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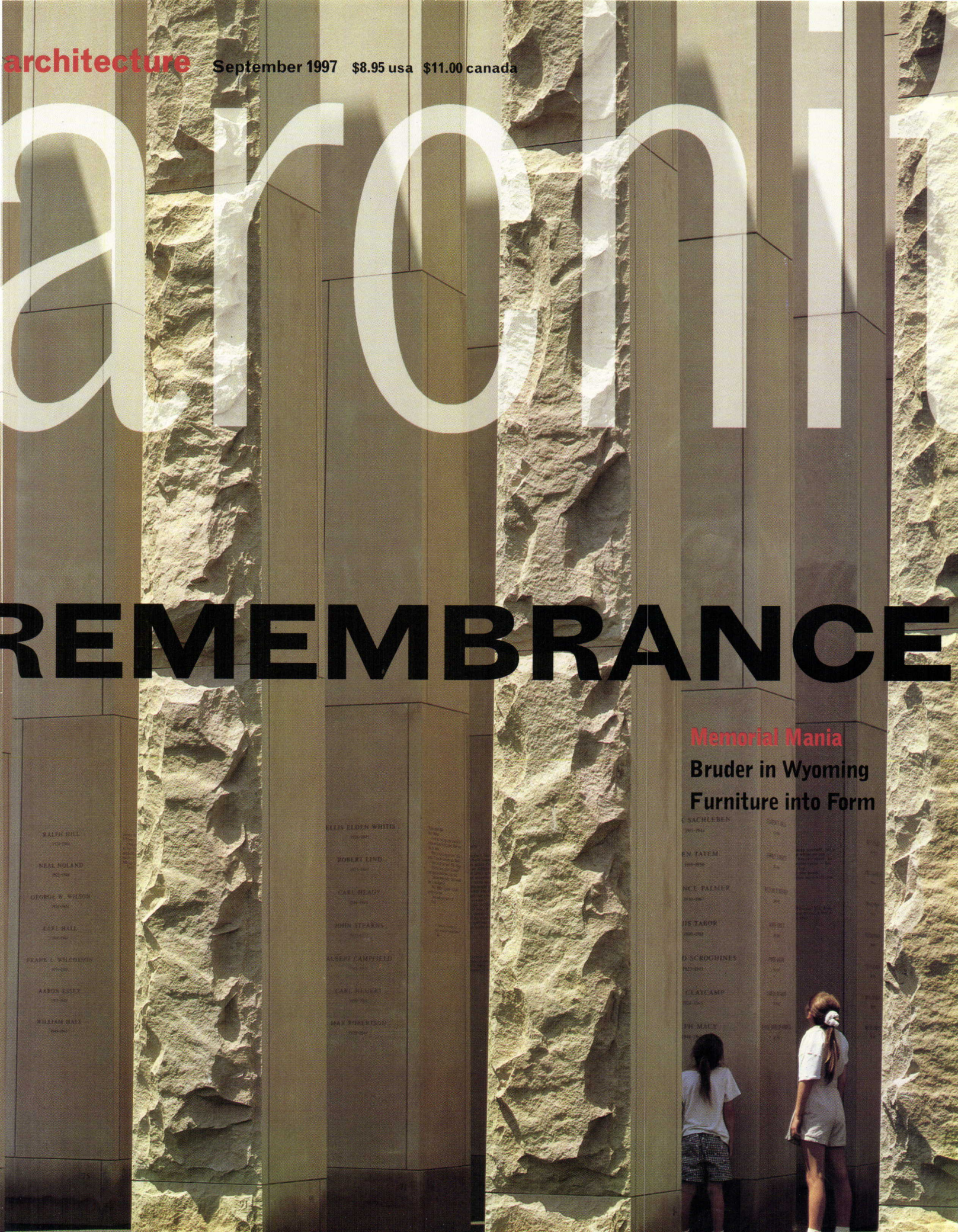

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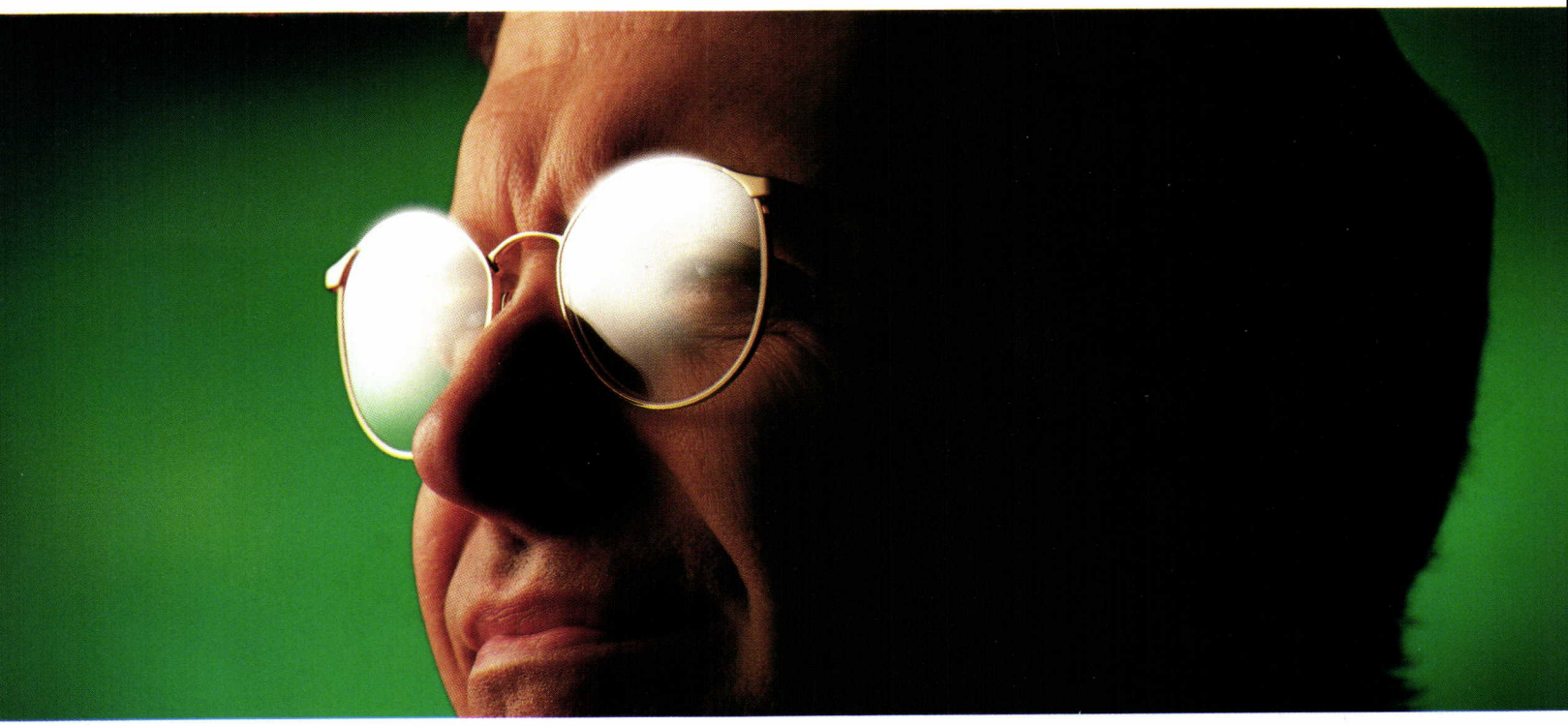

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Monumental Rejection

A federal review raises the opportunity to rethink a major memorial's design and site.

Few memorials are built as originally designed, especially in Washington, D.C. It took 51 years to complete the Washington Monument and even then, only the obelisk designed by Robert Mills was built, not the Classical temple Mills planned at its base. The newly dedicated Franklin Delano Roosevelt Memorial took nearly as long, with four different designs along the way. Now the World War II memorial, planned for the most prominent site on the Mall, faces similar revisions after two federal commissions rejected its design in July. This disapproval echoes widespread criticism of the memorial's grandiose architecture, including my own (*Architecture*, March 1997, pages 62-63).

The U.S. Commission of Fine Arts (CFA) and National Capital Planning Commission have sensibly concluded that the colonnades, walls, berms, and indoor spaces of the World War II Memorial are too imposing for its location between the Washington Monument and Lincoln Memorial. "Less can be more," asserted CFA Chairman J. Carter Brown, who characterized the memorial's lopped-off columns as having "a confusing set of symbolic functions," adding, "They don't say anything except, 'Here I am in Washington.'"

The planning commission went further, requesting a memorial better integrated into the Mall's historic setting and a comprehensive environmental analysis of the revised design's impact on the site. It also recommended that the sponsor of the World War II memorial, the American Battle Monuments Commission (ABMC), abandon the idea of housing exhibits in the memorial, and instead, pursue a full-blown museum in another location.

Now that the memorial's designer, Friedrich St. Florian, has been sent back to the drawing board, the Rhode Island architect must produce a design that eventually will be accepted by the two federal commissions—and the public. But the ABMC would be wise to consider another architect and another design altogether. After all, St. Florian's solution has been officially rejected, invalidating his competition-winning scheme for the Mall site. To whittle away his design would be tantamount to starting over. It would make a mockery of the competition for the memorial and all those who entered.

A similar turn of events marred the Korean War Veterans Memorial, when its competition-winning designers were asked to radically revise their scheme. They decided to drop out rather than compromise their vision, and the task of changing their design fell to the architect of record. The result is a dreadful tableau of ghoulish statues, which now stands as a permanent tribute to the contentiousness of the undertaking.

The ABMC should take a lesson from the Korean War Memorial and start afresh, with a new design and a new site. The celebratory monument they seek—and that World War II demands—can never be realized at the memorial's current site in the middle of the Mall. Only a landscaped solution is possible at this location, one that preserves the Mall's hallowed ground and majestic vistas.

By moving the memorial off the Mall, the commission could not only build a more prominent memorial, but a museum to tell the complicated, global history of World War II in a place that benefits the city. Without a better concept, this memorial, intended to commemorate unity, will continue to be haunted by conflict.

Deborah K. Dietsch

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Jordan Mozer, Dreamer, Inventor, Artist;
President, Jordan Mozer & Associates, Ltd., Chicago, Illinois, an architecture firm

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Design divorce

Antoine Predock's Science Center, deserves both more praise and criticism than you handed out (*Architecture*, July 1997, pages 94-101).

With Tod Williams and Billie Tsien's Art Museum addition and Will Bruder's Central Library, Predock's museum ups the architectural ante in Phoenix. These are real works of architecture, rich in allusion and metaphor. You complain of the Science Center's lack of relationship to Heritage Square, but fail to recognize the museum's parallels to the Rossen House, which anchors Heritage Square with a turret and bay, anticipating Predock's compositional richness.

Your critique of consigning offices to the basement is valid, but misses the greatest disappointment—the almost total dissonance between the exhibits and the building. Museums today just ask for so many square feet of "black boxes" to be turned over to exhibit designers, denying the architect the opportunity to add order and meaning. One hankers for the logic of 19th-century history museums whose architecture and exhibits resonated in harmony.

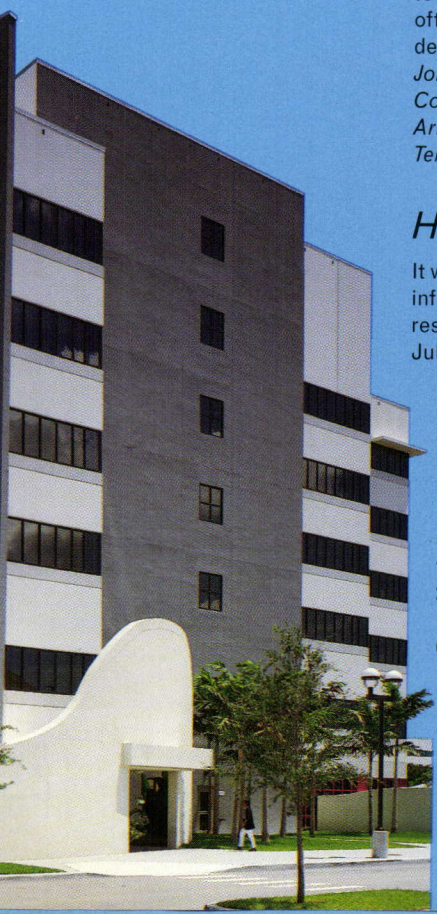
Predock has undoubtedly contributed to the architectonic seriousness of Phoenix. But his Science Center is also a monument to the price of the divorce that too often separates the exhibition designer from the architect.

John Meunier, Dean
College of Architecture
Arizona State University
Tempe, Arizona

Hurricane-proof

It was a pleasure to read your informative article on hurricane-resistant cladding (*Architecture*, July 1997, pages 136-140). While the article was thorough and descriptive, we respectfully challenge the State of Florida Emergency Command Center's claim to be the strongest building in Florida. Our vote, biased as it may be, is for our design for the Carnival Cruise Line's 225,000-square-foot world headquarters in Miami, Florida (left). This building is able to withstand 200-mile-per-hour hurricane winds.

Conrad F. Strabone
AI-FIVE
Philadelphia, Pennsylvania



Knee-jerk jingoism

Your editorial protesting that two major U.S. museum commissions have gone to foreign architects (*Architecture*, June 1997, page 13) feels like knee-jerk jingoism. Get with it. "Buy American" seems a little silly in our increasingly global village, especially for museums housing modern art.

You also cite a "revival of America's cultural inferiority complex." These clients aren't nouveau riche Chicago meatpackers and railroad barons buying instant culture from Bernard Berenson's art-trinket rape of Europe. They head iconoclastic art institutions, and are secure enough to actually choose works that are "practical, familiar, and subdued." That they have shunned "American daring" with its visual and spatial acrobatics is not necessarily an act of craven insecurity, but reaffirmation of the stabilizing role that art plays in our global life.

Mike Brill
President, Buffalo Organization for Social and Technological Innovation
Buffalo, New York

Carnegie criticism

You raise some interesting issues in your protest of Roberts Hall at Carnegie Mellon University (*Architecture*, June 1997, page 81)—and settle none of them. Roberts Hall could have more literally copied the form and materials of Hornbostel's Hammerschlag Hall, but that approach would have disregarded Roberts Hall's steeply sloped site. This Neo-historic approach also would have ignored Roberts Hall's other neighbors: the steel, glass, and concrete Scaife Hall (1962) and the Brutalist Wean Hall (1970).

Your photo is taken from a parking garage on the other side of the valley—a view seen by few. From the roads around campus, one sees the relationship between a new building with its own identity that acknowledges its older neighbor.

Paul J. Tellers, University Architect
Carnegie Mellon University
Pittsburgh, Pennsylvania

I am disappointed in your protest of Carnegie Mellon University's Roberts Hall. When a critic's objective turns to discrediting a firm recognized for exceptional design, it says more about the critic than the architect. Payette Associates and Carnegie Mellon University should be complimented for their quiet, sensitive solution. How would you react if one of the "wild modern" types had received the commission? Your shoot-from-the-hip reporting damages the real critics—those exceptional architects that self-criticize by exploring new paths in design.

Reginald D. Hough
New York City

Postmodern debate

I disagree with your July editorial (page 13). The Portland Building by Michael Graves is a monument to vanity. It ignores the needs of its users and is an affront to public sensibilities. Further, its ill-conceived design is a breach of the owner's faith in an architect.

One wonders if Charles Moore, in his tongue-and-cheek design for the Piazza d'Italia in New Orleans, anticipated his work's dilapidation. I think the egotism that allows an architect to place his own face among the sculptures decorating his work is the height of in-your-face mockery. I say let these two mistakes die quickly—the sooner, the better.

Theodor A. Grossman
Taos, New Mexico

I am amused by your adulation of the Portland Building in Portland, Oregon (*Architecture*, July 1997, page 13). Obviously, you have not spent enough time in and around the building to recognize its inadequacies. The national competition requested a design that was subordinate to the other more important government edifices surrounding the site. What Michael Graves produced is a screaming tart. Each elevation features a cutesy pattern of repeated square windows that surely does not accomplish "stringent energy conservation standards."

It should be noted that Graves disavowed any responsibility once construction problems began. When recently questioned by *The Oregonian*, Graves asked, "Why do Portlanders hate the Portland Building?" The answer is simple—because it is in Portland.

Alex Pierce
Portland, Oregon

I appreciated your July editorial about the Piazza d'Italia. As an architecture student at Tulane University, I watched as the piazza

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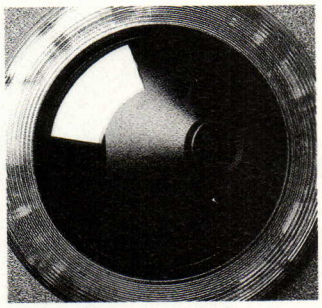

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deadline for submissions: **October 31, 1997**

Annual Awards for Visionary Design

Architecture continues the tradition of the P/A Awards to honor unbuilt projects. The purpose of this awards program is to encourage outstanding work in architecture and urban design before it is executed. Awards and citations will be designated by a jury of distinguished, independent professionals, who will base their decisions on overall design excellence and innovative ideas. Potential entrants are urged to interpret the call for outstanding work as broadly as possible. Entries, however, are limited to specific unbuilt projects that have been commissioned by real clients for execution. Judging will take place in November 1997, and winners will be notified in late November. The winning entries will be featured in the April 1998 issue of Architecture.

Jury

James Cutler
James Cutler Architects
Seattle

Zaha Hadid
Zaha Hadid, Architect
London

Dan S. Hanganu
Dan S. Hanganu Architects
Montreal

Carlos Jimenez
Carlos Jimenez Studio
Houston

Sheila Kennedy
Kennedy & Violich Architecture
Boston

Deadline for Submissions: October 31, 1997

Entry Form: Annual Awards for Visionary Design

Please complete and submit all parts intact with each entry (see paragraph 12 for instructions). Photocopies of this form may be used.

Entrant:
Address:

Credit(s) for publication (attach additional sheet if necessary):

Entrant phone number:
Entrant fax number:
Project:
Location:
Client:
Client phone number:
Category:

Entrant:
Address:

Project:

I certify that the submitted project was executed by the parties credited and meets all eligibility requirements (1-5). I understand that any entry that fails to meet submission requirements (6-16) may be disqualified. Signer must be authorized to represent those credited.

Signature:

Name (typed or printed):

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Architecture
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Project:

Your submission has been received and assigned number _____
(Architecture will fill in this number and return this receipt. Please retain it for reference.)

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(Receipt)

Awards Editor
Architecture
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Entrant:
Address:

(Return label)

Judging will take place in November 1997.
Winning entries will be featured in the April 1998 issue of Architecture.

Eligibility

1 Who Can Enter
Architects and other environmental design professionals practicing in the U.S., Canada, or Mexico may enter one or more submissions. Proposals may be for any location, but work must have been directed and substantially executed in offices in those countries.

2 Real Projects
All entries must have been commissioned for compensation by clients with the authority and the intention to carry out the proposal submitted. In the case of design competitions, the only eligible proposals are those the client intends to execute.

3 Architectural Design Entries
Entries in Architectural Design may include only works of architecture scheduled to be completed after May 1, 1998. Indicate the anticipated completion date on Project Facts page (see item 7). Prototypical designs are acceptable if commissioned by a client.

4 Urban Design Entries
Entries in Urban Design must have been accepted by a client who intends to base development on them. Implementation plans and anticipated schedule must be explained in submission.

5 Verification of Client
The jury's decision to premiate any submission will be contingent upon *Architecture*'s verification that it meets all eligibility requirements. To that end, *Architecture* will contact the clients of projects selected by the jury for recognition. *Architecture* reserves final decision on eligibility and accepts no liability in that regard.

Submission Requirements

6 Binders
Entries must consist of legibly reproduced graphic material accompanied by adequate explanatory text in English. All entry material must be firmly bound in binders no larger than 17 inches in either dimension (9 by 12 inches preferred). Avoid fragile bindings. Supplementary documents, such as research reports or urban design appendices, may be bound separately to avoid unwieldiness, as part of the same entry. Slides should be submitted only as supplementary material. Unbound material in boxes, sleeves, etc., will not be considered.

7 Project Facts Page
To ensure clear communication to the jury, the first page in the entry binder must list Project Facts under the following headings: Location, Site Characteristics, Zoning Constraints, Type of Client, Program, Construction Systems, Funding, and Schedule. Supply square footages, costs, and specific materials where possible. All project facts should fit on one page.

8 Documenting the Process
Entries should document the design process, as well as its result. Entrants are encouraged to include copies of preliminary sketches, alternative preliminary schemes, information on context and precedents for the design, and excerpts from working drawings.

9 Research Behind Projects
Although *Architecture* is cosponsoring a separate competition for architectural research, we encourage the inclusion of any research performed in support of an architecture or urban design project that is otherwise eligible.

10 No Original Drawings
Original drawings are not required; *Architecture* will not accept liability if they are submitted. No models or videotapes will be reviewed.

11 Anonymity
To maintain anonymity in judging, no names of entrants or collaborating parties may appear on any part of the submission except on entry forms. Credits may be concealed by tape or other simple means. Do not conceal identity or location of projects.

12 Entry Forms
Each submission must be accompanied by a signed entry form (left). Reproductions of the form are acceptable. Fill out the entire form and insert it intact into an unsealed envelope attached to the binder's back cover.

13 Entry Categories
Identify each submission on its entry form as one of the following: Educational (including any campus buildings), House (single-family), Housing (multifamily), Commercial, Cultural, Governmental, Health-Related, Industrial, Recreational, Religious, or Urban Design. Mixed facilities should be classified by the largest function.

14 Entry Fees
An entry fee must accompany each submission. The fee is $100 for *Architecture* subscribers; $135 for non-subscribers. (Non-subscribers can choose to subscribe at a special rate of $35 per year and pay the $100 entry fee; see entry form.) Make check or money order payable to *Architecture*. Canadian and Mexican entrants must send drafts in U.S. dollars. Fee must be inserted in unsealed envelope with entry form (see 12, above).

15 Return of Entries
Architecture will return entries ONLY if they are accompanied by a self-addressed, stamped envelope. *Architecture* assumes no liability for loss or damage.

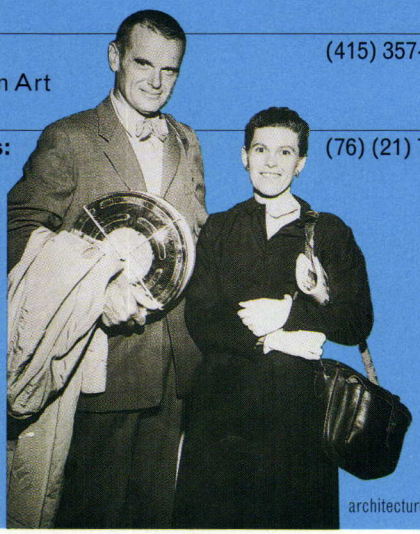
16 Entry Deadline
Deadline for sending entries is October 31, 1997. All entries must show a postage date as evidence of being in the carrier's hands by October 31. Hand-delivered entries must arrive at *Architecture*'s editorial office (address below) by 6 p.m. on October 31. To ensure timely receipt, *Architecture* recommends using a carrier that guarantees delivery within a few days.

Address entries to:
Awards Editor
Architecture
1130 Connecticut Avenue, N.W.
Suite 625
Washington, D.C. 20036

DEADLINE: October 31, 1997
Strictly Enforced

exhibitions

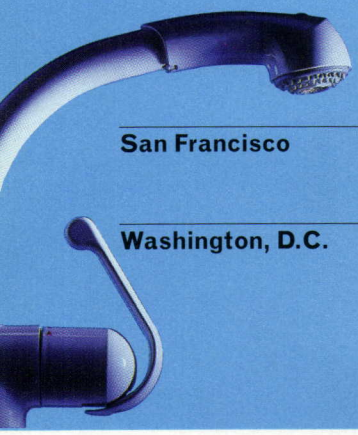
city	dates	exhibition	contact
Chicago	through November 9	**Frank Lloyd Wright: Drawing Inspiration from Nature** at the Chicago Botanical Garden	(847) 835-5440
Los Angeles	through November 30	**Steven Ehrlich Architects: World Beat Architecture** at Frank Lloyd Wright's Hollyhock House	(213) 913-4157
New York	through October 19	**Do-It-Yourself Architecture for the Great Outdoors** at the Cooper-Hewitt National Design Museum	(212) 860-6894
San Francisco	through December 2	**Shiro Kuramata 1934-1991** at the San Francisco Museum of Modern Art	(415) 357-4000
Weil am Rhien, Germany	September 19-January 4, 1998	**The Work of Charles and Ray Eames: A Legacy of Invention** at the Vitra Design Museum	(76) (21) 702-3200



Charles and Ray Eames with the film reels of "Glimpses of the USA" in hand

conferences

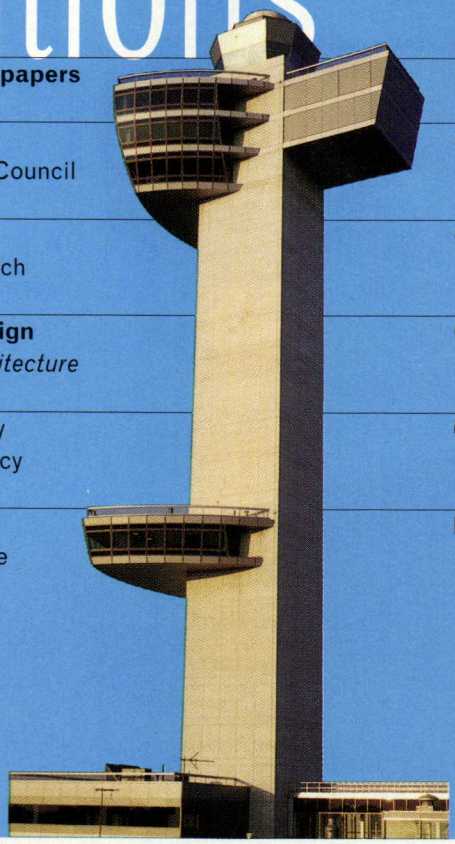
city	dates	conference	contact
Austin	October 31-November 2	**Green Building Conference**	(512) 264-0004
Kansas City	October 17-19	**The 1997 Remodelers' Show**	(800) 822-8861
Miami	November 6-9	**Environmental and Economic Balance: The 21st Century Outlook**, cosponsored by the AIA, U.S. Green Building Council, and U.S. Department of Energy	(202) 626-7482
New Orleans	October 19-22	**Symposium on High Performance Concrete**, sponsored by the Federal Highway Administration	(312) 786-0300
	October 20-23	**American Association of Homes and Services for the Aging Conference**	(202) 508-9457
San Francisco	October 15-18	**National Association of Industrial and Office Properties Conference**	(703) 904-7100
Washington, D.C.	October 22	**North American Construction Forecast Conference**	(800) 283-4699



Grohe's Ladylux Plus kitchen faucet, exhibited at the Remodelers' Show

competitions

competition	deadline	contact
Making Cities Livable conference call for papers	October 1	(408) 624-5126
Wood Design Award Program, sponsored by the Wood Products Promotion Council	October 10	(703) 733-0600
Awards for Architectural Research, cosponsored by *Architecture* and AIA Research	October 15	(202) 828-0993
Concrete Reinforcing Steel Institute Design Awards Competition, cosponsored by *Architecture*	October 24	(708) 517-1200
Awards for Visionary Design, sponsored by *Architecture*, continuing the P/A Awards legacy	October 31	(202) 828-0993
Rome Prize fellowship competition, sponsored by the American Academy in Rome	November 15	(212) 751-7200



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Project Outline

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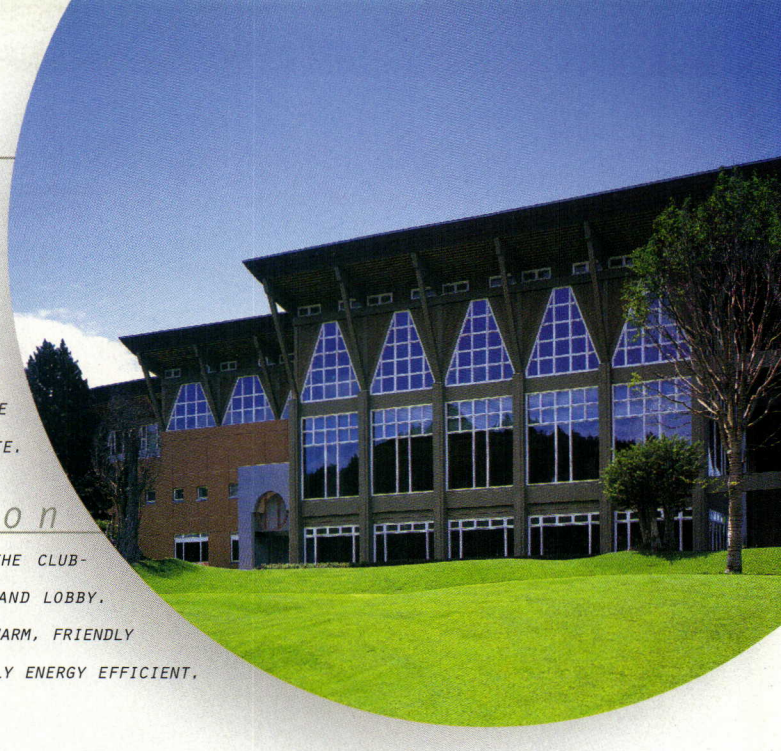

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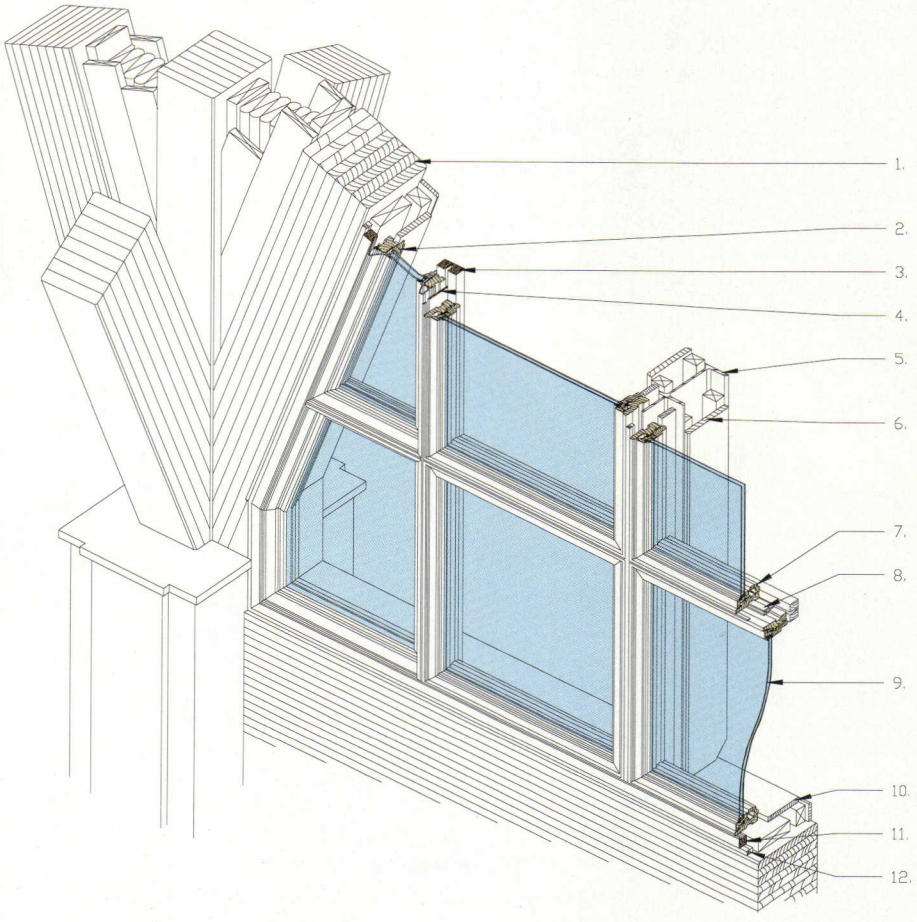
Yuji Noga, Principal Architect



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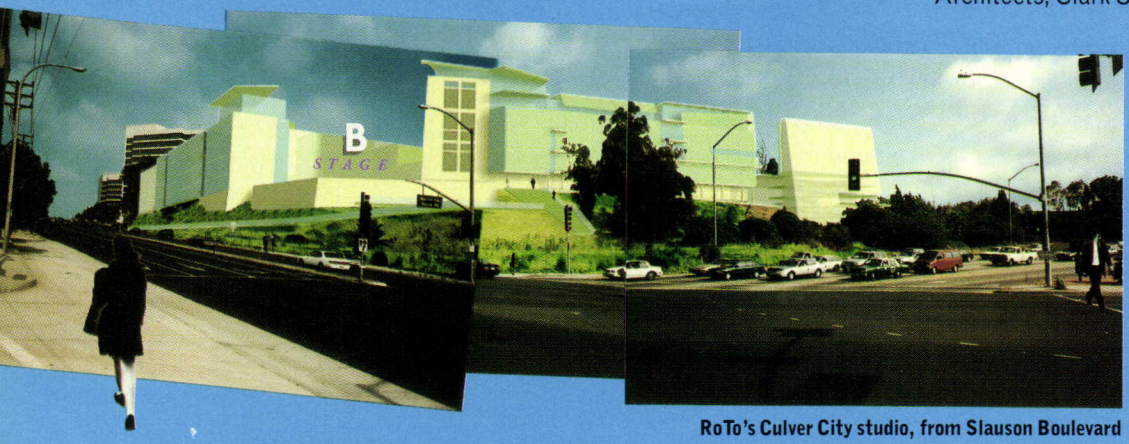
ROTO'S MOVIE STUDIO

Michael Rotondi is no longer dean of the Southern California Institute of Architecture (SCI-Arc), but his tenure continues to pay off. Rotondi and his partner in Los Angeles-based RoTo Architects, Clark Stevens, are teaming up with former SCI-Arc student Martin Kistler to develop a $150 million film, television, and electronic media studio in Culver City, California. The studio is for LuxCore LLC, a company co-owned by RoTo and the Kistler family's Swiss development and construction company, Kistler A.G. The 12 1/4-acre, 825,000-square-foot complex will house 12 sound stages for movie, television, music-video, and computer production facilities. Also planned are offices, shops, a 400-seat outdoor movie theater, and a 400-room hotel. Construction is scheduled to begin in late 1998 with a planned opening in January 2000. *Ned Cramer*



RoTo's Culver City studio, from Slauson Boulevard

DISNEY HALL DÉTENTE

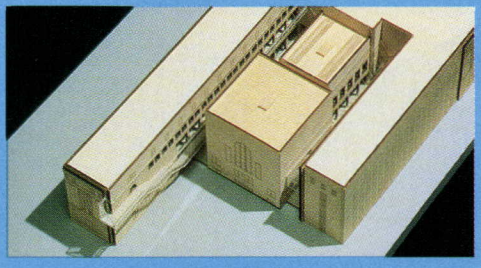
The dispute over the Walt Disney Concert Hall design has been resolved, thanks to Diane Disney Miller's financial backing of architect Frank Gehry. On May 31, Gehry threatened to withdraw from the project when it was revealed that he might not be allowed to complete design and construction documents (Architecture, August 1997, page 26). Los Angeles Mayor Richard Riordan and businessman Eli Broad, who seemed to be Disney Hall's saviors for stepping up fundraising, had determined that another architecture firm should finish the drawings and supervise construction.

In July, Miller, the daughter of Walt and Lillian Disney, announced her family's decision to allocate up to $14 million of their original $50 million gift toward Gehry's completion of the construction documents. Broad and Miller will cochair an oversight committee to guarantee Gehry's completion of working drawings. This month, Gehry and construction company M.A. Mortenson will present a plan and budget for the completion of design and working drawings to the committee. The team is also expected to provide a preliminary price cap for construction itself. Broad maintains that the hall will be completed by early 2001, asserting, "We now have over 83 percent of the total project cost of $220 million pledged or in hand." N.C.

ASIAN ART MUSEUM CONTROVERSY

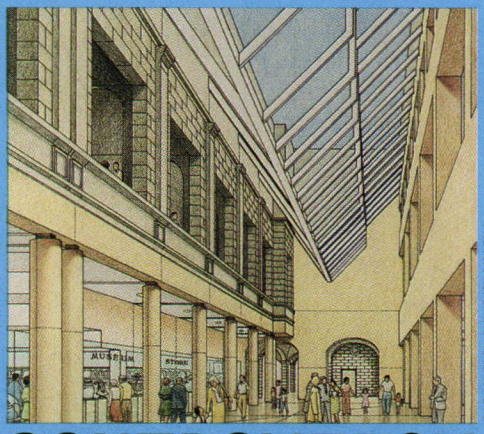
San Francisco preservationists are in an uproar over Gae Aulenti's proposed renovation of George Kelham's Beaux-Arts Main Public Library into the Asian Art Museum. Located on San Francisco's Civic Center Plaza, the 1917 library was vacated last year, when Pei Cobb Freed & Partners and Simon Martin-Vegue Winklestein Moris's new library opened next door (*Architecture*, July 1996, pages 80-91).

Aulenti, who is working with Hellmuth, Obata & Kassabaum, LDA Architects, and Robert Wong Architect, plans to enclose the interior courtyards flanking Kelham's main staircase. New stairs in the resulting atriums would provide access to the galleries above, but, preservationists note, render the existing main staircase programmatically obsolete.



GERRY RATTO

More controversial is Aulenti's proposal to remove fourteen 60-year-old murals from the loggia surrounding the staircase to make way for display cases and windows overlooking the new atriums. "The museum may look large from the outside, but the exhibition space is very limited. The loggia must be considered for exhibition space, in order to meet our program," explains Museum Director Emily Sano. Furthermore, Sano maintains that the paintings—landscapes by Italian artist Gottardo Piazzoni—are inappropriate in an institution devoted to Asian art: "Our mission is to show our collection; the murals don't permit that."



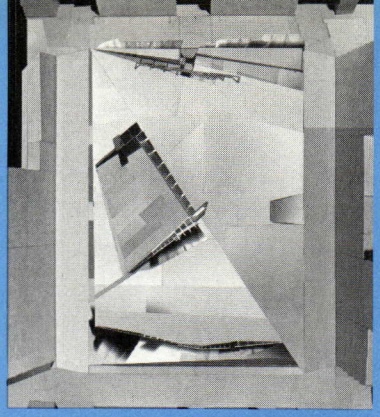
GAE AULENTI / PHILIP ISHAMARUA

According to David Bahlman, executive director of the Foundation for San Francisco's Architectural Heritage, removing the murals may violate local and federal preservation laws. On August 6, two art experts, as well as Aulenti, each presented studies to the San Francisco Board of Supervisors on whether the murals can be removed without damage. The Board is expected to respond this month. Aulenti's proposal must also be reviewed by civic agencies including San Francisco's Landmarks Preservation Advisory Board and Planning Commission, but no meeting dates have been set, and aren't expected until later this fall. The museum is scheduled to open in 2001. *N.C.*

(DIS)UNION SQUARE

In August, a controversial design competition to revitalize Union Square in downtown San Francisco left jurors divided over its outcome, and the winners uncertain whether their scheme will ever be built. The winning scheme by Michael Tunkey and Rose Mendez of Buffalo-based F.M. Design would replace Timothy Pflueger's forlorn 1942 Beaux-Arts plaza, built over a parking garage, with what the jury describes as "one plane that unwraps itself over the garage like a piece of origami." A bandstand, skating rink, market, and other elements would draw visitors into the square.

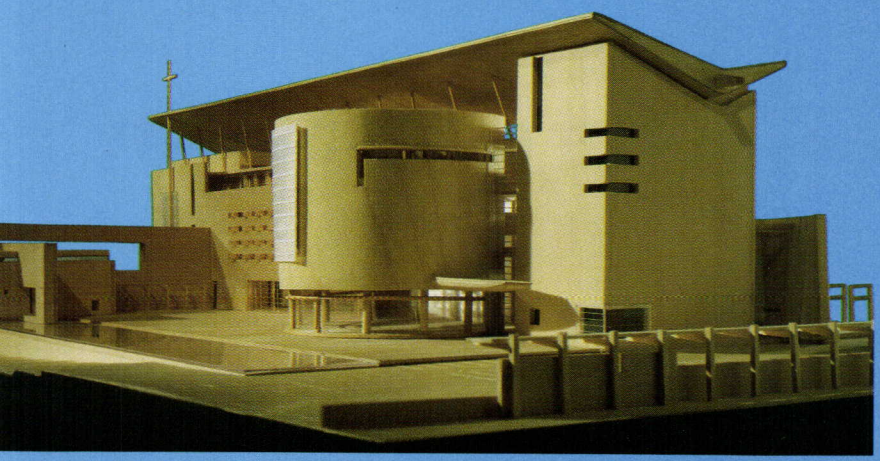
Several jurors had reservations about the scheme's progressive design, including former San Francisco Director of City Planning Allan Jacobs, who walked off the jury, complaining that the five winning schemes were simply "furthering current-day design fads."



Aerial view of F.M. Design's winning scheme

Four Bay Area designers were named as runners-up: April Philips and Michael Fotheringham; Jones, Partners: Architecture; Paul Martinez and Brian Kaufman; and Robert Edmonds.

The city will now interview all five teams, and may select one or more for the project's design phase. But there is no guarantee that the city will pick any of the finalists, and funding for the square's redesign and construction has yet to be determined. Mayor Willie Brown has offered to lead a capital campaign, but only after public approval of a final scheme. N.C.



BUILDING FOR THE POPE

In July, the Roman Catholic Church announced plans to build the Pope John Paul II Cultural Center near Catholic University in Washington, D.C. The $50 million complex, designed by Richard Clarke, director of design at Leo A Daly, will house an interactive museum and a think tank. "The center will help us gain a deeper understanding of the ministry of Pope John Paul II and his predecessors," explains James Cardinal Hickey, the archbishop of Washington. Exhibits designed by New York City-based designer Edwin Schlossberg will occupy the bottom floor of the 100,000-square foot, limestone-clad building; the second floor will display traveling exhibitions; the two upper floors will house the cultural center's library, conference rooms, and offices. The center is expected to open in 2000. N.C.

RUDOLPH remembered

Paul Rudolph, one of America's great architects, died on August 8 in New York City at the age of 78. He suffered from mesothelioma, an asbestos-related cancer.

Rudolph was the most talented and driven of a group of architects educated at Harvard during and after the Second World War, including Ulrich Franzen, Philip Johnson, Ed Barnes, and John Johansen. Immediately following graduate school, first in a Florida practice with Ralph Twitchell and then on his own, Rudolph launched a meteoric career that blazed until, like other unreconstructed Modernists, he hit the mauve Postmodernist wall.

Rudolph pursued the investigation of form, light, and space to critique architecture dryly premised on functionalism. Buildings like the 1955 Jewett Art Center at Wellesley College, with the first aluminum brise-soleil, riveted the profession. But it was Yale's Art and Architecture Building and Boston's Government Service Center that proved to be Rudolph's most important works during the high-flying years when he chaired Yale's architecture department (1957-1965). He explored concrete for its sculptural potential, and always brought his buildings into defining, animated rapport with the street.

EZRA STOLLER / ESTO (1963)

Rudolph left Yale to open a New York office (despite his heroic stature in the field, his offices were always small), and as Postmodernists battered his towering reputation and achievement, he looked to Southeast Asia, where he designed campuses, cities, and megastructures.

Rudolph was sometimes criticized as a formalist who created only one kind of building. His true fault was that he was not an apologist, and let his buildings speak for themselves. He introduced complexity into architecture when simplicity was the assumption, and took the Modernist notion of flowing space into the Z dimension. The sectional richness of his designs challenged the pancake organization of most high-rise spaces; his upper-floor spatial dilations created spontaneous gathering areas. In Asia, he designed sumptuously sculptural facades that shielded interiors, provided outdoor living space, and suggested a route for more ecologically sensitive high-rises. Like Frank Lloyd Wright, a mentor, Rudolph always opened form, but form was not simply a pleasure—he used it to humanize buildings.

Rudolph's archives will be donated to the Library of Congress, and a fund has been established in his memory to benefit the library's Center for American Architecture, Design, and Engineering. The Architectural League of New York will stage a memorial exhibition from September 19 through October 15. And a new monograph of Rudolph's recent buildings will be published by the Whitney Library of Design next year. *Joseph Giovannini*

THE BUZZ

Thanks to the new, computerized Architect Registration Exam (ARE), it now costs nearly twice as much to enter the architecture profession. And students aren't happy about it: On July 29, the board of directors of the **American Institute of Architecture Students** (AIAS) passed a resolution protesting the price hike of the ARE from $485 to $980. Even worse, the AIAS claims, the increase is due to a "non-competitive and unfair bidding process," in which the contract to administer the ARE was awarded by the **National Council of Architectural Registration Boards** (NCARB) to the sole bidder, the Chauncey Group International and Sylvan Learning Systems.

According to NCARB President Ann Chaintreuil, who met with the AIAS on August 19, each state may deliver the ARE through Chauncey and Sylvan, or may opt to contract with a test provider of its own choosing. NCARB has also established an internal task force to monitor cost and delivery.

A.C. Martin's Singapore tower

Los Angeles firm **A.C. Martin Partners** is designing a 400,000-square-foot, 37-story office tower in Singapore. And the **Pei Partnership** (that's **C.C.** and **L.C.**, not **I.M.**) is also designing two projects in Singapore: a 33-story, 220,000-square-foot office tower and a residential complex comprising three 20-story towers. The Peis are also designing a new medical center at UCLA.

It's been a great year for New York City architect and Yale Associate Professor **Deborah Berke**. Her design manifesto will be issued next month in *Architecture of the Everyday*, a collection of essays edited with **Steven Harris**. Two major commissions will give Berke the opportunity to demonstrate her minimalist esthetic: the 6,000-square-foot Hope Branch Library just outside Columbus, Indiana, and the renovation and expansion of New Haven's 70,000-square-foot Jewish Community Center into a facility for Yale's art and drama schools.

In another major university competition, the Illinois Institute of Technology (IIT) has announced a shortlist of five finalists in the invitational competition to design a student center on the **Ludwig Mies van der Rohe**-designed campus: **Peter Eisenman**; **Zaha Hadid**; **Helmut Jahn** and Stuttgart-based **Werner Sobek**; **Rem Koolhaas**; and **Kazuyo Sejima** and **Ryue Nishizawa** of Tokyo. The winning architect will be announced in February.

Meanwhile, New York City architect **Matthew Pickner** has designed new office furniture for IIT's College of Architecture in Mies's Crown Hall. **Fujikawa Johnson and Associates** and **Krueck & Sexton** are developing a restoration plan for the building.

In Chicago's West Loop, plans for a new, 17-story tower were announced in July by real

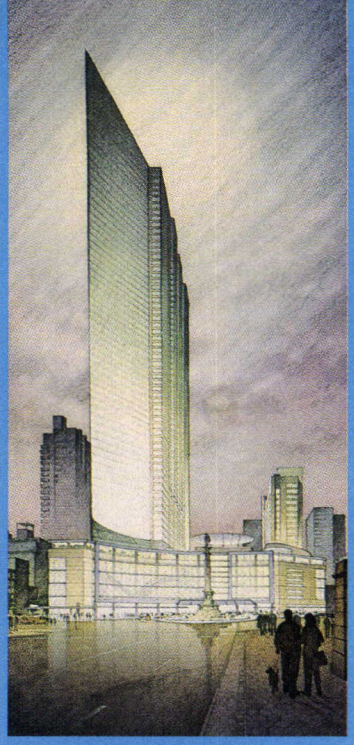
estate development and consulting firm **Development Resources**. Designed by local architect **Brininstool + Lynch**, the building will comprise 320,000 square feet of office space; construction is scheduled to begin in early 1999. And Chicago firm **Nagle Hartray** is designing the 50,000-square-foot Spurlock Museum of World Culture at the University of Illinois, Champaign-Urbana.

The Baltimore specialty-museum boom (*Architecture*, November 1996, pages 48-49) continues unabated: The joint partnership of **Grieves Worrall Wright & O'Hatnick** and **Amos, Bailey & Lee** has been selected to design the $15.4 million Maryland Museum of African-American History and Culture, near Baltimore's Inner Harbor. Another Inner Harbor institution, the Visionary Art Museum is expanding into an adjacent warehouse, which the museum's original architect **Rebecca Swanston** has been commissioned to renovate. And **Einhorn Yaffee Prescott** recently completed a master plan for the Baltimore B&O Railroad Museum.

Dedicated to artworks by the famed Wyeth family, a new wing of the Farnsworth Museum in Rockland, Maine, is being designed by Boston-based **Schwartz/Silver Associates**. The 9,500-square-foot addition will house a study center, library, archives, and galleries.

In July, New York developer **Millennium Partners** announced plans to build a 1.4 million-square-foot, mixed-use complex on Boston Common, designed by **Gary Edward Handel & Associates**. Millennium's proposal for New York City's coveted Coliseum site, designed by **James Stewart Polshek and Partners** with Handel, is rumored to be the lead contender.

It's going to be a busy fall at **Mitchell/ Giurgola Architects**. The firm was recently awarded a $28 million, 145,000-square-foot laboratory at Salisbury State University in Maryland and the $25 million renovation of the nine-story Whitney Pavilion in New York City into a laboratory for Cornell University Medical College.



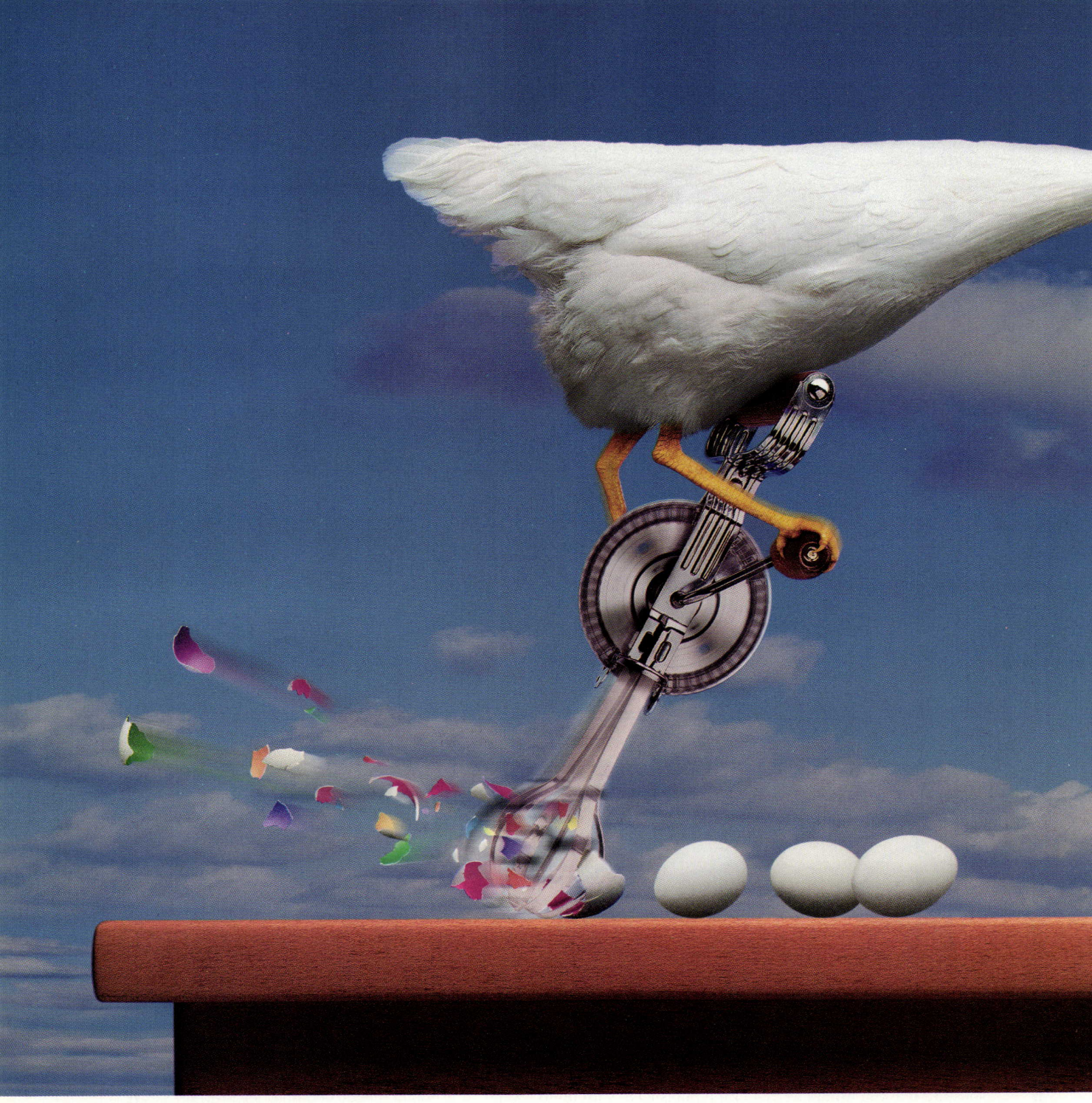
Polshek and Handel's Coliseum proposal

The landmark 1880s National Arts Club in Manhattan, designed by Calvert Vaux, is being restored by **Ehrenkrantz Eckstut & Kuhn**.

Also in New York, **Rem Koolhaas** and **Richard Gluckman Architects** are converting a 1934 bank at 43rd Street and Eighth Avenue into the 300-seat, 17,000-square-foot Second Stage Theatre.

Emilio Ambasz calls his latest project "Europe's first green industrial park." Designed with **Camerana and Durbiano, Architects**, the 300,000-square-foot complex in Turin, Italy, will house labs and offices under an earth-covered roof.

Pioneering historian and Brown University professor **William H. Jordy**, 79, died in Riverside, Rhode Island, on August 10.



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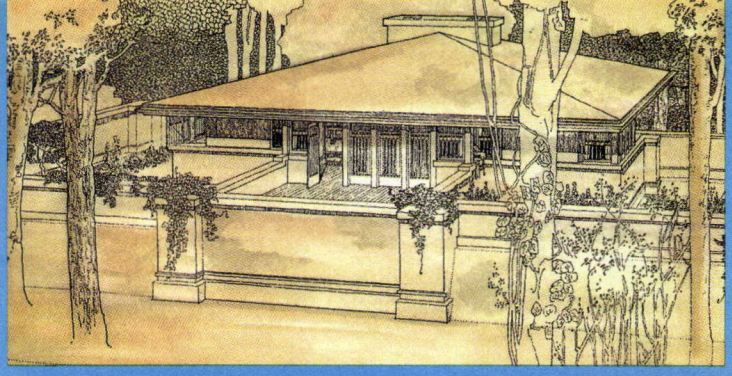


Staged Wright

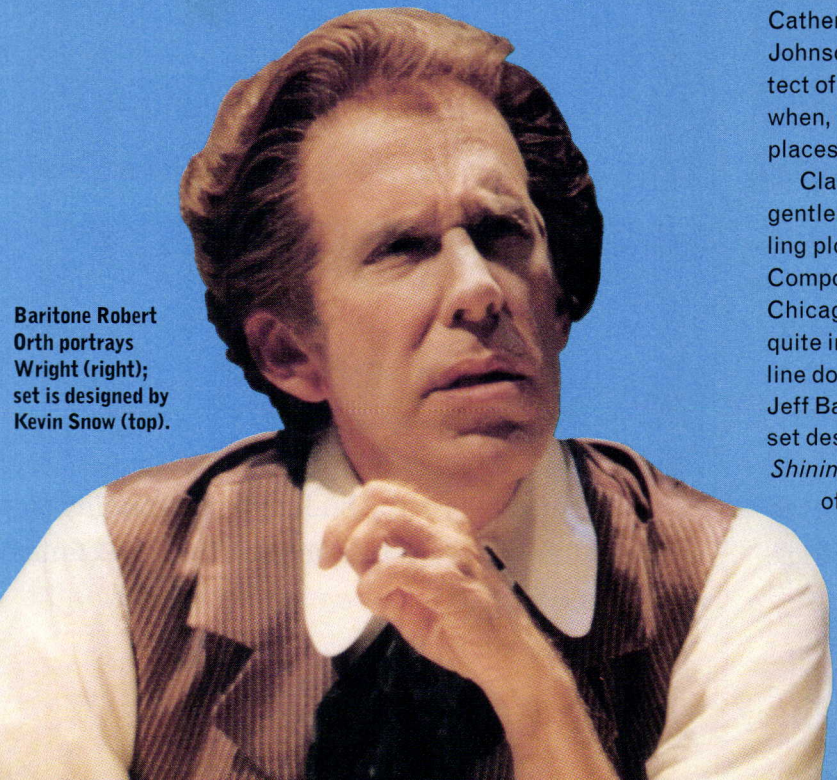
Architecture plays a supporting role in an opera about the life of Frank Lloyd Wright.

I dreaded going to the Chicago premiere of the Chicago Opera Theater's *Shining Brow* (it debuted in Madison, Wisconsin, in 1993) because I was uncertain about how Frank Lloyd Wright's distinctive personality would translate to contemporary opera. But against my will, I actually began to be drawn back into a story long hackneyed by Wright's chroniclers and relatives, from Brendan Gill to Neil Levine, from Wright's granddaughter Elizabeth Ingraham to former Taliesin fellows. *Shining Brow*—the English translation of the Welsh "Taliesin"—dramatizes the scandalous love story of Wright and Mamah Cheney, and brings to mind other architectural liaisons: Mies and Lily Reich, Corbu and Charlotte Perriand, Gropius and Alma Mahler, and God-knows-how-many more architects and their pillow-talk coconspirators.

Shining Brow presents analogies between Wright and Cheney's love affair and the architect's posturing about architecture-for-its-own-sake, including a scene where Mamah reminisces about her failed Goethe translations and finds herself oppressed by Wright's work and ego. But the opera misses the larger connection between the heroic era of Modernism and Wright's larger-than-life persona. Much more could have been made of this point. Instead, librettist Paul Muldoon's provocatively beautiful, Celtic-inspired phrases indict Oak Park's middle-class citizenry, shocked when that porkpie-hat propagandist Wright (Baritone Robert Orth is a dead ringer) fled to Europe with Mamah (played as an unsympathetic homewrecker by soprano Brenda Harris), leaving his wife, Catherine, and all those children behind. The opera fulfills Philip Johnson's caustic comment that "Wright was the greatest architect of the 19th century" by focusing on his life and not his work when, in fact, Wright's influence on his successive generation places him squarely as the primary force influencing Modernism.

Classical opera's one-dimensional story lines come from gentler, simpler times. *Shining Brow*'s equally simple, yet compelling plot line does no more or less than *La Bohème* or *La Traviata*. Composer Daron Aric Hagen's dissonant music, conducted by Chicago Opera Theater Music Director Lawrence Rapchak, was quite in tune with the drama of it all. But the power of the story line does not make up for the singers' average performances, Jeff Bauer's stilted costumes, and Kevin Snow's all-too-spare set design. Nonetheless, the heroism alluded to throughout *Shining Brow* brought home how passion is so critical to the work of the architect. Discipline is worthless without those belief systems needed to act against the status quo—to place something where nothing existed before. *Stanley Tigerman*

Chicagoan Stanley Tigerman regularly attends the opera.



Baritone Robert Orth portrays Wright (right); set is designed by Kevin Snow (top).

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Chris Wiseman, Architect

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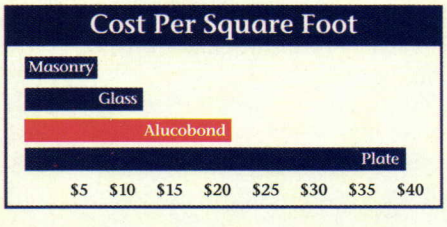

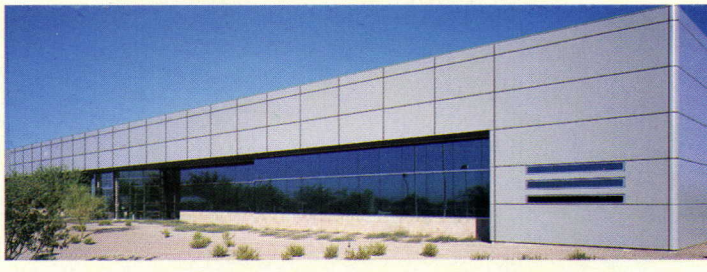

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Seoul Searching

What is a city to do when it has too many people, few natural resources, and scarce marketable features with which to attract capital? Turn to architecture and design. Seoul, a city of closed, characterless boxes that has grown from a town of 100,000 inhabitants to a metropolis of 10 million—nearly a third of South Korea's population—is doing just that. Here's a city that has a less-than-pleasant climate, no natural port, and a hopelessly overcrowded airport, roads, and railroad lines. Because of this lack of assets and what are now very high wages for the region, Seoul is having a hard time competing with other Asian tigers such as Kuala Lumpur and Manila. Moreover, the corruption and sheer lack of controls that fueled the city's growth for three decades has undermined the very structure of both the city and its businesses. Buildings and bridges have collapsed because contractors built them without permits or with bad materials. Politicians and heads of the *chaebols* (giant conglomerates that control more than half of Korea's gross national product), who find themselves threatened with bankruptcy and jail, are trying to fashion themselves as placeless multinationals. Seoul is just not a great hometown.

South Korea's capital city is attracting investment through better architecture.

So now the city is playing the design card. The government has written white papers that talk about the importance of design, has helped encourage the growth of design schools, and above all else, has commissioned massive public works programs that include high-speed rail lines and stations, a new airport, and a new national art museum. Companies are following suit, both by building structures that make their surroundings more livable at street level and by starting their own design programs. Just as a new generation of industrial designers is making the products of Samsung, LG Industries (formerly Lucky Goldstar), and Daewoo Electronics among the most beautiful and innovative in the world, so too a new generation of architects is using these incentives to transform Seoul into a laboratory for architectural experimentation.

Futuristic form and dynamic profile of Samsung tower by Rafael Viñoly signals new era for design in downtown Seoul.

They are getting help from outsiders. British architect Foster and Partners is designing Daewoo's headquarters; his colleague Richard Rogers is planning a new facility for the largest television station, SBS; and Nicholas Grimshaw has won the competition for a new high-speed rail station in Pusan. Renzo Piano's design for Fila Sportswear's

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regional offices and Korean flagship store is now under way.

Not to be outdone by these wizards of High Tech, American firms are following close behind. The usual alphabet soup of HOK, SOM, RTKL, KPF, and KMD are all designing office buildings, hospitals, and hotels in Seoul and its surroundings. A consortium headed by Bechtel is building the new airport, designed by Denver-based architect C. W. Fentress, J. H. Bradburn and Associates.

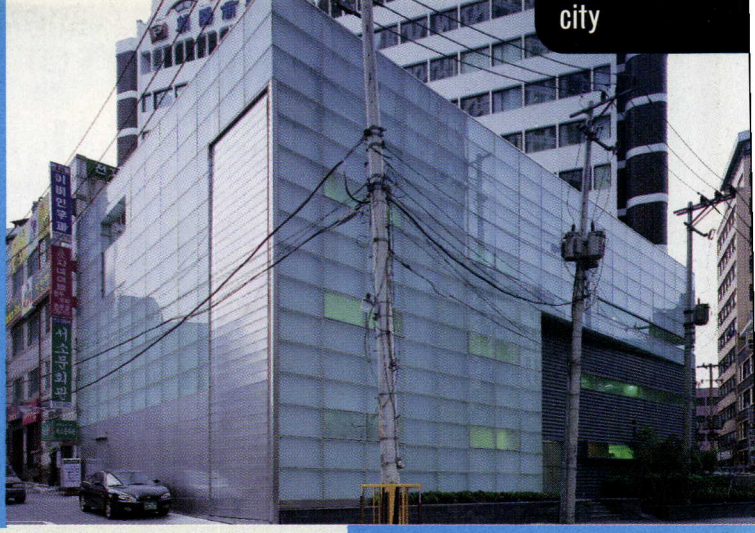
Twenty years ago, the national government decreed a series of six satellite cities for Seoul's suburbs. Each of these versions of the *Ville Radieuse*-on-steroids now has half a million inhabitants and takes care of a population crowded into apartment high-rises, filling Seoul's precincts to overflowing. Local planners and architects are slowly adding bookstores, cultural centers, schools, and cafeterias to make these isolated new towns more livable.

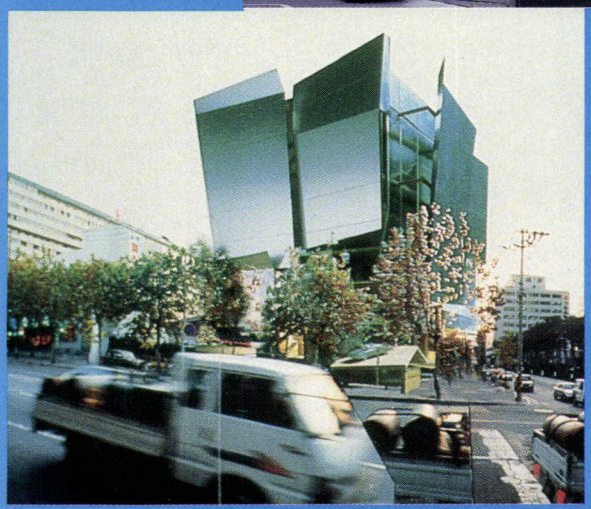
Balancing these imported architectural and urban ideas with national cultural traditions has great symbolic importance in Korea. For example, a Japanese colonial building that once stood in front of the Kyongbokkung Palace, now being restored, has just been torn down because it was blocking the *feng shui* "energy lines" that connect the mountains to the north with the Han River to the south.

In another symbol of liberation from foreign influences, the old U.S. Eighth Army Base, which occupies some of the most valuable real estate in the city, is slated for redevelopment. It is to house, among other civic amenities, a new national museum designed by Jung Lim Architects.

Cultural centers seem to be a fashionable investment for these chaebols, earning them much-needed community caché. The Illing Spinning Company, a large textile outfit, is creating a music center with a restaurant by Philippe Starck on a parcel of land beneath a highway overpass to the south of the central business district. The Samsung Cultural Foundation, a charitable organization overseen by Korea's largest chaebol, has reportedly asked Rem Koolhaas, Mario Botta, Jean Nouvel, and Terry Farrell to design buildings for a new cultural megaplex on land the foundation has amassed near the central business district. Uptown, Frank Gehry has proposed a spectacular spiral of gallery spaces rising from five levels underground to seven above street level as the new home of the Samsung Museum of Modern Art (page 69, this issue).

Samsung is one of the prime patrons of Seoul's





Samsung day-care center by Young Bum Lee (above) and proposed retail and entertainment building by Smith-Miller + Hawkinson (left) improve urban sites. Daewoo tower by Foster & Partners (below) explores new forms.

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high design renaissance. In 1996, its near-mythical Chairman Kuh-hee Lee announced a "design revolution" that would allow this sprawl of separate companies, which produce everything from oil rigs to washing machines, to compete on looks as well as on price. The company spent $126 million just last year within its electronics groups to improve the design of its products, but it has not forgotten about its urban presence. The company's slanted oval logo, designed by Lippincott & Margulies, appears on buildings everywhere, and now Samsung wants to make sure that some of the structures to which it is affixed are of a quality appropriate to its desired esthetic stature.

Kohn Pedersen Fox Associates has been given the job of renovating the base of the conglomerate's two downtown towers. For the first time in the central business district, a stretch of street will open up to pedestrian uses with a small museum dedicated to the works of sculptor Auguste Rodin (*Architecture*, January 1997, pages 82-83), a cybercafé, company-sponsored exhibitions, and other public amenities. Young Bum Lee, Samsung's senior executive architectural director, has designed a day-care center just behind this complex whose sleek skin of translucent glass betrays both his former association with I.M. Pei and his friendship with the New York firm of Smith-Miller + Hawkinson. The latter firm is designing an eight-story, mixed-use retail and restaurant complex.

Such streamlined forms seem to pop up everywhere one looks in Seoul. What had previously been large blocks that maxed out their sites are now dissolving at their bases into open labyrinths of stores, restaurants, and small offices that expose structure, create stairwells and landings where people can gather, and make an active public zone between the street and the building. Particularly strong examples of this new openness include the Barunson Building in Yongdong, south of the Han River, designed by locally based Studio Metaa, and a small multifunctional building in a trendy section north of the palace, designed by Hyo Sang Seung of ER•A Architects.

Mixed-use buildings by ER•A Architects (above) and Studio Metaa (below) feature varied volumes that challenge Seoul's standard boxes.

The largest example of good, open, local design is the Posco Tower, a 40-story building in Yongdong that houses one of the largest steel companies in the country. Designed by Group-3 Architects and a young Harvard-trained architect, Alice Choy, it is a green glass-clad composition of two 30- and 20-story blocks that visually fall apart into planes held away from each

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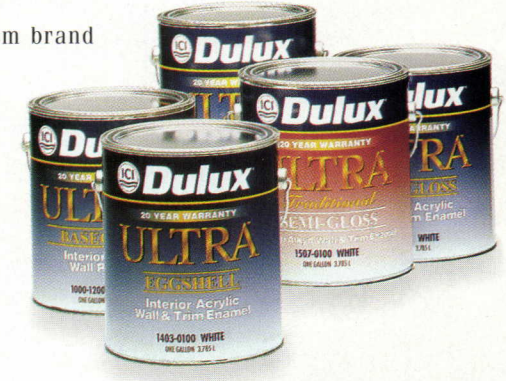

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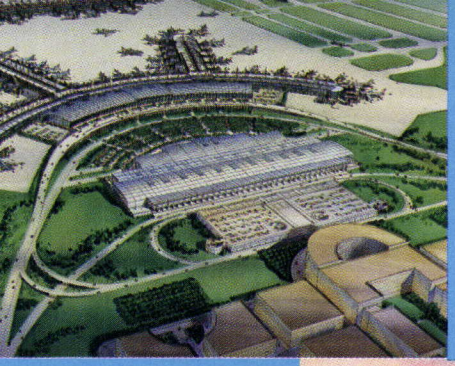
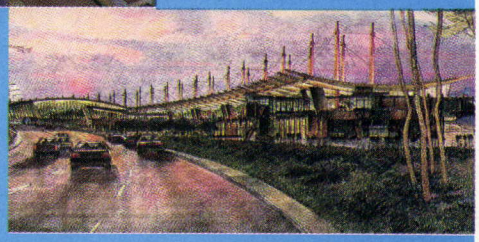


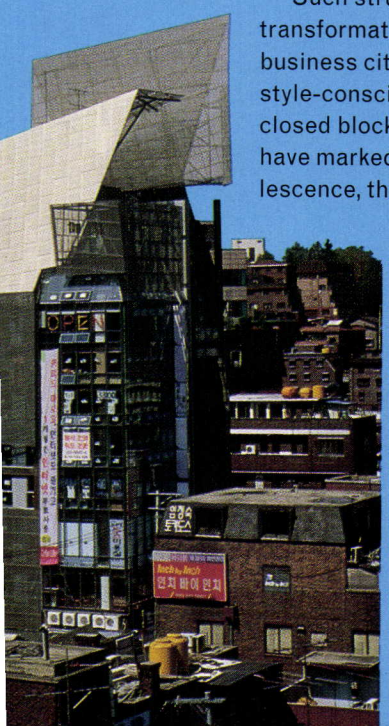
Denver-based Fentress Bradburn Architects designed Seoul's new airport at Inch'on (left and below). Morphosis's Sun Tower (bottom) houses showrooms and offices for clothing manufacturer.



other by the lines of the structure's ventilator shafts. Group-3 composed the two towers around a central atrium where structural gymnastics and a local version of the Pilkington suspension glass system compete with a spectacular video installation by local hero Nam June Paik.

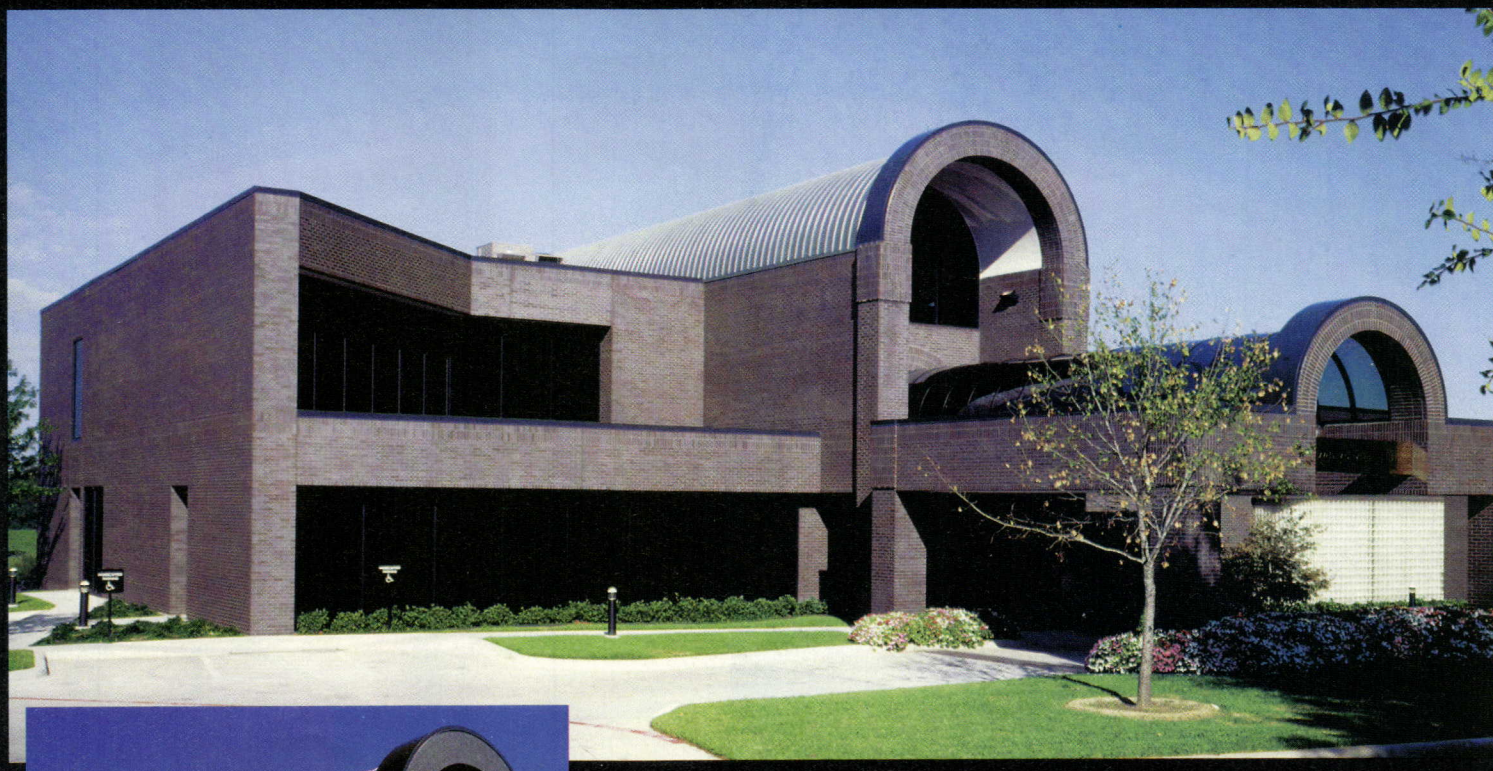
A combination of these open structures and slick skins seems to offer the best hope for an improvement in the architectural look of Seoul. Massive planes of exposed concrete do not succeed in this city, as Eul Ho Suh, a local architect, points out, because "you just cannot get any kind of consistency in the pours, and then whatever does go up has to weather four distinct and rather severe seasons."

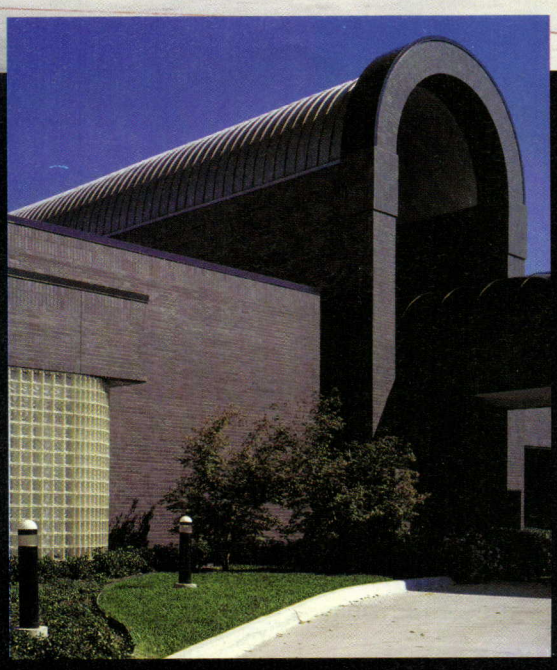
At the same time, market pressures force almost all buildings in the city to accommodate commercial uses at their base, while providing offices above. Thus, the structural latticeworks of steel and concrete that until now had remained hidden beneath glass or stucco coverings now peek out from their tautly stretched skins. Renzo Piano's Fila building, for instance, is a curved behemoth that opens itself up to the street, while Morphosis's Sun Tower (*Architecture*, January 1997, pages 66-67), located on a crowded commercial thoroughfare, comprises two six-story (plus two below grade) towers that rise up around an open central shaft. Stores open to this atrium, in which escalators rise to draw shoppers into a world of metal mesh scrims draped over concrete shapes.



Such structures acknowledge the transformation of a no-nonsense business city into a home for eager, style-conscious consumers. Instead of the closed blocks and bland streetscapes that have marked Seoul's growth through adolescence, these new buildings are more complicated, open, and attuned to fashion. Given the dynamics of Seoul's economy, they might not last much longer than the anonymous structures they are replacing. But the grand new edifices for corporations and civic institutions now rising on the plains next to the Han River promise to give Seoul a more lively soul. *Aaron Betsky*

ARTISTIC EXPRESSION





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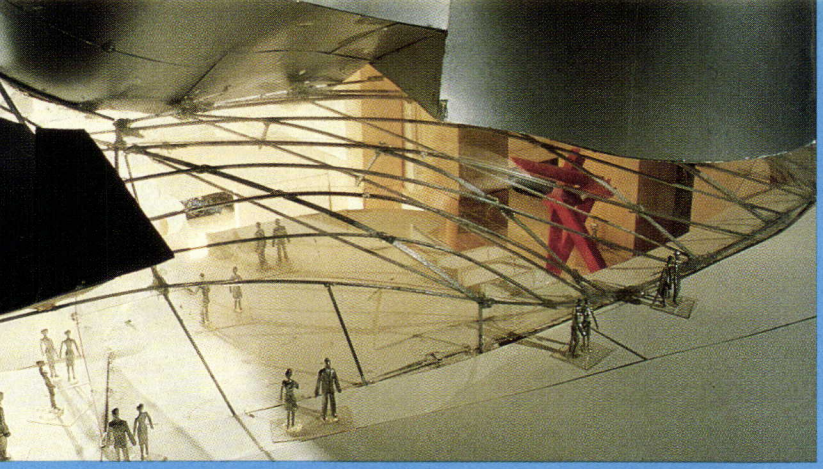
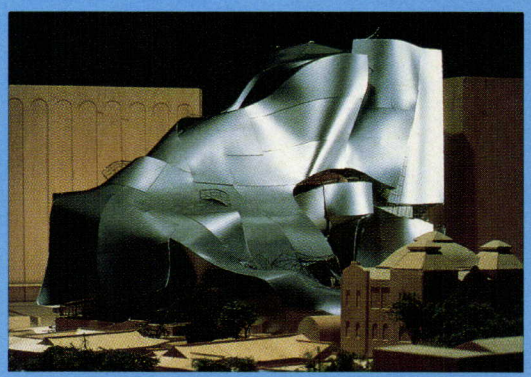


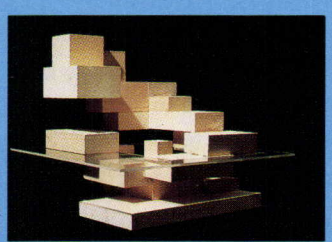
Samsung Museum of Modern Art
Seoul, South Korea
Frank O. Gehry & Associates

The Guggenheim Bilbao Museum is being touted as Frank Gehry's finest performance to date, but the maestro has another big act waiting in the wings—the Samsung Museum of Modern Art in Seoul, South Korea. But it may never hit the stage because of Samsung's inability to acquire the necessary real estate. "They discovered a piece of land they couldn't buy right in front of us and they have halted the project temporarily," Gehry explains. This interruption provides a rare, "freeze-frame" look at the project during the architect's famously involved design process.



As developed for the original site, the 408,000-square-foot museum houses the Korean industrial giant's international art collection on a 1.6-acre lot in downtown Seoul, surrounded by banal high-rises. "They're third-rate copies of bad American architecture," says Gehry, who drew inspiration instead from the Korean landscape, as depicted in traditional ink paintings. Here, his signature metal curves form abstract floating clouds, towering mountains, and flowing waterfalls. The waterfalls, at least, are evident in the building's envelope, which cascades 60 meters downward in a torrent of curved metal panels. These panels part periodically, revealing windows and skylights. The building twists away from neighboring mid-rise office buildings to face the low-scaled 19th-century Un-Hyun Palace to the southwest.

Galleries—rectilinear at the client's request—are arranged in a spiral, extending six stories above grade and three below. This configuration opens each space to daylight from the openings between the exterior panels, eliminating what Gehry calls the "bad body language" of relegating certain artworks to lesser, artificially lit galleries. Light wells, balconies, and other openings provide views between the different levels. Ramps, escalators, and stairs occupy the space between the outer skin and the gallery walls.

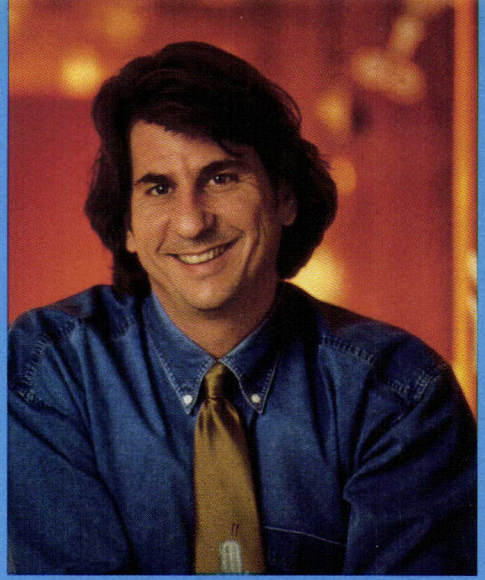


Given the unavailability of the current site, the project's future is uncertain. According to Samsung Vice President Yong Oe Han, "We are under negotiation for a new site." Han would not comment on whether or not Gehry's design would be translated to a new location. According to Gehry, "Samsung has been very secretive. They've told us they have found a new location, but we may have to start designing all over again." *Ned Cramer*

Museum is sited between high-rises and 19th century palace (above). At street level, metal panels part for museum entrance (top). Study model reveals spiraling galleries (right) inside cascading metal envelope (below).

PSSST. THE COMPAN
HAVE SOME MA

Twenty-six story, 312 Elm Building, Cincinnati



SCOTT FRANCES

Although he bridles at the description, 41-year-old David Rockwell rules entertainment architecture. From the worldwide conquest of Planet Hollywood—his office has completed more than 40—to the latest gigaplex in the American heartland, Chicago-born Rockwell and his eponymous rockwellgroup in New York City, are creating the environments that pull people back into downtown—and shake loose their change once they arrive. Based on the strength of his restaurant designs, Rockwell's office has grown from 35 to 160 people since he bought out his original partner, Jay Haverson, in 1993. His employees work in a rambling, labyrinthine loft that looks more like a theater company prop room than an architect's office: Enormous, scenographic renderings hang from the brick walls, and the place is strewn with the toys, plants, swags of fabric, and cultural memorabilia that regularly find their way into Rockwell's designs. The rockwellgroup is currently designing projects in Europe, Asia, and America, ranging from the sets for an NBC sitcom premiering this fall to the Orlando, Florida, home of Canada's famed Cirque de Soleil.

Entertainment King

Planet Hollywood isn't the only ace up David Rockwell's sleeve.

Sony Star Theatre, Southfield, Michigan

ARCHITECTURE: What is entertainment architecture?
DAVID ROCKWELL: There is a hybridization happening lately with retail, entertainment, and dining. As those pieces come together, they're creating components of what people perceive to be entertainment architecture. My take is to create interesting, immersive, involving, even playful spaces in all building types. These are things we should value in any building, not just those for entertainment.

What is driving the growth in entertainment architecture?
There seems to be more money available right now for leisure, and less time in which to spend it. Some people have recognized this as an opportunity to create new kinds of space.

I think entertainment architecture will continue to grow, and eventually transform into something we won't necessarily recognize. For instance, right now we are looking at projects with

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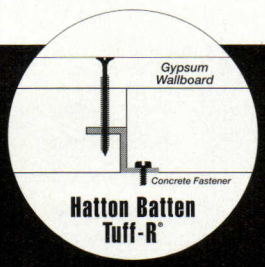

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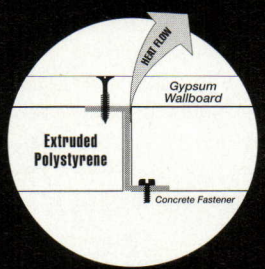

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very integrated sound and video that can transform the perception of space. It involves virtual reality, but it's more the whole environment becoming part of the virtual-reality experience, rather than just the interaction of a person and a machine.

Do you see the rockwellgroup as an entertainment firm?
Not at all. It's such a limiting title, and we're into so many markets: work for the Bronx Zoo, the redesign of the Doral Hotel in Midtown Manhattan. Those aren't entertainment. And is a restaurant entertainment architecture? Is everyone who does restaurants an entertainment architect?

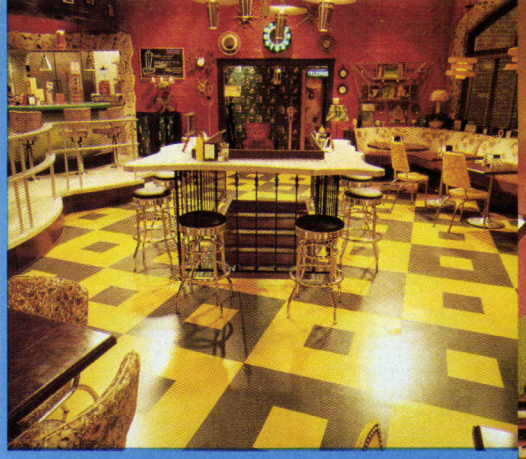
Part of our growth is the result of a conscious decision to diversify from where we were five years ago. We'd love to do a library or a hospital. Our primary limitation is size. The goal has always been to do the projects that interest us, and not the ones that don't. But currently, we're not able to do 50 percent of what comes our way because we're too busy; we don't have enough people to handle much more work, no matter what its scope.

Do you have an underlying philosophy?
The underlying philosophy of the firm is to create compelling, wonderful, imaginative, magical places that give people an opportunity to look at things differently. We want to create places for people to have fun.

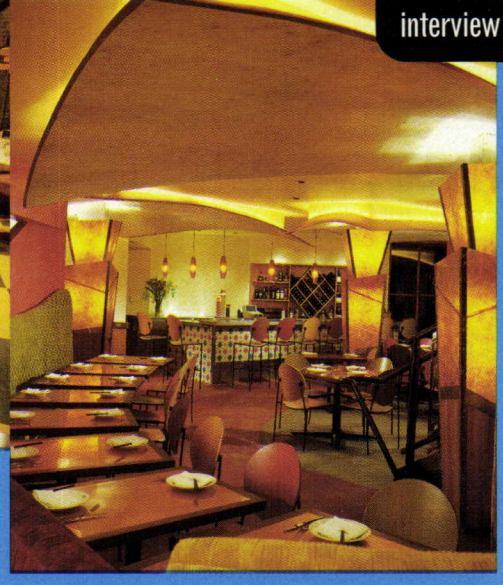
How does your office work?
We work in studios. They range in size from 10 to 40 people and are based on who works best together, never on building type, so group interaction is the key. The size of the studio changes based on the type of project and the stage of its life. We also have two floating teams that move from project to project: an interiors team, which focuses on craft, research, and materials, and a design team that moves fire power to a project when it's needed.

We also have an extremely talented, very diverse group of people—writers, modelmakers, lighting designers, painters, set designers. We might respond to an initial client meeting with a written story as opposed to a design. We always begin with a lot of research about the type of project the client is interested in and the cultural issues that surround it.

Generally, we move on two paths simul-

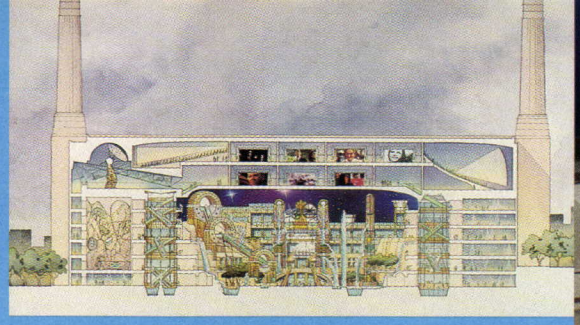


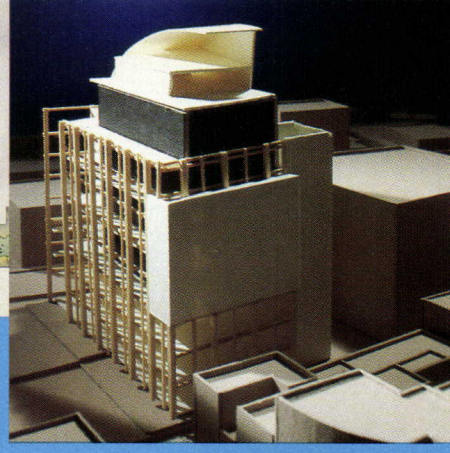
CHRIS HASTON



PAUL WARCHOL

Rockwellgroup's recent projects range from the set for the new NBC sitcom, "Union Square" (above), to the Baang restaurant in Aspen, Colorado (right).





On the boards projects at the rockwellgroup are (from left to right) the conversion of London's Battersea Power Station into an entertainment complex; the Jeil Entertainment Complex in Pusan, Korea; and the Cirque de Soleil pavilion at Disney World.

taneously, one being the logistics of space planning, budgeting, and diagramming, and the other looking for the content of the project, what's special about it.

How do you stay involved in design?
I tend to be involved very heavily at the initial stages of a project, then gradually as more of a critic. I think a lot of communication and design up front really gets a project going. I try not to establish myself as the only voice, and I make that clear in the very first meeting with the client. Once you establish yourself as the only voice, you find that no one else is going to come to the table with much. Besides initiating a lot of the work and giving creative design direction, one of my main roles is making an environment in which people can be creative.

Your office certainly doesn't look like most architecture firms.
You know those offices where you have to hold the pen exactly the same way or leave the lamp oriented in a certain direction? We try to be the opposite of that. We allow for people's idiosyncrasies.

Do you have a signature style?
One of the things we try most not to do is have a house style, a signature. We always try to find a piece of each project—something that gets at its essence—and build around that. So each project is different. But there are certain issues that particularly interest us, regardless of the project type. For instance, procession. There's usually a strong emphasis on movement through the space in each of our projects. In some cases—the Mohegan Sun Casino [in Uncasville, Connecticut], for instance—it is almost cinematic in terms of how the images unfold as you move through. We're also fascinated with lighting and careful detailing. So you can put those pieces together and begin to see how the spaces are very sensory.

Theater seems to have a strong influence on your work.
Oh, yes—I love the theater, opera, too. There is a lot of theater in my background, even before architecture school. I worked for Roger Morgan, a lighting designer and theater consultant while he was doing a show called "Crucible of Blood," which is a Sherlock

Holmes piece. I got to hang out in the theater and assist him, which basically meant schlepping stuff and getting coffee and taking notes. But it was fantastic anyway, and it turned out to be actress Glenn Close's first Broadway appearance. I was just hypnotized by the experience of watching the play get put together. From this experience, I began to sense there was a way to combine my love of architecture, theater, and music.

Who else has influenced your work?
There are a lot of architects who I think are great: Frank Gehry, Antoine Predock, Robert Venturi, Charles Moore. But also artists, directors, and set designers like Hugh Ferris, Maxfield Parrish, Fritz Lang, "Batman" production director Anton Furst, Red Grooms. Viennese architect Joseph Urban is wonderful—the extent to which he reflected what was going on in his time.

Does your work reflect our time or is it something new?
We don't look at what we're doing as creating something new. We look more at how things link to that fabric that already exists.

But is it permanent? Enduring?
There's a certain seductiveness to creating buildings that are going to be around forever. But I think the goal of permanence in architecture can lead one to overlook the wonderful pleasure of creating places that are gracefully transitory. For instance, our work on "Union Square" [an NBC sitcom premiering this fall] is a set, so it's clearly not permanent. If it lasted a season longer than it runs, that would be weird. But the funny thing is, if the show is a hit, we'll be seeing it for years and years. If it's another "I Love Lucy," then it could become one of the most permanent images.

What do you say to critics who dismiss your work as being not serious enough?
We're not here to please critics. By the same token, we like to have our work received and perceived positively. I'm thrilled we're doing work that the public seems to enjoy, and we learn from well-considered criticism. Not all of our work is intended to be serious. Maybe not taking yourself so seriously in every situation isn't a bad idea.

But how do you compare Planet Hollywood with, say, Antoine Predock's fine arts building at Arizona State University?
What's the point? Look, you make a lot of choices about the kind of work you want to do, the kind of people you want to work with, the kind of process you have for design, the nature of your office, the quality of your life. I think that creating projects that people really enjoy, projects that express optimism, is a smart choice.

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The Mark of Responsibility

A motorist cruising down Cleveland's Euclid Avenue could easily mistake the new headquarters of Applied Industrial Technologies (AIT) for something that escaped from a Jetsons cartoon. The odd, 1960s design might be tolerable, or at least easier to ignore, if the building were located in a suburban office park, where it really belongs. But the headquarters, designed by the fast-growing Cleveland firm Gilberti & Spittler International, sits near the city's downtown on once-famous Millionaire's Row.

A century ago, this mansion-lined avenue was synonymous with Cleveland's rise as an industrial powerhouse. Today, it's a blighted corridor linking the downtown core and University Circle, a bustling academic, medical, and cultural center. The challenge now facing Cleveland is how to rebuild this formerly great street.

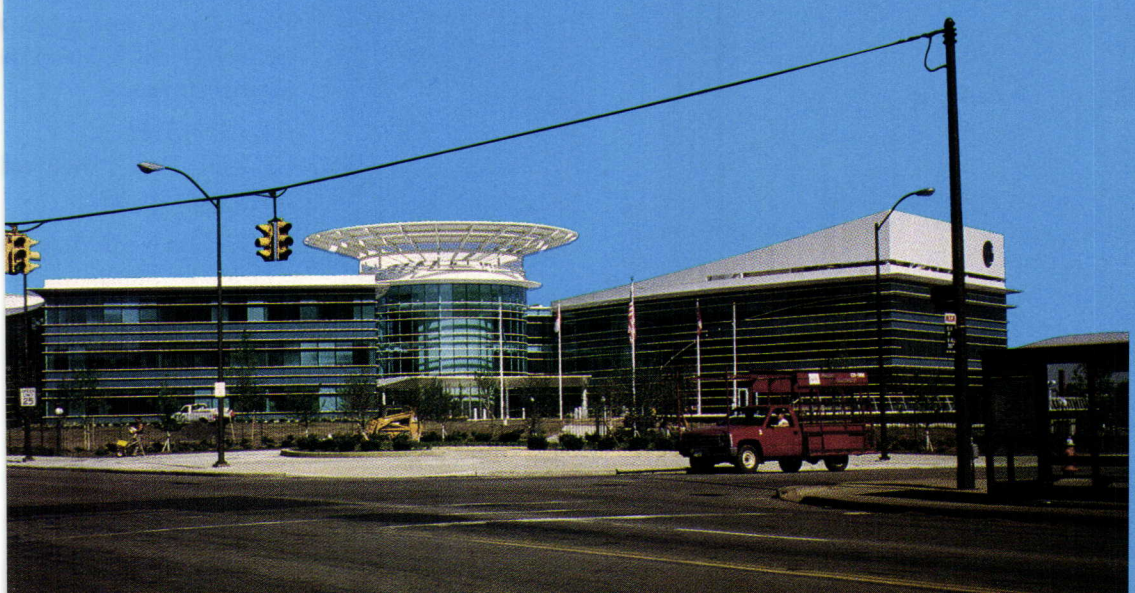
It could be argued that there isn't enough sturdy urban tissue to graft together context-sensitive architecture in these surroundings. But to the west, a consistent, three- to five-story street wall is maintained. That stops at AIT, whose entrance is concealed behind a curving wing set back from the street.

A city-sponsored headquarters snubs context and history.

Clash in Cleveland

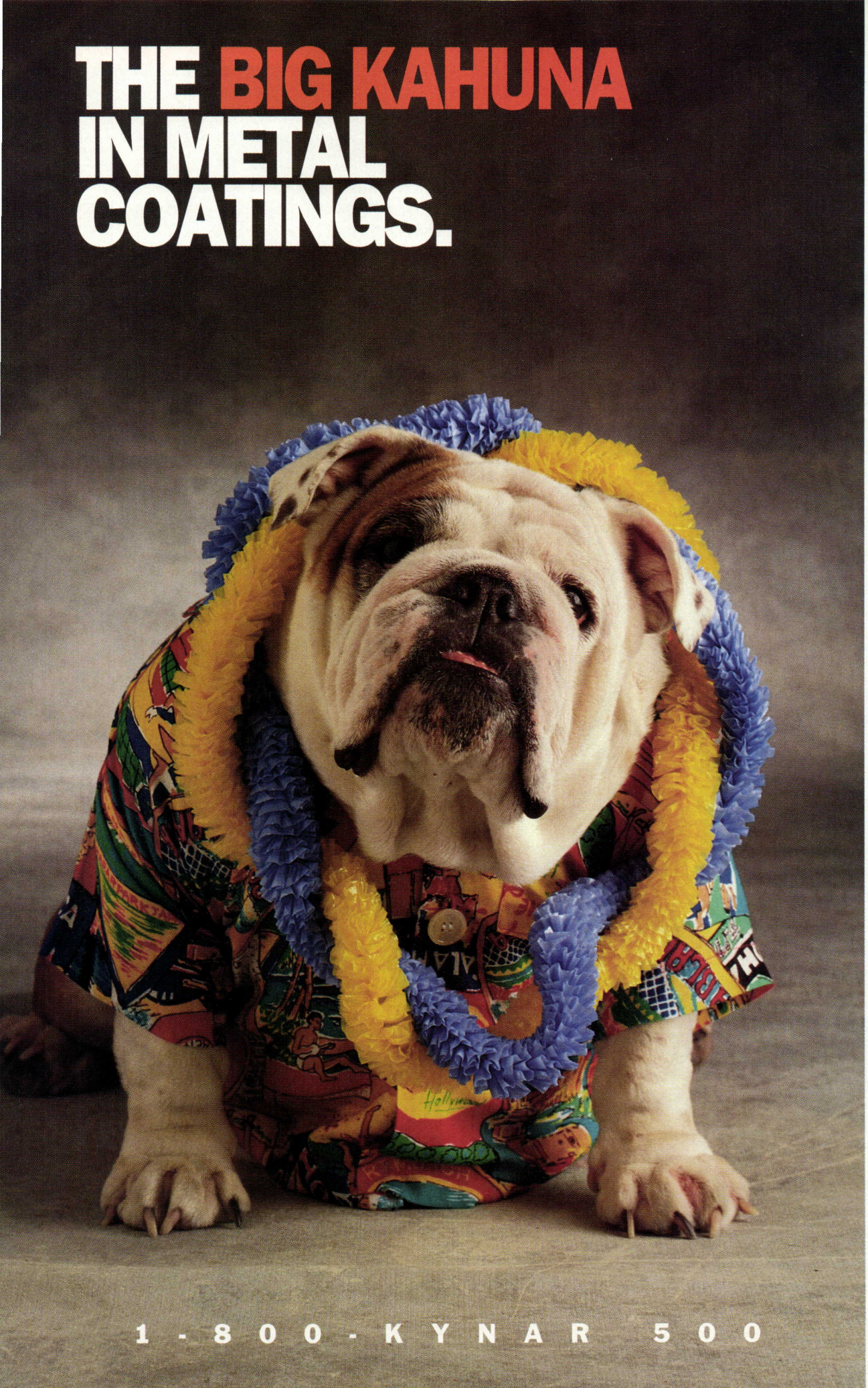
The building's obtrusive character is not simply a case of a corporate client and architect exercising questionable taste. The $28.2 million headquarters was built by the Cleveland-Cuyahoga County Port Authority and leased to AIT for 20 years, to induce the company to keep 330 jobs in the city.

With a public agency in charge, city planners could have insisted on incorporating the 1912 Carlin Mansion, one of the last surviving Euclid mansions, as part of the new headquarters. Instead, the Carlin was demolished, along with any hope that the new building would pay respect to Cleveland's rich history.



This outcome is both unfortunate and uncharacteristic. Cleveland, now in the midst of an impressive comeback, has shown admirable sophisticaiton in projects ranging from HOK Sport's new ballpark to Cesar Pelli's KeyCorp skyscraper. AIT's headquarters falls well short of the city's new architectural standard. *Steven Litt*

THE BIG KAHUNA IN METAL COATINGS.



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Architecture and AIA Research again are cosponsoring their awards program for architectural research.

The purpose of this awards competition is to recognize outstanding research in architecture and urban design, and to publicize it for use by the profession. Awards and citations will be designated by a jury drawn from academia and the profession. Decisions will be based on the study's overall excellence, innovation, rigor, and usefulness to the practice of architecture and urban design. The jury will consider the degree to which the research addresses compelling social needs, extends traditional architectural expertise, demonstrates ways to integrate research and design, or utilizes multidisciplinary problem solving. Research methodology appropriate to the nature of the inquiry should be made explicit, as should the application or applicability of the research. Doctoral dissertations and applied research are welcome. Entrants will be judged in one of three broad categories of research: Energy and Sustainable Design, Behavioral and Social Science, or Technology and Materials. Entrants should interpret the call for outstanding research as broadly as possible to include the subdisciplines of architecture as well as diverse modes of inquiry. Judging will take place in November 1997, and winners will be notified in late November. The winning entries will be featured in the April 1998 issue of Architecture.

Jury

Robert M. Beckley
Dean, College of Architecture
and Urban Planning
University of Michigan
Ann Arbor, Michigan

Susan Maxman
Principal
Susan Maxman Architects
Philadelphia, Pennsylvania

Alan Plattus
Associate Dean
School of Architecture
Yale University
New Haven, Connecticut

Deadline for Submissions: October 15, 1997

Entry Form: Awards for Architectural Research

Please complete and submit all parts intact with each entry (see paragraph 9 for instructions). Photocopies of this form may be used.

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Winning entries will be featured in the April 1998 issue of Architecture.

Eligibility

1 Who Can Enter
Architects, environmental design professionals, academics, and students conducting research and working in the U.S., Mexico, or Canada may enter one or more submissions. Research may be focused on any location, but the work must have been directed and substantially executed in the U.S., Mexico, or Canada not more than five years ago.

2 Substantive Projects
Entries may include funded research, reports accepted by clients for implementation, or studies undertaken by entrants who have marketed or applied their results. Applied research, in which existing research findings are used or tested in the field (resulting in new knowledge gained from application), and doctoral dissertations are also eligible. Basis of eligibility as well as the date of the study should be explained in the submission. *Architecture* may contact any of the parties involved to verify eligibility.

Publication Agreement

3 Providing Additional Materials
If the submission should win, the entrant agrees to make available further information and graphic material as needed by *Architecture*.

4 Publication
Architecture is granted the first opportunity among U.S. magazines for first publication of the study.

Submission Requirements

5 Project Facts Page
To ensure the jury's clear understanding, each entry must contain a page that lists, in English, the research project facts under the following headings: Project Title; Research Category; Client or Source of Funding; Budget; Start and Finish Dates; Name and Location of Client; Research Setting; Form of Final Products; Basis of Eligibility; Bibliographic References. Ten copies of this page must be submitted.

6 Narrative
Entries must contain a three- to five-page synopsis of the project that includes the following section headings: Purpose/Objectives of the Project; Research Design and Methods Used in Research; Data and Analysis Procedures; Major Findings and Results; Significance and Uses of Results. Ten copies of the narrative must be submitted.

7 Additional Materials
One copy of supplementary graphic or written material may be submitted in 8½-by-11-inch format and firmly bound in binders. No slides, original drawings, videotapes, or unbound materials will be reviewed.

8 Anonymity
To ensure anonymity in judging, no names of entrants or collaborators may appear on any part of the submission except on entry forms. Credits may be concealed by tape.

9 Entry Forms
Each submission must be accompanied by a signed entry form (left). Reproductions of the form are acceptable. Fill out the entry form and insert it intact into an unsealed envelope labeled "Entry Form" to be included with the submission.

10 Entry Fees
Entry fees must accompany each submission. Fee is $120. Make check or money order payable to *Architecture*. Canadian and Mexican entrants must send drafts in U.S. dollars. Fee must be inserted in unsealed envelope with entry form (see 9, above).

11 Return of Entries
Architecture will return entries ONLY if they are accompanied by a self-addressed stamped envelope. Copies of project facts and narratives may not be returned. *Architecture* assumes no liability for loss or damage.

12 Entry Deadline
Deadline for sending entries is October 15, 1997. All entries must show a postage mark as evidence of being in the carrier's hands by that date. Hand-delivered entries must arrive at *Architecture*'s offices by 6 p.m. on October 15. To ensure timely arrival, *Architecture* recommends using a carrier that guarantees delivery within a specified number of days.

Address entries to:
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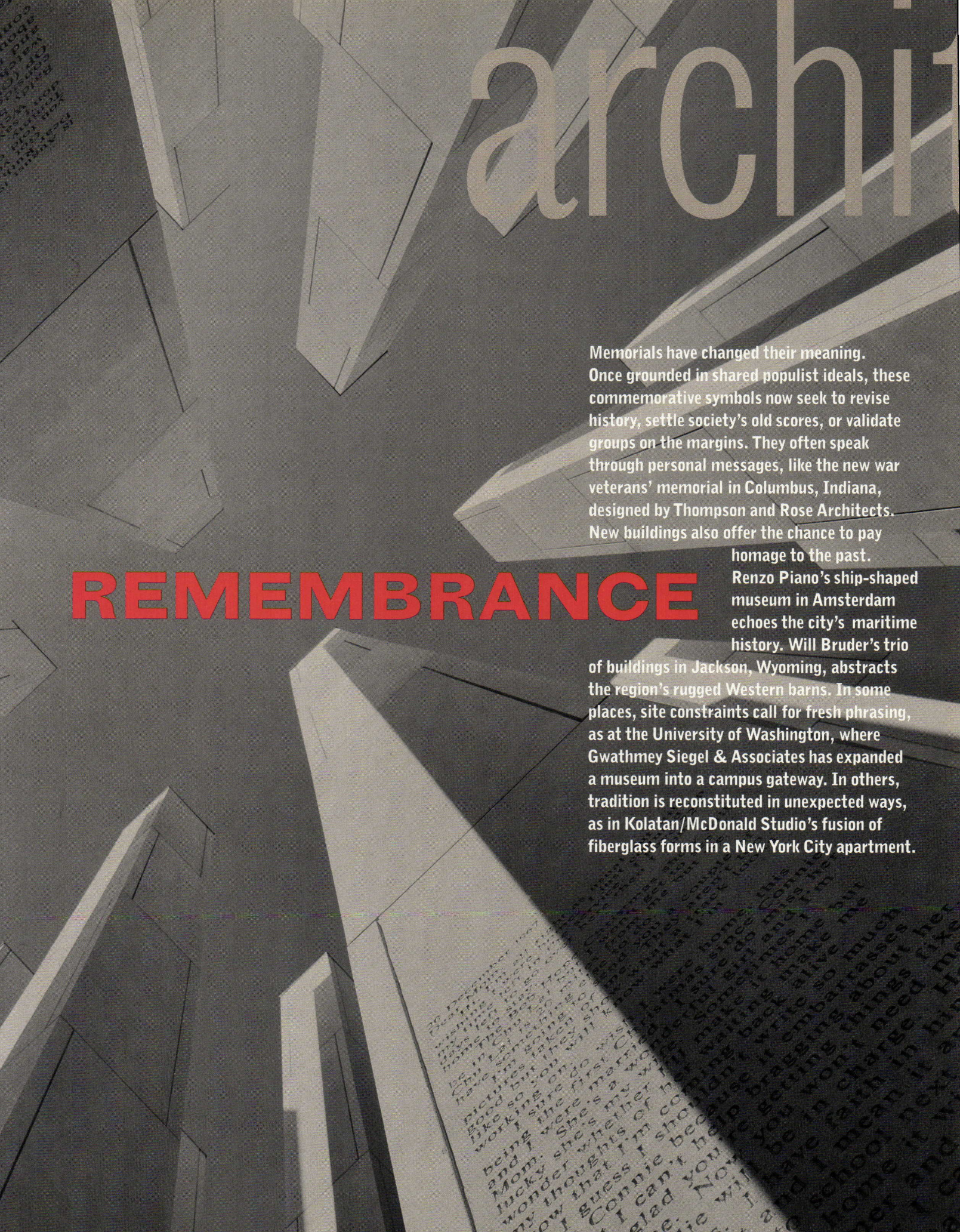
Suite 625
Washington, D.C. 20036

Deadline: October 15, 1997
Strictly Enforced



REMEMBRANCE

Memorials have changed their meaning. Once grounded in shared populist ideals, these commemorative symbols now seek to revise history, settle society's old scores, or validate groups on the margins. They often speak through personal messages, like the new war veterans' memorial in Columbus, Indiana, designed by Thompson and Rose Architects. New buildings also offer the chance to pay homage to the past. Renzo Piano's ship-shaped museum in Amsterdam echoes the city's maritime history. Will Bruder's trio of buildings in Jackson, Wyoming, abstracts the region's rugged Western barns. In some places, site constraints call for fresh phrasing, as at the University of Washington, where Gwathmey Siegel & Associates has expanded a museum into a campus gateway. In others, tradition is reconstituted in unexpected ways, as in Kolatan/McDonald Studio's fusion of fiberglass forms in a New York City apartment.

MEMORIAL

COMMEMORATION HAS SPUN OUT OF CONTROL, AS WE PROMOTE OURSELVES RATHER THAN REMEMBER OUR HISTORY. *By Deborah K. Dietsch*

Memory has become a growth industry in America. From a memorial erected to honor the Challenger astronauts at the Kennedy Space Center in Cape Canaveral, Florida, to a commemorative study center dedicated to writer John Steinbeck in Salinas, California, we are rushing to remember our tragedies and triumphs as never before. It seems that anyone with the cause and the cash is building a memorial somewhere.

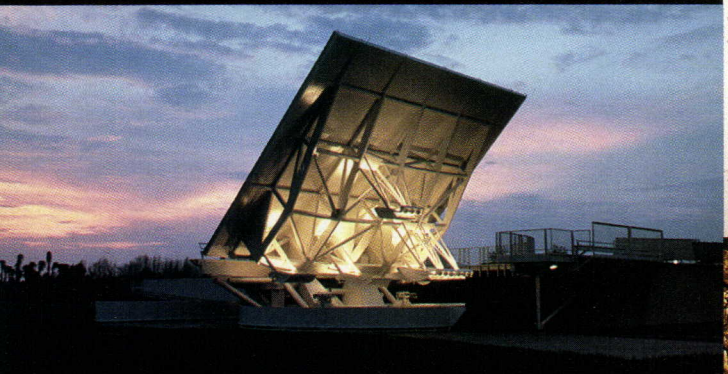
Just this summer, a new memorial dedicated to 20th-century war veterans has been completed in Columbus, Indiana (pages 98-99, this issue); a memorial has already been dedicated at New York's Kennedy Airport to those killed in the TWA Flight 800 crash last year; and a design has been selected for a permanent memorial to the Oklahoma City bombing victims on the site where the Alfred P. Murrah Federal Building once stood.

In Washington, D.C.—fast becoming the memorial capital of the world—plans are being reviewed for a memorial park to Japanese-Americans interned during World War II; fundraising continues for the Black Revolutionary War Patriots Memorial; a bill has been introduced in Congress for a memorial to late civil rights leader Ralph Abernathy; controversy is brewing over the site of the U.S. Air Force Memorial; and a battle is being waged over the design and location of the World War II memorial (page 9, this issue).

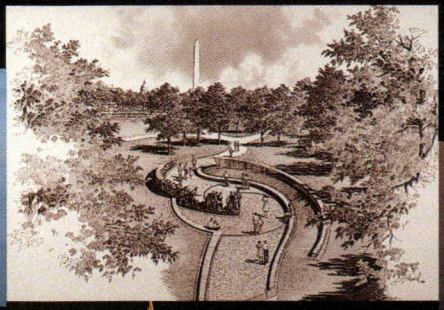
Memorial mania is accelerating as we hastily record our history before the new millenium dawns and our current memories fade. Turn-of-the-century memorialization, however, is not new. A similar commemoration craze took hold at the end of the 19th century, with many memorials erected to the dead of the Civil War.

What is different today is that memorials no longer represent a nation united, but one divided. They have become totems to factious causes rather than to shared ideals. Contemporary memorials tell us more about the present than about the past. They put our own permanent spin on history.

We are now spinning our history faster and faster, commemorating people and events to vindicate social injustices and to salve our uneasy consciences. Women in the military



ASTRONAUTS MEMORIAL
Cape Canaveral, Florida
Holt Hinshaw Pfau & Jones

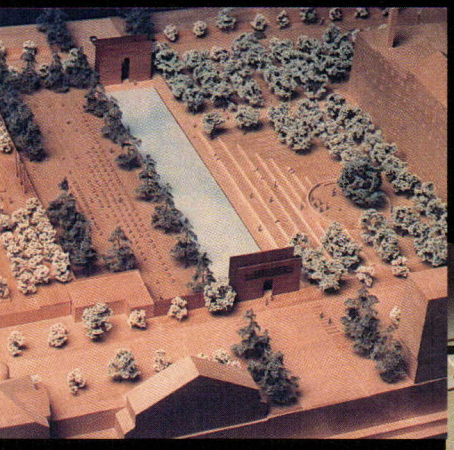


BLACK REVOLUTIONARY WAR PATRIOTS MEMORIAL
Washington, D.C.; Devrouax & Purnell

WORLD WAR II MEMORIAL
Washington, D.C.; Friedrich St. Florian

Mania

may be sexually harrassed, but they will be paid full honors when their own official memorial opens next month at the foot of Arlington

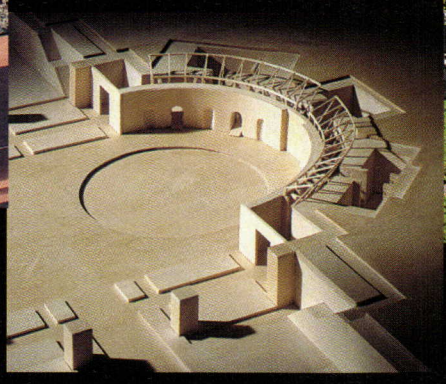


OKLAHOMA CITY NATIONAL MEMORIAL
Oklahoma City; Locus Bold Design

National Cemetery. Those afflicted with AIDS still suffer discrimination, but their disease is now better understood thanks to the AIDS Memorial Quilt, an 18-acre folk-art flag to the dead. The Indians may have won the Battle of Little Bighorn in Montana, where General Custer made his last stand, but it has taken over a century to recognize their victory with a memorial, the result of a competition held earlier this year.

The best of these memorials-to-a-cause serve an educational purpose, raising questions about present-day injustices against the backdrop of history. They also provide a symbolic catharsis for communities ravaged by tragedy and disaster, as demonstrated by the AIDS Quilt and the Oklahoma City memorial. Too many of today's memorials, however, are built as promotional tools for advancing narrowly focused, narcissistic agendas. They are mirrors of ourselves, not reflections of history.

Some, like the newly dedicated memorial to President Franklin Delano Roosevelt in Washington,



WOMEN IN MILITARY SERVICE MEMORIAL
Washington, D.C.; Weiss/Manfredi Architects

stand as three-dimensional placards to political correctness. Not only is this sprawling, stone-enclosed park completely out of bounds with Roosevelt's own wishes for a memorial the size of his desk, but it has been edited to appease various special interest groups: Yielding to anti-tobacco interests, it does not depict FDR with his signature cigarette holder. In response to animal rights activists, it eliminates the fox-fur boa on the statue of First Lady Eleanor Roosevelt. And in deference to the disabled, the already sculpture-laden memorial will be expanded to include a statue of FDR in a wheelchair.

To design a memorial is to make a political statement, inviting public

KOREAN WAR VETERANS MEMORIAL
Washington, D.C.; Cooper-Lecky Architects

debate and controversy. It took more than 50 years to complete the FDR Memorial, with four different designs along the way. The Korean Veterans Memorial, completed in 1995, was similarly besieged with design revisions, including a lawsuit filed (and lost) by the competition winners against the architect of record. Now, the newly proposed World War II Memorial is similarly threatened by a recent ruling by federal commissions requiring a new, simplified design for the most prominent site on the Mall.

Indeed, it is getting harder and harder to build heroic monuments

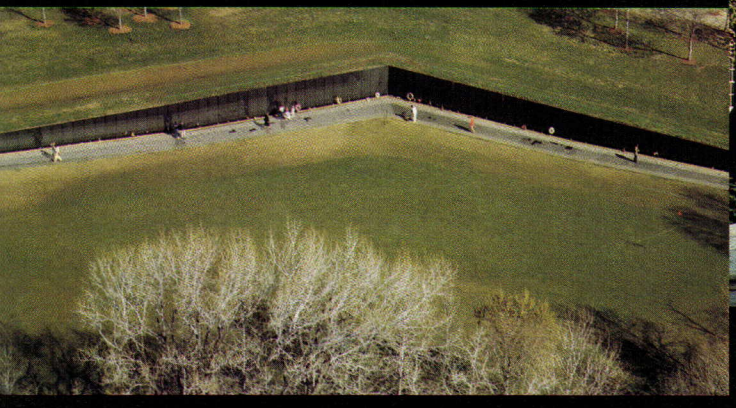
AIDS MEMORIAL QUILT
NAMES Project

in an era that shuns grandeur and greatness. This difficulty dates from mid-century, when monuments were viewed as antiquated relics of the academy and at odds with democratic notions of modernity. Few architects in the 1940s, for example, could accept the Classical model of John Russell Pope's Jefferson Memorial (1943).

But the public was equally hard-pressed to accept Modernist monumentality and commemoration. When Pedersen and Tilney's Brutalist winning entry to the FDR competition was unveiled in 1960, for example, its ring of spartan, concrete slabs was dubbed "instant Stonehenge" and officially rejected two years later.

Though its design, too, was fraught with controversy, the Vietnam Veterans Memorial turned the tide of critical and public acceptance of contemporary memorial design soon after its completion in 1982. Maya Lin's black granite wall was not only the first memorial to be built on the Mall in 50 years, it also managed to successfully embody both modern and historic ideals. Abstract and antiheroic in form, it drew on an earlier commemorative tradition in conveying the tragic proportions of war through lists of soldiers' names, arranged in the order that they died or became missing. There is no other explanation of the war. (This less-is-more approach was derided by many veterans, however, who demanded representational statuary, which was eventually added to the memorial site in 1984 and 1993.)

Lin's overwhelming inscription of names echoes Edwin Lutyens' memorial to the Missing of the Somme in Thiepval, France (1932).



VIETNAM VETERANS MEMORIAL
Washington, D.C.; Maya Lin

NATIONAL LAW ENFORCEMENT OFFICERS MEMORIAL
Washington, D.C.
Davis Buckley and Raymond Kaskey

The base of Lutyens' towering, four-sided arch is carved with the names of more than 73,000 soldiers who died during this bloody battle of World War I. It does not explain why the battle was fought. In appropriating this device, Lin's memorial personalizes, rather than sermonizes about, war. More importantly, her recessive, earthbound enclosure provides a common ground for reconciliation and healing by war veterans and protesters alike.

Now visited by millions, the Vietnam Veterans Memorial is the most influential memorial of our time. Its grassroots inception, by a small group of Vietnam vets who lobbied Congress to grant public land for their memorial, has inspired many local veterans groups and other organizations to build memorials and hold competitions to create their designs. This populist process has since been repeated all over the country, further democratizing memorial building and producing many monuments by architects as the result of juried competitions.

SALEM WITCH TRIALS TERCENTENARY MEMORI
Salem, Massachusetts; James Cutler and Maggie S

Lin's wall has also spawned many imitations by architects seeking to emulate the potent simplicity of her design. Lists of names or numbers on walls or columns is now a common commemorative device. For contemporary architects, they provide a way to achieve meaningful iconography without resorting to the sentimentality of interpretative ornamenation or allegorical figures.

Two examples include the National Law Enforcement Officers Memorial in Washington, D.C., which documents the names of slain police officers on two curved walls (it also takes a lesson from the figurative additions to the Vietnam memorial by including sculptures of lions), and the Boston Holocaust Memorial's

AS MEMORIALS ARE DESIGNED TO BE MAJOR TOURIST DESTINATIONS

glass towers, etched with numbers from 0 to 6 million to symbolize the number of Jews killed by the Nazis. Such repetition has become so rote that, in some cases, it has been reduced to mere patternmaking. It no longer moves us.

Another common formal device of contemporary memorials is the inscription of letters and other personal messages. Like the repetition of names, this documentary iconography is aimed at translating large-scale, incomprehensible events to everyday human experience. The limestone columns

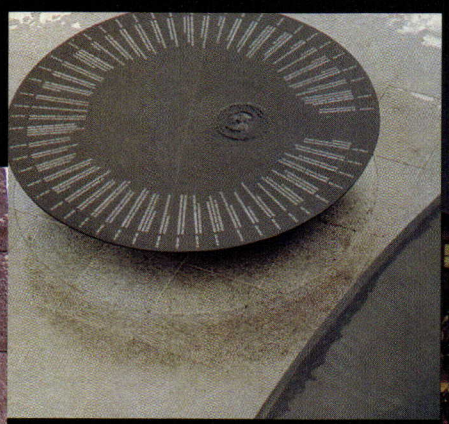
FRANKLIN DELANO ROOSEVELT MEMORIAL
Washington, D.C.; Lawrence Halprin

of the new Columbus, Indiana, veterans memorial are carved with letters sent by soldiers and their families during 20th-century wars.

The Armed Forces Memorial in Norfolk, Virginia, to be completed next year, is designed to resemble pieces of paper blown across a waterfront plaza; its curled bronze panels will record letters written by soldiers within a month of their deaths.

The AIDS Memorial Quilt is also formed from personal recollections, extending them collaboratively to a vast scale. It is pieced together from more than 40,000 panels, each measuring 3 feet by 6 feet, that are made by groups and individuals who choose the imagery and materials, including mementos from the dead.

Now that memorials have become more commonplace, they are getting bigger and more ambitious, reaching beyond their purely commemorative purpose. The final version of the FDR memorial, for example, comprises 7.2 acres with four outdoor rooms filled with commemorative sculptures. The World War II memorial was originally intended to occupy 7.4 acres with educational spaces, an auditorium, and indoor halls of honor decorated with statuary and murals. Without the proper interpretative setting, however, memorials' didactic displays are reduced to mute figures and places for photo ops. Tourists visiting the FDR memorial, for example, can recall the horrors of the Nazi death camps by traversing the memorial's smoldering pits (created with fiber-optic lighting and stones), then shop or dine at the nearby Faneuil Hall Marketplace. Tourists wandering the FDR memorial can ponder the four-term President's social reforms, then buy souvenirs in the monument's gift shop or dip their toes into its fountains and waterfalls (the National Park Service recently ruled the pools off-limits to swimming).



CIVIL RIGHTS MEMORIAL
Montgomery, Alabama; Maya Lin

BOSTON HOLOCAUST MEMORIAL
Boston, Massachusetts; Stanley Saitowitz Office

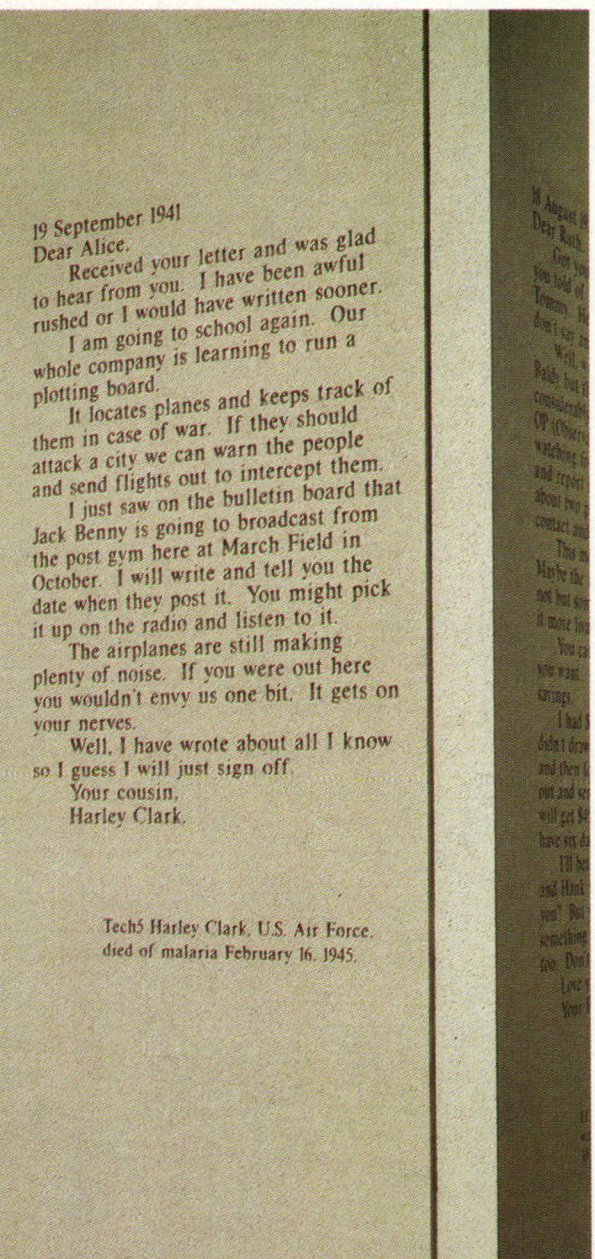
As memorials continue to proliferate, we are becoming inured to the very subjects being remembered, unmoved by their call for reflection. The act of commemoration has become more important than the individuals and events being commemorated. We need to step back from our current rush to memorialize in order to be more selective in determining who, what, where, and how we remember. Stone and bronze shrines cannot rewrite our history, nor can they solve our social ills, no matter how many we build.

EMEMBRANCE IS BEING ECLIPSED BY ENTERTAINMENT AND RECREATION.

COLUMNS OF MEMORY

WITH A BATTALION OF STONE PILLARS, THOMPSON AND ROSE ARCHITECTS MEMORIALIZES 20TH-CENTURY WAR VETERANS IN COLUMBUS, INDIANA.

BY REED KROLOFF



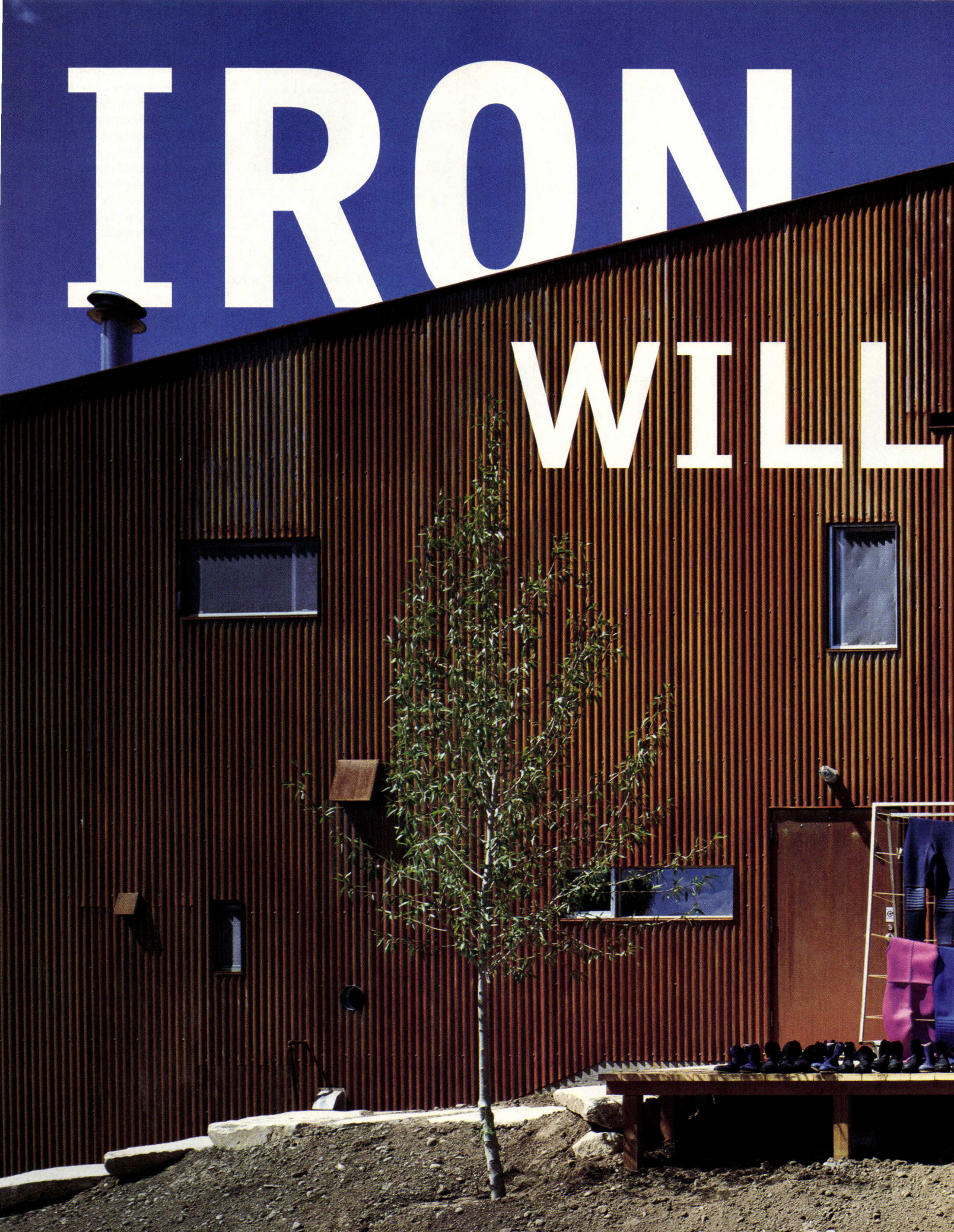
The brief for Bartholomew County, Indiana's Veterans' Memorial specified the inclusion of letters home from some of the 171 local soldiers who died fighting the wars of the 20th century. The writing isn't dramatic; these are the thoughts of ordinary people sent to do extraordinary things. But incorporating the letters into the memorial liberated Boston-based Thompson and Rose Architects from the Modernist's memorial conundrum: imparting associative meaning to abstract form without the use of traditional iconography or symbols. The memorial's narrative makes the design more accessible without being maudlin, and provides county seat Columbus with a handsome addition to its renowned architectural inventory.

Proposed initially by a group of Vietnam vets, the memorial was expanded to commemorate veterans of all 20th-century wars in an effort to broaden its public appeal. Thompson and Rose secured the commission in a 1995 competition, besting sculptors Vito Acconci and Judith Shea. Located next to the exuberant Second Empire Bartholomew County courthouse, and diagonally across from Skidmore, Owings & Merrill's banal town hall, the memorial occupies an important place in the composition of civic Columbus. It anchors a grassy site, designed by landscape architect Michael Van Valkenburgh, that was created by the earlier demolition of the county jail. In this position, the new war memorial will be visible from a bridge being built to serve as the new main entrance to town.

The memorial comprises a grid of 25 Indiana-limestone-clad concrete columns resting on a black granite base. Each measures about 40 feet high and 30 inches square. The columns are heavily rusticated on the perimeter but smooth along their inside surfaces. Veterans' names are carved onto the inside faces of the outermost columns, and their letters are inscribed on the nine innermost columns, which taper slightly toward the sky. The close spacing of the columns creates a visual shift from solid to transparent as one moves around the exterior. From the inside, the memorial forms an intimate, roofless hypostyle hall that immerses the visitor in a field of stone and sentiment.

BARTHOLOMEW COUNTY MEMORIAL FOR VETERANS
COLUMBUS, INDIANA
ARCHITECT: Thompson and Rose Architects, Cambridge, Massachusetts—Charles Rose, Maryann Thompson (principals-in-charge), Michael Grant, Aileen Hsu, Julie Kline, David Whitney (project team) **LANDSCAPE ARCHITECT:** Michael Van Valkenburgh Associates **ENGINEER:** Ocmulgee Associates (structural) **CONSULTANTS:** Todd Williams & Associates (site architect); Schweppe Lighting (lighting); Fritz Kiel, Repp and Mundt (cost) **GENERAL CONTRACTOR:** Dunlap and Company **COST:** $496,000
PHOTOGRAPHER: Chuck Choi Architectural Photography

Memorial anchors southeast quadrant of courthouse square (site plan). Outer limestone columns are rusticated to recall 19th-century courthouse (below). Veterans' letters are inscribed into interior limestone surfaces (facing page).


IRON
WILL

Phoenix architect Will Bruder transplants his desert Modernism to Jackson, Wyoming.

By Raul A. Barreneche

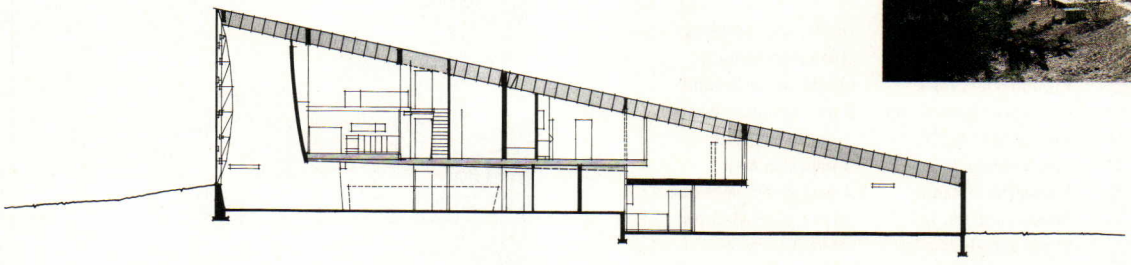
For more than 20 years, Will Bruder has been a designer of the desert. From houses to libraries, the sculptor-turned-architect has always drawn inspiration for building forms and materials from the Sonoran Desert's geological formations and its vernacular of roadside sheds, barns, and grain silos. Even his largest and most sophisticated building to date, the Phoenix Central Library (*Architecture*, October 1995, pages 56-65, 107-113), draws on the massive forms of mesas, its saddlebag service cores wrapped in the rusty copper of railroad sheds. In recent years, Bruder's work has evolved into an idiom that bridges the organicism of Frank Lloyd Wright and Bruce Goff and the more rigorous geometries of European Rationalists. Buildings such as the Cholla Branch Library (1990), Theurer Residence (1991), Deer Valley Rock Art Center (1994), and Temple Kol Ami (1994) marry stone and concrete curves with angular assemblies of glass and metal.

Bruder has built little outside Arizona—until now. Over the past two years, the architect has completed a trio of buildings in Jackson, Wyoming: An office building was inaugurated in 1995; a rafting company headquarters began operating in May; and this month, his Teton County Library opens its doors. These three projects represent an important turning point in Bruder's career, the first significant translation of his rugged material sensibilities and notions of placemaking to a locale outside the desert. "After spending the majority of my professional life working in the same place, I've really had to dig deeply to understand Jackson," the 51-year-old architect admits.

Bruder's first visit to Jackson was serendipitous. In 1992, the county was looking to replace its rustic but outdated log library, so Teton County Library Board President Paul Lawrence invited the architect, whose Phoenix library was in construction, to address the board on his vision of library design. Later that year, Bruder won the competition to design the new Teton County Library, besting designers such as Michael Graves and Meyer, Scherer & Rockcastle.

While working on the Jackson library, Bruder picked up two more commissions from new acquaintances: Ed and Lee Riddell hired the architect to design an office building for their company, Riddell Advertising & Design, and local entrepreneurs Breck and Carla O'Neill hired him to create a new headquarters for their river rafting company. This trio of buildings, which Riddell jokingly calls the "Bruder Triangle," occupies a strip of highway just west of downtown Jackson, lined with shopping centers, fast food stores, and motels. Bruder's buildings

CLIENTS: Breck and Carla O'Neill **ARCHITECT:** William P. Bruder Architect—William P. Bruder, Wendell Burnette, Tim Christ, Jack DeBartolo III, Leah Schneider (project team) **LANDSCAPE ARCHITECT:** Verdone Landscape Architecture **ENGINEERS:** Brickey, Rudow & Berry (structural), Otterbein Engineering (mechanical), C.A. Energy Design (electrical), Nelson Engineering (civil) **CONSULTANT:** Lighting Dynamics (lighting) **GENERAL CONTRACTOR:** Capstone Construction **COST:** Withheld at owners' request **PHOTOGRAPHER:** Bill Timmerman



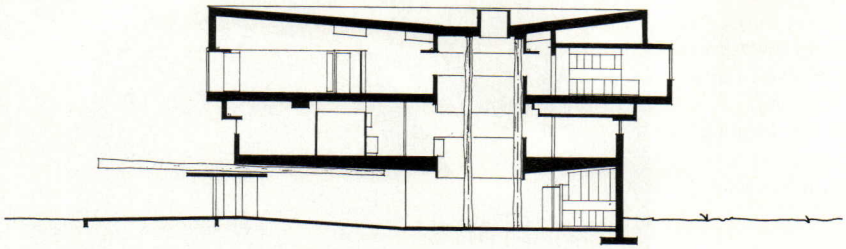
Mad River Boat Trips

Bruder wrapped the 130-foot-long sloping structure of the river rafting company's headquarters in sheets of corrugated iron. The iron is now rusting to a burnt orange hue that harmonizes subtly with the building's surroundings (facing page). A Corbusian-inspired splatter of variegated rectangular windows edits key views of the building's surroundings from within the wedge (below). Behind the glazed truss wall facing the highway (top right) are exhibits outlining the history of river rafting and a small retail area. Visiting rafters enter the building through a glazed opening in the north face of the wedge (below). At the rear, a spacious garage area (section, above right) provides storage space for rubber rafts and dry suits. On the second floor, small shared living quarters provide housing for Mad River's summer employees. The owners' loft on the second and third floors (section, top left) is a compact but airy space that rekindles the spirit of the Eameses in colorful plywood cabinetry.

avoid literal references to this roadside sprawl, instead creating a Modern idiom for the town—though they exhibit varying degrees of success.

Like other Western resort towns such as Aspen, Boulder, and Sun Valley, Jackson was transformed by a real estate boom in the late 1980s and early 1990s, as the power brokers of Wall Street and Hollywood arrived in search of a laid-back vacation retreat. This sudden surge in popularity brought the usual trappings of gentrification to this frontier town of 6,000 residents: Now, the locals and more than 3 million tourists who visit Jackson each year can sip cappuccino and shop at Ralph Lauren in faux-log storefronts that recall the Wild West. This overnight sophistication, combined with soaring real estate values, however, threatens to spoil Jackson's original small-town character.

For Bruder, Jackson presented obvious differences from the desert in climate, topography, and local building traditions. But, like many of the Arizona towns in which the architect has built, Jackson is still a frontier town at heart, despite its rank among the wealthiest communities



Riddell Advertising & Design

Bruder designed the vertically telescoping headquarters for a 17-person advertising agency to echo the muffin-shaped haystacks of neighboring ranches. Its cedar and aluminum-clad exterior recalls local barns and sheds, but with obvious contemporary flourishes. The boxy building is organized around an atrium (section and right), with archives and a photography studio on the ground floor; the upper levels house offices and production areas. A projecting glass box on the north elevation (below) encloses a conference room. Projecting from the south facade, a small metal-wrapped window (facing page, top and bottom) marks a staff cafeteria.

CLIENTS: Lee and Ed Riddell **ARCHITECT:** William P. Bruder Architect—William P. Bruder, Ed Ewers, DeWayne Smythe (project team) **LANDSCAPE ARCHITECTS:** Christy Ten Eyck (designer), John Grant (contractor) **ENGINEERS:** A.W. Schwan & Associates (structural), Tesco (mechanical), California Energy Designs (electrical), Nelson Engineering (civil) **GENERAL CONTRACTOR:** Capstone Construction **COST:** Withheld at owners' request **PHOTOGRAPHER:** Bill Timmerman

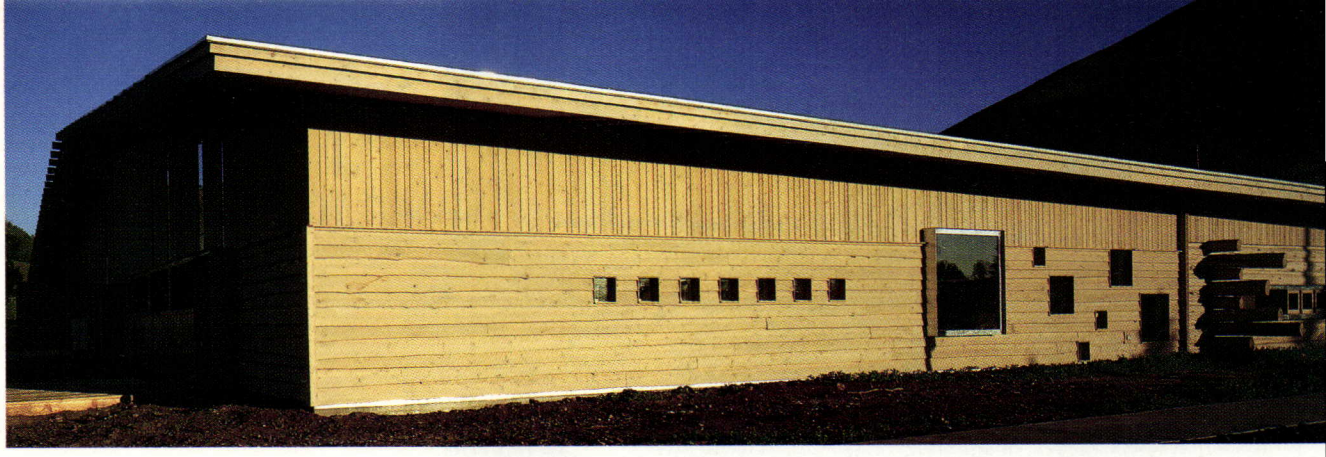
in America. Stagecoaches ride by the Million Dollar Cowboy Bar in the center of town; city commissioners work as waitresses by day; and the mayor acts out mock gun battles in the town square by night.

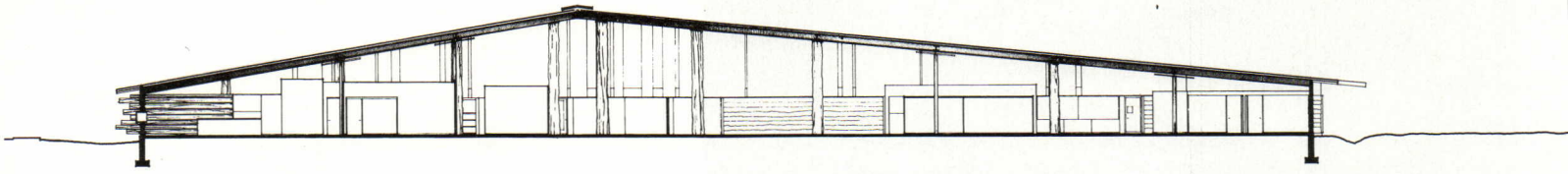
Bruder looked deeper to find the soul of Jackson, drawing from the true local vernacular of clapboard barns, ramshackle tin-roofed sheds, trailers, and log ranch houses. "There's a certain rigor and modesty of scale in these outbuildings that I enjoy," he explains. "I believe that architecture is not about bringing style to a place, but looking carefully at everything around you and asking serious questions of a place."

The primary forms of Bruder's buildings are typically simple and straightforward: He favors wedges, boxes, and sheds. In Jackson, the architect has built one of each. The strongest building in Bruder's Jackson trio is the one with the simplest parti—the rusty roadside wedge of the Mad River Boat Trip company. Its sloping, corrugated iron form responds simultaneously to the surrounding mountains and to agricultural sheds and prosaic highway buildings.

The sophisticated interiors of the wedge belie its rusty exterior. Here, Bruder creates spaces that capture the energetic activity that fills the building as busloads of adventurers depart for and return from rafting excursions on the Snake River. Brightly painted walls, translucent fiberglass counters and dressing rooms, rafting exhibits, and retail space behind the glassy east face of the wedge set the tone for visiting river runners. Upstairs, Bruder created a single level of shared living quarters for employees—a response to a new local ordinance requiring new businesses to provide affordable housing for its workers—and a loft apartment for the company's owners.

Located just east of Mad River is the Riddell advertising agency headquarters, a stepped wooden box inspired by the quirky, muffin-shaped haystacks on surrounding



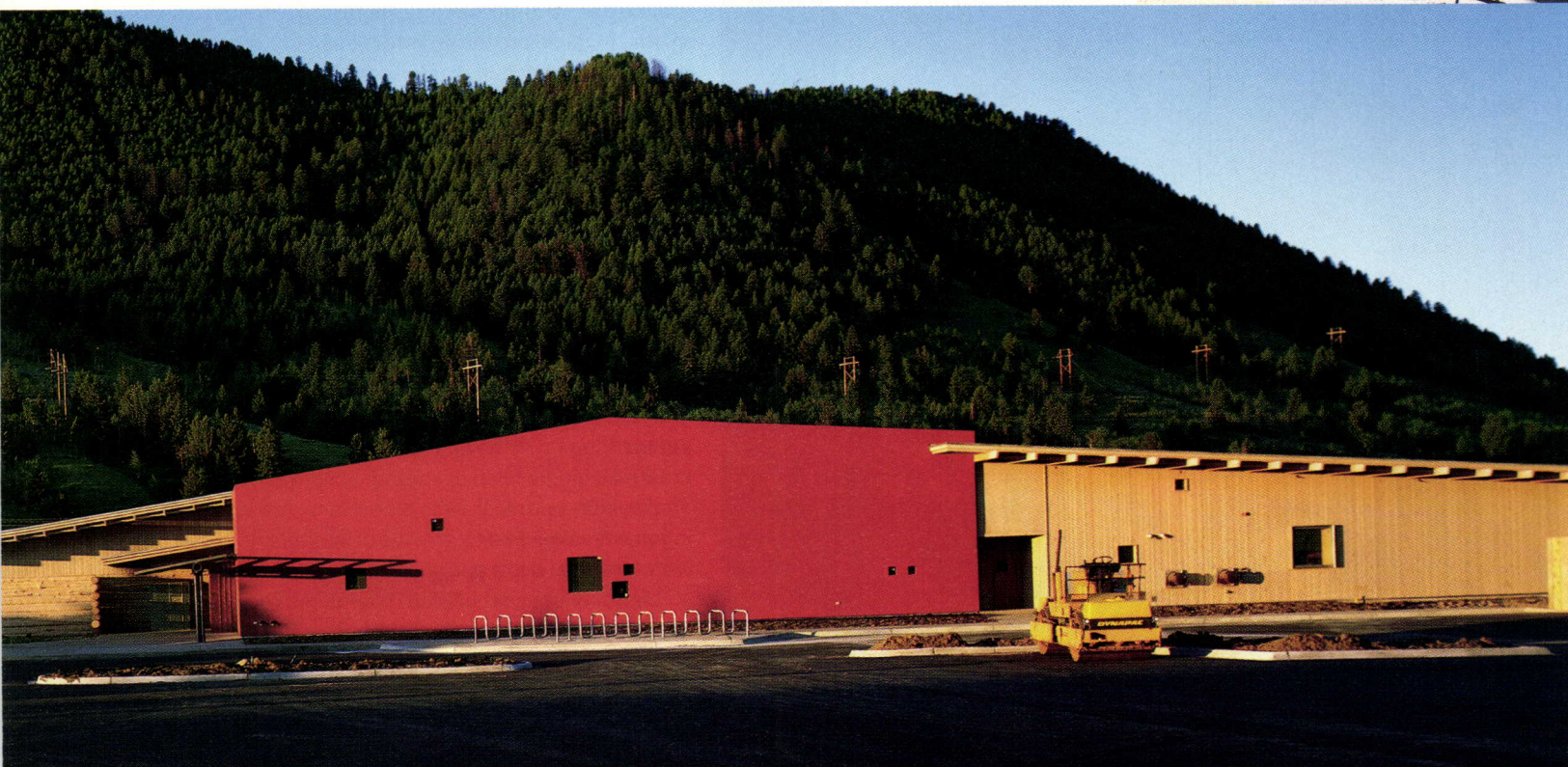


Teton County Library

The least successful of Will Bruder's Jackson projects is the town's new 25,000-square-foot public library; its wood-clad east facade (top) incorporates a clash of Modern punched windows and interlocking logs. On the north-facing entrance facade (below), a stark, stucco-clad wedge encloses a auditorium for use by the community.

Patrons enter the building under a small ribbed metal canopy to the east of the auditorium. Low bookshelves, interior partitions, and fiberglass pendant lamps attempt to reduce the scale of the cavernous interior (section), which features unstripped log columns. From the reading room, visitors exit onto an enclosed plaza to the south (right).

CLIENT: Teton County Library Board
ARCHITECT: William P. Bruder Architect—William P. Bruder, Wendell Burnette, Tim Christ, Jack DeBartolo III, Ben Nesbeitt, Brett Oaks, Leah Schneider (project team)
LANDSCAPE ARCHITECT: Floor and Ten Eyck
ENGINEERS: Brickey, Rudow & Berry (structural), Clark Engineering (mechanical), C.A. Energy Designs (electrical), Nelson Engineering (civil) **CONSULTANT:** Bob Rolhf (library) **GENERAL CONTRACTOR:** Continental Construction **COST:** $3.4 million
PHOTOGRAPHER: Bill Timmerman



ranches. A tilted aluminum wall punctured with square windows and vents leans against the west side of the building; peeled logs thrust outward over the front door to create a figural entry canopy. Its simple rectilinear massing, horizontal strip windows, and sleek interior finishes and furnishings suggest that this building is part of a larger Modern context beyond Jackson. Yet its cedar cladding, already streaked with rust from iron nails, and exposed timbers root it firmly in a Western vernacular.

Sadly, the Teton County Library—the commission that brought Bruder to Jackson and his only public building there—is the weakest of the three Wyoming projects. The oversized shed adjoins a campground and a trailer park west of the town square, near the Riddell and Mad River buildings, and echoes the log construction of the county's existing downtown library, a cherished but well-worn 1950s structure. Bruder's building is a disappointing interpretation of its predecessor, with awkward proportions resulting from a 25,000-square-foot floor plate that rises to only 25 feet in height in an effort to fit in with its neighbors. The main elevation turns a surprisingly solid, inhospitable face to the street: An auditorium housed in a large red stucco wedge dotted with small, randomly placed windows interrupts the long, wood-clad north facade.

Inside, the architect tried to re-create the cozy atmosphere of the old library. But the space feels cavernous, despite attempts to infuse an intimate scale with furniture, shelving, and small support rooms. Juxtapositions of sleek finishes such as citrus-colored partitions and tiny halogen spotlights feel cacophonous against the rough timber walls and columns. In a town without clearly defined civic buildings, Bruder should have created a strong public presence, instead of deferring to the idiom and scale of adjoining trailers and campers.

But the library has been well-received by locals. The Riddell building, in contrast, caused quite a stir when it was completed in 1995; though Bruder is a tireless teacher and charismatic salesman of his work, not everyone in Jackson was convinced by his Modern vision. Resident Murray Kostamo wrote a letter to the *Jackson Hole News* to suggest that a class-action suit be filed against the building, and added that the "genuine uniqueness of Jackson Hole should not be jeopardized by nonresident, ego-oriented architects." Then-Mayor Abi Garaman also attacked the building and suggested the architect be taken off the library job. Garaman asked Planning Director Bob Horne to ensure that "a building like Riddell's never happen again in this community." Such negative publicity almost scared off the owners of Mad River: "Half the town warned us to stay away from Will Bruder," recalls owner Carla O'Neill. Fortunately, she and her husband were undaunted by the controversy.

For an architect who runs a 10-person studio and travels the world lecturing and participating in juries, Bruder remains remarkably involved in the detailing and fabrication of his projects. He considers the design of every component of his buildings, down to its furnishing, lighting, and signage, which he often installs himself. (During a recent site visit to the Mad River building, Bruder was busy applying dry-transfer lettering to custom-designed metal signs and hanging them above the front desk.) Always the sculptor, Bruder prefers to work out details in the field, rather than drawing them in the studio. At the Riddell building, for example, he left the pattern of cedar siding unresolved before construction: "I walked around the perimeter with a big marker pen, and just drew on the substrate where I thought the wood strips should get denser or more spread out," he explains.

This last-minute detailing has its problems, however. In the warm, arid climate of Arizona, joints that don't meet or skins that leak air are more commonplace and less problematic than in cold, snowy Jackson, where Bruder must pay closer attention to the execution of his details. After just two winters, for example, some interior drywall surfaces in the Riddell building are already damaged from water leaks. This criticism isn't news to Bruder, however. "I've been faulted occasionally for details that aren't as graceful as they should be," he admits. "But there's always a gusto in the invention that's more important for me than the execution. I'd rather have a building that's about ideas."

Back in the desert, Bruder's studio is brimming with work. He is designing and building more than a dozen houses in and around Phoenix; a contemporary art museum in Scottsdale; a 1 million-square-foot office, retail, and museum complex at Arizona State University in Tempe; and a log house in the mountains of Colorado. His next big jump will likely be to Europe, where the architect has his sights set on potential commissions in Holland, Belgium, France, and Ireland. New buildings abroad will certainly allow Bruder to further adapt and evolve his work—and hopefully refine his construction techniques, given Europe's exacting standards for craft.

Having completed three projects in Wyoming, Bruder is interested in maintaining a presence there. Currently, he is designing a glassy addition to a house located just outside Jackson, inspired by Ludwig Mies van der Rohe's Farnsworth House, as well as a hillside house for an ex-river runner and author. With just three buildings, Bruder has succeeded in shaking up Jackson, offering new visions that challenge the town's conservative design sensibility and make residents reconsider their expressions of place. Client Ed Riddell maintains that the controversy surrounding his building opened up an important public discussion about architecture in Jackson. "People who were for and against the building were both very emotional. I never thought architecture could stir up such feelings," Riddell remarks. Bruder has heard reports that even cowboys at the bars are talking about architecture. Aside from fostering such dialogue, his buildings in Jackson have brought a sense of permanence to a place of nostalgic veneers and false fronts.

LAMP OF LEARNING

By Steven Litt

Hardy Holzman Pfeiffer Associates lights up Cleveland's Beaux-Arts government center with a new beacon for the city's library.

Historic preservationists in Cleveland were incensed in 1993 when Partner Malcolm Holzman of Hardy Holzman Pfeiffer Associates unveiled plans for an expansion and renovation of the Cleveland Public Library's main branch downtown. Holzman's design called for a 10-story glass oval, set within four six-story towers of white marble. The oval was intended to give the library's new wing a strong, contemporary air, while the masonry towers framing it would refer to neighboring Beaux-Arts buildings in Cleveland's Neoclassical government center, laid out in 1903 by Daniel H. Burnham, Arnold Brunner, and John Carrere.

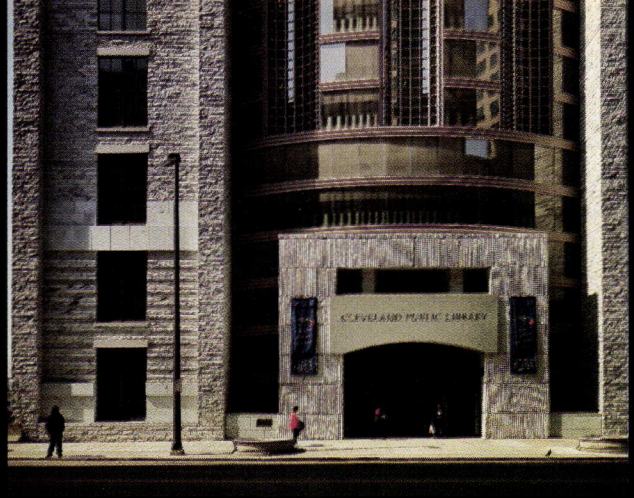
Preservationists claimed the new building would deeply harm the historic district. But rather than disregard its context, the new wing, which opened in April, thoughtfully and deeply reflects its surroundings. Though not a flawless performance, it possesses a delightfully offbeat logic, which becomes more convincing the longer you look at the building. Holzman's 270,000-square-foot addition is also the most exuberant, original, and gutsy new building in a city where cautiousness and conservatism have ruled architectural taste for decades. Named for Louis Stokes, the native Clevelander who became Ohio's first black Congressman in 1969, the library is winning converts.

The $65 million building, designed by Holzman with Robert P. Madison International and URS Greiner, both of Cleveland, is part of a $90 million library expansion and renovation funded by a bond issue enthusiastically supported by local voters in 1991. It is also Holzman's second controversial proposal for the library expansion in 10 years. In 1989, he proposed wrapping glassy wings around the beloved Eastman Reading Garden to link the new building to the original Main Library, a Neoclassical palace built in 1925 to designs by the Cleveland firm of Walker and Weeks. By connecting the new and old library buildings on every floor, the plan provided for a smooth flow of books and browsers. But it was scrapped after public outcry ensued over sealing off the garden from Superior Avenue, one of the downtown's main boulevards.

Under the second plan, the Stokes Wing is connected to the Main Library by corridors beneath the garden, which will reopen in 1998 after renovations that include new landscaping by the Olin Partnership of Philadelphia, ornamental gates designed by Tom Otterness, and a reflecting pool designed by Maya Lin.

The Stokes Wing is the latest ripple in a wave of urban library construction across North America that began in 1991 with the completion of the Harold Washington Library in Chicago and continued in 1993 with the expansion and renovation of the Los Angeles Public Library, also designed by Hardy Holzman Pfeiffer Associates. Other new libraries followed in San Francisco, Vancouver, Phoenix, and Denver (*Architecture*, October 1995).

Despite the revolution in information technology, Holzman contends that most new libraries take inspiration from the Beaux-Arts notion of the library as a masonry strongbox with an inward focus. "The ideas about what a library should be have changed, but the



Neither Modernist nor Postmodernist, Holzman's design infuriated observers who either wanted the building to imitate its Neoclassical neighbors or wanted to free his glass oval from its masonry corner towers.

architectural thinking is still predominantly the same," the 56-year-old architect maintains.

In Cleveland, which possesses the nation's third-largest public research library, Holzman sought to invent a new type of library that expresses openness and accessibility. "We wanted an outwardly directed building, one that made it clear that the library reaches out to the community," says Marilyn G. Mason, director of the library.

Holzman interpreted this openness literally with transparency. But he also wanted the building to fit within its Beaux-Arts context, with its heritage of masonry construction and Neoclassical ornamentation. The interaction between those two formal concepts resulted in the glass oval implanted within marble corner towers.

The symbolic inspiration for the design is the "lamp of learning," an ornamental detail borrowed from the original Walker and Weeks building next door. Holzman literally wanted the building to light up at night as a beacon, which it certainly does. Holzman was also excited about the formal possibilities of having the stone towers appear to penetrate the glass oval.

Like much of Hardy Holzman Pfeiffer's work, the Stokes Wing is neither strictly Modernist nor Postmodernist. This ambiguity infuriated observers who wanted the building to imitate the Neoclassical Main Library, and those who thought Holzman should have done away with the corner towers and left the glass oval unencumbered. But the union of glass and masonry in the library creates an uneasy object, invigorated with formal tension among its constituent parts.

The glass oval, by far the most controversial element in the design, marks the library as a distinctive presence. But rather than cry for attention, its curving contours send the eye veering off to the building's neighbors. Furthermore, its reflectiveness reduces the apparent mass of the Stokes Wing, giving it a quality of lightness that bows to the more weighty, formidable presence of the Main Library. In Holzman's design, there is a ghostly echo of the original, turn-of-the-century government center plan, under which this site was to have been left open as a corner park.

Meanwhile, the stone portions of the exterior respond to different conditions on every side of the building. When viewed from an oblique angle, the corner towers facing Superior Avenue appear to continue the cornice line of the old Main Library. On the east side of the building, the glass oval nearly disappears behind a 10-story marble facade pierced by conventional windows, which turns a deferential face across the street to the 10-story Federal Reserve Building, another Beaux-Arts treasure designed by Walker and Weeks.

However, while the massing and scale of the corner towers and the East 6th Street facade work well, the detailing of the stonework fails to evoke either the richness or the massiveness of earlier buildings in the surrounding historic district. Except for smooth panels around the windows, the towers are faced with rough-textured blocks of marble, measuring 8 inches high and 16 to 36 inches wide, dimensions that tend to make the marble look like cheap concrete blocks. The Georgia quarry Holzman used was unable to cut larger rough-textured blocks without dramatically increasing costs.

But any sense of disappointment over the exterior vanishes inside the building. Visitors enter through a 14-foot-high portal surmounted by a huge, arched granite lintel, which creates a dramatic sensation of compression. A 30-foot-high foyer surfaced with massive marble slabs

Massive granite entrance lintel is set within fluted marble archway.

Six-story marble-clad towers of new Stokes Wing (facing page) embrace 10-story glass oval, which houses reading areas and stacks. Offices and service areas are located behind library's east facade.

Ceiling by Cleveland artist Holly Morrison (above) enlivens a tower reading room. Brushed aluminum check-out desks (below) are set within glittering tiled arches styled like enlarged Neoclassical cornices.

leads to the spacious main lobby, which creates an equally palpable sensation of release.

The marble-floored lobby is dominated by a large, colorful, curving tile wall shaped like a blown-up Classical cornice, complete with dentils and elaborate moldings. Brushed aluminum circulation desks are set within two arches cut into the tile wall, which act like stage proscenums. They are trimmed with light globes that lend a theatrical air to the act of borrowing or returning a book.

A railing on the other side of the lobby overlooks the double-height lower lobby, which serves the popular audiovisual department and a 250-seat auditorium on the lower level. Daylight pours into the lobby from a curved glass wall directly above the auditorium, which is formed by a concave scoop in the oval's lower section. Details such as the bulging, faience-blue columns that march across each floor were intended to refresh the eye—and the spirit—during Cleveland's notorious winter months. The spirit is playful, bright, and big-hearted.

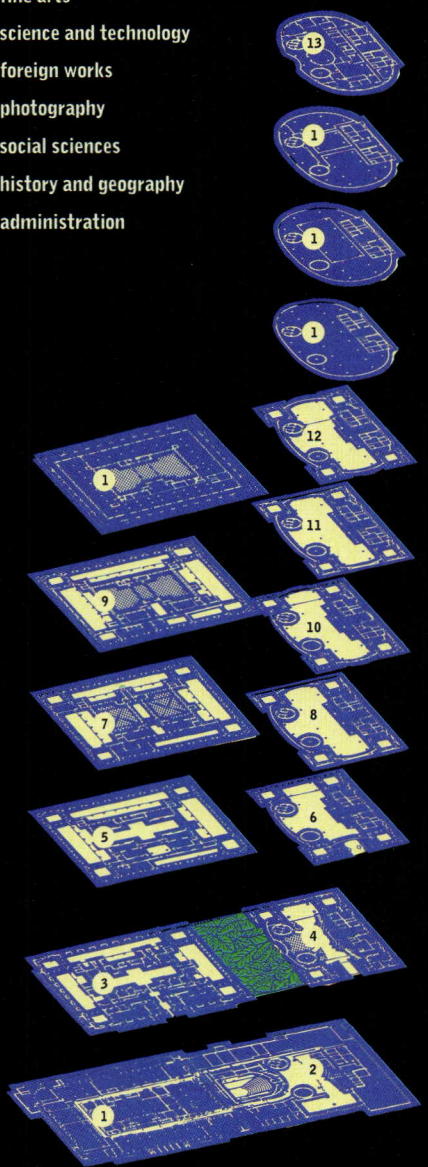
Reading areas range from the cozy rooms tucked within the corner towers to rows of desks and computer workstations set between book stacks and the oval's curving glass wall. Thermal pane windows are coated with a fritted pattern that acts like a curtain to tone down the light. Even on the sunniest of summer days, light levels and air circulation are comfortable. And there's no glare on computer screens.

While the Stokes Wing's design calls attention to itself outside, spectacular views from the inside out emphasize the surrounding cityscape. Cantilevered floor areas just inside the oval curtain wall appear to extend from the bulk of the building and create a sense of soaring over surrounding streets. Because the largest glazed area faces west toward the old Main Library, the views from inside are dominated by the Walker and Weeks original. It's one more element in which Holzman's design expresses a sense of lightness and openness while directing attention toward Cleveland's past in a way that is both respectful and celebratory.

LOUIS STOKES WING ADDITION, CLEVELAND, OHIO
CLIENT: Cleveland Public Library **DESIGN ARCHITECT:** Hardy Holzman Pfeiffer Associates, New York—Malcolm Holzman (partner-in-charge), Robert T. Almodovar, Kala Somvanshi (project managers), Setrak K. Ohannessian (project architect), Robin Kunz, Daria Pizzetta, (interiors), Christopher Bach, Michael Connolly, Nancy Geng, Rob Lopez, Manuel Mergal, Kristopher Nikolich, Susan Pon, Jeff Porten, Allen Robinson, Victor Rodriguez, Bruce Spenadel (project team) **ARCHITECT OF RECORD:** URS Greiner, Cleveland—Al Liutkus (project manager), Joel Schwarz (project architect), Dan Clements, Christina Faranela, Ron Godes, Geoff Varga, John Vargo, Beth Zandee Van Riland (project team), Will McCullam (field observation), Mark Banas, Dave Basista, Charlie Basham, Emmy Lejarde, Ina Pivovar, Ed Radziszewski, Bob Zednik (engineering team) **HISTORICAL ARCHITECT:** Robert P. Madison International, Cleveland—Robert P. Madison (principal-in-charge), Robert Harmicar (project manager), Lyle M. Harding (project architect), Jeffrey C. Hoskin (job captain), Lester Cumberlander, John Davis, Ernestine Edwards, Sandra L. Madison, Thomas E. Veider (project team) **LANDSCAPE ARCHITECT:** The Olin Partnership **ENGINEER:** Ralph C. Tyler Co. (civil) **CONSULTANTS:** Fisher Marantz Renfro Stone (lighting); Acentech (acoustics); Heitmann & Associates (curtain wall); Lou A. Maranella & Associates (conservation); Salestrom Design (graphics) **GENERAL CONTRACTORS:** Turner Construction Company in association with ColeJon Construction, Choice Construction, and Ozanne Construction. **COST:** $65 million **PHOTOGRAPHER:** Cervin Robinson

Faience-blue columns and bay windows create dense spatial rhythm in reading areas (top). Lower lobby (below) leads to 250-seat auditorium beyond curved curtain wall. Concrete tower (at right) houses emergency fire stair.

1. book storage
2. auditorium
3. reference
4. gift shop
5. literature
6. meeting room
7. fine arts
8. science and technology
9. foreign works
10. photography
11. social sciences
12. history and geography
13. administration



FURNIT

A Manhattan apartment by Kolatan/MacDonald Studio sheds traditional boundaries of domestic space.

URE INTO FORM

By Sarah Amelar

Aluminum-clad armoire with Australian lacewood door flows into bathroom vanity behind translucent glass partition. Kitchen counter (far left) culminates in pivoting table on wheels.

The bathtub and bed in the Ost/Kuttner Apartments are melded into a single, curvaceous fiberglass form. Just beyond the pillows, a clear glass partition, like a dam, holds back the tub's flow of water. "We wanted to rethink the standard elements of everyday domesticity—the generic kitchen sink, bathtub, and bed," says Partner Sulan Kolatan of Kolatan/MacDonald, the architect of this 1,600-square-foot loftlike residence, a winner of a 1997 Progressive Architecture Award (*Architecture*, January 1997, pages 102-103).

In combining two adjacent apartments on Manhattan's Upper West Side, Kolatan and Partner William MacDonald created a landscape of hybrid forms that replace traditional room partitions and furnishings. Through computer modeling, the architects compiled a database of sectional profiles of fixtures and furniture, electronically mapped their similarities, and selectively merged them to create what Kolatan calls "entirely new animals." An aluminum-skinned armoire, for example, doubles as a bedroom wall that flows into the bathroom vanity.

The project's programmatic requirements were particularly well-suited to multifunctional components and fluid, noncellular space. The clients, German artist-filmmaker Beatrix Ost and businessman Ludwig Kuttner, needed a setting that could serve as a pied-à-terre, accommodate

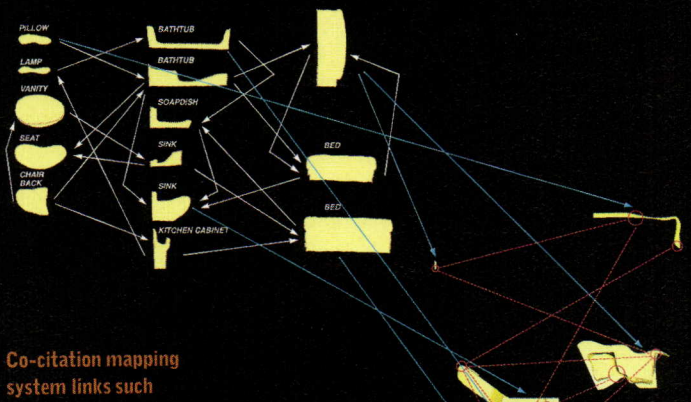
Glass shelves in kitchen are flanked by curved backs of bathroom's fiberglass shower stall and sink.

a sit-down dinner for 14 or a corporate cocktail party, or function as independent units for separate groups of overnight guests. The original pair of apartments, which form a square with windows on three sides, needed to become, as the architects put it, "more than one, less than two."

Kolatan/MacDonald replaced the original party wall dividing the two apartments with movable, steel-framed cement-board panels. Staggered to either side of this center line stand two amber-colored molded-fiberglass structures: the sculptural core of the main bedroom/bathroom and of the kitchen/guest bath. These composite

Glass partition separates bed from flow of tub water behind it. Cabinet doubles as bedroom wall and slopes down to stainless steel and aluminum vanity.

Molded fiberglass bathtub (left) and shower stall (right) were fabricated in sections small enough for the building's freight elevator. Hinged panels permit service access to pipes and plumbing fixtures.



Co-citation mapping system links such disparate elements of apartment's landscape as bathtub and refrigerator.

1. entrance
2. main bathroom
3. main bedroom
4. armoire/bedroom wa
5. living area
6. pivoting partitions
7. kitchen
8. guest bathroom
9. guest bedroom

OST/KUTTNER APARTMENTS, NEW YORK CITY
CLIENTS: Beatrix Ost and Ludwig Kuttner **ARCHITECT:** Kolatan/MacDonald Studio, New York City—Sulan Kolatan, William MacDonald (principals-in-charge); Erich Schonenberger (project architect); Rebecca Carpenter, Natasha Cunningham, Steven Doub, Matt Hollis, Philip Palmgren, Patrick Walsh (design team) **ENGINEER:** Ove Arup & Partners (structural) **CONSULTANTS:** Alvin Cooke, Highland Studio (metalwork); Seal Reinforced Fiberg (fiberglass); ATLAS Industries (movable partitions and concrete); John Depp (glass); IDS (fabric and upholstery); Hoffman Floor Covering (epoxy wall and floor system) **GENERAL CONTRACTOR:** Foundations Design Internati **COST:** Withheld at owners' request **PHOTOGRAPHER:** Michael Moran

"domestic scapes," as the architects dub them, are simultaneously fixed and flexible: Both are sited permanently in this interior landscape, yet their character and function change with the positions of their moving parts. In the guest bath, for example, a wavy hinged door encloses either the shower or the toilet and sink, or serves as a wall—depending on the level of privacy desired.

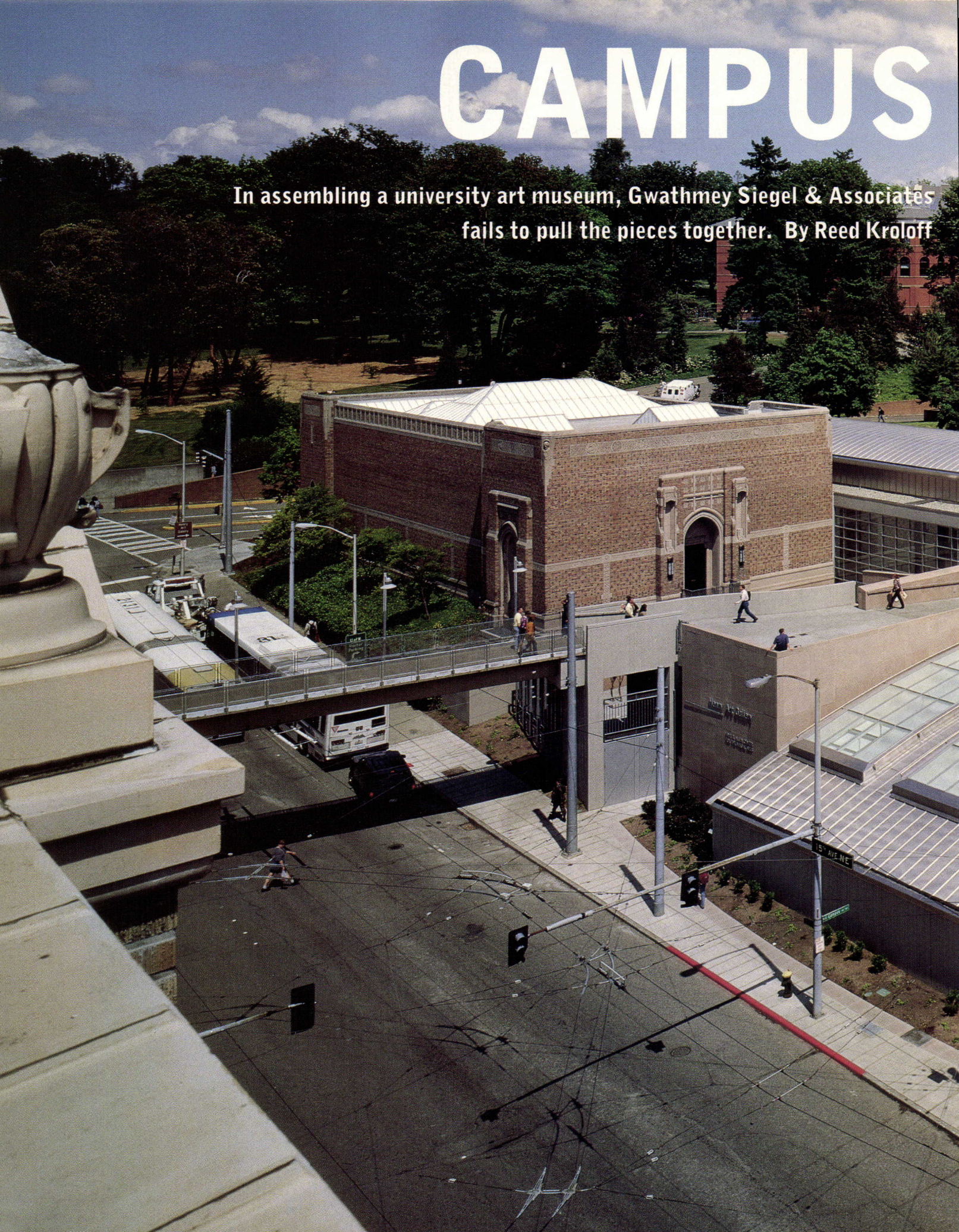
The chimerical built elements—part wall, part furniture, part plumbing fixture—appear both dynamic and rooted in place. The molded fiberglass, a modified acrylic resin, does not stop abruptly where each structure meets the ground, but extends along the floor, as if flowing around the base and affixing its position. Equally dynamic is the undulant quality of the molded surfaces, with the concurrent use of their fronts, backs, tops, and bottoms.

Vibrant colors and muscular forms contribute to the fluid dynamism of the space. As a result, the setting is easier to envision as a corporate entertainment space or showroom than as a dwelling. The design, however, departs purposefully from commonplace domesticity. With the conscious blending of forms and functions, the user has to "reinvent the program—it's no longer fixed and typical," explains MacDonald. Indeed, as you lie in bed with water sloshing near your head, these ambiguous conditions alter the spirit of everyday activity.

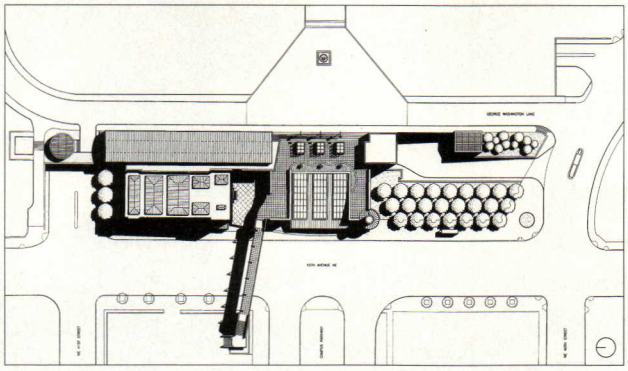
Steel-framed cement-board panel pivots horizontally to become dining table.

CAMPUS

In assembling a university art museum, Gwathmey Siegel & Associates fails to pull the pieces together. By Reed Kroloff




FRAGMENTS

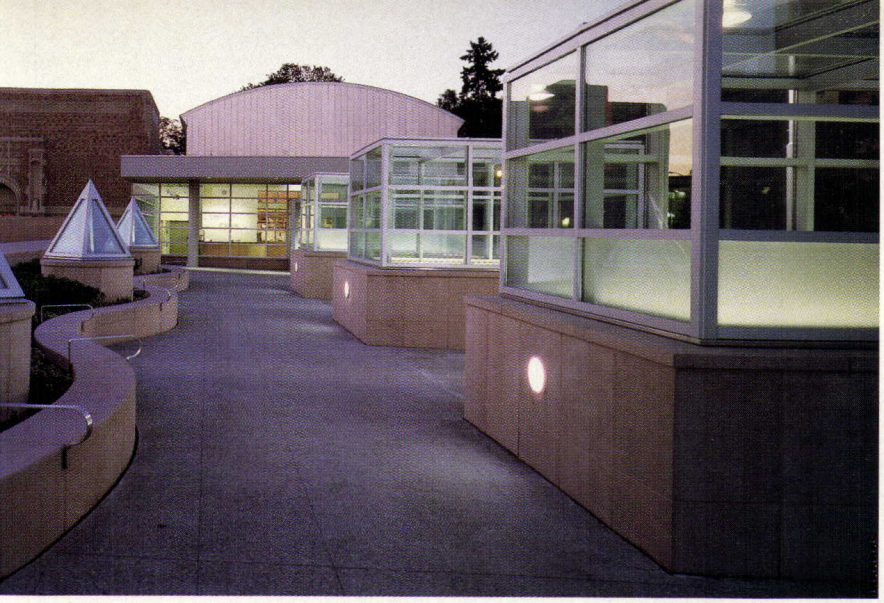


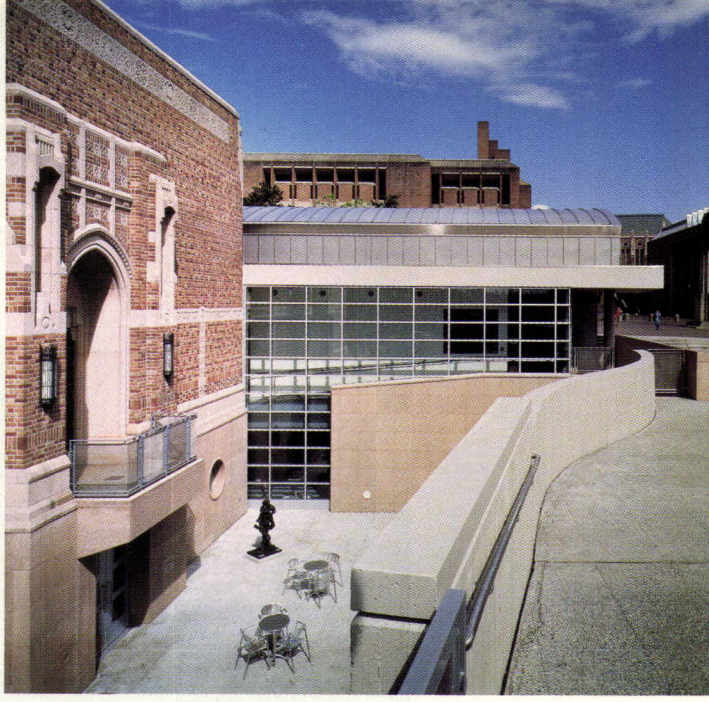
Henry addition defines campus edge along 15th Avenue (above). Complex includes vaulted gallery, circular stair, and elevator tower (below).

Bristling with the noise, traffic, and tangled overhead power lines of a busy intersection, the western entrance to the University of Washington has always provided an inhospitable greeting to its leafy Seattle campus. Local architect Carl Gould's 1915 master plan proposed a Neo-Gothic fine arts complex as a campus gateway, but only the northwestern corner of the project was built: a diminutive yet dignified museum called the Henry Gallery. Now, Gwathmey Siegel & Associates, in association with Loschky Marquardt Nesholm Architects, has revised Gould's vision by leveraging a $13 million expansion and renovation of the Henry into a significant campus portal. While the new complex does refine the western edge of campus, it ultimately fails to achieve architectural coherence.

Principal Charles Gwathmey faced three programmatic challenges in revamping the Henry. The architect's first assignment was to more than quadruple the existing museum's size to 46,000 square feet without threatening the architectural integrity of Gould's design. Second, he had to contend with a steeply sloped, narrow site bounded by 15th Avenue on the west and a subterranean parking garage to the east. Finally, Gwathmey had to preserve an impressive view into the university's central quad from Campus Parkway, the Beaux-Arts axis that terminates at the new gallery site. From the west side of the Henry, motorists and pedestrians look past a statue of George Washington to Gould's imposing Suzzalo Library in "Red Square," the red brick-paved plaza that is the spiritual heart of the campus. Gwathmey Siegel had to protect this vista, despite the fact that the only possible location for the addition lay directly in its path.

The architect's logical solution was to build down from the edge of the elevated campus. The addition—named the Faye G. Allen Pavilion in honor of the mother





Monitors bring daylight to subterranean offices and grand stair (above). Realigned bridge carries pedestrians across 15th Avenue and leads over sculpture court to new entrance in gridded glass pavilion (right).

of Microsoft mogul and university donor, Paul Allen—is divided into two volumes: a thin bar slipped between the original Henry and the underground parking garage, and an adjoining larger wing parallel to 15th Avenue. The bar building houses a lecture hall, a gallery, administrative offices, classroom and studio space, an expanded gift shop, a new entrance for the complex, art preparation areas, and storage. The larger block, which is topped by a dramatic, stainless steel-clad vault, encloses the main exhibition space and media gallery. Attached to its southwestern corner is a spiraling staircase that connects 15th Avenue to the campus plaza, 30 feet above the street.

In remaking the site, Gwathmey sliced the ground plane away from the previously half-submerged Henry, creating a sculpture court between the existing gallery and the addition. He also renovated the older building, maintaining its top-lit galleries and converting part of its basement storage into teaching space and a café.

Gwathmey treated his addition as a collection of sculpted architectural objects grouped around the Henry: the vaulted main exhibition area; a shed along the original building's east flank that shelters the new entrance, theater, and support spaces; a tower above the loading dock; three skylight monitors over the offices; and a glass block-crowned spiral staircase at street level. The new forms are carved and spliced platonic solids, rendered in a tough, yet elegant palette of concrete, glass, and stainless steel.

In juggling his simple volumes, Gwathmey was aiming for collage, the Modernist compositional strategy he employed to expand Harvard's Fogg Museum and Frank Lloyd Wright's Guggenheim. At the Henry, an abstract iconography of shed, vault, and cylinder is supposed to offer "counterpoint, enrichment, and positive provocation" to the university's picturesque Collegiate Gothic architecture. But successful collage depends on its constituent parts achieving enhanced formal or representational significance through juxtaposition and overlay. Whether it is Georges Braque's symbolically reconstituted scraps of the ordinary, or LeCorbusier's exquisite balance of platonic asymmetries, collage processes its component parts into a meaningful new whole. There are wonderful moments when such transformations occur in Gwathmey's new museum. But too often, the building's pieces remain discrete or only tenuously connected. The expanded Henry is little more than the parts of its sum.

Gwathmey's collage is strongest in reinforcing the urban design of the campus. By recessing his building, the architect preserves the view of Red Square. He also partially rectifies a boorish university decision that years earlier slung an elevated pedestrian bridge across 15th Avenue, clipping the Henry's face. Gwathmey recognized the egregiously placed structure as an unrealized opportunity to engage the museum. "A huge population crosses it in both directions," he explains, "which compels them to interact with the Henry." To liberate the Henry's front facade and lead pedestrians over the new sculpture court, Gwathmey realigned the bridge slightly to the south. It now ends at the Henry's entrance, with a view of the library and Red Square beyond.

The Henry's new entrance court, which sits atop the office wing of Gwathmey's addition, also gains stature. It provides an impressive staging area for eastward procession to the center of campus, as well as a scenic overlook to downtown and the Olympic Mountains to the west.

Offices, theater, classrooms, and support spaces occupy bar building to east of original Henry gallery. Large window (at center) illuminates main staircase to new galleries.

Thus formalized, the entrance to campus is given a clear identity, one that complements the Henry's long-held status as a cultural link between the university and the city.

However, the improvements fail to materialize at street level. The addition's sculptural volumes are too large and too close to discern from the campus side of 15th Avenue. For the most part, pedestrians encounter solid concrete walls ranging from 10 to 30 feet in height. Landscaping is minimal, and there is nowhere to sit. In fact, with the exception of a chest-high view of the sculpture court through a barred gate, the only interaction a pedestrian can contemplate is climbing the stairs to the new plaza above.

From campus, entrance to addition and courtyard is marked by flags. Concrete structure (foreground) houses stairs and elevator to garage. Vaulted roof encloses entrance and theater.

Further, Gwathmey's composition isolates Gould's original building. Still obscured by the pedestrian bridge across its front facade, the Henry is now also sliced away from the rest of campus by the slender stainless steel-clad theater and entrance shed of Gwathmey's addition. Other elements are similarly divided: With the spiral stair spinning off the corner of the buried gallery block, the vaulted gallery separated from the original building by the courtyard, and the thin shed of the theater wing hidden from view by the Henry along 15th Avenue, visual cohesion breaks down.

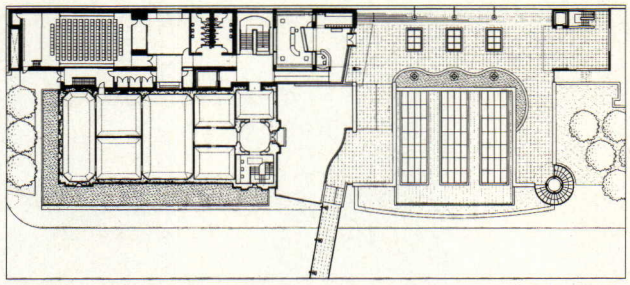
Gwathmey also vacillates between accommodating the old and exerting the new. He eschews historic references, but wraps the sculpture court—where the new and old buildings come together—in a pinkish cast stone clearly intended as a transition between the Henry's brick and the Allen pavilion's concrete. This hesitant gesture only confuses the composition with the addition of the new building material.

The museum's interior is also uneven. As the Allen Pavilion descends into the site, its spaces enlarge and grow lighter in a delightful inverse relationship to their elevation, culminating in a dramatic, 6,000-square-foot skylit exhibition gallery at the lowest level. This gallery is formed by the sweeping vault that defines the museum's 15th Avenue facade, and the skylights running down its roof like flattened ribs flood the volume with extraordinary daylight. The special exhibits gallery adjacent to the main stair is another effective double-height space. The amount of light in each is a welcome revelation in sun-starved Seattle.

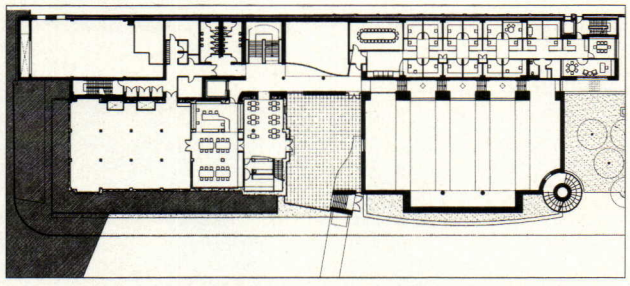
Interior circulation reflects Gwathmey's intent to layer visual information in unexpected and thought-provoking patterns. He discards the Henry's traditional enfilade in favor of spaces organized as events along a path that winds from the plaza-level entrance down to the subsurface galleries. Beginning with a glazed entry hall that frames the older building and continuing down to lower-level balconies overlooking the deeper galleries, Gwathmey invites patrons to peer across, down, up, and through spaces, and to wander them at will. The architect explains the organization as a "system that doesn't obligate a one-way sequence; it is something experiential, multifaceted, and unveiling."

But this laissez-faire approach breaks down almost from the entrance, and with it, the structure for his collage of architectural images. After so carefully framing a view of the old Henry in the addition's entrance hall, Gwathmey terminates the procession from the reception desk to a secondary lobby located at the head of his grand staircase not with a painting or sculpture, but with an elevator door. Worse, the building offers no clue about where the visitor should turn from there: The entrance doors to the Henry, immediately to the left, are no more prominent than the doors to the rest rooms, located just ahead, or the main stairs to the right. There is no change in ceiling plane or flooring to help direct visitors or convey the hierarchical significance of the place within the circulation scheme. Further down, the architect builds a grand, theatrical stair leading to the large gallery, but terminates it in a glass emergency exit door overlooking the side of a loading dock.

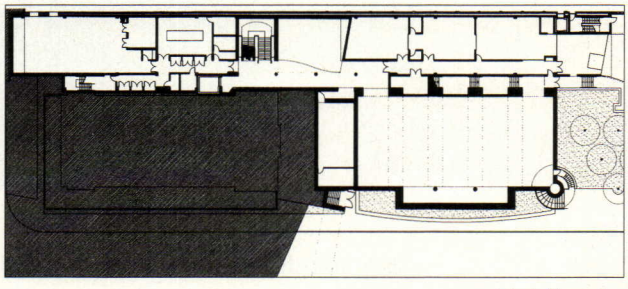
More fundamental program decisions make no sense at all. The new theater and museum offices share almost identical floor plates. Yet inexplicably, the windowless block of the theater sits above ground, while the offices are insensitively consigned to



Third-floor plan



Second-floor plan



First-floor plan

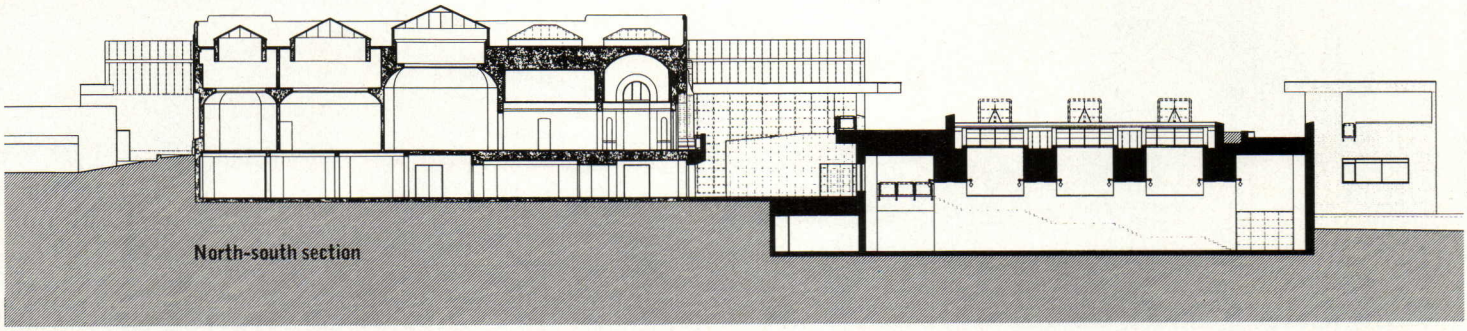
George Washington looks west toward Olympic Mountains along axis framed by Henry (rear). New museum entrance is located under canopy (right).

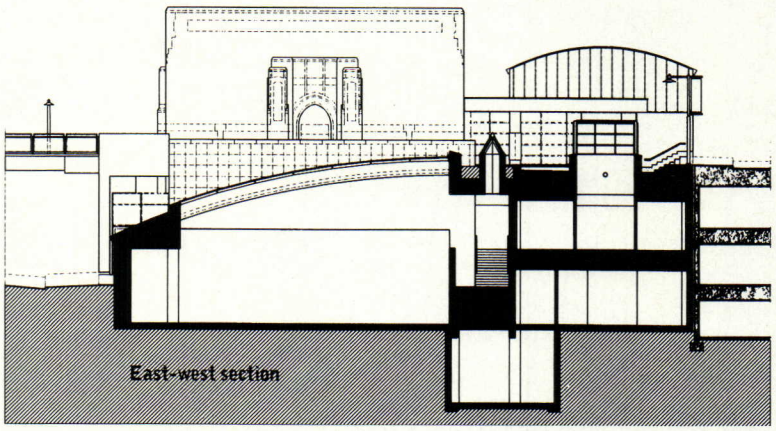
Double-height east gallery is designed for large-scale installations (left). Hallway (above) overlooks gallery and leads to grand staircase down to main exhibition space. Vault of main exhibition space (facing page) is segmented by mechanical ducts and lighting equipment. Oversized skylights flood subterranean gallery with daylight.

Had the offices occupied the theater's prominent location—flanking the Henry—their (presumed) glazing would have provided yet another opportunity to frame views of the old museum through the new.

There are places where everything works at the Henry, like an impossibly tall and narrow room carved out of the spiral stair. Bulging ever-so-slightly into the southwest corner of the new main gallery, it is a magical, almost spiritual space, with a distant ceiling that dissolves in light. Occupying this room is like sitting inside a votive candle. By wrapping this sanctified space with a prosaic stair, Gwathmey achieves precisely the kind of collage he seeks, one that enriches each piece through its contrast with the other.

Though it may be wonderful, the stair tower is a singular event, as are all of the Henry expansion's best architectural moments. Gwathmey sums up the problem, describing his campus building as "a landscape of fragments." Sadly, those fragments never coalesce into a larger, more coherent picture.

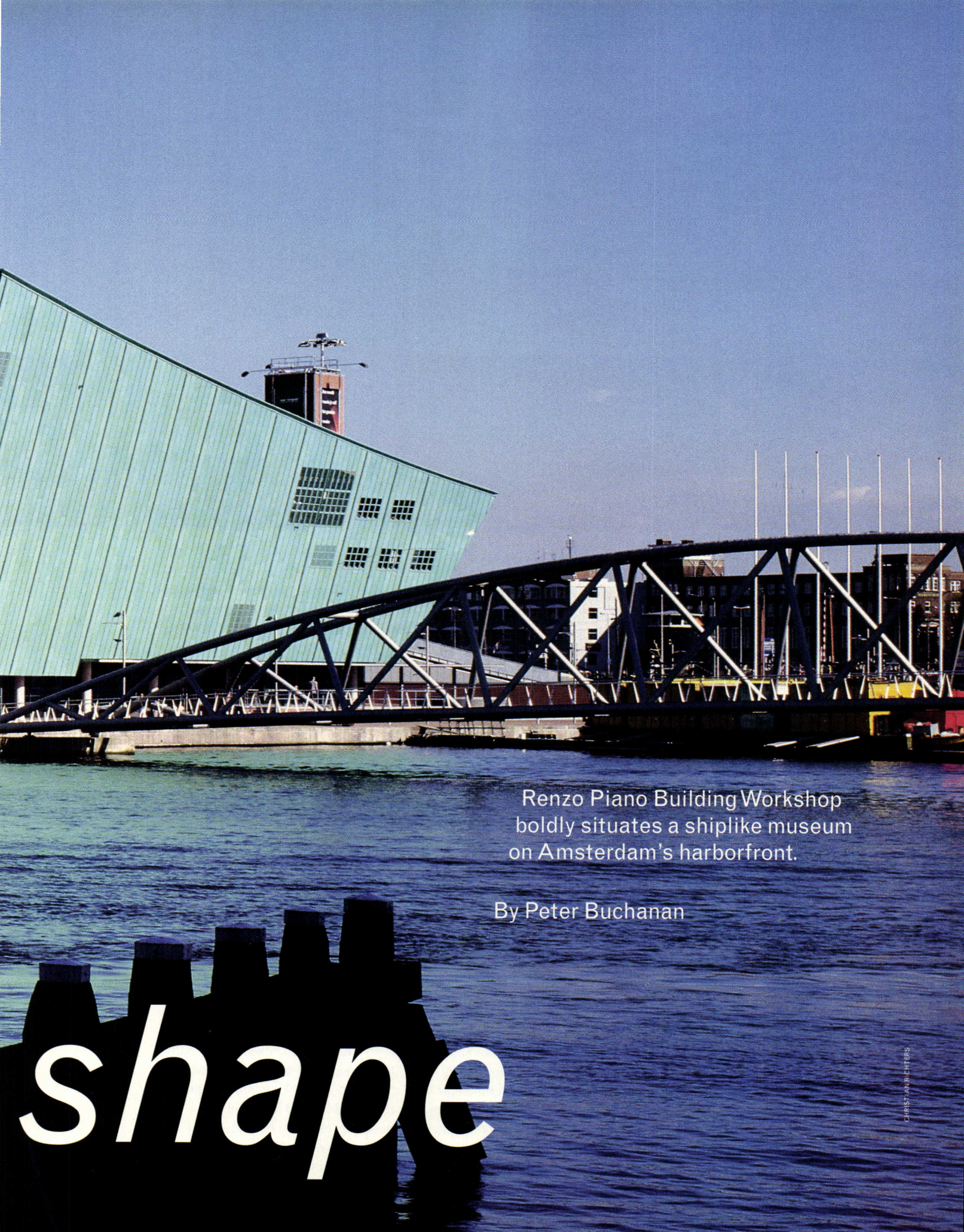




East-west section

HENRY ART GALLERY RENOVATION AND ADDITION
UNIVERSITY OF WASHINGTON, SEATTLE, WASHINGTON
ARCHITECT: Gwathmey Siegel & Associates, New York City—Charles Gwathmey, Robert Siegel (partners), Bruce Donnally (associate-in-charge), Nancy Clayton (project architect), Richard Lucas, Will Meyer (project team)
ARCHITECT OF RECORD: Loschky, Marquardt & Nesholm, Seattle—John Nesholm (partner), Dean Clark (partner-in-charge), Artur Haug, Mary Ann Smith, Alan Worthington (project team)
LANDSCAPE ARCHITECT: Berger Partnership **ENGINEERS:** Andersen Bjornstad Kane Jacobs (structural); Consulting Design (mechanical); Sparling (electrical); Summit Technology (civil) **CONSULTANTS:** H.M. Brandston & Partners (lighting); Michael R. Yantis Associates (acoustics) **GENERAL CONTRACTOR:** Ellis-Don **COST:** $13 million
PHOTOGRAPHER: Farshid Assassi/Assassi Productions


Ship



shape

Renzo Piano Building Workshop boldly situates a shiplike museum on Amsterdam's harborfront.

By Peter Buchanan

CHRISTIAN RICHTERS

Copper-clad walls of center's second-story administrative offices lean out beyond glazed ground floor and brick-clad elevator shaft.

Nicknamed "the Titanic" because it evokes a ship sinking into Amsterdam harbor, the newMetropolis National Science and Technology Center is quite unlike any previous building created by the Renzo Piano Building Workshop. That is precisely why it is a typical Piano design: Rather than reflecting any personal idiom, it is a very direct response to place and program.

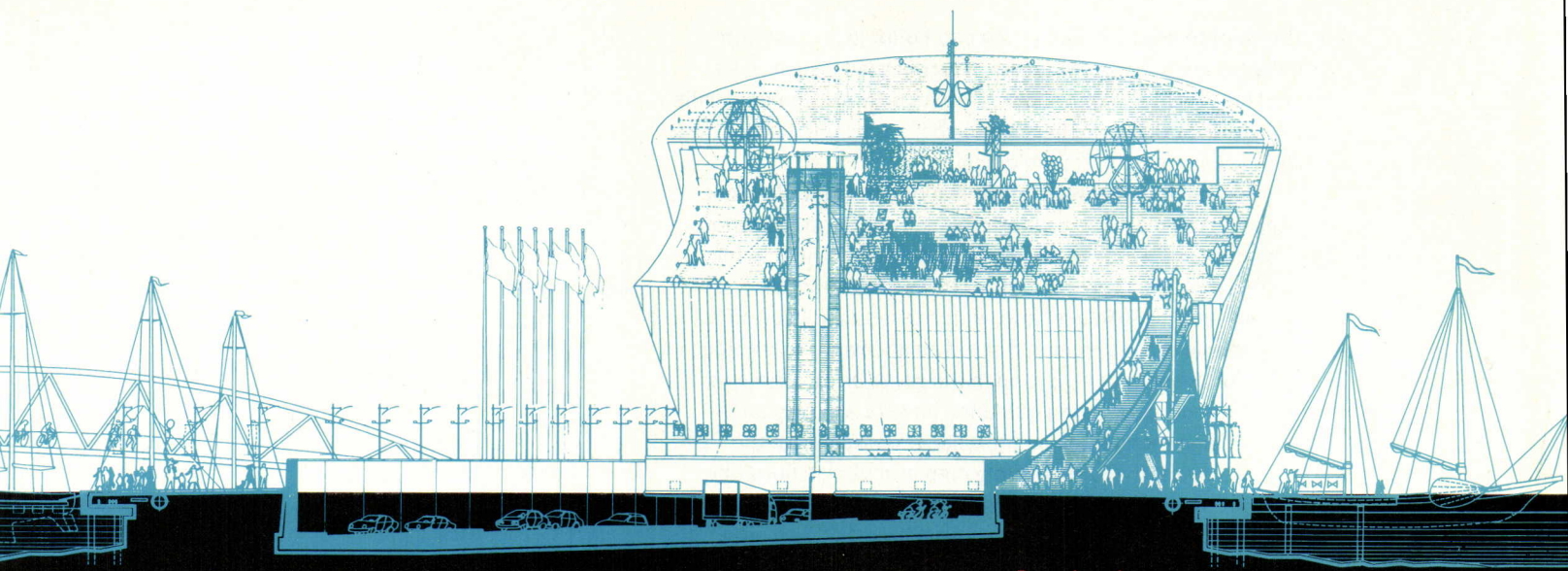
The new building is utterly different, for instance, from Piano's other recent museum designs, such as the Cy Twombly Gallery in Houston, the Brancusi Studio in Paris (*Architecture*, April 1997, pages 76-79) or the soon-to-be-completed Beyeler Foundation Museum outside Basel, Switzerland. A big, flexible space dedicated to playful exploration, Piano's Amsterdam museum is closer in spirit to the Pompidou Center. But here, the diagonal, upward promenade passes through the center of the building rather than dangling off it, and, until the top of the building is reached, most of the dramatic views are internal rather than out over the old city.

NewMetropolis, named to evoke images of urban renewal and Fritz Lang's classic film, is the latest iteration of what started as a museum of labor, founded by industrialist Herman Heijenbrock at the beginning of this century. This museum's collection centered on machinery of the time and paintings by the founder. Over time, the museum came to be publicly owned and, in its fourth and penultimate manifestation, occupied an old school building.

But newMetropolis has severed its ties to this past: Instead of mixing old and new, the original exhibits have all been discarded in favor of contemporary interactive displays. As director Joost Douma describes his vision, "Rather than a traditional scientific institution, we needed a knowledge center, a place that focuses on intercommunication so that people can see things and try them out for themselves, get information, and talk freely as they would in an urban forum."

The science center straddles a road that leads into a tunnel traversing Amsterdam harbor. This location allowed the 120,000-square-foot building to be built close to the old city center, the Central Rail Station, and the Maritime Museum. It also has strong associations with technology and maritime history.

Piano's shiplike design retains the immediacy of his initial gestural response to context: As the road dives below the water, the roof sweeps up in mirror-image



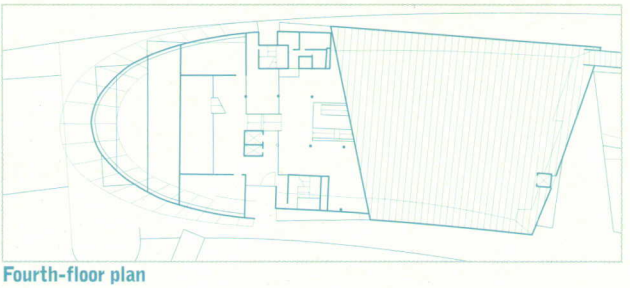
Barge-bound exhibits of maritime museum are moored on museum's eastern side. From eastern pier, gangway leads to roof.

counterpoint to create a wedge-shaped building. In sympathy with the tapered shape of the site, it terminates in a shiplike prow. This 106-foot-high volume, with its outward-leaning walls clad in pre-oxidized copper, floats above a ground floor enclosed in floor-to-ceiling glass.

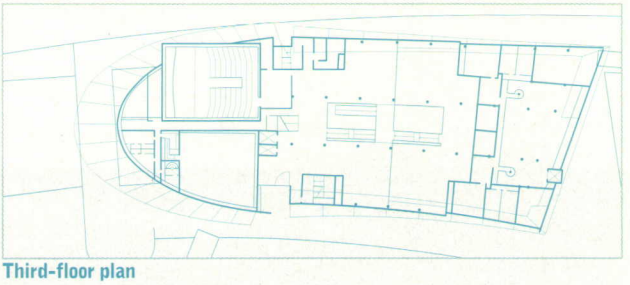
Approach to newMetropolis is along the piers flanking the sunken road and by footbridges from Central Station to the northwest. A triangular paved area connects the two piers outside the main entrance in the building's southern and lowest end, which faces the old city. The whole ground floor is treated as an inward extension of the pier and is paved in the same brick. It houses an office offering guidance on careers in science and technology on the west, a workshop on the east (that deliberately displays what is normally a behind-the-scenes function), and a temporary exhibitions space at the curved northern end.

Entering the double-height lobby, attention is commanded by the vista that extends straight ahead and diagonally upward through the entire length and height of the building, an effect contrived by the way the stairs and the stairwells are aligned and staggered. This dramatic processional compels visitors onward and upward through all four above-ground levels dedicated mostly to long-term exhibits.

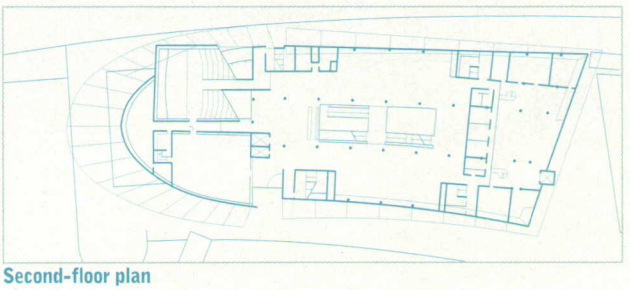
The museum's exhibition areas step diagonally upward. This arrangement accommodates a gift shop and offices over the east side of the lobby. Partially projecting from the curved prow under the topmost exhibition space are a "black box" theater and a 200-seat cinema-lecture theater. Piano devised this arrangement to allow natural light



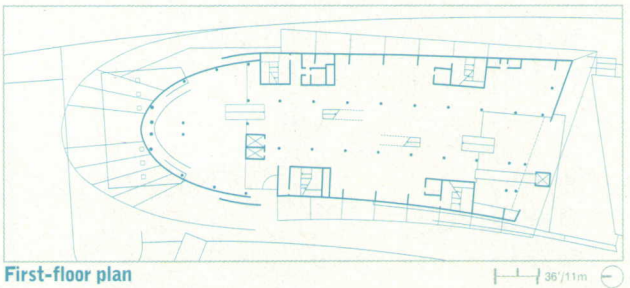
Fourth-floor plan



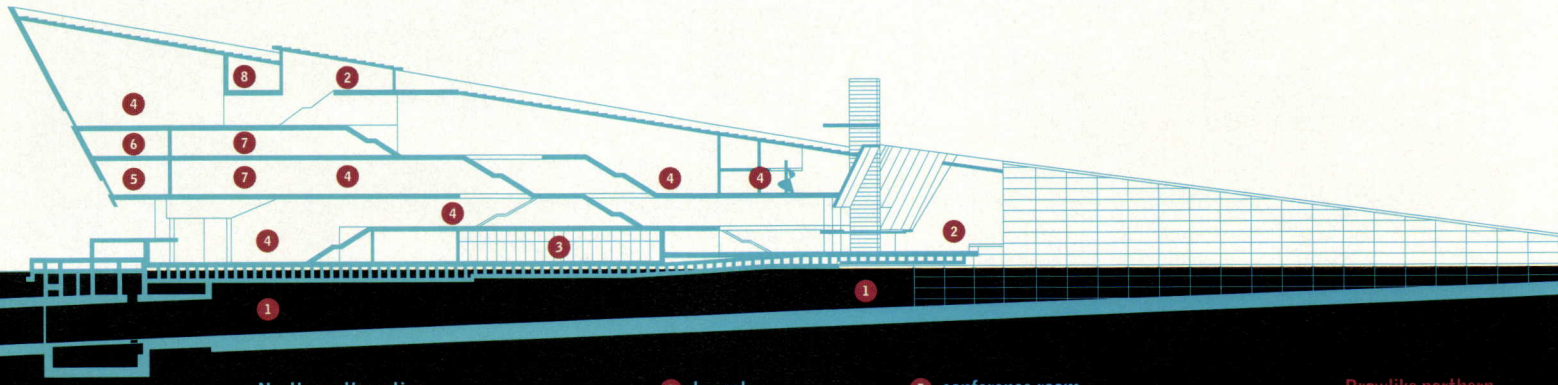
Third-floor plan



Second-floor plan



First-floor plan



North-south section

1 tunnel
2 entrance
3 information center
4 exhibition space
5 conference room
6 storage
7 theater
8 kitchen

Prowlike northern end (facing page), containing theaters, restaurant, and roof access, rises 106 feet above double-height, glazed gallery.

Third-floor exhibit (above) lets visitors try their hand at docking remote-controlled model tankers.

to reach all levels through strip skylights in the roof. But the client vetoed daylighting the exhibits, so visitors move from one to the next under spotlights in the gloomy, cavernous hold of the museum's ark of knowledge.

In contrast with the introversion of the interior, Piano bestows a generous public space to the design in the form of the giant, canted plaza that sits within the building's slanted roof. A ramp from the quay sweeps up to the plaza and allows visitors to enter the museum and explore its exhibits from the top downward. The plaza features panoramic views that connect newMetropolis with the old city.

Exhibition spaces are spartan in their unfinished materials and straightforward detail: poured-in-place concrete columns and ceilings, gray linoleum floors, and perforated galvanized steel balustrades and wooden handrails, both unpainted. This frugality was all that was possible with the 28 million guilder budget ($13.7 million, excluding professional fees), and is consistent with Piano's concept of the center as a "noble factory, an eminently pragmatic space, where every element is justified solely in terms of the function it performs."

Unfortunately, the exhibits are designed by museum staff in an idiom that is characteristic of the sort of overwrought High Tech to which Piano's approach is an antithesis. The effect is that of a games arcade. In the future, perhaps, as the spirit and potential of the science and technology museum are better understood, the exhibits will be more sensitively designed and situated to complement Piano's splendid spatial sequence.

Staff-designed exhibits surround stairwell (top left and facing page) composed of perforated steel balustrades and riserless steel treads.

NEWMETROPOLIS NATIONAL SCIENCE AND TECHNOLOGY CENTER
AMSTERDAM, THE NETHERLANDS
CLIENT: Dutch Institute for Crafts and Technique **ARCHITECT:** Renzo Piano Building Worskop, Genoa, Italy— Renzo Piano (principal), Olaf De Nooyer (project architect), Massimo Alvisi, Jack Backus, Mario Bassignani, Dante Cavagna, Ivan Corte, Junya Fujita, Antonio Gallo, Domenico Guerrisi, Adam Hayes, Shunji Ishida, Hembert Pénaranda, Enrico Piazze, Antonella Recagno, Kelly Shannon, Florian Wenz, Hiroshi Yamaguchi (design team) **ENGINEERS:** D3BN, Ove Arup & Partners (structural), Huisman and Van Muijen (mechanical) **CONSULTANTS:** Peutz & Associates (acoustics), Brink Group (cost estimation), Bureau Bouwkunde (local support) **GENERAL CONTRACTOR:** BAM Amsterdam **COST:** $13.7 million **PHOTOGRAPHER:** R. Richter/ Architekturphoto, except as noted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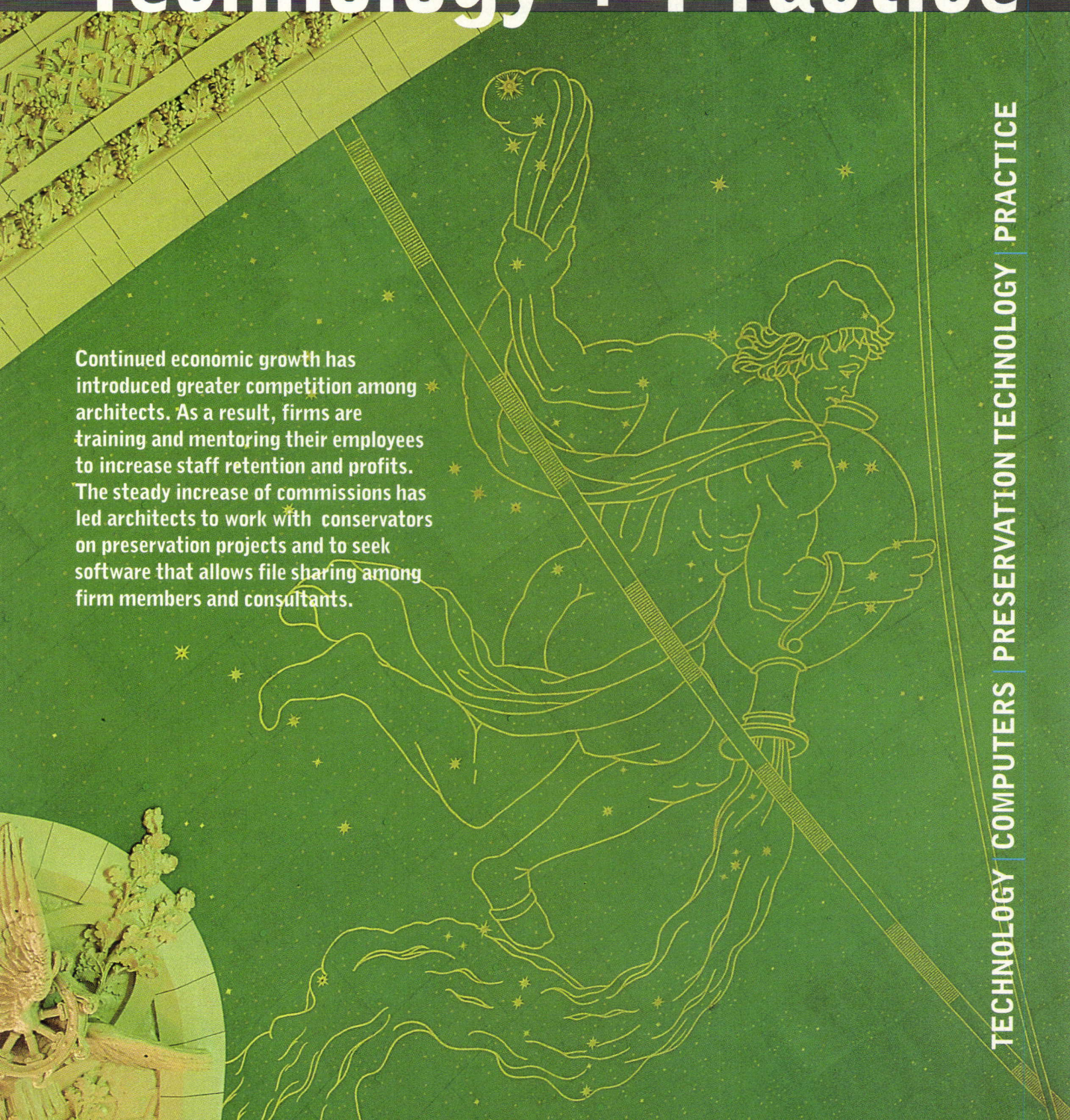


Continued economic growth has introduced greater competition among architects. As a result, firms are training and mentoring their employees to increase staff retention and profits. The steady increase of commissions has led architects to work with conservators on preservation projects and to seek software that allows file sharing among firm members and consultants.

TECHNOLOGY | COMPUTERS | PRESERVATION TECHNOLOGY | PRACTICE

Collaborating with Conservators

As preservation projects proliferate, more architects are turning to conservators to help remedy ailing building materials and systems.

By Eric Adams

As an architect in charge of renovating an historic railway station, you are faced with cleaning the walls of its cavernous passenger terminal. The walls have accumulated 80 years of grime, but you can't use water to get the dirt off because the stone, it turns out, is a water-soluble imitation that would crumble. What do you do? Hire a conservator, a step familiar to many architects now handling preservation projects.

"Architects have the full picture of what's going on and conservators work from the micro level outward," explains Beyer Blinder Belle Architects and Planners (BBB) Associate Partner James Rhodes, an enthusiastic advocate of conservators. "Working together, the two can come up with solutions that neither could on their own."

BBB, for example, tapped Integrated Conservation Resources (ICR) to help with its $175 million restoration of the famed Grand Central Terminal. ICR devised a solution for the railway terminal's water-soluble walls by slathering them with ammoniated latex, waiting for it to dry, and peeling it off in great big sheets. With the latex came the dirt, soot, tar, and other pollutants that had been steadily coating the inside of the building for decades. The Grand Central restoration is one of many recent projects that underscore the value talented conservators bring to restoration and preservation jobs as diagnosticians and repair specialists.

Not just color matching

Armed with training in chemistry, materials conservation, and building pathology, conservators specialize in the laboratory testing and microscopic analysis of all types of building materials, including masonry, wood, steel, glass, paint, and terra-cotta. In the lab and on the building site, conservators' work includes paint and mortar analysis, water transmission tests, electron microscopy, X-ray diffraction, physical strength testing, crack monitoring, and infrared analysis. They also analyze cause-and-effect relationships behind building materials' deterioration so they can develop and implement effective techniques to preserve and restore them.

Architects and engineers may have some knowledge in these areas, but it usually isn't enough. Architect Pamela Hawkes, a principal of Boston's Ann Beha Associates, says conservators are valuable for their intimate knowledge of building materials. "It's their expertise in dealing with particular materials' problems, as with masonry or paint, that's important," maintains Hawkes, who is working with engineer Robert Silman Associates and conservator Building Conservation Associates, both of New York City, on the restoration of the terra-cotta-clad Ringling Museum in Sarasota, Florida. "Where we might know how to put together a brick wall, they would know what the constituent parts of brick and mortar are and how they react to different weathering, what repairs could work, and their general properties and needs."

ICR Co-President Glenn Boornazian says conservators' strengths come from using their own techniques to isolate and understand a structure's specific problems. He explains that conservators try to save as much of the original artifact as possible, developing nondestructive methods that are physically and esthetically compatible with the original design, and understanding and respecting the original architect's or artisan's intentions in carrying out any repairs.

Discovering those intents requires research. "Surveying archival documentation comes first," says Catherine Subick, a conservator on the staff of John Milner Architects in Chadds Ford, Pennsylvania, who is preserving an early 20th-century concrete house in Doylestown, Pennsylvania. "I wanted to see how the architect actually put this together, what he was thinking, and what made the building last. That's critical to the conservation process, though it is often ignored."

Conflicts and compromise

Conservators are most often brought into projects by architects, although owners are increasingly initiating conservator involvement as they grow more aware of these experts' importance. They should be involved early enough to help formulate overall preservation strategies with the architect, engineer, and client, all of whom may visit a site together for an initial assessment.

At this point, the collaboration—and compromise—begins in earnest. Conservator Kate Ottavino, vice president of A. Ottavino Corporation in Ozone Park, New York, explains that priorities need to be discussed early. "You have to create a hierarchy of building fabric," she says. "You need to know what the final product should look like and what constraints will be placed on the work so you can make decisions with the client about what's important."

How to find a conservator

Finding a conservator is not easy. Joel Snodgrass, a Huntington, New York, conservator, says architects should look for conservators who are specialists in the fields relevant to a given project—and several are needed for larger jobs. Snodgrass recommends contacting state historic preservation offices, schools of conservation and preservation, and the following organizations:

Association for Preservation Technology
P.O. Box 3511
Williamsburg, Virginia 23187
(540) 373-1621
A membership organization sponsoring a conference in Chicago from September 25 to 30.

Foundation for the American Institute for Conservation
1717 K Street, N.W., Suite 301
Washington, D.C. 20006
(202) 452-9545, (202) 452-9328 fax
FAIC is the primary source for locating architectural conservators.

Historic Resources Committee
American Institute of Architects
1735 New York Avenue, N.W.,
Washington, D.C. 20006
(202) 626-7425, (202) 626-7518 fax
General resource for preservation and conservation.

National Center for Preservation Technology and Training
NSU Box 5682
Natchitoches, Louisiana 71497
(318) 357-6464, (318) 357-6421 fax
http://www.cr.nps.gov/ncptt/
A division of the National Park Service, NCPTT is a national authority on preservation technology.

RESTORE
152 Madison Avenue, Suite 1603
New York, New York 10016
(212) 213-2020, (212) 213-3743 fax
Offers conservation training for architects, engineers, and craftspeople.

Grand Central Terminal's ceiling was restored by John Canning Studios for Beyer Blinder Belle Architects. Fiber-optic lights were installed to illuminate individual stars in zodiac mural.

Once the scope of the project is decided, the conservator begins laboratory testing and analysis of the deteriorated building materials to determine the degree of damage and the recommended course of action. The conservator's ability to interpret reports and transfer information effectively helps to develop a conservation strategy, such as chemical cleansing of stained surfaces or replacement of pieces too badly damaged to save, which either the conservator or another contractor will execute. Ottavino recommends on-site tests and mock-ups of the proposed strategy because they save time in construction. In cleaning a building, for example, the conservator, contractor, and architect can test treatments in one or two days and alter the methods, if necessary, by observing water

pressure, the volume of runoff, the time and effort involved, and any reaction to the cleaning materials and methods.

This testing is critical, as materials selection is one of the areas in which collaboration is most vital. "In recent years, it has become evident that we need to understand the ramifications of using certain procedures and products on different materials," explains architect John Milner, who relies on his conservator to determine the safety of certain materials. "Ten years ago, we would have found a cleaning compound that the manufacturer said would clean concrete and we would just go ahead and use it," Milner adds. "Now, we're more careful about the ingredients and their impact on the structure."

Compromise enters the architect-conservator relationship whenever conflicts arise, often from deep philosophical differences. Ottavino points out that the conservator's greatest responsibility is to the preservation of the object or building, while the architect's is to public safety and the client.

This disparity can cause debate over such issues as the destruction of original fabric to allow structural repairs and the insertion of contemporary materials in historic structures. "Conservators have a hard time accepting this sometimes because they feel it destroys the purity of the original project," says structural engineer Robert Silman, who recently had to sell the idea of using carbon fiber to strengthen the roof of Frank Lloyd Wright's Wingspread in Racine, Wisconsin.

Structuring the contract

Making the architect-conservator relationship work financially and contractually is the next challenge. Many architects may be reluctant to hire conservators because they either think they can do it themselves (depending on the job, preservation architects often can) or they fear the cost would come out of their own fees. George Skarmeas, director of historic preservation at the Hillier Group in Princeton, New Jersey, explains that shouldn't be the case. "There should be a contractual clause that will allow specialty consultants to be paid for outside of the base fee," Skarmeas maintains, stressing the importance of well-structured contracts, particularly in terms of liability (most conservators don't have their own insurance) and areas of responsibility. "There has to be dialogue about where the lines are drawn—where the architect's work begins and where the conservator's work ends.

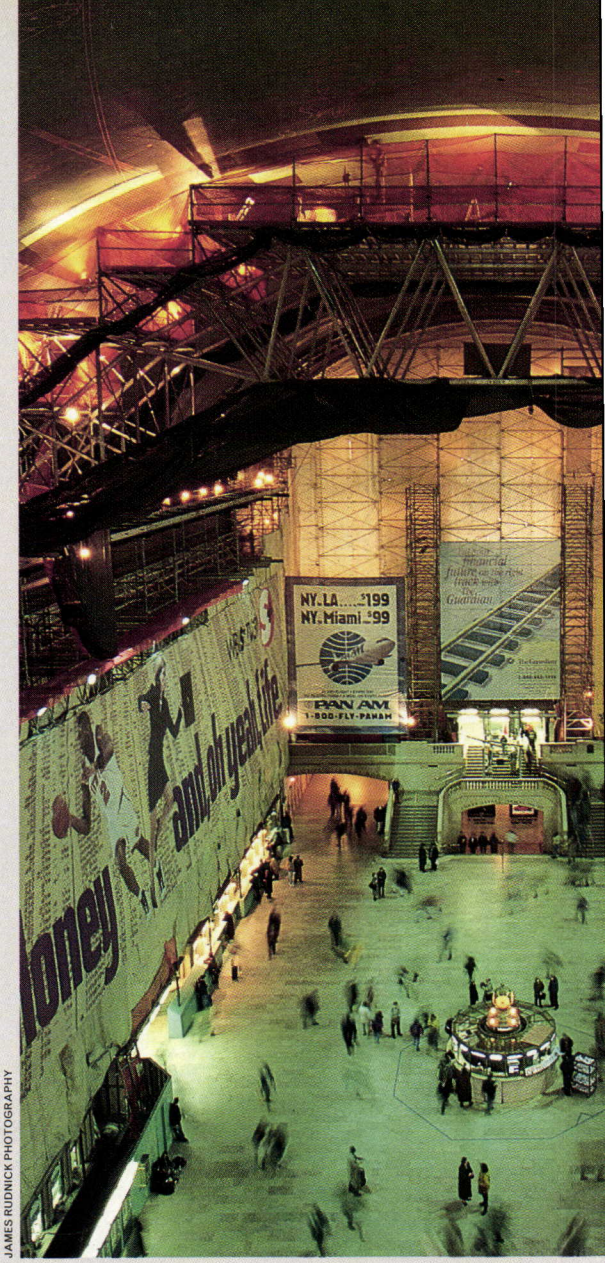
Conservators can also bring down final project costs through precise bidding. If consulted early enough, a conservator can determine exactly how much various cleaning and restoration procedures will cost. "We tell clients that if we spend this extra money in advance, the contractor will bid on a finite set of documents," says Rhodes, whose restoration of the Grand Central Terminal ceiling, for example, ended up costing less than even the most conservative estimate.

New frontiers

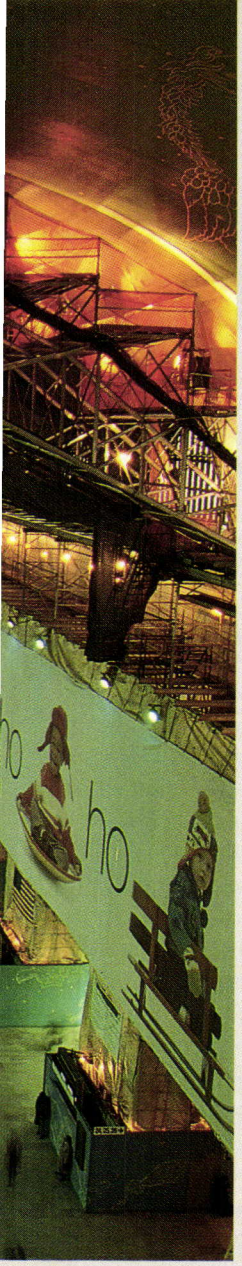
With forecasters predicting that adaptive reuse will soon outstrip new construction in volume, the demand for architectural conservators will certainly continue to grow. And with newer buildings aging, conservators are perpetually facing new frontiers and new complexities in preserving and repairing building materials. Modern, postwar buildings in particular will likely be the next greatest preservation challenge. Plastics, steel, glass, and concrete are among the many materials that conservators are just now beginning to grapple with. As Subick puts it, "We all know these materials are going to fail, but we don't know how or when."

The roles of conservators are also changing. They are increasingly developing maintenance manuals for restored structures that will enable owners to take better care of their buildings. These manuals contain descriptions of the materials that comprise the building and instructions on how best to take care of them to ensure longevity and maintain esthetic appeal. They also tell owners what to look for in terms of damage and deterioration as well as anticipated repairs and who should carry them out—a contractor, a conservator, or the maintenance staff. (Some architects and conservators have even suggested that conservators can also be hired to advise on new construction.)

But no matter how the methods or market change, the conservator's underlying dedication to historic structures will remain the same. "The philosophies and theories associated with working on historic buildings drive each one of us," says Boornazian, "and we're all passionate about it."



JAMES RUDNICK PHOTOGRAPHY



JAMES RUDNICK PHOTOGRAPHY

Platform spanning 110-foot-wide concourse (facing page) was moved along tracks as ceiling work was completed. Detail (above) shows oil paint before and after cleaning.

Cleaning Grand Central

Architects and conservators restoring Grand Central Terminal in New York City knew that they had their work cut out for them from the project's beginnings in 1990. "When we were in our testing phase, you could put your tools down and come back 10 minutes later and they would be covered with sooty grime," marvels Glenn Boornazian, co-president of Integrated Conservation Resources (ICR), the primary conservator collaborating with project architect Beyer Blinder Belle (BBB) on the $175 million restoration.

Clearly, air purification was going to be a priority. So was removing the offending scum from the building—walls, floors, windows, and the practically obscured zodiac mural on the ceiling. "I identified 13 different sources of pollution in here," says BBB's James Rhodes. "They ranged from restaurant cooking to the trains to people smoking."

Cleaning the walls throughout the 1913 Manhattan terminal proved to be the most delicate job, as their imitation Caen stone is water-soluble. Compounding that was the fact that a 1980s cleaning effort left a thick clay residue that had altered the walls' color. (Conservators frequently find themselves correcting previous preservation efforts.) "We went nuts," laughs Boornazian. "We had to figure out how to remove the dirt and clay and also prevent absorption of cleaning materials."

After much thought and testing, ICR chose an ammoniated liquid latex treatment to clean the walls and to expose their true golden color. This treatment required applying the latex solution, letting it dry (the ammonia swells the clay and the latex congeals around it), and then peeling it off the walls. "That's what makes a good conservator: using your knowledge of materials to understand what is destructive and what is non-destructive and being able to develop potential options," Boornazian explains.

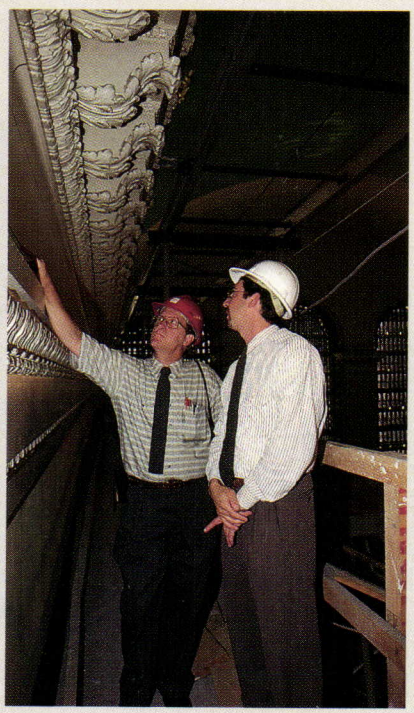
The painted ceiling over the main concourse required a lighter touch. The mural has more than 2,500 stars etched in gold on a 37,000-square-foot blue background. Though only about 50 years old (it was repainted in 1945 on new, suspended tiles), the mural was nearly invisible behind dark soot. Paint conservator John Canning of John Canning Studios in Southington, Connecticut, worked with Rhodes to develop a cleaning solution. "The owners had specified a commercial cleaning agent, but we didn't want to use it because it was proprietary and we didn't know what was in it," says Canning. Instead, Felicity Campbell, a freelance conservator hired by Canning, developed a solution comprised of diammonium citrate, which is a dirt-loosening agent, and ammonium bicarbonate/ sodium bicarbonate, the agent used to clean the Sistine Chapel. This mixture removed the dirt and didn't blanch the paint.

A 120-ton aluminum scaffolding system, which featured a platform stretched across the terminal's concourse, enabled Canning's team to inch forward week by week as they cleaned the ceiling. "It was quite exciting, with thousands of people walking around below us," Canning says. "It was like working in Manhattan's living room."

The ceiling restoration proved how a conservator can help reduce project costs and persuade clients. "Felicity demonstrated that her method was faster, cheaper, and more consistent. That convinced our client to do it," notes Rhodes.

To reduce indoor pollution, a new air circulation and purification system was installed. The Grand Central Terminal restoration should be completed by mid-1998.

Latex was applied to clean water-soluble stone (above). Conservator Glenn Boornazian and architect James Rhodes discuss restoration of plaster molding.



JENNIFER KROGH

Workers at Ottavino Corporation's shop position granite panels for treatment (right). Steel brackets anchoring panels were damaged by rust (far right) and replaced.

JENNIFER KROGH

Repairing the Whitney's Stone Curtain Wall

Though only 30 years old, the Whitney Museum of American Art on New York City's Upper East Side was recently in danger of losing stone panels from its five-story exterior. During preparations for an expansion and renovation early last year, the museum discovered that the steel anchors that held the granite cladding to Marcel Breuer's cantilevered edifice had rusted through and were in danger of failing.

With its expansion already in progress, the museum decided to correct the curtain wall deficiencies with a fast-track repair and cleaning job. Chicago-based architecture and engineering firm Wiss, Janney, Elstner Associates developed the plans for reanchoring of the stones and Ozone Park, New York-based conservator A. Ottavino Corporation is now executing the project.

"It's a fairly simple restoration," maintains architect Diane Kaese. "The problem leads back to the initial anchorage and the failures of that system." Steel bolts used in conjunction with stainless steel and zinc-coated dowels caused a galvanic action between the zinc and steel. The rust that resulted pushed the steel dowels outward, loosening the stone cladding. This anchoring system was also deemed to have been inadequately designed in general, with "the wrong pieces in the wrong places," Kaese says.

Wiss, Janney, Elstner designed a new stainless steel anchoring system for the stones. Because of its experience with removing and reinstalling stonework, Ottavino was brought in as the contractor to execute the work. "They bring a level of care and understanding that you don't typically get with contractors," Kaese says. "They understand the material itself, what it can take and what it can't, and how to repair the stone without damaging it."

JENNIFER KROGH

Scaffolding over facade at corner of 75th Street and Madison Avenue facilitated museum's fast-track renovation schedule.

Ottavino removed all the stone panels and the loose anchors embedded in each as well as those attached to the wall. Removing the panels proved a challenge, since some weighed up to 3,000 pounds. A winch at the top of the scaffolding helped ease each tablet down to the ground, and a special hydraulic lift that the contractor created for this job helped remove the stones from beneath the cantilevers.

The smaller stones were taken to Ottavino's shop, while the larger ones were worked on on-site. "Once we got the panels down, it was a matter of examining each; repairing them, if necessary; removing the existing caulking and mortar; cleaning the stone; and then cutting new anchor holes," Ottavino President Mohamed Elkordy explains, "all without affecting the face of the stone."

Fortunately, few of the granite panels were damaged, but all certainly had to be cleaned. For this, the conservator used a mild commercial cleaning agent for conservation work. As the panels are finished, they will be sent back to the Whitney for reattachment to the facade. "The logistics of a project of this scale are one of the challenges of this job," asserts Elkordy. "Coordination between the field work and the shop work is critical, as is handling that quantity of stone in a systematic and efficient way."

The job will be finished this fall, and Elkordy applauds the Whitney Museum's willingness to endure a year of complex, unsightly scaffolding shrouding its building. "The museum is doing this the right way," he says. "They're getting to the heart of the problem rather than just shooting bolts through the stones to anchor them to the wall."

Reviving the Ringling Museum's Terra-Cotta

High humidity and salty air from the Gulf of Mexico wreaked havoc on Ca' d'Zan, the Italian palazzo-style terra-cotta mansion built in 1929 by circus mogul John Ringling and his wife, Mable. The Sarasota, Florida, house, which was converted to an art museum in 1947, suffered from neglect and decay until architect Ann Beha Associates of Boston, conservator Building Conservation Associates (BCA), and engineer Robert Silman Associates, both of New York City, developed and executed a $4.5 million restoration plan.

The preservation work, currently under way, includes roof replacement and repairs to the windows and terra-cotta walls, balconies, and balusters. BCA focused primarily on the terra-cotta. The firm first examined every inch of the building, labeled and numbered each element, and then developed a computerized database, which documented the condition of each piece and the level of treatment required. "We were able to use this database to provide information to the cost estimator and then help the architect develop the budget," explains BCA President Raymond Pepi, adding that the database can be coordinated with CAD drawings for detailed strategic planning and cost estimating.

Ca' d'Zan, built by John and Mable Ringling in 1929, suffered decades of erosion from the Florida Gulf Coast's moist, salty air.

During their survey, the conservators collected samples of the terra-cotta for testing and cataloged rust stains, dislocations, and deformities. Probes into Ca' d'Zan's structure helped the team further assess damage and its causes.

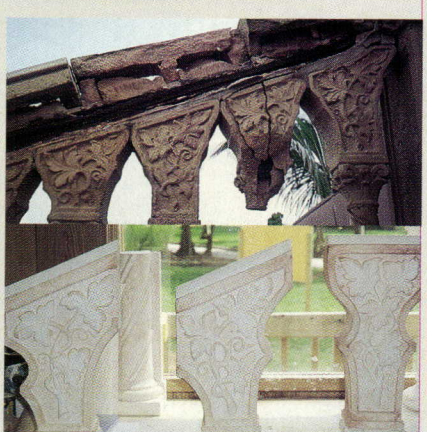
"The greatest damage was on the balconies," says BCA's Ricardo Vierra. "A lot of the interior steel was corroded, so we had to replace that with stainless steel and strengthen and waterproof the balconies."

Many terra-cotta pieces had to be repaired or replaced throughout the building. Architect Pamela Hawkes of Beha Associates says that getting the new terra-cotta in on time was difficult, but getting it to match the originals was even harder. "There is a hand-painted glazing in multicolors," says Hawkes, who uses conservators frequently in her firm's museum work. "BCA had to work to match not only each piece's color, but also its surface texture. That was very hard."

The next phase of the Ca' d'Zan restoration will include preservation of the decorative painted finishes as well as the installation of new museum-quality climate control, fire protection, lighting, and electrical systems. This construction is expected to begin in the spring.

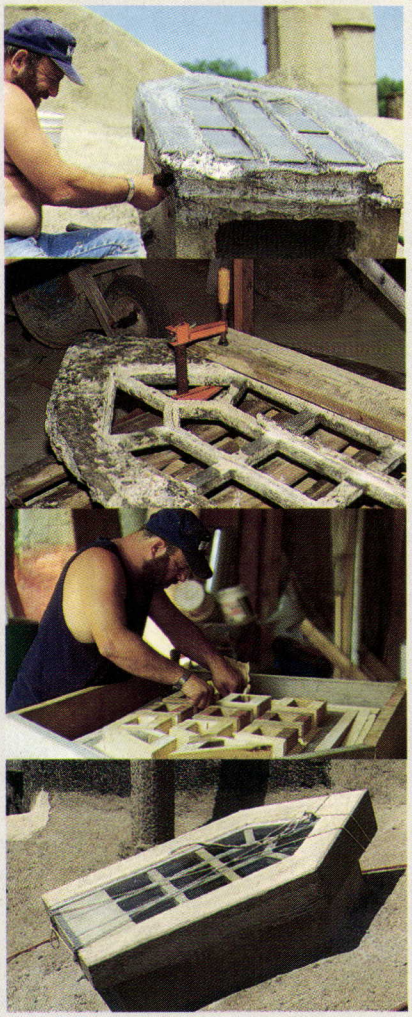
TRAFALGAR HOUSE / KVAERNER CONSTRUCTION

Balcony (left) and balusters (below) were restored with new terra-cotta.



TRAFALGAR HOUSE / KVAERNER CONSTRUCTION

Conservator Catherine Subick removes fungus from concrete with a low-pressure water rinse.



Contractor Denny Griffo removes deteriorated cast-concrete skylight and constructs wood form for casting new concrete window frame.

Preserving an Early Concrete Structure

Henry Chapman Mercer's 1912 Fonthill Museum in Doylestown, Pennsylvania, was one of the first buildings in the country to use reinforced concrete as the primary material, and the scholar and craftsman reinforced it with chicken wire, automobile fenders, and metal fences.

But that concrete is showing its age. Defects inherent in the original construction and concrete mixture caused leaks inside the building, so John Milner Architects of Chadds Ford, Pennsylvania, was called in for the repairs. As with any preservation project, the first step was to assess the extent of the damage.

"We needed to analyze what the problems were and what treatments we could undertake to slow natural deterioration of the concrete," Milner says, stressing the distinction between a routine restoration and one with a conservation component. "That approach is something an architect is usually not trained to do."

Milner's staff conservator, Catherine Subick, began the project by researching the design and construction of the building and working to determine what sources were available to Mercer about concrete, then a new material in this country. "What was important was that Mercer wrote down all his mixes and proportions," explains Subick, who studied architectural conservation at the University of Pennsylvania before joining Milner. "I combined that material with assessing porosity, strength, and hardness to try to repair it in a suitable fashion."

Her microscopic analysis and testing found that small fungal growths were penetrating the concrete surface, causing discoloration and breakdown. She then developed and tested a low-pressure water wash and scrubbing treatment to remove the contaminants and then treated the concrete with a water-repellent coating to impede the continued growth of the fungus.

Subick also repaired the broken concrete, again after careful selection of materials and methods. "The key in this project is to respect the original fabric and not impose modern technology where it's not warranted," Subick says. "We tried to use a weaker material, rather than bond everything together with high-strength epoxies and consolidants."

The museum project, which includes renovating a garage into a visitors center, also required preserving a concrete skylight, repairing cornices with stainless steel anchors, conserving tile, and replacing deteriorated balusters with new cast concrete units, according to Mercer's original formula.

Conservation work at 1912 Fonthill Museum included cleaning and treating all reinforced concrete. Badly damaged segments were replaced with new concrete using the original mixes and proportions.

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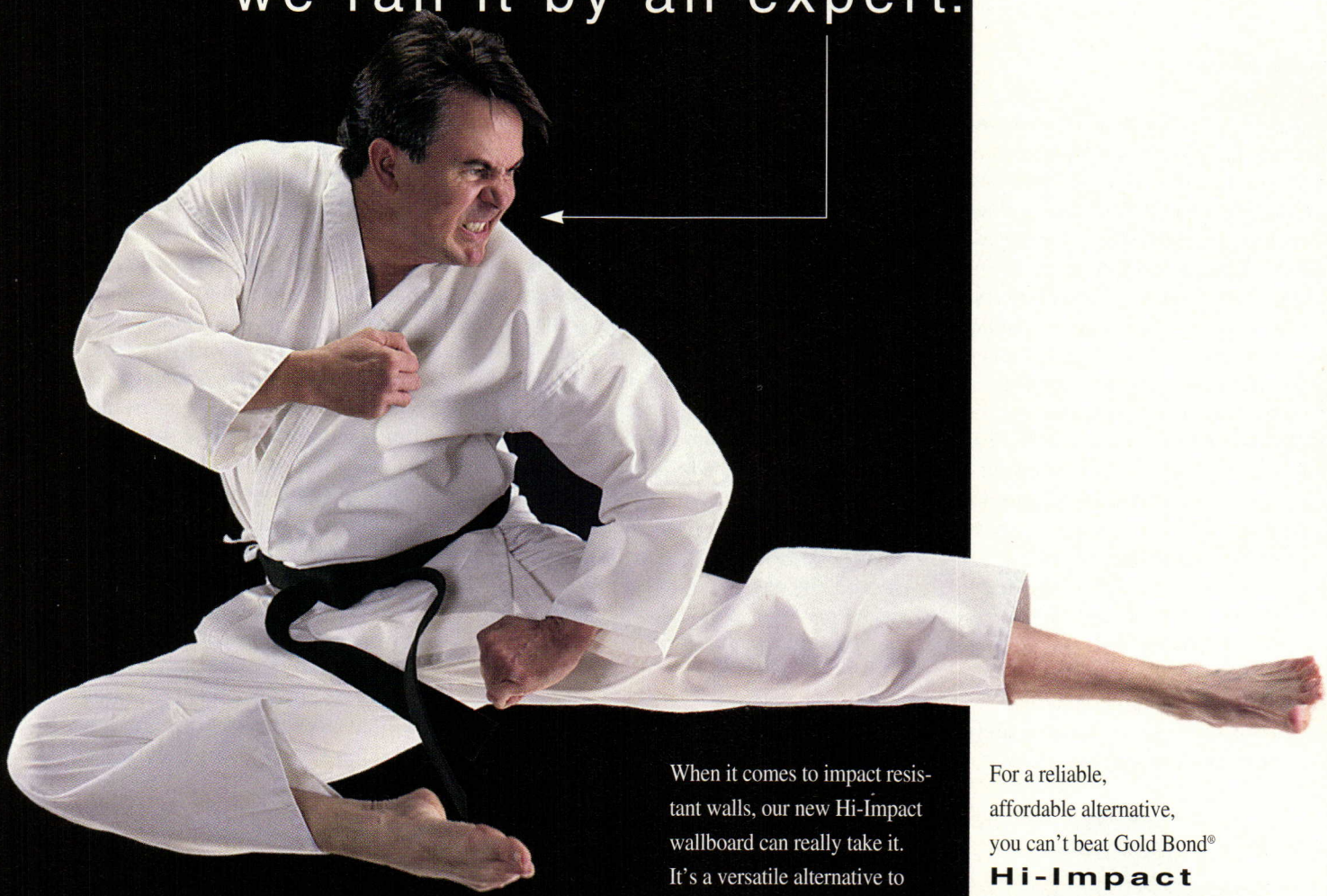

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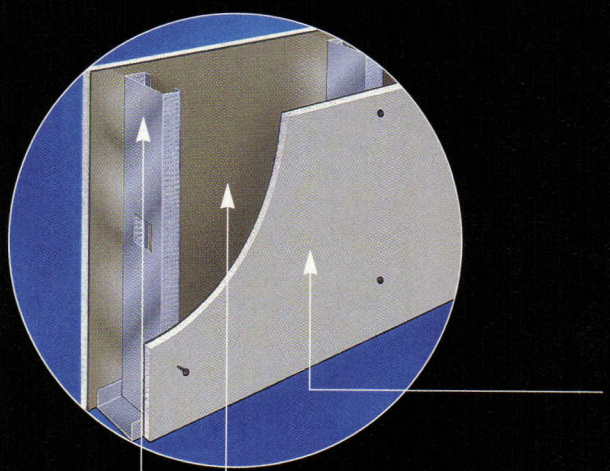

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Training Employees for Keeps

Firms find new ways to mentor employees in order to reduce turnover and improve profits.

By Elizabeth Padjen

A great education and an impressive résumé do not guarantee success in the real world of architectural practice. It takes a combination of training and old-fashioned mentoring to accelerate the rate at which new employees become fully productive. As many firms have learned, these programs also contribute to an individual's long-term career development and loyalty to the firm.

But many principals still don't understand the basic precepts of employee development, according to Linda Hopper, education group director at the AIA. "This isn't rocket science," Hopper points out. "You can go to any bookstore and buy a book on employee motivation." An effective training program is an ongoing effort, evolving over time to match individual needs—to the mutual benefit of both the employer and employee. "To replace an employee, it typically costs you three times their salary," Hopper reports. "And studies show that constant turnover and low profitability are synonymous."

Training programs are particularly important for firms whose clients expect high levels of technical expertise and efficient project delivery, asserts Paul Nakazawa, a management adviser with Pearson Egan Nakazawa and lecturer in professional practice at the Harvard Graduate School of Design. "If the client is looking for originality and not for effectiveness, maybe training doesn't pay. But in a rough-and-tumble world—in a price-sensitive environment—training definitely pays."

Greg Baldwin, partner of the Zimmer Gunsul Frasca Partnership (ZGF) in Portland, Oregon, believes good training programs are critical to a firm's growth in smaller markets. "Portland doesn't have the labor pool of New York or Boston, so we don't let people go unless they're not working out. We're not educating people for one project, but for a permanent position."

Buddy system

Of course, training means different things at different points in an employee's career path, often beginning with the basics: telephone and e-mail procedures, copy machine codes, graphic standards. Many firms assign "buddies" to guide new hires through the complexities of office procedure and to introduce them to other staff members for the first few weeks.

Gensler tries to assign buddies who are members of the same studio and peer group as the new staff member. "It's much easier to bother a peer with a question," observes Laurie Dreyer, Gensler's director of human resources. "You don't want a senior associate to think you're dumb."

These buddies take new employees to lunch, to staff meetings, and to their first company event, and serve as a general information resource. "New employees are joining a social system," notes Dreyer. "If we make it easy to ask questions, they'll open up to new opportunities."

But the ability to negotiate the path to the coffee pot does not necessarily mean that an employee is acculturated. The customs, expectations, and even the

In Gensler's San Francisco office, Senior Associate Michael Bodziner guides designer Dana Frost through disability-access requirements of a retail project.

Training Costs

Architecture firms spend an average of one percent of direct labor costs on training staff, not including labor costs for training time. Design firms (including architecture, interiors, and engineering) spend an average $335 per employee per year on training. Larger firms spend more than smaller ones.

language of an office are frequently taught at the project-team level and in firmwide design discussions, even in offices that claim not to have formal training programs.

Leers, Weinzapfel Associates of Boston conducts an annual retreat where employees discuss projects completed in the previous year, and also gives the staff firmwide sketch problems throughout the year to kick off new projects. "Everyone gets to see the client's program," says Principal Jane Weinzapfel, "and they all have a chance to get their ideas and point of view into the project."

Leers, Weinzapfel also holds a "design lunch" twice a month to discuss an in-house project, where a project team presents design issues and poses questions to the entire office throughout the project phases. "It's an opportunity for young professionals to explain ideas in a safe way," explains Weinzapfel. "Sometimes it takes awhile for someone to speak up, but there's no requirement to be brilliant. It's important that we develop a shared vocabulary, and that they develop confidence."

Learning at lunch

In fact, lunch seems to be prime learning time in many offices. Brown-bag lunches are a typical format, with the understanding that employees are providing their own food and donating their own time. Presentations from product vendors and consultants are common, but some firms are more creative, with lunchtime programs organized and presented by the employees themselves, including lectures, video presentations, and pin-up sessions. Many firms schedule field trips, giving their staff a chance to see in-house projects, observe construction techniques, or study a new building type.

A voluntary, monthly brown-bag lunch at Ellerbe Becket in Kansas City helps prepare younger employees for the registration exams. "We started out by following the IDP [Intern Development Program] home-study manual," remembers Vice President R. Douglas Smith. "But no one came. It was seen as continuing education, and people were doing enough work without studying for monthly tests. Now we just discuss the project process, following the IDP outline."

Employee initiative at Wallace Floyd Associates in Boston led to an extensive training program that ranges from teaching younger employees essential professional skills to providing continuing education for more seasoned practitioners. "It started with four associates who used to meet once a week to brainstorm about issues in the office. The program evolved as a way to provide stronger liaisons between the principals and the staff," reports Associate Wendy Riggs-Smith.

Wallace Floyd is now a registered provider of AIA learning units, even though only 12 or 14 members of the 50-person firm are AIA members. "We call it continuing ed," says Riggs-Smith, "but its real purpose is to develop a collaborative spirit—the program is open to everyone, and everyone has something to contribute." A staff committee runs the program and publishes

As part of ZGF's mentoring program in construction administration, Associate Partner Ernest Grigsby (at left) leads interns through the Washington County (Oregon) Criminal Justice Center.

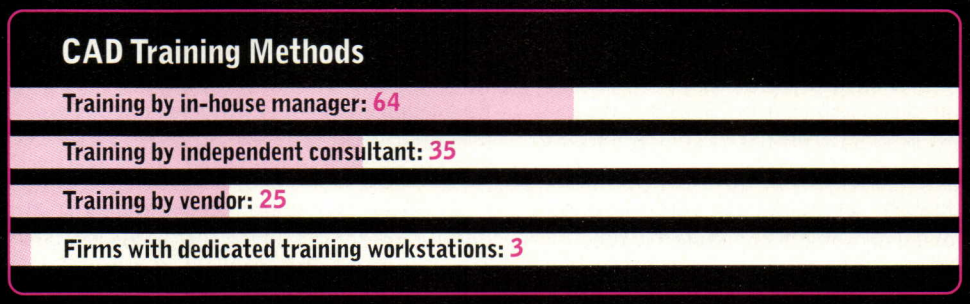
Types of Training Offered by Firms

(Numbers in percent)

Source: PSMJ 1996 Financial Statistics Survey

A 1996 survey of 23 architects by management consultant Zweig White & Associates of Natick, Massachusetts, found that firm principals take quite a casual approach to training staff in project management and office skills. Firms appear to emphasize client relations foremost, while financial matters such as negotiating fees and collecting bills trail behind. The figures (left) represent the percentage of respondents who provide specific types of training.

The ratio of staff expressly trained in CAD operations to technical staff generally is an average 64 percent in architecture firms. The average architecture firm spends nine days training an employee on CAD, compared to the 11 days among design firms overall.



a course catalog each "semester" listing 15 or 20 offerings, such as accessibility; architectural concrete; landscape basics; marketing; introduction to the Internet; rendering; graphics software; urban design; weatherproofing; even yoga and juggling. As is typical of most firms, classes are taught by staff members with a few exceptions, such as a four-session writing workshop. Riggs-Smith reports no difficulty in finding volunteer instructors.

Working out logistics

Such educational programs require coordination, which is often assigned to the office IDP coordinator, the human resources director, or even the office librarian. "A lot of training programs fail in logistics," reports Gensler's Laurie Dreyer. "Every office needs a sheep-herding dog. And once you get people into the class room, you can't let them leave."

Job pressures and other time demands do affect participation, particularly from the newer employees for whom many of these programs are designed. "New hires are very sensitive to their own productivity," notes Riggs-Smith, who reports great variation in participation from new employees. "It takes time to get up to speed, so they're less likely to use personal time on classes. If they put down their pencils for a 5:00 class, they pick them up again at 7:00."

Jane Weinzapfel reports a similar phenomenon. Although Leers, Weinzapfel does not offer in-house classes, the firm does subsidize seminars at the annual Build Boston convention. "Younger professionals typically don't ask to take seminars," Weinzapfel observes. "Maybe it's because they are learning so much on the job." Some firms require participation—most often in CAD training, but also in courses that will bolster weaknesses reported in annual review sessions.

Most firms feel the responsibility for continuing education falls on the employee, an attitude reflected in compensation policies for classes. Classes at Wallace Floyd are offered on personal time, with the exception of CAD training. Ellerbe Becket has a similar policy. "We offer training as a staff resource," says Doug Smith. "It's available to them, but it's not part of the work day." ZGF provides training sessions in technology and communication on company time. Other firms take a looser approach, reimbursing tuition fees for some courses or providing full or half compensation for some class time.

But even if employees do bear the responsibility for their own professional development, many firms try to offer guidance through mentoring programs that are established with varying degrees of formality. Gensler issues a brochure describing its "Buddy-Coach-Mentor" program. After orientation by a buddy, an employee is assigned to a coach, who monitors the development of job skills, and advises on long-term career goals. A mentor, which Gensler defines as "an inspiration and role model whose behavior, performance, skills or knowledge you wish to emulate," is encouraged, but not assigned. "It happens or it doesn't," says Dreyer. "It's chemistry—you can't assign them."

Finding a mentor

While most firms recognize the kismet aspect of mentoring, some try to actively cultivate these relationships. Wallace Floyd employees select a mentor after their three-month review, frequently interviewing possible candidates. Ellerbe Becket is about to launch a mentoring program and is considering such resources as a skills database of potential mentors, checklists for initial discussion, and a monitoring mechanism for employee feedback. "We won't prescribe or mandate a relationship," Smith notes. "We'll be like a dating service, but we won't do any actual matchmaking."

Mentoring is under discussion in many offices. "I think we're looking at a trend in which there's greater concern about the continued growth and satisfaction of staff," observes Mark Maves, senior vice president of KCF/SHG in Washington, D.C., where mentors are assigned to employees, and in a twist on traditional definitions of mentoring, evaluate their performance. "Mentorship used to be quite common before the baby boomers. But with the sheer number of people in our generation, a lot of boomers haven't been mentored. I sometimes wonder if we lost the habit."

A mentoring program can reflect more than altruistic intentions—it can be critical to a firm's ability to attract and keep new talent. "A good program is high on the list of a lot of people going through job searches," notes Steven Wonkka, cochair of the Young Architects Committee of the Boston Society of Architects. "Mentoring isn't much of an issue for people right out of school—you may not even be aware of it; landing a job is difficult enough. But the issue emerges after a year or two. That's when people realize they need to take responsibility for their career development, and they begin to evaluate their own firm and talk to their friends."

Senior staff can benefit from mentoring, too. ZGF has recently implemented a new "advisor" program, which acknowledges that advisors may themselves wish to have an advisor, recognizing that goals and responsibilities change with advancement along a career path. According to Managing Partner Robert Packard, the firm sometimes turns to outside resources, including clients and consultants, to find advisors with special skills to match an employee's interests. Serving in an advisory or mentoring capacity can also teach important management skills. ZGF's Greg Baldwin notes, "It's a process that obviously benefits a young person, but it is also critical to the senior person. It's the responsibility of senior staff to learn how to make other people effective. Mentoring is a two-way street."

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Brick Braces for a Shake-up

Tougher seismic safety codes for masonry construction demand new brick details.

By James Parsons

The latest challenge to brick construction does not come from the laboratories of materials science, but from the natural forces of the earth from which brick is formed. Because disaster recovery costs from even minor earthquakes have risen sharply in recent years, the federal government has encouraged the building industry to develop a unified nationwide code for seismic safety in masonry buildings.

The Federal Emergency Management Agency (FEMA) sought to develop national seismic design provisions when it created its National Earthquake Hazard Reduction Program (NEHRP) in 1977. This program's design provisions are reviewed and updated every three years by the Building Seismic Safety Council (BSSC), an independent advisory group of 61 engineering and building trade associations. The council's recommendations are then typically incorporated into the policies of Building Officials and Code Administrators International (BOCA) and other model building code organizations.

Although viewed as too stringent by many in the design and construction industries, past provisions of the hazard-reduction program have prompted many states and localities west of the Rockies to adopt their own seismic standards for certain types of construction in accordance with NEHRP.

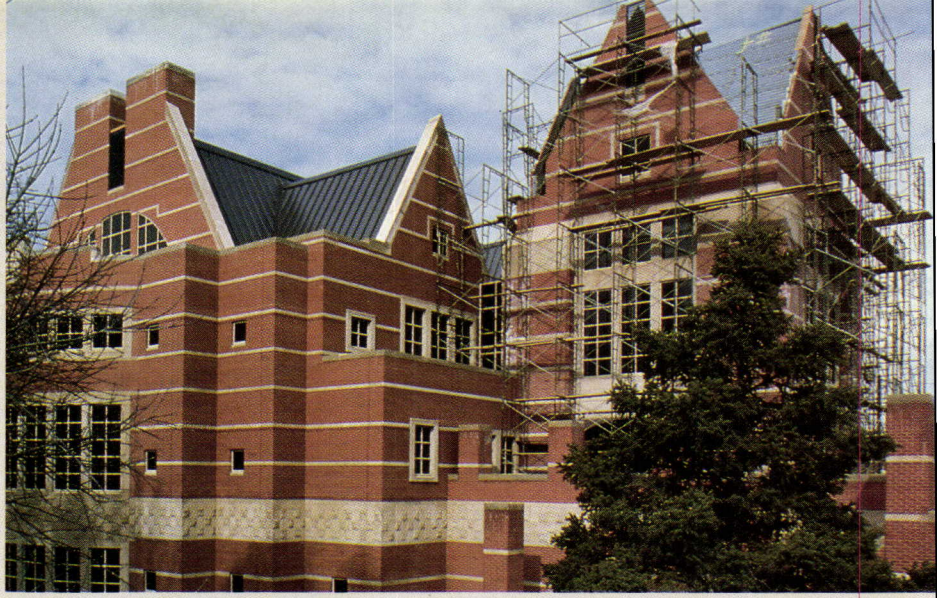
Constructed of unreinforced masonry, First Christian Church in Santa Monica, California, (top) lost its brick facing during 1994 Northridge quake. Sepulveda Veterans Administration Hospital (above), located three miles from quake's epicenter, experienced blowouts at each corner of its brick veneered, reinforced concrete structure.

Gregg Borchelt, director of engineering and research for the Brick Institute of America, explains that the proposed 1997 NEHRP recommendations contain many far-reaching changes. "NEHRP '97 raises the design floor for most of the country," Borchelt maintains. If the proposed guidelines are approved, areas near faults will find "drastic" changes in their building codes.

Increased reinforcement

Architects in regions where earthquakes are rare will have to consider various degrees of seismic forces in their loading calculations. "In other words, there will no longer be such a thing as a no-seismic-load area in the United States," asserts the Brick Institute's Borchelt.

While these latest seismic provisions will affect nearly all types of construction, Borchelt argues that



Architect Breslin Ridyard Fadero designed Giovale Library at Westminster College in Salt Lake City with brick veneer to recall original campus buildings. Triangular wire-ties sandwiched between bricks and fastened to 8-inch steel stud backup system horizontally stabilize the wall during an earthquake.

the provisions will affect masonry especially, because they increase the reinforcement necessary for exterior veneer and interior loadbearing walls. Brick exteriors will require more expansion joints to permit the movement of veneer. Bearing and shear wall structures will need vertical and horizontal reinforcement, and more connections to backing and floor elements will be required.

Structural engineer Wayne Bryan of Ehlert/Bryan in McLean, Virginia, cautions that the new masonry provisions will also affect renovation projects, particularly public facilities, noting, "Retrofits will be more expensive because of the need to add proper reinforcement such as improved connections between the roof and floor diaphragms."

This issue could be particularly troublesome to owners with a large inventory of brick structures. The U.S. Army, for example has found that strengthening brick walls through its barracks upgrade program has required a second look at common retrofit practices.

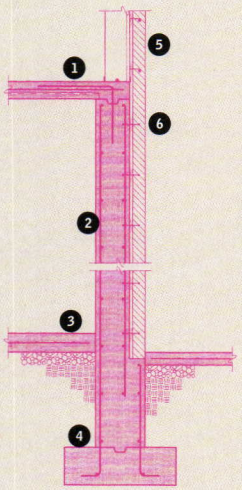
"Some estimates for treating walls with spray-on concrete have been as high as $55 per square foot, which can be an expensive proposition for large buildings," explains Charles Gutberlet, a structural engineer with the Army Corps of Engineers. "We're now working with our labs on developing a fiber-reinforced coating, which will provide the same degree of reinforcement, but at less cost."

Once members of the safety council approve the new seismic masonry provisions, probably by the end of this year, the next step is to incorporate these guidelines into the International Building Code, scheduled to be completed by the year 2000. The safety council solicited comments on the new seismic provisions from its members beginning in June, and will sponsor several conferences over the next two years to debate and fine-tune the seismic masonry provisions. Regardless of how the issue shakes out, the Brick Institute's Borchelt advises architects to prepare to have to consider seismic forces in their brick designs. "The ensuing public review and discussion of NEHRP may alter the degree of earthquake protection, but it's likely that at least some categories of buildings will require earthquake protection beyond current requirements," he says.

For guidance, architects can look to some of the masonry design techniques already used in the seismically active areas of California and the Pacific Northwest. Reports following the 1989 Loma Prieta and 1994 Northridge earthquakes show that reinforced masonry and masonry veneer structures performed well, with most failures stemming from a lack of reinforcing, corrosion, or insufficiently grouted joints.

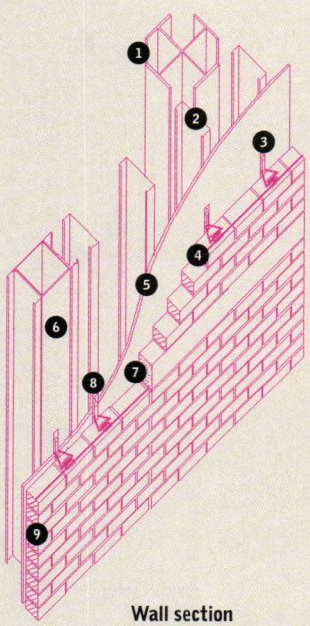
East Coast detailing

Because NEHRP originally focused its recommendations on upgrading federal facilities, several recent courthouse projects demonstrate how seismic detailing also may be employed in East Coast ventures. In White Plains, New York, for example, Skidmore, Owings & Merrill specified a 3-inch gap between the brick skin of the building's stepped-back corners and the precast concrete



Wall section

1. concrete slab on steel deck
2. 11" concrete foundation wall
3. 6" concrete slab on grade
4. footing
5. brick veneer
6. #9 wire, 16" o.c.

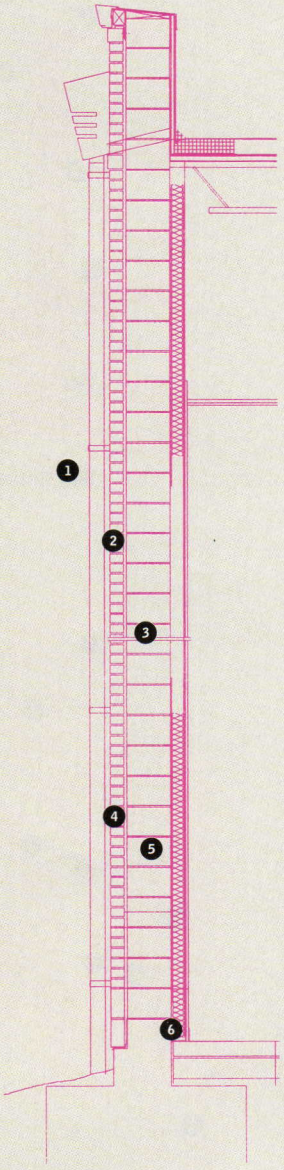


Wall section

1. steel frame
2. 8" studs, 16" o.c.
3. 1/4" triangular wire-ties
4. #9 wire, 16" o.c.
5. drywall sheathing
6. steel column
7. limestone band
8. 1/5" triangular wire-ties
9. brick veneer

NBBJ attached brick veneer to concrete-block substrate with anchors and steel ties in their design for the chapel of the U.S. Navy Family Support Complex, a 46-acre campus in Marysville, Washington. The building meets Washington's Uniform Building Code seismic design criteria for one-story buildings.

1. bracket
2. face brick
3. 2" concrete masonry unit
4. waterproofing
5. vapor barrier
6. insulation



Wall section

panels under the skin, allowing the panels to slide together along the plane of the facade during an earthquake. "Seismic detailing was a key feature of the design and fit into the Classical language of the building very well," says SOM Design Partner Gary Haney. "The use of precast concrete as a back-up for brick was far superior to the conventional cavity wall, which could be crushed under seismic pressure."

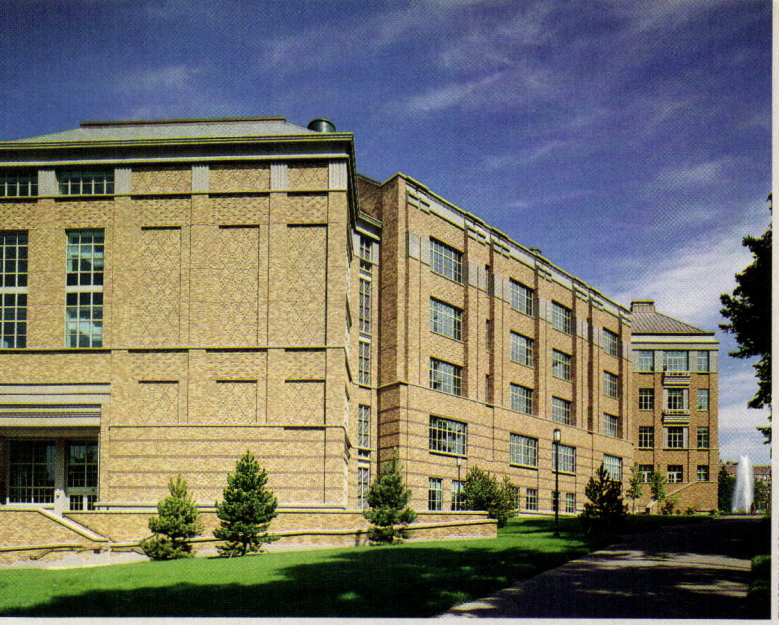
New seismic design practices east of the Rockies will also require architects to become more familiar with methods of weatherproofing wider expansion and isolation joints. Michael Rizza, CEO and founder of the Michael Rizza Company, a San Francisco-based manufacturer of seismic seals, notes that joints for thermal movement are often insufficient for seismic movement. "Most expansion joints that we see in our East Coast and Midwestern projects measure only 3 to 4 inches wide—not enough to handle a major earthquake," Rizza says. "Although we now have elastomeric materials that provide four-way movement, a wider joint is necessary to prevent crushing the seal. And if another New Madrid or Charleston earthquake occurs [two 19th-century temblors believed to be the most powerful in the nation's history], many of these structures could easily fail because of a too-narrow joint."

Ralph Belton, a senior associate at NBBJ in Seattle, notes that integrating seismic protection into a design eventually becomes second nature. "It doesn't take long to look at building design in seismic terms," he says. Changes in design can be subtle, such as spiral wrapping of rebars in concrete columns or mechanically fastening the walls to buildings. In many areas of the East, he adds, the wind-loading requirements already in place will likely exceed those for seismic loading.

Belton cites several NBBJ projects in the Pacific Northwest that exemplify the integration of seismic design criteria for masonry. For a four-story ambulatory care facility designed for the University of Washington Medical Center in Seattle, for example, the contractor wanted to place structurally reinforced brick panels over a traditional waterproof membrane on a stud backup wall. An alternative strategy was to strengthen the stud backup system rather than reinforce the brick, as is evident in NBBJ's U.S. Navy Family Support Complex in Marysville, Washington.

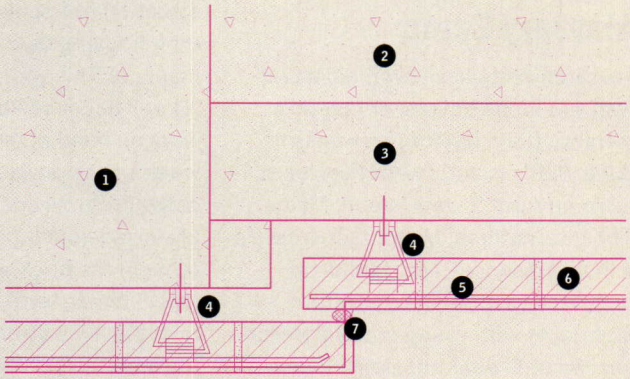
On the Gothic-style University of Washington campus, where brick is the predominant exterior finish, two recently completed projects illustrate how seismic detailing can be achieved without sacrificing appearance. The Physics and Astronomy Building, designed by Cesar Pelli & Associates and NBBJ, features curved building surfaces and corners clad in a tweedy pattern of multicolored brick. Dovetail anchors connect the veneer with the concrete backing, permitting both thermal expansion and seismic movement.

At the nearby Chemistry Building, designed by Moore Ruble Yudell and Loschky Marquardt & Nesholm (LMN), the facade is broken up into a complex composition of smaller-scale masonry panels, with varying



TIMOTHY HURSLEY

Moore Ruble Yudell and Loschky Marquardt & Nelsholm designed chemistry laboratory at University of Washington with brick veneer attached to concrete-block substrate with steel shelf angles and slotted stainless steel anchors.



Spandrel detail

1. concrete spandrel beam
2. concrete column
3. concrete masonry unit infill
4. brick tie system
5. brick reinforcing
6. face brick
7. vertical expansion joint

offsets from the wall plane resulting in a richly textured appearance.

The veneer is secured with stainless steel anchors embedded in the masonry joints, which are then tied to vertical straps attached to the concrete building frame, the infill concrete construction, or the concrete masonry unit backing for the cavity wall assembly. The weight of the veneer is carried by projecting relief angles, which reach into the horizontal joint below each panel.

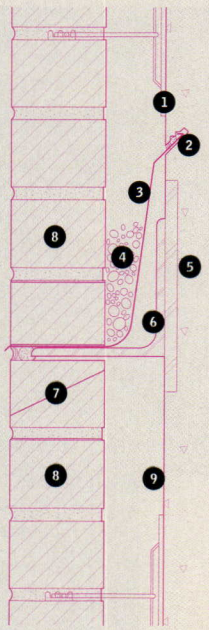
"The key to seismic detailing is to remember that the building is not a monolithic block and that it will distort or warp during an earthquake," contends LMN Project Manager Richard L. Wilson. "If you provide offsets and control joints, allowing the elements to move in relation to each other without causing damage, you can still achieve many satisfying designs using masonry veneer."

Standing up to pressure

Despite the learning curve required of the new masonry seismic provisions, suppliers such as Tom Sheridan of Potomac Valley Brick Company in Rockville, Maryland, harbor no fears about masonry's future. "The new standards will affect nearly all types of building materials in one way or another," Sheridan predicts, "and because of brick's esthetic value, I believe it will continue to be a popular material for veneer." Adds Principal Mike Flynn of Pei Cobb Freed & Partners, "Seismic design will merely be an addition to what we already do. There's already a great deal of research about the performance of masonry construction in earthquakes. We won't be starting from square one."

And what about the cost of making brick walls and veneer seismically sound? "Certainly, seismic detailing for masonry will be more expensive," says NBBJ's Belton. "But compared to other things that the building industry has dealt with in recent years, it's questionable whether that additional cost will be as significant as some people fear. And considering that this is a safety issue, the investment in seismic detailing will likely prove to be a minimal investment in protecting lives."

Freelance writer James Parsons specializes in building technology and engineering issues.



Spandrel section

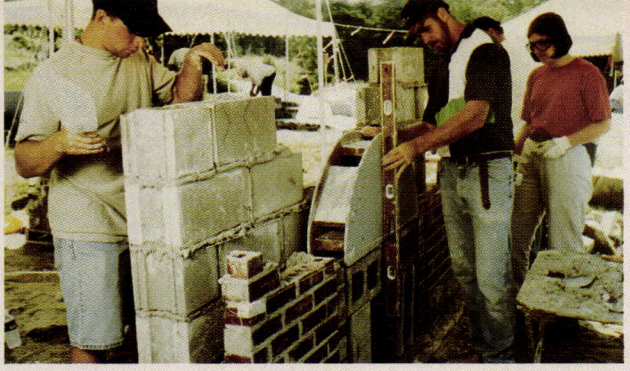
1. brick tie system
2. copper reglet
3. copper flashing
4. washed pea gravel
5. steel plate
6. galvanized steel
7. sloped vent in mortar
8. brick veneer
9. bituminous dampproofing

Architects Go to Masonry Camp

Few architects have ever laid a brick wall, set stone pavers, or poured a terrazzo floor, but for two weeks in June, that's exactly what they learn to do on rural Swans Island, Maine. The International Masonry Institute's annual Masonry Camp teams up architecture students and intern architects with young craftsmen during two one-week sessions. Teams of architects and masons learn the how-to's of brick, terrazzo, stone, tile, plaster, and mosaic construction from expert craftsmen, while designing a theoretical 16-unit affordable masonry housing project on Swans Island—a peculiar design problem, since the island is full of old clapboard buildings and even a granite quarry, but not a single brick building.

Participating in the design process is an eye-opening experience for the masons; for the architects, the biggest challenge is constructing full-scale wall sections of their housing designs with real masonry. This year, architects Hugh Newell Jacobsen and William Rawn were on hand at the end of each week's session to critique the design of the projects and the craft of the life-sized building fragments. "I thought the bricklayers had a surprisingly intense level of design invention, that was stronger than that of the architects," observes Rawn. "I think the masons learned to respect how hard the design process is."

For the young designers and craftsmen, trading tasks allows them to learn each other's trade in a hands-on setting. The masons leave camp understanding that what they build is an integral part of the larger design process, while the architects realize that every brick they draw must be laid by real people. A more important benefit of the program, however, is encouraging a dialogue among designers and craftsmen, who often share an antagonistic working relationship. "It would have been even more interesting if the architects and apprentices were willing to discuss their disagreements and frustrations more candidly," maintains Grace Kim, an intern architect at Skidmore, Owings & Merrill's Chicago office.

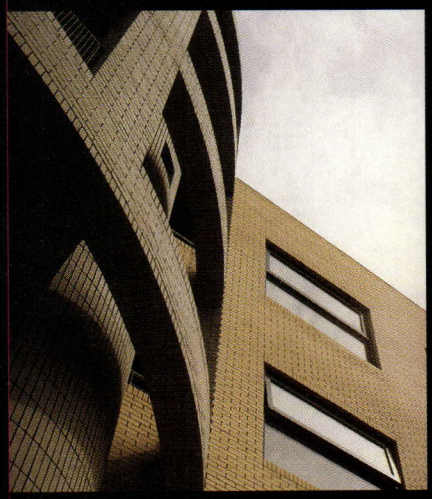


Intern architects and apprentice masons build full-scale wall section of brick veneer over loadbearing CMUs.

For more information on next year's program, contact the International Masonry Institute at (202) 783-3908. *R.A.B.*

Thin is In

The new thin-layer masonry process may soon provide American architects with a high-tech way to achieve an old style of brick. Prism tests of the cement-based, polymer-added mortar, developed in Belgium by Ankerplast PVM, have produced nearly twice the flexural bond strength over type-"M" mix at widths of 1/8 to 3/16 inches. The result is a mortar that more closely resembles the traditional look of 18th- and 19th-century masonry.



Thin-layered masonry faces mixed-use complex in Hoorn, the Netherlands.

Chuck Stein, vice president of marketing for Boral Bricks Products of Atlanta, explains that appearance was but one of several considerations that led to the development of thin-layer masonry. "Dutch architects wanted an economic, easy-to-use mortar that would give them more flexibility in creating masonry walls and detail," Stein says. "We believe many architects and builders in the U.S. will find thin-layer masonry to be an attractive alternative for masonry, given the thin mortar joint and look it provides."

Although formal structural testing of the mortar has yet to be conducted in this country, European tests have proved its flexibility, water-repellency, moisture- and frost-resistance. Paul Zimmerman, a marketing manager at Boral, predicts that this new mortar will also have seismic benefits. While the cost is somewhat higher, proponents believe that the need for fewer perpendicular joints and growing familiarity among bricklayers will enhance thin-layer masonry's attractiveness and improve costs. "Because of thin-layer masonry's polymer base, the mixture can be applied directly with a mortar pump, so, there's no need to clean and tool the joint," Stein maintains. "The mortar also streamlines the process of creating prefabricated elements for buildings, sound walls, and complicated bond patterns. And because the sand is premixed, clean-up is much easier."

Thin-layer masonry will debut in this country next January at the National Association of Home Builders' Annual Builder's Show in Dallas, where Boral is using machines imported from Elbo Equipment Company in the Netherlands to construct its "House of the Future." The company will then ship the materials to Clemson University's Center for Engineering Ceramic Materials for testing to determine the material's precise earthquake resistance. "We also hope to do demonstration projects in other markets," Stein says. "We're confident that thin-layer masonry will prove to be an attractive alternative for masonry construction." *J.P.*

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Circle 110 on information card

Chasing Software Connections

With design data arriving in so many formats, architects are seeking easier ways to link various unrelated programs. How far off is this "interoperability"?

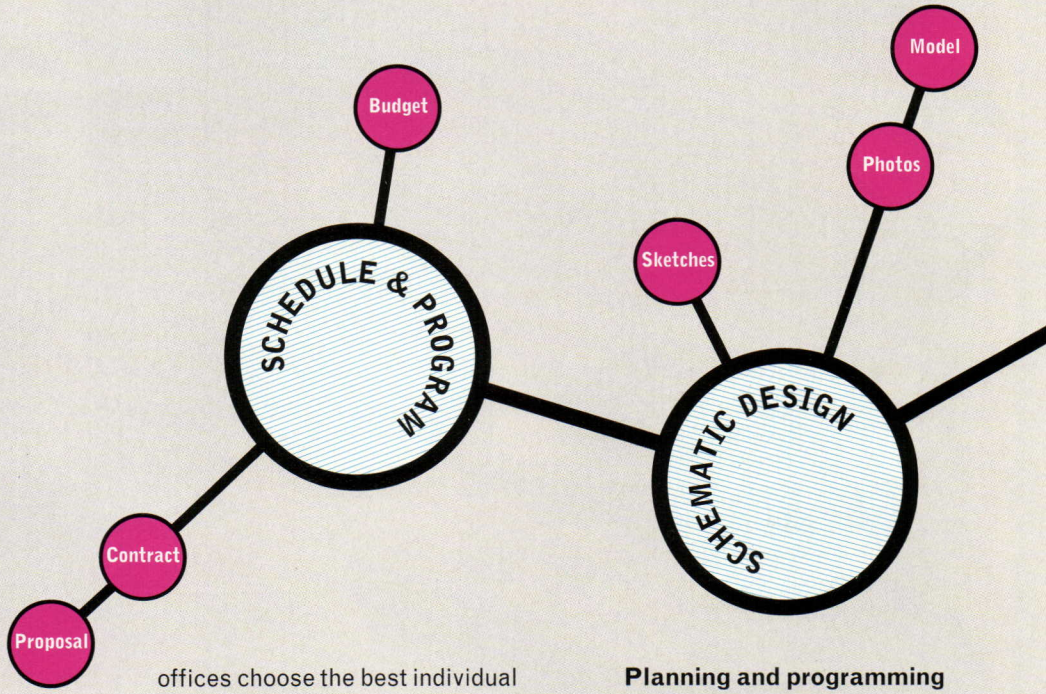
By Patrick Mays

Most software reviews focus on a program's strengths and weaknesses as a stand-alone application and address compatibility with other programs only in general terms. Applications are described as being able to import and export a DXF file, Autodesk's standard drawing exchange file format, or they are said to be "OLE compliant," meaning that they can take advantage of Microsoft's object linking and embedding. However, "interoperability," or the ready ability to move data among various programs, is a significant, overlooked problem in architectural practice. In fact, there are at least three different DXF file formats that cause problems for imported information, and files referenced by object linking are sometimes visible but can't be printed or manipulated.

Information passes through various applications over the life of an architectural project. It is important that information from the programming phase be accessible in the schematic design phase. Construction drawings often need to be reused for presentations and future marketing efforts.

Some CAD software vendors understand these problems better than others. Many AutoCAD users have experienced the frustration of trying to make a two-dimensional color presentation from CAD files. There is no industry-standard color system in AutoCAD with which to anticipate a plotter's output, and line weights are not visible on screen to help visualize the final product.

Many firms purchase "suites," or families of software applications that seem to intercommunicate more completely, but this task is not as easy as vendors promise. Other offices choose the best individual program in each category rather than a suite, because they realize that other consultants and project partners may not have the same suite to facilitate information exchange. For example, Corel's WordPerfect will open Microsoft Word documents fairly consistently, but Microsoft Word will usually scramble the formatting of a WordPerfect file.



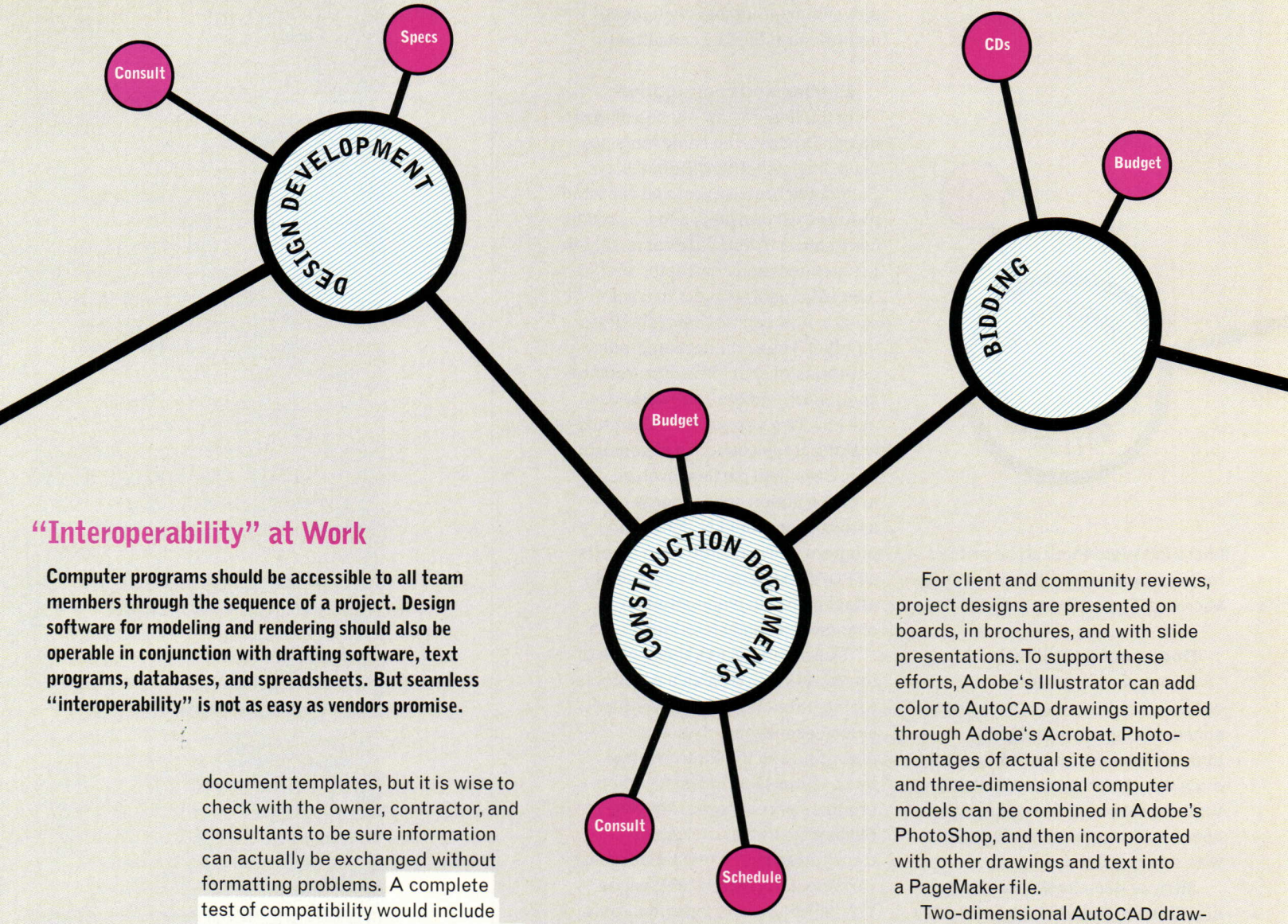
Most businesses, architecture firms included, rely on a general productivity suite that includes word processing, spreadsheets, electronic mail, database applications, and in some cases, a project management tool. It is hard to imagine a practice today that does not use CAD modeling, rendering, and visualization tools. Most firms also have a graphics suite that includes nontechnical drawing, photographic editing, and desktop publishing tools. The software vendors best known for these suites are Microsoft for a general productivity suite, Autodesk for drafting and modeling, and Adobe for graphics.

Planning and programming

From the beginning of a project, a general productivity suite, like Microsoft Office, is used to submit proposals and contracts, to set up budgets, and to build project direc-tories. The professional version of Microsoft Office includes Word, Excel, Power Point, Mail, and Access. Many offices add Microsoft Project to this collection to track time and resources.

The interoperability of Microsoft's applications is actually quite good, but problems in coordinating project files with consultants and problems reusing information in later phases must be anticipated. Microsoft Project and Excel work well together, projecting tasks to be completed, durations, staff allocations, and cost. Problems generally arise not in these products' ability to create plans, but in their ability to receive data from accounting packages to track the progress of a job against its plan.

Likewise, Access and Word make a good combination for creating project directories and standard



"Interoperability" at Work

Computer programs should be accessible to all team members through the sequence of a project. Design software for modeling and rendering should also be operable in conjunction with drafting software, text programs, databases, and spreadsheets. But seamless "interoperability" is not as easy as vendors promise.

document templates, but it is wise to check with the owner, contractor, and consultants to be sure information can actually be exchanged without formatting problems. A complete test of compatibility would include exchanging files on disks between all parties, comparing printed results, and sending word-processed, spreadsheet, database, and project schedule files as e-mail attachments.

Schematic design

As projects move through the schematic and design development phases, three-dimensional conceptual massing models and accurate, two-dimensional technical drawings must be produced on CAD. Autodesk has dominated this process for years with AutoCAD, and has recently added 3D StudioViz to expand its modeling tools.

For the many architectural offices using Apple Macintosh computers, neither AutoCAD nor 3D Studio applications are available, but Bentley's MicroStation and Graphisoft's ArchiCAD offer well-integrated modeling and production solutions that run in both Mac and Windows environments.

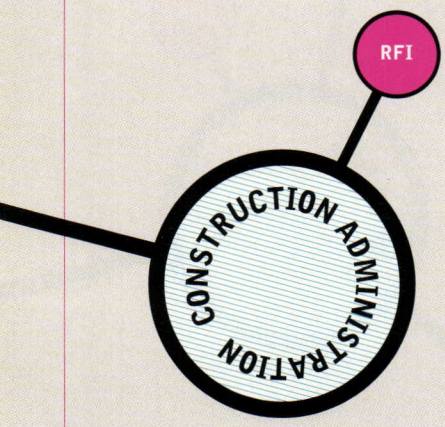
Offices that mix Macs and PCs frequently use Autodessys's form•Z for three-dimensional modeling on both MacOS and Windows platforms while completing two-dimensional drawings in AutoCAD for Windows. Bentley's TriForma and Graphisoft's ArchiCAD connect conceptual modeling to production so that changes in a model update the two-dimensional construction drawings and vice versa.

However, it is not possible to make a round trip with information from 3D StudioViz to AutoCAD. You can send drawing information from 3D StudioViz to AutoCAD, but there is no active link to send the AutoCAD drawing back to the 3-D program.

For client and community reviews, project designs are presented on boards, in brochures, and with slide presentations. To support these efforts, Adobe's Illustrator can add color to AutoCAD drawings imported through Adobe's Acrobat. Photomontages of actual site conditions and three-dimensional computer models can be combined in Adobe's PhotoShop, and then incorporated with other drawings and text into a PageMaker file.

Two-dimensional AutoCAD drawings imported into Illustrator by the DXF process do not show the plotted line weights and line types, which are critical to communicating design ideas. Using Adobe Acrobat as a print controller, a Portable Document Format (PDF) can be generated from AutoCAD showing the line weights just as they would be plotted. Illustrator can then open the PDF and add colored fills and gradients to enhance presentation drawings.

Three-dimensional models built and rendered in 3D Studio Viz can be saved as TIFF files, which can be opened through PhotoShop. Using a scanned or digital photograph of site conditions, computer models can be composited in a real world context. PageMaker will easily take presentation drawings from Illustrator and composite pictures from PhotoShop and create layouts with text from



Microsoft Word that can be printed for large boards, small brochures, or Microsoft Power Point "slide" shows.

Document coordination

During the construction documents phase, door and window schedules must be related to dimensioned drawings; consultants' drawings must incorporate architectural drawings for reference; and specifications must be coordinated with drawing details.

Many of these tasks are greatly simplified in AutoCAD Release 14. Linked or embedded files will actually plot for the first time so that various schedules and lists that appear in drawing sets can be maintained in Excel or Word. This approach will open many avenues for actually counting components from drawings and reporting them in Excel. For small projects, specifications are sometimes printed directly on drawings; AutoCAD can now directly reference a Word file to make that process simpler.

AutoCAD Release 14 supports raster files as backgrounds, which is like taking a picture of a drawing and then placing it in a single layer. In the past, consultants were sent reproducible drawings on paper that they could then draw over. Release 14 allows users to send backgrounds as single-layer, weighted line drawings, which prevent unauthorized changes to architectural files by consultants.

Bidding and construction

In the final review phases of the design process, the same tools are used, but in slightly different ways. Schedules kept in Excel and exported to AutoCAD drawings can be used by contractors to estimate costs. If both the architect and contractor are using Microsoft Project to track events, they can tie their schedules together. The architect can predict deliveries of shop drawings from the contractor, and the contractor can see how late or rejected submittals will affect the sequence of construction. Even if all parties involved in construction cannot agree on a word-processing or scheduling program, they can still save reports as PDFs and send them as e-mail attachments to ensure that no changes are made to original files.

There is much talk these days of the World Wide Web as the ultimate tool for interoperability. Eventually, seamless movement across platforms and the Internet may be possible. During construction, progress photographs, drawing revisions, and reports can be transmitted over a private intranet (*Architecture*, March 1997, pages 122-125). Summary logs generated in Excel or Access can be transferred to a Web environment and made accessible to all parties. This approach provides the additional benefit of collaborative review from an on-line white board, the meeting rooms of the Internet.

Despite the talk of Web-based connections, desktop applications and their ability to exchange files will remain the strategic challenge for project managers. Often, consulting all the team members involved in the design and construction process to select the right mix of applications, rather than relying on complicated software, makes interoperability a reality.

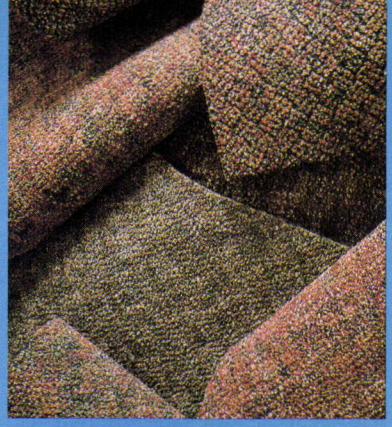
Patrick Mays is an architect and director of management information systems for HOK Architects in San Francisco.

What is Interoperability?

Interoperability and object-oriented data are terms frequently associated with the International Alliance for Interoperability (IAI), a nonprofit group of building industry experts. In the next five years, standards proposed by the IAI, called Industry Foundation Classes (IFCs), should provide specifications for software vendors in the A/E/C marketplace to create common object databases that will share information. These specifications will not resolve problems with general productivity software, but should help produce the documents from which architecture is built.

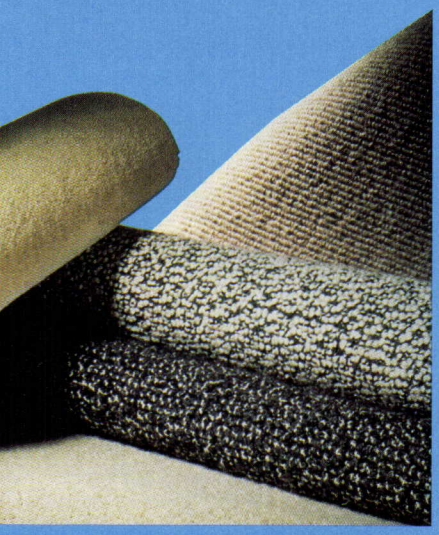
The idea behind the new specifications is for architects to create three-dimensional buildings not two-dimensional drawings in their computers from component parts. These three-dimensional components contain data and intelligence, or behavior, about the items they represent. Unlike relational databases, which refer to a single common "lookup table," object data have d irect links between each piece of information in a database. By understanding relationships between components, the object data can provide up-to-the-minute costs and quantities, as well as warnings. For example, when an architect places a door and shows a door swing, an electrical engineer can then place a light switch near the door's lock side. If the door swing is later reversed, both architect and engineer are notified to relocate the switch.

It will take years for software vendors to implement these standards, and it will take even longer for contractors, engineers, and architects to work out the legal and cultural issues. Other industries, such as the aerospace and automotive design fields, have already begun working this way, so the day is clearly coming when architects will follow suit. In the meantime, it will be important for architects to begin creating three-dimensional CAD files at the start of a project, rather than creating three-dimensional presentation renderings from two-dimensional drawings.



1

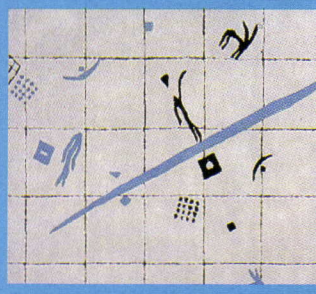
1 Multicolored Carpet
Mannington Commercial's new Techniques line of commercial loop carpeting weaves various colored yarns together to create color depth. The 1/10-inch-gauge carpet is treated with a soil-resistant coating and is available in 12 colors. Techniques can be specified in 12-foot-wide broadloom, 6-foot-wide vinyl-backed, or 18-inch-square modular tiles. *Circle 291 on information card.*



2

2 Woolen Texture
Woolshire Company wraps yarn around each loop of its new Cottage Weave commercial wool broadloom carpet to create a sisal-like texture. Cottage Weave is available in 14 colors and in 12-foot widths. *Circle 292 on information card.*

3 Hand-Woven Carpet
Stark Carpet's latest residential line, the Ashley Collection, comprises 29 designs of hand-woven wool carpet. Designs include floral and geometric motifs and are available in yarn loop-pile, cut-pile, or needlepoint weaves. The carpets measure 5 by 6 1/2 feet and can also be specified in custom sizes. *Circle 293 on information card.*



3

Carpeting

Recycled fibers, new weaves, and dyes boost flooring's texture and color.

4

4 Recycled Fibers
Carnegie Commercial Carpets is making its Filigree commercial carpeting line more environmentally sound by incorporating BASF-developed recycled fibers. When the carpet is discarded, BASF will recycle carpet fibers into hard plastics for use in other industries. The line is available in 14 colors and in 1/10-inch-gauge cut-pile. *Circle 294 on information card.*

5

5 Patterned Tiles
Milliken Carpet unveiled its Movements line of cut-pile carpet tiles at this year's NeoCon, where it won the Best of NeoCon silver award. Milliken's recent enhancements in dyeing technology claim to enrich color saturation and afford precision color placement and blending. Improved bonding technology allows for more fibers on the face of the carpet for longer wear. The line comprises 125 colors and patterns, and is manufactured in 36-inch-square carpet tiles. *Circle 295 on information card.*

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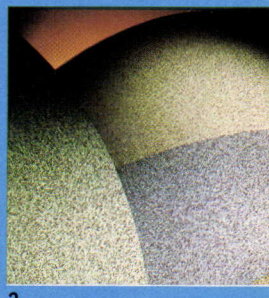
1

Vinyl Surfacing

Additives and patterns expand options in wallcovering and flooring.

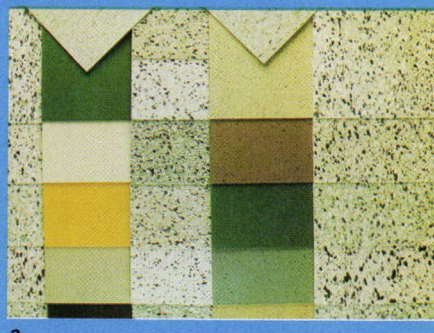
1 Mildew-Resistant Vinyl
Inpro's Antera vinyl wallcovering for commercial and institutional applications incorporates antifungal and antibacterial additives in its vinyl and dyes to prevent mildew. The first line of Antera wallcovering, Diversity, coordinates with Inpro's door and wall protection products. The collection's 16 patterns are available in 30-yard bolts with 54-inch widths.
Circle 296 on information card.

2 Patterned Flooring
Mannington Commercial's ArchiTextures collection of pattern-inlaid sheet-vinyl flooring was introduced at NeoCon this spring. The four new patterns purportedly depart from the sterility of institutional sheet vinyl by featuring warm hues and foliage and fibrous patterns. The collection is available in 30 colors.
Circle 297 on information card.



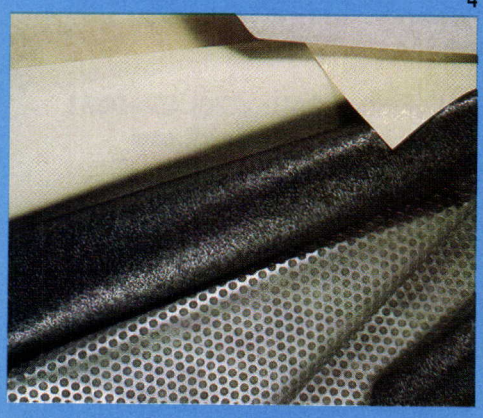
2

3 Composition Tile
Azrock recently added the Nouveau Granite pattern to its line of vinyl composition commercial flooring tile. The company now offers 106 styles of premium and standard tile. The 12-inch-square, 1/8-inch-gauge tiles are available in five colors. A slip-resistant surface finish can be specified.
Circle 298 on information card.



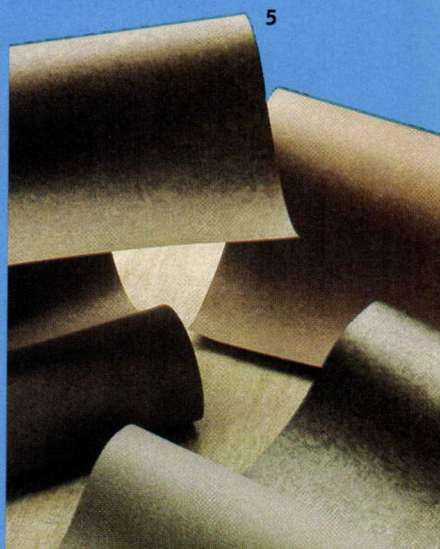
3

4 Lightweight Wallcovering
Last month, Gilford released Grand Tour, a line of paper-backed vinyl wallcovering using a lightweight PVC infused with minute air bubbles. The wallcovering is available in 55-yard bolts with 36- to 37-inch widths. The collection comprises 69 selections; metallic, earth tone, and print finishes can be specified.
Circle 299 on information card.



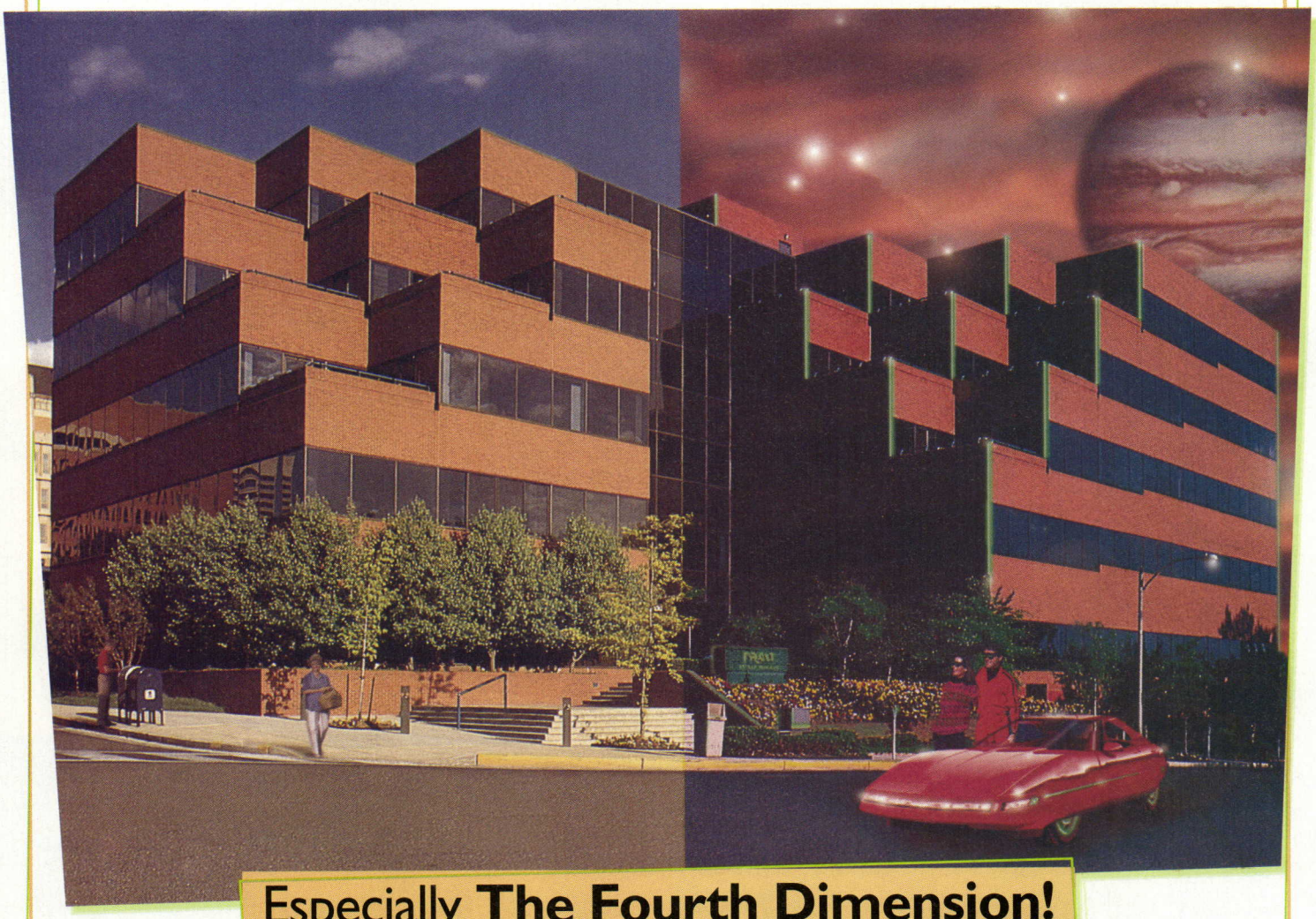
4

5 Textured Wallcovering
The J.M. Lynne Company recently introduced four new vinyl wallcovering patterns: stippled, smooth, and two woven patterns. The patterns evoke metal, ceramic, and cloth surfaces. The wallcovering is available in 30-yard bolts with 54-inch widths.
Circle 300 on information card.



5

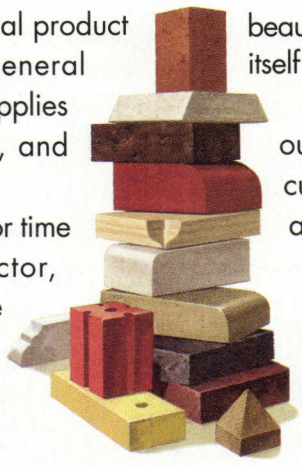
Belden Brick: Quality In Every Dimension...



Especially **The Fourth Dimension!**

When the quality of an individual product is dimensionally defined, the general assumption is that the description applies consistently to the length, height, and width of the product.

The fourth dimension – duration or time – is an equally important factor, especially in a building product like brick that is frequently chosen solely on the basis of its appearance. The beauty of Belden Brick lasts as long as the brick itself (lifespans of centuries are not uncommon).



In connection with the fourth dimension, our experience has been that most of our customers find Belden Brick very attractive at first glance – and for a very long time afterwards.

For more information CALL: (330) 456-0031
Website: http://www.beldenbrick.com
E-mail: belden@beldenbrick.com

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Born of 6 years of metallurgical research and development...
2 new members of the Follansbee family of roofing metals
VIROMET® and VIROTIN®
a new breed of environmentally-sensitive roofing metals

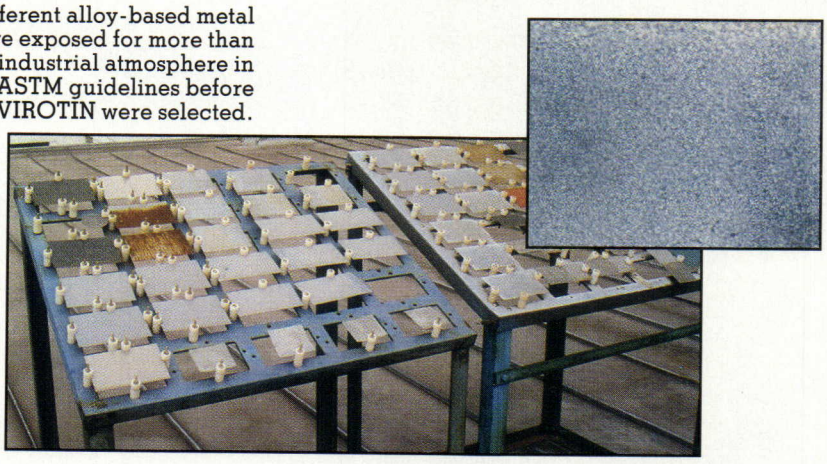
- each capable of withstanding the most severe corrosive conditions, even those encountered in marine atmospheres
- each environmentally sensitive, meeting the rigid, critical standards for environmental compatibility
- each coated with ZT,® a special, patented alloy of zinc and tin, a combination not previously used to coat architectural metals

VIROMET has been engineered to excel in all the critical aspects of a roofing metal's performance in a broad spectrum of applications. It is stainless steel coated with ZT and performs exceptionally well in marine atmospheres while offering the architect a dependable corrosion resistant product for use in both industrial and rural environments.

VIROTIN was developed to mirror all of the time-tested qualities of the original Terne or "tin" roof used extensively since colonial days. It is prime, copper-bearing steel coated with ZT. VIROTIN produces the same aesthetic effects as those original roofs and provides an environmentally-sensitive material for many restoration projects as well as institutional, commercial and rural buildings.

VIROMET and VIROTIN are the two newest members of the Follansbee family of architectural roofing metals. They join TCS, introduced in the 1960's and Terne, the traditional roofing metal. TCS is architectural stainless steel coated with a terne alloy; Terne is prime, copper-bearing carbon steel coated with the same alloy. We invite your inquiry concerning any or all of these outstanding roofing metals. Call us toll-free, 1-800-624-6906.

Over 50 different alloy-based metal combinations were exposed for more than 5 years in an industrial atmosphere in accordance with ASTM guidelines before VIROMET and VIROTIN were selected.



In addition to extensive laboratory testing at California State University at Berkeley, Follansbee exposed samples to salt-laden beach front exposure for more than 5 years at a test site in Topsail, North Carolina.

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Advertising Angst

Architects are right to be uptight about hawking their services on TV.

Do architects need to advertise what they do? The profession's opinion is divided. Two years ago, the American Institute of Architects launched a series of four-color magazine ads plugging architects in a dozen business and shelter periodicals. Many architects thought those spots did the trick. "The print campaign has done wonders for our image," insists architect Emil A. Slavik of Cleveland, Ohio, "and TV advertising can do even more." But most AIA members aren't so enthusiastic.

Architect Peter M. Saucerman of Sacramento, California, is "distressed" that the institute proposed in May to spend "big bucks" on television commercials. With more pressing matters at hand, Saucerman explains, such as the current turf battle that California architects are fighting with state-employed engineers, the notion of spending millions on a slick advertising campaign seems foolhardy. "The planners of this little adventure are way off the mark," scoffs Saucerman.

The planners of this "ad-venture" are the AIA's directors, who want to take architects prime-time with TV commercials prodding viewers to hire an architect. AIA members would have had to remit $150 over the next three years to pay for the campaign, but they quashed the idea at this year's AIA convention.

Architects are right to fret about TV ads, just as lawyers and doctors have recently in their medical and bar association meetings. The driving idea behind the ad campaign—that design services can be sold commodity-style, like eggs, meat, and milk ("where's *your* mustache?")—is laughable. What percentage of people watching TV undertake construction projects? And if they are engaged in building, hasn't it probably occurred to them already to hire an architect? Besides, good architecture isn't generic, and the kind of architecture that is generic isn't worth pushing on TV.

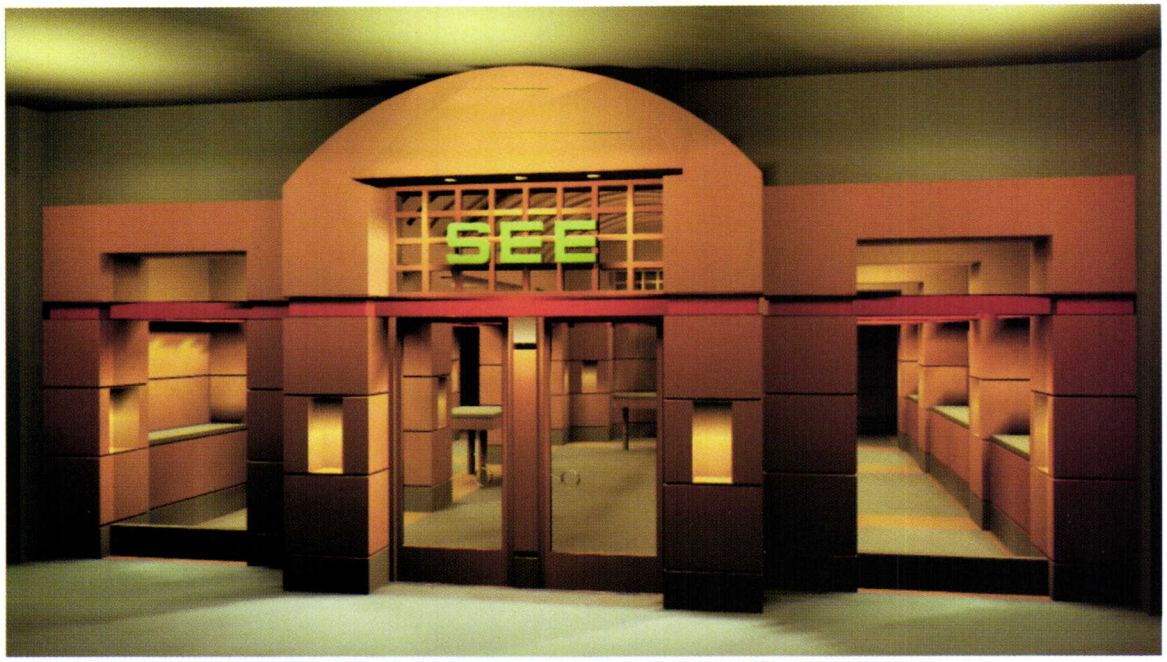
Architects can only speak for—and promote—themselves. They shouldn't spend money relying on the AIA to plug their collective and diverse expertise. The most famous architects are as good, or better, at selling themselves than they are at designing. Michael Graves, for instance, has lent his name to ads for Absolut Vodka, Dexter Shoes, and German appliance manufacturer Miele, and even glued his likeness to a billboard advertising his condos in Miami Beach. And "poet, sculptor, and principal" Will Bruder, in ads for DuPont Antron, twirls for the camera while rhapsodizing about carpet fibers. Meanwhile, most architects hang out their Web pages, hoping some client will browse in their direction with a major commission.

The institute would be much smarter to direct its public-outreach money to the American Architectural Foundation, whose 1996 public television documentary about urban redevelopment, "Back from the Brink," has become a favorite among public officials and concerned citizens nationwide. A public television station in Corpus Christi, Texas, organized an on-air discussion of local urban problems to follow "Brink." And Mayor Loretta Spencer of Huntsville, Alabama, sent 10 copies of the tape to local business leaders with bags of popcorn. Everyone liked the program so much they formed a new redevelopment commission for the town. TV commercials are never that inspiring. There are better ways to insinuate the importance of architecture to a nation of nonbelievers. Leave industry advertising to dairy farmers. *Bradford McKee*

ARRIS

voted

BEST ARCHITECTURAL CAD



ARRIS computer image by McCall Design Group, San Francisco
Modeled and rendered by John Chan

The software for architects.

In November, 1996, a unique competition was held in Boston to determine the **Best Architectural CAD** software. The results? Over 300 architects and design professionals voted ARRIS, by Sigma Design International, the "**Overall Winner**" in a head-to-head contest with AutoArchitect using AutoCAD, Microstation TriForma by Bentley, ALLPLAN by Nemetschek, ArchiCAD, MiniCAD, DataCAD, and Architrion.

ARRIS voted:

- ***Best Overall Architectural CAD***
- ***Best Conceptual Sketching***
- ***Best Design***
- ***Best Presentation***
- ***Easiest at 3D Modeling***
- ***Most Accurate 3D Modeling***
- ***Best Quick-Shaded Perspectives***
- ***Best Animation***
- ***Best Rendering***
- ***Best Network Collaboration***

WINNER 1996 ARCHITECTURAL CAD CUP

"We congratulate the ARRIS Team and also Sigma Design, the developers of ARRIS. They clearly demonstrated that they are the current standard bearers of architectural CADD excellence."
Geoffrey Langdon
CAD Shoot-out Organizer

ARRIS

Life's short. Work smarter.

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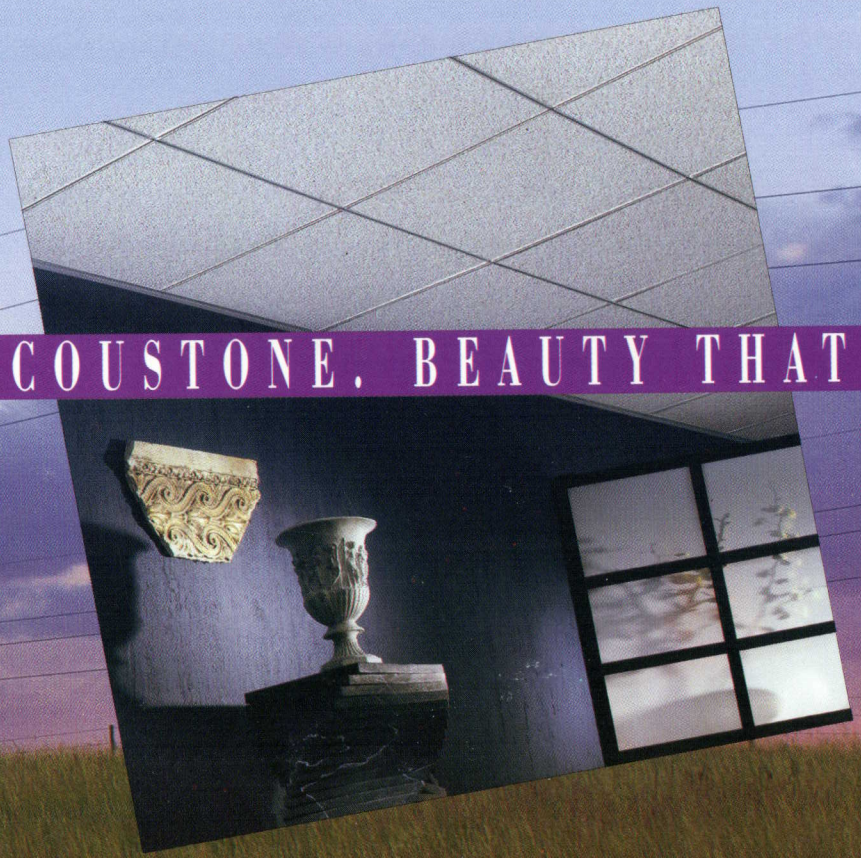

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