be dropped, which would bring the display scheme in line with Libeskind's design. Critics take issue with the proposal to integrate the accomplishments of Jews into the larger history of Berlin, claiming it would play down their role, creating a kind of forced assimilation.

Libeskind's scheme has created a paradox. Its very power has drawn international support for the idea of a Jewish museum in Berlin. But its power also draws critics: does its architecture eschew reconciliation, instead pointing a perpetually damning finger at Berliners? The building is delayed again while its ultimate mission is debated. In early 1992, it is agreed that the Jewish Department will be located in the basement level along the axes to the stairs, garden, and Holocaust Tower. Other historical city themes are to be developed on the upper levels, referring back at relevant moments to key Jewish contributions. The Theater and Fashion Departments will also include the contributions of Jews. Though such a compromise seems to undercut the narrative Libeskind's design anticipates, the firm is not asked to alter the design. The cornerstone is laid on November 9, 1992.

1993-96 The process of selecting a director for the Jewish Department begins. The exhibition scheme of 1992 is further refined in 1993. Amon Barzel, chosen as director in 1994, rejects the plan, calling for Jewish topics to be autonomous, detached from the city-history narrative. He asks that the entire Libeskind addition become a separate Jewish museum. In the meantime, the role of the Centrum Judaicum becomes defined as the "site of Jewish self-portrayal," putting it in conflict with Barzel's vision.

Libeskind's addition is topped out in 1995, but the battle between Barzel's "autonomous" and Libeskind's "integrative" visions continues through 1996; in that year, Barzel describes the addition's mission as "[concentrating] on Jewish subjects through which one can learn more about general German history. It is no longer then possible to look at German history without also seeing Jewish history." Seen as intransigent, Barzel is fired.

1997-99 Through all of this, construction continues, although at a leisurely pace. The flow of money from the government slows because of the vast financial obligations reunification entails. Libeskind unsuccessfully attempts to broker the conflicts over the museum's identity. What remains unscathed is the museum's design. As it nears completion, it remains surprisingly true to the vision of the 1989 competition entry.

W. Michael Blumenthal is hired to direct the museum in 1997. He describes his selection as ironic, since his once-prominent family was driven from Berlin in 1939, when he was 13. Blumenthal has no museum experience, but he is an expert on German-Jewish history (his book *The Invisible Wall*, an exploration of his family's history in Germany, was published in 1998), served three American presidents as Treasury secretary

and ambassador, and has headed two large corporations. The museum hopes he will bring organizational and political skills they have not yet had. Also, says Blumenthal, "I was someone who had not been involved in the previous debates." He brings on staff Dr. Thomas Freunenheim, a museum executive with experience at the Smithsonian, and Shaiké Weinberg, who was a designer and first executive of the U.S. Holocaust Memorial Museum in Washington.

The vision his team hammers out is "to depict the entire history of the relationship between German Jews and non-Jews from Roman times to the present," Blumenthal explains, "with all its high points and accomplishments, on the one hand, and all the setbacks and disasters on the other." Administratively, the museum is separate from the Berlin Museum; it is supported by the city, the national government, and private donations.

As the project neared completion in 1998, construction trailers occupied the space between new and old.

Blumenthal says the museum installation



will "tell a story," an approach that is successfully used at the U.S. Holocaust Memorial Museum but is uncommon in European museums. Such a narrative scheme usually calls for structures enclosing neutral, windowless, "black box" spaces. Blumenthal recognizes the curatorial challenge in Libeskind's slits of glazing criss-crossing the galleries and the display complexities that are engendered by narrow passages and acute-angled rooms.

Some museum experts tell Blumenthal the museum can't succeed. "It's challenging as hell," he admits. But "the architecture is a tremendous asset for a new museum. Many museums have to develop a clientele. We will have one automatically because the building is so extraordinary. Not a day goes by that people don't plead to get in."

The building is completed at the end of 1998 (the final project cost is about \$80 million), but the installation will not be finished until October 2000. The empty building will open to the public for tours beginning this month. ■

Project: Jewish Museum, Berlin

Owner: Land Berlin

Architect: Studio Daniel Libeskind—Daniel Libeskind, architect; Matthias Reese, Jan Dinnebie, project architects; Stefan Blach, David Hunter, Tarla MacGabhann, Noel McCauley, Claudia Reisenberger, Eric Schall, Solveig Scheper, Ilkka Tarkannen

Engineers: Cziesielski + Partner (civil); GSE Tragwerkplaner, IGW Ingenieurgruppe Wiese (structural)

Consultants: Müller, Knippschild, Wehberg (landscape); Lichtplanung Dinnebie KG (lighting); ARGE Beusterien & Lubic (management)

Sources

Concrete floors and walls: Fischerbou

Zinc cladding: Werner + Sohn

Built-up roofing: Deutsche Asphalt

Metal roofing: Werner + Sohn; Lacker

Windows and glazing: Trube + Kings

Skylights: Lacker

Metal doors: Hodapp

Wood doors: SEG

Door hardware: SEG

Acoustical ceiling and suspension grid system: Stift

Paints and stains: Mako

Floor and wall tile: Picher

Carpet: Eckhard + Solina

Flooring at void bridges: Rec

CAN ARCHITECTURE TRANSFORM A CULTURE? AN ASSESSMENT

A visitor to the still-empty Jewish Museum can appreciate how the architecture contributed to the unending debate about the installations. The building "argues" its point of view so forcefully that it's hard to imagine displays that will be sympathetic to the architecture and also allow historic but prosaic objects to hold their own.

The brooding power of the exterior does not prepare the visitor for the more neutral and museum-like interiors. The gallery proportions are conventionally high and loftlike. The slashing window openings are dramatic, offering jaggedly cropped

city views (a reminder that events depicted in displays occurred very close by), but the openings also read as a kind of scribed, background graphic.

The building testifies to Berlin's commitment to reconciliation. Fresh, raw, and driven by emotion, it avoids the mawkish theatricality that is endemic to recent memorial architecture, but not by much. Whether its expression will wear well is another question, especially since the building is certain to spur less confidently rendered imitations.

Even now, it is hard to assess Libeskind's most daring moves: the

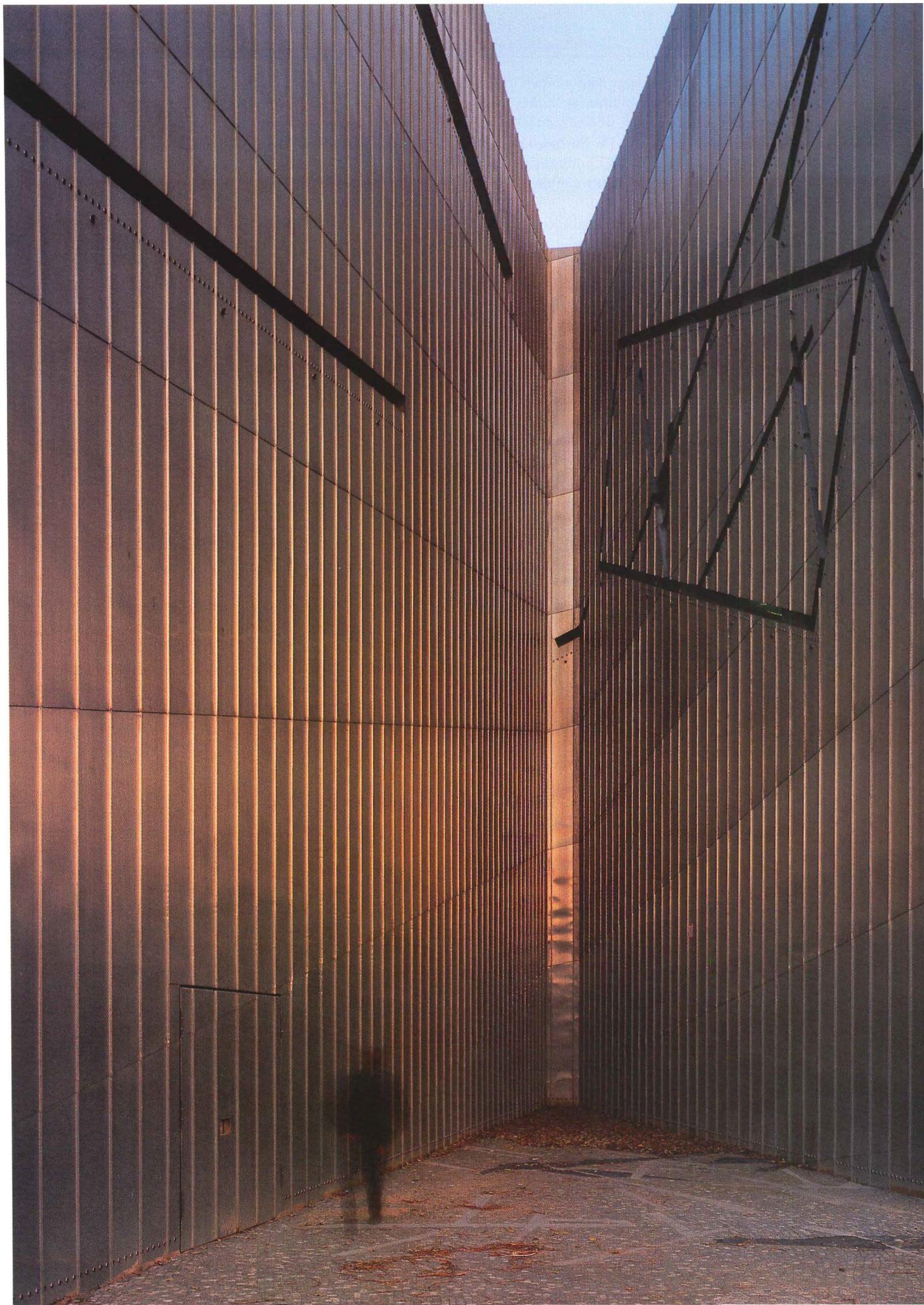
voids and the Holocaust Tower. Will they make people think? Or, because of their contrast with displays that are more self-explanatory, will they have to be explained and there by come to seem a kind of diorama, albeit in a fashionably abstract style?

Critics have complained that the complex and difficult story of Jews and Berlin should have been told by curators, not the architect. "It is the responsibility of architecture and culture to address events and history," Libeskind replies. Yet he does not see the building as a specific statement about history, but rather a composition that deals with the contradictory notions of "incredible contributions and abysmal losses," as he puts it. "I

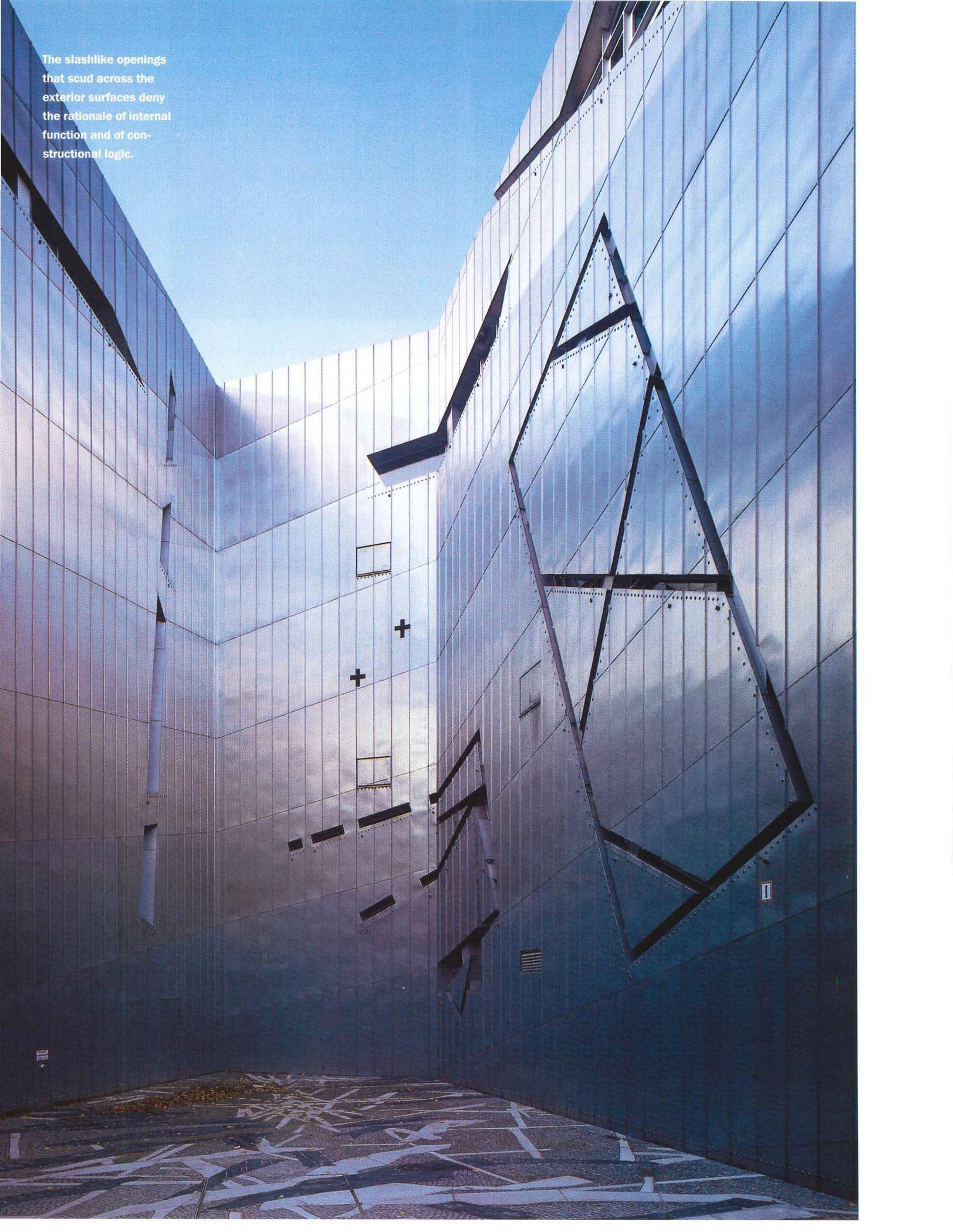
thought of this as a living presence. History is not over."

Libeskind admits a powerful faith in the ability of people to learn from history and from architecture. In this he eerily echoes the assimilated Jews of the Nazi era. They believed profoundly in German culture and felt proud of their contributions to it. That such a culture could succumb to evil on the gargantuan scale of the Final Solution was inconceivable for all too many of them.

But, Libeskind believes, architecture remains a culturally powerful force. As he declared in a recent talk in New York, "A building and a city are always present across time and across history. The act of building transforms the culture of a city." Time will tell. *J.S.R.*

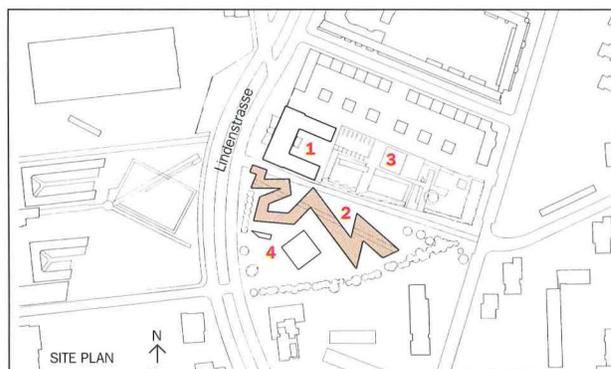


The slashlike openings that scud across the exterior surfaces deny the rationale of internal function and of constructional logic.



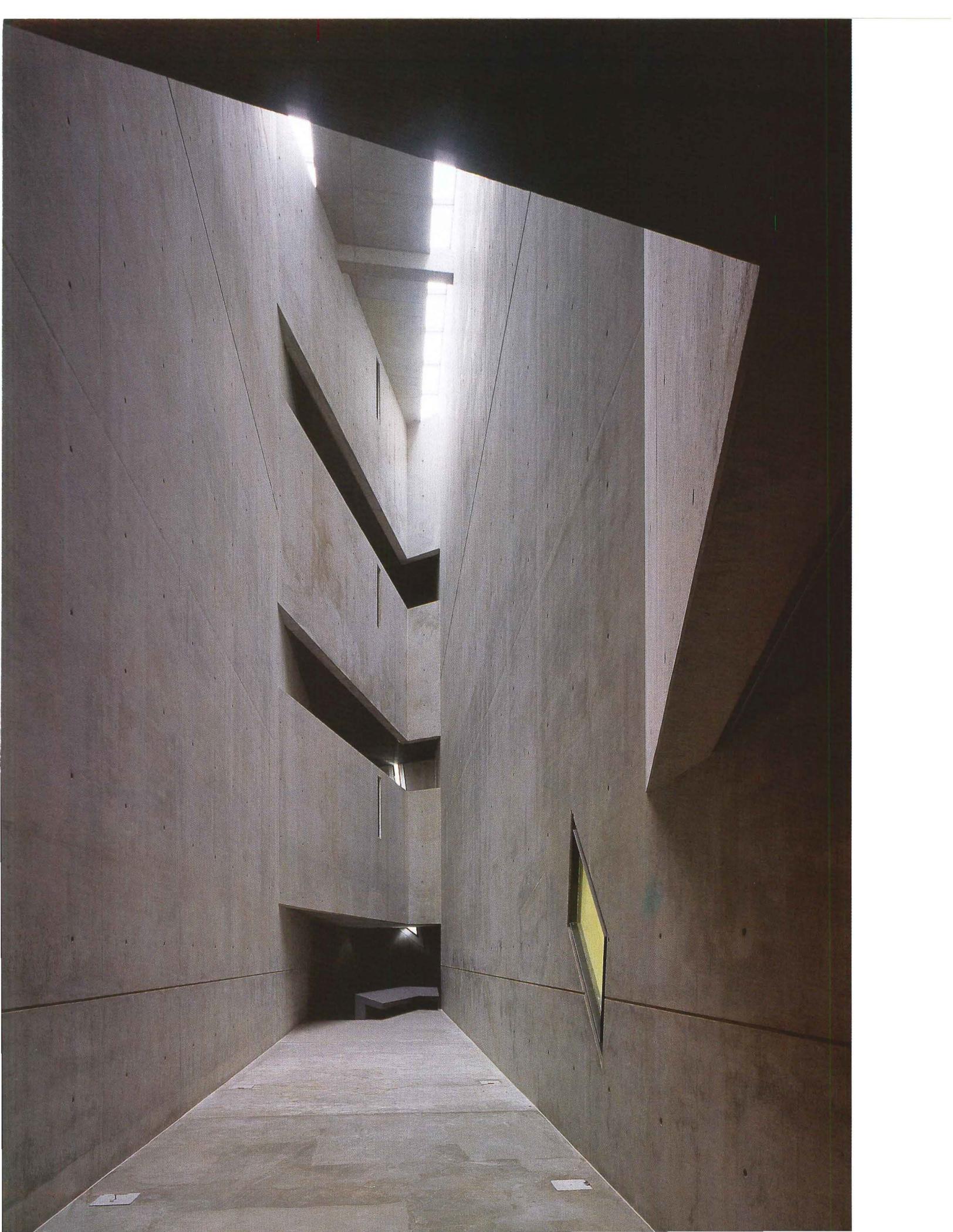


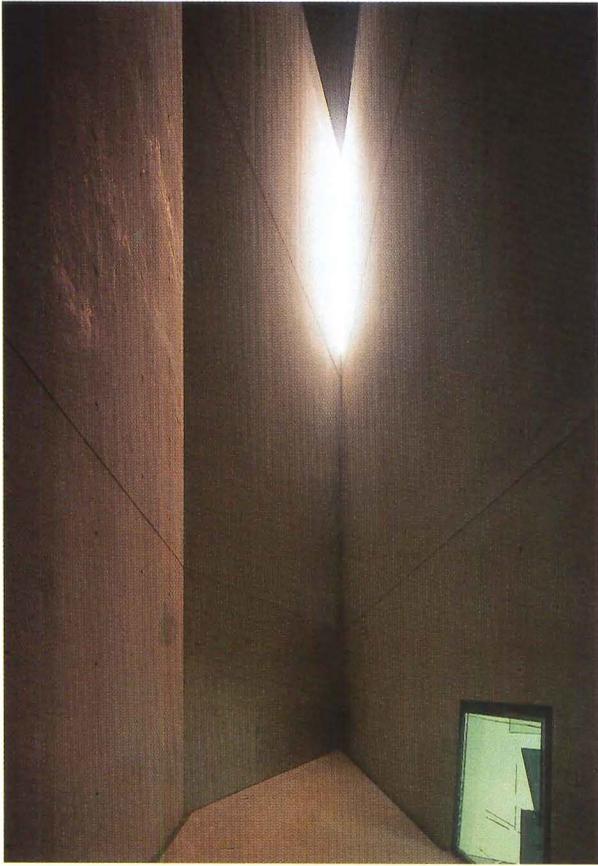
No passerby would confuse the Jewish Museum with an office building or a government ministry (views from street left and opposite). Berlin's contradictory history— aspiration and accomplishment versus repression and tragedy— is almost literally written all over the building's facades. The gestures of form and pattern appear to be the product of a mathematical formula. Libeskind, though, does not expose his compositional process to scrutiny. Although the code seems knowable, the design is disturbing because its sources remain unrevealed.



1. Existing museum
2. Addition
3. Existing garden
4. New garden

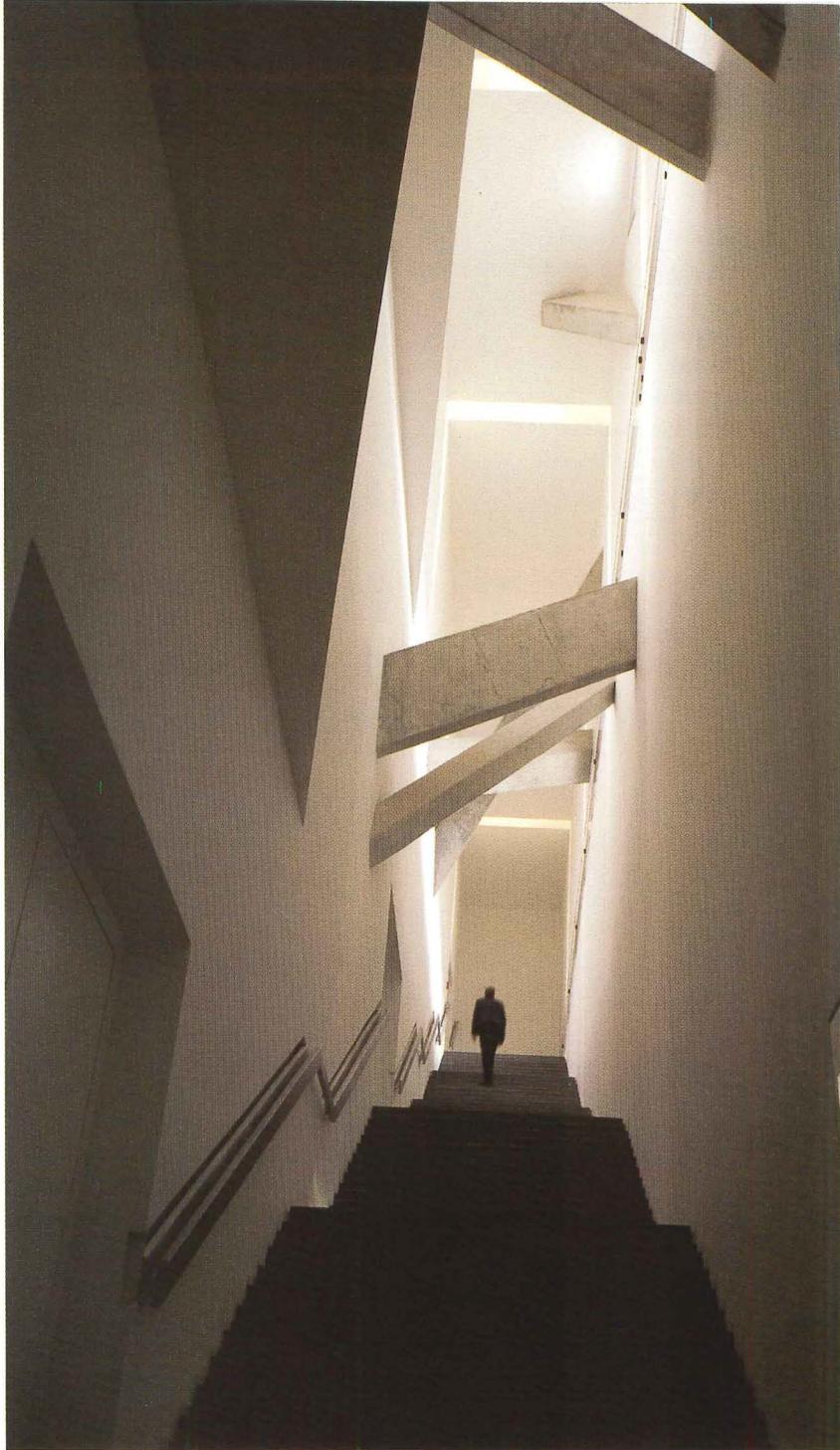




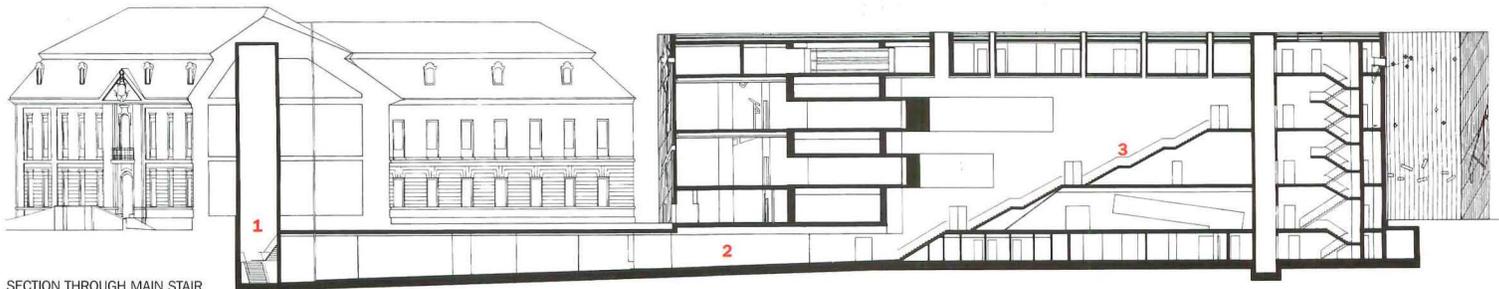


The Holocaust Tower (above) is lit only by a slit in the wall. The tower and the void spaces (opposite) are the building's chief memorializing elements.

One long stair (photo right and section below) offers access to all levels of the museum. The beams, not originally part of the design, offer lateral resistance.

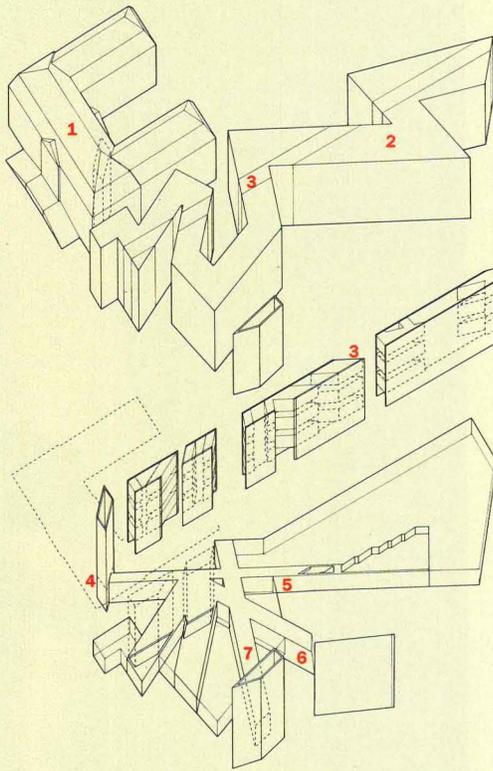


1. Entrance stair
2. Corridor to exhibits
3. Main stair



SECTION THROUGH MAIN STAIR

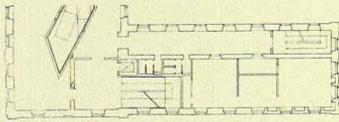
- 1. Existing museum
- 2. Addition
- 3. Voids
- 4. Access from existing building
- 5. Corridor to galleries
- 6. Corridor to garden
- 7. Corridor to Holocaust Tower



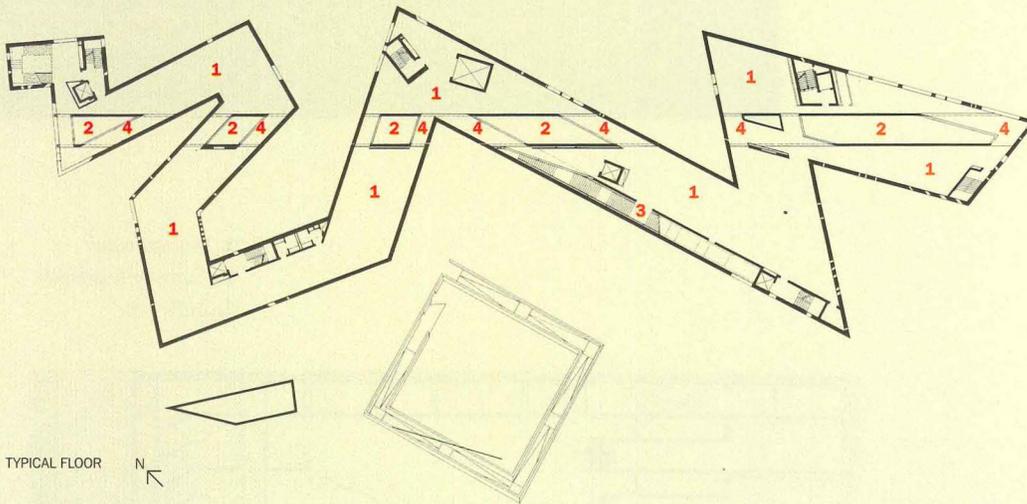
One of the choices visitors can make on reaching the subterranean part of the addition (axonometric left) is to head toward the E.T.A. Hoffmann garden (7, with construction tape). In galleries, the pattern of recessed ceiling light tracks and terrazzo floors echoes the crisscrossing glazed slits (4). In other areas, glazing reads like artwork (8, 9). Where a bridge over a void interrupts the flow of the galleries (typical plan, below), the exterior of the void is painted black (3). Administrative space (1), some of which is skylit (5, 6), is located on the top floor.



1



- 1. Gallery
- 2. Void
- 3. Main stair
- 4. Bridge over void



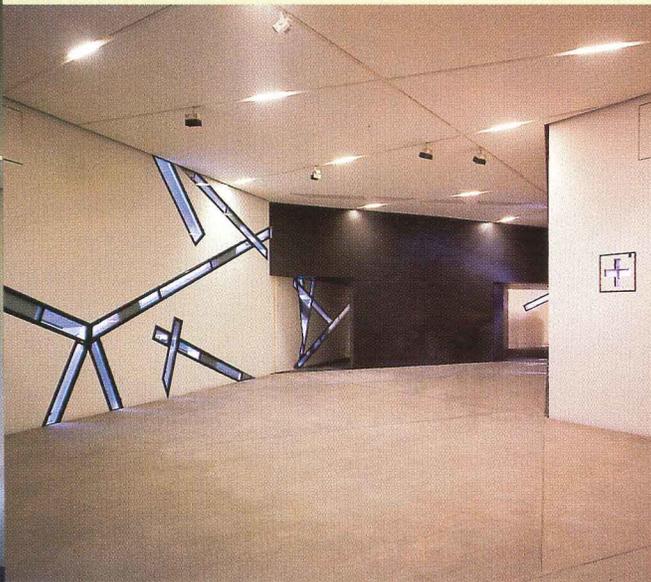
TYPICAL FLOOR



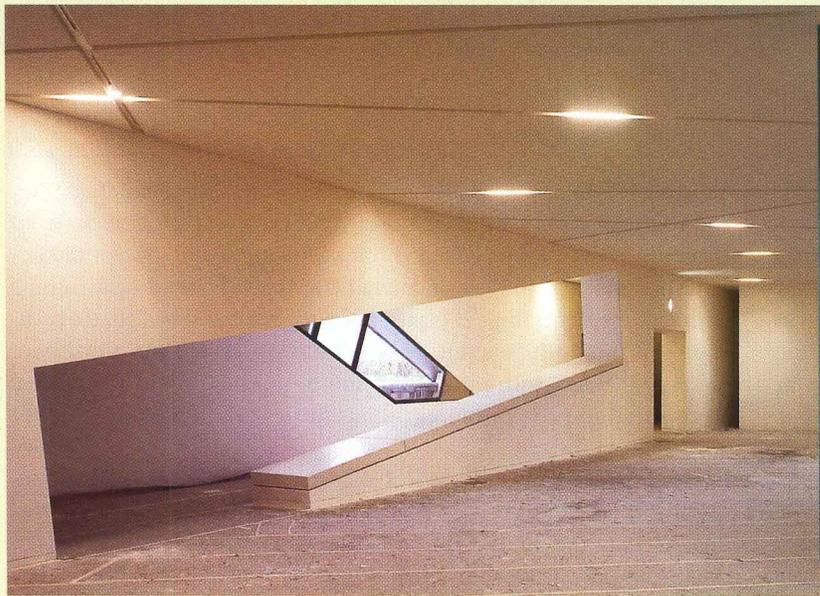
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2



3



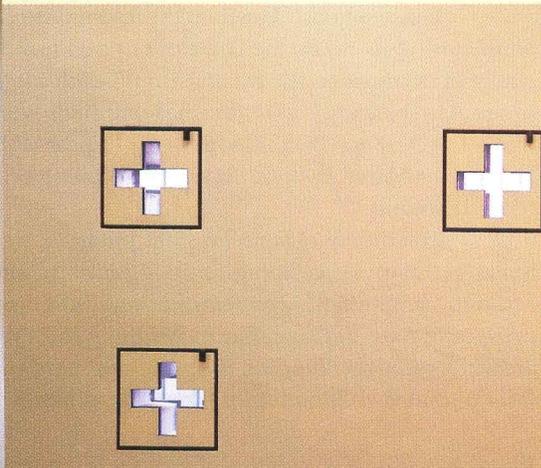
4



5

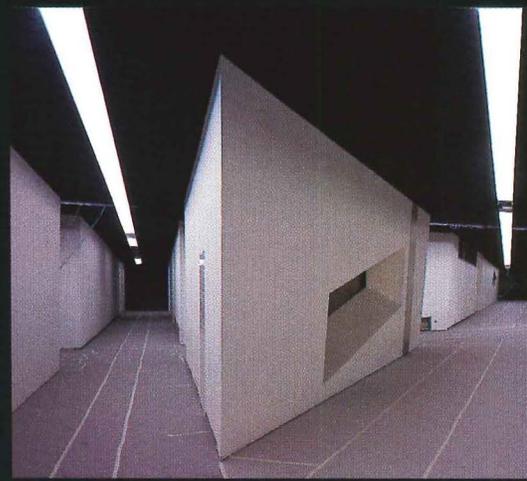
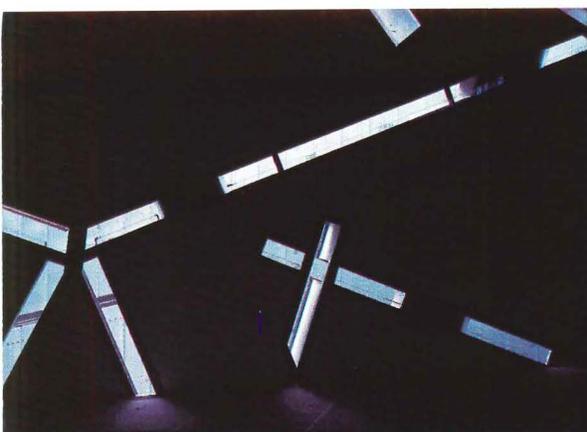


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8



ESSAY: DANIEL LIBESKIND'S MUSEUMS CHALLENGE CURATORS AND THE PUBLIC ALIKE.

by Victoria Newhouse

All of Daniel Libeskind's museum schemes continue an ongoing effort by architects of this century to break away from rectilinear architecture in order to stimulate a more active role for the viewer. Yet for all its novelty, the Jewish Museum recalls a classic Berlin precedent: in 1830, Karl Friedrich Schinkel's Altes Museum opened without any art, just as Libeskind's museum has opened without the displays of historic documents and art for which it was created. The heated argument over whether the Altes Museum should be called a monument, a treasury, or a museum prefigured the Jewish Museum's five name changes. Now a paradigm of museum design, Schinkel's building owes its success to his insistence on the parity of art and architecture, a notion that still fires debate today.

There was no such controversy about Libeskind's design for the Felix-Nussbaum-Haus, a little jewel of a museum in the northwest German town of Osnabrück. Here the architect had a clear mandate: to house some 160 paintings by a Jewish native son who had depicted the horror of the Holocaust with startling realism.

Like the Jewish Museum, the reserved streetfront of the Felix-Nussbaum-Haus masks the complexity of its plan and the unsettling nature of its interiors. The two museums—each a freestanding addition to an older building—were designed and built within the same time frame (1989–98 for Berlin, 1996–98 for Osnabrück) and share a close family resemblance. In both, the architecture itself evokes the experience of the Holocaust.

The quirky oblique interiors produced by Nussbaum's rotational geometry of colliding forms—similar to those in the Jewish Museum—amply fulfill arguments for the sensuality of such spaces made in the early 1960s by Claude Parent and Paul Virilio. What the two French architects called the “function of the oblique” rejected Euclidian space in favor of canted walls and tilted floors that unbalance the body, thereby

bringing it into an unusually tactile relationship with a building. They realized their theory in the 1964–66 Church of Sainte-Bernadette du Banley at Nevers, France. Though Libeskind says their concept did not influence him, his two German museums are indeed both disquieting and multisensory: floors slope in places; interiors are slashed by light that penetrates tortured window slits; heavy steel doors clang shut; metal floor gratings in the Nussbaum allow sound to penetrate from unexpected areas, as it might to a person in hiding; the Jewish Museum's Holocaust voids echo eerily.

Felix Nussbaum was forced to flee Osnabrück in 1933; subsequent years of hiding in various European cities ended with his internment in 1940 and his death at Auschwitz four years later. Links between the cities where Nussbaum sought refuge dictated the Osnabrück plan, just as the design of the Jewish Museum was developed from lines drawn between the addresses of prominent Berlin Jews.

The Nussbaum museum is composed of three parts. The blank concrete wall of a long, narrow 7-foot-4-inch-wide segment is tucked between two historic structures containing the existing Cultural and Folk Art Museums. Referred to as the Gallery/Corridor, this first part is interrupted at one end (Libeskind's reference to the artist's interrupted life) for the entranceway in its short side. A small lobby connects the constricted passageway with the more expansive oak-clad exhibition area, the House of the museum's name. A wide, zinc-clad suspended bridge connects the two areas to one another and to the Cultural Museum.

Each segment of the museum complex is used to exhibit work of different periods: the claustrophobic concrete Gallery/Corridor for canvases executed in detention camps, the larger and more luminous plaster interiors of the House and Bridge for pre-1933 paintings and for temporary installations.

The Felix-Nussbaum-Haus fulfills the monographic museum's ideal of exhibiting an artist's work in spaces that complement it and relate to the conditions in which it was created. The 17th-century mansion of the Musée Picasso in Paris is reminiscent of the imposing houses the artist preferred; the converted warehouse of the Andy Warhol Museum in

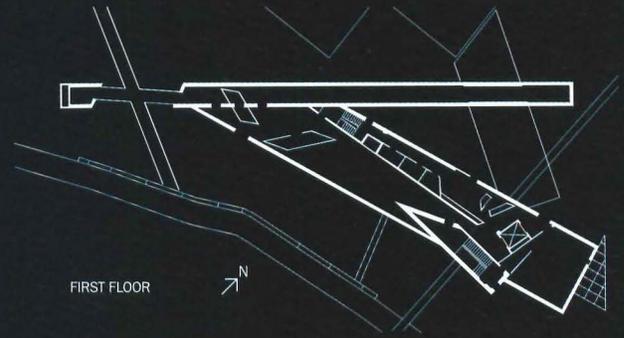
Victoria Newhouse is an architectural historian who contributes to a number of design publications. She recently published a book on the architecture of museums, Towards a New Museum, and is the author of Wallace K. Harrison, Architect.



As in the Jewish Museum, Libeskind's Felix-Nussbaum-Haus in Osnabrück features an empty tower (foreground in photo

plan below). Skewed and crossing lines figure significantly in the Osnabrück project too, but not as densely as in Berlin (opposite left). In

Berlin, visitors are forced to choose a path (opposite right); in Osnabrück the single path can lead ambiguously (this page right).



Pittsburgh resembles his Factory studio. But by stretching this concept to call up the specter of Nazism as well, the Nussbaum goes beyond this single-artist-museum ideal to become a powerful metaphor for an era.

Equally successful in conjuring up the Nazis' terrifying negation of normalcy (albeit with gestures of hope such as the increased window openings at upper levels), Berlin's Jewish Museum also depends on intentional disorientations that are diametrically opposed to the so-called neutrality of some contemporary museums, for example Renzo Piano's 1997 Beyeler Foundation Museum in Basel Riehen, Switzerland. Whereas

LIKE THE JEWISH MUSEUM, THE FELIX-NUSSBAUM-HAUS HAS A COMPLEX PLAN AND UNSETTLING INTERIORS.

many of the memorials undertaken by the more than 100 Holocaust organizations—such as James Ingo Freed's U.S. Holocaust Memorial Museum in Washington, D.C., created by the United States Holocaust Memorial Council—rely on figural representation to convey events far removed in time and place, Libeskind rejects such methods in Berlin, where the events actually occurred.

The distinction is epitomized by a void instead of the plethora of information offered in Washington, D.C. While Freed's museum has proven effective for an American audience, Libeskind feels that such evidence of the Holocaust is omnipresent in Germany. Rather than the chronological narrative that unfolds in Washington's black box spaces, Berlin's emotionally charged galleries are intended for thematic displays. The architect suggests as one possibility large piles of dolls alluding to both a former Jewish industry and the millions of children who were killed during the Holocaust.

There is a danger that the Jewish Museum's effectiveness could be compromised, as some art museums have been, by numerous program changes. Because Renzo Piano and Richard Rogers completed their design for the Centre Georges Pompidou in Paris (1977) with no art or director in place, the museum's permanent collection galleries suffered. More

recently, programmatic uncertainty for art museums by Alvaro Siza at Santiago da Compostella (1993) and by Richard Meier at Barcelona (1995) produced interesting buildings that bear little relationship to their contents. The very elements that reinforce the impact of the Jewish Museum's architecture—overscaled spaces, angled walls, and long window slits that rule out large wall areas for hanging art or artifacts—require especially sensitive installations. At the Felix-Nussbaum-Haus, the Gallery/Corridor's unusually low light and spatial constriction actually dramatize the paintings of Nazi repression.

Program changes do not seem to threaten Libeskind's three current museum projects—the Boilerhouse Extension to the Victoria & Albert Museum in London, the Imperial War Museum of the North at Manchester, and the Jewish Museum in San Francisco. In London he proposes a vertical reinvention of Berlin's horizontal zigzag plan within what appears to be precariously balanced giant boxes, their exteriors a mosaic of structural tile Libeskind calls fractals. In the San Francisco project, two wavelike structures twist and interpenetrate an existing building for an institution that attempts to reinforce Jewish identity in a city where assimilation is unusually high.

In 1925 Le Corbusier began to propose innovative structures and forms for national and international fair pavilions, and mid-century Frank Lloyd Wright's Guggenheim Museum in New York provided multiple perspectives between viewed art and viewers. Furthering the means of creating dynamic space, the fractured forms of recent exhibition buildings also reflect today's social fragmentation and artistic anarchy. Prime examples are Peter Eisenman's Wexner Center for the Arts (1989) in Columbus, Ohio; the circulation spaces of Rem Koolhaas's Kunsthal (1993) in Rotterdam; Coop Himmelblau's Groninger pavilion (1994), also in the Netherlands; Frank Gehry's Guggenheim Museum (1997) in Bilbao, Spain; and Zaha Hadid's project for the Cincinnati Contemporary Arts Center (1998).

Hopefully, the unresolved program of the Jewish Museum in Berlin will not compromise lively architecture in which forms poignantly remember the eradication of a culture. ■

Although only 88 stories, Petronas Towers rise to 1,483 feet (including 241-foot pinnacles). Each tower has 2.3 million square feet of space.



Other than their status as the world's tallest buildings, what else do Cesar Pelli's **PETRONAS TOWERS** have going for them?



by Clifford A. Pearson

If they were merely the tallest buildings in the world, the Petronas Towers in Kuala Lumpur would be little more than real estate curiosities, worthy of our brief attention. After all, their tenuous hold on the height record—challenged by Chicago's Sears Tower, which still has the highest observation deck and habitable floor—will be lost completely in 2002 or 2003 when Kohn Pedersen Fox's World Financial Center is completed in Shanghai. But there's more to these Malaysian twins than just scraping the sky. Though modern in construction, use of materials, and expression of structure, the Petronas Towers break with Modernist orthodoxy by being symmetrically arranged on the site and figurative in design. They also represent an attempt by a Western architect to interpret Islamic design ideas in a contemporary way.

Built as a symbol of national pride in what had been a rapidly emerging Asian powerhouse, the project is now wrapped in more ambiguous meanings—a consequence of the economic and political turmoil that has swept through Malaysia in the last year and a half. Although the Petronas Towers may appear today as icons of hubris, they will certainly outlast their immediate economic context and acquire less vainglorious connotations—much as the Empire State Building came to stand for more than the folly of building during the Great Depression.

Getting the ball going

The project has its roots in the early 1990s, when Kuala Lumpur was shedding much of its heritage as a leafy colonial outpost and assuming the status of one of the hot real estate markets in Asia. With demand for modern office space rising, the Malaysian government decided the time was right to move the Selangor Turf Club from its strategic location in the city's so-called Golden Triangle to a site on the edge of town. The 104 acres occupied by the colonial-era racetrack offered a great opportunity to create a new commercial center for the Malaysian capital.

WWW On The Web: Take a virtual tour of this project at www.archrecord.com.

The towers rest on concrete foundation mats supported by friction piles dug as deep as 413 feet. The site was once a racetrack.

In 1990 an international competition was held to select a master plan for what is now called the Kuala Lumpur City Centre (KLCC). A committee representing the major investors in the project, the city, and the national government selected the United States firm of Klages, Carter, Vail & Partners (KCV) based on its scheme for an integrated, mixed-use development that would include a large central park bordered on three sides by office buildings, hotels, shopping centers, apartment towers, and entertainment complexes. In the scheme, buildings would occupy only 37 acres, while 67 acres would be developed as public areas, including 50 acres for the park. Reserving such a large amount of outdoor space for public use was an unusual decision in the hard-nosed world of Asian development. The plans called for building 18.5 million square feet of commercial and residential space on 22 lots in phases over a 10-to-15-year period.

As plans for KLCC were solidifying, Petronas, Malaysia's national oil company, was looking to consolidate its 14 different offices in Kuala Lumpur into one headquarters building. In January 1991 it agreed to become a primary tenant of the first buildings at KLCC, as well as a majority stakeholder in KLCC Holdings Sendirian Berhad, the investment holdings company that owns the development.

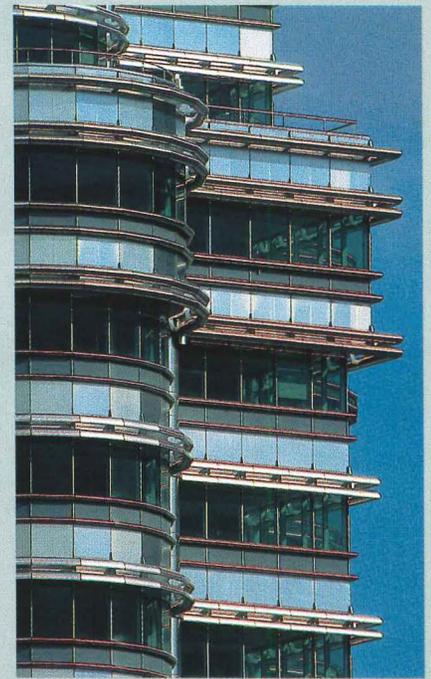
With the involvement of Petronas came the participation of the highest levels of the Malaysian government, making this more than just another big project in a boom town. Indeed, Prime Minister Mahathir Mohamad took a strong interest in the project, seeing it as a symbol of his country's modernization and rising profile on the international scene. He

Project: *Petronas Towers, Kuala Lumpur, Malaysia*

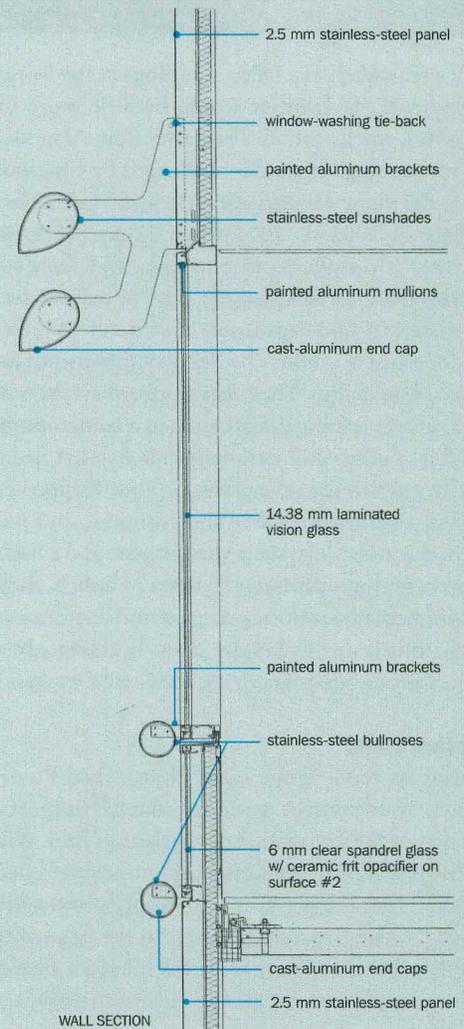
Owner: *Kuala Lumpur City Centre Holdings Sendirian Berhad*

Architect: *Cesar Pelli & Associates—Cesar Pelli, FAIA, design principal; Fred Clarke, FAIA, project principal and collaborating designer; Jon Pickard, AIA, design team leader; Larry Ng, AIA, project manager; John Apicella, David Coon, Edward Dionne, Peter Follett,*

Michael Hilgeman, Mitchell Hirsch, Russell Holcomb, Alison Horne, Gregg Jones, Keith Krolak, Vlad Simionescu, Heather Young, David Chen, John Clegg, Jerome del Fierro, Roberto Espejo, Sophie Harvey, Kristin Hawkins, Steven Marchetti, Robert Narracci, Dean Ober, Mark Outman, Enrique Pelli, Neil Prunier, Roger Schickerdantz, B. J. Siegel, David Strong, Jane Twombly, designers (credits continue on last page of story)



The two towers were built simultaneously by different sets of general contractors, an arrangement that injected some healthy competition into the process and ensured that the entire project didn't depend on just one group. It also created a situation where two sets of builders explored the best methods and techniques for getting the job done. Each team was a joint venture between foreign contractors and a Malaysian firm and had as one of its goals the transfer of expertise to the local company. The same was true for subcontractors, such as those for the curtain wall, vertical transportation, and poured concrete. Overseeing the entire project was a KLCC subsidiary that is now applying its new expertise to other large developments. *C.A.P.*





- 1. Petronas Tower
- 2. Concert hall
- 3. Retail complex
- 4. Office tower
- 5. Hotel
- 6. Future building



even made suggestions on the architectural design, some of which found their way into the final scheme.

In April 1991 a design competition was held for the northwest portion of the site, the first group of buildings to be developed. The invited competition included Murphy/Jahn, Aldo Rossi, Johnson Burgee, Kohn Pedersen Fox, KKS (of Japan), and Cesar Pelli & Associates. In evaluating the entries, the selection committee looked for designs that “complied with the master plan, were functional and efficient, and expressed the culture and heritage of Malaysia,” recalls Abdul Rahim Naim, chief operating officer of KLCC (Holdings) Berhad. “We wanted something extraordinary, and that is what Mr. Pelli gave us. His design has elements of Islamic architecture identifiable with our country. The other architects’ designs looked as if they could be built anywhere. Mr. Pelli’s design could be in no other place but Kuala Lumpur.”

Learning to speak Malaysian

The program for the design competition showed two towers of different heights asymmetrically placed on the northwest corner of the site and called for a solution that would be Malaysian in character. “No one knew what it meant for a building to be ‘Malaysian,’” says Cesar Pelli, FAIA. “We were flying blind.” But by studying Islamic architecture, Pelli learned

WHEN A BUILDING IS TALLER THAN ITS NEIGHBORS, IT SHOULD MARK ITS PLACE ON THE SKYLINE, SAYS PELLI.

that repetitive geometries are keys to understanding buildings in predominantly Muslim countries such as Malaysia.

Although initially each tower’s plan was based on a 12-pointed star, the architects eventually adopted a scheme using intersecting squares, which form an eight-pointed star—a popular form in Islamic design. To enhance the evocation of traditional “arabesques” and increase the amount of space on each floor, the designers added curved bays between the eight points. Such complex geometries are a way of linking the buildings to Islamic design traditions without resorting to “cultural pastiche,” states Pelli. Twin 16-branched towers clad in steel and glass are not specifically Malaysian. “But because they will appear for the first time in Kuala Lumpur,” says Pelli, “they will be forever identified with the place—in the same way the Eiffel Tower is identified with Paris, although its structure and form were not derived from Parisian or French architecture.”

Another important decision, says Pelli, was to “make the towers

figurative” and place them symmetrically on the site. Instead of following the example of Ludwig Mies van der Rohe’s Lake Shore Drive apartment towers in Chicago or Minoru Yamasaki’s World Trade Center in New York, where twin high-rises slide past one another on the diagonal, Pelli set his Malaysian skyscrapers shoulder to shoulder—like men standing at attention. Not only were the tower forms themselves figurative, but the space between them was too, with the center of the void the focal point of the composition. Adding a bridge linking the towers at the 41st and 42nd stories made the space between the structures an even stronger element.

The result, says Pelli, is a design that is unabashedly symbolic, that announces its presence as a landmark and a gateway to an important new development. “When a building is taller than its surroundings, it has a responsibility to mark its place on the skyline. It has a responsibility to the civic realm,” states the architect.

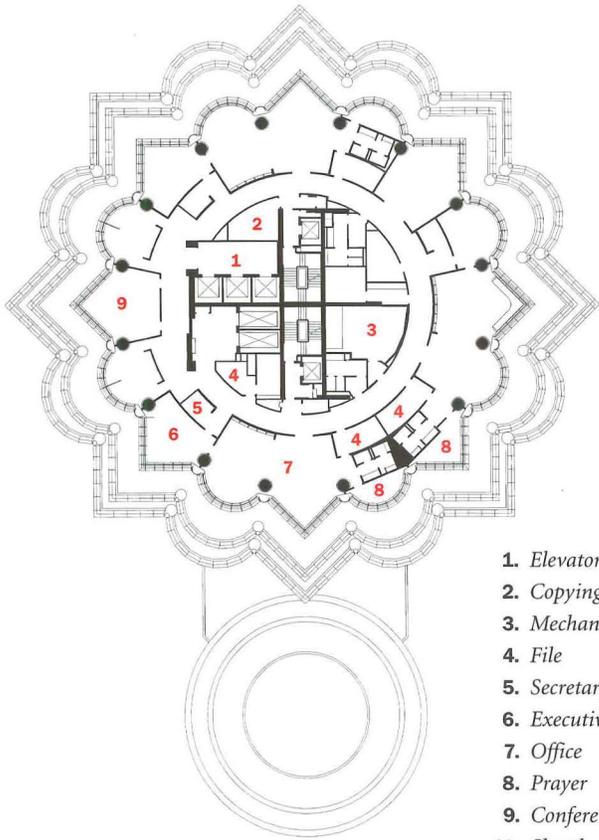
The buildings in Pelli’s competition entry were not the world’s tallest. Only after Pelli was awarded the commission and his firm started working on design development did the prospect of setting a record come up for discussion. By June 1993 the designs called for twin towers of 1,426 feet (432 meters), just 36 feet less than the Sears Tower in Chicago. By stretching the size of the spires on top of the towers, the architects pushed the total height of the buildings to 1,483 feet (452 meters) and created better proportions, explains Larry Ng, AIA, the project manager for Pelli’s firm. “Our goal was to design the most beautiful buildings, not necessarily the tallest,” states Ng. The client agreed to go with the taller, more elegantly proportioned design.

Based on a scheme by Klages, Carter, Vail & Partners, Pelli’s	master plan (above) contrasts a “hard” street edge (below)	with a less formal “soft” edge of buildings facing the park.
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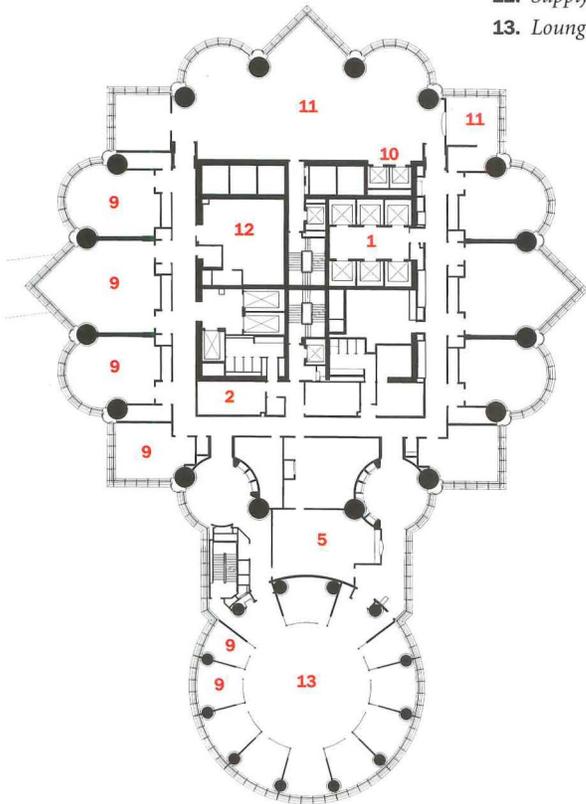
Beacons for the entire city, the towers are also a gateway to the Kuala Lumpur City Centre, which includes a Mandarin Oriental hotel (lower left in photo) and a domed retail center (in foreground).





EXECUTIVE FLOOR CONCEPTUAL LAYOUT

1. Elevator lobby
2. Copying
3. Mechanical
4. File
5. Secretary
6. Executive assistant
7. Office
8. Prayer
9. Conference
10. Shuttle elevators
11. Reception
12. Supply
13. Lounge

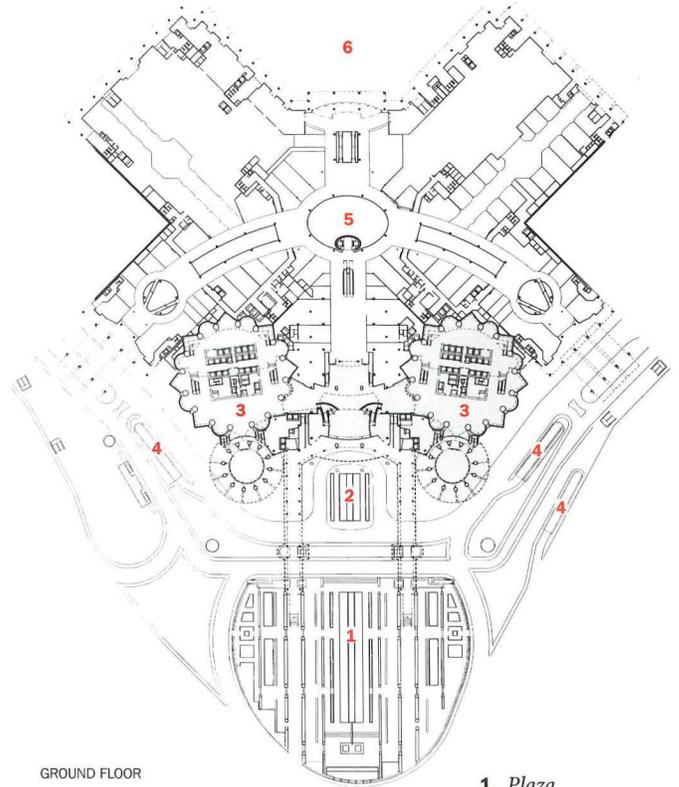


CONFERENCE CENTER CONCEPTUAL LAYOUT

0 20 FT.
6 M.

Conceptual plans by STUDIOS show how typical upper and midlevel floors (left) can be laid out. Petronas occupies all of one tower and part of the second. The twin towers share a common podium with

the Petronas Concert Hall and a 1.5 million-square-foot retail center (plan below). The shape of the twin towers is a geometric elaboration on the intersection of two squares (bottom).

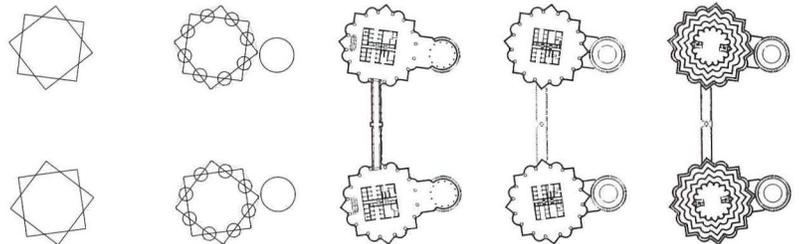


GROUND FLOOR

0 100 FT.
30 M.



1. Plaza
2. Forecourt
3. Tower lobby
4. Ramp to parking
5. Retail center
6. Esplanade and park



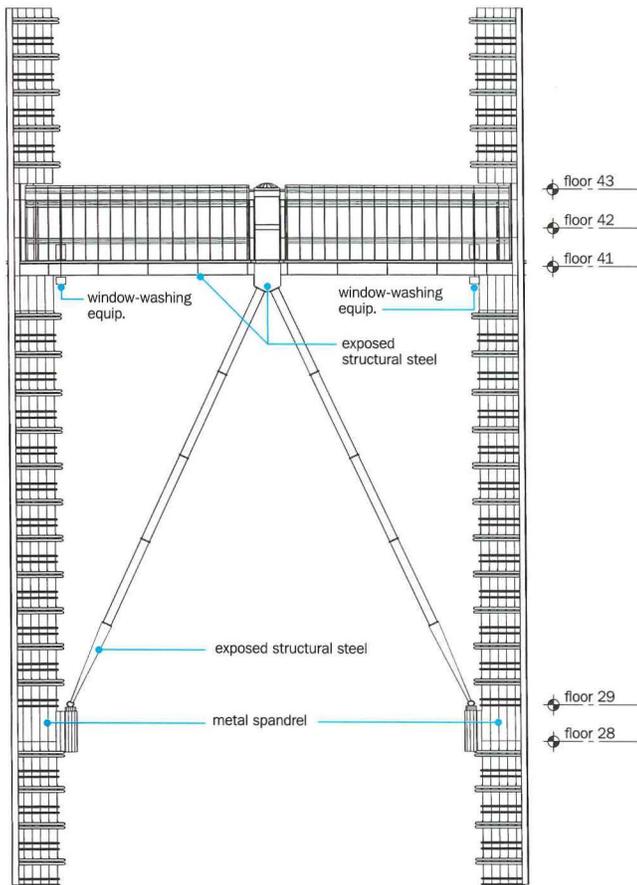
EVOLUTION OF BUILDING GEOMETRY

SKYBRIDGE

Connecting the towers at levels 41 and 42, the skybridge

is a dramatic element that helps define the buildings as an urban portal and, on a more prosaic level, serves as a fire exit from one skyscraper to another. Fabricated in South Korea and transported in 493 pieces, the bridge was assembled on site and then raised 604 feet into the air by eight hydraulic jacks. After being lifted into place, the 193-foot-long steel bridge was attached to the office towers' perimeter concrete frames at the 41st floor and supported from below by a pair of V-shaped legs resting on spherical bearings secured to the 29th floor. Each leg is comprised of two 3½-foot-diameter steel tubes. The architects had considered other designs for the

bridge, including a truss structure that would be suspended from above by cables. But by using steel girders instead of trusses, the architects and engineers eliminated the need for crisscrossed members and made the bridge more transparent. The ends of the bridge girders sit on sliding bearings, allowing the towers to move up to 10 inches. To accommodate twisting, the girders have rotational centering pins on a box girder that crosses the bridge at midspan. Despite initial impressions, the bridge is independent of the towers' structural system. Because the skybridge can be used as an emergency exit from the conference center on the 41st and 42nd floors, it paid for itself by eliminating the need for another fire stair. *C.A.P.*



SKYBRIDGE ELEVATION



Because the Petronas Towers would be such important landmarks on the Kuala Lumpur skyline, Pelli wanted to make them as slender and elegant as possible. The final design achieved an aspect ratio (height to width) of about 9.4, significantly greater than a typical high-rise's 7.0, reports Pelli. Setbacks at six different levels and a 208-foot mast on top of each tower emphasized the vertical nature of the buildings.

Even before the design of the towers was finalized, excavation work had begun. But as digging progressed, major problems with the soil were discovered. The limestone bedrock below the towers turned out to be sloped steeply to one side, making it much more expensive and difficult to build the foundations as planned. So the architects, engineers, and client agreed to move the towers about 200 feet to the southeast, where the buildings would sit on a concrete mat anchored to the soil (not bedrock) by concrete friction piles.

The new placement had the added benefit of setting back the towers further from the nearby streets, providing more room for vehicular access and ramps leading down to underground parking. It also created the opportunity to design a public plaza in front of the buildings. "The extra space allowed us to establish a procession from a formal garden out front to a gateway formed by the two towers and finally to an informal park at the center of the KLCC site," says Ng.

In addition to the Petronas Towers, the first phase of development at KLCC included an 850-seat concert hall set on a podium level between the towers, a 1.5 million-square-foot retail center behind the towers, a Mandarin Oriental hotel designed by Wimberly Allison Tong & Goo, an office tower by Kevin Roche John Dinkeloo & Associates, and another office tower by the Malaysian firm Kumpulan Senireka. Pelli designed the concert hall and was design consultant on the six-story retail complex, which was designed by the Walker Group CNI. Major landscaping features included the garden plaza by Balmori Associates and the public park by the late Brazilian designer Roberto Burle Marx.

A "soft tube" runs through it

Like most high-rises in Asia, the Petronas Towers are mostly concrete structures. Not only are contractors more familiar working with concrete in this part of the world, but the material is twice as good as steel in reducing a tall building's tendency to sway in the wind. Each tower has what Pelli calls a "soft tube" structure: an outer ring of 16 concrete super columns spaced widely apart (between 26 and 33 feet on center) and connected to each other by slightly arched ring beams. The columns are nearly eight feet in diameter at the base of the building, but are more slender on higher floors. At most of the setbacks and at the upper portion of the tower, the columns slope in toward the center of the structure, enhancing the building's svelte profile. Concrete outrigger beams tie the perimeter columns to the building's 75-by-75-foot concrete core at the 38th and 40th levels. Making all the structural dynamics possible is

high-strength concrete (10,000 pounds per square inch), much stronger than the 6,500 psi concrete typically used in Malaysia.

Steel also plays an important role in the building's structure. Not only are floors made of composite metal decking and steel infill beams, but each of the curved or pointed bays cantilevered beyond the perimeter columns is steel-framed. The 241-foot-tall pinnacle on top of each tower is also steel-framed. In addition, the dramatic skybridge linking the two towers is framed by twin steel-plate girders.

The sophisticated structural system with widely spaced perimeter columns "makes this an extraordinarily transparent building from the inside," states Pelli. "It's the most column-free high-rise I've ever designed." And for privileged workers with offices in the bays projecting

THE BUILDINGS' LINEN-FINISH STAINLESS-STEEL SKIN CAPTURES THE LIGHT AND DIFFUSES IT.

beyond the columns, the wraparound views are particularly impressive.

While floor plates are not huge by U.S. standards, they are comparable to what is available in office buildings in Kuala Lumpur, states Ng. By attaching 43-story buildings called "bustles" to the taller towers, the architects created lower floors with 28,000 gross square feet. Midlevel floors have 22,000 square feet and upper ones 18,000 square feet. According to Ng, the building's core occupies an average of about 23 percent of the total space on each floor. Although high-rises such as the World Trade Center in New York have cores that occupy as little as 15 percent of the total, demand for very large office floors is less in Kuala Lumpur.

Vertical transportation, needless to say, is a critical issue in the world's tallest buildings. To accommodate the large number of people using the buildings, all elevators are double-deckers. A skylobby at the 41st floor is a transfer point from low-rise elevators to those going to the

The Petronas Concert Hall (center in photo below) is part of the

developers' attempt to open KLCC to the public. A plaza in front of

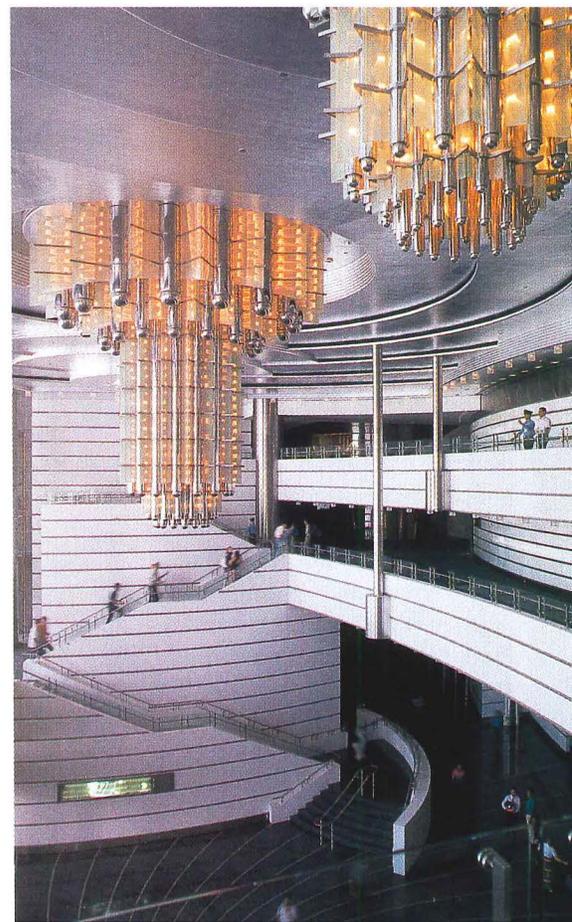
the concert hall and a 50-acre park are other parts of this plan.

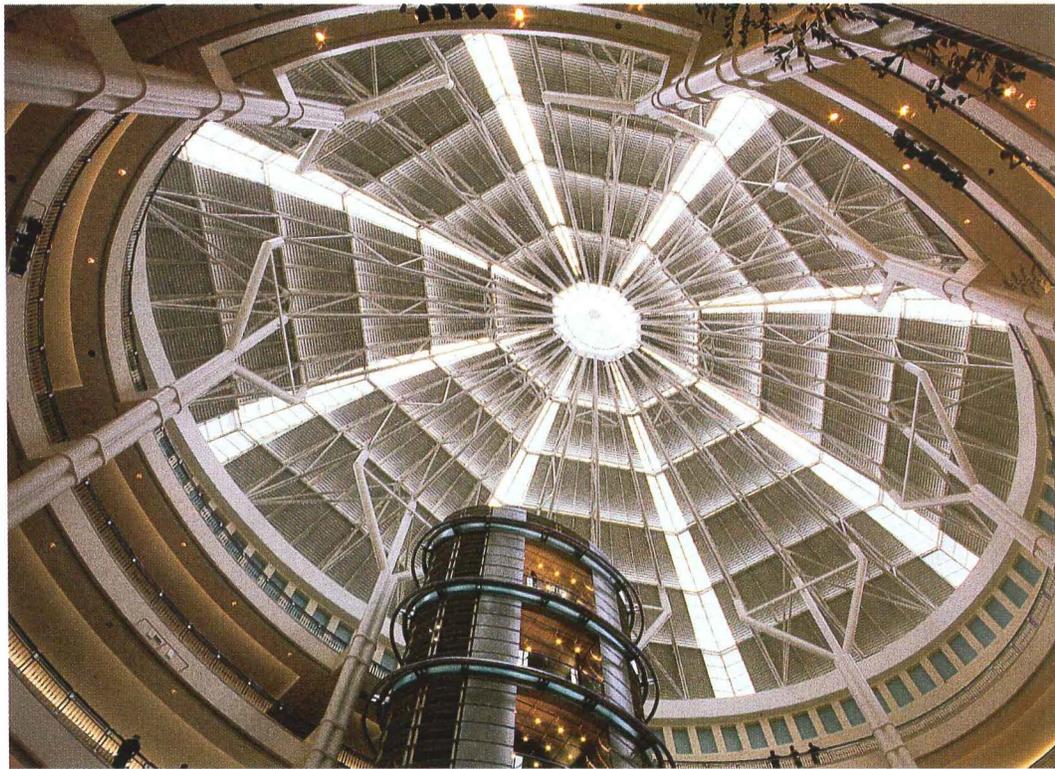




In the Petronas Concert Hall (top and above) the stage can rise and the acoustical panels can be adjusted to accommodate different kinds of performances. Two grand stairs (right) lead from the ground

floor to the concert hall. A six-story retail center (opposite left), designed by the Walker Group CNI, has a central atrium with a Pelli-designed dome (opposite right) that allows sunlight to enter between metal panels.





upper floors, as well as access to the skybridge linking the two towers. The skylobby also serves a four-level conference center, executive dining facilities, and a Muslim prayer room.

The buildings' geometry and pinnacles may have been inspired by Islamic motifs, but their skin is purely modern. The curtain wall is composed of unitized panels of $\frac{1}{8}$ -inch linen-finish stainless steel and $\frac{1}{8}$ -inch laminated glass. "The linen-finish steel captures sunlight and diffuses it," explains Ng. Projecting from the curtain wall are stainless-steel sunshades whose teardrop-shaped blades shed water and are self-cleaning. Because Kuala Lumpur is very close to the equator, the sunshades wrap around all sides of the buildings. The combination of linen-finish stainless steel and projecting sunshades gives the towers' skin a rich sense of depth and highlighting, says John Apicella, one of the designers in Pelli's office who worked on the project.

From symphonies to shopping

The Petronas Concert Hall, a 28,000-square-foot structure set between the twin towers, addresses the garden plaza with a curving glass facade that invites the public inside. Designed by Pelli and his associates, the concert hall is reached by two grand staircases from a podium level common to all of the buildings at KLCC. An adjustable stage allows the hall to accommodate a broad range of performances, from a solo pianist to a full symphony orchestra or a Malaysian cultural troupe. Hand-carved Malaysian wood screens set within stainless-steel frames wrap around the interior of the space and hide adjustable sound-absorption panels.

A 1.5 million-square-foot shopping center stretches out behind the Petronas Towers and faces KLCC's public park. Walker Group CNI designed most of the complex, but Pelli designed the central dome, which allows daylight to come into the atrium by way of patterned glass set between spiraling metal petals.

Despite the sorry state of the Malaysian economy, the Petronas Towers are mostly occupied, reports Ng, thanks to its main tenant's global operations and joint ventures. And the public seems to have taken to the project's many outdoor spaces. In the garden plaza, the park, and the covered walkway adjacent to the shopping center, there are usually crowds of people.

"These towers are not monuments but living buildings that play a symbolic role," states Pelli. "We worked hard to make them alive." ■

Architect of Record: *KLCC Berhad Architectural Division*

Associate Architect: *Adamson Associates*

Landscape Designers: *Balmori Associates; NR Associates*

Engineers: *Thornton-Tomasetti Engineers (structural); Ranhill Bersekutu Sdn. Bhd. (structural); Flack + Kurtz (MEP); KTA Tenaga Sdn. Bhd. (MEP); Ove Arup and Partners (site/civil); Arup Jururunding (site/civil)*

Consultants: *STUDIOS (interior designer, office buildings); Walker Group CNI (retail); Howard Brandston & Partners (lighting); Israel Berger & Associates (curtain wall); Shen, Milsom & Wilke (acoustical); Katz Drago Company (vertical transportation)*

General Contractors: *Tower 1: Mayjus (Malaysia Japan US) Joint Venture—*

MMC Engineering & Construction, Ho Hup Construction, Hazama Corporation/JA Jones Construction, Mitsubishi Corp.

Tower 2: SKJ Joint Venture—Samsung Engineering & Construction, Kuk Dong Engineering & Construction, Syarikat Jasatera Sdn. Bhd.

Sources

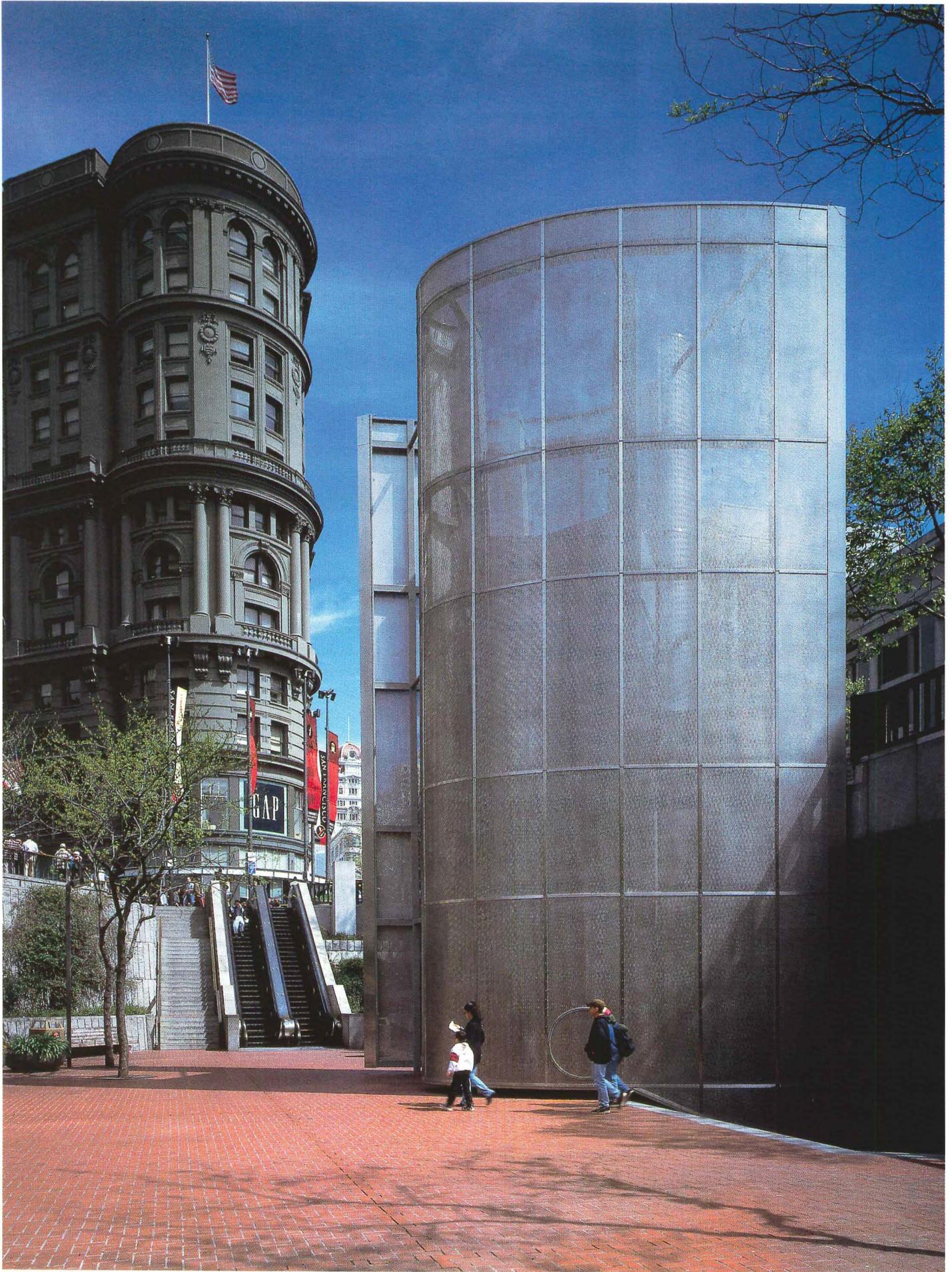
Curtain wall: *Designed by Harmon Ltd., fabricated by Lucksoo Metal Works*

Laminated vision glass: *Malaysian Sheet Glass & Spandrel; DuPont*

Ceramic-frit glass: *Viracon*
Glass doors: *PPG Industries (Herculite)*

Double-deck elevators: *Pernas Otis*

Fiber-optic concert hall lighting: *Starfire*



PORTFOLIO

Five small-scale projects challenge the character of their surroundings, showing how welcome an intrusion can be.



The view of the elevator in Hallidie Plaza to the southeast (left), the north (below), and the northeast, toward the Powell Street cable car turnaround (opposite).

A SLEEK OUTDOOR ELEVATOR SHAFT RISES FROM A BRUTALIST BASE

A sculptural elevator shaft has recently sprouted from San Francisco's sunken Hallidie Plaza. The result of an ADA-related lawsuit, it shuttles between busy Market Street and the San Francisco Convention and Visitors Bureau's information center below street level.

Only half of the project's budget was for machinery; the rest was for design elements that would save this site near the famous Powell Street cable car turnaround—one of the city's most visited spots—from an ugly intrusion.

Two stainless-steel wings enfold the elevator shaft, providing a material and formal counterpoint to the Brutalist granite and brick plaza. The

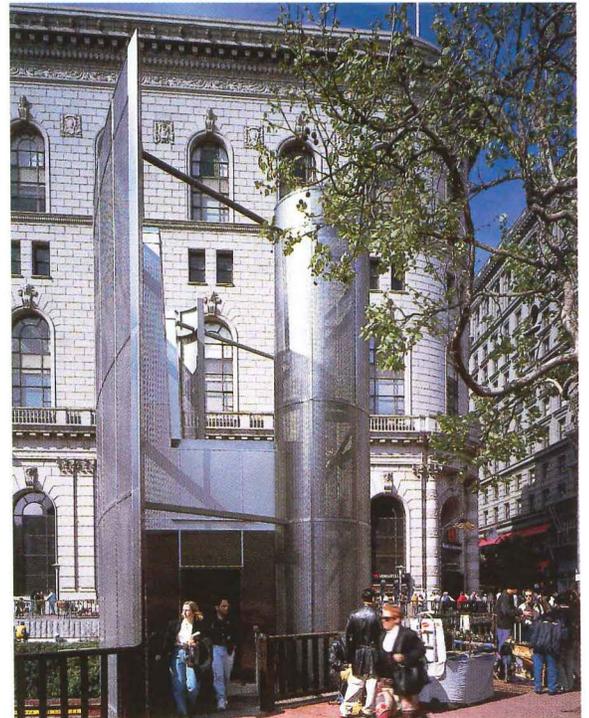
sheathing is perforated—it is 22 percent transparent—varying the effects of daylight. Sometimes the shaft and the wings' ribs are partially visible through the steel, sometimes they are obscured. When the wings overlap, the surface produces a moiré pattern. *David Simon Morton*

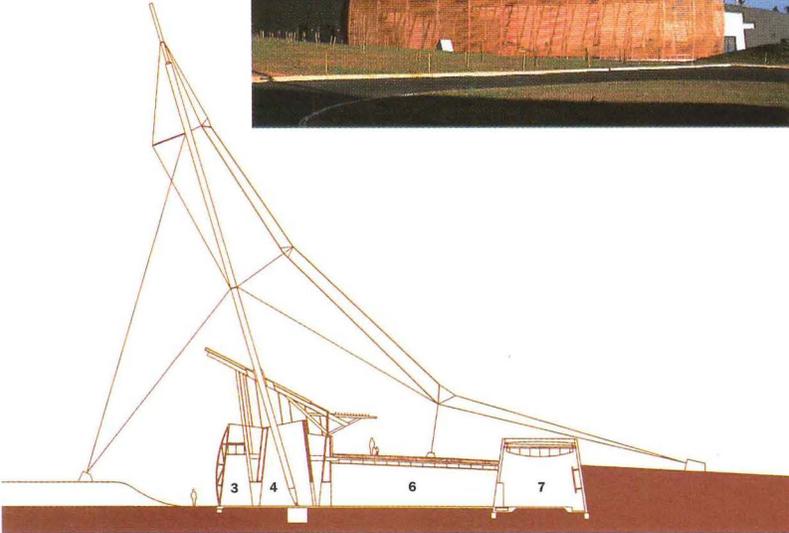
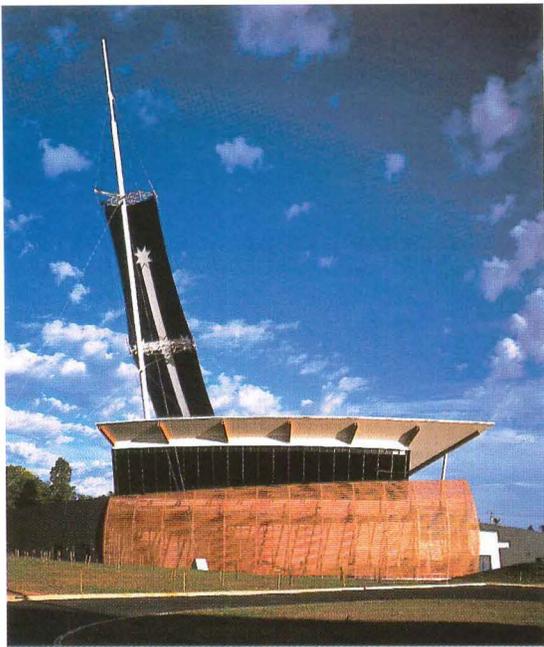
Project: Hallidie Plaza Elevator, San Francisco

Owner: City and County of San Francisco

Architect: Michael Willis and Associates—Michael E. Willis, FAIA, principal-in-charge; Charles B. Leoni, AIA, project architect; Domingo Cuevas, project designer

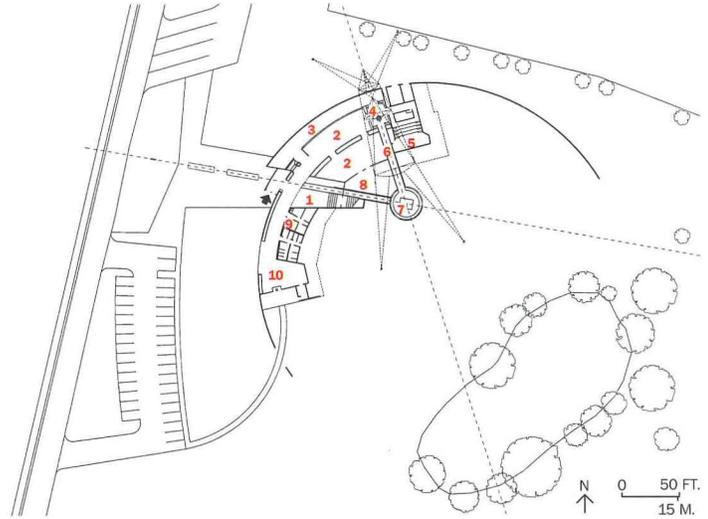
Structural engineer: SOHA Engineers





SECTION

1. Foyer
2. Gallery
3. Hall of Debate
4. Genealogy Tower
5. Theater
6. Approach
7. Contemplation space
8. Courtyard
9. Offices
10. Café



A VISITORS' CENTER MEMORIALIZES AUSTRALIA'S MARTYRED GOLD MINERS

In 1854, Australian gold miners in the Ballarat goldfields lifted the standard of the Southern Cross above their armed stockade in defiance of the British Crown. Imperial troops rushed the stockade in the night, killing 35 men. The event marked the beginning of resistance to British rule and of Australian democracy; it is still a potent political symbol today.

A 10,000-square-foot visitors' center recently erected on the site of the long-destroyed Eureka Stockade enhances this symbolic power. The building is semicircular in plan, a gesture of democratic inclusion. The facade's slender hardwood timbers—emblematic of the original stockade—cast a shad-

owed grid over the Hall of Debate (right). The walls of this gallery and other interior spaces cant inward to evoke the claustrophobic experience of the mines.

Out of respect for sacred ground, the building is mostly hidden in a hill. Outside and above, trusses spaced along an angled, 160-foot-long mast keep an enormous flag of the Southern Cross forever unfurled. *D.S.M.*

Project: *Eureka Stockade Interpretive Centre, Ballarat, Victoria, Australia*

Owner: *City of Ballarat*

Architect: *Cox Sanderson Ness—John Sanderson, project director; Patrick Ness, design director; Daniel Haskell, project architect*

Mast engineers: *Spacetech with Arup*





The jewel-like security pavilion captures as much attention as its massive neighbor, Kevin Roche's Museum of Jewish Heritage.

1. Public passage
2. Parcel storage
3. Ticketing
4. Information

A MUSEUM'S SECURITY CENTER IS REALIZED IN NO TIME AND IN NO SPACE

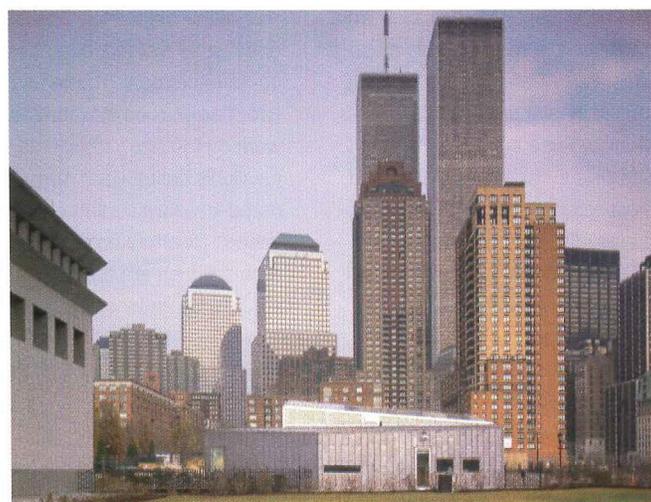
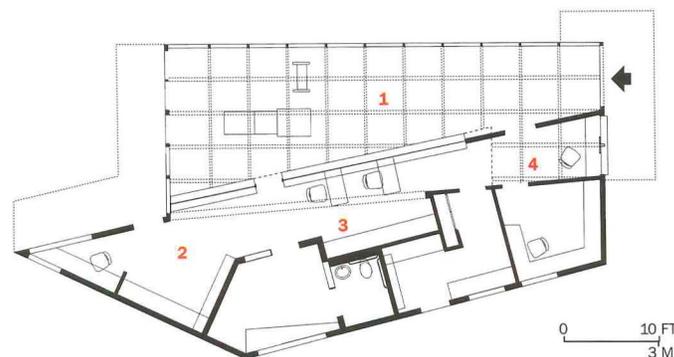
As the date neared for the opening of New York City's Museum of Jewish Heritage, acts of global terrorism convinced museum officials that security and ticketing should be kept outside the main building. Claire Weisz Architect + Mark Yoes, who had designed a tiny security booth nearby, were given six weeks to design and oversee construction of a small pavilion that would house these functions.

Stringent programmatic demands in a limited space made creating a satisfying design as daunting a prospect as beating the clock. The completed pavilion squeezes ticketing, metal detectors, a baggage check, offices, a staff lounge, and a restroom into 1,300 square feet. Two trapezoidal boxes pivot from the pavilion's east side. The northern box, aluminum-framed and triple-glazed with low-e glass, is a public atrium, where visitors enter and pass through the metal detectors. The southern box is steel-studded and sheathed in lead-

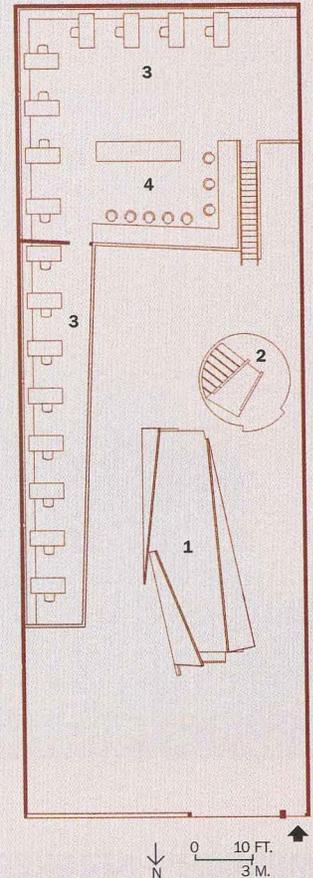
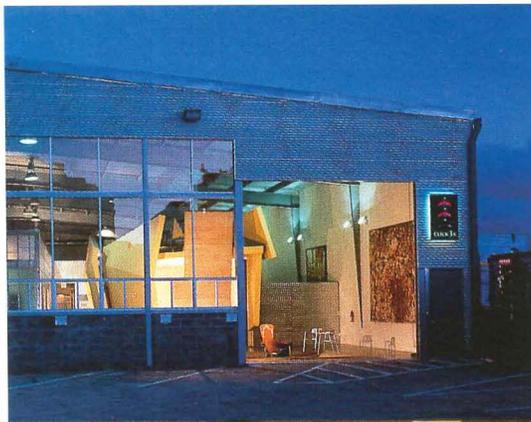
coated copper, hiding security-oriented spaces.

The architects wanted the small structure to be a memorable sight in Battery Park City, though the competition is stiff—the World Trade and World Financial Centers crowd the north, Lady Liberty controls the southern view, and Kevin Roche's compact yet massive museum stands a few yards away. Unlike its neighbors, the pavilion doesn't project a single image to impress the viewer. With so many faces, it is like a jewel imperfectly cut, its form changing as one circles around it. The absence of horizontal roof lines—every exterior face is a trapezoid—confuses perspective. Among buildings with more simple geometries, the pavilion emerges as a delightful visual puzzle. *D.S.M.*

Project: Visitors Center, Museum of Jewish Heritage, New York City
Owner: Museum of Jewish Heritage
Architect: Claire Weisz Architect + Mark Yoes



Behind the studio's industrial facade (right) are creative spaces enclosed in custom-made envelopes (below and bottom).



1. "Flame" rooms
2. Conference room
3. Animation
4. Production

EXPLODING OFFICES ANIMATE A CONVERTED WATER HEATER FACTORY

Many of the corrugated steel-clad industrial buildings of Bergamot Station in Santa Monica, California, have been adapted to less muscular uses. Forty-five art galleries have moved in, along with the Santa Monica Museum of Art, Pugh + Scarpa's architecture studio, and, most recently, the Click 3x animation studio, which occupies a 6,500-square-foot, double-height space that was formerly a water heater factory.

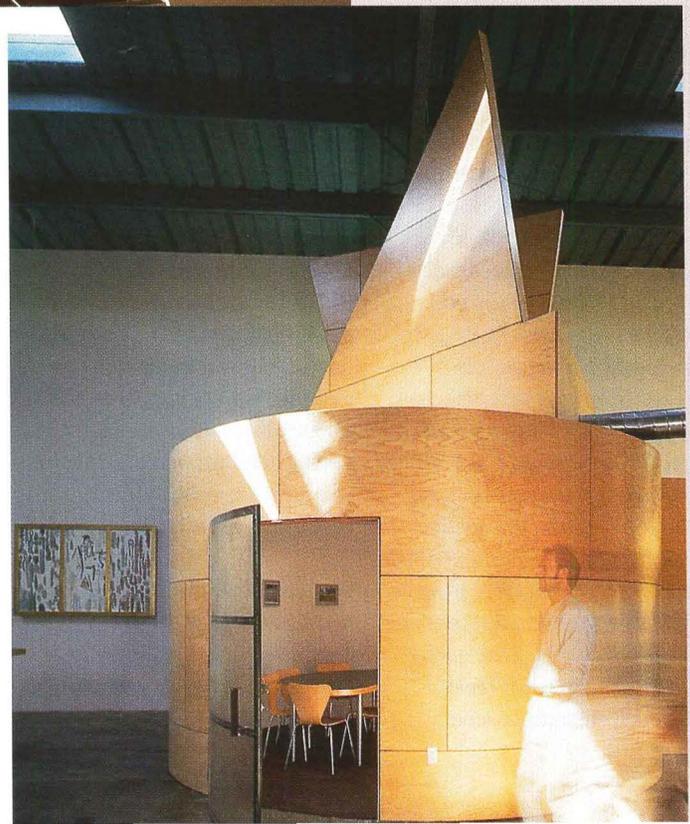
Pugh + Scarpa designed the studio and furnishings for Click 3x, inserting a 2,500-square-foot, open-plan mezzanine over a group of enclosed offices on the main

floor. Two partially enclosed, free-standing workspaces interrupt the rest of the main floor. One is a cylindrical steel-framed, birch-paneled conference room. The other houses two "flame" rooms, where animators work on footage with clients. The pavilion's destabilized forms, fabricated in yellow laminate and birch veneer, fix attention on these rooms, which are the heart of the studio's operations. *D.S.M.*

Project: Click 3x LA, Santa Monica, California

Owner: Click 3x

Architect: Pugh + Scarpa—Lawrence Scarpa, principal-in-charge





AN INLAND LIGHTHOUSE SERVES AS AN URBAN MARKER

Atlantic City, New Jersey, has a new lighthouse, though it is too far from shore to signal ships. Rising above a newly landscaped inland park, the ceremonial structure marks the main approach to the Boardwalk and the city's casinos for those exiting the expressway.

During the day, light passes through the 90-foot-high steel skeleton, recording its structure in

shadow on Teflon-coated sails. At night, the lantern beams brightly and color-filtered lights in the surrounding park are trained on the lighthouse.

An abstracted staircase within the structure is a tipping vortex that excites both fear and fantasy. Below, at the lighthouse's base, five concrete piers frame views of the city. *D.S.M.*

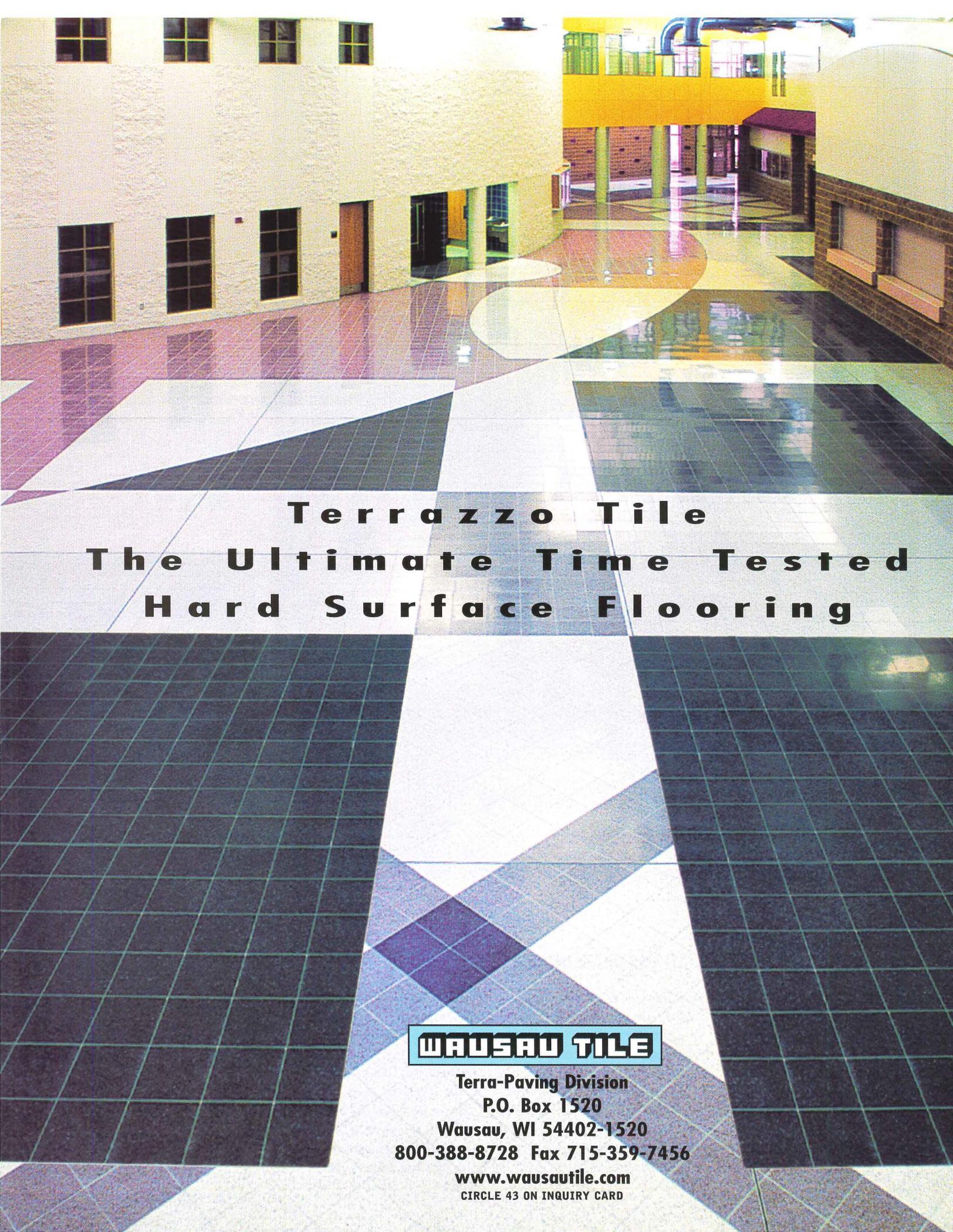
Project: *From the Lighthouse, Atlantic City, New Jersey*

Owner: *Casino Reinvestment Development Authority*

Architect: *Ford Farewell Mills and Gatsch, Architects—Michael Farewell, AIA, designer; Michael R. Schnoering, AIA, project manager; Nicholas P. Cusano, AIA, project architect*

Structural engineer: *Harrison-Hamnett, PC—John N. Harrison, PE*





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1

Woodside

Contemporary production housing is certainly not the norm in Bellevue, Tennessee, but the architect/developer makes it work.



2

Prairie Crossing

In this conservation-minded community, three architecture firms created vernacular houses appropriate to the Midwestern setting.



3

East Water Place

A townhouse development in Chicago strives to give urban dwellers a suburban lifestyle, with one- or two-car garages, lawns, and private entrances.



4

Harbor Town

Architects Looney, Ricks, Kiss designed close to 65 percent of the houses in Harbor Town, a planned neotraditional community in Memphis, Tennessee.

by Mitchell Rouda

In Japan there is a saying: “The nail that sticks up gets banged down.” These are words of great significance to the architects who design most of America’s new homes. Production houses, subdivision houses, spec houses, merchant-builder houses—no matter what they’re called, developer-built houses are a product, sold on the open market just like cars and shoes. And like other products, the design of speculative housing is a function of marketing. Design mistakes are perilous, and risk must always be managed.

Though no reliable or controlled statistical analysis has been done on how well innovative projects fare, ask any homebuilder, or any architect who specializes in providing plans to homebuilders, and you’ll be told that the bigger the chances taken in the design of a production house, the more likely it is to fail. “Buyers are sheep,” is what homebuilders say, and they may be right. But when new homes sell more slowly than the required pace (usually two to four units per month), or when neighboring projects outsell yours, word spreads among the public that “This is not a good deal,” and the project spirals downward. The homebuilding company may well lose control of the project to an even more conservative entity than their buyers: the bank.

Violent business forces provide good reason for architects and homebuilders to be so cautious. Years pass between the time when commercial homebuilders work with architects to plan and design housing projects and when they begin to actually sell houses and make money. Big dollars, usually belonging to someone other than the homebuilders, are staked on the speculation. Financial scrutiny and design review by both banks and equity investors are a given. Competition is always fierce, with hundreds of builders vying for the business. Some of them lose. The nail that sticks up hurts badly when it’s banged down.

With the goal being sales per month, not commodity and delight, it’s no wonder that so many homebuilders are “listening to the market,” a euphemism for copying the work of others that has already sold briskly, recently, and nearby. Worse yet, what the market tells them to copy isn’t always pretty. The market that builders pay so much attention to repeatedly reminds them of something few architects like to hear:

Mitchell Rouda, the former editor in chief of Builder, was chief operating officer for Trophy Homes, a merchant builder in Orem, Utah, and Las Vegas. A graduate of Carnegie-Mellon University’s School of Architecture, he is now president of HomeTouch, a company specializing in computer-assisted new-home sales.

Located in Yountville, California, Washington Park features "mature oaks and drives characteristic of historic country lanes," according to the sales brochures.



they planned to do inside those three bays. None of them had three cars. In each case at least one bay was to be used as a workshop, a hobby center, or a storage area for everything from out-of-season clothing to Christmas decorations. It was suggested to them that the third bay could be recessed behind one of the others so that only two of the gaping doors faced the street. "Oh no," was the resounding reply, "we are ready to move up to a three-car house." In other words, the three doors on the front of the house have become a status symbol. Sales facts are sales facts, and nails get banged down.

Still, substantial innovations and dramatic improvements to housing product happen daily. In fact, the whole idea of "new" is what drives the homebuilding business; the competition

low-dollars-per-square-foot and big backyards will almost always outsell creative and innovative design.

This is architecture?

Product? Dollars per square foot? Outsell? Listening to the market? As an architect, you either understand it or you don't, and either way it's still frightening. After all, what's this got to do with architecture?

Take, for example, garage doors. No one in the design profession particularly likes the way they look on the front of the house. But they are ubiquitous and buyers like them. In parts of the country where houses have no basements, the garage is used for storage. Twenty homebuyers in Las Vegas, all of whom demanded a three-car garage, were asked what

builders face from each other is minor compared to what they face from "used" homes. "Different" and "better" are the keys to a project's success. So it is the architects who possess the almost mystical potential to create the golden egg, the perfect blend of new and traditional, different and safe. Most homebuilders highly value their architects; the successful ones charge builders roughly \$20,000 per floor plan. And the cult of the architect is alive and well—one who has had a lot of recent "home runs" can now demand \$50,000 per plan.

In the last few years, there have been better than 1.5 million new homes built annually; and more than 80 percent of these were single-family detached (sfd). Of the 1.1 million sfd units built in 1997, developers sold about three-quarters to consumers. In other words, they were

GROWING UP AMONG SPEC HOUSES

When I was young, my parents used to drag me out on Sundays to the farthest reaches of Long Island, where my mother's sister had a brand new home—with a cathedral ceiling—purchased for 11,000. I hated that trip, not only because of the long car ride, but because the cousins at the other end were girls.

But one day the trip got interesting. We stopped off at the sales office of a builder on the way

Mitch Rouda at his cousin's tract home on Long Island in 1960.

and toured three model homes, each with royal names. They were called "The Windsor," "The Rockingham," and "The Devonshire," and the whole place had some kind of name like Castle of England Estates. I couldn't imagine how much money you would need to live there. (As an adult I realize that these were actually cheap houses.)

Each house had a private bath adjoining the master bedroom. All had family rooms—hang-out rooms just for kids and TVs. Those of us who lived in the older suburbs had never seen such things before.

I may have been too young to judge the brocades and wallpapers, but some of the decorating made a

lasting impression. I still remember that the kids' rooms had cartoon characters painted on every wall, and one even had a basketball hoop by the closet door. Figuring that those features were standard, I decided we should move in.

We never did, but each time we made that trip I insisted on stopping at the model homes of one builder or another—an easy task since in those days they littered the road at every exit of the Long Island Expressway. Soon I was collecting brochures, and not long after that I began to draw my own floor plans. And thus, at the age of nine, it became an established fact in my family that I would grow up to be an architect.

Years later, during architecture school, I was surprised to discover that any architect who was worth anything would never dream of designing a "tract" home. The true architects were those who struggled and limited themselves to custom homes. Those who made money on something as mundane as production housing were considered by fellow students to be at the bottom of the professional heap.

Twenty years of business experience has crystallized my frustration at this stereotype and at the scope of work to which the profession, aided by the universities and journals that support it, has limited itself. *M.R.*



designed up-front for sale on the open market. The on-owner's-lot segment, for the most part, used stock plans, purchased from plan books or magazines. Of the tiny fraction that is left, another tiny fraction, the homes of those who can afford it, are true custom-designed homes. These are what most architects think of when they imagine designing a house: houses with music rooms and copper roofs and ocean views.

These statistics make it fairly obvious that the nearly one million developer-built new homes are not a freaky sideshow to the making of architecture but one of its main events. What other building type so profoundly affects the character of our landscape? These homes define the patterns of our suburban and exurban growth, create permanent and rigid social structures, and set stylistic tones that, for most people, are their most intimate experience with architecture.

Among these homes there are what we call "good" ones and "bad" ones—homes that are environmentally responsible and those that waste materials, energy, and land; homes that are proportionate and balanced and those that are jumbled and gaudy; homes that are pretty and

DEVELOPER-BUILT HOMES ARE NOT A FREAKY SIDESHOW TO THE MAKING OF ARCHITECTURE BUT ONE OF ITS MAIN EVENTS.

those that are not. There are some spec houses in the bunch that are truly well designed, some that are disastrous, and many in between. Yet most architects look askance at the whole body of work, at the entire spec house field. In doing so, they abdicate participation in shaping the largest single piece of the built environment—an environment that they otherwise profess to be involved in improving. (Add strip shopping centers to this stunning abdication. The profession's best talents won't get involved with them either.)

Houses as products

The first time I heard a house described as a "product" was the day I left the world of architects and entered the world of builders. I winced. But I have since found out how market-oriented developer-built housing is. Just like on the supermarket shelf, the package, often much more than the taste of what's inside, influences the willingness of a shopper to select the product. In Salt Lake City, for example, a local dairy recently redesigned the containers for its milk products. The new package, called a "Chug," is a plastic bottle similar to soft-drink containers. The result has been a 300 percent increase in sales of chocolate milk. These same dynamics affect housing too.

It is typically the vice president of sales and marketing at a homebuilding company who is the primary client contact for the architect. That vice president, if he or she is any good, will tote into initial programming meetings stacks of data based on recent sales, consumer research, and interview results with potential customers. This research might demand anything from bigger closets to more chartreuse and less red. During these meetings, the builders and the architect also typically review competitive floor plans, organized in order according to sales rate—the most successful first and the least successful last—looking for patterns and lessons. The idea is that

the architect will follow these patterns carefully in crafting new plans.

The results of this approach are a little unpredictable. For example, it's doubtful that many Americans think much from day to day about the view through their house from the front door. Yet houses with a great entry view sell faster, perhaps because good first impressions help build buyer preference. And so "dramatic entry impact" is a major programmatic requirement of most builder housing. So are "memory points"—niches, specialty windows, a cute corner desk, a cartoon character on the bedroom wall, anything that sticks in the buyer's mind. Most home-shoppers will walk through five to 15 model homes on a typical Sunday afternoon. What they remember from that mass of product offerings matters.

So when an architect says that he or she has a new idea, the response will always be "Great, show me some market research to prove it will work." Of course, whatever innovation an architect might come up with is more likely to take hold if it can be explained very quickly to the home-shopper during a short conversation with the sales agent. The

shopper must also respond to that new idea by choosing the home above all others, as one might choose one cereal box over another from a crowded supermarket shelf. And that new idea must be reasonably priced. Most builder clients want nothing more than that brave new idea that can lead to product differentiation and broad market acceptance.

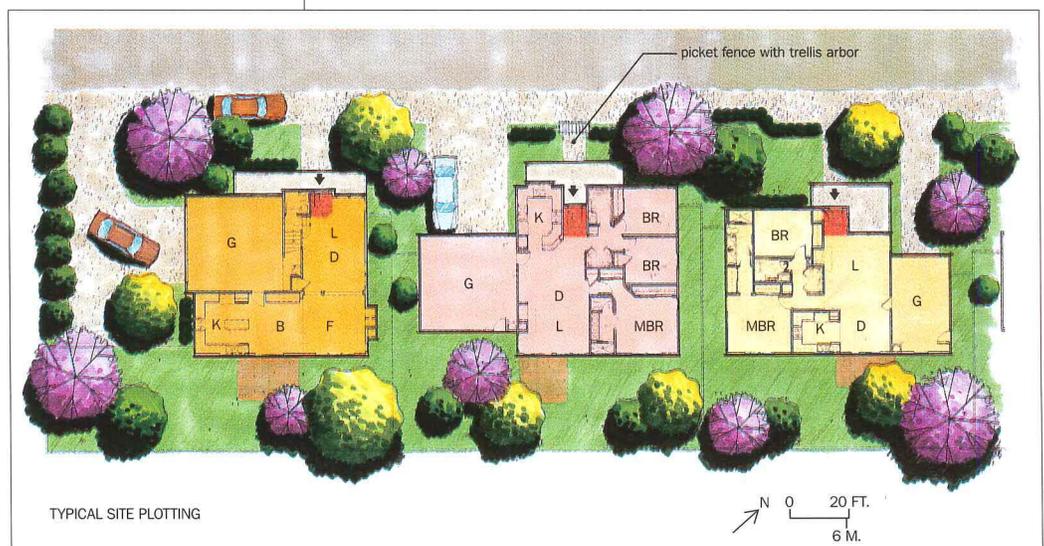
It's not fair, you think. The market doesn't always know what's best. Why must nails get banged down?

It might be easier for architects if they stay out of this game altogether. But if they do, then housing as a whole won't improve. Unless architects embrace the business realities of the homebuilding business and take on the challenge of using design to increase sales, the people who manage the large and risk-prone investment in homebuilding won't allow architects to influence the look and feel of the "product."

Just like other architects

Though most are ignored by the mainstream profession, there are architects who pay the price to play this game—and therefore influence homebuilders' (continued on page 176)

Picket fences, trellises, arbors, and other suburban features are standard fare at Washington Park.



1 Woodside Bellevue, Tennessee

PUTTING CONTEMPORARY HOMES IN THE MIDST OF A STRONGLY TRADITIONAL SUBURBAN AREA IS A GAMBLE.

by Christine Kreyling

Project: Woodside, Bellevue, Tennessee

Architect: Artech Inc.—Moshen Malakouti, AIA, partner-in-charge; John Abernathy, AIA, Gaetano Fabris, Ni Li, Don Burke, design team; Mark Blumberg, models

Engineers: Steve Bridges (surveyor); Global Electric (electrical)

Consultants: Tony Ashburn (mechanical)

Contractor: Artech Inc.—Karl Dupre, project manager; Alan Ghavami, Jim Remagen, superintendents

Land development cost: \$375,000

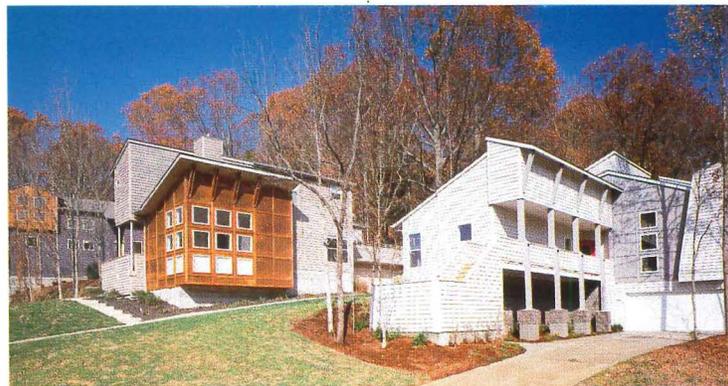
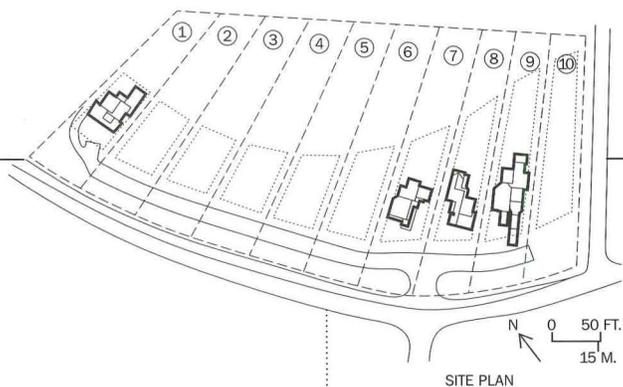
Cost per square foot: \$60–\$70

Bellevue, Tennessee, 10 miles southwest of Nashville, is a collection of subdivisions with names like Willow Pointe, Magnolia Place, Devon Close, and Aspen Heights. The houses range from 1960s split-levels with brick veneer, shutters, and the occasional vinyl Tuscan column, to the more recent generic cluster homes, with pseudo-Palladian windows and coach lamps suspended over the garage doors. In short, there is nothing architecturally striking in Bellevue—except Woodside.

This development-in-progress will ultimately include 10 houses tucked into the side of a wooded slope along a cul-de-sac. But the boldly contemporary lines of the three houses that have already been built make it clear that Woodside is not business as usual in Bellevue.

“We wanted to do something a little different, but not so different as to scare people off. After all, this is speculative building,” says designer and developer Moshen Malakouti, AIA. The exteriors of the three basic models contrast cypress lap siding with stained board and batten. Grids of square windows signal the main living spaces, while large eaves brackets translate the

Christine Kreyling is a freelance writer and the architecture and design critic for the Nashville Scene.



vocabulary of the bungalow to a modern idiom. The foundation blocks are laid in courses of three rough to one smooth, adding textural interest. “The rustic setting justifies the raw look of the materials,” Malakouti says. Some of the houses have towers to take advantage of the wooded views, and all models have a porch or a sundeck.

Malakouti’s company, Artech, was founded in 1991 to offer residential clients a design-build option. “Usually the contractor sees finished plans, and then he has to negotiate back and forth between the architect and the client. Serving as architect and contractor cuts down on the design and build time,” he

says. Artech’s seven-person staff includes full-time project managers and field supervisors who oversee a rotating crew of subcontractors.

Most of Artech’s work is the design and construction of traditional homes situated in Nashville’s gated communities, many of which have covenants that do not permit styles more recent than the 19th century. While Malakouti is comfortable with traditional elements, he prefers to go modern. His intention at Woodside is to make contemporary design available in an area where anything other than Colonials and Cape Cods must be custom-designed. The homes in the subdivision range from 2,500 to 3,000



Not the average Tennessee subdivision, Woodside has 10 lots and four basic home designs, which can be customized. Leaving the existing trees made construction more difficult and more costly. "Excavation subcontractors didn't like it," the architect says, but it helped give the houses, which are on narrow lots, greater privacy and a more established feel.



square feet and cost \$250,000 to \$275,000, which is competitive with others in the area.

Securing financial backing for the project, Artech's first as a developer, was not easy. "I've worked in Nashville, either as a builder or designer, for 17 years," Malakouti says. "I knew that some buyers would appreciate a more modern approach. And I wanted to be the first one in the area to reach these buyers." But being the first has disadvantages. Bankers were reluctant to gamble on Malakouti's niche market: young professionals willing to make the break from traditional suburban boxes. The company was required to submit models of each of the houses as well as comparative price studies.

Artech paid careful attention to the sloping topography, retaining view corridors to the surrounding hills. Knowing its buyers would be more ecologically minded than most, the company also tiptoed around existing trees during construction. Narrow lots (50 to 60 feet) necessitated designs that create privacy. Window placements are carefully considered, as is siting and landscaping. The floor plans of the three existing houses include a living room/great room, a separate dining room, a kitchen with a breakfast area, three bedrooms, two-and-a-half baths, a two-car garage, and bonus space that can serve as

an office or study. Public spaces are delineated by a shift in floor or ceiling level rather than actual walls. High-traffic areas are in free-flowing spaces, not separate hallways.

Artech is willing to customize the interiors to fit the needs of its buyers—an increasingly common practice in high-end developments. Jack and Rhonda Smart, Nashville natives who purchased one of the three houses already in place, worked with Malakouti to modify the basic floor plan to accommodate the needs of their children. The garage became a playroom for the kids, the bedrooms were expanded, and the bonus space upstairs was used for a homework area. "We got as close to a custom design as we could afford," Rhonda Smart says.

Another couple who bought one of Malakouti's homes, Ralph and Penny Mastrangelo, call themselves "determined modernists." They moved to the area three years ago and spent many of their weekends searching for a contemporary house. "We'd just about given up," Penny Mastrangelo remembers. "Then we found Woodside." ■

Sources

Framing lumber: Boise Cascade

Roofing: Tamko

Vinyl windows: Alenco

Skylights: Velux

Doors: Prendor

Carpeting: Karastan-Plesseau



2 Prairie Crossing Grayslake, Illinois

THREE CHICAGO ARCHITECTS TEAM UP TO CREATE SPECULATIVE HOUSING THAT PRESERVES A SENSE OF PLACE ON THE PRAIRIE

by William Weathersby Jr.

Project: *Prairie Crossing, Grayslake, Illinois*

Client: *Prairie Holdings Corp.*

Architects: *Tigerman McCurry Architects—Margaret McCurry, FAIA, partner-in-charge; Nagle Hartray Danker Kagan McKay Architects Planners—Dirk Danker, AIA, principal-in-charge, James Nagle, FAIA, design principal, William Duke, AIA, project architect; Frederick Phillips & Associates—Rick Phillips, FAIA, design principal*

Engineers: *P&D Technologies (civil)*

Consultants: *William Johnson and Partners, The Lannert Group, Frank Edward Haas, Peter Lindsay Schaudt Landscape Architecture, The Natural Garden and Eco Logic (landscape architects/land planning); Applied Ecological Services (resource management/wetlands); John Callewaert (farm)*

Contractor: *Shaw Homes (1994–97); Sturbridge Construction Corp.*

Land development cost: *\$25 million*
Cost per square foot: *\$110–\$160*

Prairie Crossing, 40 miles north of Chicago, is a community with a mission. First priority is ecological stewardship of the 667 acres of wetlands, prairie, and farmland that make up the site. Preservation of the region's architectural vernacular is second.

The Prairie Crossing site was targeted for high-density development in the late '80s. After a series of court battles, a group of neighbors acquired the site, created a development firm called Prairie Holdings to manage it, and began to make plans for a neotraditional, conservation-oriented community.

Landscape historian Victoria Ranney, a neighbor who has taken a lead role in the project, says Prairie Crossing looks back to Frederick Law Olmsted's Riverside, a successful Chicago suburb built along the Des Plaines River. "We borrowed Olmsted's approach to a project," she says, "which was to figure out the central character of the place, then have all the design details contribute to that main theme."

Three Chicago-area architecture firms—Tigerman McCurry, Nagle Hartray Danker Kagan McKay Architects Planners, and Frederick Phillips & Associates—were gathered to see that these two missions were

William Weathersby Jr., is a freelance writer specializing in architecture. He is based in Westport, Connecticut.

accomplished. They created a dozen complementary house types that seem as appropriate to the site as the fields of grasses and wildflowers.

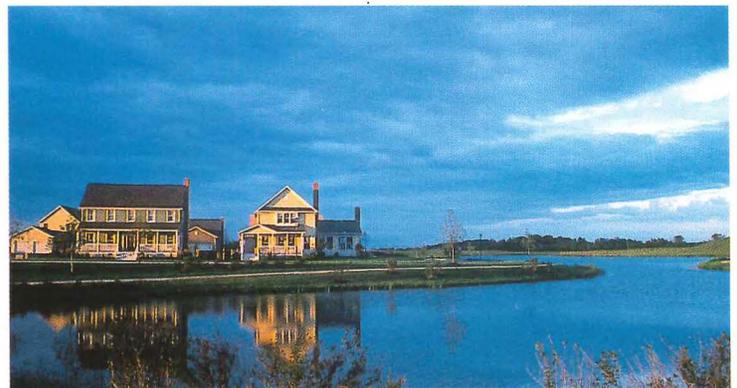
There are only 317 home sites on the property. Nearly 60 percent of the total acreage was designated as open space, including a 22-acre lake, 160 acres of prairie, and walking trails. An organic farm wraps the site on three sides and a four-stage natural filtration system handles storm water runoff.

Housing densities vary within the community. The "prairie" sites emulate homesteads and overlook the lake or face out toward the open land, while the "village" sites are small lots near the village green. The latter is one of the most successful parts of the development; the close proximity of the houses creates the ambience of a small town. Garages are at the rear of the houses and front on alleys. That, along with sidewalks and picket

fences, allows the streetscape to evoke a historic Midwestern town.

The houses in Prairie Crossing recall the pared-down style of mid-1800s farmhouses. Clapboard siding, broad front porches, steep gables, and great rooms are typical. The houses aim to reinterpret, rather than replicate, the past. "The houses are authentic in terms of vernacular details, while adapting elements of regional architecture to the way we live now," says principal architect James Nagle, FAIA, who devised the concept behind the initial four houses. Concessions to contemporary lifestyles include two-car garages, high ceilings, and high-efficiency windows. Square footages range from 1,150 to 3,400.

The three architecture firms met as a group with the developer for design reviews and each developed four to six final house prototypes. The houses are unified by standardized details, such as





SITE PLAN

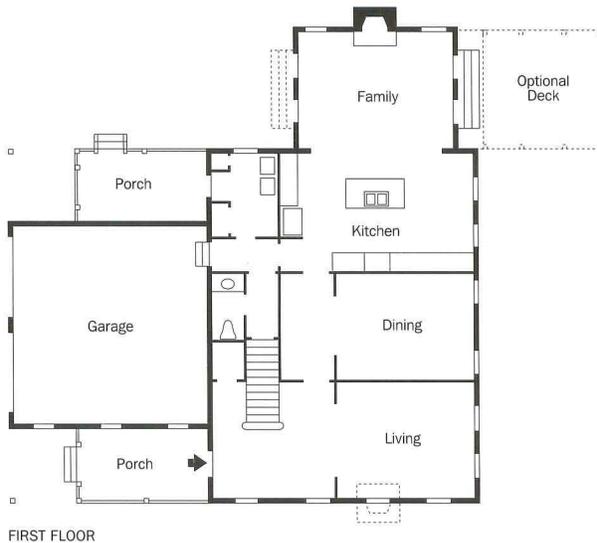
Set on 660 acres of prairie, farmland, and wetlands, Prairie Crossing was slated for high-density development until neighbors purchased the site. It is divided into four categories of housing parcels: "village," "prairie," "field," and

"meadow." Lot sizes vary, as do the square footage and price of houses. The three architecture firms involved in the project were guided by an experienced developer, who introduced marketing considerations to the design process.



The Joice: 3,000 square feet. Designed by Tigerman McCurry Architects.

Although three different firms were involved in designing the houses, using similar details gave all the houses a unified appearance.



FIRST FLOOR

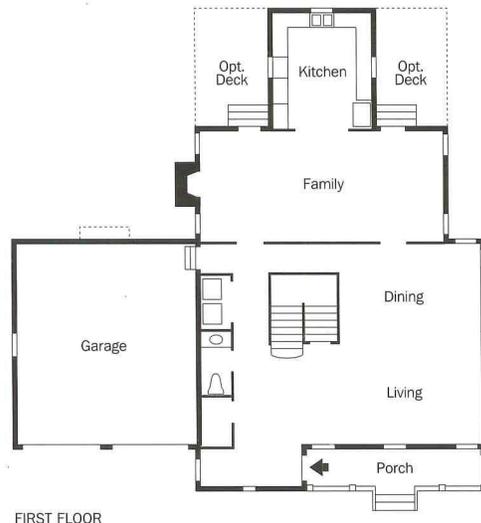


SECOND FLOOR



The Ogilvie: 2,200 square feet. Designed by Tigerman McCurry Architects.

Broad front porches, gables, and clapboard siding were included on all the homes to create a mid-1800s Midwestern look.



FIRST FLOOR



SECOND FLOOR



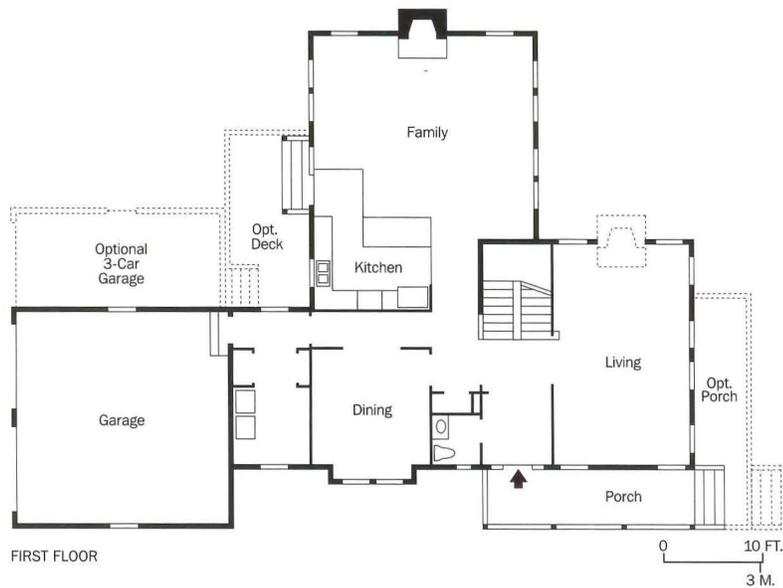
The Ingalls: 1,140 square feet. Designed by Nagle Hartray Danker Kagan McKay Architects Planners.

Prairie Crossing has guidelines for the colors houses can be painted and how they can be customized.



The Gage: 2,850 square feet. Designed by Nagle Hartray Danker Kagan McKay Architects Planners.

Jim Nagle helped define the direction the houses would take at **Prairie Crossing** when he designed the first series of prototypes.



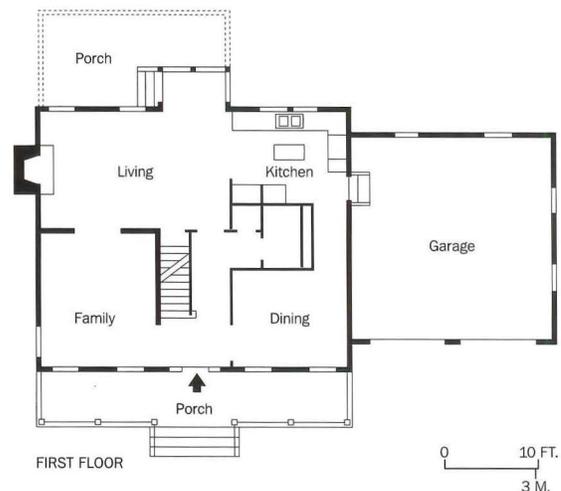
The Jensen: 1,600 square feet (above).
The Lincoln: 2,150 square feet (right).

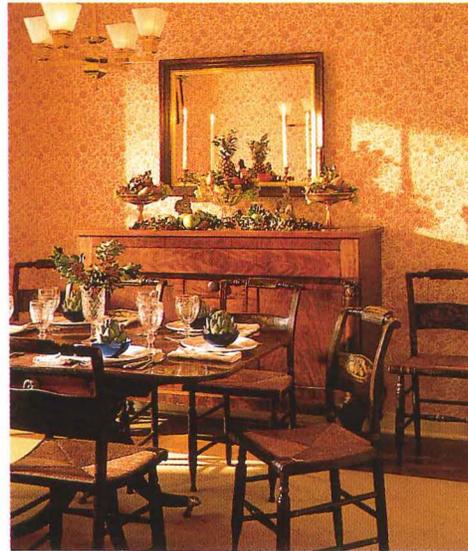


Both designed by Frederick Phillips & Associates.

While **Tigerman McCurry** and **Nagle Hartray** had some experience in designing single-family production housing, this was **Rick Phillips's** first major project. He was inspired not

only by **Midwestern farmhouses** but also by **Shaker and Colonial New England styles**. All of the architects incorporated plenty of windows to take advantage of views.

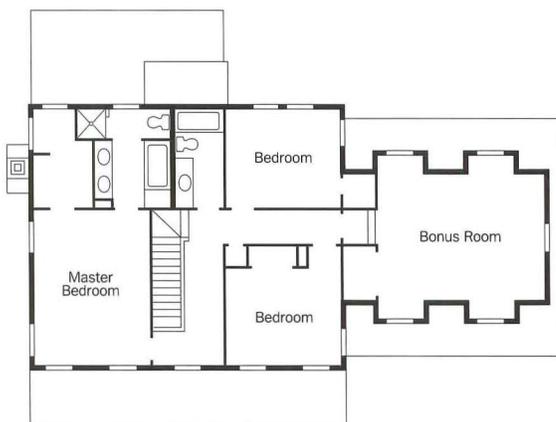




The interiors of model homes are carefully designed—often by merchandisers—to create “memory points,” features that prospective buyers will remember after tromping through dozens of other model homes.



SECOND FLOOR



SECOND FLOOR

window muntins, interior trim, and eaves profiles. Some diverge from the farmhouse ethos to embrace more of a Craftsman style, while others include elements from Colonial New England. Rick Phillips, FAIA, reinterpreted the three-quarter houses of Nantucket. “The simple New England box was more efficient than the Midwestern farmhouse,” he says. Margaret McCurry, FAIA, was inspired by a variety of historic Midwestern residential forms, from the Sears, Roebuck & Co. four-square to the farmhouses that stood near stagecoach trails.

Shaw Homes, a homebuilder and developer, brought budgetary rigor and an emphasis on marketability to the design process. Balancing these demands with architecture was difficult for the architects. “The spec housing industry is like the automobile industry,” Phillips says. “What sells is the laundry list of features. If you can design a house that incorporates everything on the list, no matter how it looks, it will sell.”

McCurry agrees: “I encountered philosophies of development that never come up when I design custom houses. There were funny little standards that didn’t appear in the design guidelines but would pop up in meetings. The developer would say things like, ‘You can’t pass the master bedroom on the way to the other bedrooms.’”

A primary mandate was versatile floor plans that could accommodate additional bedrooms, screened porches, and open-plan kitchens. Most of the houses have two optional facade designs.

Reacting to the demands of the market meant occasional feats of architecture. For example, prospective buyers were asking for smaller, less expensive houses with amenities. McCurry designed a four-bedroom house under 2,000 square feet, including a two-car garage. Incorporating one of the garage doors into the facade of the four-square plan kept the house from being overwhelmed by garage doors. “This is a typical way in which we tried to diminish the effect of a developer requirement,” she says.

Three strong-minded architects collaborating with a developer brought its own challenges. “We weren’t satisfied, and were often disgusted, with what sells,” Phillips says. “Ultimately, there was a good dynamic between the architects and the developer. We were able to stretch the developer’s way of thinking, and vice versa.” ■

Sources

Roofing: Owens Corning

Locksets: Schlage

Paints and stains: Sherwin-Williams

Entry doors: Pease

Interior doors: Weyerhaeuser

Atrium doors: Crestline

3 East Water Place Chicago

NEW TOWNHOUSES GIVE URBAN DWELLERS SUCH SUBURBAN LUXURIES AS GARAGES AND YARDS—ALL WITHIN WALKING DISTANCE OF DOWNTOWN.

by Craig Kellogg

Project: East Water Place, Chicago

Owner: Ogden Partners

Architect: Booth Hansen Associates—
Laurence Booth, FAIA, design principal; William Ketcham, AIA, project manager; Matthew Petrie, project architect; Kerl LaJeune, Susan Lanyi, design team

Engineers: Robert Miller Associates
(structural)

Consultants: Wolff/Clements Associates
(landscape)

Contractor: W. B. Olson Inc.

Cost per square foot: \$80–\$85

"The suburban lifestyle is okay. But you don't have to live it in the suburbs," says Laurence Booth, FAIA, who served as architect and as part of the development team for East Water Place, a speculative townhouse project in Chicago. Urban townhouses, despite their party walls and limited frontage, offer owners such suburban luxuries as a private entrance, a small yard all to themselves, and, that hallmark of life outside city-center, an attached garage.

Booth knows about this approach to urban living firsthand. He raised his own family in a historic townhouse in Chicago's Lincoln Park. "It's the perfect compromise between urban and suburban," he says. He now resides in one of the East Water Place units.

The 2.2 acres of land on which the project sits are owned by the Chicago Dock and Canal Trust, established in 1857 by Chicago's first mayor. The site was leased from the trust for 99 years; each homeowner has a lease agreement with Chicago Dock. The cost of the leases now ranges from \$500 to \$650 a month and will be adjusted annually according to the Consumer Price Index. Because land costs are not included in the price of the townhouses, East Water Place units

Craig Kellogg is a freelance writer based in New York City.

seem inexpensive. Prices range from \$318,000 to \$450,000, depending on the degree of customization. Square footage is from 2,175 to 3,450.

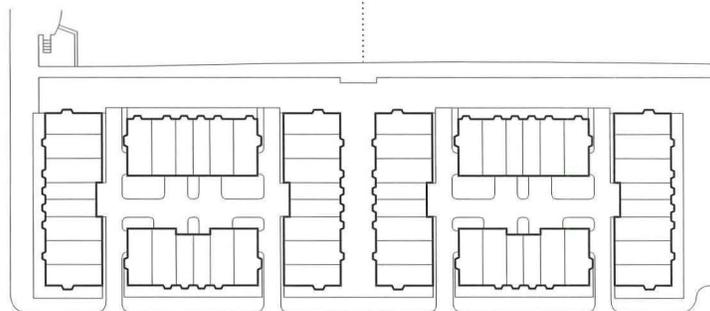
Bounded to the north by the Ogden Slip waterway, where the Chicago River joins Lake Michigan, and to the east by Lake Shore Drive, the townhouses are in eight buildings arranged along the southern edge of the slip. The land is part of a bigger tract that was slated for high-rise housing and commercial development during the 1980s. That project fell victim to a collapsing real estate market and was never built.

Booth Hansen Associates worked with the trust to plan the townhouses in the early 1990s. Construction began in the fall of 1996. To limit financial risk, only eight of the three-story units were built initially. When these were offered for sale, they proved so popular that construction continued unabated until all 56 units were

completed 18 months later.

Through its experience designing and building many townhouse projects, as well as single-family production and custom homes, Booth Hansen has devised ways to build efficiently. At East Water Place the firm used prefabricated painted-steel window bay modules, which are bolted to exterior walls to save time during the framing process. Party walls have a two-inch cement-gypsum board that's ordinarily used to line elevator shafts. "Soundproofing is very important because it provides the kind of privacy that comes with freestanding suburban houses," Booth says.

Experience has also familiarized the architects with the interior configurations people want. "We know everybody lives around the kitchen," Booth says. So kitchens are spacious. And unlike some designers who don't leave an appropriate space for the bed or the couch, Booth Hansen pays



SITE PLAN



close attention to where furniture can be placed. Because many of the townhouses were sold before construction began, owners could customize their homes' interiors. "What's nice about townhouses is there are a lot of ways you can fiddle with the configuration," Booth says, since partition walls are rarely load-bearing.

Every unit at East Water Place has at least a one-car garage, and most accommodate two cars. In both cases, the garage occupies about 40 percent of the ground-floor area. The interiors are arranged so that formal entry doors are at one end of the building and garage doors at the other. "Chicago is an automobile city," Booth says. "People are using their cars all the time. Separating the doors, or directing the garage doors toward an auto court, minimizes their architectural impact, making the front of the project neater and providing a more attractive street-scape."

In addition to the garage, the ground floor includes a small reception hall, a laundry space, a guest bathroom, and a guest bedroom, which many owners use as a home office or gym. The family living areas are on the next level and bedrooms are on the top floor. Winding stairs save space in the tall, narrow units. To take advantage of the views of the Chicago skyline and the water,

each unit has a penthouse. These small rooms often serve as entertainment spaces; several owners have run plumbing up to them and installed bar sinks.

Varying the heights of the ceilings gives each floor a different sense of purpose. The ground floor and the penthouse have eight-foot ceilings, the main floor has 11-foot ceilings, and the top floor has 10-foot ceilings. "Conventional wisdom is that an eight-foot ceiling is standard and nine feet is special, but a ceiling of 11 feet is really great," says Booth. "Tall ceilings allow very tall windows so you can see from the ground to the sky."

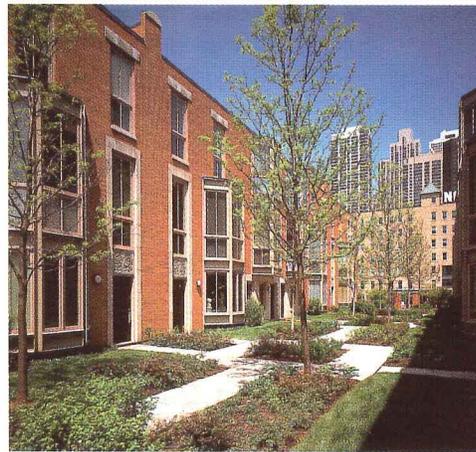
Serving as architect and developer and then moving into the complex gave Booth a special commitment to East Water Place. "People have asked, 'Don't you feel this was a conflict of interest?' I don't think so. It's just a matter of treating your money like you would treat other people's money," he says. Having the architect become part of the economic equation is not a bad thing. "I sat at the table, and I had a vote. But I also took a greater risk. And in this case, it paid off." ■

Sources

Masonry: *Endicott Clay Products*

Wood windows: *EVCO*

Concrete reliefs: *MaTerre International*



High-rise housing and commercial projects were slated for the site of East Water Place in the 1980s, but plans were scrapped when the economy bottomed out. Since East Water Place has proven so successful, one of the high-rises has begun construction nearby.



4 Harbor Town Memphis, Tennessee

A NEOTRADITIONAL COMMUNITY, JUST A BRIDGE-SPAN AWAY FROM DOWNTOWN MEMPHIS, IS A MARRIAGE OF ARCHITECTURE AND LAND PLANNING.

by Wendy Moonan

Project: Harbor Town, Memphis, Tennessee

Architect: Looney Ricks Kiss Architects, Inc.—J. Carson Looney, FAIA, principal-in-charge; Brad Shapiro, AIA, Mark Jones, AIA, project architects

Consultants: Barbara Earhardt (interior design); Charles N. Sandifer & Associates (landscape); RTKL Baltimore (land planner); Island Properties Associates (developer)

Land development cost: \$15 million

Cost per square foot: \$70–\$110

J. Carson Looney, FAIA, possesses the almost mystical ability to create speculative houses that are both well-designed and fast sellers. Looney heads up the residential sector of Memphis, Tennessee-based Looney Ricks Kiss Architects, which has a staff of 140, including 35 licensed architects. The firm has greatly influenced major residential developments throughout the Southeast, as well as in Texas and Rhode Island, by designing houses or by drafting covenants and design plans to guide local builders. The firm also collaborated with several different builders at Disney's Celebration in Florida.

Looney is one of the second generation of New Urbanists, neo-traditional city planners and architects who believe in neighborhoods designed for small-town social interactions and a pedestrian-oriented street life. His firm designed about 65 percent of the speculative housing, including single-family and townhouses, in Harbor Town, a 135-acre community in Memphis. With its neat wooden houses, small lots, sidewalks, and curving streets, Harbor Town can look like a set from some idealized television show.

Located on an island in the

Wendy Moonan is the architecture editor at House & Garden and a frequent contributor to ARCHITECTURAL RECORD.

Mississippi River, just a bridge-span away from downtown Memphis, Harbor Town was a pristine wilderness area until development began in December 1989. The homes were the first single-family detached houses built in Memphis in more than a century.

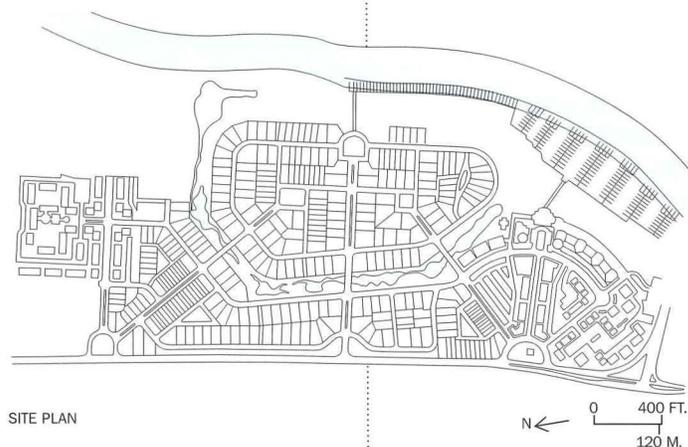
The developer, Henry Turley Jr., wanted to create a community that was dense but not urban, and with small streets to encourage intermingling. "I wanted to do something new, to add a different element to the city," he says. Turley also wanted something that reminded him of the community he grew up in.

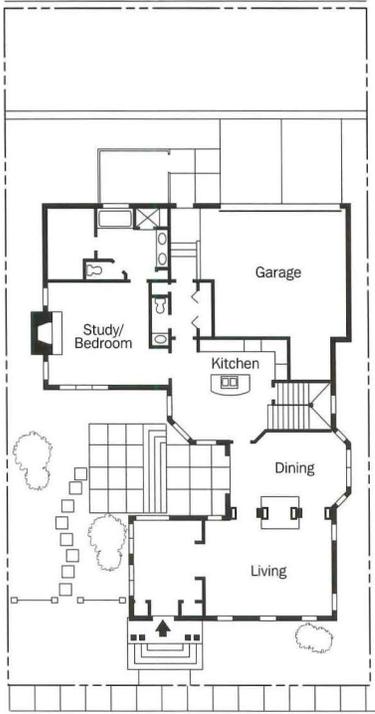
Harbor Town is home to about 2,000 people of varied household types and income levels, from single professionals to young families to empty nesters. Ultimately the town will include a town square where residents can shop. The grocery store is already completed.

Looney developed Harbor Town's design guidelines, which help create consensus among builders, architects, and homebuyers. The guidelines respond to the climate, environment, history, and culture of the area. He also pioneered several house designs for small lots.

"Harbor Town is the first job where we were able to totally integrate land planning and architecture," he says. "That allowed us to test new housing types." Houses range tremendously in price—from \$150,000 to \$750,000. The high-end homes, on the western side of the island, offer spectacular views of the Mississippi, while the lower-priced houses are more like cottages.

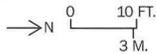
All of these designs were carefully calibrated to meet the demands of Harbor Town's target markets. "In spec housing, the worst thing that can occur, other





SECOND FLOOR

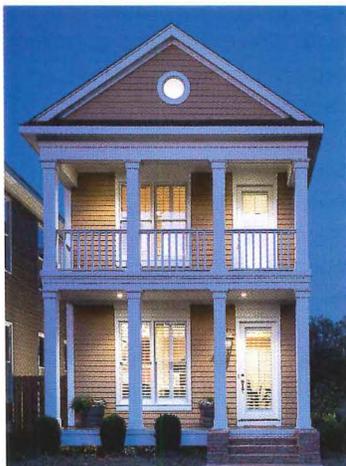
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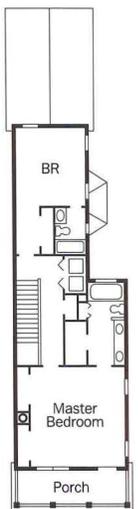
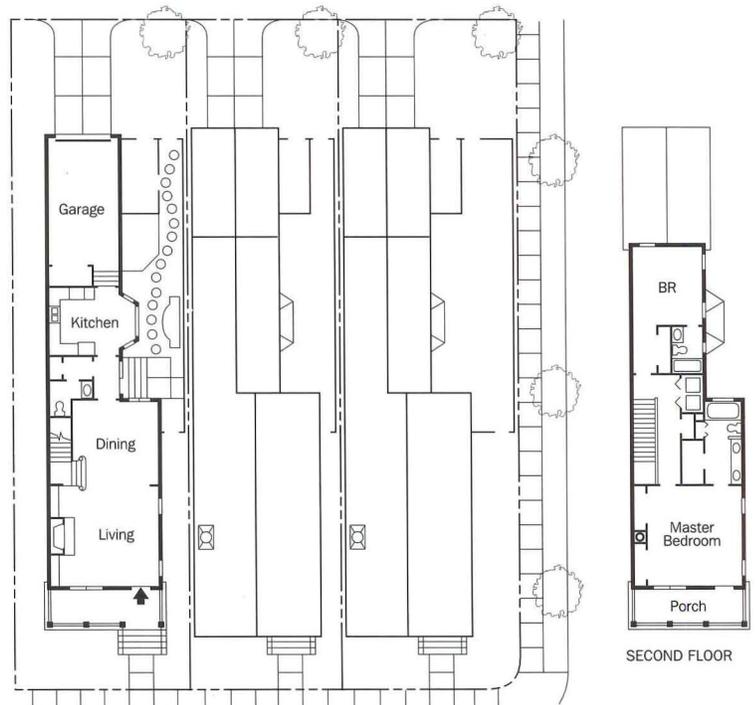
Uhlhorn Vesta Home: *Featured in a Memphis homes tour, this 3,000-square-foot house is on a narrow lot adjacent to one of Harbor Town's community parks.*



Harbor Bend Rowhouses: *These single-family houses were built at a density of seven units per acre.*

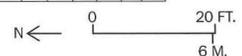


Compact, low-maintenance homes like these are ideal for first-time buyers, young professionals, and empty-nesters. They range in size from 2,400 to 3,000 square feet. The connecting side porch extends living space to the outdoors.



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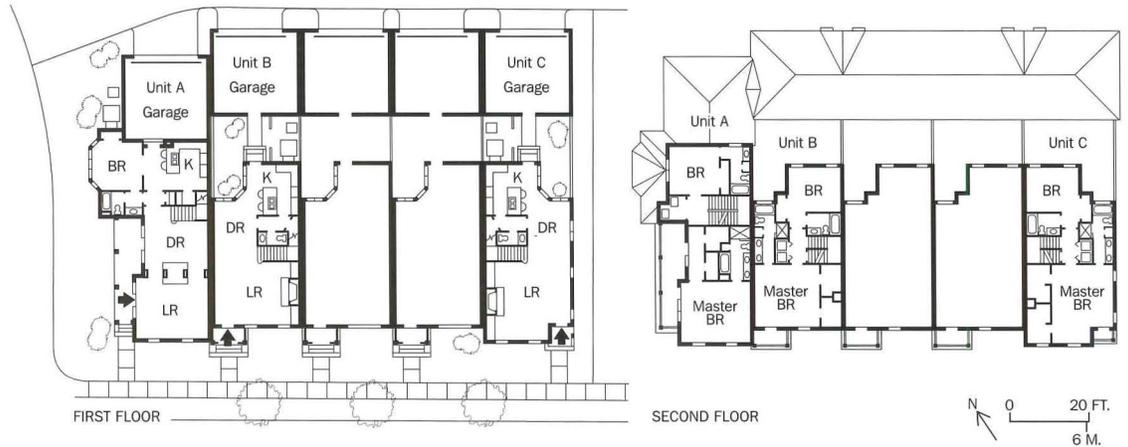
FIRST FLOOR





Harbor View Townhomes: *The Charleston contains five units in a 1,949-square-foot building.*

Harbor Town includes many different housing types—from apartments to single-family homes. These townhouses are in a single building, intended to look more like an old mansion than new development.



than bad design, is no sales," he says. To make sure this doesn't happen, Looney works closely with the firm's research division. He talks to real estate agents and pays attention to trends emerging from the custom market.

"Knowing the market and meeting the needs of that market is much different than marketing," Looney says. "People don't want vaulted ceilings, they want liveability. They want a house that solves

their problems, like where to put wet boots or where to store all the canned goods, not just arched doors."

He's found that most people in the Southeast want a house that is an interpretation of one of the classical American architectural styles from the late 1700s to the mid-1800s, Georgian or Federal. His efforts go into overall design, instead of 56 pages of molding details. "You try to get as close as

you can to the historical style, and you make sure the builders don't freelance on you," he says.

Balancing quality, square footage, and price is essential. "If you invest in a few good interior surfaces, you can leave out the fancy moldings and trims," Looney says. He typically uses wide-plank heart-pine floors instead of the customary 3½-inch-wide second-grade oak. Tall ceilings and doors also offer perceived value.

The approach may seem formulaic to those who think of architecture as art. Looney is ready with a defense. "We build communities, not objects. This isn't art, these are people. When land planning and houses come together, the whole becomes a work of art."

At the same time, he also sees many merchant-builder houses designed to please the market instead of aspiring to good design.

A typical streetscape in Harbor Town, where development emphasizes neighborliness.

"The bad ones, and they are the majority, are either overblown and bombastic or they are cookie cutters with basically no aesthetic value," Looney notes. "They add nothing to the streetscape or to the community."

Homebuyers often do not have the time or the budget to design something custom. "I think of spec houses as a convenience and a service. Anyway, custom doesn't always mean the highest level of design. Dollars and time have nothing to do with design awareness or taste." Speculative housing, Looney adds, is "just another level of choice." ■

Sources

Framing wood: *Trus Joist MacMillan, Weyerhaeuser*

Wood siding: *Mesquite*

Roof shingles: *GAF Building Materials Corp.*

Wood windows: *Sierra Pacific*

Exterior patio doors: *Weathershield*

Locksets: *Kwikset*

Paints and stains: *Sherwin-Williams*



Metal Flashing on Low-Slope Roofs

IT'S NOT ALWAYS EASY TO UNDERSTAND FLASHING SYSTEM DETAILS, BUT DESIGNING THEM PROPERLY IS ONE OF THE SECRETS TO A WATERTIGHT ROOF.

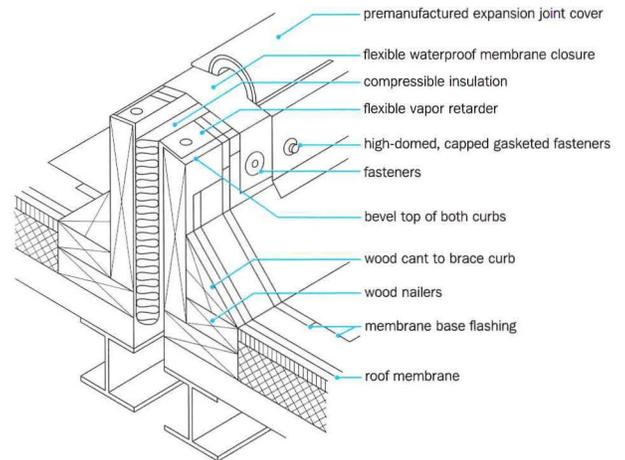
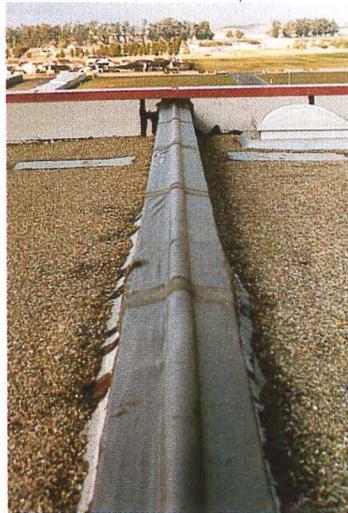
by Barbara A. Nadel, AIA

Flashings are the glue that holds the roof of a building together,” says Patrick C. Rehse, FAIA, of Architectural Resources Team in Phoenix. They are as important to the performance of a low-slope roof as the membrane selected, the installation method used, and the quality of the craftsmanship. But too often flashings fail—not because of the materials themselves but because of the way the systems are designed.

The flashing system serves a number of purposes on the roof. It seals the roof membrane edges at walls, vents, curbs, drains, gravel stops, scuppers, headers, and penetrations. It allows for movement at expansion joints and other places where the roofing material is interrupted or terminated, while sealing out water. It also covers and protects the edges of the membrane at seams and penetrations, and can be used to conduct water from the roof through scuppers.

The material used for flashing depends chiefly on what the base membrane is made of. While there are many types of low-slope roofing, they can be roughly divided into five categories: single-ply, built-up, modified bitumen, sprayed-in-place urethane foam, and structural metal. Achieving a design that is as close to watertight as possible with these materials alone should be the architect’s first priority. There’s no substitute for a well-designed roof.

The basic elements of flashing design apply to all types of roofs. Base flashing is a continuation of the roofing membrane that is typically



EXPANSION JOINT WITH PREMANUFACTURED COVER

Premanufactured expansion joints (above) include a bel-

lows, a flexible membrane that absorbs movement. The joint

should be logically detailed where it meets the parapet wall.

applied separately from the field application. The components, made of sheet metal, include cap flashing or counterflashing, which is applied to shield the exposed portions of the base flashing or to extend into the wall to divert any interior water to the exterior of the wall. Metal copings are used to seal and waterproof the top of a parapet or building wall. Edge flashings are used to hold the gravel in place on a ballasted roof or to finish off the edge of other types of roof. Expansion joints are structural separations that accommodate movement between two building elements, or at specific locations, such as where the roof deck changes direction. Scuppers create an exit for water through a parapet wall or an elevated edge. Each of these metal flashing components require equal design consideration.

However, few architects are thoroughly schooled in the purpose, mechanics, and theory of flashing design, according to Jack Robinson, director of technical services for the National Roofing Contractors Association (NRCA). “Roofing details rarely come from architects fully thought-out,” he says. “They tend to fall back on the manufacturer’s guidelines, which are generalizations, not job-specific details. Architects must take those generalizations and adjust them to the characteristics of the building.”

Ray Corbin, of the Better Understanding of Roofing Systems

Barbara A. Nadel, AIA, is principal of Barbara Nadel Architect in New York City, which specializes in health, criminal justice, and institutional planning and design.

CONTINUING EDUCATION



Use the following learning objectives to focus your study while reading this month’s ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 140 and follow the instructions

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Describe the purposes of roof flashing.
2. Identify the basic tenets of flashing design.
3. Explain the importance of careful flashing design to creating a waterproof roof.
4. Describe where most roofs fail and the causes of the most common failures.
5. Describe the importance of a careful construction and maintenance program.

Institute (BURSI), agrees. "There is no such thing as a typical roofing detail. There is a tremendous amount of variation depending on where the building is, its structure, and the materials used."

Codes and standards provide some guidance for architects, but there's no substitute for education. Several roofing trade and educational organizations, including the NRCA and BURSI, offer courses and seminars. But according to a survey by the NRCA, not a single architectural school offers courses on roof detailing. "Architects aren't getting any training on this in school, but it should be in the core curriculum," Robinson says. "Something like 50 percent of all building-related lawsuits have to do with the roof. This is the most litigious segment of the industry."

Failing to properly detail and maintain flashings is expensive. From 1993 to 1998, professional liability insurer CNA/Schinnerer reports, indemnity payments on roof claims against design professionals averaged \$77,000 per claim. While 65 percent of roof claims were closed without any payment to claimants, professional liability specialist Mike Maloney, of Petty Burton Maloney Associates in Rochelle Park, New Jersey, notes that the insurer's average payout excludes the design professional's related legal costs and hours spent defending the case, which add up quickly, even in cases without financial settlements.

"Good flashing design is certainly not the most glamorous aspect of architecture," Robinson says. "Given a choice between creating buildings and detailing roofs, no architect would pick the roof. But understanding flashings is what keeps water out, and there is nothing more essential to a building's survival."

Flashing basics

Bituminous flashings are created on the roof by combining felts and adhesives. Single-ply and spray-on flashings, often made from the same

GUIDE FOR SHEET METAL FLASHING FASTENERS*	
BASE METAL	FASTENER
ALUMINUM	STAINLESS STEEL OR ALUMINUM ALLOY
GALVANIZED STEEL	CADMIUM-PLATED OR GALVANIZED STEEL
STAINLESS STEEL	STAINLESS STEEL
TERNE-COATED STAINLESS STEEL	STAINLESS STEEL
TERNE METAL	CADMIUM-PLATED OR GALVANIZED STEEL
COPPER	COPPER, BRASS, OR BRONZE

* BASED ON GALVANIC ACTION SOURCE: ARCHITECTURAL SHEET METAL MANUAL, 5TH EDITION

material as the membrane, are usually made up in the field. Metal, which is used with all types of roofing, may be formed in a sheet metal shop or in the field. Most thermoplastic single-ply manufacturers have metal flashings coated with the membrane so they can be formed in the field and welded directly to the membrane, creating a very durable flashing.

Sheet metal flashing materials include aluminum, copper, lead, stainless steel, Monel (a nickel and copper alloy), steel, and zinc alloy. Galvanized steel is the most commonly used because it is easy to work with and tends to be less expensive than other materials. Copper is likely to last the longest, but it is expensive, and water running off of it stains many building materials. Which metal is selected also depends on cost, tensile strength (the stiffness of the metal), application details, the material's coefficient of expansion, and its compatibility with the base membrane.

When preparing a flashing design, select a gauge appropriate to the application. Metals that are too light are more likely to be damaged or to blow off in heavy winds. A 24-gauge galvanized steel, for example, is fine for cap and base flashings, but 22 gauge is necessary for copings greater than 12 inches.

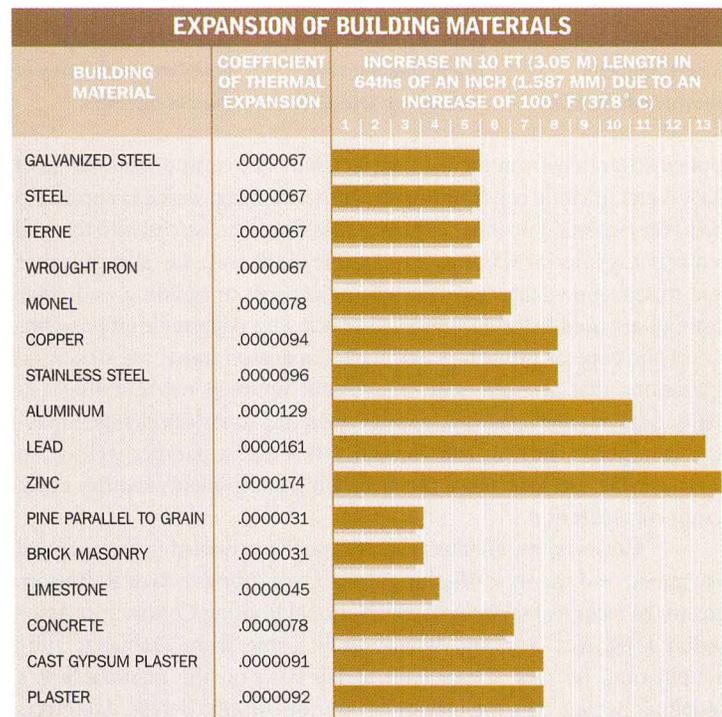
Within the past 10 years, increased attention has been focused on the effects of wind on roofs. The ability of metal flashings to resist uplift is directly related to the thickness of the metal used and the way it is attached. The vertical face is most prone to damage from wind, though the metal edge is also susceptible to problems because it is affected by wind blowing up the side of the building and across the top. Broad sheets of flashing are usually held in place with a continuous cleat so that wind will not go up and under the membrane, potentially causing condensation and other problems.

Different metals chemically react when they come into contact with each other, which leads to corrosion. Copper and steel, for example, are generally incompatible and must be separated when used on the same roof. Some metals will cause streaks and stains on cedar or redwood siding or trim. Compatibility problems can also arise between minor components, such as nails and screws. Stainless steel is a good choice for these because it will not react with most metals. The membrane manufacturer can offer advice.

Differing rates of expansion and contraction caused by temperature fluctuations also render some flashing materials incompatible with roofing materials, the deck beneath, and other structural elements. All of the elements of a roof move to some degree as weather conditions change. In cold climates, for example, materials shift significantly as sunlight heats the roof by day and later, when temperatures plummet at night. Also, temperatures on rooftops may vary considerably from those at other levels of a structure. The temperature and season when the flashing is installed are also significant. Tightly fastening metal when temperatures are warm means it won't have room to contract when temperatures drop.

Metal moves more than nonmetallic building elements, such as wood or concrete. Metal flashings must be large enough to do the job but small enough to prevent unnecessary movement.

Dimensional changes are accommodated by specifying materials that move at similar rates or by otherwise building some flexibility into

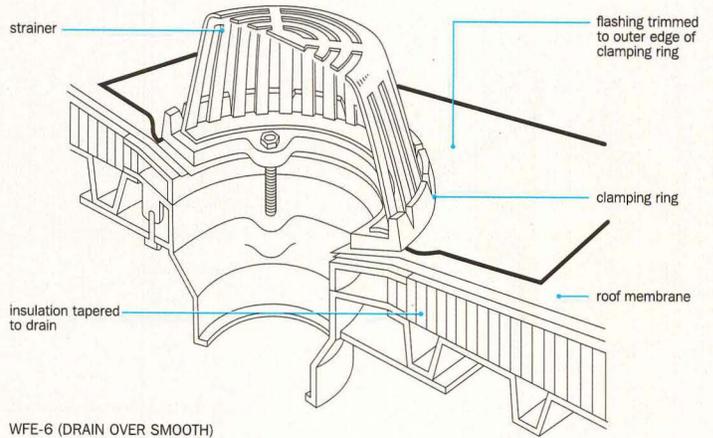


THE EXPANSION COEFFICIENT IS IN INCHES PER INCH PER DEGREE F. THE VALUE MAY VARY DEPENDING ON THE RANGE OF TEMPERATURE INVOLVED.

SOURCE: ARCHITECTURAL SHEET METAL MANUAL, 5TH EDITION

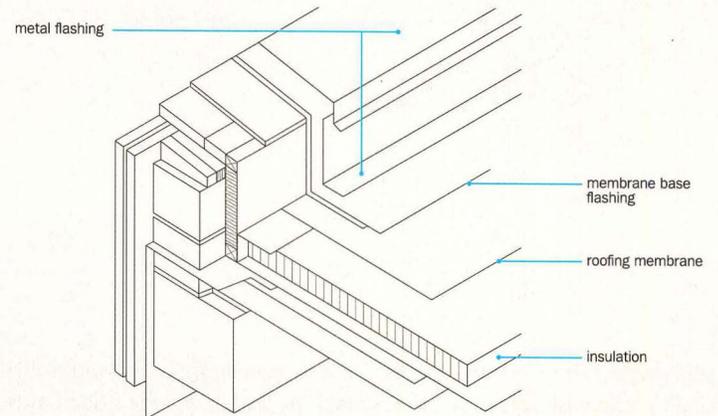
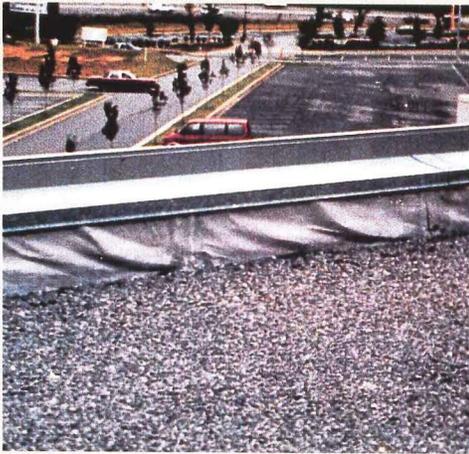
The biggest problem with metal counter-flashing is that it moves more than non-metallic building elements. The coefficient of expansion varies among different types of metal.

Ponding around a drain cap is caused by failing to properly taper the deck and insulation where they join the drain. Base flashing should be carefully trimmed to the clamping ring. The slope around the drain should be greater than that of the roof field.



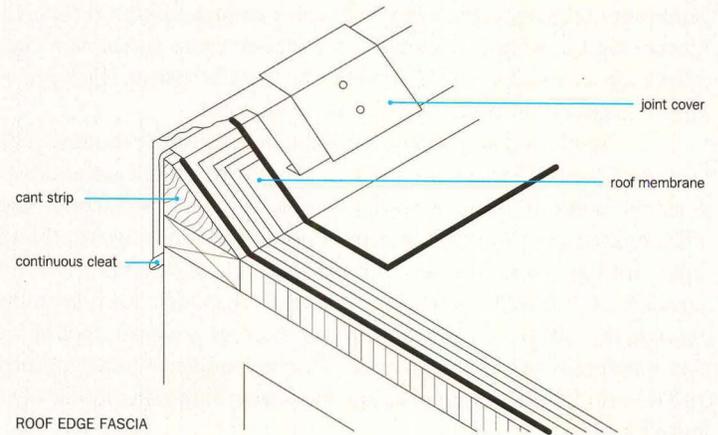
WFE-6 (DRAIN OVER SMOOTH)

Loose base flashing at the parapet wall is likely to pull out from the coping, providing a place for water to enter the structure. In this example, the coping must be removed and the membrane refastened to the wall.



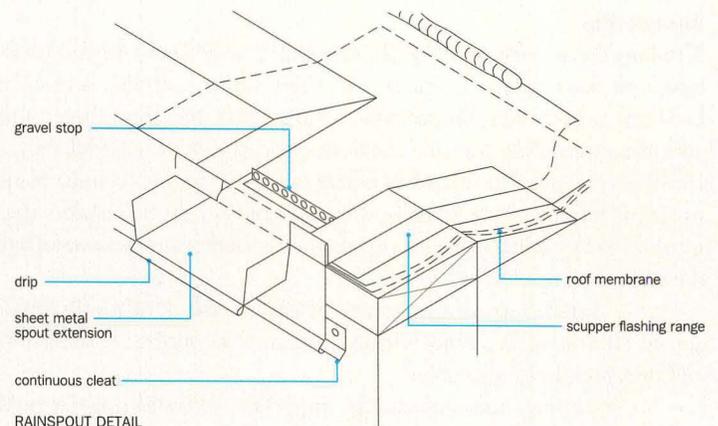
LOW PARAPET WALL

An embedded metal edge flashing is almost guaranteed to cause problems; the metal below has a different coefficient of expansion than the overlapping membrane. The edge flashing should be reinstalled atop the membrane with four-inch joints to allow for expansion.

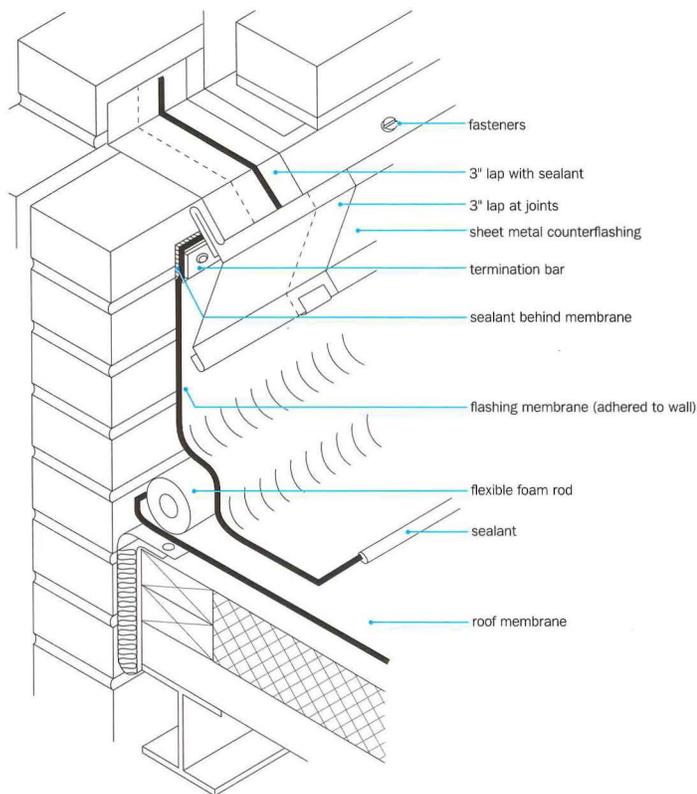


ROOF EDGE FASCIA

The lack of a gravel stop, sheet metal spout extension (conductor head), and counter-flashing makes the wall below likely to leak. Water should be directed away from the wall with a downspout. Metal flashing should wrap over the wall, protecting the membrane flashing.



RAINSPOUT DETAIL



the design. There are two ways to control movement: by joining (soldering or otherwise permanently fastening) the laps so that the system moves as one piece, or by designing each joint as an expansion-control system. If the latter approach is used, the sections of metal must be adequately lapped at the joints and they must be short enough to limit movement. Cover and backer plates, though they require more installation time, shield lap joints—where water leaks are likely to occur. High-performance, elastomeric caulk also helps keep water out.

To allow the membrane and the metal flashing to move independently and still maintain a seal in all climates takes careful design. Sealants, caulks, and mastics, used in accordance with manufacturer specifications, can add an extra element of protection against water, though none of these is a substitute for proper detailing. Adhesives give added strength and should be specified for vertical grades. Keep in mind, though, that adhesive compatibility is an issue, as is proper application. Some solvent-based adhesives won't adhere to modified bitumen or metal in cold weather, for example, because the solvent evaporates too slowly to form a bond.

Design tips

Thinking three-dimensionally helps architects understand the roof structure and how details work at perimeter joints, corners, and other locations where two-dimensional details don't tell the whole story, according to roofing consultant and forensic expert Toby Nadel, AIA, in Dewitt, New York. "In situations where eaves and copings change planes or terminate against a wall, three-dimensional sketches can explore these transitions by evaluating the integrity, the aesthetics, and how watertight the termination is," he says.

"Perspective drawings are essential," the NRCA's Robinson agrees. "It's the only way for the architect and the roofer to understand and interpret flashing details."

Drawings are particularly important at well-known trouble

spots—perimeters, non-wall-supported deck junctions, and parapet walls, to name a few—where leaks are most likely to occur. The following are typical applications for metal flashing components and techniques for improving their performance.

Roof perimeter. Differing coefficients of expansion between the metal edge and the roof membrane can cause either or both materials to split. Successful designs provide room for expansion, set the edge flashing in some type of mastic, and elevate the edge above water level so that the roof will not leak if there are splits.

Parapet walls. Allow sufficient height for all the components of the system so that any potential route for water to penetrate the roofing envelope can be blocked. An adequate base membrane also means that there is enough room to properly counterflash; otherwise the metal can wind up resting directly on the roof. The top of the base flashing should

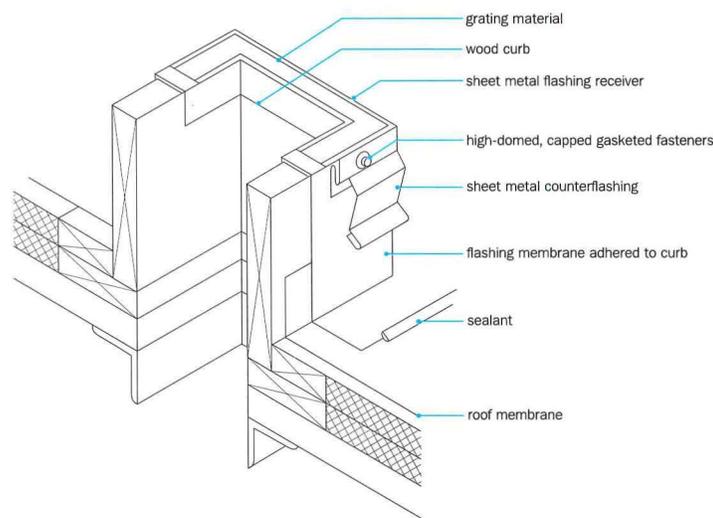
PERSPECTIVE DRAWINGS ARE THE ONLY WAY FOR THE ARCHITECT AND THE ROOFER TO INTERPRET METAL DETAILS.

be protected with a through-wall or surface-mounted counterflashing, or a coping.

Base flashing: Flashing height should be installed eight to 12 inches above the highest point of a roof plane, including at parapet walls, the bases of mechanical units, crickets, and tapered insulation systems. In severe climates with heavy snowfalls, higher base flashing may be advisable to accommodate more thermal movement. Masonry parapets need to breathe, however, and architects often mistakenly detail flashing that seals the entire side of a masonry parapet wall, Robinson says. Cracks and spalling occur when moisture enters the wall and is trapped.

Fastening: Proper fastening on vertical elements is essential to prevent wind uplift and to keep the metal from simply sliding off as it wears. Nailing the counterflashing at eight-inch-on-center intervals is the norm, but six-inch intervals may be needed in some locations. Backing that up with a compatible adhesive adds strength.

Non-wall-supported deck junctions: When a separate roof deck structure abuts a wall, the two elements will expand and contract differently. This is an especially complex junction because it is an expansion joint and a wall flashing detail. Avoid doing anything that would fasten the wall and the deck, inhibiting movement. To that end, the metal flashing should be lapped—four inches is usually sufficient—to allow move-



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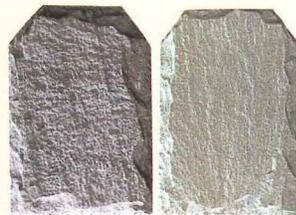
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ment. Base flashing should be high enough to protect the adjacent wall and allow adequate space for the counterflashing.

Expansion joints: Premanufactured expansion joints, which come with sheet metal flanges and bellows (the flexible material that absorbs the movement), are easy to install. Sheet metal joint flashings, often with an accordion fold to absorb movement, may also be made in the field, which may be necessary when there are numerous slope or radius changes or joints that are otherwise complex. These must be carefully detailed, since both sides of an expansion joint cannot be fully secured. Compressible insulation within the joint cavity and a vapor retarder in the deck slow heat and moisture transfer. Cap these with sealant to keep water out.

“For some reason, designers think expansion joints end when they hit the end of the roof or slam into a parapet wall,” says Douglas Pearmain, a senior product design engineer with Johns Manville’s roofing systems division. “But continuing the seal is important.” Expansion joints should run up and over the parapet wall and make a logical transition into the edge of the roof.

In the field

To avoid roof failure, Nadel recommends inspecting several key elements during construction. Flashing materials should be clean and dry prior to application, relatively smooth, and of proper thickness. Ensure that flashing is solidly anchored to decks and walls. Understanding what is beneath the flashing determines the quality of the job. For example, the roof deck

and the flashing systems may be of adequate quality, but if the deck has inadequate nail retention properties, the flashing will pull out under high winds or other stresses. Wood blocking should be of adequate thickness and height to receive nails for both the roofing membrane and the flashing. Cants and crickets should be securely anchored.

Construction scheduling also influences flashing details, says Richard Koziol, AIA, roofing consultant with Wiss, Janney, Elstner Associates Inc. in Northbrook, Illinois. Thinking ahead means all of the base flashings can be of the same height, saving the architect from specifying transitions and odd joint details during construction.

Selecting a qualified roofing contractor and conducting regular field inspections helps control quality. For large, complex roofing projects, owners should, and are often required to, hire a full-time roof inspector equipped with a camera, a notebook, and even a cell phone to report from the site. Architects can hire a clerk of the works, who will contact the architect when problems arise. Some federal or public contracts require continuous on-site supervision.

Proper flashing design should include a routine preventive maintenance program to extend roof longevity and minimize costly emergency repairs. Without proper maintenance, even flashing of the best design, workmanship, and materials will eventually fail. Roofs should be inspected after major storms, heavy winds, and during and after construction for damage caused by foot traffic, equipment, and faulty materials. Architects can assist owners by providing seasonal routine maintenance strategies and roof management programs. ■



**AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION**

INSTRUCTIONS

- ◆ Read the article “Metal Flashing on Low-Slope Roofs” using the learning objectives provided.
- ◆ Complete the questions below, then check your answers (page 174).
- ◆ Fill out and submit the AIA/CES education reporting form (page 174) or file the form on ARCHITECTURAL RECORD’s Web site at www.archrecord.com to receive two AIA Learning Units.

QUESTIONS

1. What are the basic components of a flashing system?

2. What are the major types of sheet metal flashing? Which is used most often?

3. How are dimensional changes in metal flashing accommodated?

4. Where do most roof problems occur and how can those problems be avoided?

5. How are flashings solidly anchored to the roof?

KITCHEN & BATH PORTFOLIO

As the turn of the millennium rolls near, kitchens and baths are playing an essential part in the work of many architects—and the everyday lives of their clients. We've come a long way from the turn of the last century, when these rooms were often well hidden and purely utilitarian. Designers of the modern kitchen have often opened it up to the rest of the house with work islands and dining counters. But only recently has the bathroom achieved greater openness, too—as more architects experiment with translucent partitions and opaque walls that don't

always reach the ceiling. An emphasis on clean lines, natural materials (particularly the warmth of unpainted wood), and exposed industrial elements (often in glimmering stainless steel) have defined many kitchens and baths this year.

On the following pages, ARCHITECTURAL RECORD's fifth annual Kitchen and Bath Portfolio highlights eight projects from across the United States that address these design issues. The settings range from the urban landscapes of Chicago, Los Angeles, and San Francisco to the rural seclusion of southern Michigan and coastal Washington State. In many cases, the architects also designed or renovated the entire house—though this was not a requirement for inclusion. If you are interested in submitting a kitchen and/or bath project for next year's portfolio, please do not hesitate. We look forward to hearing from you. —*The Editors*

ON WOODED ISLAND NEAR SEATTLE, A RUSTIC HOME SET AMONG PASTURES

Though Vashon Island, Washington, is only a short ferry ride from Seattle, its lush forests seem far removed from the turmoil of urban life. For a pair of retired radiologists with a secluded 19-acre property, James Cutler Architects designed a comfortable yet rustic 2,330-square-foot home comprising five one-story, cedar-shingled sheds linked by breezeways. Sited on a brow between meadows and woodlands, the home looks out toward the fields where the owners' horses graze. Beyond the house, Cutler also built a barn and stable.

Like much of the complex, the light-filled kitchen relies on a rhythmic composition of simple, rectangular forms. Custom Douglas fir cabinets, mounted on pine-paneled walls, are articulated as four distinct boxlike units, each fitted with stainless-steel task lighting and hardware.

Celebrating pure functionality, the architect exposed the stove's galvanized-steel vent duct and centered it prominently among the cabinets. Similarly, a horizontal steel strip, punctuated at regular intervals by electrical outlets, became a compositional feature of the clean-lined Douglas fir backsplash.

Fronting the sink and dishwasher island are 7½-foot-high cabinets that shield food preparation from view while maintaining the kitchen's openness.

The architect conceived the

house as a group of "day boxes," defining the public zone, and "night boxes," enclosing the most private spaces. In the primary day box, living area, dining area, and kitchen flow together beneath an open, pine-paneled pitched roof. Creating a discrete private box within the

larger space, Cutler clustered the powder room, the linen closet, the refrigerator, and stereo equipment within a freestanding structure with a glass-shelved, track-lit display cabinet.

Generously scaled windows and the unabashed simplicity of the forms and materials defer to the landscape while also providing an interior backdrop for the clients'

collection of Abstract Expressionist paintings and sculpture.

Architect: James Cutler Architects

General Contractor: Pete Crocker

Sources: Verdi Aquamarine honed granite (countertops); Olson Sheet Metal (custom lighting); Dacor (range and ovens); Elkay (sink); Chicago (faucets); Amana (refrigerator); Tipke (custom hardware fabrication)



REJUVENATING A 1930S BATHROOM WITH MORE DAYLIGHT AND OPEN SPACE

After an earthquake damaged their Tudor-style bungalow, two Los Angeles women hired architect J. M. Reynolds to reinforce the foundation, rebuild the chimney, and refine the front entrance and master bath. Within the confines of a tight budget, Reynolds added a gracious entry foyer and rendered the small, dim 1930s bathroom bright and visually expansive.

Virtually unchanged since its construction, the dark bathroom had reddish-brown tiles and a tiny window. To create a luminous south-facing wall, the architect gutted the seven-by-eight-foot room, reoriented the fixture locations, and replaced the solid exterior wall with glass block, punctuated by a clear, operable window.

To further enhance the sense of openness, Reynolds sank the bathtub into the crawl space, thus eliminating the obstruction of a high

tub rim. Though the room's actual dimensions remained unchanged, Reynolds cleverly maximized floor space by cantilevering his custom-designed cherry-wood vanity (topped with black granite) over the ceramic-tile floor.

The vanity—with its rich palette and sculptural contours—was designed with the dignified elegance of living-room furniture. By lining the foyer with similar cherry-wood cabinetry, the architect helped restore unity and solidity to this earthquake-shaken house.

Architect: *The Office of J. M Reynolds Architects*

General Contractor: *Terra Tek Construction*

Sources: *PPG (glass block); AFG (shower door); Halo (downlights); Absolute Black Granite (countertop); Dal Tile (floor and wall tiles); Kohler (shower fixtures and faucets)*



SAN FRANCISCO ARTS FOUNDATION WITH GUEST QUARTERS AND PHOTO STUDIO



Drawing on a Japanese-influenced, minimalist aesthetic, Pfau Architecture created a tranquil, clean-lined building for a San Francisco couple's photo studio and arts foundation. The modest 1,600-square-foot structure needed simple, flexible spaces that could double as guest quarters.

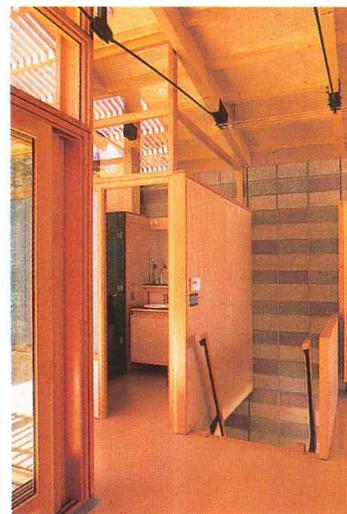
With an elegant economy of means, the architect used common-

place materials in standard modules—maple plywood sheets and integrally colored concrete masonry blocks—to form open yet ordered, light-filled spaces. (With Zenlike precision, even the shower's black ceramic tiles were laid out so that no piece had to be cut.)

To enhance spatial flow, glass panels separate opaque walls from the open roof structure, ushering daylight into enclosed spaces. Light also diffuses into the bathroom through a shoji screen-like wall of sandblasted glass. Just as the walls visually stand free from the ceiling, the countertops, custom-designed with wide reveals, and the wall-mounted toilet share a floating quality.

Architect: *Pfau Architecture*
General Contractor: *Caletti Construction*

Sources: *Dorn Braci (faucet and showerhead); Kohler (sink); Duravit (toilet); Cal Stone (concrete masonry units); D-Line (locksets)*



A BEACH HOUSE KITCHEN WITH HAMMERED, ACID-WASHED COPPER DETAILING

Before completing an 11,000-square-foot home for a developer client, architect Barry Gehl had to convert a beachside shack on the property into a future guest house that could also house the client's family of five in the interim. Taking cues from his client's request for "as many natural materials as possible," Gehl says he "attempted to bring the exterior into the interior."

Echoing an exterior of weathered-cedar shingles, fieldstone wainscoting, slate roofing, and copper gutters, the kitchen's interior features such rugged materials as recycled fir beams and columns (sandblasted and lightly white-washed), acid-washed copper hardware and cabinet doors (custom-made and inset with patterned glass), and limestone countertops. Gehl selected four-inch-thick slabs of chisel-edged bluestone to visually anchor the ends of the island.

Seeking a "timeless" quality, Gehl eclectically combined the modern industrial aesthetic of stainless steel—on the refrigerator, exhaust hood, oven doors, sink, and towel and utensil racks—with conscious references to old-world craft. The hammered, acid-washed, and riveted copper hardware, for example, was custom-forged to recall the art of the blacksmith.

Architect: *Barry Gehl Architects*

General Contractor: *Randy Kent and Larry Gladstone*

Sources: *Pella (windows); Thermador (stove and oven); Sub-Zero (refrigerator); Franke (sink); Lightolier (downlights); Artemide (task lighting); Lutron (lighting controls); Randy Kent and Larry Gladstone (custom cabinetry); The Tinman (copper cladding); Paul Casey, Metalsmith (custom hardware); Tuxedo Limestone (countertops)*



COLORADO ARCHITECT'S ASPEN HOME IN UNUSUALLY UPSCALE TRAILER PARK

In chic Aspen, Colorado, where the average house is valued at nearly \$2 million, the formerly city-owned trailer park—with spectacular mountain views—may be one of the last affordable neighborhoods in town. Within the confines of a typical 44-by-70-foot lot, architect Scott Landenau of Studio B Architects re-envisioned trailer typology when he replaced his family's mobile home with a house of his own design.

He describes this project as “an exercise in the honesty of detailing, structure, materials, and transitions.” Creating a collage of colors and textures on the exterior, Landenau experimented with standard unrefined materials—corrugated tin and plastic siding, maple-veneer plywood walls, concrete countertops and floors, and commercial-grade trusses—applied in sometimes unorthodox ways.

In contrast to the house's low-

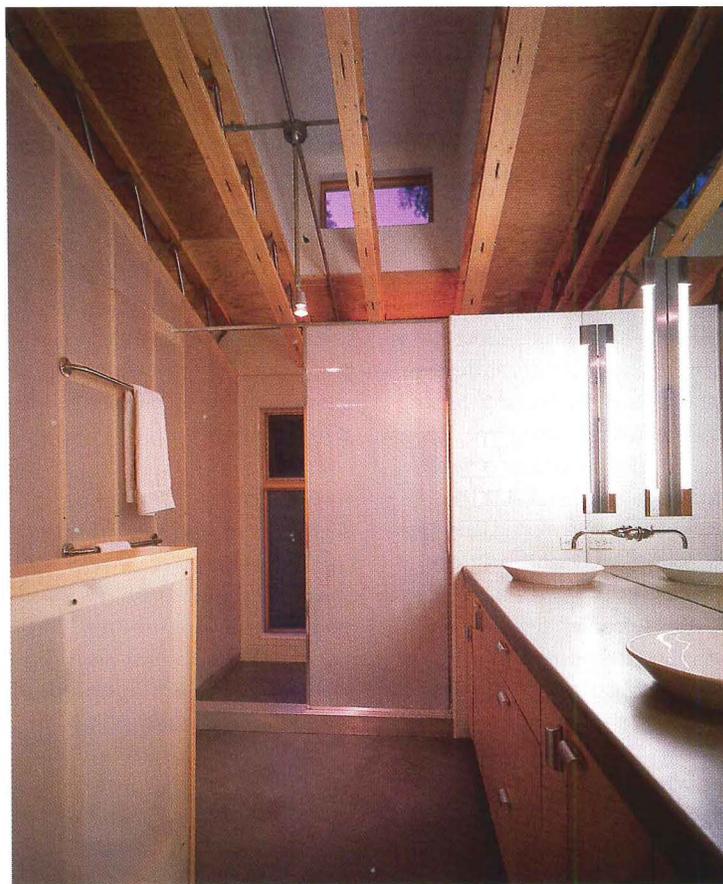
brow ancestor, the double-wide trailer, Landenau designed an open shed roof with exposed steel-and-wood trusses. To maintain spatial continuity, no partitions reach truss height, even in the bathroom, which is partially enclosed by translucent, sanded Plexiglas. Soundproofing is not a major concern, explains Landenau, who was happy just to leave behind the filmsiness and drafts of his old traditional trailer.

Architect: *Studio B Architects*

General Contractor: *Tanner Construction—Ron Tanner*

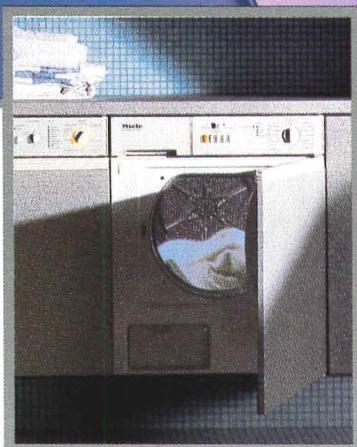
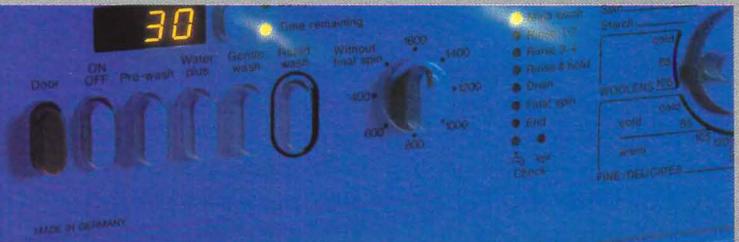
Sources: *Kitchen—Jenn-Air (appliances); Franke (sink); Hansgrohe (faucets); FSB (hardware); Flos, Piperita (wall sconces); Artemide (floor lights); Tolomeo (task lights); Lutron (lighting controls)*

Bathroom—Porcher (water closet); Kohler (sinks); Hansgrohe (shower fittings)



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MASTER BATH FOR A MASSACHUSETTS HOME NESTLED AMONG TREES

When a couple in the arts hired architect Michael Rosenfeld to expand their rural Massachusetts home, they made some unusual requests: the new 14,000-square-foot house should include an underground basketball court and a meditation room, along with a pool room, guest quarters, and spacious offices with secretarial suites for each of them. Though the house would be large, the owners wanted it to remain intimate, with the feel of a "small stone cottage."

Seeking a rustic quality, Rosenfeld made extensive use of natural stone and wood surfaces—slate with redwood, cedar, and mahogany. Responding to the surrounding forest, the architect focused the sequence of interior spaces on views of three particularly majestic trees.

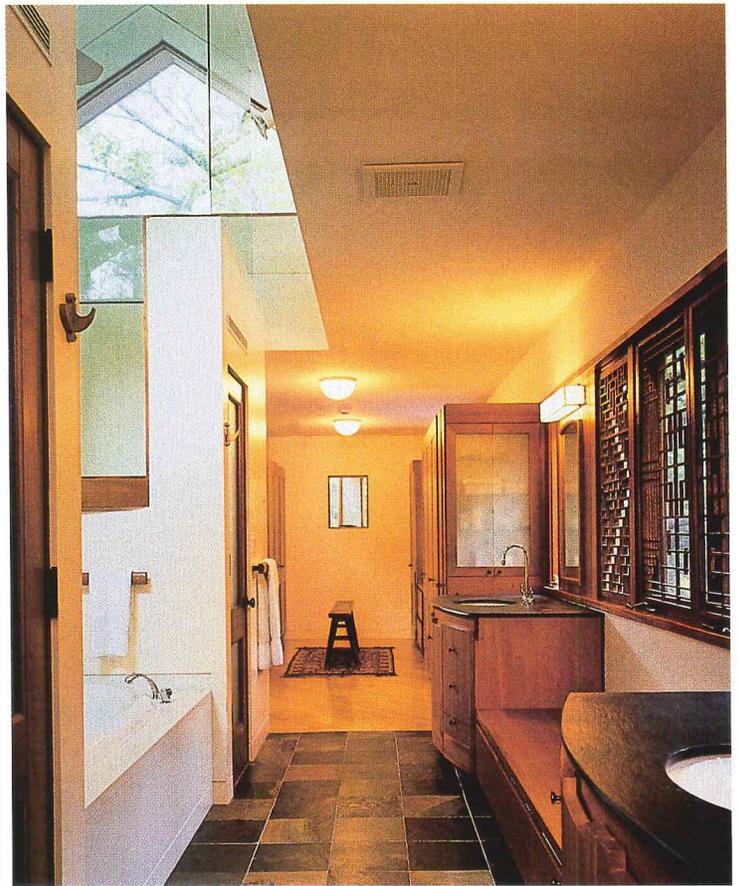
Even from the master bathroom, views upward through a

peaked window reveal the top of a great maple. Between paired sinks with slate counters, other panoramas of the woods appear through a Chinese-influenced mahogany window screen, custom-designed by the architect. A cathedral ceiling soars above the whirlpool tub—giving the simple experience of bathing an enhanced sense of relaxation and luxury. Enticing partial views from the tub open themselves fully during the brief journey from master bath to dressing area and bedroom.

Architect: *The Office of Michael Rosenfeld*

General Contractor: *Thoughtforms Corporation*

Sources: *Little Harbor (windows); Truth (locksets); Baldwin (hinges); European (cabinet hardware); Kohler (sink, faucet, toilet, and tub); Harrington (hand shower and mixing valve)*



KITCHEN WITH HUMBLE MATERIALS FOR FAMILY AND PETS IN RURAL MICHIGAN



Honest, humble materials were the clear choice for the new home of a southwest Michigan family with 10 household pets and a passion for their rural surroundings. For the interior of this red, barnlike house, architects Reckley & Associates created a tawny palette with concrete floors (which are radiant-heated and ground to reveal aggregate), maple-plywood walls with galvanized-steel wainscoting, and

open-web joists with exposed plumbing lines.

Architect: *Reckley & Associates*

General Contractor: *JWK Construction*

Sources: *Caradco (windows); Häfele (cabinet hardware); D'Ac (pendant lighting); Halo (track lighting); Kroin (faucets); Kohler (porcelain sink); Kindred (stainless-steel sink); Gaggenau (appliances)*





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CHICAGO TOWNHOUSE REMODELED FOR MODERNIST GRAPHIC DESIGNER

A graphic designer and former race-car driver enlisted Wheeler Kearns Architects to transform his Chicago townhouse into a series of simple elegant spaces: a foil for his museum-quality collection of Modern furniture. Most of the three-story house's original Victorian-era detailing had been stripped away long ago—offering a virtually clean slate for new interiors.

In the kitchen, Wheeler Kearns

inserted a steel-framed grid of windows facing the garden. Custom cabinetry combines stainless-steel appliances and counters with a wall of cabinets faced in African ribbed-mahogany veneer.

In the bathroom, custom steel-work and mahogany continue the themes established in the kitchen—but here they are played against a slate floor, in contrast to the kitchen's maple flooring.

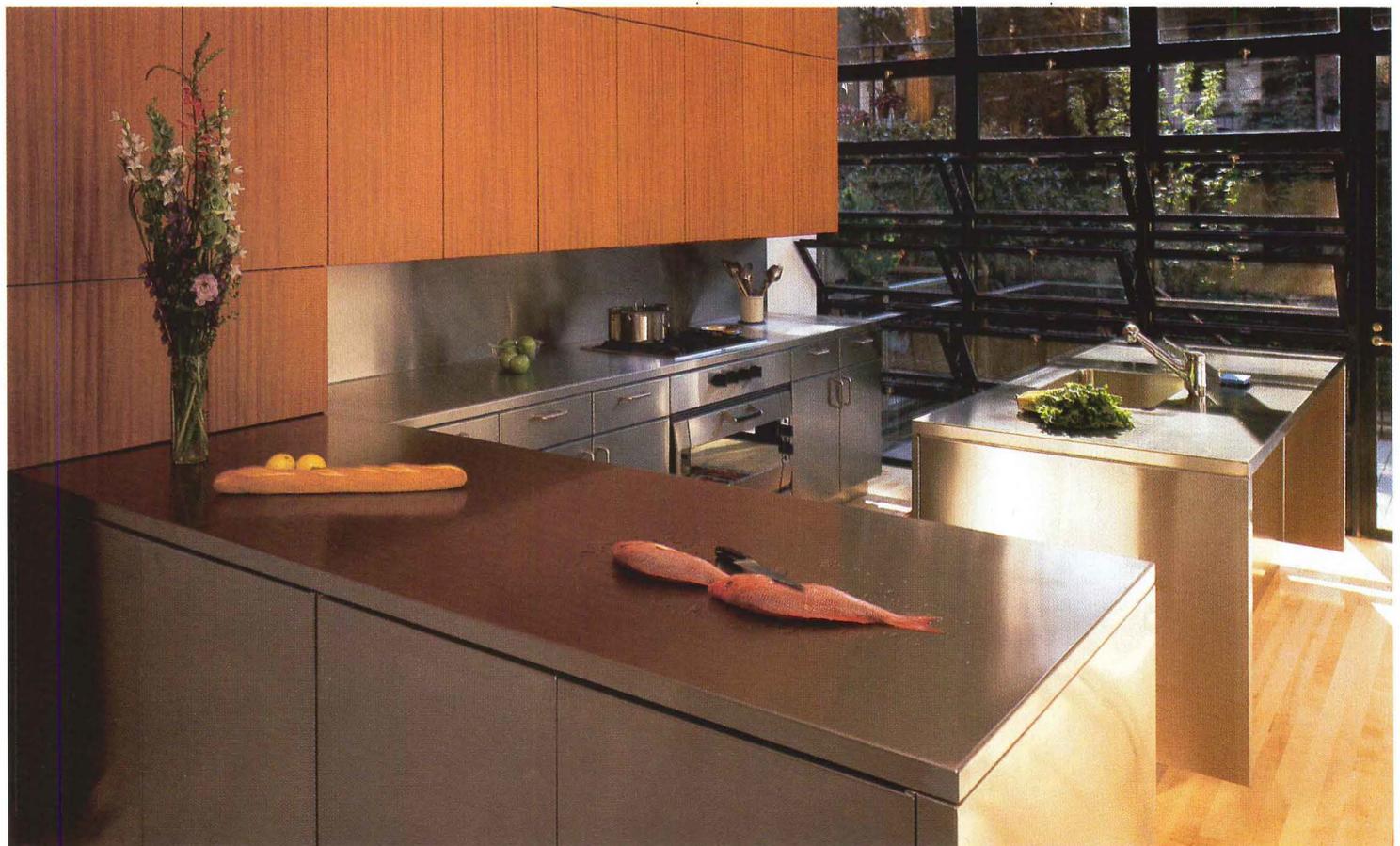


Architect: Wheeler Kearns Architects

General Contractor: H & R Johnson

Sources: Kitchen—Hope's Architectural Products Inc. (window, lockset, and hinges); Paoli Woodworking (custom cabinetry); Sub-Zero (refrigerator, freezer, and pull-out drawers); Gaggenau (cooktop, oven, and dishwasher); Hansa (faucet)

Bath—Speakman (showerhead); Kroin (faucets); Kohler (toilet); Sloan (concealed toilet flush valve); Grohe (shower valve and volume control)



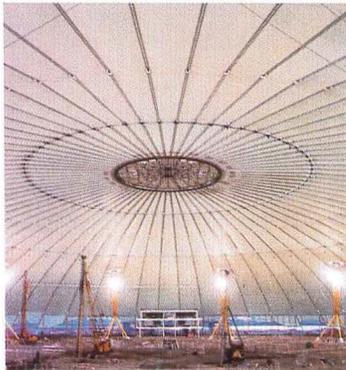
NEW PRODUCTS

MEMBRANE ROOF WILL HELP MOVE ENGLAND INTO THE NEXT MILLENNIUM



The Millennium Dome in Greenwich, England, was created by the Richard Rogers Partnership and Bath-based engineer Buro Happold as an exhibition and amusement center that will help usher in the new millennium. Part of a larger project that will eventually include 14 themed installations, the 920,640-square-foot dome itself has already seen its share of controversy.

One of the disputes over the dome had to do with its exterior membrane. The design team had



Birdair's roof panels push England's Millennium Dome into the future.

originally planned to use a German PVC product for the skin. But various environmental groups, including Greenpeace, protested, contending that the PVC would pollute the environment by off-gassing. Instead, the dome was covered with Birdair's tensioned membrane, fabric panels made from fiberglass coated with Teflon polytetrafluoroethylene

(PTFE). The tensioned membrane has none of the environmental hazards associated with PVC roofs, is projected to last for 25 years, and is also structurally sound.

Tensioned membranes such as the Millennium Dome's are made from fiberglass for mechanical strength and have a PTFE coating to ensure weather resistance. Fibers are drawn from hot melted glass through platinum dies into continuous filaments, which are then twisted and plied into yarn bundles. The yarns are woven into a wide structural fabric that is finally coated with PTFE. In tests and for projects in Colorado and Saudi Arabia, the PTFE coating can withstand temperatures ranging from -100° to 450° F and is immune to UV radiation. The fiberglass yarns have an ultimate tensile strength of 500,000 pounds per square inch (psi) and a modulus of elasticity of 10.5×10^6 ; steel, in comparison, rates at 29×10^6 psi.

The Millennium Dome's membrane, which consists of 1.72 million square feet of exterior membrane and interior liner, took 12 weeks to install. It has 12 structural steel masts, each 328 feet high, with some $43\frac{1}{2}$ miles of cablenet. Each mast rests on a 33-foot, four-pronged pyramid structure that distributes the structure's weight over the concrete foundation.

800/622-2246. Birdair, Amherst, N.Y. **CIRCLE 200**

This month's product pages focus on commercial and residential roofing products and projects from around the world. Architects, roofing contractors, and roofing consultants have many more options nowadays, whether they're working on new construction or restoration. From fire-protected shakes and shingles to solutions for leaky roofs, manufacturers are providing new answers to age-old problems. For more information on the roofing industry, check out the National Roofing Contractors Association's Annual Convention and Exhibit in Phoenix, February 7-10 (www.roofonline.org). —Elana Frankel, Products Editor

HISTORICALLY ACCURATE ROOF TILES HELP RESTORE A POOL PAVILION

In 1867, a retired merchant named Henry Shaw donated 200 acres of his estate to the people of St. Louis. From that parcel of land, a Victorian park was created. Today, Tower Grove Park is being restored to fulfill what the current park director John Karel calls "its original intent: to be a magnet for the citizens of St. Louis."

One of Tower Grove's most prominent buildings is the 84-year-old Romanesque Pool Pavilion, which frames the park's main long view. When it came time to restore the pavilion, John Karel and the project's principal restoration architect, Philip Cotton, worked to maintain—and create—historical accuracy. "Tower Grove is a National Historic Landmark," says Cotton. "So there was no question that the Pool Pavilion had to be restored to its original materials. Early photographs clearly show the design of the original tiles and the ridge pieces."

Tower Grove's Pool Pavilion roof was recently restored with Ludowici tiles.

The 4,500-square-foot roof was restored with Ludowici roof tiles that match those of the 1914 original. First produced in Italy in the 1500s, Ludowici tiles were used in historical and cultural centers across Europe. In 1890, Ludowici began producing its tiles at a facility in New Lexington, Ohio. "Even though there was no record that the original tiles on the Pool Pavilion were Ludowici," says Cotton, "we think it's likely because there is a lot of Ludowici roof tile in St. Louis, including the immediate neighborhood of the park." The quality of the clays has not changed over the past 100 years, although the firing process has improved.

At some point in the pavilion's history, the original tile roof had been torn off and replaced with asphalt shingles. No one knows why. According to Cotton, that doesn't matter. "Our job was to restore the Pool Pavilion to its 1914 grandeur."

610/341-7328. Ludowici, Valley Forge, Pa. **CIRCLE 201**

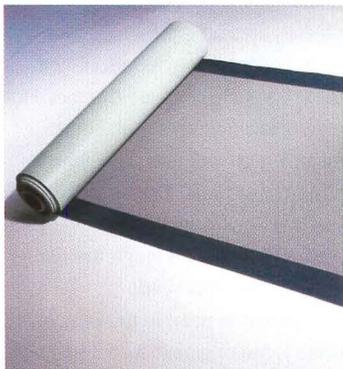


ROOFING PRODUCTS FOR A WIDE VARIETY OF USES

The products highlighted on this page range from fire-resistant shakes to slate-like shingles, for such projects as a leaking 129,000-square-foot roof and roofs for a residential development in California. Whatever the use, each of these products successfully fulfills a specific roofing need.

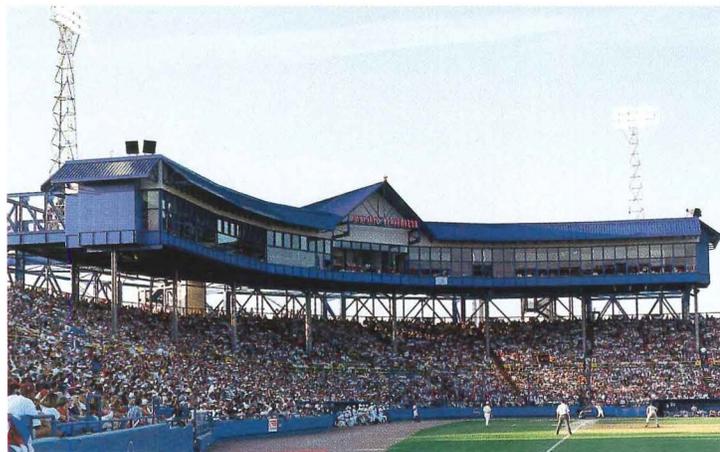
▼ Heat-weldable walkway

Stevens Roofing's hot-air-weldable thermoplastic polyolefin (TPO) walkway pad with welding tabs minimizes abrasion and mechanical damage caused by rooftop traffic. It features a 120-mil membrane with 29 inches of skid-resistant surface. 877/TPO-ROOF. Stevens Roofing, a division of JPS Elastomers, Holyoke, Mass. **CIRCLE 203**



▼ Stadium renewal

To complete the renovation of the 48-year-old Rosenblatt Stadium in Omaha, Boone Brothers Roofing, in coordination with general contractor Weitz Company, installed more than 11,000 square feet



► Steel shingles

Centria's steel shingle series for the light commercial building market includes two lines: AstonWood, which provides the appearance of wood shingles, and StoneCrest, which offers the look of slate (shown) or copper. The shingles are manufactured from G90 galvanized steel and protected by Kynar 500 and Hylar 5000 coatings. They are covered by a 20-year warranty for finish integrity, chalk, and fade. 800/759-7474. Centria, Pittsburgh.

CIRCLE 202



▲ Fixing a leaky roof

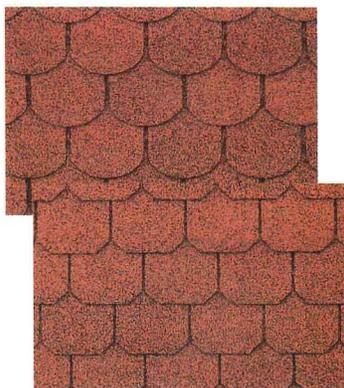
Arctic Cat's manufacturing facility in Thief River Falls, Minnesota, had a 129,000-square-foot metal roof that was leaking. Versico produced a special-width sheet of Versiweld Premier, its thermoplastic polyolefin, to facilitate the attachment of the membrane to the roof's center metal purlins and stop the leaks. 800/992-7663. Versico, Akron, Ohio. **CIRCLE 204**

of blue Snap-Clad panels manufactured by Petersen Aluminum. The stadium's new press box features peaked metal roof panels with a Pac-Clad protective finish. 800/PAC-CLAD. Petersen Aluminum, Elk Grove Village, Ill. **CIRCLE 206**

▼ Fire-protected shakes

For the 89 homes in California's Palomar Vista Estates, architect David Kaech wanted visually appealing roofs that were also practical. He chose Celotex Presi-

dential Shakes, which feature 3M's Algae Block Copper Roofing Granule System to help protect against fires, flying sparks, and wind-blown embers. 800/443-4272. Celotex, Tampa, Fla. **CIRCLE 205**

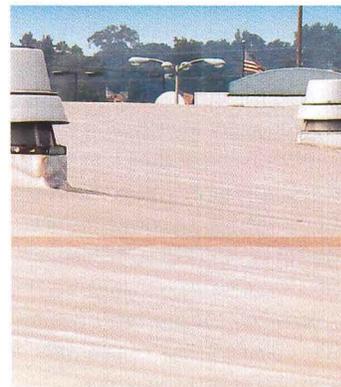


▲ Residential design

Atlas's two new, heavyweight, fiberglass-mat, three-tab shingles for the residential market are Alpine (top), a scalloped, half-rounded shingle, and Matterhorn (bottom), an angular-shaped shingle with a dog-eared pattern. Both shingles are available in five colors. 770/952-1442. Atlas, Atlanta. **CIRCLE 207**

▼ Bowling alley makeover

Indianapolis's Woodland Bowl was retrofitted with an 80,000-square-foot roof from GenFlex. The mechanically attached white PVC roof is energy-efficient and cuts down on cooling costs. For more information, GenFlex has released the GENDisk CD-ROM. 800/443-4272. GenFlex, Maumee, Ohio. **CIRCLE 208**



PRODUCT BRIEFS

▼ Reclaimed douglas fir

The U.S. brewery of Takara Sake recently renovated a loft in Berkeley, California, to serve as a sake tasting room. To achieve

a Zen look, architects from Hisaka & Associates used three heavy timber structures made from G. R. Plume's reclaimed timber. 360/384-2800. G. R. Plume, Ferndale, Wash. **CIRCLE 209**



▼ Cladded fridge

Born and raised in Buenos Aires, designer Gonzalo Rodriguez settled in the Detroit area to study industrial design at the Center for Creative Studies. His recent collection, shown at the International Contemporary Furniture Fair, included a series of bentwood and metal furniture as well as a refrigerator clad with woven aluminum strips (below). Arrangements can be made to customize any surface with his woven aluminum designs. 248/543-3774. Gonzalo Rodriguez, Ferndale, Mich. **CIRCLE 212**



▲ Curtain call

Artifact, Michael Graves's collection of curtain hardware for Blome, includes curtain rods, finials, brackets and rings, holdbacks, swag holders, furniture knobs, drawer pulls, coat hooks, and stair rods. Brushed brass, brushed nickel, Tuscan bronze, antique bronze, and mirrored black finishes are available. 800/875-0042. Blome, Secaucus, N.J. **CIRCLE 213**



▼ Commercial flooring

Homespun, a collection of sheet-vinyl flooring from Tarkett, was designed for the health-care market and light commercial installations. The collection includes three patterns—Walden Wood, a hardwood plank; Stamford Tile, a 12-inch octagonal paver; and Stoney Run, a nine-inch quarry tile—in 13 colors. It is available in 12-foot widths. 800/225-6500. Tarkett, Whitewall, Pa. **CIRCLE 211**



▲ Rub-a-dub-dub

The Millennium Products project was created by the British Design Council to encourage and promote the country's designers. The Ursula tub, by Jon Barnes and Nicola Regan of the Scottish-based company Submarine, was chosen as a Millennium Product for its innovative use of materials. The elliptical, freestanding, stainless-steel tub will be on view in the Philadelphia Museum of Art's exhibition "Cool Britannia: Recent British Design Selected by Sir Terence Conran" through March 7, 1999. 011/44/141/243-2424. Submarine, Glasgow. **CIRCLE 210**



► Mobile furniture

Box Office by Design is a new collection of wooden furniture from the Texas-based company Smart Furniture. The desks, computer tables, bookcases, and entertainment centers are available in two styles, traditional and contemporary, and two finishes, cherry wood and clear maple. The light-weight and compact pieces can be assembled and disassembled without tools. In company tests, the furniture withstood 1,000 assemblies

and disassembles without degradation of performance, making it a good choice for areas where furniture layouts will be changed frequently. 888/269-6788. Smart Furniture, Arlington, Tex. **CIRCLE 214**



◀ Distressed tiles

Precut Vix Blue and refined limestone tiles from Paris Ceramics have been slowly turned with sand in a large mixer to create an aged look. This type of treatment, available for most Paris Ceramic limestone, distresses the edges and surfaces of each piece and helps to bolster the natural grip of the stone. 203/552-9658. Paris Ceramics, Greenwich, Conn. **CIRCLE 215**

PRODUCT BRIEFS

▼ Contract applications

Mannington's new base-grade commercial inlaid sheet flooring, called Magna, features a natural granite look. Magna has a felt backing and is available in six-foot widths and a variety of colors. The flooring complies with ASTM standard F-1303, type 11, grade 1, class A specifications. 800/241-2262. Mannington, Salem, N.J. **CIRCLE 216**



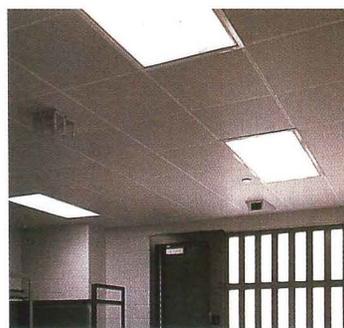
▲ Mobile seating

The name of Yves Claude Arbour's furniture collection, Kanso, is Japanese for "simple." Made from stainless steel and black napa leather, the bench (above) is

available with wheels. Also available in the line are a utility cart with a wood, granite, or marble top; a rolling bed; and a variety of tables. 212/725-7616. Yves Claude Design, New York City. **CIRCLE 217**

▼ Wireless wonders

JVC's professional computer products division has expanded its Vipslan-10 wireless LAN system to include three enhanced interface modules: ceiling- and wall-mounted transmitter network hubs (shown), and a computer transceiver. 800/488-4353. JVC, Cypress, Calif. **CIRCLE 219**

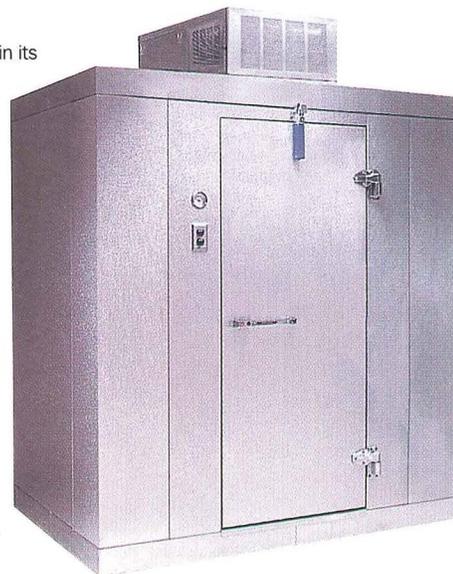


▲ Ceiling system

The Luxalon limited-access metal ceiling system by Hunter Douglas can be made of aluminum or steel for protection and security. Panels are available in 12-inch widths and in lengths of up to six feet. 800/366-4327. Hunter Douglas, Norcross, Ga. **CIRCLE 220**

► CFC-free panels

Nor-Lake has converted to HFCs in its foamed-in-place insulated panel manufacturing process. The polyurethane insulation used in all Nor-Lake walk-in panels will use HFC 134A, which is CFC-free and has zero ozone depletion, thanks to a partnership with the Minneapolis-based Foam Enterprises. The result of the new HFC 134A expanded foamed-in-place process is a full four-inch walk-in cooler of freezer room panel with an R-value of up to 30 in -30° C applications. 800/477-5253. Nor-Lake, Hudson, Wis. **CIRCLE 222**



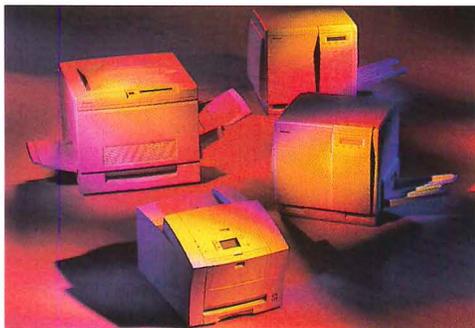
▼ Walk the plank

Kentucky Wood Floors/Kentucky Millwork has introduced Brazilian Ash, a new species that is available in 3/4-by-three-inch planks with a factory-applied urethane finish for no-wax maintenance. With its rich blond color, the planks can be used in a variety of residential and commercial applications. The company's Web site, www.kentuckywood.com, provides dealer information. 502/451-6024. Kentucky Wood Floors/Kentucky Millwork, Louisville, Ky. **CIRCLE 218**



▼ More print for your money

Tektronix has introduced four new color printers to its Phaser line that offer a broad range of prices, target applica-



tions, and technologies. The new printers—the network-ready 740; the reasonably priced, color-capable 740L; the solid-ink color printer 840; and the

11-by-17-inch color laser printer 780—all come standard with built-in Ethernet connections, Adobe PostScript 3, and PCL language for desktop, network, and application compatibility.

800/835-6100. Tektronix, Wilsonville, Oreg. **CIRCLE 221**



Bill Layman, Tom Rivellini
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CIRCLE 59 ON INQUIRY CARD

PRODUCT BRIEFS

▼ Anchors away!

KDI Paragon's Quickset is a newly patented Taper-Lock anchor system that makes installing and removing starting platforms in pools easier, eliminating the need for tools. Upgrade kits are available. 914/452-5500. KDI Paragon, LaGrangeville, N.Y. **CIRCLE 223**



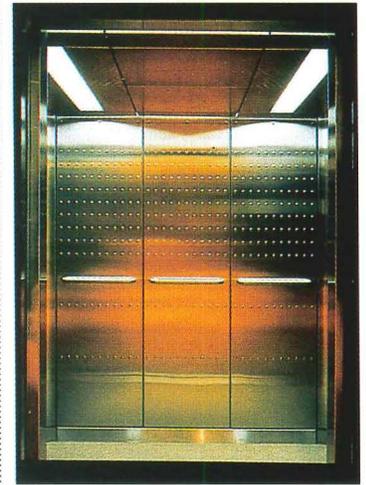
◀ High-security locks

Mas-Hamilton's PowerLever door locks are available in black with a chrome lever (shown); chrome with a chrome lever; and brass with a brass lever. The Model 1000 provides keyless electronic access for 20 users; the 2000 is for 40 users and provides 450 date/time-stamped audit events; and the 3000 handles 96 users, 945 date/time-stamped audit events, and time zone/access schedules. 800/950-4744. Mas-Hamilton, Lexington, Ky. **CIRCLE 224**

▶ Video surveillance

The Silent Witness model SWC40 is a surveillance system that includes a black-and-white video camera, digital image storage that records more than 90 minutes of video or 1,140 still images, video motion detection, and an alarm interface in a compact, fiberglass-reinforced, polycarbonate, vandal-proof enclosure. It measures 4½ inches by 4½ inches by 3½ inches. 888/BUY-CCTV. Silent Witness, Surrey, B.C., Can.

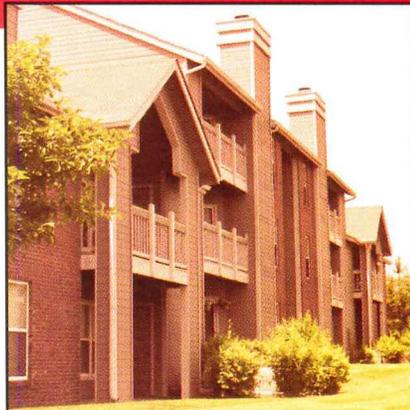
CIRCLE 225



▲ Elevator insides

CabForms, an elevator interior package from Forms + Surfaces, is available in stainless steel, bronze, and aluminum with satin, polished, abraded, embossed, etched, calendered, and stamped finishes. Complete packages include panels, frames, handrails, base, and ceiling. For more information, see the company's Web site at www.forms-surfaces.com. 800/451-0410. Forms + Surfaces, Carpinteria, Calif. **CIRCLE 226**

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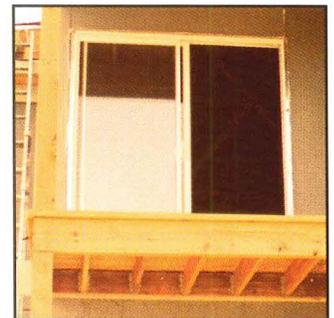
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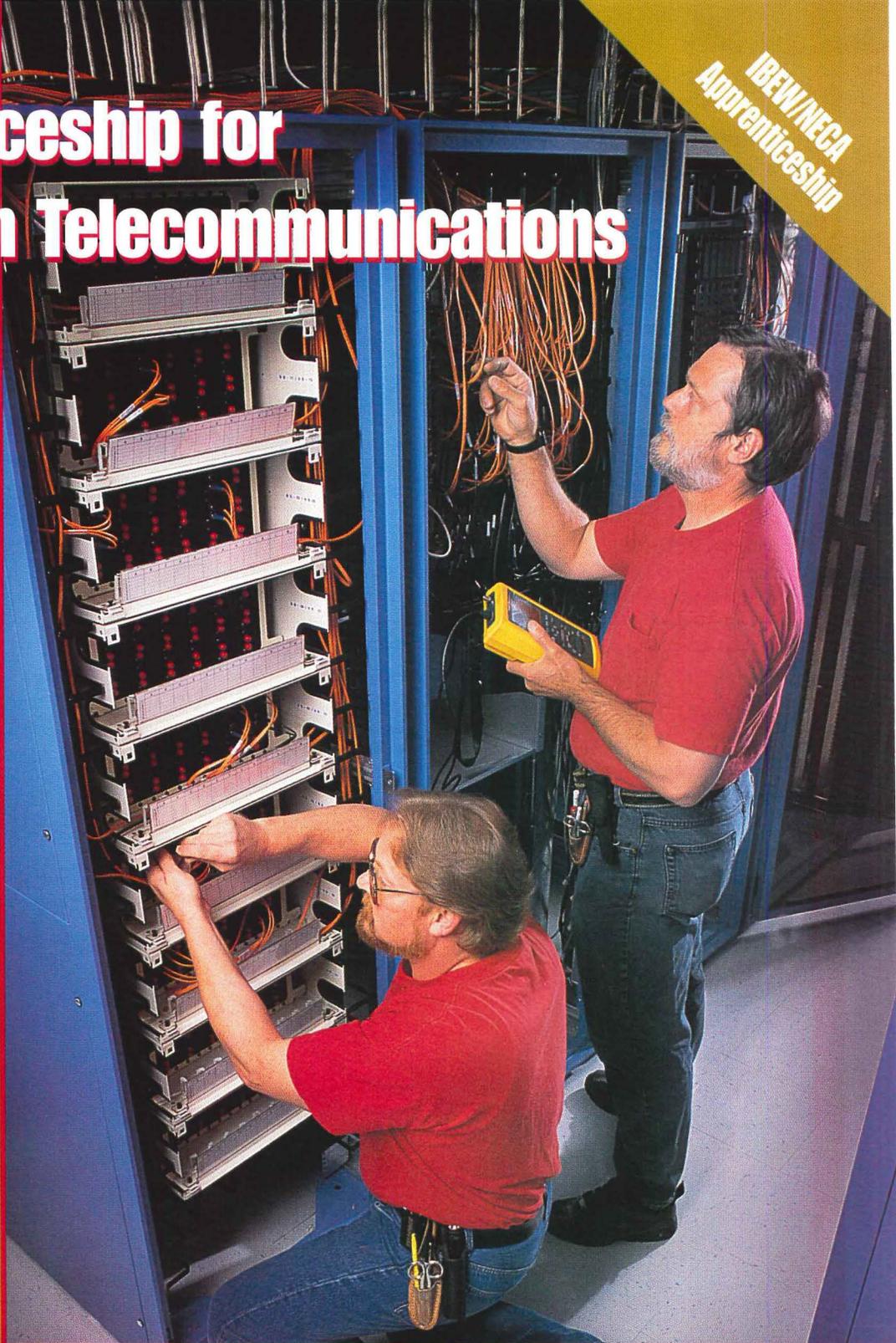
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CIRCLE 61 ON INQUIRY CARD

PRODUCT BRIEFS

► Escalator cleaner

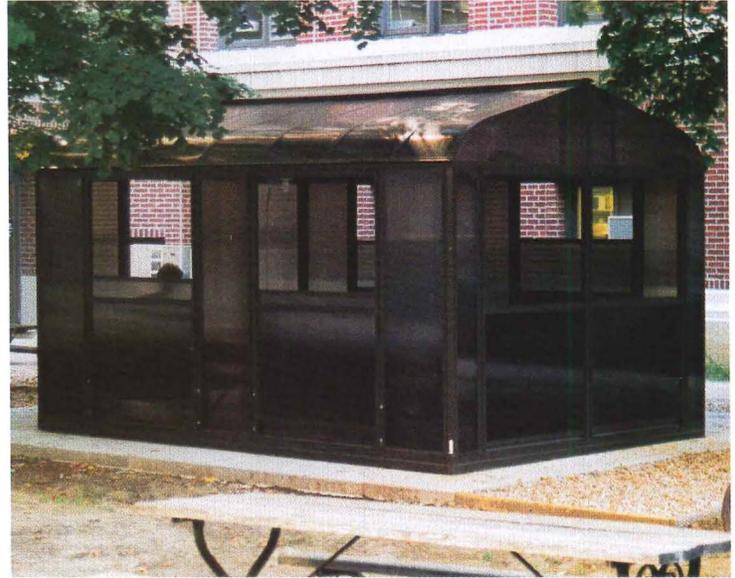
The Cimex escalator cleaner model X46 from Kee Industrial Products is designed to provide a fast (400 rubs per minute) and thorough brushing and simultaneous vacuum cleaning of all types of escalator treads and moving sidewalks. A nylon bristle brush is available for routine maintenance; a nylon bristle with abrasive carbides is available for initial deep-cleaning operations. 800/525-2094. Kee Industrial Products, Buffalo, N.Y. **CIRCLE 227**



▼ Smoking shelters

When St. Joseph Mercy Hospital in Ann Arbor, Michigan, needed a place for smokers, Duo-Guard provided a solution: an enclosed area for people who haven't quit the nicotine habit. With heaters, exhaust systems, benches, doors, lights, and air-conditioning, the smoking shelter provides a comfortable space away from

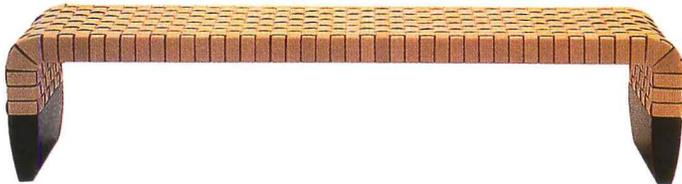
smoke-free environments. The eight-by-10-foot structure, made from an aluminum frame and translucent bronze, can accommodate approximately 10 smokers. Today, more than 1,800 shelters are in use outside commercial, health-care, and government facilities. 800/872-4404. Duo-Guard, Canton, Mich. **CIRCLE 228**



▼ Bench-mark design

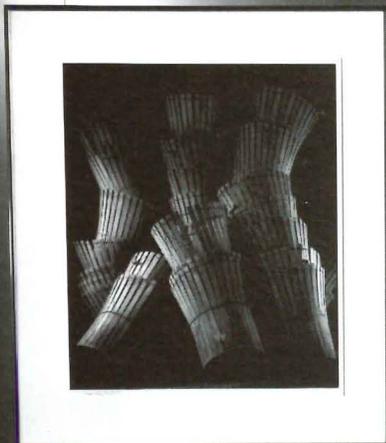
The original designs for the Panca bench, created by Guglielmo Ulrich in 1934, are in the collection of New York's Museum of Modern Art. But the current license for the design belongs to the company M2L,

which has recently reissued the bench. The re-edition, made of wenge wood covered with interlaced coach hide, measures 71 inches wide by 16 inches deep by 16 inches high. 800/319-8222. M2L, New York City. **CIRCLE 229**



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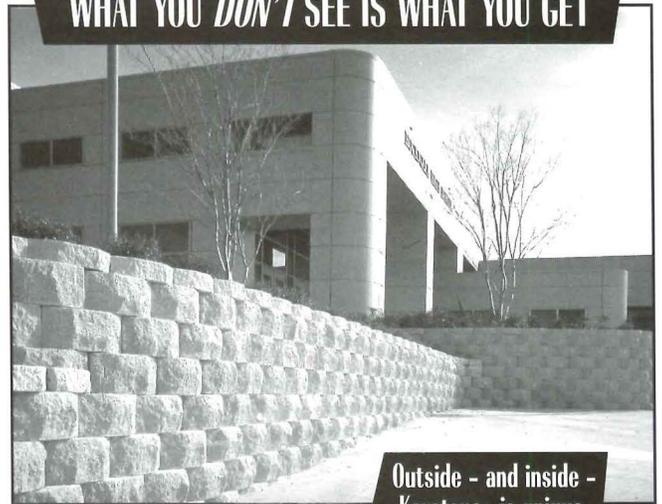
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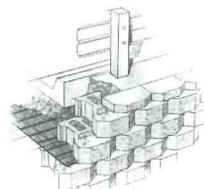


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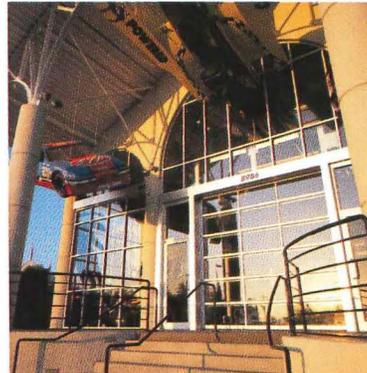
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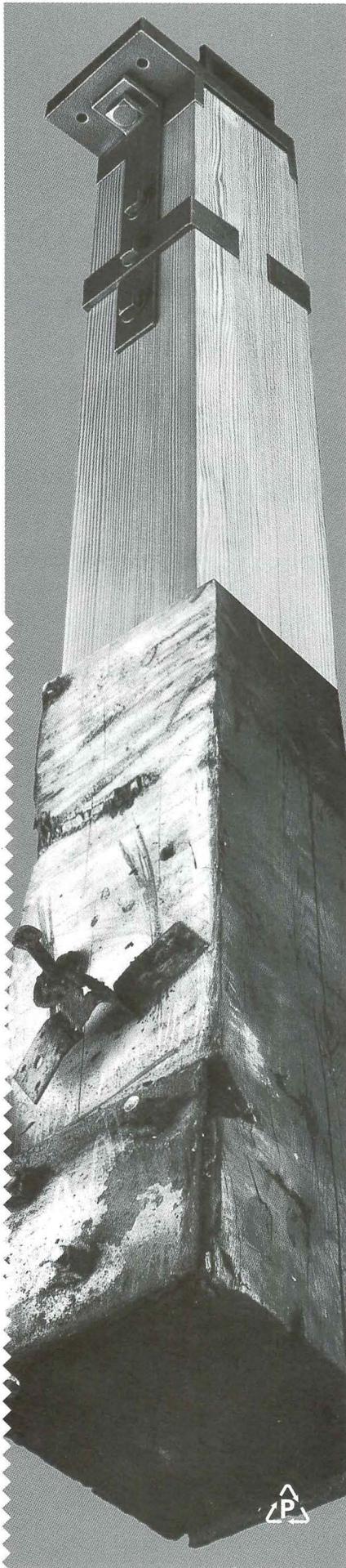
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PRODUCT LITERATURE

MRI enclosures

Lindgren's literature on Enviro-Shield shows how to protect MRI systems from magnetic interference. 630/307-7200. Lindgren, Glendale Heights, Ill. **CIRCLE 230**

Digital light control

Prescolite's brochure features the DiCon digital light control. 510/562-3500. Prescolite, San Leandro, Calif. **CIRCLE 231**

Cantilever racks

A new brochure from Paltier highlights cold-formed and structural cantilever racks. 800/323-0096. Paltier, Michigan City, Ind. **CIRCLE 232**

Organizing walls

A pamphlet on the Max/Wall features the chases that hold electrical and plumbing fixtures. 920/793-1121. Fisher Hamilton, Two Rivers, Wis. **CIRCLE 233**

Daylighting information

Guardian 275 has a new brochure on translucent daylighting. 888/SKY-COST. Guardian 275, Wausau, Wis. **CIRCLE 234**

Electronic catalog

Astrup's CD-ROM for Windows and Mac highlights canopies, marine fabrics, and awnings. 216/696-2820. Astrup, Cleveland. **CIRCLE 235**

MRI enclosures

TVS's controlled access unit for linen and waste chute systems is described in the company's new literature. 512/863-7549. TVS, Georgetown, Tex. **CIRCLE 236**

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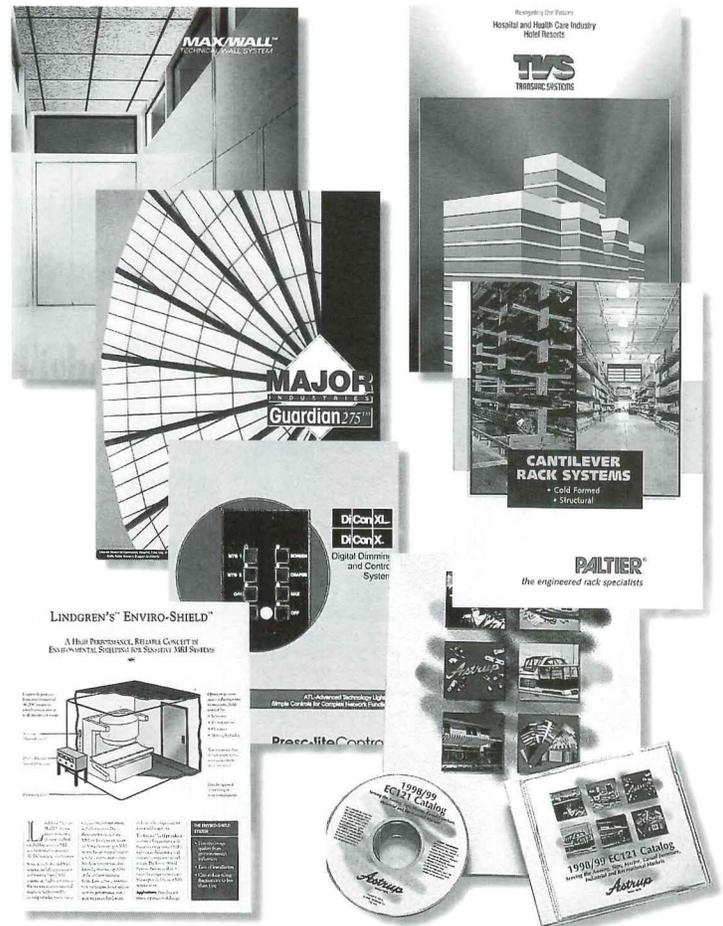
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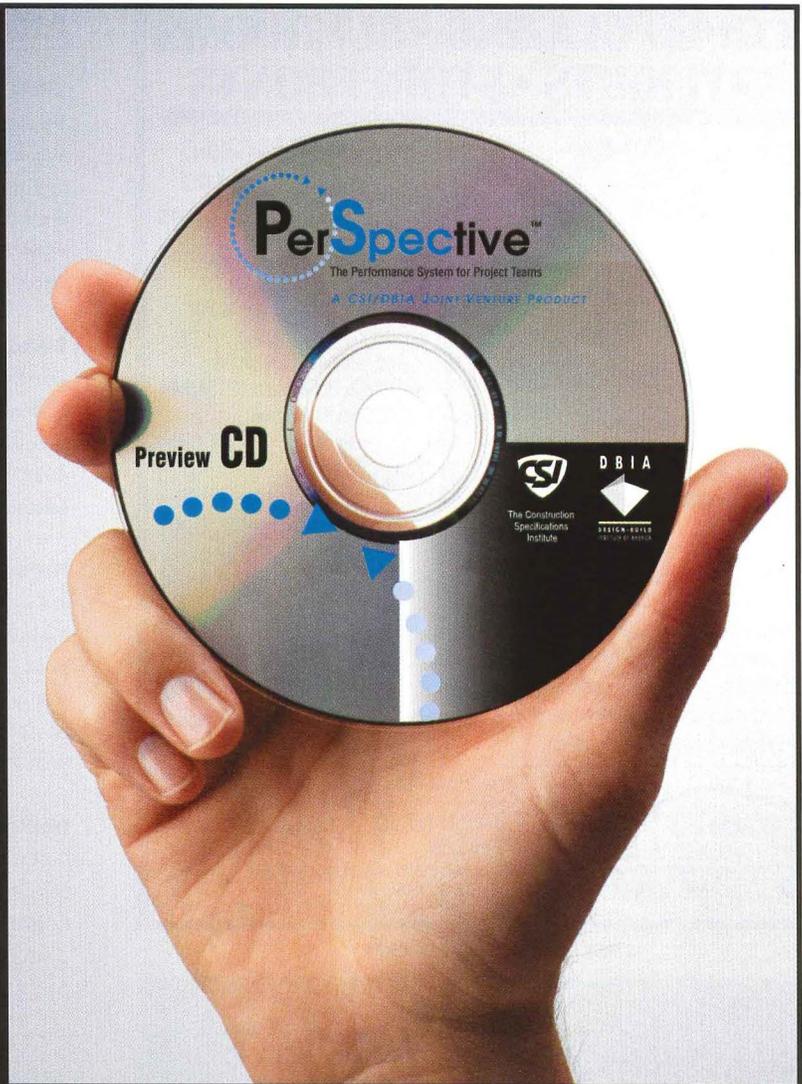
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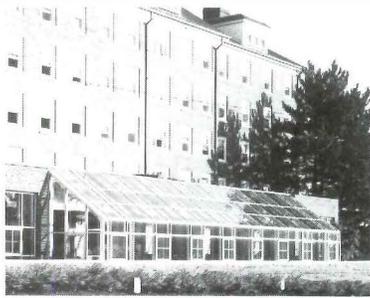
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CIRCLE 67 ON INQUIRY CARD

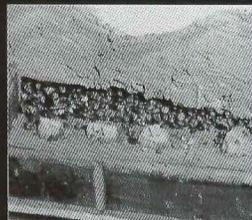
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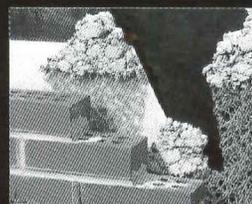
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PRODUCT LITERATURE

LRFD manual

The "Load and Resistance Factor Design Manual for Engineered Wood Construction" includes both design information and construction examples. 504/443-4464. Southern Pine Council, Kenner, La. **CIRCLE 237**

Safety flooring choices

Altro Floors' new catalog features information on safety flooring products, color selections, and warranties. 800/565-4658. Altro, Mississauga, Ont., Can. **CIRCLE 238**

Hardwood products

The new guide from the Hardwood Manufacturers Association (HMA), "Hardwood Expressions," provides details on solid hardwood flooring, cabinetry, furniture, and woodwork. 800/373-WOOD. HMA, Pittsburgh. **CIRCLE 239**

Dealer-architect collaboration

Outlook, Weather Shield's newsletter, has an insert called "Architectural Insights" that focuses on strengthening

the relationship between dealers and architects. 715/748-2100. Weather Shield, Medford, Wis. **CIRCLE 240**

Redwood products

The new architectural guide from the California Redwood Association is an eight-page color booklet that provides technical information for specifiers of redwood lumber. 415/382-0662. California Redwood Association, Novato, Calif. **CIRCLE 241**

Fiberglass insulation

CertainTeed's complete line of fiberglass insulation products for commercial applications is described in the company's new 16-page color catalog. 800/723-4866. CertainTeed, Valley Forge, Pa. **CIRCLE 242**

No-glare glass coating

Viracon Solarscreen 50, a new coated-laminate glass product that minimizes glare and solar heat gain, is detailed in literature sheets available from the company. 800/533-2080. Viracon, Owatonna, Minn. **CIRCLE 243**



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AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

ANSWERS

Questions appear on page 140. To receive CES credits, fill in the education reporting form below or at our Web site (www.archrecord.com).

1. The fundamental components of a flashing system are the base flashing, which continues the roofing membrane that is applied separately; and the various sheet metal elements, including cap flashing or counterflashing, copings, edge flashings, expansion joints, and scuppers. All these parts serve specific purposes and deserve equal design consideration.
2. The major types of sheet metal flashing materials are aluminum, copper, lead, stainless steel, Monel (a nickel and copper alloy), steel, and zinc alloy. Galvanized steel is used most often because it is easy to work with, bends easily, and is less expensive than other materials. Copper is likely to last the longest, but it is expensive and its water run-off stains many building materials, including concrete and stone. Which metal is selected also depends on cost, tensile strength (or stiffness), application details, coefficient of expansion, and compatibility with the base membrane.
3. To accommodate dimensional changes, the architect should specify materials that expand at similar rates or build some flexibility into the design. Two ways to do this are to fasten the laps, usually with solder, so

that the system moves as a whole; or to design each joint as an individual expansion control system. If the latter method is used, the metal must adequately lap at the joints—at least four inches—to provide room for movement. Cover and backer plates require more installation time but effectively shield lap joints where water leaks often occur. High-performance, elastomeric caulk also helps keep out water. Metal flashings must be large enough to do the job but small enough to prevent unnecessary movement.

4. Most roof problems are due to water leaking in and around the perimeter and at corners or junctions in the roof plane. Well-known trouble spots are perimeters, non-wall-supported deck junctions, and parapet walls. To avoid these problems, architects must think through the details three-dimensionally. Perspective drawings help architects think through the detailing at corners and transitions. Another cause of roof leaks is poor maintenance. Roofs should be inspected after major storms, heavy winds, and during and after construction.
5. Understanding what lies beneath the flashing determines the quality of the job. The roof deck and the flashing systems may be adequate, but the deck may have poor nail-retention properties. As a result, the flashing will pull out under high winds, temperature extremes, or other stresses. Wood blocking should be of adequate thickness and height to receive nails for both the roofing membrane and the flashing. Details, such as cants and crickets, should be securely anchored as well.



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- "Metal Flashing on Low-Slope Roofs" (page 135)
 "New Standard Promotes More Precise Specification of Resilient Wall Base" (page 142)

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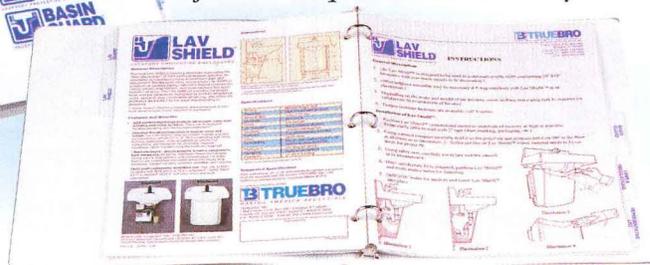
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HOUSES AS PRODUCTS *continued from page 117*

product for the better. Hundreds of serious architects work nearly exclusively at providing services to merchant builders. They're serious, skilled, and not very different from other architects. They are mindful of the lessons of form taught in architecture school and affected by the cult of Corbu, just like their peers.

One of these architects is Aram Bassenian, AIA, of Bassenian-Lagoni Architects in Newport Beach, California. He sees the schism between the work he does and the values of the architecture world simply: "You approach things from a business perspective and you catch the wrath of your profession." His architectural training gave him a dual sense of responsibility.

"On the one hand," he explains, "I want to advance the art that I was trained in, and on the other to do my share to better house Americans. Instead of spending a year working on a single high-rise, I can work on hundreds of house plans that will benefit thousands of homeowners. And even if I can't make these houses exactly as I wish, if I can make an adjustment to each one to the positive, by the end of the year I have done a lot of good."

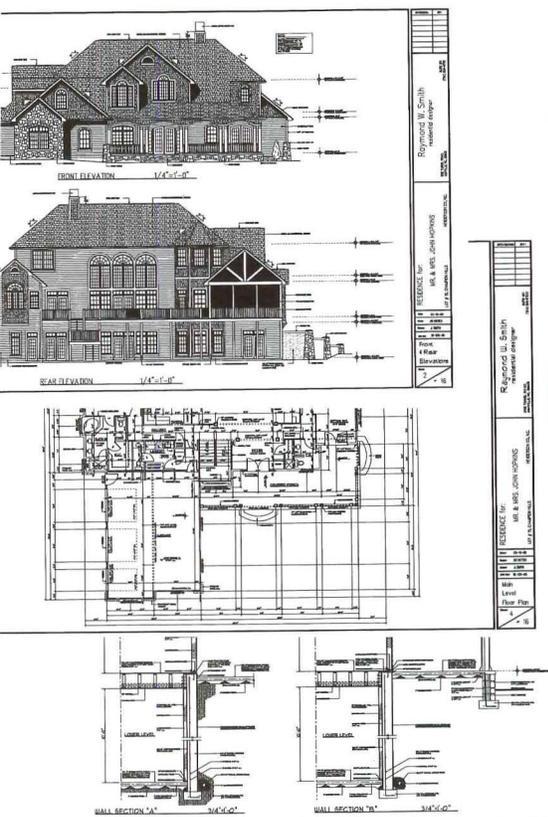
Are these "adjustments to the positive" that Bassenian and others make significant? Many are; in total, they have created the best-housed nation in the history of the world. And it's safe to say that Americans spend a smaller proportion of their incomes for their homes than the citizens of almost any other nation. A few architects who have played by the rules of the industry deserve a lot of credit for all this.

Some of the most dramatic recent improvements in builder housing revolve around lifestyle—the development of distinct home styles and community types for niche markets. Active-adult housing is

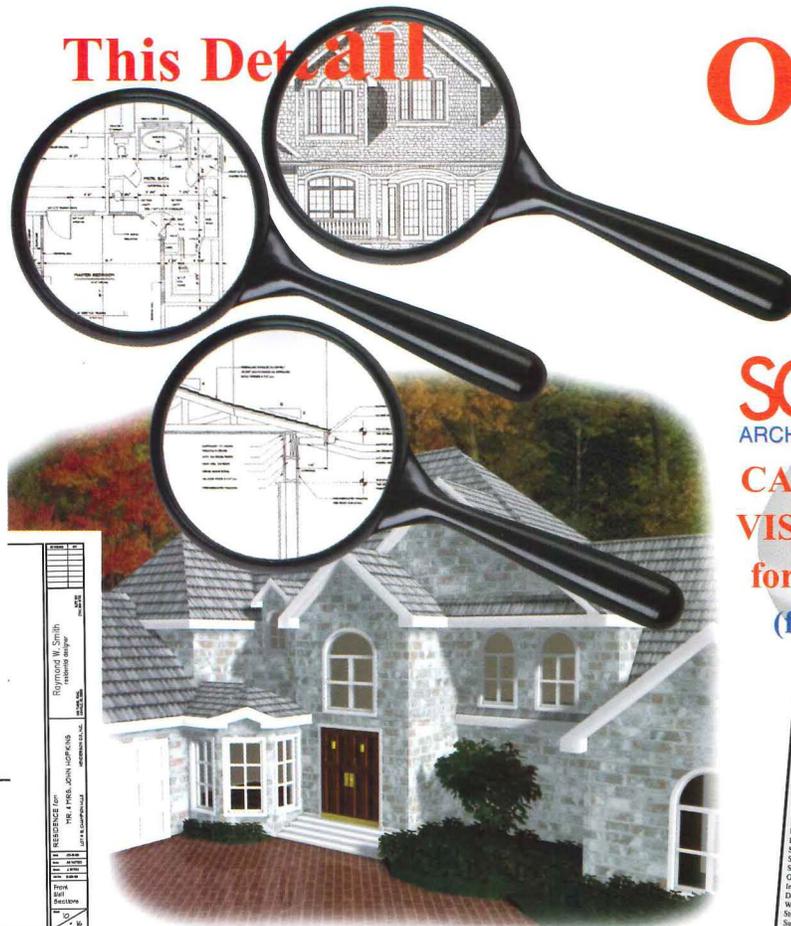


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Material List & Cost Estimate

Material	Description	Qty	Units	Cost	Mtsp
INSULATION					
	R-20 Wall Insulation	1853	sqft	0.30	10.00
	Vapor Barrier (Wall)	2368	sqft	0.05	10.00
	Air Barrier	2078	sqft	0.15	10.00
	Subtotal				
EXTERIOR FINISH					
	Brick	81	sqft	2.70	15.00
	Brick Siding	1527	sqft	1.25	15.00
	White Vinyl	1026	sqft	1.95	15.00
	Brick Header	1	each	14.50	10.00
	Brick Mortar	1	cm	12.70	10.00
	Brick Moulding	7	each	2.80	15.00
	Siding Starter	19	feet	0.23	10.00
	Siding S-Moulding	207	feet	0.16	15.00
	Siding Dripcap	222	feet	0.16	10.00
	Outside Siding Corner	95	feet	0.16	10.00
	Inside Siding Corner	56	feet	0.18	10.00
	Door Trim	42	feet	1.00	10.00
	Window Trim	80	feet	1.20	15.00
	Shavo	267	feet	1.20	15.00
	Subtotal	128	sqft	0.43	10.00
TOTAL PROJECT COST					

Working Drawings

3D Renderings

Material-Take-Offs

CIRCLE 70 ON INQUIRY CARD

one example; others include condominium communities with recreation centers designed for young people and family-oriented master-planned communities. Despite the potentially negative implications of segregation that these approaches can entail, the people who live in these homes and communities appreciate that they bought not just a home but a way of life.

One of the biggest design challenges of new housing is its stultifying sameness, which so many architects detest. Everyone, even the customer, wishes it were different. Buyers of homes, like buyers of most everything else, want more choice. But not if it means sacrificing the size-for-price equation, or doing something that looks too weird—don't forget there are resale issues when it's time to move on.

Computer technology may help fix this problem by addressing two of the causes of the monotony: the difficulty in getting homebuyers to understand their choices, and the difficulty builders have in keeping track of buyers' selections once they're made. Virtual-reality software can help homebuilders offer three times as many architectural options to customers, and showing beautiful pictures of how each home looks in its various configurations—with the bay window or without, with the home office or the extra bedroom—helps customers to make better choices. But the trend toward increasingly customized spec homes has made managing the job jacket for each house the builder's biggest headache. Computers can help with this too, linking workers in the field with the sales office.

Fast-forward just a year or two, and it's possible to imagine a system where buyers browse through home styles on a computer, manipulate each house in hundreds of ways—from adding rooms to choosing colors—and then issue an electronic order for exactly what they want.

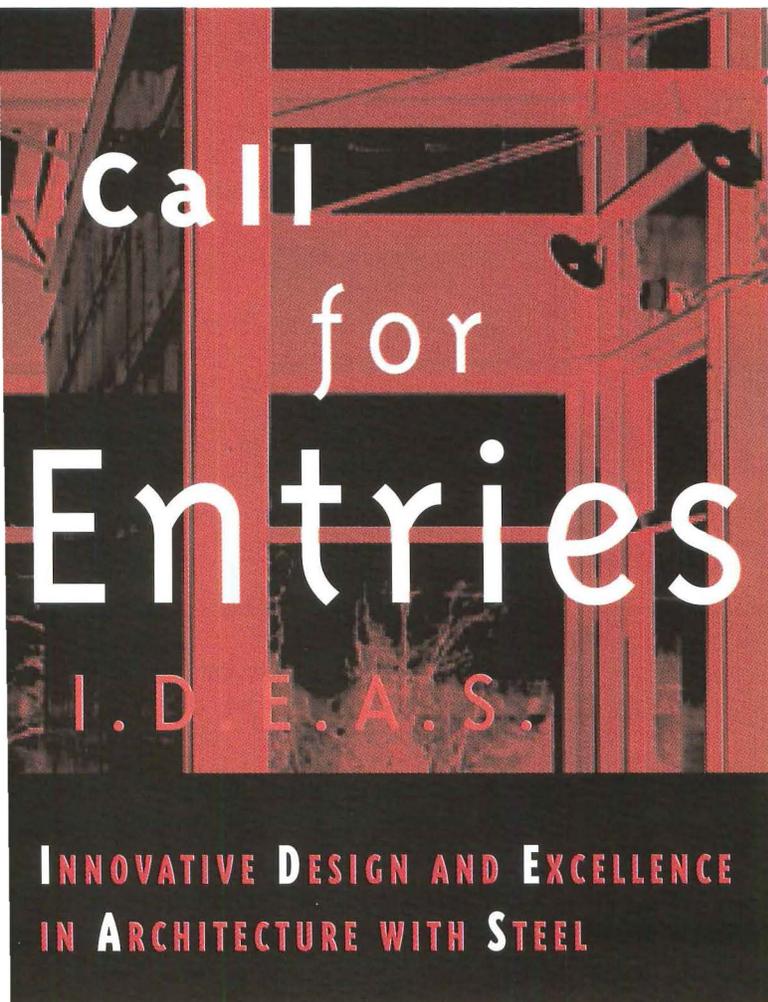
The builder will be able to share this information with the 100 or so subcontractors and suppliers involved. That's important since each of these suppliers, if they get the order wrong, could wreck the production concept of homebuilding, which is at the core of its efficiency. Without computer tracking, builders have no choice but to standardize homes and limit choices.

Artist or architect?

In the end, what can be said about the state of the art of American housing is this: given the imperfect but relatively responsive way that free markets work, America has obtained more or less exactly the homes that most Americans want. The two-story, two-and-a-half-bathroom, three-bedroom palaces we see cropping up like weeds across the surveyed and graded hillsides of America are almost scientifically calibrated to provide the public's version of balance between look and price: brick on the front and vinyl siding around the back, slate flooring in the entryway, resilient flooring in the kitchen. Still, these homes remain architectural products; they continue to evolve, however slowly and in lockstep with public taste. Like all buildings, they retain the power to shape lives, inspire, and characterize our landscape.

Do these homes cease to be within the purview of architects simply because they are also in the realm of the free market? Are architects not in the business of improving the built environment, but only in the business of making one-of-a-kind commissioned art?

If the latter is true, we have agreed on a very narrow definition of the design profession. We have also condemned architects to serve only the wealthy, and to provide a correspondingly limited outlet for the profession's best talent. That is something we will all suffer for. ■



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CIRCLE 71 ON INQUIRY CARD

(continued from page 64)

Union Internationale des Architectes Student Competition

Submission deadline: January 31

Student entrants are invited to design a housing project for a city in their home country. In addition to cash, the winner will receive the UNESCO Prize for Architecture. For information call Liu Kecheng at Xi'an University, Xi'an, China, 011/86/29/220-29-43, or E-mail LiuKCH@pub.online.xa.sn.cn.

Young Architects Forum: Scale

Submission deadline: February 1

"Scale" is the theme of this year's competition sponsored by the Architectural League of New York. Open to architects and designers who have

graduated from undergraduate or graduate programs in the last 10 years. Winners receive a cash prize and are invited to exhibit their work at the Urban Center. For an entry form or for further information, call 212/753-1722.

Encouraging Neighborhoods of Choice and Diversity

Registration deadline: February 15

Submission deadline: April 15

This competition seeks innovative and sustainable redevelopment strategies for a Baltimore neighborhood that has witnessed a dramatic decline in population. First prize for the winner is \$10,000. For more information, call Rob Inerfeld at the Neighborhood Design Center, 410/233-

9686, E-mail him at inerfeld@hotmail.com, or visit www.ndc-md.org.

NYSCA Project Grants

Application deadline: March 1

The Architecture, Planning and Design Program of the New York State Council on the Arts announces grants provided through its Independent Projects category. Grants of up to \$10,000 for architects, designers, and scholars are available for projects that advance the field and contribute to the public's understanding of the designed environment, especially those that are outside the realm of traditional practice. Open to New York State residents only. Contact Anne Van Ingen at 212/387-7013 or E-mail avaningen@nysca.org.

DuPont Benedictus Awards

Submission deadline: March 8 (professional architects); March 19 (students)

These awards, open to professional architects and students, recognize the use of laminated glass in commercial and residential projects. Winning architects receive a sculpture by glass artist Hans Godo Fräbel; winning students receive \$15,000 for their programs. Entry forms are available from each of the sponsoring organizations: contact Stephanie Vierra at the AIA, 202/626-7446, vierras@aiaemail.aia.org; Francine Troupillon at the UIA, 011/33/1/45-24-36-88, uia@uia-architectes.org; Joanna Hanes-Lahr at DuPont, 202/393-5247, haneslahr@mcimail.com. Information is also available at www.dupont.com/safetyglass/benedictus/index.html.

The Van Alen Institute Dinkeloo Fellowship

Submission deadline: May 7

A two-month stay at the American Academy in Rome will be awarded for the submission that best demonstrates how architecture and technology can be environmentally conscious. Open only to those who have graduated, or will graduate, from U.S. architecture degree programs between May 1990 and September 1999. For a competition packet, contact the Van Alen Institute at 212/924-7000, E-mail vanalen@vanalen.org, or write 30 West 22nd Street, New York, N.Y. 10010.

Resort Concept Competition

Submission deadline: May 15

The San Francisco-based Valor Group is sponsoring a competition for the design of an environmentally sensitive, portable tent village. For more information, call 415/276-5958. ■

Please submit information for events and competitions at least six weeks prior to the magazine's publication date (February 15 for the April issue).

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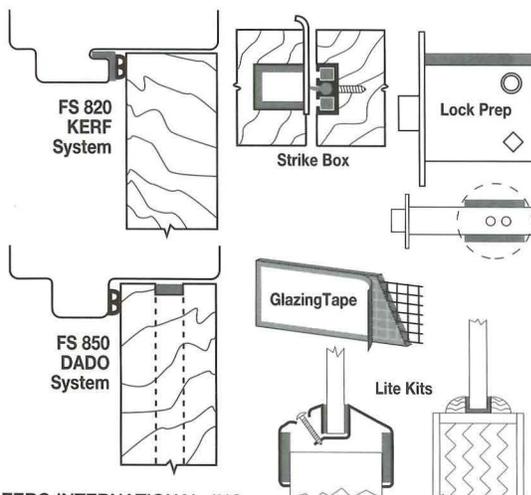
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Ball State University is in Muncie, Indiana, a city with a population of approximately 80,000, located 50 miles northeast of Indianapolis. The university has an enrollment of 18,000 students and a full-time faculty of 870. The College of Architecture and Planning, the only state-supported school of architecture in Indiana, offers programs at the baccalaureate and master levels to its approximately 685 students through its three departments: Architecture, Landscape Architecture, and Urban Planning. The College faculty, approximately 60 in number, hold degrees from more than 40 universities and have professional experience in a broad range of private firms, public agencies, and other academic institutions. Particular strengths of the College are its diversity and inter-disciplinary approach, as exhibited in its curricula and in special programs, such as Community-Based Projects.

The College is looking for a dean who has attained distinction in the environmental design professions and can exhibit evidence of knowledge of the professions, outstanding leadership and management ability, and a strong sense of vision. The Dean will provide academic leadership and foster inter-disciplinarity and will be expected to teach at least one course per year. In addition, the Dean will cultivate and maintain relationships with external constituents, including benefactors and alumni.

Minimum qualifications for the position include: master's degree and credentials that will merit a tenured faculty appointment as full professor in one of the departments in the college; demonstrated record of success in scholarly productivity and/or professional practice; demonstrated success in developing external funding or fund raising; experience in administration; teaching experience; and ability to communicate effectively. Salary is competitive and commensurate with experience and qualifications.

Applicants and nominees should send a letter of application, curriculum vitae, and the names of three references to: Philip Repp, Chairperson, Selection Committee for Dean of Architecture and Planning, Office of the Provost, Ball State University, Muncie, Indiana 47306. Review of applications will begin February 15, 1999, and continue until the position is filled. The position is available July 1, 1999. (www.bsu.edu/cap)

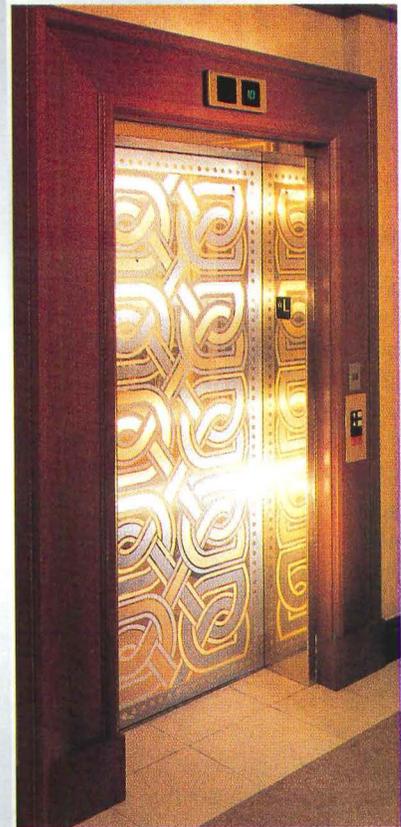
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THE FUTURE Expansion or contraction, ascent or descent? Some thoughts on the future shape of cities.

COMPILED BY DAVID SIMON MORTON



In the future, the money and the skilled workers that usually maintain a city and its infrastructure will have fled. Only the poor will remain, and they will fix up the deteriorating city as would anyone wanting to survive. The future city's sleek skyscrapers and empty buildings will be made useful, retrofitted with whatever is near at hand.

—Lawrence G. Paull
Production Designer, *Blade Runner*
Beverly Hills, Calif.

Despite all the talk about how the Internet is going to make distance irrelevant, physical proximity of people, homes, and businesses still matters.

Americans yearn for true community, yet they increasingly look to networks to connect us. Today it's the Internet; in the past it was telephones, television, radio, and even the highway system. Ironically, most of these networks have had the result of spreading us out even further, both physically and socially.

While I see value in these networks, they'll never replace the kind of community that begins at one's front door. For this reason, I believe that cities of the future will look and function pretty much like the best cities of the past.

—Peter Katz
Author, *The New Urbanism: Toward an Architecture of Community*
San Francisco

If cities are to survive as viable places to live, they will learn to use all resources more productively. No city today could survive being cut off from the flow of life support from

the outside. Cities of the future will begin to learn the lessons of Curitiba, Brazil, where planning is based on what will best enhance the lives of children. Using this design principle, the people of Curitiba seek to promote genuine democracy, the efficient use of resources, and the restoration of the environment.

—L. Hunter Lovins
Executive Director
Rocky Mountain Institute
Snowmass, Colo.

of housing is made available at affordable prices.

—James A. Johnson
Chairman and CEO
Fannie Mae
Washington, D.C.

All the indicators suggest that the megalopolis will continue to expand without constraint, ultimately leaving in its wake the fragmented detritus of worn-out stock and infrastructure, not to mention people, as has been

The cities of the future that will continue to thrive are those that develop regionally, reversing the decades-long leeching of their tax and population bases to the suburbs. Reinvestment in the social infrastructure of schools, hospitals, and public space will support growth and make the great cities of the world function as desirable places to live as well as work.

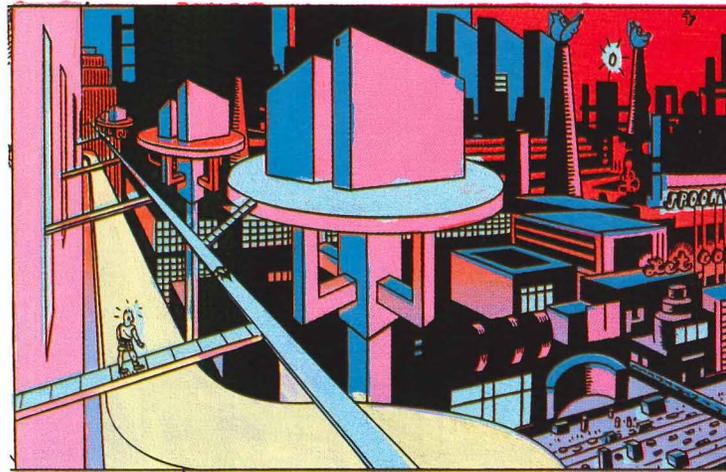
The shape they take will follow the form of their social innovations. High, low-sprawled, or underground—the architecture will take its inspiration from local conditions. Then the cities of the future might be as varied and brilliant as the great cities of the past, not the present high-rise monotony of downtowns from Los Angeles to Kuala Lumpur.

—Ross Miller
Author, *Here's the Deal: The Buying and Selling of a Great American City*
Storrs, Conn.

One of the greatest changes that cities will go through over the next five to 10 years is the replacement of high-rise and high-crime public housing neighborhoods with attractive, mixed-income developments. We've already helped dozens of cities to start this process.

We're seeing cities all over the nation following New Urbanist principles to create "people-friendly" neighborhoods that low-, moderate-, and upper-income families can share.

—Andrew Cuomo
Secretary, U.S. Department of Housing and Urban Development
Washington, D.C.



The city of the future, by Gary Panter, creator of *Jimbo*.

The city of the future is a 24-hour city filled with opportunities for work, culture, and entertainment, and anchored by safe and stable neighborhoods of homeowners.

Vacant lots will be built up, historic structures will be restored, and aging buildings will be modernized to become home to a growing urban population. More young families and immigrant households of moderate income will make their homes in the city, as a wide variety

happening to most American provincial towns since 1945. This debilitating entropy is inseparable from that interstitial socioeconomic mix of First and Third Worlds, both within the inner city and without. Hence the familiar bombed-out expanses of Detroit, Buffalo, Houston, etc.

[Excerpted from a longer response]
—Kenneth Frampton
Ware Professor of Architecture
Columbia School of Architecture
Planning and Preservation
New York City