

75TH ANNIVERSARY YEAR

PIA

Progressive Architecture

A Penton Publication October 1995

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- Spanish Modernism
- Critique: Holocaust Museum
- Lewis Mumford
- Process: Holl's Museum
- Technics: Roofing



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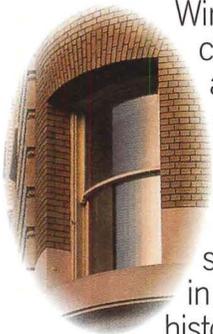
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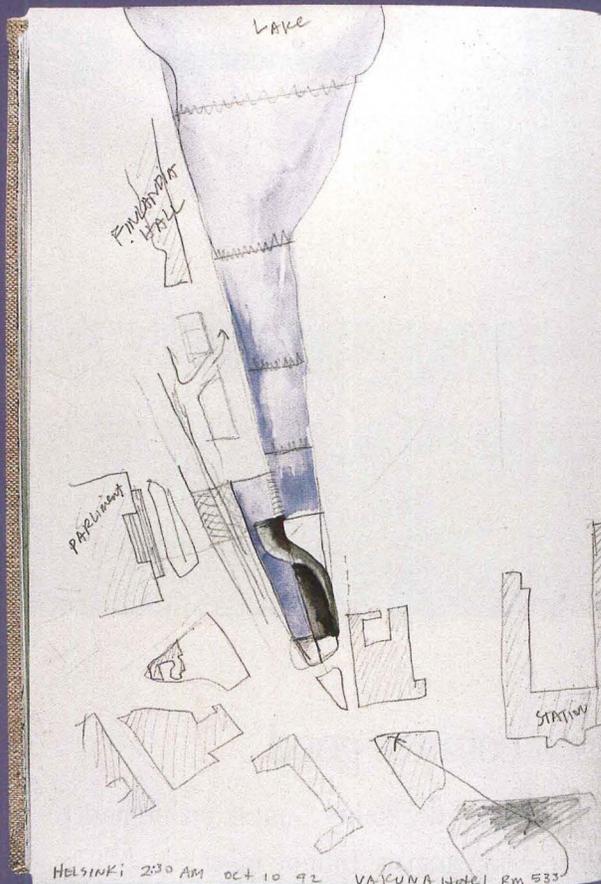
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Cover design by Julie Anne Yee.

FACING PAGE
Early sketch plan by Steven Holl for Museum of Contemporary Art, Helsinki (p. 74).

Features

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Production houses – their exteriors overblown, their interiors laden with dubious luxuries – are about as thoughtfully designed as Detroit's 1950s automobiles. Can architects improve them?

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In present-day Spain, Modernism's social program has reemerged. Representing this resurgence are four projects that synthesize craft, materials, and form to create an architecture of place.

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In its tasteful attempts to address through architecture the defining atrocity of the 20th Century, the Holocaust Memorial Museum by James Ingo Freed is perhaps too tactful for our own good.

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The architectural observations of Lewis Mumford, who would have turned 100 this month, are no less timely now than when he wrote them.

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In his competition-winning project for the Museum of Contemporary Art in Helsinki, architect Steven Holl has organized sequences of galleries into forms that mesh with their urban and natural context.

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If you think you know how to ventilate a wood roof, think again. Two architects debate the matter with Timothy Taylor, whose recommendations appeared in the May P/A.

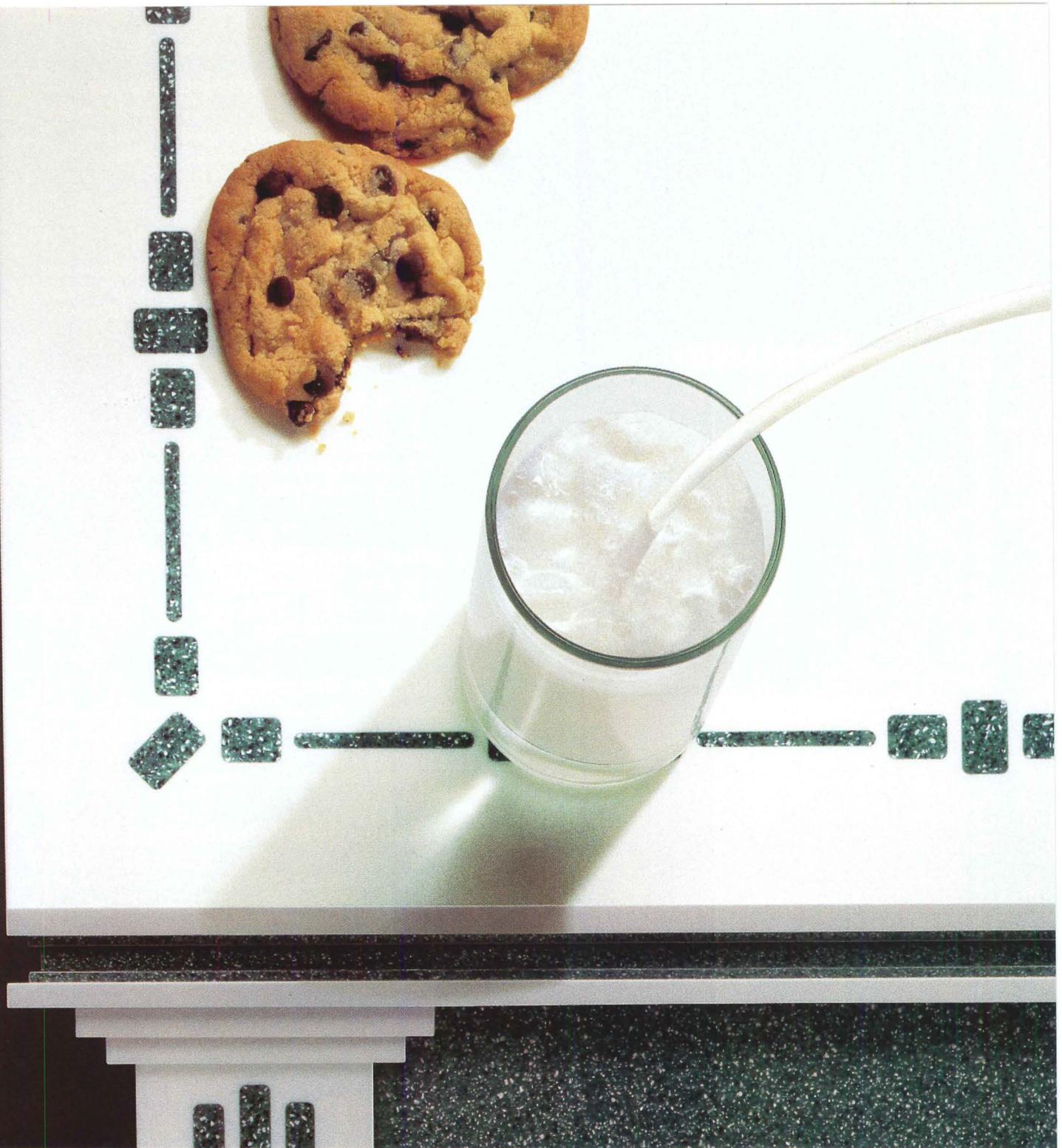
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Designing a roof that meets performance standards won't let the architect off the hook if something goes wrong, and it probably will.

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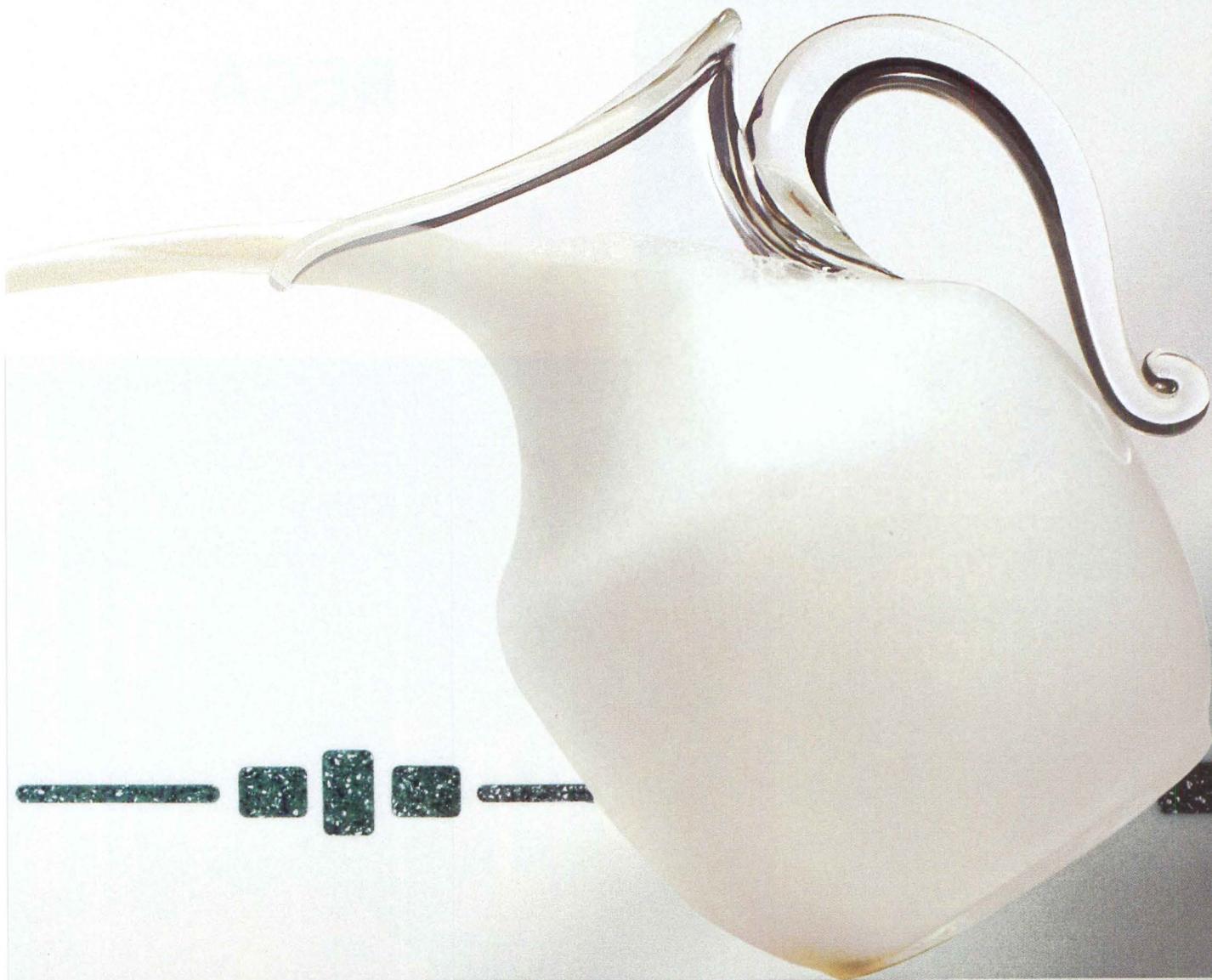


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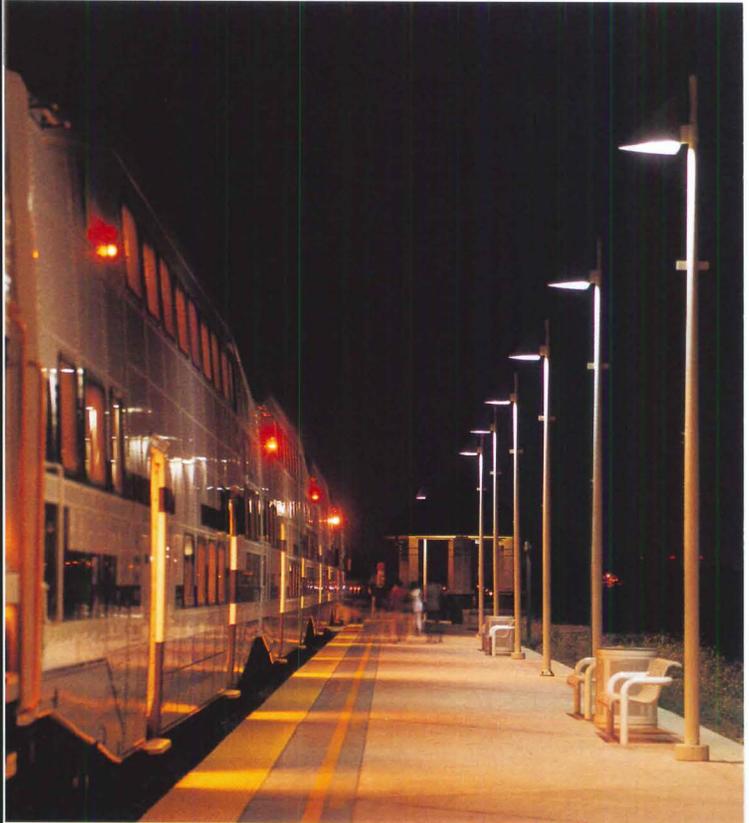
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Speaking of Architecture

"I wanted to be an architect," an acquaintance recently confessed, "but I couldn't handle the math." It is staggering to consider how many good architects there might have been had this math "problem" not gotten in the way. "Problem" is in quotes because I don't believe bad math skills have ever kept anyone from being an architect. More's the pity that someone who excels in verbal skills (the other half of the S.A.T. scores) shouldn't be drawn to the profession.

It is only after school and several years in practice that it becomes clear that verbal and written communication is critical in architecture (more important than math skills, one could argue). Many architects put "communication skills" at the top of their list of things they wish they had had more exposure to in architecture school. They had no idea how much time they would spend writing reports, proposals, marketing literature, and correspondence to consultants and contractors, or just talking on the phone. Presentations to clients or regulatory boards are nothing like the spiels required for the studio jury.

Yet, at the same time, there is a certain cult status to the image of the architect as the noncommunicative artist: "Let my architecture speak for itself." I remember one jury in school where the studio professor would not let us speak while presenting our projects. "Your drawings alone should tell us everything about your design," he declared. The discussion between jurors proceeded in a language that could be understood only by those initiated in "architalk." Indeed, much of our time in school was spent mastering the professional language that would mark us as architects, set apart from mere mortals. Usually we worked alone on our design projects, not in groups that would force us to communicate with each other. We also felt a certain pride in not spending much time in the library. Today, these characteristics of professional education, as far as I can tell, have only intensified. As architects we moan about the fact that we're marginalized in society. But why should anyone outside the profession care about what we think or what we can do if they can't understand what we're talking about, if we are incapable of discussing architecture and design in a way that makes it relevant to their own lives?

It is time for us to recognize the central role of good communication in the health of the profession, and time for us to promote it.

The public has become suspicious of those who shroud themselves in a professional lexicon. People now demand to be informed about how the decisions of professionals will affect their lives, and they seek to open that decision-making process for discussion. Other professions seem to be moving in a direction in which those who communicate best will thrive. The medical profession, for example, has made great strides in communicating with patients and their families. Physicians are more willing than they were just a decade ago to engage patients in frank discussions about their health. The explosion of information available through publications and computers has also made the public more savvy on health issues, which makes the dialogue with the doctor that much easier and more meaningful.

This social dynamic is also present in architecture. Today, architects find that their work comes under the critical eye of not only the client, but the building's potential users, neighborhood groups, and sometimes the public at large. Recent research by Dana Cuff and Tridib Banerjee (P/A, July 1995, p. 96) indicates that architects are often ill-prepared to explain to these myriad audiences the effect the work will have on their neighborhoods and their lives. Schemes run aground for lack of communication.

It is time for us to recognize the central role of good communication in our profession. We can start by attracting those whose verbal skills may be as sharp as their drawing ability. Courses in honing communication skills should be required, while studios should encourage the verbal and written communication of design ideas, with a minimum of architectural jargon. Architects might receive continuing education credit for improving their public speaking, or for the publication of letters and articles about architecture and design in public forums such as Op-Ed pages.

Ultimately, we need to celebrate the fact that everything we do as architects in some way touches the public, and that architecture's legacy through history has communicated – for better or worse – the culture's value system. The profession may find itself better equipped to further that legacy if, in the future, would-be architects don't make it into the profession because they just can't handle the verbal requirements. □



Michael J. Crosbie

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Views

Good Firms/Bad Firms

I read with interest your article "Good Firms/Bad Firms" (August, 1995, p. 57). My daughter is a senior in architecture at one of the major universities, and I have been amazed to see the kind of behavior you describe in your article. My personal career is directly involved with leadership development, team development, and corporate culture shaping. There is absolutely no doubt that corporations will not survive into the next century without strong, positive cultures.

James Champy and Michael Hammer started the reengineering revolution with the publishing of their book, *Reengineering the Corporation*, in 1993. In 1995, James Champy published *Reengineering Management - The Mandate for New Leadership*. In this new book, Mr. Champy makes the following statements: "The results are in: Reengineering works - up to a point." "The obstacle is management." "The only way we're going to deliver on the full promise of reengineering is to start reengineering management." and "The rules for governance for effective business enterprises today are being determined by their culture, not their organizational structure."

There is no secret about what a positive (and financially rewarding) culture should look like. We have a survey instrument that can measure the current culture of an organization and compare it to the cultures of financially successful (or unsuccessful) companies. This allows the leaders to begin working on their own management styles and team orientation to move the company toward a more positive culture.

I am convinced, based on what I have seen in the schools and what you have exposed in your recent article, that the architecture industry is, and will be, facing an increasingly difficult future and global competition. The industry had better get its act together.

Thanks for exposing this issue. It is essential that action be taken to begin correcting this trend.

Ron Potter

Orion International

Ann Arbor, Michigan

More Good Firms/Bad Firms

Your article "Good Firms/Bad Firms" is a refreshing break that I haven't seen in the architectural press in recent years. I admitted long ago that I am in the people business and they produce the architecture.

You have raised many questions in this article. I hope you do not stop there.

August Perez III, President

Perez Ernst Farnet

New Orleans

Vinegar and Granola

Do you drink vinegar for breakfast every morning? Perhaps you do, perhaps that is the only possible explanation for the arrogant, scathing, and snide tone of your article titled "Atlanta's Pragmatic Olympics" (P/A, July 1995, p. 51). And even when you attempted (for the sake of, dare I say it, balance?) to make positive observations about any aspect of Atlanta's preparation for the 1996 Olympics, there almost always followed a "but" clause pointing out how those positive elements were far outweighed by the aesthetic crime being committed.

Your comment about the Olympic Cauldron structure, "In this one symbolic instance, the Olympic authorities have opted for art, not from an architect but from an artist..." is ludicrous. Are you actually implying that there is something wrong with having gone to an artist for input? Just because the Cauldron is a "structure" does not automatically make it the exclusive domain of an architect. You, of all people, should appreciate this point (*continued on page 14*)

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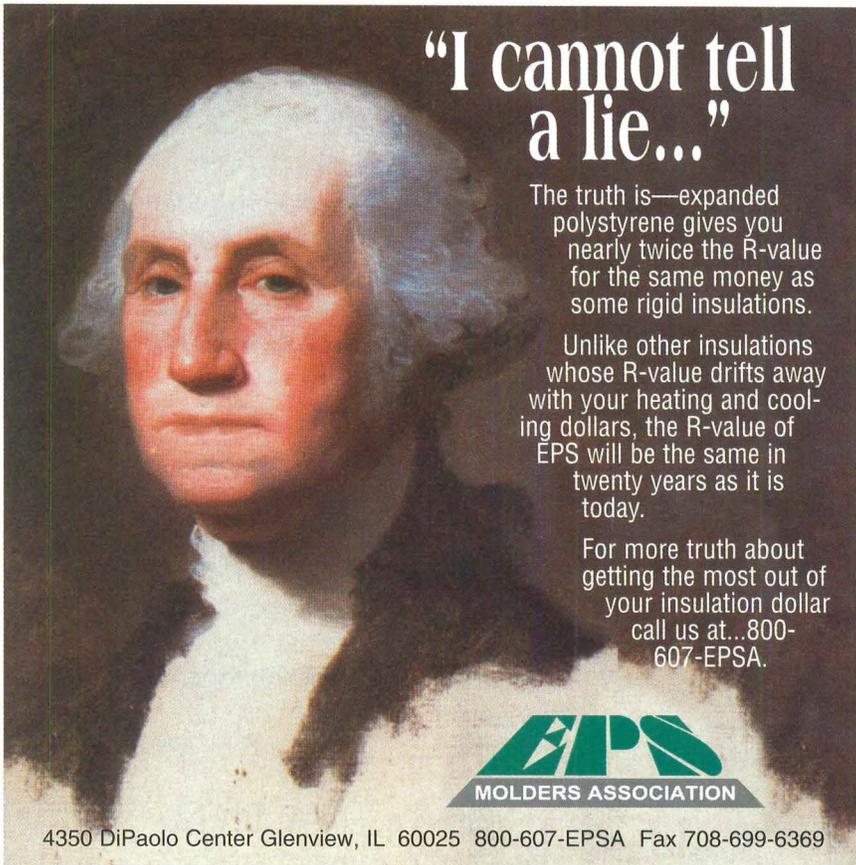
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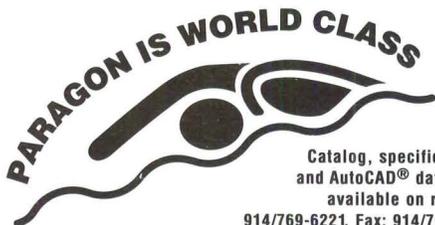


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Views

(continued from page 12) since the message of your article appears to be the inverse – that just because architects create structures, they need not be artless. If the architectural profession wants freedom to create art, then why shouldn't artists have the freedom to create structures?

At the end of your article you list four very positive attributes of “the Atlanta effort,” but of course, follow these with the negative observation that this effort “... will not demonstrate that economy and efficiency can best be served by design that breaks new ground.” Well, if that statement represents the totality of your grievance, I think it is safe to say that the rest of us – those without such delicate architectural sensibilities as yours – can continue to sleep at night.

Isabel Inguanzo

Atlanta

As a matter of fact, I usually have sensible granola for breakfast, but I could be tempted by something more festive for a special occasion. I don't object to the commissioning of Armajani for the Olympic Cauldron, although no comparably renowned architect was invited to do anything for the Olympics; I do find his effort, in this case, very disappointing. The sum total of my argument is that the Olympics call for exciting architecture, which could engage the public, not the granola that is being provided. – Editor

Liability

In the May 1995 issue, P/A carried a “Practice Note” (p. 34) regarding contracts, based on a California Court of Appeals ruling. I am pleased to report that the California Supreme Court has decertified the lower court's decision, thus restoring the legal value of limited liability clauses in California. While the precautions stated in the “Practice Note” are still valid, they no longer are absolute prerequisites to the endorsement of limited liability clauses.

Timothy Truax

**Thelen, Marrin Johnson & Bridges, Attorneys
Los Angeles**

CORRECTIONS

ANSI, Not ADA

In “ADA Solutions” (P/A, August 1995, p. 102), illustration number 2 depicts lavatory position per ANSI A117.1 standards, not ADA standards. Illustration number 3 depicts a bathroom plan complying with ANSI A117.1 and Fair Housing, but not ADAAG.

Kim A. Beasley and Thomas D. Davies, Jr.

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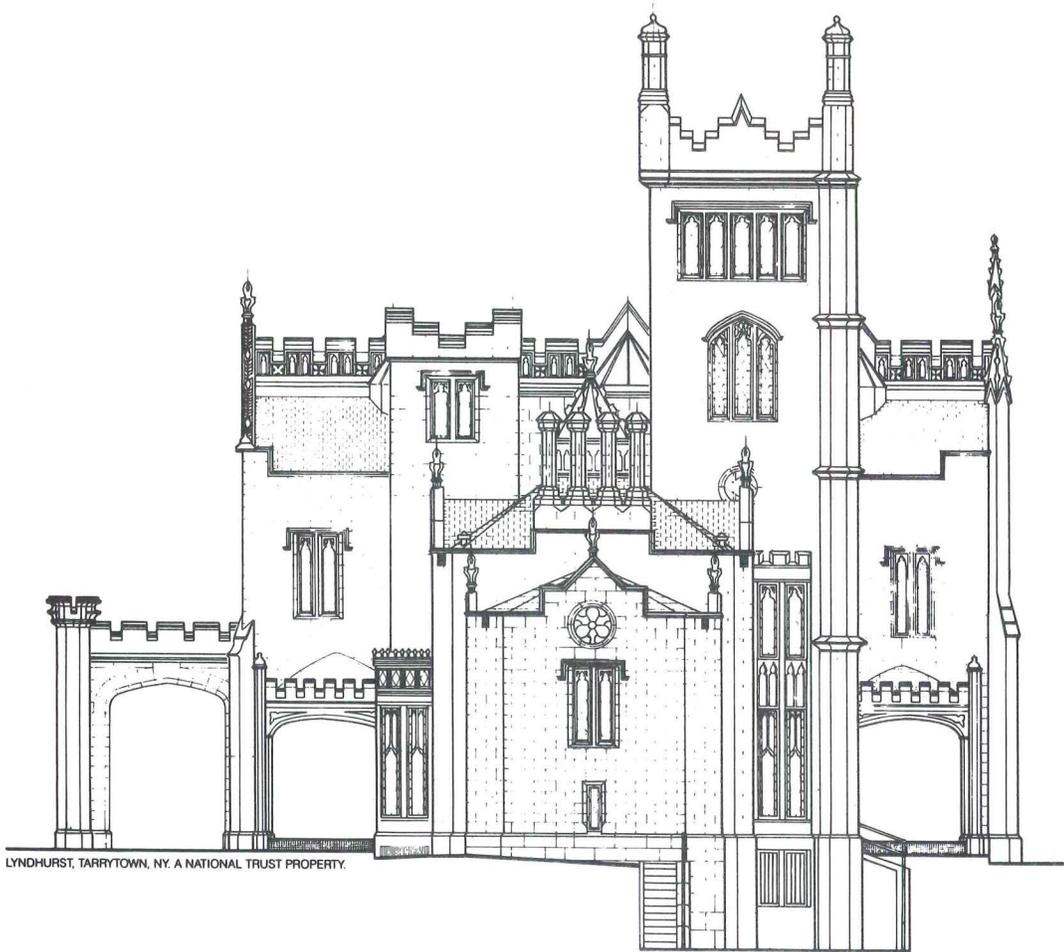
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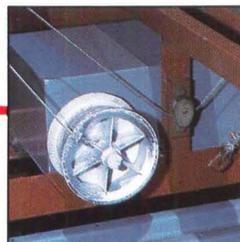
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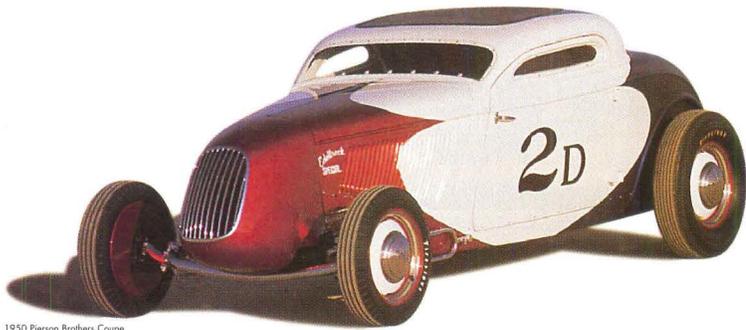
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Dance to Disney's Music

Celebration, the 4,900-acre new town near Orlando, Florida, being developed by The Celebration Company, a subsidiary of The Walt Disney Company, has opened its sales office, designed by Pentagram Design. Playing off the false fronts of Disney World, Pentagram had renderings of proposed houses in the new town enlarged to full scale and mounted on billboards (see below). Prospective home buyers enter through real porches, built onto the front of the billboards, to reach the rear sales office, with its "blueprint" flooring and its renderings and models of the new town.

Celebration is intended to be a model community, with a traditional town plan, a star-studded cast of architects designing buildings in its downtown (including Venturi, Scott Brown; Philip Johnson; Michael Graves; Cesar Pelli; Robert A.M. Stern; Graham Gund; and Cooper, Robertson), and such amenities as a Robert Trent Jones golf course, a fiber-optic telecommunications network, parks and nature trails, and a school and teaching academy that Stetson University will help run.

It sounds like utopia, but it raises the usual questions about the utopian suppression of individual differences or human disorder. As Orlando architect John Henry has asked, "Will Celebration be a totalitarian blueprint? Can a handful of self-appointed experts plan well enough for the lives of over 20,000?" If nothing else, history may see Celebration as a reflection of our era, in which the (necessarily authoritarian) corporation is seen as a model of how to run a (supposedly democratic) public sector. The development offers us the trappings of democracy in its architecture and town plan, but the urge to order and control every aspect of the place is also evident. Not a company town, since few Disney employees can afford to live there, Celebration is, instead, a place in which to "dance to the music" of a corporation that has a reputation, at least within our profession, for being ruthless. □



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The Plain Dealer, Cleveland, Ohio

On opening day, jubilant crowds thronged Cleveland's Rock and Roll Hall of Fame and Museum.

An Uncomfortable Fit in Cleveland

On September 1 Cleveland dedicated a shiny new institutional landmark, the \$92-million Rock and Roll Hall of Fame and Museum. Perched on the edge of Lake Erie, the building, designed by Pei, Cobb, Freed & Associates with I.M. Pei as principal-in-charge, opened to much acclaim, promising to put Cleveland on the international map of cultural tourism and to force it to become a world-class city. After the heavy boosterism and the opening's unrelenting media coverage – a truly modern ritual of inauguration – serious difficulties remain.

Originally the building was designed for a steeply banked site along the Cuyahoga River, and when the program expanded beyond the site's carrying capacity, Pei grafted the old design onto a location along the lake and shoehorned the excess program (approximately 75,000 square feet of exhibition space) beneath a podium that supports its stainless steel and glass top hat. Pei said he sought to "echo the energy of rock and roll," but this is a starched and pressed example of late Modernism, one that signifies, in its well-crafted Euclidean design, the conservative values of "the establishment" that rock and roll set out to confront.

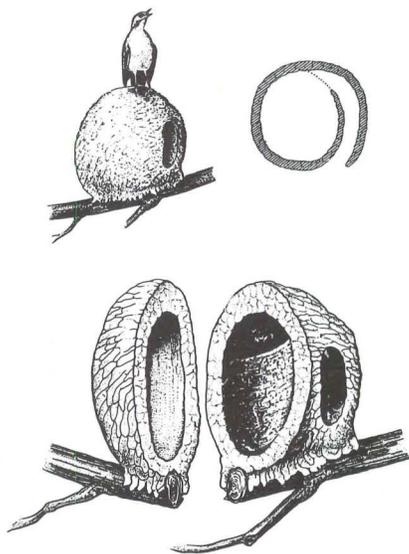
In addition to semiotic problems, the building's day-to-day operations are impeded by its inability to handle large crowds. As a survival technique, the museum has adopted a policy of selling timed tickets, with guards moving visitors along to prevent gridlock. Exacerbating the situation, the building is such a hermetic object that expansion will be difficult if not impossible.

The best decision was that of the planning director and other Cleveland officials who chose a strategic site that strengthens the attractiveness of Ninth Street – a classic urban avenue that links two vital districts: Gateway, home of the Cleveland Cavaliers and the Cleveland Indians, and North Coast Harbor, home of the Great Lakes Museum, Pier Park, the Cleveland Browns, and the new hall. Despite its disappointing architecture, the Rock Hall builds upon the planning initiatives and urban investments the city has made over the last 15 years, and it should help to stimulate more development in the future.

Michael Robinson

Michael Robinson is director of the Urban Design Center at Kent State University.

Books



Animal Architecture by Juhani Pallasmaa, Museum of Finnish Architecture, Helsinki, Finland, 1995, \$27.

This wonderful collection of structures built by animals is a catalog to an exhibit at the Museum of Finnish Architecture in Helsinki. It demonstrates that animals have been designing structures a lot longer than we have, tens of millions of years according to author and architect Juhani Pallasmaa. The long practice of animal architects, he points out, makes their creations perfect. "Animal constructions may surpass our achievements in their functionality, ecological adaptability, structural strength, efficiency of energy systems, economy, and precision." The examples are humbling in their ingenuity (termites create complex ventilation systems for their towering nests), strength (spider filament has a tensile strength three times that of steel), and beauty (as in the elegant mosaic of a marine bristle-worm's tube). Beyond the marvel of their creations, the architects of the animal kingdom have much to teach us. "The real beauty of animal architecture," writes Pallasmaa, "is its total integration into the life pattern of its builder, and to the dynamically balanced system of nature." (Shown above: drawings of a Red Oven Bird's mud nest.)

Ethics & Urban Design, Culture, Form & Environment by Gideon S. Golany, Wiley & Sons, New York, 1995, \$49.95

In the tradition of the biologist/geographer Patrick Geddes, this book argues for an ecologically based urban design that would take into account natural, cultural, and historical forces in the making of cities. Much of the book provides a useful and concise overview of the historical development of ancient and vernacular cities, but at the end it lapses into a pet interest of the author's: below-ground settlement. Here, the book violates its own argument by presenting as a universal answer something that has occurred in relatively few places (China, Northern Africa). A book that sounds level-headed at first, ends up on a strange and utopian note.

9H No. 9: On Continuity edited by Rosamund Diamond and Wilfried Wang, 9H Publications, Cambridge, Mass., and Oxford, England, distributed by Princeton Architectural Press, New York, 1995, \$42.50.

After a six-year hiatus, 9H resumes with a 288-page hardbound volume subtitled *On Continuity*. Dealing rather freely with that theme, the editors have gathered articles involving the continuity of design traditions, the integration of buildings with land, and the sensitive alteration of existing structures. The 28 individual pieces range from virtually textless photo essays to critical and theoretical essays – the two sometimes paired to cover the same project. With some notable exceptions, the writing is accessible. Among subjects chosen to demonstrate continuity are Sigurd Lewerentz's travel photos from Italy, successive renovations of Munich's Alte Pinakotek, Stirling and Wilford's Braun factory complex at Melsungen, and Richard Gluckman's Andy Warhol Museum in Pittsburgh.

Re: American Dream introduction by Richard Weinstein, Princeton Architectural Press, New York, 1995, \$19.95.

Subtitled *Six Urban Housing Prototypes for Los Angeles*, this book documents alternative housing proposals by local architects Janek Bielski; COA: Central Office of Architecture; Johnson + Favaro; Guthrie + Buresh; Mary-Ann Ray; and Roger Sherman. The projects, presented in an exhibition at the Municipal Art Gallery, address the inappropriateness of both the city's ubiquitous single-family tract house and its environmentally devastating development patterns for its culturally diverse population and multitude of family types. The proposed "Urban Houses" suggest a variety of densification, planning, zoning, and volumetric strategies that offer lessons beyond L.A.'s city limits.

Briefly Noted

Architectural Metals: A Guide to Selection, Specification, and Performance

by L. William Zahner, John Wiley & Sons, New York, 1995, \$89.95.

Covers maintenance and restoration techniques, weathering and corrosion characteristics, fabrication methods, and other subjects.

The Architect's Studio Companion, Second Edition by Edward Allen and Joseph Iano, Wiley & Sons, New York, 1995, \$54.95.

Updated technical reference, with enhanced tables and charts, ADA compliance information, and new structural data for columns and beams.

Asymptote: Architecture at the Interval by Hani Rashid and Lise Anne Couture, Rizzoli, New York, 1995, \$30.

Theoretical and real projects (all unbuilt) by the young New York firm, exploring architectural space in the "post-information age."

Decorative Tile in Architecture and Interiors by Tony Herbert and Kathryn Huggins, Phaidon/Chronicle, San Francisco, 1995, \$59.95.

History of tile, with an emphasis on 19th-Century advancements.

Obituaries

Abraham W. Geller 1912–1995

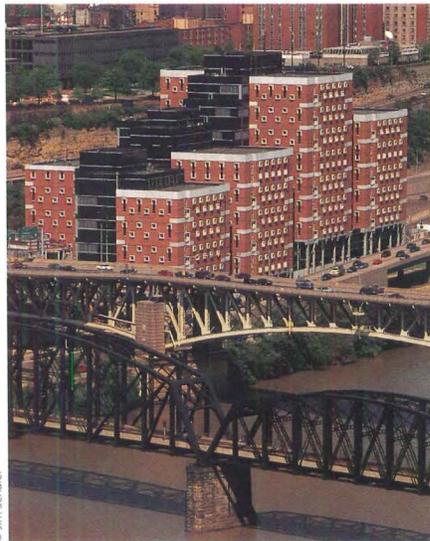
New York architect Abraham W. Geller died in Manhattan on August 14. Born in Romania, Geller came to the U.S. as a child, studied architecture at Cornell, and worked for such Modernist pioneers as William Lescaze, Walter Gropius, and Marcel Breuer. He opened his own small office in 1946 and executed a number of widely respected projects, including Cinema 1 and Cinema 2 (1962), piggy-backed movie theaters that initiated the multiplex movement. He was best known, however, for his nurturing of younger talents, his social idealism, and his dedication to Modernism. Geller gained media attention in 1985 when he used the occasion of receiving the New York Chapter AIA Medal of Honor to denounce Michael Graves's proposed addition to the Breuer's Whitney Museum, a scheme that was ultimately dropped.

David Taylor 1967–1995

David Taylor, a Yale architecture student who served as an intern at P/A for the summers of 1993 and 1994, died of cancer on August 24th in Boston. With a liberal arts degree from Brown University, David was a rarity – an architectural student who could write. He was also a rarity as a person: deeply reflective yet never dour, extremely capable but unassuming. He will be missed by everyone here.

SITE and Gehry Among Chrysler Design Award Winners

Chrysler Corporation is in its third year as sponsor of one of the country's few awards programs that recognize work in all the design disciplines. Sending the message that good design is not only good business but can improve the quality of our everyday lives, the corporation joined the San Francisco Museum of Modern Art in presenting "Subjects and Objects: The Chrysler Awards for Design Innovation," which opened in August. On display, in addition to work by the previous years' honorees, are projects by the 1995 winners: architect Frank O. Gehry; the environmental design firm SITE; designer Ralf Hotchkiss; the graphic design firm ReVerb; computer software designer Philip Zimmermann; and Robert M. Greenberg of R/GA Digital Studios, a commercial film and special effects firm. The work shown is uneven formally, but has in common a high level of design vision and invention. This year's jury was made up of Trevor Creed, David Kelley, William Mitchell, Chee Pearlman, Gaetano Pesce, Michael Rock, Brigitte Shim, and Michael Sorkin. The exhibition, designed by Michael Sorkin Studio of New York, is on view through December 3. □



© Jim Schäfer

Jailhouse Knock

Prisoners in Pittsburgh have been moved out of H.H. Richardson's Allegheny County jail and into a new \$147-million jail that has prompted complaints. The old jail and the adjacent county courthouse were completed in 1888, after Richardson's death, and the jail was remodeled in 1909 by Frederick Osterling. Its interior was reconstructed in the 1970s, but prisoners sued soon afterward, demanding relief from overcrowding, so a new jail (above) was ordered built.

Prison specialists L. Robert Kimball & Associates of Ebensburg, Pennsylvania, designed the replacement jail, with Tasso Katselas Associates of Pittsburgh responsible for the exterior and for construction documents. The 900,000-square-foot facility contains 1,800 cells divided into 35 pods, making room for 2,400 prisoners, compared with 1,400 at Richardson's granite fortress. A secure corridor will link the lock-up section for new arrests to a new Municipal Courts building below the Liberty Bridge.

Critics complain of excessive luxuries such as the two cable-equipped color TVs and eight telephones in each pod's day room, but officials say the jail simply meets federal standards. Critics also contend that rushed construction led to problems, including a malfunctioning electrical system, water leaks, false alarms from the guards' body alarms, unlit stairwells, generators that did not work, and missing electrical outlets for employees' computers. Jail administrators and the county's engineering and construction chief maintain that the problems are minor and typical of any new facility. Meanwhile, the county, with IKM architects of Pittsburgh, is planning to convert the old jail into 21 county courtrooms plus offices, at a cost of up to \$30 million. **Brian Butko**

Brian Butko is an editorial assistant at the Historical Society of Western Pennsylvania.

The Mall That Won't Admit It

In early September, Indianapolis unveiled Circle Centre, a mixed-use complex intended to infuse new lifeblood into downtown retailing by accommodating three large national chain stores and 110 specialty shops, restaurants, bars, and movies. The \$314.5-million project, designed by Ehrenkrantz & Eckstut Architects of New York, which also coordinated its development and master plan, contains 800,000 square feet of retail space plus parking facilities and – its most unusual feature – a pavilion called the Artsgarden, located over the intersection of Washington and Illinois Streets, designed to house concerts, exhibits, and other arts functions.

In a deal with preservationists, the city agreed to reuse 19 historic buildings that were spared demolition, along with nine other old façades that were dismantled, stored, and reinstalled. The complex thus consists of 32 new and old buildings orchestrated to give the impression from the street that this is not a monolith but a district that evolved through several historic periods. Nordstrom's is clad on its three prominent corner entries with three different vocabularies derived from Post-Modern revival styles. Promotional literature says the center's preserved façades function as entrances to interior spaces, yet in most cases they are blind façades or they serve merely as egress from fire stairs. The complex pretends to address the street but actually serves its own internal reality.

The highly touted Artsgarden, which sits on a pair of arches that diagonally span the intersection of Washington and Illinois Streets to facilitate vehicular traffic, is enclosed by telescoping metal and glass arches that align with the east-west axis of

Cars Yes, Daycare Maybe

New Jersey Transit has gone ahead with the construction of two massive parking garages that together will accommodate 3,500 cars near the Metropark train station in Iselin, New Jersey, rejecting most of a grassroots attempt to improve the garages' aesthetics and place nonautomotive uses such as stores and a daycare center in part of the ground floor. "We incorporated changes that were cost-effective, such as landscaping and lighting," said Frank Smolar, NJ Transit's director of facilities rehabilitation (see P/A, Aug. 1994, p. 17). "But some of the changes that were suggested to make the garage beautiful, to look like a building, were just too expensive." The New York office of Jung/



Robert A. Benson



Robert A. Benson

Top, the Artsgarden crosses an intersection. Above, Nordstrom's block with historic infill.

Washington Street, but it offers only blunt elevations from north and south. The structure is attached somewhat awkwardly to the northwest corner of Circle Centre, and a purported relationship to nearby Monument Circle is difficult to sense. The cost of Circle Centre goes beyond money: it includes a loss of architectural integrity and historic authenticity. **Robert A. Benson**

Robert A. Benson chairs the Miami University Department of Architecture.

Brannen Associates is architect, and Terminal Construction of Wood-Ridge, New Jersey, is contractor for the \$25-million project, awarded under a design-build contract. The transit agency is exploring whether "complementary improvements," possibly including daycare, cinemas, or recreation, should be provided on an unused portion of the site, on the Boston-to-Washington rail corridor. Assistant Executive Director Rick Richmond said the agency is considering how to make a better pedestrian connection from the station to the adjoining residential neighborhood. John P. Bergan, a planning consultant in Princeton, had argued for a more comprehensive redesign. □

Calendar

COMPETITIONS

Theater Awards

Deadline, submission: November 6
Theater projects completed after January 1, 1987, may be entered in the 1996 Architecture Awards Program of the United States Institute for Theater Technology. Contact USITT, 10 W. 19th St., Suite 5A, New York, NY 10011-4206 or Tim Hartung, Tel. (212) 807-7171. FAX (212) 5917.

Rome Prize

Deadline, application: November 15
The American Academy in Rome announces its 1996/1997 Rome Prize fellowship competition in the fields of architecture, historic preservation, landscape architecture, urban design and planning, and interior design. Contact Fellowships Dept., American Academy in Rome, 7 East 60th St., New York, NY 10022-1001. Tel. (212) 751-7200.

Awards for Architects in Europe

Submission deadline: November 24
The AIA London/UK chapter has announced its second annual awards program, honoring projects anywhere in the world designed by European-based architects. Contact Anita Kercheval, AIA London/UK, Tel. 44 171 930-9711 or FAX 44 171 930-9108.

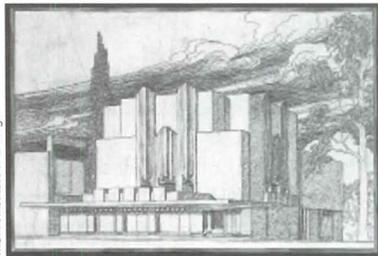
AIDS Memorial

Deadline, submission: November 25
This is an international competition for the design of an AIDS memorial in Key West. Contact Key West AIDS Memorial Competition, 1113 Fleming St., Key West, FL 33040. Tel. (305) 292-7722. FAX (305) 292-2162.

Traveling Fellowship

Deadline, application: December 11
The Steedman Traveling Fellowship is a \$20,000 award for foreign travel and study by an architect who received his or her professional degree up to eight years ago. Contact Steedman Governing Committee, Washington U., School of Architecture, Campus Box 1079, 1 Brookings Dr., St. Louis, MO 63130-4899. Tel. (314) 935-6293. FAX (314) 935-8520.

EXHIBITIONS



Two on the Prairie School

Milwaukee and Chicago.
Two exhibitions on the Prairie School are: "Prairie School Collaborators: Frank Lloyd Wright and George Mann Niedecken" at the Milwaukee Art Museum, Oct. 6–Feb. 4, 1996, and "The Prairie School: Design Vision for the Midwest" at the Art Institute of Chicago, Oct. 14–Jan. 7, 1996. (Shown above, from the show in Chicago: proposed Ascot Theater, Melbourne, Australia, 1923, by Marion Mahony Griffin and Walter Burley Griffin.)

Robert Moses's New York

Through December 8
PaineWebber Art Gallery, New York.
An examination of the city planner's projects and influences, this show covers his work from the 1930s through the 1960s.

Paolo Soleri

Through December 17
Chicago Athenaeum, Chicago.
This retrospective marks the 25th anniversary of Soleri's Arcosanti, an "ecologically correct" community in the Arizona desert.

Modern Black Design

October 15–January 2, 1996
Internet site: <http://www.cyberstore.ca/FosTech/Summers/exhibit.html>
Design by or relating to African-Americans and others of African descent will be on the Internet.

Architectural/Design Multimedia Studio

October 26–31
Art Club Gallery, New York.
"Using Computer Technology in Design Visualization and Presentation," sponsored in part by Autodesk, is an exhibit and an open studio for rendering and animation products. Contact Edge Media (212) 674-6174.

CONFERENCES

Preservation Technology

October 29–November 5
Washington, D.C.
The annual international conference of the Association of Preservation Technology will cover national preservation policy and how it affects rehabilitation projects. Contact APTI 1995, PO Box 16236, Alexandria, VA 22302-9998.

InterPlan Contract Furniture Show

November 1–3
New York, New York.
InterPlan includes educational seminars and a trade show. Contact InterPlan, Tel. (800) 950-1314 or (212) 869-1300.

Sustainable Design and Development

November 2–3
Atlanta, Georgia.
Issues and techniques for building sustainably will be discussed at "Designing for the Global Environment." Contact Georgia Tech Continuing Education, Tel. (404) 894-2547. FAX (404) 853-0117. E-mail: conted@gatech.edu.

Rethinking the City

November 10–11
Baltimore, Maryland.
"Rethinking the City: Conservation, Preservation, and Innovation" will consider the influence of global technologies on the city. Contact Center for Architecture and Urban Design, Maryland Institute, College of Art, Tel. (410) 225-2219.

Feminism, Design, and Technology

November 16–18
Graduate School/CUNY, New York.
"Re-Visioning Design and Technology: Feminist Perspectives for a Changing World" includes a public forum, Nov. 16, and a conference, Nov. 17–18, with panelists from the design disciplines, engineering, and information technologies. Contact Joan Rothschild, Center for Human Environments, Graduate School and University Center/CUNY, Tel. (212) 642-2962. FAX (212) 642-1986.

Practice Notes

U.S. Firms Rank Large Globally

Seven of the world's ten largest architectural firms are based in the United States, according to a survey by the publication *World Architecture*. They are Gensler, HOK, NBBJ, SOM, RTKL, Callison, and Ellerbe Becket (listed in descending order by size). Two Japanese design/build corporations, Kajima and Nikken Sekkei, and a Swiss firm, Suter & Suter, are also in the top ten. Among 200 firms worldwide, U.S. firms rate high in average fees per architect. For more information, contact Elisabeth Conway at *World Architecture* in London: 44-171-470-7000, fax 44-171-470-7007.

Regaining 1980s Profits

Just as the U.S. economy has started to cool, profits for design firms, reports the *Professional Services Management Journal*, have "essentially returned the profession to the levels of the 1980s." Median operating profit is up 23 percent over 1994, net revenue per technical staff person is up 11 percent, and the backlog of work is up 43 percent. To order the 1995 *PSMJ* Financial Statistics survey (for \$243 including shipping and handling), contact Michael Hughes at (617) 965-0055.

Technics Notes

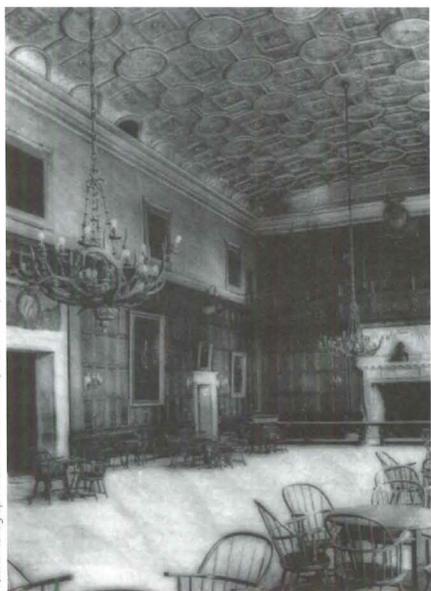
Material Assessment Software

A new software package makes it easier for architects to assess the environmental impact of building materials over the lifecycle of a project. *Athena* software can analyze 35 building materials as used in a variety of ways in buildings. It generates a detailed breakdown of the energy and raw materials used to manufacture the material, its emissions, solid waste, liquid effluent, and the damage to local ecosystems from mining, logging, and other extraction processes. Materials and assemblies can then be compared. Contact: Jamie Meil, JKM Associates, 8 Granville Ave., Ottawa, Ontario, Canada K1Y 0M4; phone (613) 722-8075; fax (613) 722-9628; e-mail: jkm@mail@fox.nstn.ca.

Where to Buy Metric

A directory of manufacturers of building materials and equipment sized and labeled in metric units is available from the U.S. Metric Association. The *Metric Vendor List* is a \$40, 150-page source that lists more than 1,400 manufacturers and their metric products, addresses, and phone and fax numbers. The association also publishes the bimonthly *Metric Today*. For more information, contact U.S. Metric Association, 10245 Andasol Ave., Northridge, CA 91325-1504; phone and fax: (818) 368-7443.

McKim, Mead & White Sacrificed



From *A Monograph of the Works of McKim, Mead & White, 1879-1915*.

Interior of the dining hall in the Harvard Union, soon to be carved up.



Laura Fieber, Photographer

Can Do CANstruction

CANstruction, a design/build competition in which architects, engineers, and designers erect structures out of canned and boxed food and then donate it to local foodbanks, began in New York two years ago. Last year, the event spread to other cities, including Denver, Seattle, and Fort Lauderdale, and this year Boston, Chicago, San Antonio, Hampton Roads, Virginia, and Connecticut are expected to join the list of places holding competitions. The third annual event in New York, sponsored by the New York chapters of the AIA and the Society of Design Administration and the Decoration & Design Building, will take place November 8th. The entries will be on view in the D&D Building November 10-17. Last year's competition collected 25,000 canned goods from 24 participating firms. With lots of press coverage, CANstruction has emerged as a way for the design professions to do good while getting exposure for what they do best: design and build. Above is Helpern Architects' entry, "Food, Shelter, and Community," in last year's New York event. □

The only grand interior McKim, Mead & White designed at Harvard, a 94'x 40' hall in the Harvard Union building, is to be split into pieces. The 30-foot-tall vaulted space, completed in 1902 and used for decades as the freshman dining room, is to be divided into two meeting rooms, beneath a floor of offices the university intends to insert for the humanities faculty. The designers of the reconfiguration, Goody Clancy & Associates of Boston, propose a skylighted staircase that would extend from the basement through the dining hall to the roof of the five-story building. (A staircase near the building's entrance would be removed.) The dining hall would be discernible only in the paneling and monumental fireplaces; McKim, Mead & White's cornice and vaulted ceiling would be gone.

Architectural historians, including alumni, have decried the loss and challenged the plan's feasibility. Harvard and Goody Clancy have replied that space

shortages at the university require the subdivision of the hall to supply a long-awaited home for humanities faculty and graduate students scattered across campus and beyond. Ironically, Philip Parsons, director of planning for the Faculty of Arts and Sciences, proposed the dining room's reconfiguration as a trade-off for the \$25-million restoration of Memorial Hall by Venturi Scott Brown and Bruner Cott, a project calling for conversion of that Ruskinian Gothic masterpiece into Harvard's next freshman dining hall. Parsons said the school faced "a choice of which great hall to preserve." The Arts and Sciences faculty has avoided commissioning new buildings in recent years, instead hiring architects to reshape interiors for better utility. The resulting preservation work has won many accolades, but in the current instance, Leland Roth, author of a leading monograph on McKim, Mead & White, declares, "This is saving the humanities by destroying them." **Philip Arcidi**



Jean Barber

AIA Diversity Conference: Beyond Just "Talking the Talk"

Participants in "Building Bridges: Diversity Connections," the AIA's Second Annual National Diversity Conference held in San Francisco this summer, demonstrated through their energy, vision, and commitment that diversity in architecture can only invigorate the profession.

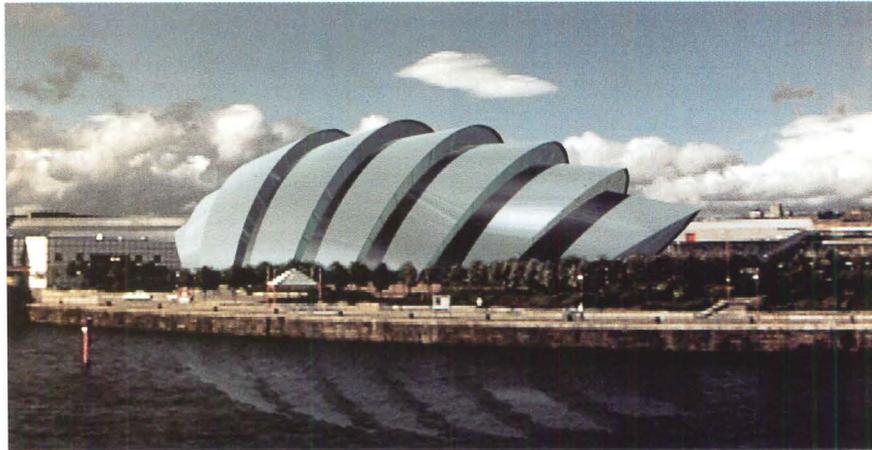
Although the program was uneven (a panel called "Women and Men: Duality or Diversity" included two women presenters and not one man, except for the moderator), the conferees offered proposals for better working conditions and ways to improve opportunities for advancement, initiate mentoring programs, and promote new forms of leadership. The proposals, which the conferees have asked national AIA to address and require of its members, would not only improve conditions for minority, women, disabled, and gay and les-

bian architects, but would benefit the profession as a whole. A suggestion was also made to encourage the schools to include multicultural studies in design curricula.

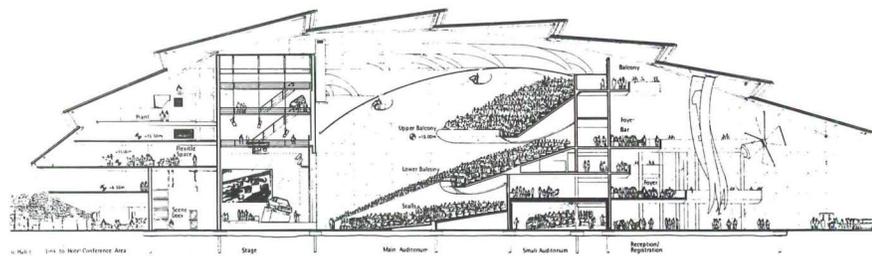
The conference provided a forum for discussing many constructive ideas about improving equity in the profession. But what is really needed, said more than one conferee, is a program for getting the larger message to those who did not attend. One suggestion was to hold diversity sessions at the national convention. It's a good idea, but not as effective as AIA adoption of the proposals. As San Francisco architect Regina Davis, a member of the AIA National Diversity Committee, put it, talking about these issues is essential, but it's time to start "walking the walk." (Shown above is Sharon Sutton's "Power and Empowerment" workshop.) □

The Shell Game

Cities, in the battle for world recognition and for tourist and convention dollars, often look to architecture to provide a memorable symbol. In this, the city of Glasgow, Scotland, is no exception, evidently pleased with the design by Sir Norman Foster & Partners and Ove Arup & Partners, for a £30-million (\$19.46-million) conference center next to the river Clyde. Containing a 3,000-seat auditorium, with lobby, flyspace, and backstage facilities, the building has a series of telescoping steel-framed vaults that wrap over the internal functions, recalling the shells of the Sydney opera house. Already labeled "the armadillo" by the public, or "the opera louse" by some journalistic wag, the Foster/Arup design seems well on its way to becoming an equally iconic image for Glasgow.



COMPUTER RENDERING, VIEW FROM THE SOUTH

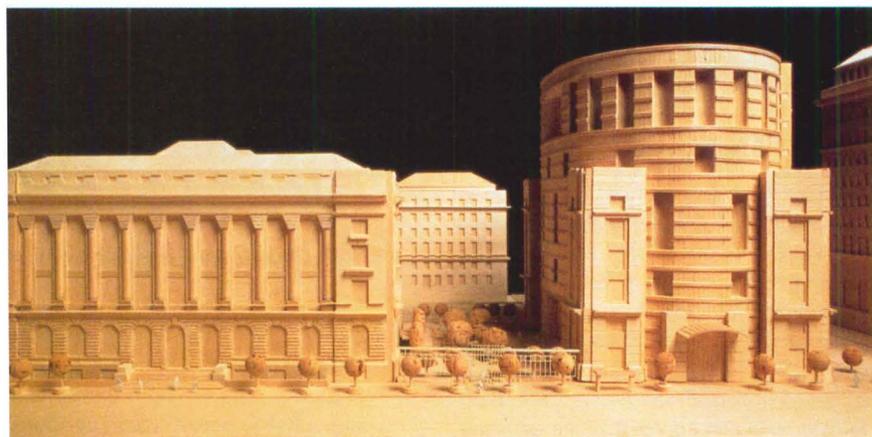


SECTION

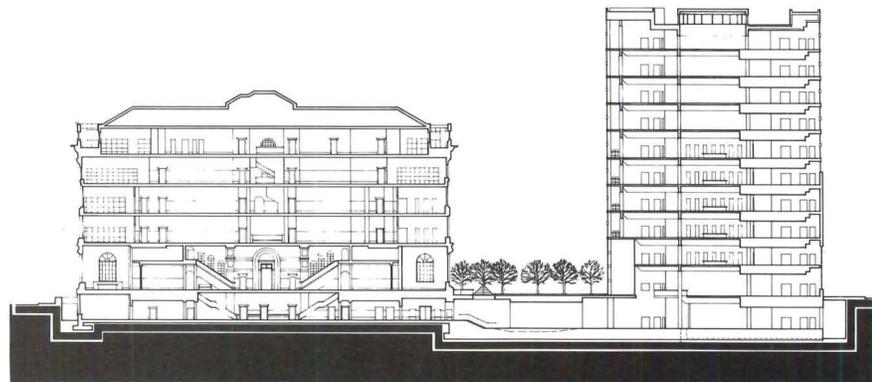
40/12m

A Tower Versus a Block

The competition-winning scheme of New York architects Hardy, Holzman, Pfeiffer Associates and the Cleveland firm of URS Consultants, for a 250,000-square-foot addition to Cleveland's Beaux-Arts public library is under construction. The initial design intruded into the garden next to the existing library, but public outcry led to the current scheme, which preserves the open space. The design has a 10-story oval tower, the height of the Neo-Classical Federal Reserve Bank across the street, with corner brackets that continue the cornice and the beltcourses of the adjacent library block. This combination of a Modern oval tower and a vaguely Classical block is well-intentioned, referring, say the architects, to the "traditions" of the library and the "technologically advanced society ... (of) tomorrow." The mix, however, never really jells; with so stark a contrast between the tower and its brackets, the two seem to intrude upon each other, symbolic, perhaps, of the coming struggle in libraries between a past of print and an electronic future. Construction is expected to be completed next summer.



Courtesy of HHPA



SECTION

40/12m

San Francisco Public Library: A Confused Symbol

The new San Francisco Library, scheduled to open next April, is an example of good intentions gone awry. A competition-winning design by Pei Cobb Freed & Partners, New York, and Simon Martin-Vegue Winkelstein Moris, Associated Architects, the main library completes the Beaux-Arts master plan of the city's Civic Center, a product of the City Beautiful Movement. While the new building anchors the south side of the Civic Center, creating with the original library a grand forecourt to the city hall, its design raises questions about the role of civic architecture.

The new library is designed to be a bridge between the past and the future and between the civic and the commercial districts of San Francisco. The result is a building that addresses too literally the diversity of its context and constituency. An L-shaped bar, which contains the open stacks and faces the Civic Center to the north and the west, is clad in a Neo-Classical curtain wall, reflecting the design and the part of the original library of 1919. In contrast, the south and east sides, which face the commercial part of the city and house the electronic functions of the library, are contemporary: the south side has a Post-Modern granite façade, its entrance marked by four large-scale windows; and the east side is a steel-clad assemblage with a curved roof. The only thread tying the façades together is a 3' x 3' grid; likewise, banners will be hung to mark the library's three entrances.

Inside, the 376,000-square-foot building is as complex as its exterior, due in part to myriad programmatic requirements and size and scale limitations. Organized around a five-story atrium and a discontinuous great staircase, the plan of the library is complicated by three axes (two relating to the Beaux-Arts master plan of the Civic Center and one following the irregular diagonal of Market Street). The atrium, which is interrupted by a projecting periodical room on the fourth floor, will bring light deep into the library's mid-section, but the diagonal and rectilinear axes have created awkward spaces and disjunctures in the plan.

With a densely packed interior (designed by the architects, the associated architects, and Kwan Henmi) and a multifaceted exterior, the new library succeeds in responding to the complexities of the contemporary city and the modern library, but, bowing to these competing forces, fails to provide a coherent common ground.



AERIAL VIEW LOOKING WEST

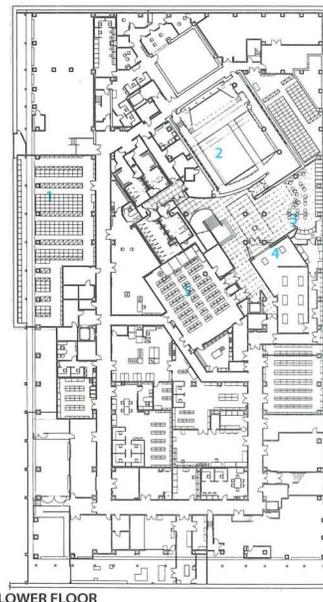


"CIVIC" FAÇADES, LOOKING SOUTHEAST



"COMMERCIAL" FAÇADES, LOOKING NORTHWEST

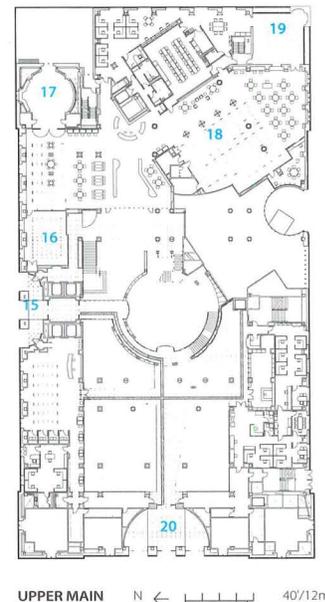
- 1 COMPACT STACKS
- 2 AUDITORIUM
- 3 CAFE
- 4 GALLERY
- 5 COMMUNITY MEETING ROOM
- 6 INFORMATION DESK
- 7 RESERVE DESK
- 8 BOOK RETURN
- 9 GROVE STREET ENTRANCE
- 10 DEAF SERVICES
- 11 BROWSING
- 12 CATALOGUING
- 13 WORKROOM
- 14 COMPACT STACKS
- 15 FULTON STREET ENTRANCE
- 16 CHILDREN'S COLLECTION
- 17 STORY TELLING ROOM
- 18 CHILDREN'S BOOKS AND READING AREA
- 19 CHILDREN'S TERRACE
- 20 LARKIN STREET ENTRANCE



LOWER FLOOR

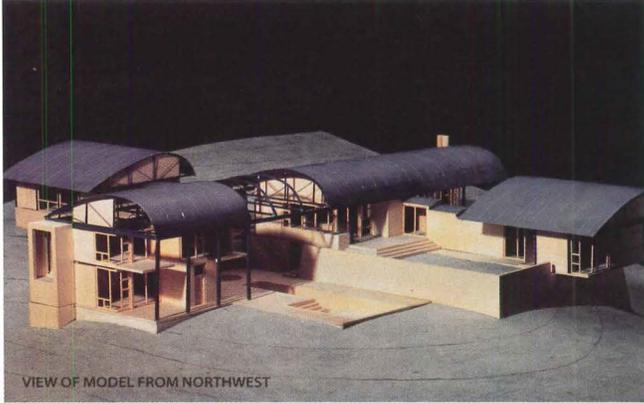


MAIN FLOOR



UPPER MAIN FLOOR

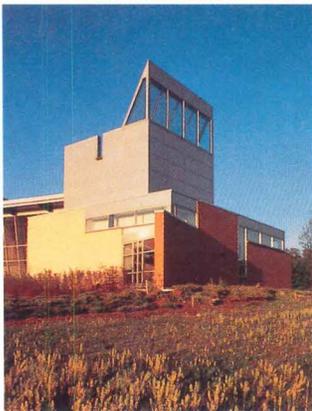
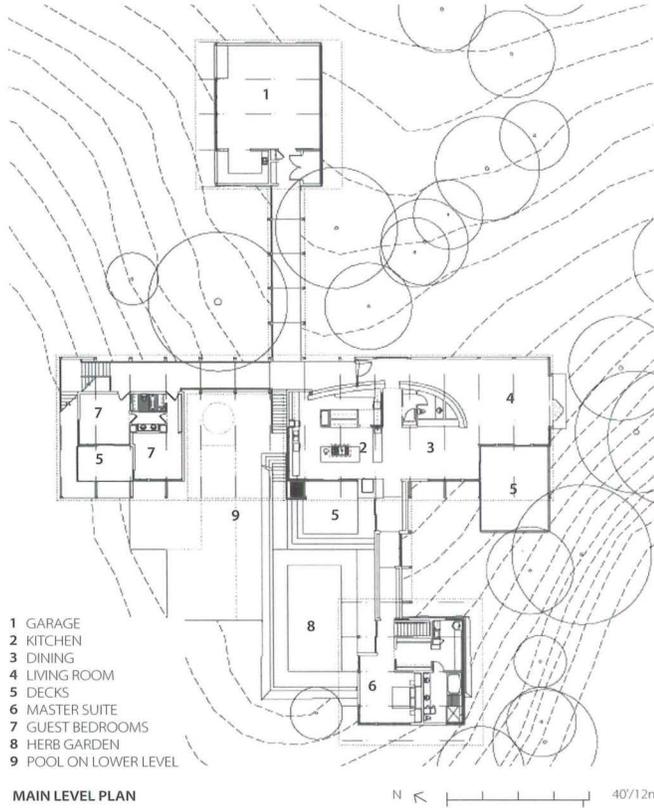
N ← 40/12m



Barry Robinson

Living Lightly on the Land

This 6,000-square-foot house on sloping wooded land above the Napa Valley in California, uses the site's volcanic "toofa" stone for the pool and retaining walls. Steel bow-string trusses and projecting curved metal roofs provide protection from the intense sun. Designed by Lundberg Design of San Francisco, the steel-framed structure has a pinwheel plan, with a central living/dining/kitchen space off which spin pavilions containing a master bedroom, guest bedrooms, and a three-car garage. To minimize its effect on the topography and vegetation, architect T. Olle Lundberg has placed much of the house on galvanized steel I-beams set on concrete piers. Decks, balconies, and covered walks also maximize useable outdoor space.



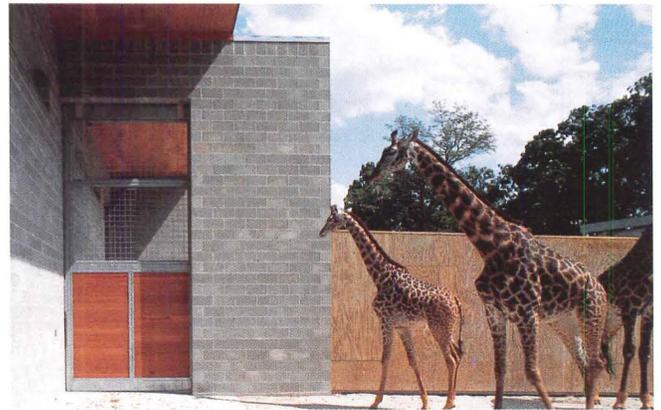
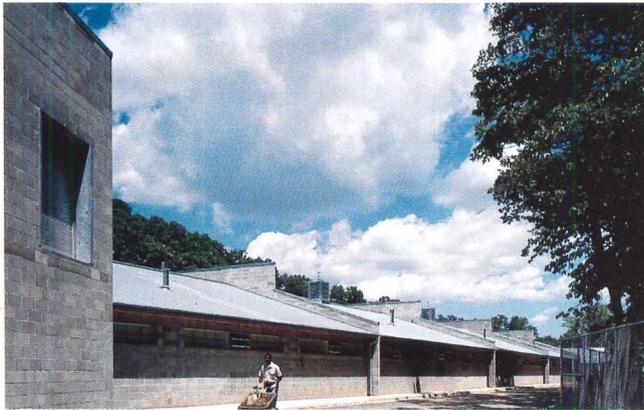
Photos: Robert Burley/Design Archive

Building Community Relations

The new headquarters of the Ontario Provincial Police occupies a 60-acre site of rolling hills and rock outcrops, overlooking two lakes. The 53,000-square-meter (174,000-square-foot) building, designed in a joint venture by Dunlop Farrow Architects and W.M. Salter + Associates of Toronto, sits on a spot that roughly marks the transition from Southern to Northern Ontario, and is intended to mediate between the police and the public. The police force is noted for its community-oriented approach to law enforcement, and this \$74 million building includes a library, a museum, an auditorium, a cafeteria, and a daycare center open to the community, as well as facilities devoted to police work. The architects separated the community services into wings connected by an interior public street and separated these wings from the police facilities, thus maintaining security.

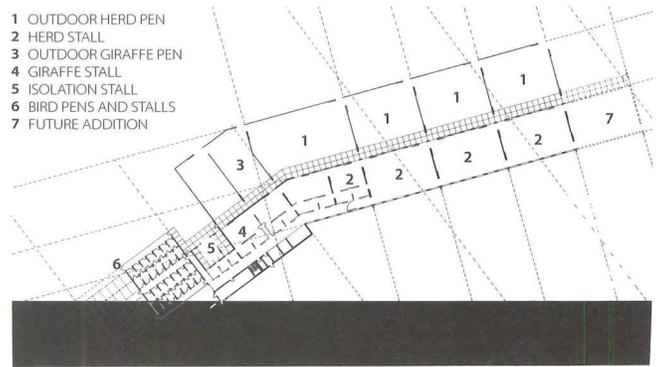


Photos: Assassi Productions



Animal House

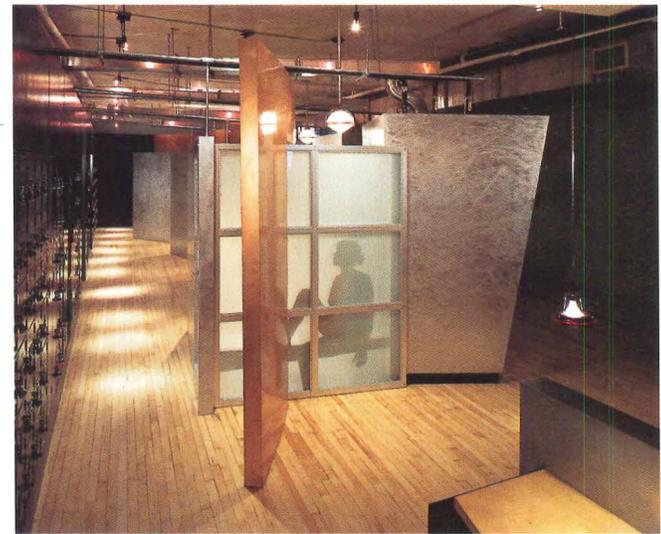
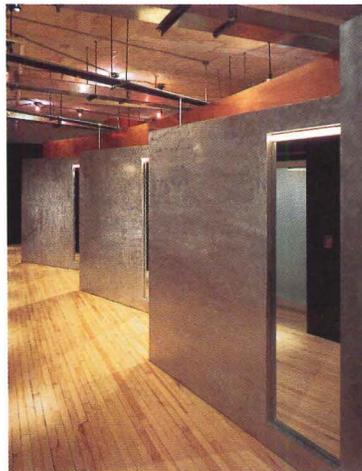
The African Plains Barn Building at the New Kansas City Zoo is a non-public facility that houses species from giraffes to birds. The 29,640-square-foot building and 35,800-square-feet of exterior holding areas, by International Architects Atelier of Kansas City, Missouri, was designed to disappear into the site's natural setting, out of public view. Its basic palette of materials (concrete masonry blocks, galvanized steel, and wood) are left in their natural state; its long, barnlike form, cranked at one end, is divided into bays with the use of walls that pierce the roof. The architects have given the animals and their caretakers much more than is typical for a building not meant for public consumption. It's almost a shame that it's so well hidden.



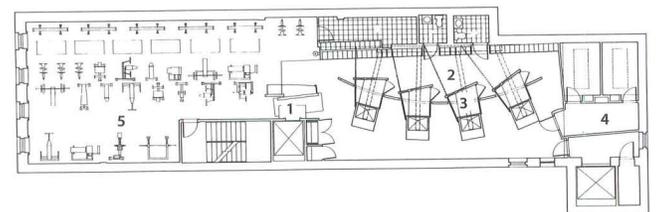
FLOOR PLAN N ↑ 100/30m

Pumping and Posing

Winner of a 1994 AIA New York Chapter Design Award, the Definitions Fitness Center in Manhattan's Flatiron District is not for the timid. The second of three health clubs designed by Thanhauser & Esterson for the same client, it focuses on the voyeuristic nature of the gym. Typically, health clubs have common changing areas lined with lockers, but Definitions has subverted this convention: occupants of the individual changing cabanas may be viewed in silhouette via translucent glass panels that are held in burnished aluminum frames, taking to a new level the opportunity to see and be seen. The result is both anonymous and distinctly personal. While the cabanas are surely the main event, the architects also play on other notions of exposure (the ductwork and the electrical and water supply lines are not enclosed) and of movement (a curving, copper-clad wall connects the changing rooms). In contrast, the club's massage rooms are concealed behind a wall of maple and cherry panels.



Photos: Brian Rose



FLOOR PLAN N ↑ 20/6m



SECOND FLOOR PLAN

- 1 BIOLOGY
- 2 PHYSICAL SCIENCE
- 3 PREP SPACE
- 4 STUDENT PROJECT LAB

Fun With Science

Faced with a booming enrollment, the Niles West Township High School in Skokie, Illinois, turned to O'Donnell Wicklund Pigozzi and Peterson Architects of Chicago to add to an existing facility – a long, rectilinear block. The resulting science wing, which includes 14 new classrooms and support space, is like an exclamation point at the end of the school, canted 20 degrees to better utilize the shape of the site. The angled addition, playing off the geometry of the original building, creates a

wedge-shaped plan that allows classrooms to occupy the periphery of the block, while support areas and storage are found at the center. Corridors open at the triangle's three corners to allow casual interaction and congregation among the students and the faculty. The exterior employs bold forms and angles, acting as a "metaphor of science as a discipline embedded in history yet thrusting into the future," say the architects.



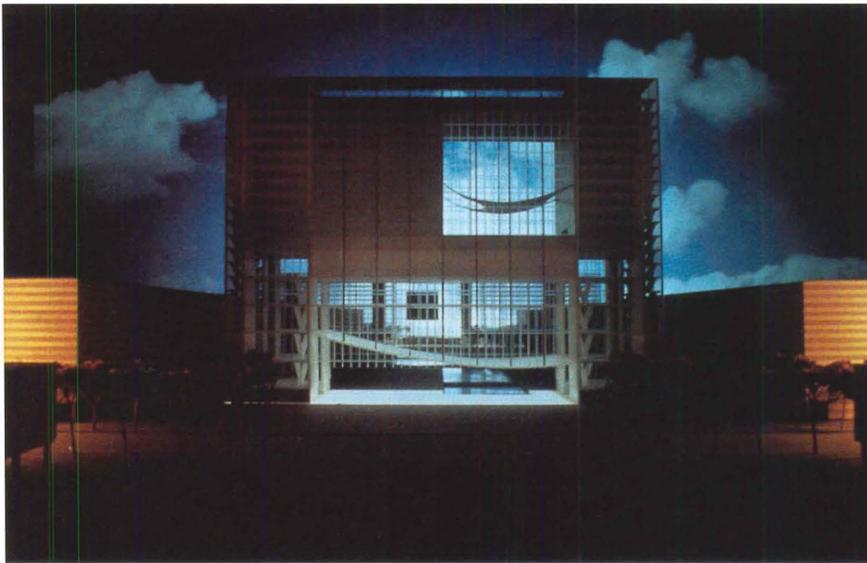
SOUTHEAST CORNER

Timothy Hursley/The Arkansas Office



CORRIDOR LOUNGE

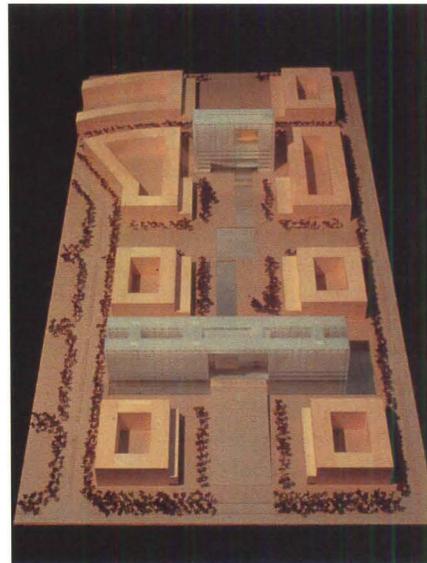
Barry Rustin Photography



Competition Winner for Taiwan Civic Center

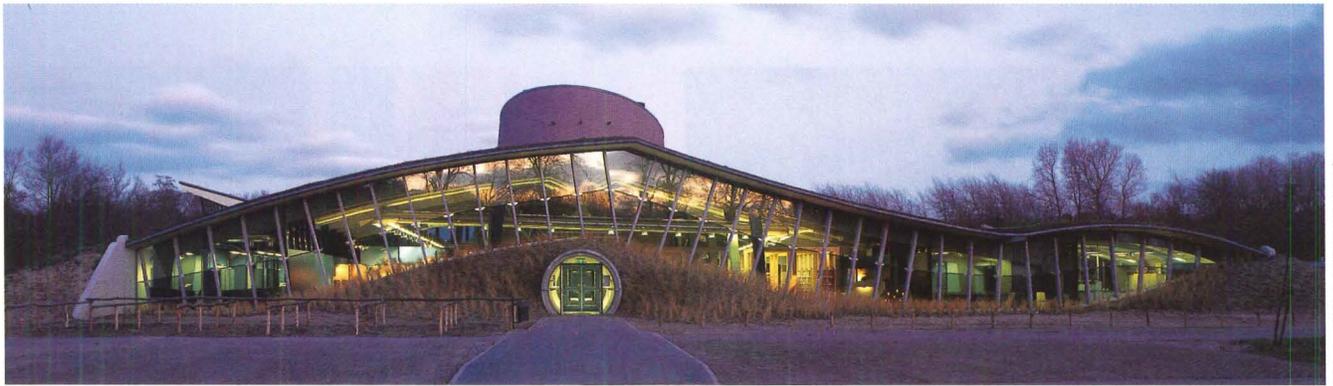
A Zurich firm has won an international competition for the design of a new civic center for the Western Taiwan city of Taichung. A scheme by Weber + Hofer Architects was selected from a field of 130 entries. Second prize in the design competition went to HNTB Architects of New York. Taichung – one of the country's fastest growing urban areas – has

set aside a 107-hectare site to develop a civic center that will include housing, commercial use, a plaza, parks, and two major government buildings. Weber + Hofer's design is based on the theme of two gateways, symbolized by the government and the city council buildings. The two – one, vertical in form, the other, horizontal – are at opposite ends of a large



MODEL OF MASTER PLAN

public plaza with reflecting pools. "We wanted to make democracy visible in the project," wrote the architects of their design, "to display the place where the decisions of government are made." A glazed void in each of the buildings frames views of the complex.

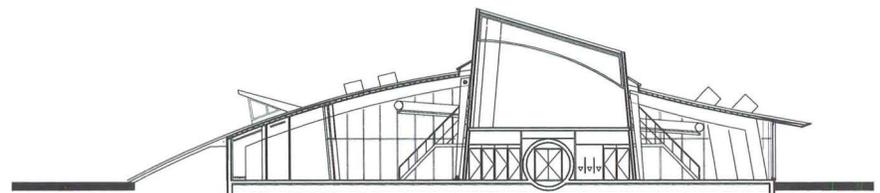


All photos © Sjanak Henselmans Fotografie

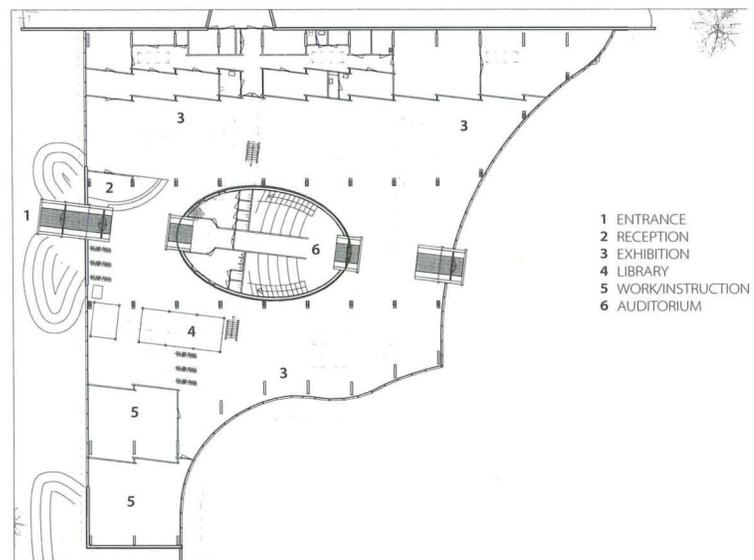


Learning from the Landscape

Designed as an artificial dune, the De Hoep visitors' center in Northern Holland is an educational facility commissioned by the regional waterworks company. Architect Maarten Min and conceptual artist Jetty Min-Kauffmann of Min 2 Productions, Bergen, Holland, have meshed the rawness of Organicism and the functional form-making of Modernism with the architecture of nature. Formed in unison with an existing outdoor exhibition of dune flora, the sand-dune-shaped building metaphorically represents the activities of the waterworks company, both above and below the ground. The grass roof, supported by laminated wood joists, is punctured by a freestanding conical volume that contains a cinema, a technical room, and bathrooms. Similar to a root system, ducts carrying mechanical and electrical services grow from the central cone. Natural light is brought into the building through a skylight around the cone and through several dormers. The building also houses a permanent exhibition, temporary exhibition space, classrooms, a library, offices, and service spaces.



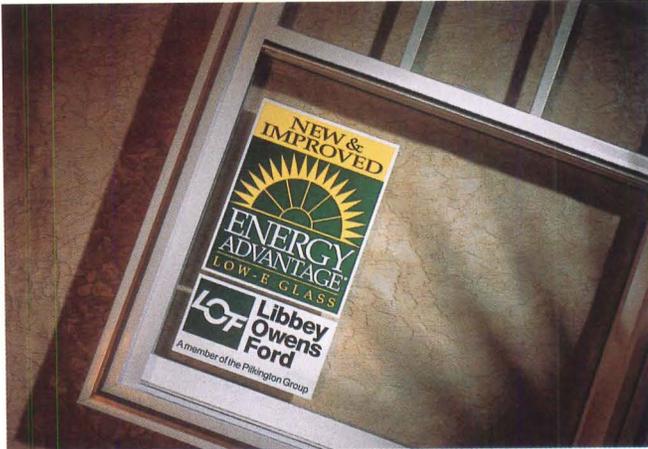
SECTION LOOKING NORTH



- 1 ENTRANCE
- 2 RECEPTION
- 3 EXHIBITION
- 4 LIBRARY
- 5 WORK/INSTRUCTION
- 6 AUDITORIUM

FLOOR PLAN

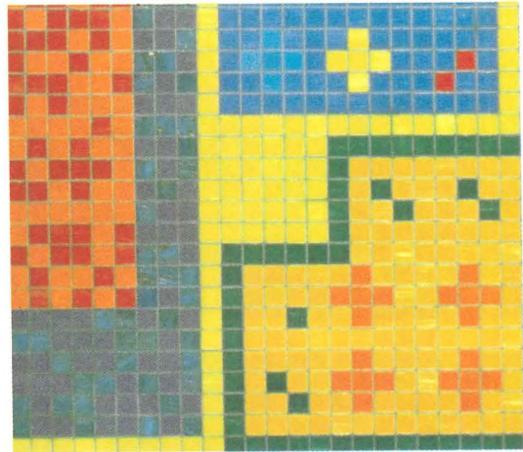
N ↑ 40'/12m



Low-E Glass

Libbey-Owens-Ford announces the availability of Energy Advantage® pyrolytic Low-E glass. A new coating application process "improves emissivity without diminishing perfor-

mance characteristics or color neutrality," according to the manufacturer. The product has an emissivity rating of 0.15 and a U-value of 0.33. Circle **100** on reader service card



Mosaic Tile Catalog

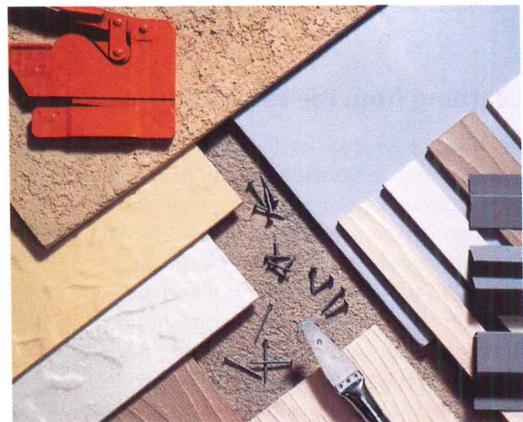
Renato Bisazza announces the availability of "Panorama," a 32-page, four-color catalog featuring five color palettes. Vetricolor comes in a 3/4" mosaic tile in 62 colors. Le Gemme is transparent, comes in a 3/4" tile and has a coppery color palette. Oro is handcrafted, made of 24-carat gold leaf sandwiched between two layers of glass, and comes in 3/8" x 3/8" size. The Grip series, for non-slip applications, comes in a 3/4" tile. Opus Romano is a 1/2" mosaic tile available in 75 colors. Circle **101** on reader service card



Floor Warming System

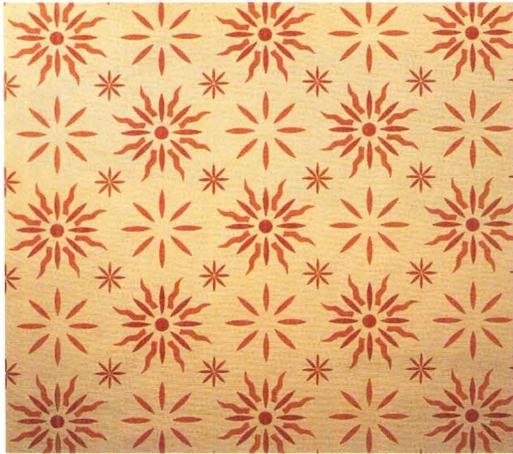
WK Heating Systems introduces the Warm Touch™ floor warming system. The system is set directly under the stone or tile surface and is installed in the same thin-set mortar, adding only 1/8" or less to floor height. Warm Touch™

may be used in renovation and new construction applications and comes in a variety of widths and lengths. It features a thermostat with a remote floor sensor and comes with a 24-hour timer. Circle **102** on reader service card



Lightweight Siding

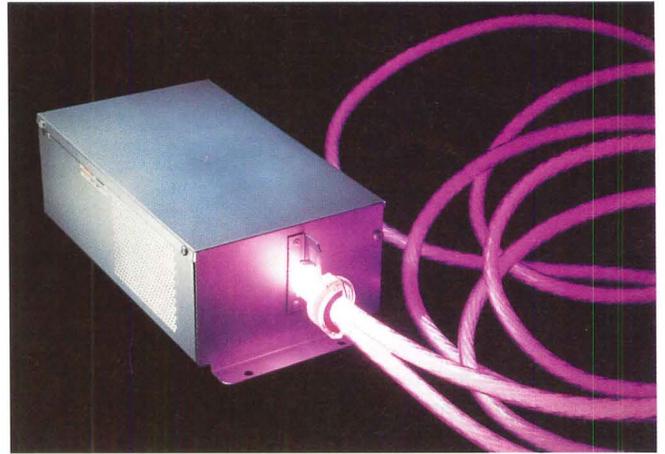
MaxiPanel, by MaxiTile, may be used for residential and commercial construction in all regions and climates. It is available with smooth or textured surfaces and accepts modified stucco or paint. MaxiPanel is available in 4' x 8', 4' x 9', and 4' x 10' sizes and in thicknesses of 5/16" or 7/16". Panels are asbestos-free, autoclaved, and composed of cellulose fibers, cement, and silica-sand. MaxiPanels are lightweight, moisture-tolerant, and non-toxic. A selection of accessories and trim is available. Circle **103** on reader service card



Home Collection by Alessandro Mendini

Urban Architecture announces the availability of the Memphis Milano "Easy Home" collection of home furnishings designed by architect Alessandro Mendini. The collection includes chairs, bookcases, mirrors, fabric, lamps, vases, dressers, tables, plates, and other items. (Shown above: Haapi, a blended linen fabric with a natural backing.)

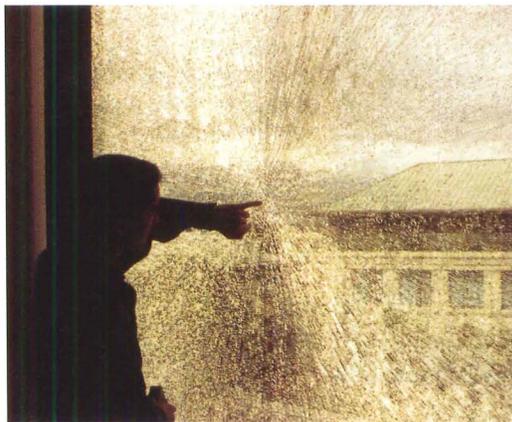
Circle **104** on reader service card



Fiber Optic Illuminator

Fiberstars introduces the Model 403 Illuminator, an illuminator that transmits light through fiber optic tubing using a 150-watt metal-halide lamp with a patented dichroic reflector. High-intensity discharge lighting coupled with the dichroic reflector focuses light into and through thin plastic solid-core

fibers. The 403 Illuminator is U.L.-listed for concealed-space mounting in dry locations. Optional built-in computerized controls provide custom operating functions. The unit may be used for indoor and outdoor applications. Circle **105** on reader service card



Window Film

Western Glass Restraint Systems introduces GlassLock, a patented glass restraint system designed to minimize damage and injury caused by flying glass. The system holds a layer of window film beneath a customized extruded aluminum plate and cap that are anchored to the interior of the window frame. GlassLock has passed compliance tests conducted by the National Certified Testing Laboratories and the Miami Testing Laboratory. The system is available in two configurations. Circle **106** on reader service card



Foam Insulation

Amoco Foam Products' AMOFOAM®-RCX is a foam insulation board made with a minimum of 50-percent recycled polystyrene (from industry-related sources and post-consumer material) and virgin polystyrene resins. The product

features a protective, non-reflective film laminate on both sides, giving it increased strength. AMOFOAM®-RCX boards are available in 4' x 8' and 4' x 9' sheets in thicknesses of 1/2" and 3/4." Circle **107** on reader service card

Building Products Disks

The 1995 Residential Energy Source® Directory (energy-efficient products from more than 500 manufacturers) and the REDI Guide (environmentally friendly building products) are available from Iris Communications on disk for both Windows and Macintosh systems. Both the directory and the guide include product descriptions, detailed specifications, and certification status. Circle **108** on reader service card

Sound Control Matting

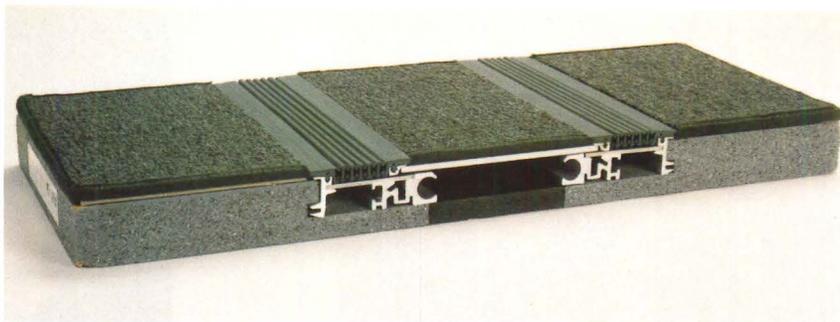
Akzo Nobel introduces Enkasonic® sound control matting, a geosynthetic material used in both commercial and residential applications. A three-dimensional nylon matting heat-bonded to a filter fabric, Enkasonic® is installed between layers of the flooring substructure, creating a sound-rated floor system "which meets all known codes" in multifamily and multilevel housing. Circle **109** on reader service card

Safety Paint

Seal-Krete® Glow Paint is available for applications where emergency signage or markings are needed. The paint, which glows for up to four hours, can be applied to concrete, wood, metal, plaster, drywall, wall coverings, and Styrofoam. Glow Paint is waterborne, environmentally safe, nonradioactive, nonflammable, and nonhazardous, according to the manufacturer. Circle **110** on reader service card

Fire-Retardant Treated Wood Guide

Hickson Corporation announces the availability of a reference guide for designing with fire-retardant treated wood. The 18-page, four-color brochure outlines code-compliant applications as covered in National, Standard, and Uniform model building codes. Circle **111** on reader service card



Expansion Joint System

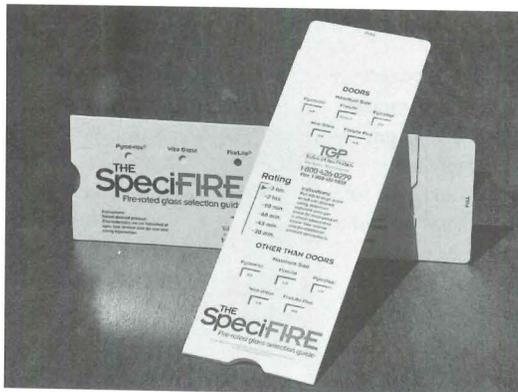
Harris Specialty Chemicals introduces Seismaxplus™ "no-bump" expansion joints. This floor-joint system has no exposed metal and has elastomeric seals at the ends of the slider plate. The seals are available in a variety of colors. Flooring materials (carpet, sheet

vinyl, terrazzo, finished metals, ceramic tile, marble, and other tile from 1/8" to 1/4" thick) can be installed on the slider plates. The elastomeric seals provide movement capabilities, without buckling. The system meets ADA requirements. Circle **112** on reader service card



Plastic Sheet Glazing

GE Plastics introduces MR5® and XL-1® reflective LEXAN polycarbonate sheet products for use where solar heat gain is high. The sheets reduce heat gain without reducing natural light; they are lightweight and impact-resistant. Both XL-1® and MR5® products have passed Dade County's Building Code guidelines for hurricane-resistant glazing. Circle **113** on reader service card



Fire-Rated Glass Selection Guide

The SpecifIRE is a hand-held slide chart offered by Technical Glass Products to give design professionals information on glazing options. The chart describes Pyrowiss®, wire glass, FireLite®, FireLite Plus® and Pyrostop® products, giving information on the characteristics, size, and rating details of each product. Circle **114** on reader service card

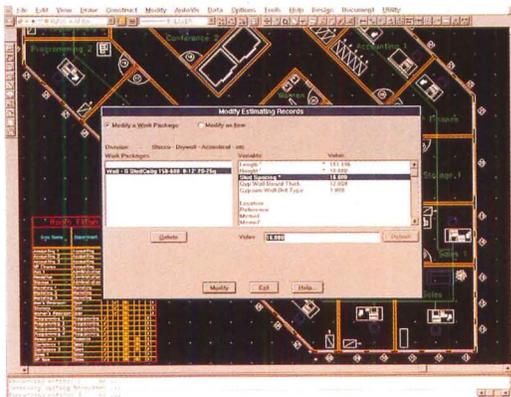
Computer Products



Antiglare Glass Filters

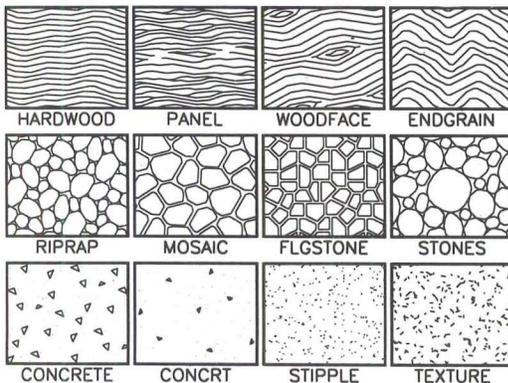
The WorkSmart® 6000 series of antiglare glass filters, from Ergodyne, reduces glare, brightens color, and eases the reading of text on computer terminals. Antistatic and anti-

radiation features also eliminate radiation, static shock, and dust build-up. The various filters fit terminals from 14"x15" to 15"x17" in size. Circle **115** on reader service card



CAD Estimating Tools

Integrating CAD with construction cost estimating, KETIV Technologies has linked its ARCHT® Version 13.0 software for AutoCAD Release 13 with Timberline Software's Precision Collection of estimating software, eliminating manual takeoffs from drawings. This not only speeds up estimating time, but allows designers to do various design/cost scenarios more quickly. Circle **116** on reader service card



Pattern Library

CompugraphX has released the "100 Plus Hatch Library" Version 2.0 for AutoCAD LT Release 2 for Windows®. Containing 240 hatch patterns – everything from floor tile and brick patterns to landscape and geology symbols – the program costs only \$49. Circle **117** on reader service card

Low-cost CAD

GammaCAD PRO 2.00, from Gamma Software, is a low-cost (\$25), easy-to-use CAD system that features on-line tutorials for novice users and lossless DXF transfers for those who want to supplement more expensive CAD programs. The software contains more than 100 drawing symbols. Circle **118** on reader service card

Laminates on CD-ROM

Nevamar has announced the availability of its laminate product information on the electronic version of Sweets, called SweetSource. Also available are more than 150 detail drawings of products on Nevamar's Computer Assisted Specification (CAS) system. Circle **119** on reader service card

Powerful Workstations

Silicon Graphics has introduced more powerful CPUs along with price cuts in its workstations and server systems. A new 250 MHz microprocessor is available for the Indigo²™ desktop workstations, and price reductions of up to 22 percent are being offered on selected systems. Circle **120** on reader service card

Document Imaging

DocSTAR is a document imaging system from BitWise Designs that enables offices to reduce the time and money involved in handling paper files. The Windows®-based software and BitWise hardware (scanner, fax, laser printer, and computer) speed up the storage and retrieval of files, drawings, and photographs. Circle **121** on reader service card

2D and 3D Modeling

Point Line's CADD software provides 2D drafting tools, with drawing and data management capabilities, and 3D solids modeling features, allowing walk-and-fly-throughs and animations. A paint program also provides high-quality presentations. Circle **122** on reader service card

Interactive Rendering

Caligari's 3D graphics and animation product, trueSpace2™ for Windows®, features interactive rendering and lighting of 3D objects, organic surface sculpting, and the ability to map video onto 3D objects. With the \$795 software comes trueClips™, a CD-ROM of more than 200 textures and 600 3D objects.

Circle **123** on reader service card

Up-dated CAD and Database Management

CADworks has begun to ship Release 2.0 of Drawbase for Windows®. Features include the linking of attributes to symbols and objects, the dynamic exchange of data with other systems, the rapid creation of drawings with multiple symbols, and the ability to generate reports from and queries about active or referenced drawings.

Circle **124** on reader service card

Sketching and Drafting Software

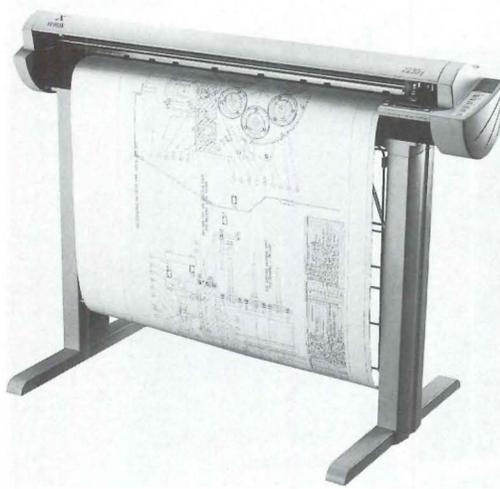
TommySoftware® has introduced CAD/DRAW 4, Level 1, a graphics application that accommodates sketching as well as precise CAD drawings. With a retail price of just \$79.95, the new release offers expandability, bitmaps and erasers, smart symbol libraries, a full-featured text editor, and full compatibility with all Windows 95 and Windows NT applications.

Circle **125** on reader service card

Graphics and Animation Software

Visual Reality 2.0 for Windows® is a 3D graphics and animation system that allows users to create film-like 3D scenes, animations, and special effects much faster than competing products. Photos can be combined or collaged with images, and organic deformations for objects and type fonts are also possible with push/pull, melt, stretch, twist, and bend tools.

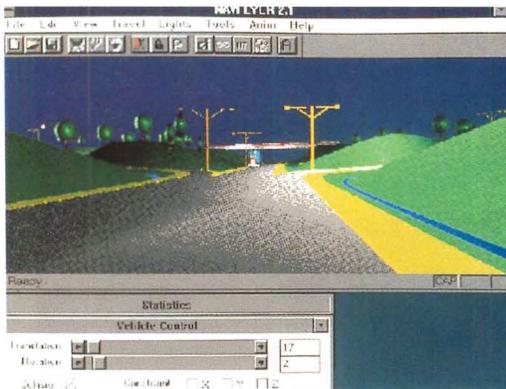
Circle **126** on reader service card



Wide-Format Ink-Jet Plotter

Xerox has entered the wide-format plotter market with a 36", two-head, black-and-white ink-jet plotter, called the Xerox 2230ij. With a color-highlight feature, the plotter allows important information to be highlighted or changes noted. The machine is fast, able to plot a typical D-size CAD drawing in two minutes; flexible, able to plot on film, vellum, or paper; and moderately priced at \$4,495.

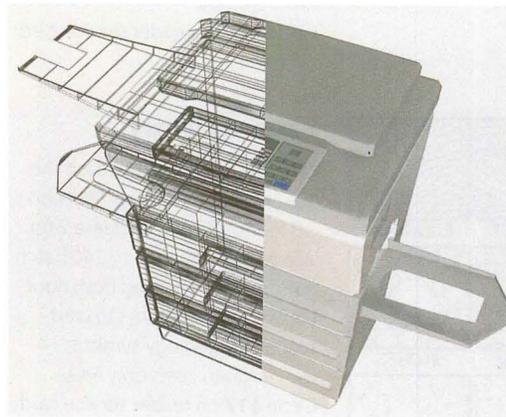
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Real-Time Visualization

MicronGreen and Softdesk have announced a partnership to provide real-time, interactive visualization tools for the AEC market, enabling users to "navigate on the fly and interactively evaluate a design." NAVlyer, shown here, is available on Softdesk's free Super Productivity CD and will soon be on Softdesk's Web page <http://www.softdesk.com>.

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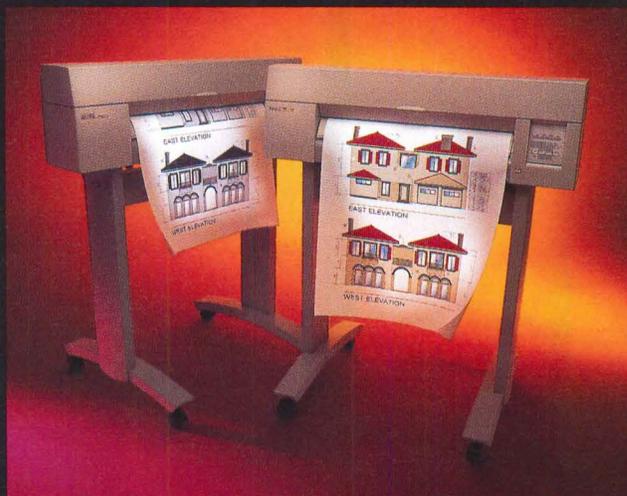
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Saarinen Fest at Cranbrook

Students and colleagues of Eliel and Eero Saarinen gather at Cranbrook Academy to share insightful recollections of the two. *by Steven Litt*



Paul Erickson

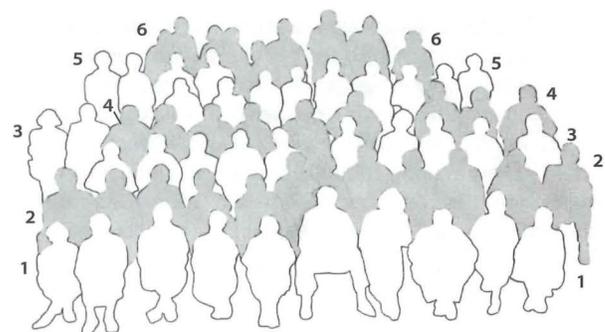
It was an invitation to reminisce in front of video cameras. On an August weekend, Cranbrook, the renowned educational community in Bloomfield Hills, Michigan, hosted a reunion of former employees, design associates, and students of Eliel Saarinen and his son, Eero.

Eliel, born in Finland in 1873, designed much of the Cranbrook campus, taught architecture in its Academy of Art, and lived in Bloomfield Hills from 1925 until his death in 1950. Starting in 1936, Eero worked in partnership with his father, and for a time in a triple partnership with Eliel's son-in-law, J. Robert F. Swanson, as well.

In 1950 Eero formed his own firm, Eero Saarinen & Associates. In the amazingly short span of 11 years before his untimely death in 1961 at age 51, Eero's firm designed landmark projects including: the TWA Terminal at John F. Kennedy International Airport in New York; Dulles International Airport in Chantilly, Virginia; the U.S. Embassy in London; and the Deere & Co. headquarters in Moline, Illinois.

While cameras rolled during the reunion weekend, moderators including Cranbrook Archivist Mark Coir guided 90 participants through discussions on the philosophy, working methods, and atmosphere created by two of the century's most influential architects. For Cranbrook, the weekend was a chance to gather vital information for future use by scholars. The event also offered a look at the personal styles of the

Steven Litt writes about architecture for the Cleveland Plain Dealer.



Attendees at the Saarinen reunion at Cranbrook, by row, left to right: 1. Jan Swanson, John Jickling, George Matsumoto, Susan Saarinen-Bergman, Anthony Moody, Robert Ziegelman, Susana Torre, Balthazar Korab, Sarah Westlake, Merle Westlake; 2. Jack Goldman, Joan Goldman, Jay Chamberland, Mary Lott, Milon Lott, Edward Saad, Alice Saad, Allan Dehar, Dee Roth, Harold Roth, Gary Brown, Gale Abels; 3. Jerry Henderson, Phil Henderson, Lewis Zurl, Donald Hoey, David Hoedemaker, Thomas Bosworth, John Thornley, Patricia Bräuer, Bobbi van Dijk, Peter van Dijk, Nobuo Hozumi, Robert Bräuer; 4. Leonard Parker, Nancy Allen, Maurice Allen, Glen Paulsen, Ray Bean, Ronald Saarinen Swanson, Cesar Pelli, Christine Jaroszewicz, Mark Jaroszewicz; 5. Norbert Blum, Mary Ann Blum, Claude DeForest, Harold Tsuchiya, Edmund Bacon, Ruth Pudists, Elsbeth Ware, Helen Perttula, Norm Perttula, Roger Johnson, James R. Smith, Doris Smith, Mary Riordan; 6. Gunnar Birkerts, Robert Saarinen Swanson, Susan Brozes, Sylvia Birkerts, Kay Kaiser, David Force, John Mesick, John Buenz, Manuel Dumlaol.

Saarinen Fest (continued from previous page)

Saarinens and the intensely competitive designers who gathered around them.

"They were very different personalities," said Cesar Pelli, who worked for Eero Saarinen Associates for a decade. "Eliel was gregarious, easygoing, fun. Eero was very focused, driven, not interested in social interchange. He was a workaholic."

In addition to Pelli, Eero's firm employed Robert Venturi, Kevin Roche, John Dinkeloo, and Gunnar Birkerts. Venturi and Roche, whose respective firms were racing to meet a competition deadline, were unable to attend. But with Pelli, Birkerts, and many others in the audience, the reunion easily evoked the heady atmosphere around the Saarinens in the decades following World War II.

Tales of "Pappy" and Son

On the face of it, the father and son could not have been more different as designers. Eliel's architecture was rooted in the turn-of-the-century Arts and Crafts movement, the traditional urbanism of Viennese city-planning theorist Camillo Sitte, and the drive to create a romantic national style in his native Finland. Eero's brand of modernism emphasized pathbreaking sculptural forms made possible by new construction technologies.

Yet in speaking of the Saarinens, the former students and associates emphasized how father and son both sought to create total environments that encompassed everything from furniture to large-scale planning.

Eliel's former students – some of whom called him "Pappy" – spoke with reverence about his ability to communicate unforgettable lessons by holding intimate chats in the studio alcove of his house at Cranbrook. "That corner seat around the table is the most sacred place in the world to me," planner Edmund Bacon said. "Every waking thought, every single motivation I have, came from that man."

Bacon also said it was "the great tragedy of American culture and civilization and architecture" that instead of embracing the design philosophy of his mentor, the nation chose to follow "the European progeny of the International Style, with their emphasis on no ornament, individual ego, rejection of history, rejection of architecture as part of the flow of continuity and the environment. The possibility exists that the profession will rediscover Saarinen. I pray the day comes soon."

Architect Merle Westlake of Lexington, Massachusetts, said simply, "I came to Cranbrook to learn about architecture. I soon realized that if I could come away with a little bit of Eliel, that was the best I could do."

Eero's former associates, who outnum-



Balthazar Korab

A party in full swing during the heyday of Eero Saarinen's firm, with Saarinen in the center.

bered those of his father at the conference, recalled his prodigious appetite for work. They also marveled at his propensity to scrap designs for major projects after months of work only to start over in a search for dynamic sculptural forms that satisfied his demanding sensibility.

"We saw all his doubts, his sweats, his changes of mind. He was completely open," Pelli said.

Architect John Buenz of Chicago recalled how executives of Deere & Co. fell in love with an early version of a design for their headquarters. "But Eero said, 'I've lost the thread,'" Buenz recalled. "It must have given Joe Lacy (Eero's office manager) a heart attack to go that far with a design and not go through with it because it wasn't as good as he could make it. I thought if I could work that hard, maybe there'd be a chance I could do a good building some day."

An "Intensely Competitive" Atmosphere

Many former associates recalled the golden moment of getting hired by Eero in the 1950s, at hourly wages from \$2.50 to \$3.75. "It was probably the most creative, the most exciting office in the world at that time," said architectural photographer Balthazar Korab, who had previously worked in the Paris office of Le Corbusier.

Few spoke of the circumstances under which they left Eero's employ. As Pelli described it, the atmosphere in the office was intensely competitive. "It was a highly efficient sieve," he said, away from the cameras. "If somehow things didn't click, you left." When

asked how he managed to stay 10 years, Pelli said: "I was not outmatched."

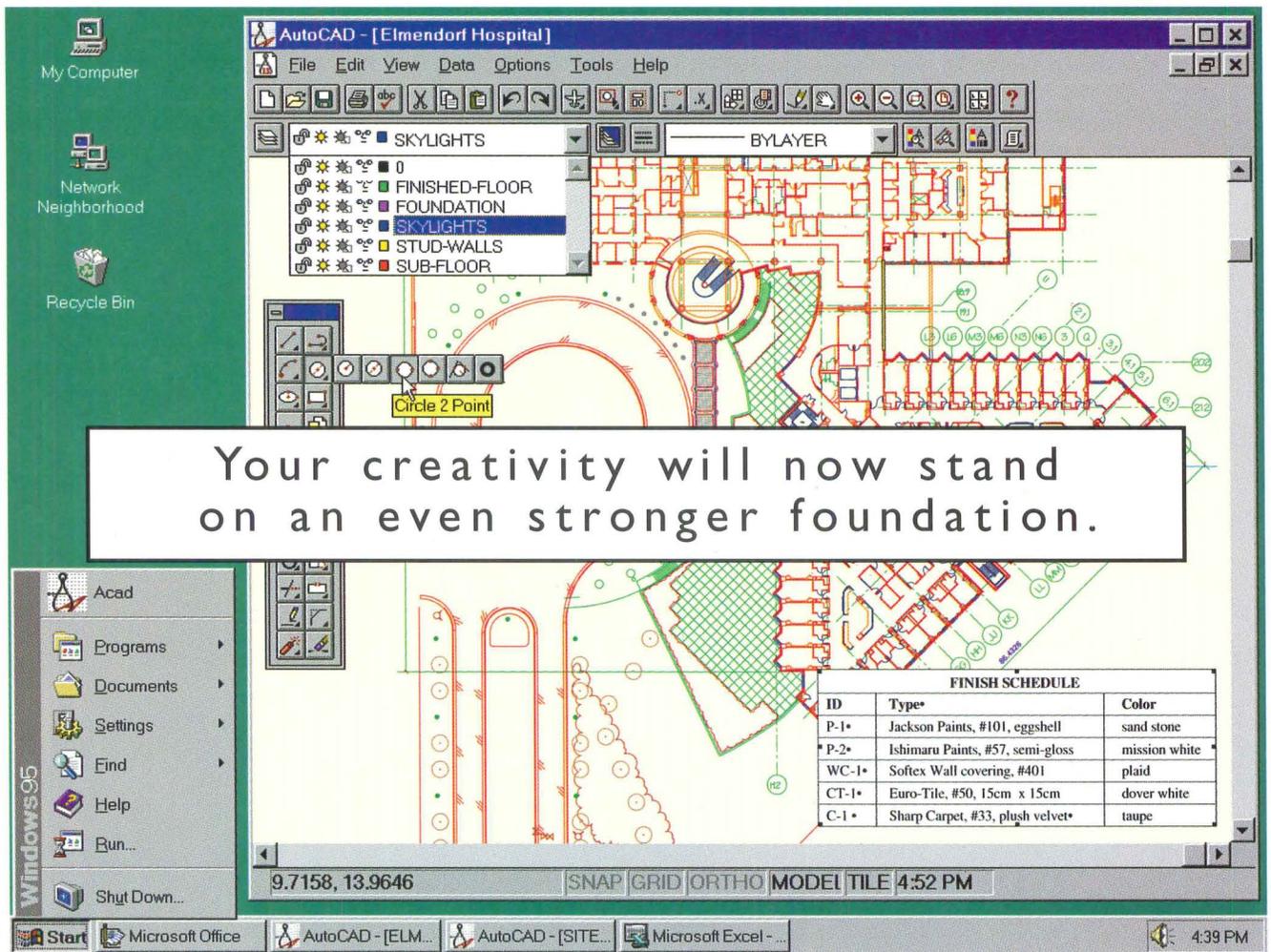
Pelli and others also described how Eero's firm evolved in the mid-1950s from a "friendly and familial" studio to a more corporate structure, with teams of designers answering to Eero and key subordinates, including Roche. The structure enabled Eero to exercise control over larger and ever more complex assignments, with talented younger architects working as "subordinate collaborators."

As architect Lewis Zurlo of Danbury, Connecticut, put it, "Eero wanted to see everything. Everything had to be sifted through one man's mind." Others recalled Eero's ambidexterity, his ability to write backwards, like Leonardo da Vinci, and his strong preference for working with models rather than drawings.

If Eero's firm sounded like a pressure cooker, the former associates also described their favorite release, which came in the form of frequent, well-lubricated parties. One architect recalled a Friday afternoon bash at which martinis were served from a model of the dome of the Kresge Auditorium at the Massachusetts Institute of Technology.

Throughout the reunion weekend, architect Claude DeForest of Winnipeg, Canada, displayed cartoons that depicted life in Eero's office in a style best described as Bauhaus meets the Flintstones. In one drawing Eero is shown absentmindedly carving rows of windows in a pumpkin, while Roche, exhausted from overwork, snoozes at his drafting table.

Now, thanks to Cranbrook's Saarinen reunion, a weekend's worth of remembrances are part of the historical record. □



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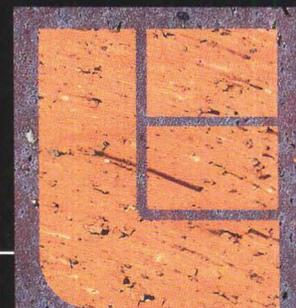
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The Rise of Quality of Life Issues

The Conference on Cities in North America, held in New York City, concluded that social and environmental factors are as important as economics to the health of cities.

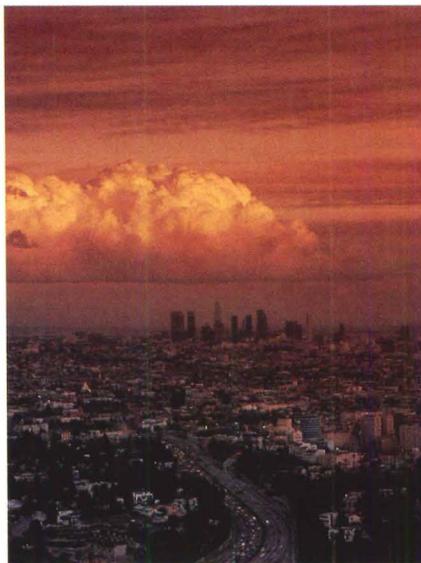
by Geraldine Campos

With more than half of the world's population inhabiting urban areas by the turn of the century, and with the growing recognition that the economic prosperity of cities is directly linked to their quality of life, architects and urban designers will play an increasingly important role in creating a new urban world. This was one of several concerns addressed at the Conference on Cities in North America (CCNA) held in June, in preparation for a United Nations conference on Human Settlements, called Habitat II, to be held in Istanbul, Turkey, in June of 1996. Unlike its predecessor Habitat I, held in Vancouver in 1976, Habitat II will focus on developed as well as developing cities, in the hope that each will learn from the other on ways to improve the built environment.

Chaired by Robert Geddes, Professor of Architecture at New York University, and sponsored by NYU's New York Institute for the Humanities, the conference gathered architects, urban planners and designers, writers, critics, government officials, and community advocates to discuss the strengths and weaknesses of North American urban regions. In an opening summary of the papers to be presented at the conference, Geddes noted a major theme emerging from many of them: that equity and the environment are becoming as important as economics to the health of cities. The "three E's" as he called them were at the center of discussion throughout the three-day event.

Case studies from five metropolitan regions, New York, Los Angeles, Mexico City, Toronto, and Cascadia (Vancouver, Seattle, and Portland), were presented to analyze the diversity of planning, development, and design in North American cities. The specific problems of these cities differed: Los Angeles is beset with sprawling growth; Mexico City must contend with pollution; and New York City is struggling with the need for more public transportation. Despite these differences, however, the five regions had similar problems such as the shift from manufacturing to a more service-oriented economy, the degradation of the environment, and the privatization of experience.

The author, a summer intern at P/A, is a graduate of Yale's undergraduate architecture program. She now works for the City of New York.



Pollution, poverty, and the privatization of experience have come to characterize North American cities such as L.A. (above).

The cities that responded to economic, environmental, and social trends offered the best regional solutions discussed at the conference. Toronto, a city with a comparatively high standard of living and low population density, has activated an economic boom, a population increase, and a more lively and livable downtown area by diversifying land use and encouraging multicultural and class integration. The downtown's success stems from its proximity to the University of Toronto and a street grid that maintains its pedestrian character with medium-density cooperatives and nonprofit apartments built next to railway land zoned for redevelopment for new transportation routes. Similarly, Portland, Oregon, a city with great environmental diversity, boasting vast urban and rural spaces along the southern section of the Cascadia region, is encouraging more sustainable urban patterns of growth and optimum land-use planning by setting urban growth boundaries that ensure minimum population densities, manageable urban supplies of land, and the preservation of agricultural land. Both of these examples successfully apply the "three E's" in managing urbanization. Whether these North American

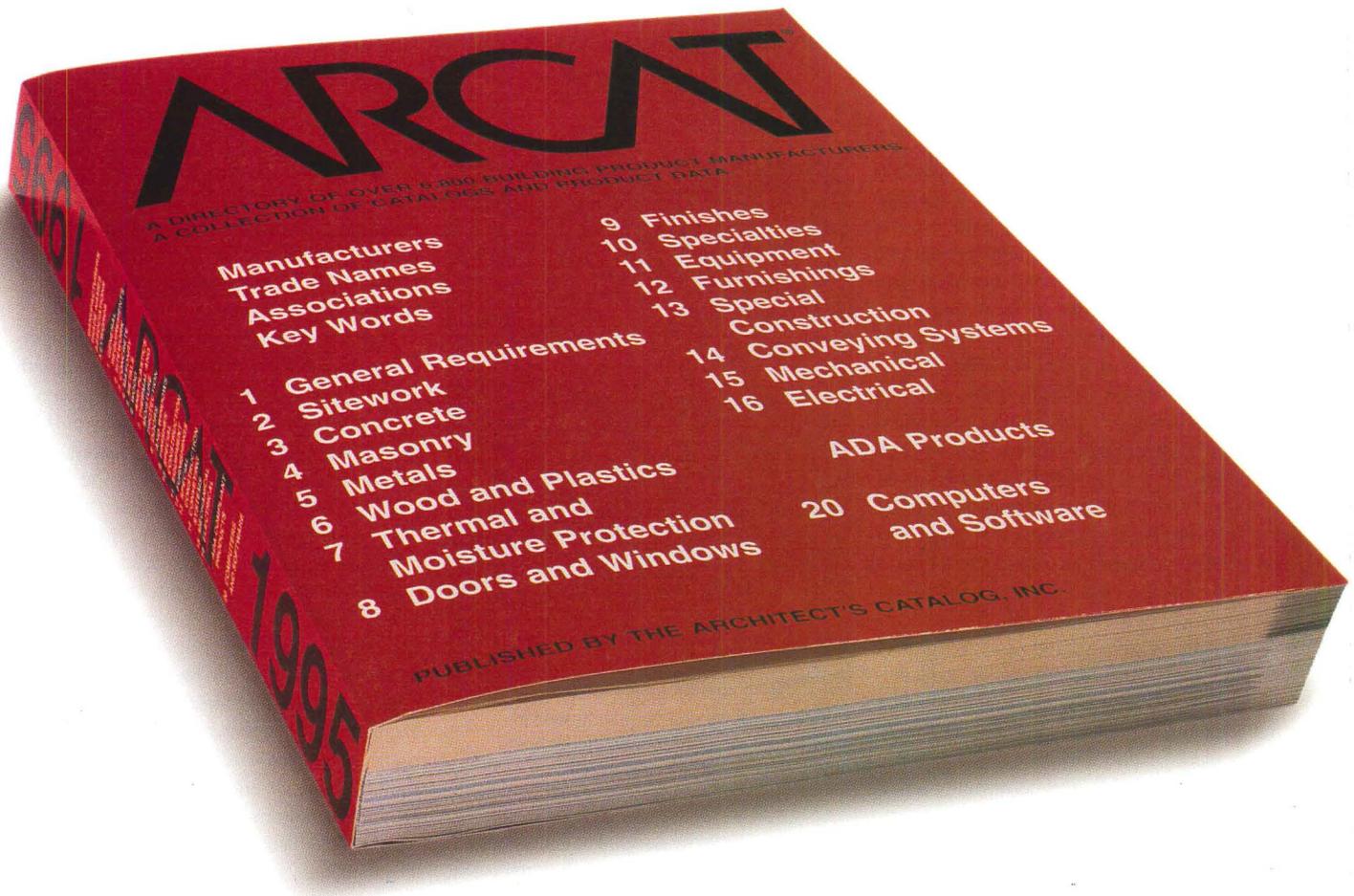
paradigmatic urban solutions will work in growing Third World metropolitan areas is doubtful, but resolving urban problems by integrating economic, environmental, and social issues in planning is the key to successful efforts around the globe.

Furthermore, CCNA highlighted the importance of making urban design, coupled with improving the quality of life, an ongoing collaborative effort, involving the best of business, government, academia, and grass-roots organizations. This further reflects the notion that architects must be sensitive to all forces affecting urban areas by linking the physical structure of a city with its social, economic, and cultural behavior. Architects might also grasp the opportunity to promote socially responsible private and public development, and to participate in the revitalization of inner cities and older neighborhoods. Since architecture, more than any other profession, directly influences the quality of life through design, architects are in a position to champion urban solutions by creating public awareness and by maintaining the character and reality of place.

The conference also stressed that as our economy becomes a global one, this mandate will become increasingly important in building healthy cities. Since local actions have global consequences, it is important that community actions keep broader societal needs and goals in mind as we look for regional solutions to our urban problems.

Conference discussions concluded that if the world's cities are to become viable centers of life that can sustain their growing populations, they must be conceived as holistic entities, where economic vitality, environmental health, and social equity create a functional whole. The city is a source of education, diversity, and opportunity, as well as a repository of investment capital, skilled labor, information, and imaginative ideas. If we are to curb the deterioration of human environments, and to create equitable and sustainable cities, then cities must work for the good of the whole and maintain a healthy balance of all the factors that shape their growth and quality of life. It is high time that we as a profession go about our jobs with this in mind. □

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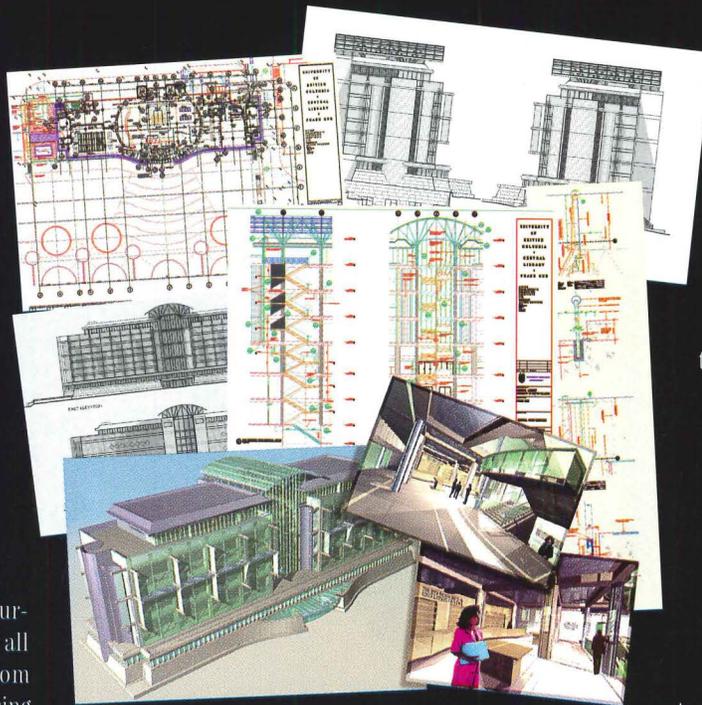
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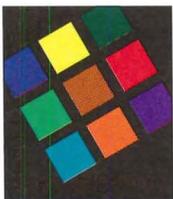
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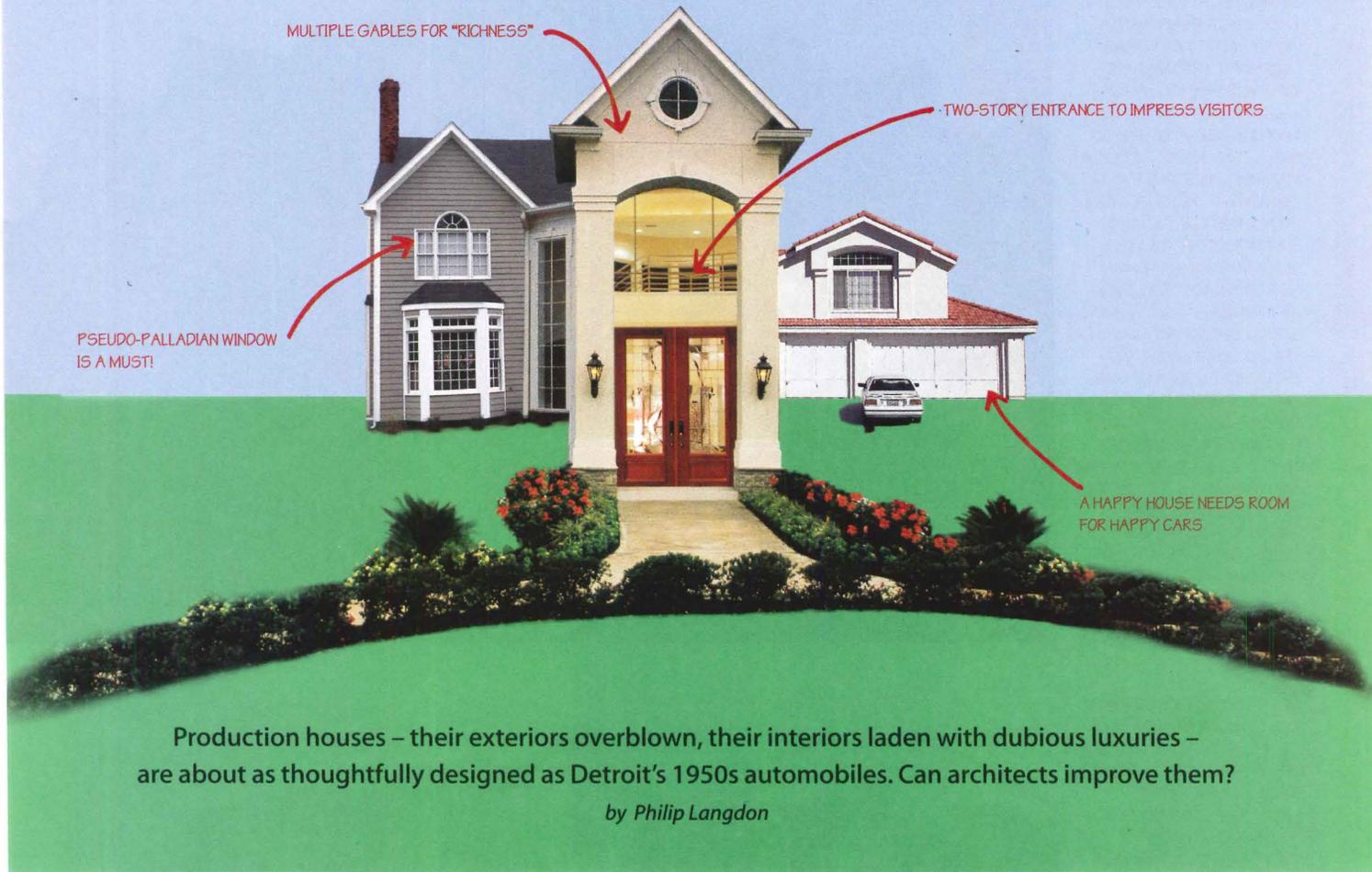
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Dissecting the American House



Whenever I visit expensive new tract houses, I end up thinking about Cadillacs. Not today's gently curved, almost anonymous Cadillacs, but rather, the 4,700-pound behemoths of 1959, the apex of late-fifties Detroit baroque. Aesthetically, the vintage Caddy and today's upper-priced production house share the same bombastic yearning for super-deluxe effect. Where the 1959 Cadillacs sprouted superfluous, chromed tailfins, 1990s houses sprout gratuitous hips and gables. Where Cadillacs proclaimed their impressiveness with 325-horsepower engines and rumbling dual exhausts, houses try to wow passersby with haughty two-story entrances and a promiscuous display of round-arched windows.

Philadelphia architect James Wentling, in his books *Housing by Lifestyle* and *Designing a Place Called Home*, systematically examines what's been happening to house design. He argues that a house should be organized as a group of "components": a "community" component made up of kitchen, breakfast area, and family room; a "privacy" component made up of master suite, secondary bedrooms, guest suite, and den; a "functional" component made up of garage, laundry, storage; and so on. When these components are competently arranged,

says Wentling, the house can satisfy a multiplicity of needs – of the individual occupants, of the household as a unit, and of the neighborhood of which it is a part. This mode of thinking influences homebuilding, but in the main, builders seem to pay less attention to logically organized "components," as in Wentling's formulation, than to a succession of "features." It is features – double-height entrances, oversize bathtubs, sprawling master retreats – that builders use to win customers. And for this, American consumers pay dearly, surrendering not just their money but much of the satisfaction that a well-designed house can deliver.

Homebuyer, Come Hither

The practice of emphasizing certain features – with little regard for how well they fit into an intelligent overall design – is flagrant in medium- to high-priced houses and is epitomized by the builder's cultivation of "curb appeal." A large proportion of upper-priced production houses possess monumental two-story entrances, intended to show how far the homeowner has risen in society's pecking order. Premium materials like brick or stone, interspersed with elaborate win-

CLIENTS SHORT ON SUBTLETY? HERE'S A "BUILDING DESIGNER" SOLUTION: PUMP UP THE EXTERIOR UNTIL IT LOOKS LIKE THE WHOLE HOUSE IS ON STEROIDS. START WITH A DOUBLE-HEIGHT ENTRANCE, EMBELLISH THE MONUMENTAL ARRIVAL POINT WITH DOUBLE DOORS, PUT AN ELABORATE WINDOW OVERHEAD AND TOP IT ALL OFF WITH A COMPLICATED ROOFLINE - THE MORE GABLES THE BETTER. SELECT A PREMIUM MATERIAL LIKE STONE FOR THE PORTIONS OF THE HOUSE VISIBLE FROM THE STREET. TO MAKE IT STAND OUT ALL THE MORE, ALTERNATE THE STONE WITH A DIFFERENT MATERIAL, SUCH AS IMITATION STUCCO. FINALLY, SPREAD DECORATIVE PLANTINGS AROUND THE GROUNDS AND THE EFFECT IS COMPLETE. THE EXAMPLE SHOWN HERE, BY JACK PRESTON WOOD IN HOUSTON, IS FEATURED BY THE AMERICAN INSTITUTE OF BUILDING DESIGN IN A BOOKLET ON THE ADVANTAGES OF EMPLOYING A BUILDING DESIGNER. MORE MODEST APPLICATIONS OF FEATURES LIKE THESE INFLUENCE CUSTOM AND PRODUCTION HOUSES THROUGHOUT THE U.S.



"M-O-N-E-Y," SAYS THIS HOUSE BY BUILDING DESIGNER WILLIAM B. EPPS, JR., OF HOUSTON DESIGN GROUP. STAGGERED ELEMENTS PUNCTUATE THE FACADE, A HALF-DOZEN DIFFERENT KINDS OF WINDOWS COMPETE FOR ATTENTION, A "CLOUDFORM" WINDOW INSPIRED THE SWOOPY ROOF OVER THE TWO-STORY ENTRANCE.



Bruce Glass, Courtesy Houston Design Group, © Jack Preston Wood, Houston, Courtesy AIBD (above)

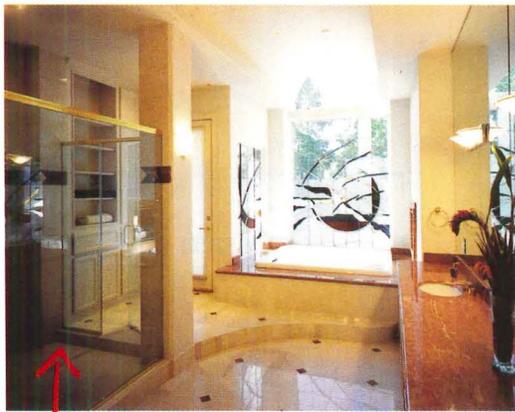
dows, embellish the façades in an intense effort to maximize first impressions, while the sides and the rears may be clad in inexpensive stucco or vinyl and trimmed with pathetically thin window casings.

Inside is a double-height foyer from which visitors command a view of the first-floor living space and a vista out the back to a deck or other outdoor amenities; this serves to impress prospective homebuyers with the interior's spaciousness and drama, even if it means that day-to-day living will enjoy precious little privacy. Among the spaces displayed on the interior are a vestigial living room, which survives in most houses as a little-used ceremonial space, and a formal dining room, if the target market segment can afford it. The kitchen is outfitted with a generous array of high-grade cabinetry, since food preparation takes place within sight of everyone, includ-

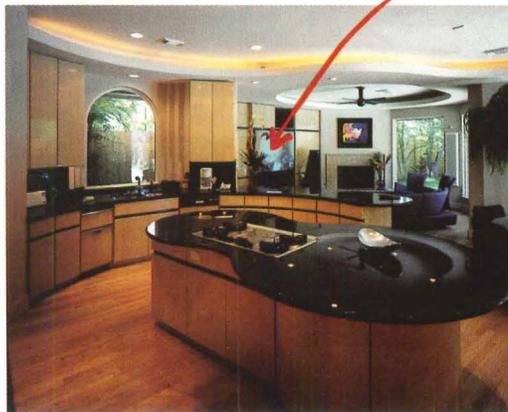
ing guests. Socializing in this large and relatively informal combination kitchen/family room/breakfast area – the “community component,” in Wentling’s classification – has become the norm.

Away from the public component lies the master bedroom area, which has grown substantially as it has incorporated additional features: an enlarged, well-illuminated master bathroom with a tub big enough for two (suggesting to prospective homebuyers imagined sensual delights), walk-in closets (people have more gear than in the past), and perhaps a sitting area with special windows and other amenities. The master retreat can be taken as a practical response to the lack of visual and acoustic privacy in the main portion of the house; here is a secluded spot that parents can escape to when children are noisily hanging out in the family room. At the

David Epps, Courtesy Houston Design Group



THE BATHROOM HAS LONG CEASED TO BE "THAT ROOM DOWN THE HALL." HEADS OF HOUSEHOLDS WANT A BATHROOM ALL THEIR OWN, AND IT HAD BETTER BE LUXURIOUS. AMONG THE FEATURES FREQUENTLY FOUND IN NEW MASTER BATHS: RICH MATERIALS, ALL THE WAY UP TO MARBLE AND GRANITE; A ROOMY, SEPARATE SHOWER STALL; AND BEST OF ALL, AN OVERSIZE BATHTUB NEXT TO A WINDOW, SO YOUR NEIGHBORS CAN REALLY GET TO KNOW YOU. Designer: Houston Design Group



TODAY'S KITCHEN OPENS INTO A FAMILY ROOM WITH A BIG-SCREEN TV AS WELL AS A FIREPLACE. FOR EASY VISUAL CONTACT BETWEEN KITCHEN AND FAMILY ROOM, THERE IS AN ISLAND FOOD PREPARATION AREA, AND SOME COUNTERTOPS HAVE NO CABINETS OVERHEAD. A BIG CHUNK OF THE HOUSE'S BUDGET IS SUNK INTO THE KITCHEN - NEVER MIND THAT THE USE OF TAKE-OUT FOOD IS AT AN ALL-TIME HIGH. Designer: Houston Design Group

WHERE WOULD SCARLETT AND RHETT BE WITHOUT A GRAND STAIRCASE? FANCY FOYERS PLAY ON YEARNINGS FOR ROMANCE, AND THEY TELL THE WORLD HOW SUCCESSFUL YOU ARE. DOUBLE DOORS, ORNATE WINDOWS, AND A CHANDELIER SOLIDIFY THE OPULENT FIRST IMPRESSION. Designer: Don Henderson, Jr., Henderson Design Group, Dallas



Bruce Glass, Courtesy Houston Design & Associates (right); Chris Henderson, Henderson Photo Imaging

HOW MUCH SPACE DO YOU NEED FOR ACTIVITIES LIKE SLEEPING, SEX, AND READING IN BED? A LOT, EVIDENTLY. THE MASTER SUITE IS BECOMING A PRIVATE WORLD THAT'S COMPLETE IN ITSELF (AND, IN THIS CASE, COMPLETE WITH COLUMNS AND GARLANDS). Designer: Houston Design Group



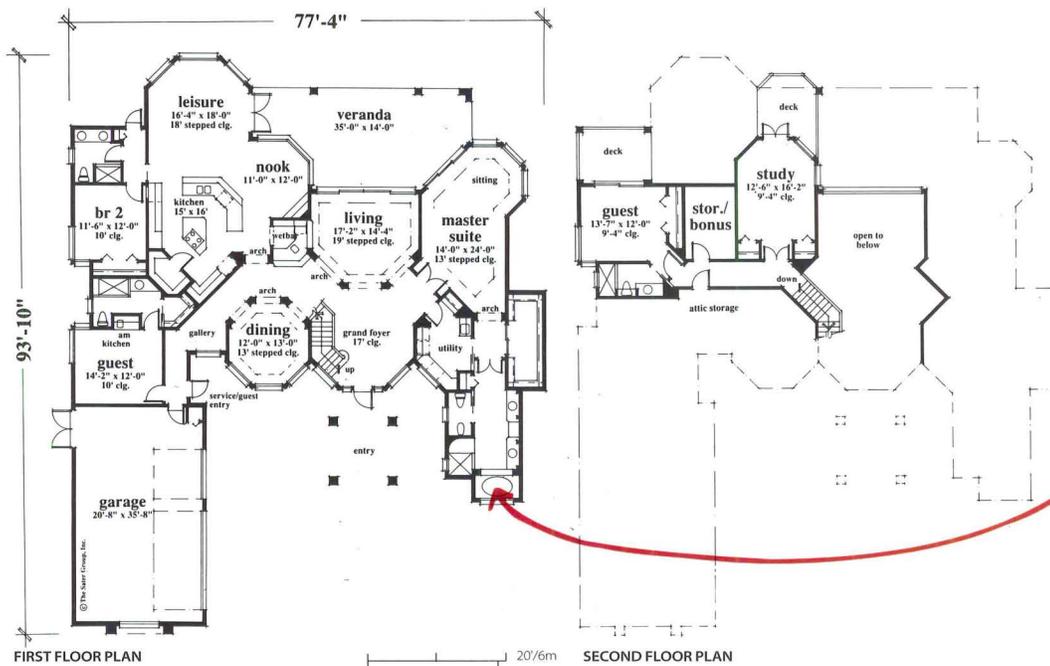
same time, it is not practical at all if judged by how much use the typical homeowner makes of the whirlpool bath and other ballyhooed luxuries. The master retreat reflects a profound change American society has undergone in the past 40 years: a movement from the child-centered orientation of the immediate postwar years, when the family room was invented for use by youngsters and parents together, to today's adult-focused, sybaritic outlook. Not all the features I've pointed out appear in every house, of course. But as Gary Kecskes of Lawrence Technological University observes, many of the amenities first introduced in expensive houses gradually filter down to the mass of production houses.

What's missing from today's house is discipline. First, there's a lack of discipline about how the house will accommodate its occupants' daily lives. The number of rooms and

spaces in a house has little to do with how people spend their time. Some spaces, especially the living room, seem to be built as much out of habit as anything else. Pittsburgh architect Stephen Casey says the living room should be roped off, as in a house museum, since it has been reduced to "a room that you look into, where you display special objects." Consonant with the mismatch between the house's features and their utility, some popular amenities are inherently inefficient. For example, although walk-in closets have become standard in production-house master bedroom suites, Casey observes that wall closets would supply the same amount of storage in fewer square feet, allowing resources to be used better elsewhere.

Beyond the lack of fit between the occupants' functional needs and the house's features, there is a lack of discipline in composition. The exterior rarely forms an enchanting pattern.

PLANS REMAIN BOXY IN SOME PARTS OF THE COUNTRY, BUT THE GENERAL TREND IS TOWARD IRREGULARITY, OPENNESS, AND "INTERIOR VISTAS." FROM THE FOYER IN THIS SCHEME, VISITORS CAN SEE THE LIVING ROOM, THE DINING ROOM, PART OF THE SECOND FLOOR, AND THROUGH GLASSY WALLS, OUTDOOR AREAS TO THE REAR. THE GROUND-FLOOR MASTER SUITE OCCUPIES MORE SPACE THAN A THREE-CAR GARAGE. THE SECONDARY BEDROOMS ARE PUSHED AS FAR AWAY FROM THE MASTER SUITE AS THEY CAN GET. SO MUCH FOR "FAMILY VALUES."
 Designer: Houston Design Group



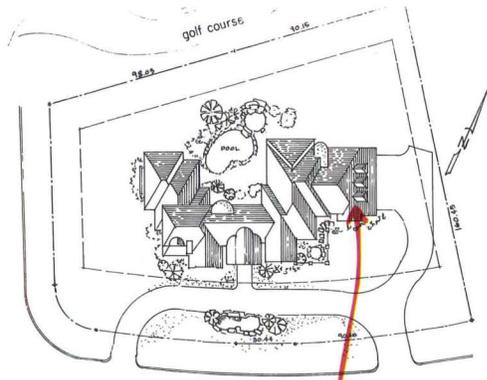
PLANS INCREASINGLY FEATURE 45-DEGREE ANGLES TO JAZZ UP THE INTERIORS. THIS MAIL-ORDER PLAN CALLS FOR ANGLED WALLS, ALONG WITH STEPPED CEILINGS, IN EVERY MAJOR ROOM. THE RESULT IS THAT CIRCULATION AND ODD CORNERS CONSUME SUBSTANTIAL SQUARE FOOTAGE FOR POOL OWNERS, THERE IS A BATHROOM (CONTAINING A SHOWER) WITH A DOOR TO THE OUTSIDE. NOTE THAT THE STRETCHED-OUT MASTER SUITE HAS AN OVAL BATHTUB NEXT TO A WINDOW FACING THE STREET, GIVING NEW MEANING TO THE TERM "PUBLIC BATH."
 The Sater Design Collection, Bonita Springs, Florida

In *The Old Way of Seeing*, Boston architect Jonathan Hale argues that since about 1830 American houses have lost the patterning of their exteriors that once gave even common houses "magic and harmony." He associates the change with the U.S. economy's becoming more "calculating" and impersonal during the first half of the 19th Century. Even if the change in composition arrived around 1830, as Hale says, that was not the end of the matter. A comparison of tract houses built in our own century suggests that a similar decline occurred between the 1920s and the postwar decades, probably because homebuilding became a larger-volume business, less influenced by skilled craftsmen and the remarkably good pattern books they had access to in the first few decades of this century, and because homebuyers learned to "calculate" coldly for themselves, seeing houses as investments to be equipped

with whatever features the market says they should have for resale value. These shifts are virtually a recipe for the debasement of house design. It should not be surprising, given such a widespread absence of commitment among builders and buyers, that today's houses rarely have the pleasing patterns of solid, void, and ornament that make so many ordinary houses from 70 years ago alluring.

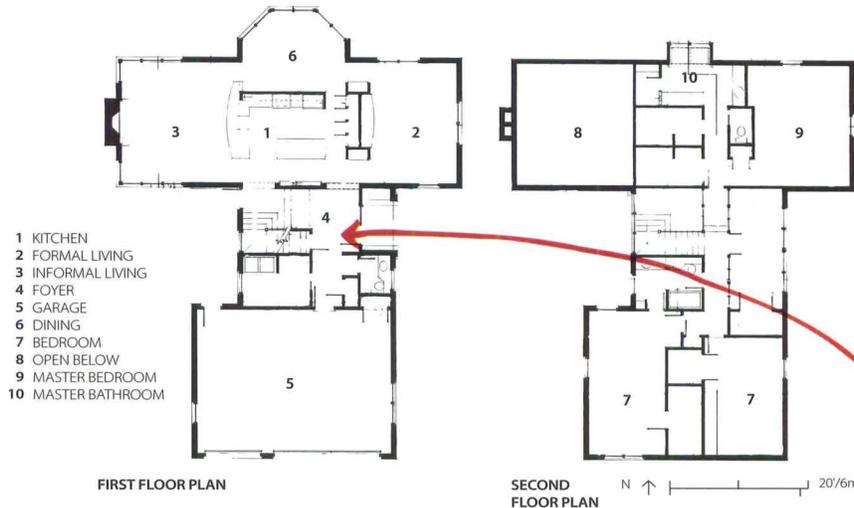
The Role of "Building Designers"

Before considering how the situation might be improved, it's useful to know who designs houses. A sizable volume of production and custom house design is done by nonarchitects who call themselves "building designers." Representing about 1,000 building designers (and a small number of residential architects) is the American Institute of Building Design, a 45-



BIG NEW HOUSES ARE INCREASINGLY SQUEEZED ONTO LOTS BARELY LARGE ENOUGH TO ACCOMMODATE THEM. ONE LAND-EATING FEATURE IS THE THREE-CAR GARAGE. NOTE THE COMPLICATED ROOF, WHICH PROMISES TO BE A MAINTENANCE HEADACHE IN YEARS TO COME.
Houston Design Group

SOME ARCHITECTS ARE MAKING WELCOME IMPROVEMENTS IN THE PLANNING OF MASS-MARKET HOUSING. REFRESHINGLY SIMPLE IS STEPHEN M. SULLIVAN'S PLAN, RIGHT, FOR A SEATTLE AREA HOUSE. IT INCORPORATES THE ISLAND KITCHEN INTO A "GREAT ROOM." GONE IS THE LITTLE-USED LIVING ROOM, BUT MORE THAN COMPENSATING FOR ITS DISAPPEARANCE IS A LIBRARY THAT CAN BE SHUT OFF FROM THE ADJOINING ROOM. AN OFFICE (WITH POCKET DOORS) IS ANOTHER FEATURE THAT TAKES INTO ACCOUNT THE CHANGING USE OF THE HOME.
Stephen Sullivan Architects



THE PLAN OF A HOUSE AT LEFT, THOUGH DRAWN UP FOR AN INDIVIDUAL CLIENT, INDICATES ANOTHER WAY PRODUCTION HOUSES COULD EMBRACE TODAY'S INFORMAL WAY OF LIFE, PLACING THE KITCHEN AT THE HEART OF THE HOUSE. ECK'S DESIGN ALSO RECOGNIZES THAT MUCH OF THE TIME, PEOPLE ARRIVE HOME VIA THE GARAGE RATHER THAN THE FRONT DOOR. SO THE EXIT FROM THE GARAGE LEADS INTO THE FOYER, GIVING THE RESIDENTS THE SAME ENTRY AREA AS GUESTS WHO ARRIVE ON FOOT.
Jeremiah Eck Architects

year-old organization that moved to Westport, Connecticut, from Sacramento four years ago as part of its strategy to become stronger nationally and to exercise a bigger influence on building regulations in the Northeast. Through its 21 state societies, AIBD lobbies governments to allow nonarchitects to design houses, multifamily housing up to three stories, and light commercial buildings. It is particularly bothered by restrictions in New Jersey, where, according to Doug Bowman, a former president of AIBD, "an architect's seal is required on any project."

Executive Director Tammy Crosby says AIBD strives to enhance building designers' credibility. As evidence of this, she cites the organization's chief membership requirement: at least six years of "professional design experience." In truth, the requirement is nebulous. "Professional design experience" may

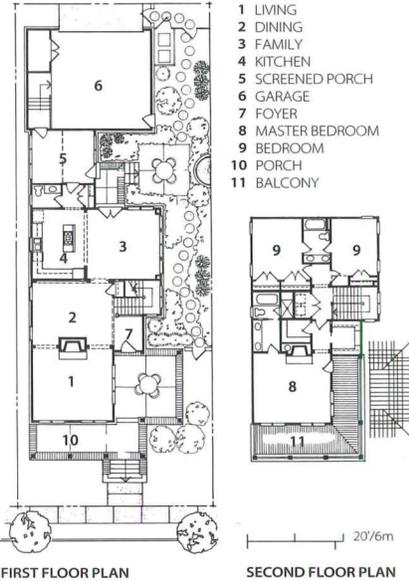
mean the individual has worked for an architectural or engineering firm, a homebuilder, a plan shop, or himself – as if all of these were equal. Half of that experience may be courses in an architecture-related field of study, but no degree is required. Architect J. Carson Looney, of Looney Ricks Kiss Architects in Memphis, expresses concern because despite the obvious looseness of the professional requirements, the AIBD and its National Council of Building Designer Certification provide members with a seal they can affix to documents. Looney says clients may get the idea that a building designer's seal is equivalent to the seal that architects receive after passing a state exam.

W.D. Farmer, an AIBD board member and the operator of a plan service in Atlanta, estimates there are 2,500 building designers nationwide, most of them not in AIBD. Some are first-

ARCHITECTS ARE ALSO IMPROVING THE DESIGN AND SITING OF SPEC HOUSES. THIS HOUSE BY LOONEY RICKS KISS ARCHITECTS IN THE HARBOR TOWN DEVELOPMENT IN MEMPHIS LOOKS TRADITIONAL BUT IT ACCOMMODATES MODERN LIVING PATTERNS. THE KITCHEN OPENS TO A FAMILY ROOM, AND THERE IS A DIRECT CONNECTION—THROUGH A SCREENED PORCH—TO THE ATTACHED GARAGE AT THE REAR. THE WALLS OF THE GARAGE, PORCH, AND FAMILY ROOM HELP TO DEFINE THE GARDEN COURT. THE FIRST-FLOOR PORCH AND SECOND-FLOOR BALCONY GIVE THE HOUSE A SOCIABLE PRESENCE ON THE STREET.



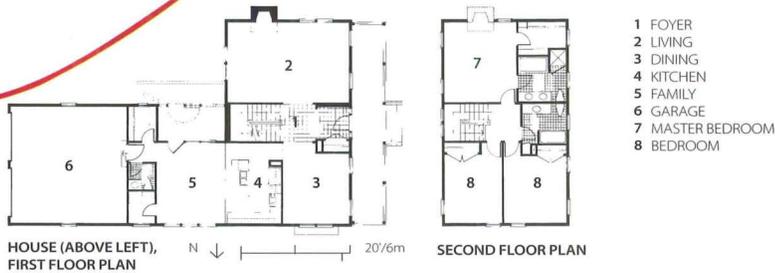
Jeffrey Jacobs, Mims Studio, Courtesy Looney Ricks Kiss



IN PRAIRIE CROSSING, ABOUT 40 MILES NORTH OF CHICAGO, THE LAND OWNER SET OUT TO BUILD HOUSES WHILE PRESERVING MUCH OF THE SITE AS AGRICULTURAL AND NATURAL TERRAIN. THE ASSIGNMENT GIVEN NAGLE HARTRAY DANKER KAGAN MCKAY WAS TO DESIGN HOUSES THAT WOULD FIT WELL WITH OLD FARMHOUSES AND LOOK PLEASING BUT NOT OSTENTATIOUS FROM ALL DIRECTIONS. OTHER HOUSES IN THE DEVELOPMENT, DESIGNED BY FREDERICK PHILLIPS & ASSOCIATES AND TIGERMAN McCURRY ARCHITECTS, ALSO ILLUSTRATE THE QUEST FOR COHERENT, RESTRAINED DESIGN. TRADITIONAL NATURAL MATERIALS SUCH AS WOOD CLAPBOARD ARE USED ON ENTIRE EXTERIORS. THE AMPLE WINDOWS ARE ORGANIZED INTO REGULAR PATTERNS.



Bruce Van Inwegen



rate, but a look at the work shown in the AIBD's *DesignLine* magazine suggests that many building designers view houses much as homeowners without architectural training tend to do: as a succession of features to be added together until the budget is exhausted. The houses shown contain fine materials and craftsmanship, but the overall emphasis is not so much on coherent design as on keeping up with the neighbors. Since the houses meet safety requirements, it's hard to justify shutting building designers out of the housing field. But an analysis of what's being produced suggests that architects are getting fewer commissions than they should.

Architects' Influence

This is not to say that production houses are not influenced by architects. Stephen Fuller, a building designer who operates

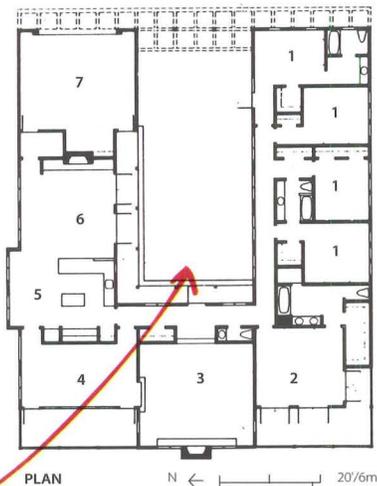
Design Traditions, an Atlanta plan service and residential design firm, says architects such as Andres Duany and Elizabeth Plater-Zyberk have exerted a large and positive influence on the design of houses by formulating architectural codes for new developments. "The codes are writing the genetic lifeline of these houses," Fuller says. "The architect has sort of put up a lot of invisible fences that guide the builder to the right solution." Code-writing, he notes, is a way for architects to have a greater hand in the shaping of tract housing without doing individual designs.

Fuller's firm is responsible for the design of 3,000 to 4,000 houses a year, mostly production houses in relatively conventional, low-density suburban developments. Even in these developments, which are by no means Neo-Traditional or New Urbanist, he detects a strong impact from Duany, Plater-

AT LEE'S ORCHARD IN CALIFORNIA'S SANTA CLARA VALLEY, ARCHITECTS DANIEL SOLOMON AND KATHRYN CLARKE OF SOLOMON, INC., DESIGNED 13 SPEC HOUSES (WITH FOUR FLOOR PLANS) SET IN THE GRID OF A NEWLY PLANTED OLIVE ORCHARD. ALL RESPOND IN SOME FASHION TO RURAL VERNACULAR ANTECEDENTS. THE COURTYARD HOUSE AT RIGHT FEATURES A PITCHED ROOF AND A PROMINENT CHIMNEY, BUT THE DESIGN IS CRISP AND CONTEMPORARY, OPEN TO SUNLIGHT AND VIEWS. FOR A PART OF CALIFORNIA WITH A MEDITERRANEAN-LIKE CLIMATE, THE COURTYARD FORM SEEMS AN EXCELLENT CHOICE.



Gary Strong



PLAN

N ← 20'/6m

ANOTHER OF SOLOMON'S HOUSES AT LEE'S ORCHARD, BELOW, TAKES ITS CUE FROM THE OLD DOGTROT HOUSE, OPEN IN THE MIDDLE. THE SOCIAL AREA AND A GARAGE ARE IN THE DWELLING'S UPHILL PORTION, WHILE MOST OF THE BEDROOMS ARE

IN THE OTHER SEGMENT, JOINED BY A SECOND-STORY INTERIOR BRIDGE. A SYMBOLIC GATEWAY LEADS INTO THE CENTRAL AUTO-MOBILE COURT, THROUGH WHICH THE MAIN ENTRANCE IS REACHED.



Christopher Irlon

- 1 BEDROOM
- 2 MASTER BEDROOM
- 3 LIVING
- 4 DINING
- 5 KITCHEN
- 6 FAMILY
- 7 GARAGE



SECOND FLOOR PLAN



FIRST FLOOR PLAN

N ← 20'/6m

Zyberk, and others of like mind. This impact takes at least three forms: First, a growing trend toward harmonizing the architecture instead of letting each building compete for dominance; this may eventually discourage some of the overly ostentatious features now widespread on upper-priced tract houses. Second, a trend toward giving the houses front porches and toward deemphasizing the visual impact of the garage, so that the public environment becomes more appealing. And third, a trend toward "regionally appropriate" styles.

The prospects for architects' involvement in production house design seem brightest for firms that can skillfully adapt historic styles. The reason is obvious: most homebuyers want an architecture that seems comfortable and familiar, rooted in forms they already enjoy. Adolph Loos once said, "A house must serve one's comfort. The work of art is revolutionary, the

house conservative." The public's preference for houses that have a high degree of familiarity poses a problem for architects who favor avant-garde work; since the advent of Modernism, there has been a gulf between the tastes of many architects and the tastes of the public. The building designers' lack of a complete architectural education may in fact be a source of their attractiveness to the public; not having had their tastes molded by studios and theoretical and polemical works, building designers remain closer to the public's tastes.

How One Firm Succeeded

Among architectural firms that design in a traditional mode, Looney Ricks Kiss has done as well as any at creating familiar-looking houses without sinking into either caricature or stodginess. Its designs for Memphis (*continued on page 90*)

Modernism's Reign in Spain



1

In present-day Spain, Modernism's social program has reemerged. Representing this resurgence are four projects that synthesize craft, materials, and form to create an architecture of place. *by Abby Bussel*

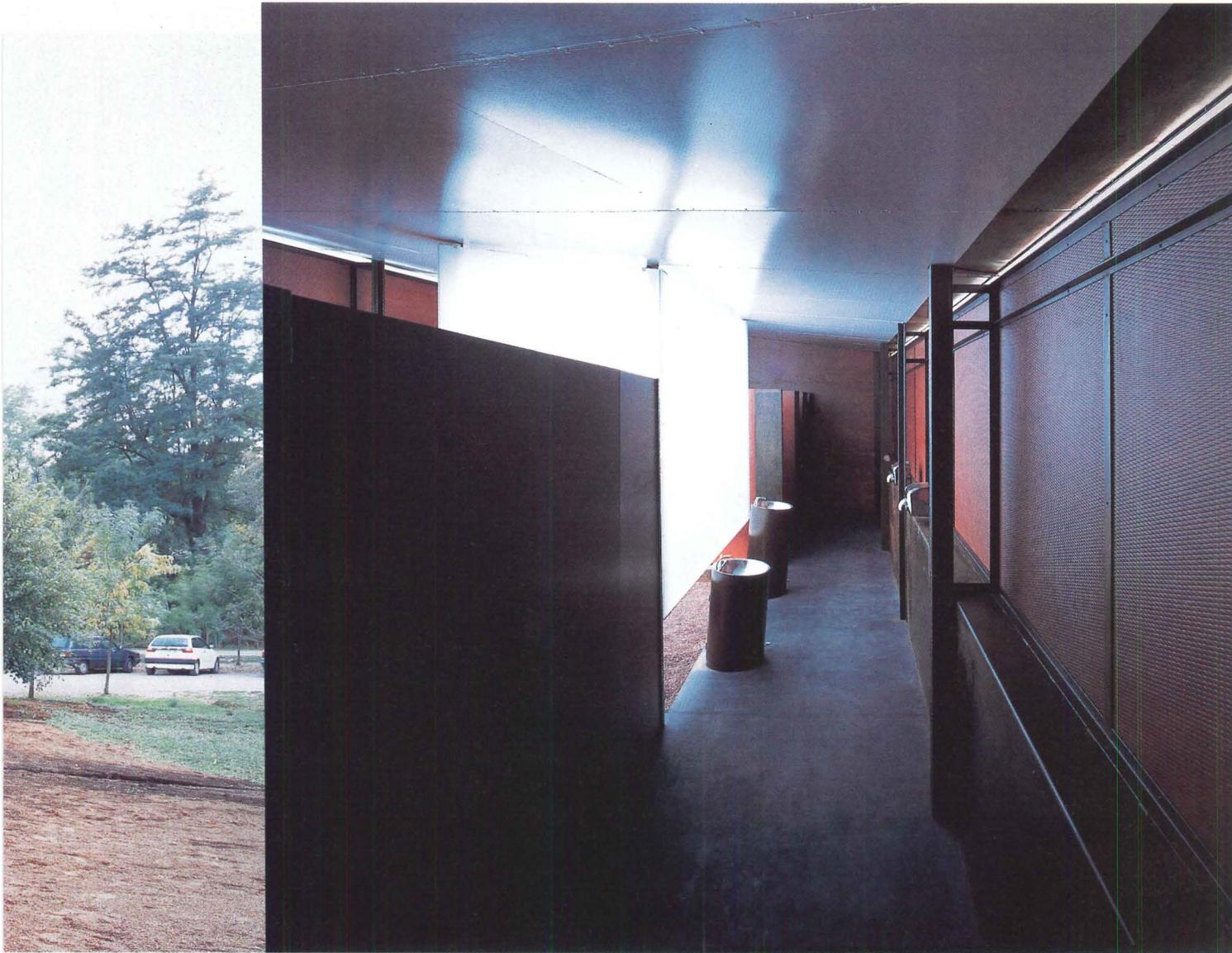
Moving beyond the spectacle of the Barcelona Olympics, young Spanish architects (generally, those born after 1950) are reviving Modernism's social program. Their work has been characterized by the European press as a reaction to both the nostalgia of Post-Modernism and the intellectualized form-making of Deconstructivism. Call it Minimalism, Neo-Rationalism, or Critical Regionalism, but by whatever name, this diverse group of architects is producing some of the best work anywhere.

Carrying on a strong tradition of Modern invention in Spain, this current body of work has emerged from a confluence of socio-economic conditions and cultural agendas. One factor, according to Weld Coxe and Mary Hayden in "World Trends in Private Practice," a UIA report on research conducted in 1993, is that architects in Spain are given, by law, complete responsibility for their projects. "Architecture schools

train their students in both architecture and engineering ... and, once registered, the architect's seal on drawings covers all ... aspects of the building. The result is that Spanish architects have much more control over the entire process, including design."

This position of authority can be found to directly correspond to "a heightened social and economic status of architects in the community or society in which they practice," conclude Coxe and Hayden. And it is this status, combined with economic prosperity and social optimism that laid the foundations for the emergence of a renewed architectural energy and rigor in Spain in the mid-1980s. Both the public and the private sectors in Spain have demonstrated their respect for architectural expertise by employing young practitioners who are committed to an architecture that is forward-looking.

In stark contrast, for example, to the dismal pastiche of new libraries by star architects in San Francisco and Denver,



2

Fageda de Jorda, Reception Pavilion Rafael Aranda, Carmen Pigem, Ramón Vilalta

among other cities, or the placelessness of the megamall and the superstore – cultural shrines in the U.S., where artifice is preferred to art – the brightest lights of Spain’s architectural community are exploring an aesthetic that is minimal, rational, and regional. Their work rises above insipid contextualism. It is an overtly Modern architecture of place, extracting its richness from local materials and vernacular cues.

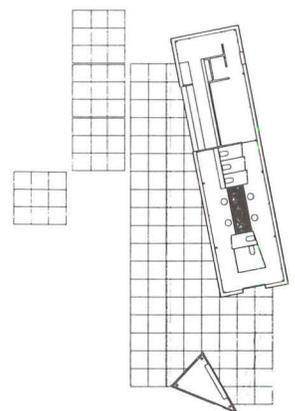
Representative of this *oeuvre* and shown on the following pages are: the reception pavilion for the Fageda de Jorda by Rafael Aranda, Carmen Pigem, and Ramón Vilalta; the Chapel-Auditorium of Collserola Cemetery and the Rius-Fina residence by Francesc Rius Camps; and the Morella Boarding School by Enric Miralles and Carmen Pinós. These projects mediate between the natural and the built environments, between history and modernity, and between the technologies of form-making and the sensations of experience. □

Located in the Garrotxa Volcanic Zone Nature Park in Girona, Spain, is the reception pavilion (1) for the Fageda de Jorda, a recreational beech forest. The architects use a Modern vocabulary to express both the flow and the color of lava. The pavilion’s copper-clad roof connects an information post, clad in metal panels, and a rectilinear structure of rust-colored hardboard and black metal sheeting, which contains toilets (2), a bar, and a storeroom.

Architects: Rafael Aranda, Carmen Pigem, and Ramón Vilalta with M. Tapies and A. Saez.

Date of completion: 1994.

Photos: Hisao Suzuki.



PLAN

N  20/6m



3

Chapel-Auditorium at Collserola Cemetery Francesc Rius Camps

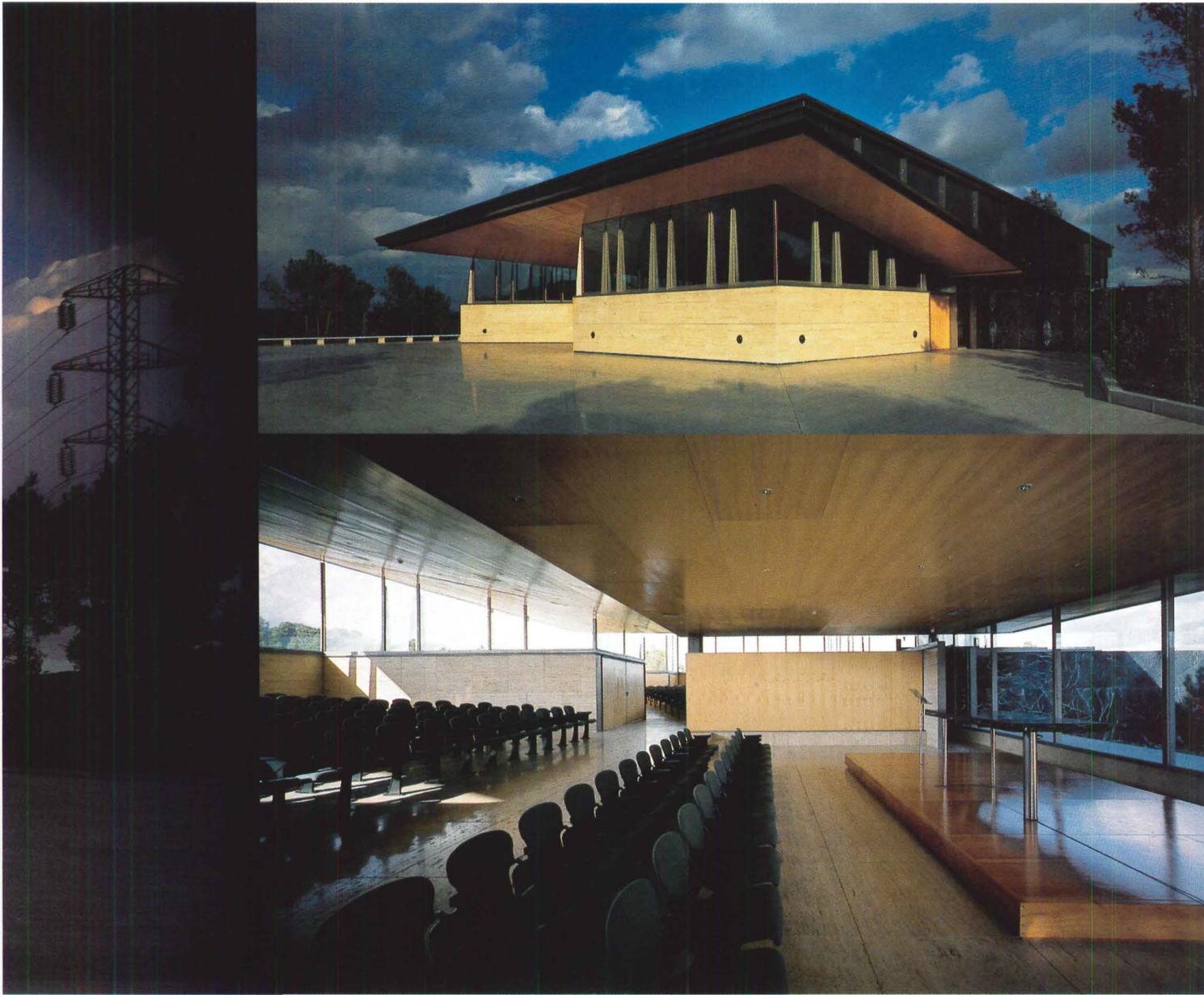
Set on a hill in Barcelona is the Collserola Cemetery's auditorium and chapel building (3, 4) by Francesc Rius Camps, the oldest, at 54, of the architects in this collection of projects. Built for civil and religious ceremonies, the chapel-auditorium sits on a travertine platform – an informal gathering spot before and after services. The platform is shaded by the canopy-like roof, which is structurally separated from the chapel's glass and travertine-clad walls. As the roof protects people mingled outside, the glass and marble walls provide privacy for those seated in the building and

serve to connect the congregation to the surrounding natural environment. Two other dual-purpose strategies, similar to that of the building envelope, are found inside: an angled entrance area interrupts the rectilinear plan and serves to separate the chapel (5) from the auditorium; these two seating areas can be joined to create a 500-seat hall by lowering a mechanically activated wall.

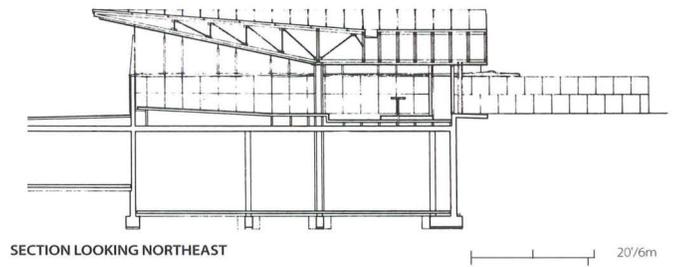
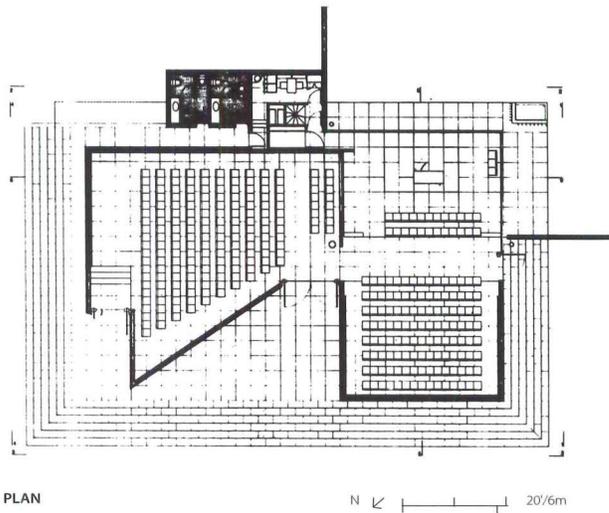
Architects: Francesc Rius Camps with Sergi Serra Casals, Moisès Aguilar Pastor, and Emma Idrach Meliá.

Date of completion: 1992.

Photos: Hisao Suzuki.



4 (above), 5

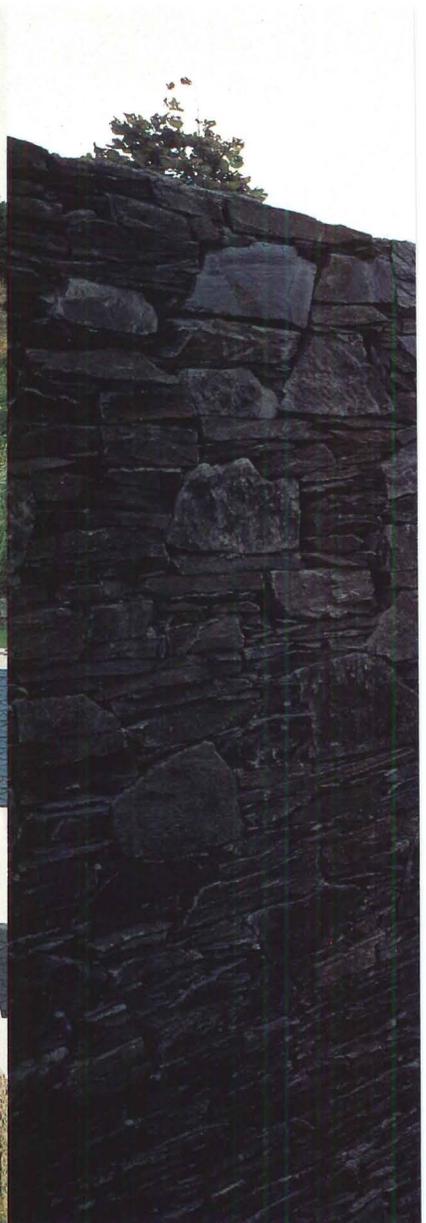




6

Casa Rius-Fina
Francesc Rius Camps

Overlooking the village and the valley of Bolvir, Girona, Spain, is a holiday house (6) designed by the architect for his family. Sited on a long narrow terrace, the house is closed on its north side (7) and open on its south side (6), taking advantage of the natural terrain and the climate. The bar-shaped building, cranked at its east end to separate the kitchen from the rest of the house, has thick walls of local stone, a wood roof structure, and a slate shingle roof (see Selected Detail, p. 96). While the building



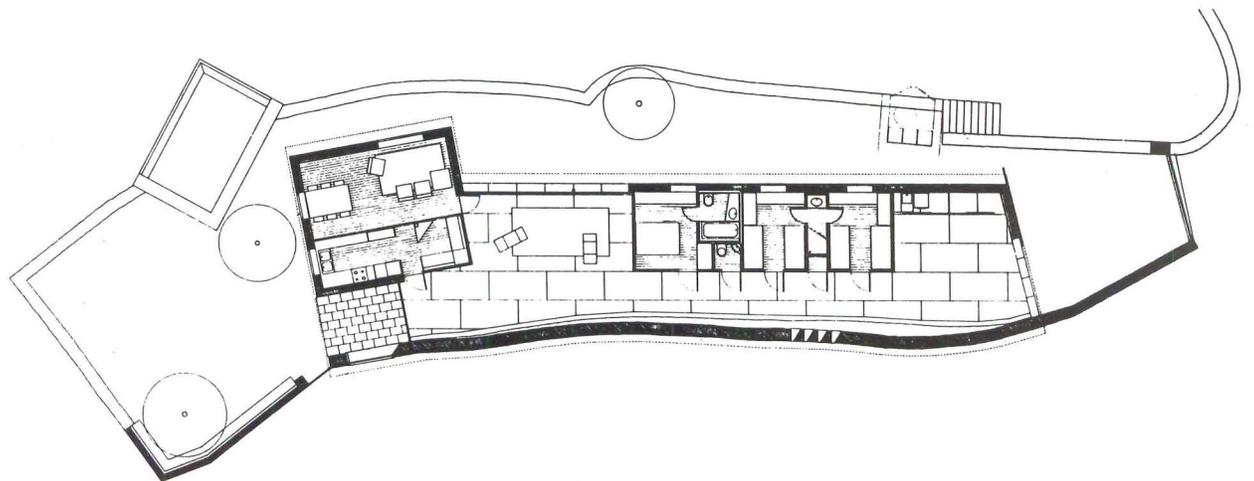
7

materials are typical of the area, the square, mullionless windows clearly identify the house as a modern interpretation of the vernacular. The open plan is interrupted by two wood-clad boxes, one containing the kitchen and other, the bedrooms (8).

Architects: Francesc Rius Camps with Moisés Aguilar Pastor, Emma Idrach Meliá, and Jaume Ratera Vives.
Date of completion: 1990.
Photos: Hisao Suzuki.



8



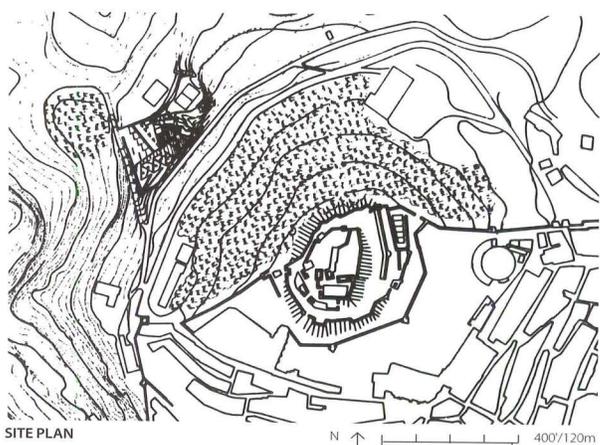
PLAN

N ↓  10/3m



9

Morella Boarding School Enric Miralles and Carmen Pinós



The stepped part of the Morella boarding school in Castelló, Spain, was inspired by the ramparts of the fortified castle it sits below and by the terraced landscape of its site (11). The multilevel structure, designed by Enric Miralles and Carmen Pinós (a partnership now dissolved), is organized into three main areas: the dormitory wing that zigzags down the hilly site (10, 12); the classroom wing (9) contained in a series of stepped blocks, which widen as they descend the hill; and the exterior common areas or plazas (9) between the classroom levels. A stepped exterior ramp separates

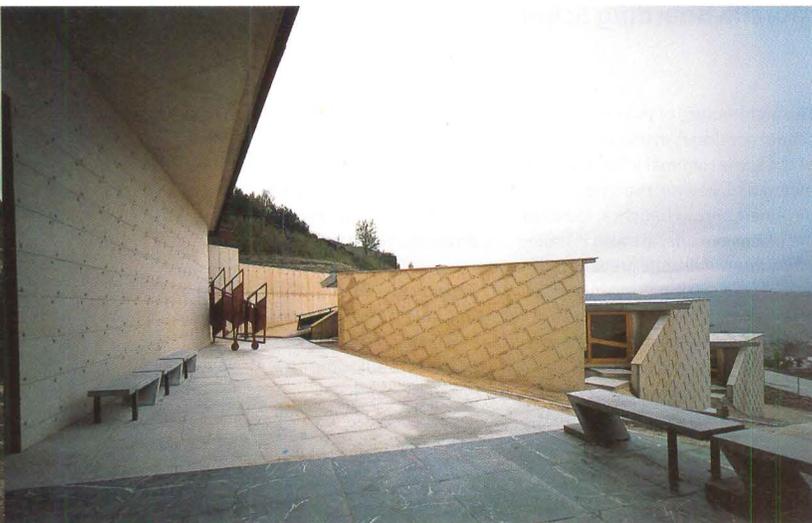
the classroom wing from the dormitories. The building hugs the landscape, focusing views on the surrounding valley through long, vertical slits of glass and large windows. The buff-colored precast concrete cladding, fastened with custom-designed bolts, is set in alternating, diagonal courses of flush and angled tiles on the dormitories (12) and in regular courses on the classroom buildings. In fabrication, detailing, and finish, the materials palette is an evolutionary interpretation of the local architecture.



10



11



12



13

Morella Boarding School *(continued)*

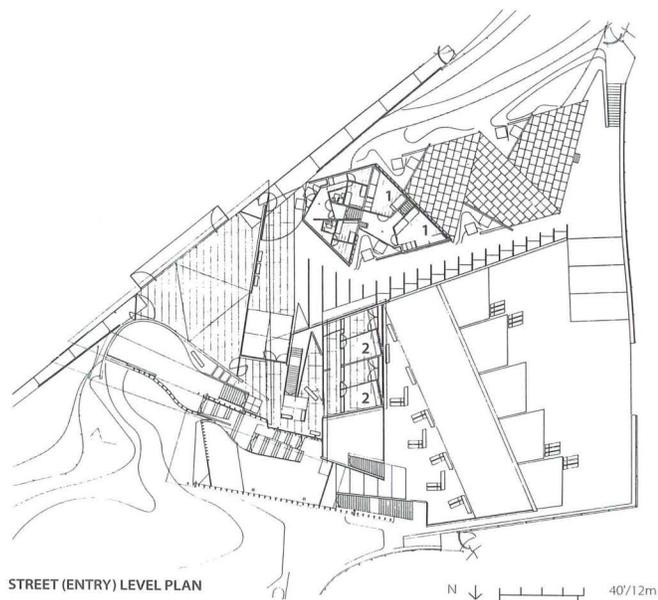
The architecture of the Morella school continues inside with the use of the same minimal vocabulary and materials. Likewise, the custom-designed, zigzag benches, found in the plazas outside, are also installed in the interior lounge areas (13). The interior materials palette includes black marble flooring and black-metal balustrades and railings that highlight common areas and corridors. The open corridors and stairs ride the hilly site, creating

dynamic perspectives that run both parallel and perpendicular to the sloping site. The architects funnel natural light into internal common areas, like the sweeping bar space on level one (14).

Architects: Enric Miralles and Carmen Pinós with Rodrigo Prats, J.A. Andreu, Se Duch.

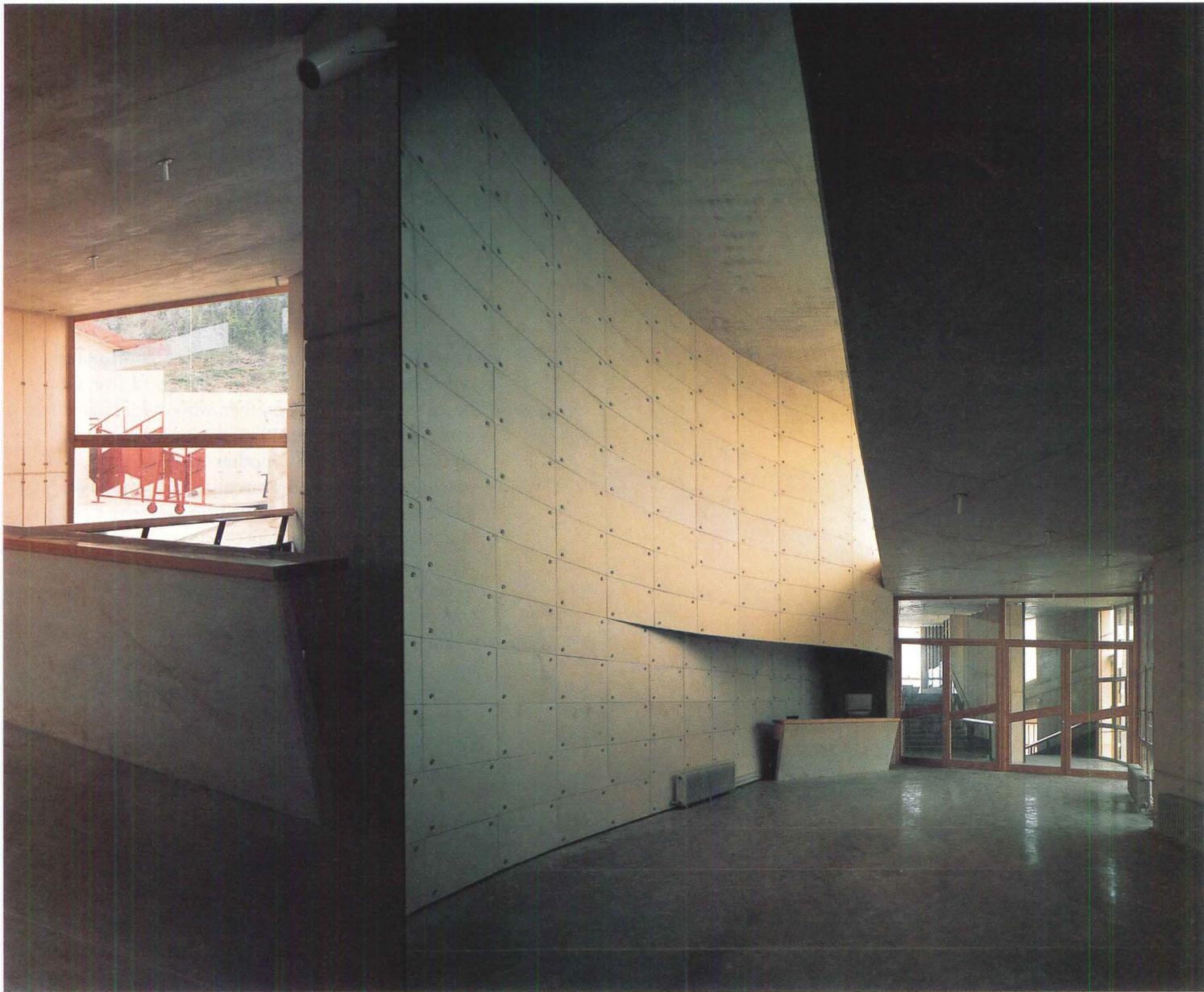
Date of completion: 1994.

Photos: Hisao Suzuki.



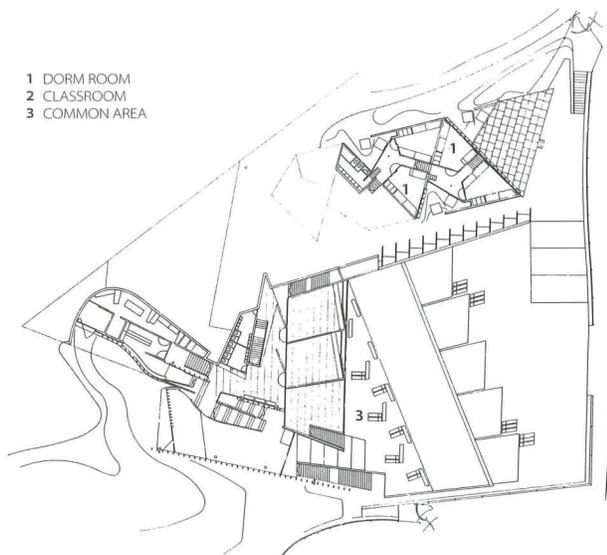
STREET (ENTRY) LEVEL PLAN

N ↓ 40/12m

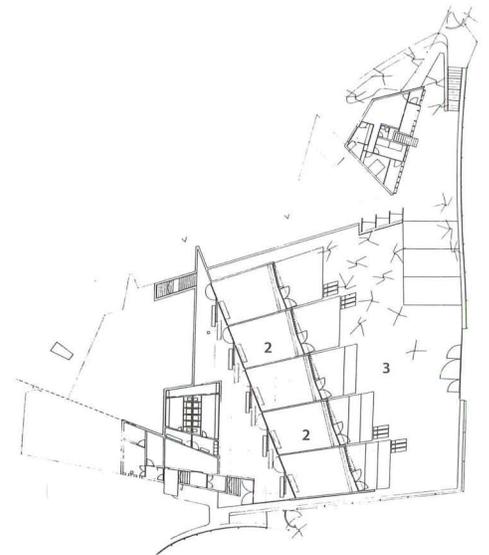


14

- 1 DORM ROOM
- 2 CLASSROOM
- 3 COMMON AREA



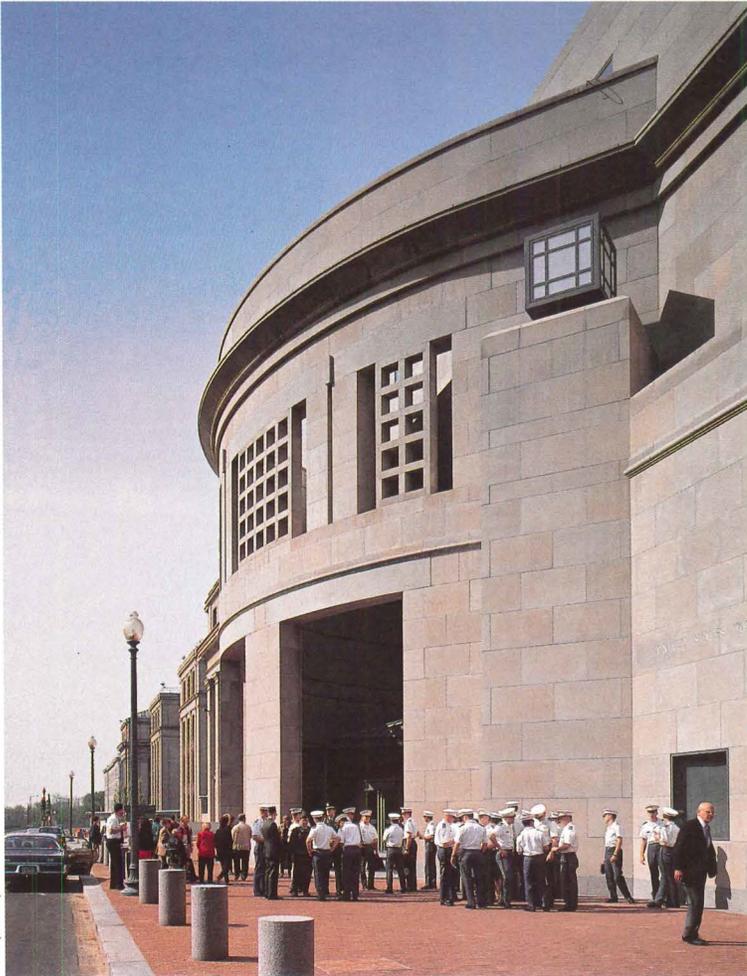
FIRST LEVEL BELOW STREET



THIRD LEVEL BELOW STREET

Memory Too Politic

In its tasteful attempts to address the defining atrocity of the 20th Century, the United States Holocaust Memorial Museum by James Ingo Freed is perhaps too tactful for our own good. *by Ziva Freiman*



Timothy Hursley

For a building that in itself is supposed to be a memorial, **the museum's primary façade on 14th Street blends altogether too sedately** with the public edifices on either side of it, giving little indication of its role. Closer examination of the primary entrance (above) reveals that the bowed masonry wall is a "fake front," stretched like a polite veneer over the harsher architecture within.

The Holocaust has been a constant, controlling presence in our family. From the age of five, I'd heard stories from my mother, who was liberated from Bergen Belsen in 1945, the lone survivor of an extended clan. My mother had lost a three-year-old daughter under circumstances she never discussed, and I could never bring myself to ask about. Now, with two small children of my own, I was afraid that visiting the Holocaust Museum in Washington would be reliving the unspeakable terror of the mothers.

Imagine my surprise, on completing an initial tour of the building, to realize that I felt virtually unscathed. And while I became more affected with each successive walkthrough, the emotions and insights that came to me were rarely visceral, but reactions sifted through a cerebral filter.

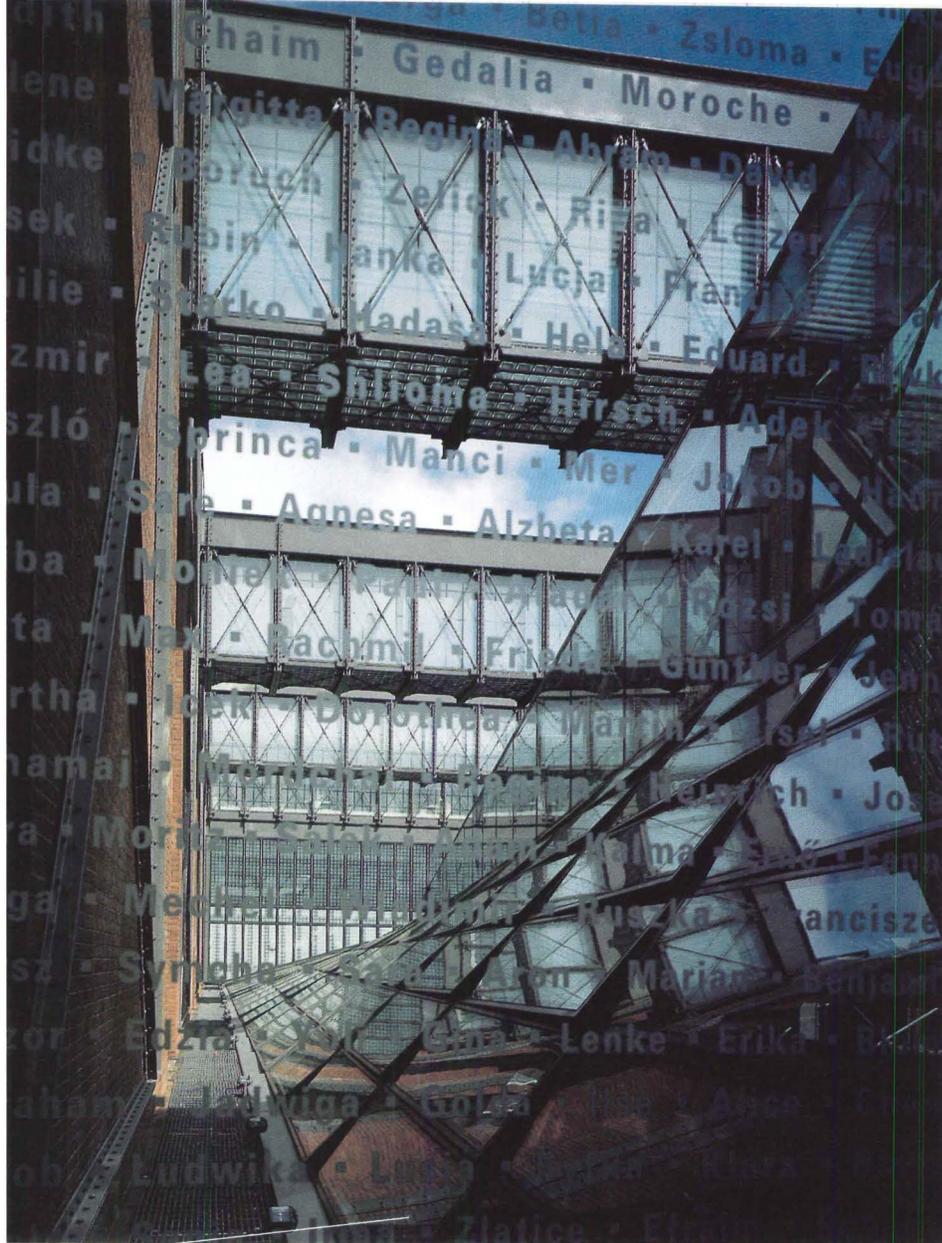
A similar intellectualization characterized the copious, reverent coverage the building received upon its inauguration in April 1993. (P/A published an extensive examination of the design in February 1993.) As conceived by James Ingo Freed, of Pei Cobb Freed & Partners, the museum is the refined product of a subtle mind. It grows on you the more you know.

The task put to Freed was of excruciating sensitivity: to design the first – and only – national museum of the Holocaust, dedicated primarily to the annihilation of six million European Jews, to be sited prominently near Washington's monumental mall. Moreover, the museum's institutional shell would not be neutral but commemorative: the museum *as* a memorial. This last objective has been met in some places and missed in others, depending on the varying degree to which container and content have been integrated.

Sins of Omission

The extreme restraint, if not taciturnity, of the exterior of the building is a case in point – it is more a conscientious, mannered response to its civic context than the disturbing presence it had every right to be. *(continued on page 64)*

Inside the permanent installation, **visitors experience polar opposites: the ethereal glass bridges**, where the surrounding structure, viewed through transparent walls inscribed with victims' names, plays a powerfully evocative role; and the dense and crowded **black-box display halls** (seen here on a good day), from which architecture is largely excluded. A secondary set of fritted-glass bridges, visible in the upper photo, connects the library, research, and archive spaces on the fifth floor.



Timothy Hurley



Alan Gilbert

Straddling, uncomfortably, the question of what role architecture should play in propounding the lessons of the Holocaust, the interior of the building offers three disparate experiences: the black-box permanent exhibit, where the architecture all but disappears (two or three memorable exceptions notwithstanding); the figural volumes of the Hall of Witness and the Hall of Remembrance, where the architecture, as the sole commemorative medium, ranges from resonant expression to stony opacity; and the hybrid remainder of the building, which is indeterminate in both layout and language.

Torn between grateful respect for Freed's dignified sensibility and gnawing disappointment, my reaction to the museum led me to the reluctant conclusion that in the end, the architecture – of both the display and the building – was not strong enough. It is not ersatz representation (which Freed labels “pseudo-concentration camp”) that I miss, but an experiential, phenomenological depth. With few exceptions, the architecture simply does not do enough physically to put people emotionally on the spot.

I don't question that it is primarily the didactic responsibility of the exhibit to bring about the kind of soul-searching that is really our only hope for redemption. As it stands, the permanent installation is so dense it's hard to keep sight of the individual in the Holocaust, much less come to terms with the dark side in our own nature. Nowhere, for instance, are you forced to contemplate what *you* would have done, as victim or as potential accessory, given the same choices between complicity and resistance. Perhaps the employment of a physically manipulative architecture could have helped such self-knowledge to come about. By abdicating this risky and much more controversial course of action, the designs of both exhibit and container abet the delusion that the moral issues of the Holocaust are a matter of the past.

The Permanent Exhibit

From the start the permanent exhibit was conceived as an autonomous entity within the museum, occupying three floors of the building and served exclusively by three elevators that deliver visitors to the beginning of the procession on the fourth floor. The multimedia installation documents in exhaustive detail the chronology of the Holocaust as viewers spiral down along a tightly prescribed course leading from the fourth floor (“Nazi Assault – 1933 to 1939”) to the third floor (“Final Solution – 1940 to 1944”) to the conclusion on the second floor (“Aftermath – 1945 to Present”). *(continued on page 66)*

The elevators serving the permanent exhibit are **one instance of structure theatrically – and effectively – incorporated into the display:** entered through a somber brick arcade, the raw steel cages hold the audience captive, as a video

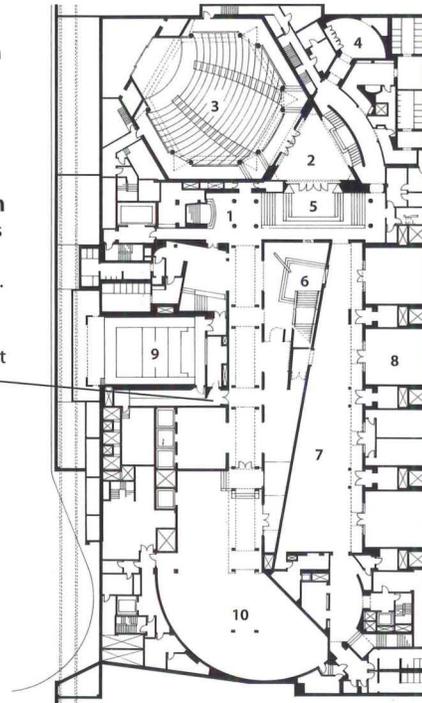
monitor timed to the elevator flight delivers the first stunned impressions that filtered out to the world from the liberators of the camps.



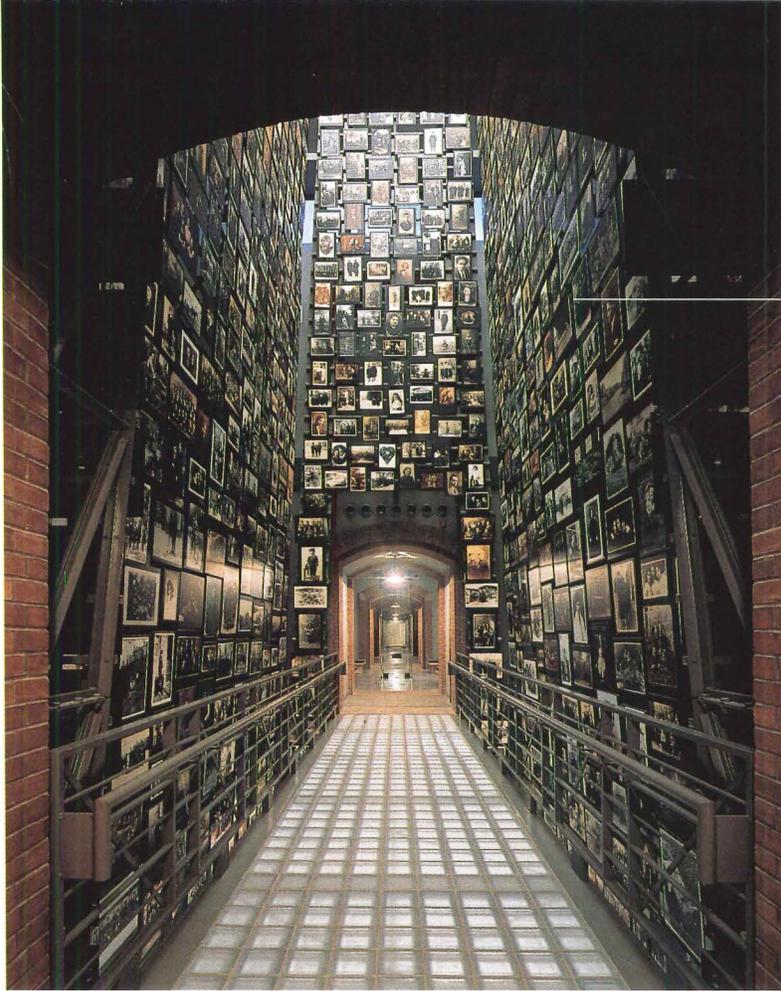
Photos these two pages: Timothy Hursley

- 1 STAIR CONNECTING TO FIRST FLOOR
- 2 THEATER LOBBY
- 3 THEATER
- 4 GREEN ROOM
- 5 AMPHITHEATER
- 6 MAIN STAIR TO HALL OF WITNESS
- 7 EDUCATION/ CONFERENCE CENTER
- 8 CLASSROOMS
- 9 CINEMA
- 10 TEMPORARY EXHIBITION SPACE

The decision to split the black-box permanent exhibit between two opposing sides of the building, connected by glazed bridges spanning the Hall of Witness, reflects architect Freed's perception of the psycho-historical “rhythm of the Holocaust” as a series of events of great intensity followed by (fatally passive) lulls. This organizing principle is not evident in the concourse-level plan, where a less-than-coherent geometry results in a **warren of hallways** and alcoves.

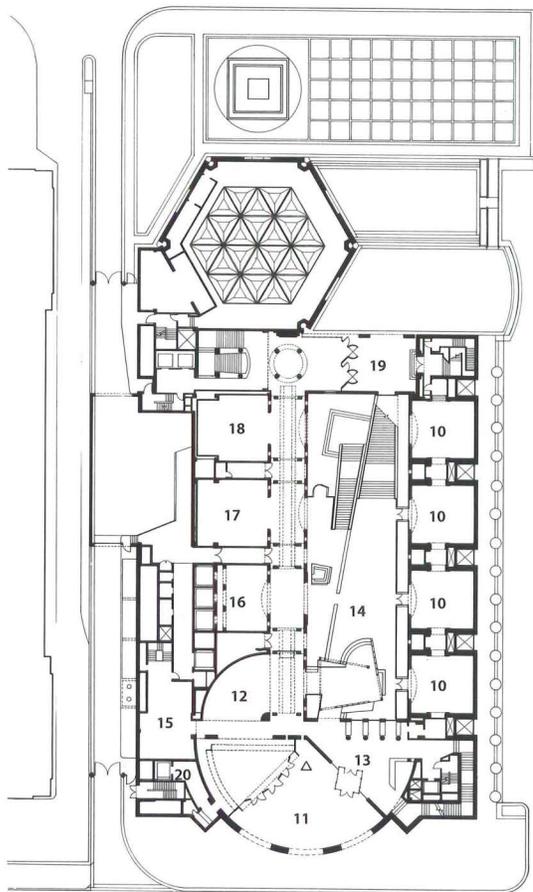
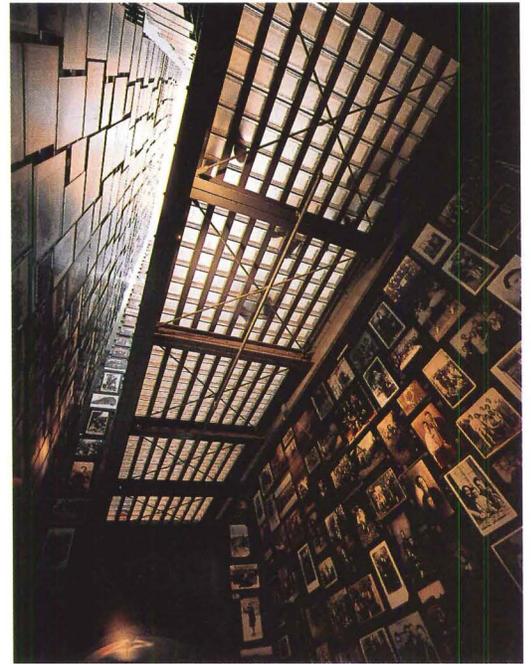


CONCOURSE FLOOR PLAN



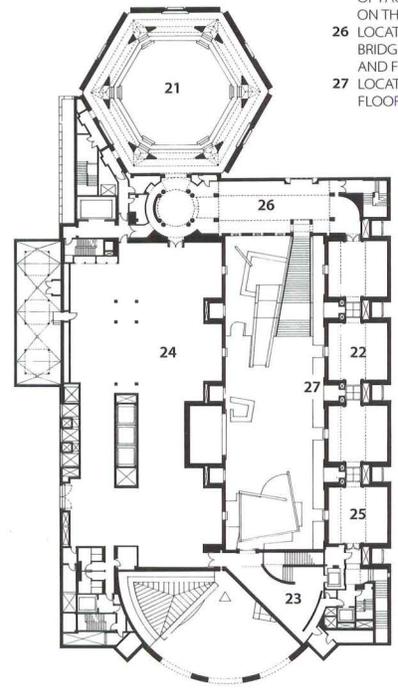
The episodic nature of the towers in the museum's north wing was underutilized by the designers of the permanent installation, with **the memorable exception of the "Tower of Faces,"** a two-

story vertical shaft covered from top to bottom with photographs of the massacred inhabitants of one small town. It is one of only a few instances where architecture and subject matter are forcefully integrated.



FIRST FLOOR PLAN N → 40/12m

- 11 14TH STREET ENTRANCE (INDIVIDUALS)
- 12 HALL OF FLAGS
- 13 BOX OFFICE
- 14 HALL OF WITNESS
- 15 BOOKSHOP
- 16 ELEVATORS TO PERMANENT EXHIBIT
- 17 CLOAKROOM
- 18 PATRONS' LOUNGE
- 19 15TH STREET ENTRANCE (GROUPS)
- 20 ELEVATOR TO FIFTH FLOOR LIBRARY/ARCHIVE/RESEARCH CENTER



SECOND FLOOR PLAN

- 21 HALL OF REMEMBRANCE
- 22 LEARNING CENTER
- 23 TRANSITION SPACE BETWEEN PERMANENT EXHIBITION FLOORS
- 24 CONCLUSION OF PERMANENT EXHIBITION
- 25 LOCATION OF "TOWER OF FACES" INSTALLATION ON THIRD FLOOR
- 26 LOCATION OF GLAZED BRIDGES ON THE THIRD AND FOURTH FLOORS
- 27 LOCATION OF FIFTH FLOOR BRIDGES

The actual fleshing out of the display came very late, when the architectural design was nearing completion. "We were running very fast at the end," Freed recalls. "At that point all we could do [to accommodate the evolving exhibit] was to make changes." This disjunction between structure and content served an expedient purpose: the existence of resolved plans for the building made it easier to raise funds for the exhibit. But beyond that, the decision to house the permanent exhibit in what amounts to a black box had to be pedagogical – that is, a conscious choice to create an incontrovertible body of evidence, only intermittently tempered (or threatened) by the ambiguities of forceful architecture.

To Freed's credit, there are moments along the route of the permanent exhibit where the architecture kicks in to great effect. One of the most haunting arose from Freed's ability to assimilate what he calls "the rhythm of the Holocaust" and to give it architectural form. Freed describes this "rhythm" as a series of sharp changes followed by relative lulls: "First, there was the removal of citizenship, then everybody sat back and got used to it; then the removal of people to the ghetto and they thought, well, that was the worst." This perception of the historical dynamic – an event of great intensity followed by a slowing of the pace – informed the configuration of the split building wings connected by slender bridges.

Even without the benefit of Freed's explanation, these glass and steel crossings linking the darkened exhibition halls have tremendous power. After hours spent shuffling silently in the claustrophobic dark of the exhibit, huddled in a tightly packed throng (in itself chillingly appropriate), I found the light-dazed bridges ineffably stirring. Freed wanted to "avoid any transcendental feeling" at these junctures, and had the glass walls of the bridges on the fourth and third floors inscribed with the names of destroyed communities and vanished individuals. To stunned visitors pausing on these crossings (and many do) the views of the building's contorted skylight over the Hall of Witness, and its "surveillance architecture" of towers and catwalks are all the more grimly resonant for the terrors freshly imprinted on the retina in the darkness that came before, and for the dread of the horror awaiting in the darkness ahead.

Unlike the bridges, the actual transition spaces between one floor and the next are disappointing in their anonymity. Intended as places for reflection and decompression, these small lobby-like areas are tucked into wedge-shaped spaces located at the descent from the fourth floor to the

third, and from the third floor to the second. Both double-height volumes are drenched with light, and embellished with contemporary artworks commissioned by the museum: Ellsworth Kelly's *Memorial* on the third floor, and, on the floor below, Sol LeWitt's *Consequence*. In observing these spaces, I never saw people pause for more than a minute or so before moving on. It's not surprising; the dynamic, residual geometry of these rooms is disquieting, rather than restful. The placement of a bench smack in the middle of the third-floor space offers no escape from the traffic moving down the stairs and on into the next exhibition hall. You feel exposed. (Would that this vulnerability had been triggered *within* the exhibit.)

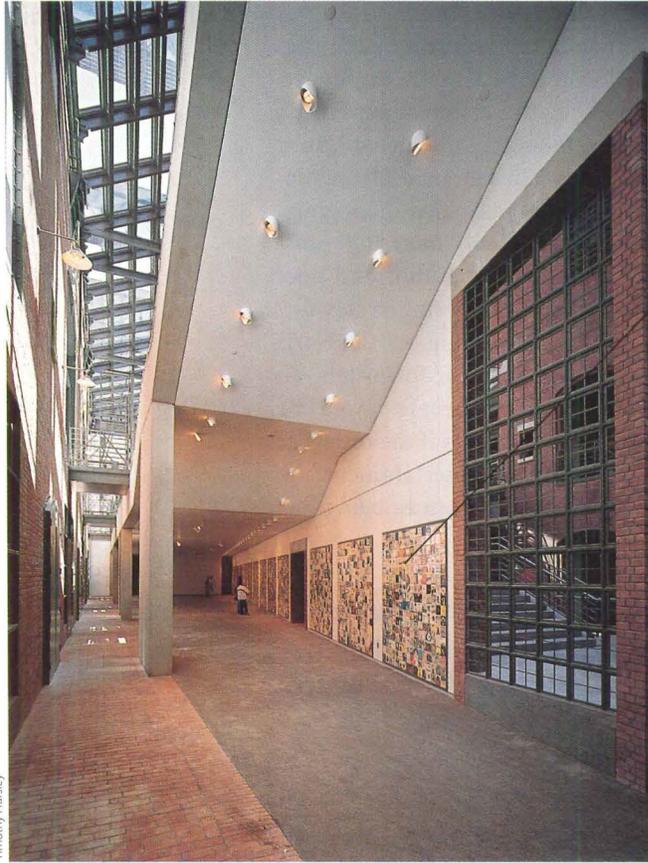
Freed contends that the transition spaces arose from a "misapprehension" between the architect and the exhibit designers. Freed had hoped the tall spaces created by the stairwells might be used for some kind of three-dimensional installations while still serving as joints be-

With few exceptions, the architecture simply does not do enough physically to put people emotionally on the spot.

tween the chronological chapters of the exhibit. Ralph Applebaum, one of several exhibition designers working under the guidance of then museum director Jeshajahu Weinberg, mistook Freed's intention and purposely left the rooms out of the loop.

Architecture Parlante

If there was any doubt about the appropriateness of integrating the subject matter with the fabric of the museum, the "Tower of Faces" puts it to rest. Configured as an autonomous episode within the chronology of the permanent exhibit, it comprises a collection of some 1,300 photographs documenting life in Ejszyski, a small town whose inhabitants (you learn later) were massacred over the course of two days by a Nazi killing squad, leaving only a handful of survivors. The pictures – of school graduations, picnics, kindergarteners, wise men, and, ironically, faddish young women in sultry Gypsy get-ups – are arrayed in dizzying profusion along the entire height of a vertical, skylighted shaft linking the fourth and third floors in the narrow row of "towers" comprising the museum's north wing. Visitors on the fourth floor traverse the shaft on a glass block bridge; those on the third floor can look up to see their shadowy footsteps



Timothy Hursley

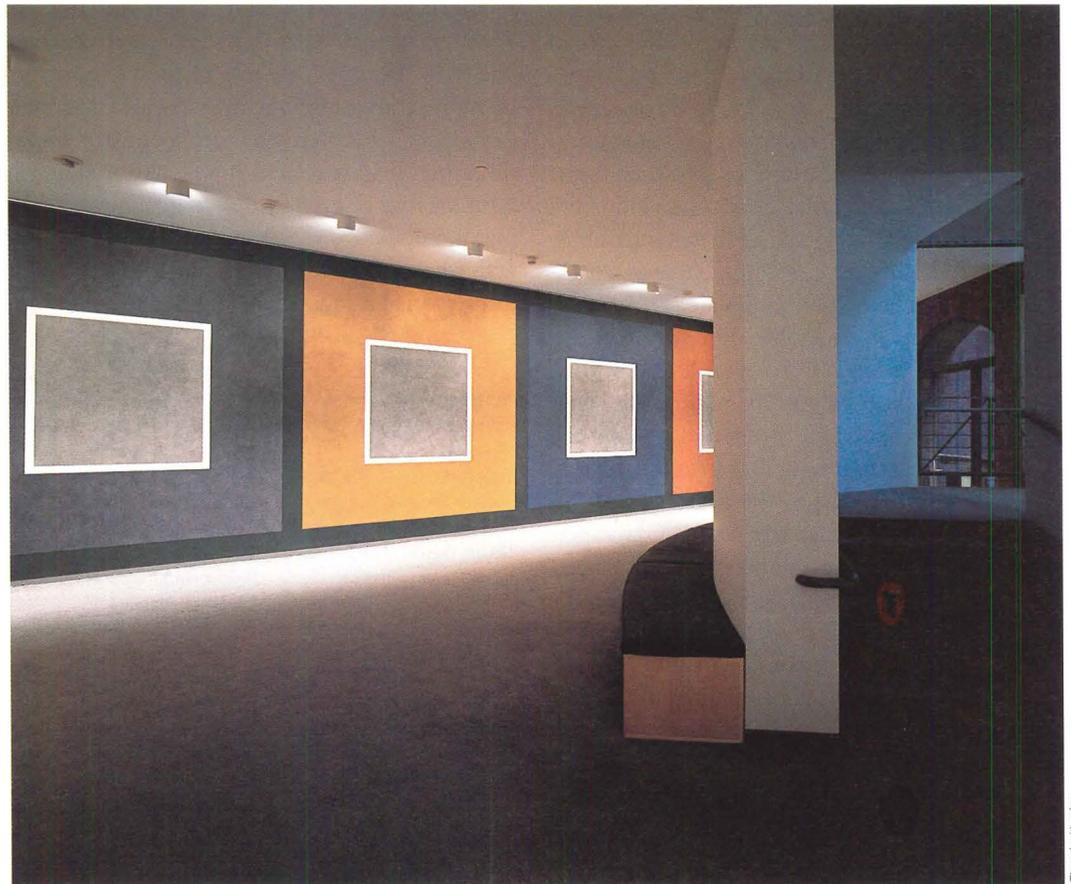
The concourse floor is loose to a fault, its auditoria and classrooms dispersed among a bewildering array of corridors and alcoves. I found the education/conference center beneath the main stair particularly unsettling: on one side, a wall of tiles painted by American school-children struck me as an afterthought; a temporary installation about Oskar Schindler, up on the far wall, appeared too flat, too low, and too meager to command the space.

By contrast to the aimlessness people experience on the concourse floor, the route through the permanent exhibit is tightly constrained, in some places relying on railed paths to lead people through a convoluted procession. In one of the exhibit's rare lapses into theme-park choreography, a ramp cuts right through the interior of a death train boxcar.



Jeff Goldberg/Esto

The transition lounges between the floors of the permanent exhibit are not at all conducive to contemplation, as intended. The dynamic geometry of the second-floor space, with its Sol LeWitt mural, makes it only marginally habitable. A bench placed against the curving wall tends to thrust visitors away, rather than offer a haven. As a number of critics have noted, three of the four artworks commissioned by the museum are highly abstract, and in the absence of identifiable references of their own would at best absorb meaning from their context. The two installed in these anonymous spaces are all but wasted.



Timothy Hursley

and, sometimes, to hear the faint echo of voices. It was, for me, one of the most moving spaces in the entire museum.

By comparison, the two major volumes of the building lacked immediate emotional impact. The Hall of Witness, which forms the atrium core of the museum, is distinguished by an understated allusive vocabulary; its steel-girded brick walls, warped skylight, skewed axis, and blind arches have been analyzed at length to ferret out their sublimated recall of train stations, crematoria ovens, and the bleak industrial architecture of the camps. The first time I saw this space, with tourists milling about in colorful profusion and the sun pouring in from above, I was taken with its beauty, though it seemed to lack the *gravitas* I had come to expect from the media buildup. But then the cerebral process set in: later the same day, when I exited the permanent exhibit, the hall took on new meaning; my eyes had been sensitized to the imagery of the Holocaust. Even the daytrippers, with their shorts and their noise and their blithe confidence, brought to mind an image of fatal innocence that had struck me upstairs: in one photograph, a woman newly deported to the Ravensbrück concentration camp is seen making her bed, fastidiously patting a blanket into place.

The interior of the Hall of Remembrance has no such resonance. The cavernous hexagonal volume clearly aspires to the spiritual but somehow ends up merely vacant. It's hard to point to any major gaffes; perhaps it is a combination of faults (ponderous proportions, slick surfaces, underarticulated details, a demystifying overabundance of daylight) and thwarted intentions. Freed had initially conceived this space as a place for private contemplation. He created an ambulatory around the hall's sunken core with the idea that the center would be an inviolable void commemorating the absence of six million. But when Mrs. Thatcher visited the museum, Freed recalls, "she wanted to march right down" to the middle. Since then, by decree of the members of the board, the use of the space has been changed radically by harnessing it to the institution's need for a ceremonial hall. "The state has different recall from the individual," says Freed, and in "giving up the ambiguity of the private" the Hall of Remembrance has "become a different kind of space." I can't say how the Hall of Remembrance functions as a ceremonial site, but on repeated visits I never saw any individuals do more than hastily slip in and out.

Architecture as Goad

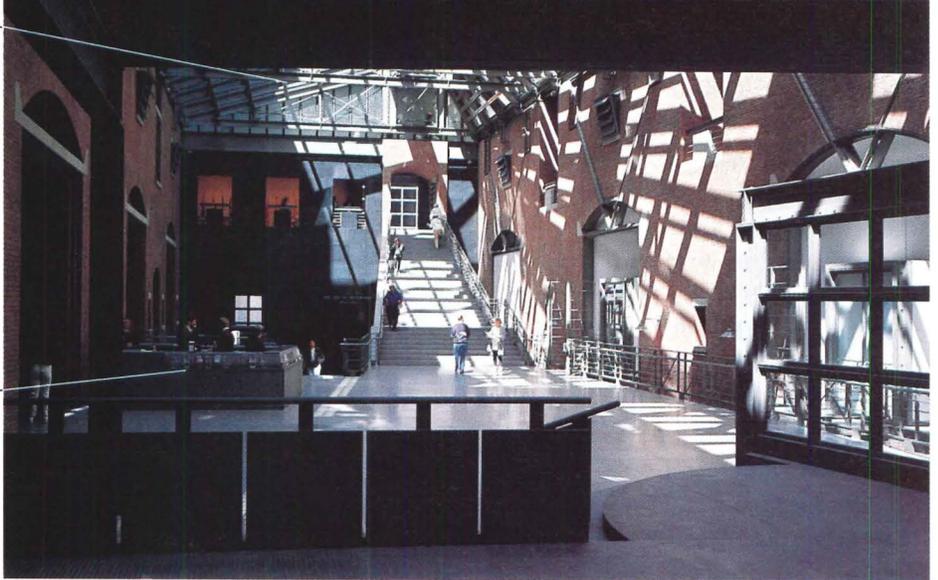
In its uneven attempts to integrate the museum's subject matter with a subtly expressive, and perhaps overly tactful architecture, Freed's building forces the question of whether art can at all reflect the Holocaust. In a thoughtful essay accompanying the recently published monograph on the building (*The United States Holocaust Memorial Museum*, Phaidon) author and poet Adrian Dannatt deems the issue irrelevant: "What matters is that the truth about the Nazis should never be suppressed or forgotten. To ensure this large numbers of people have to be engaged, moved, informed, even if the means of doing so resembles popular entertainment," he writes. "The danger of the Holocaust being for-

It is not ersatz representation (which Freed labels "pseudo-concentration camp") that I miss, but an experiential, phenomenological depth.

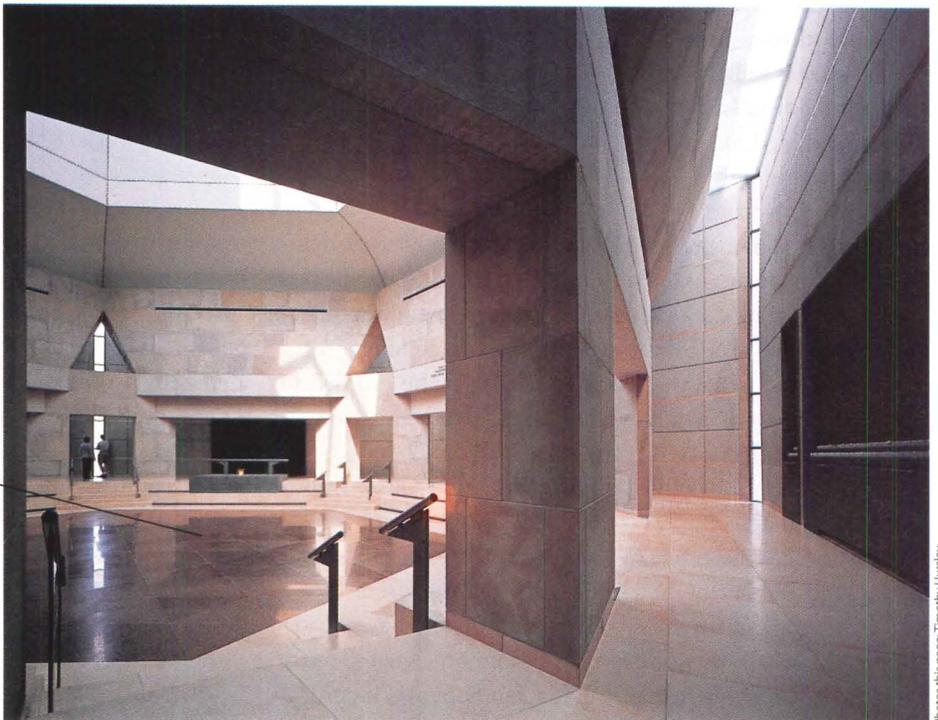
gotten or denied is too real for subtlety." To an extent, Dannatt is right, of course. But I still maintain that architecture has a deeper potential than we have yet plumbed. A review of Holocaust memorials all over the world (*P/A*, Feb. 1993, p. 75) suggests that the most potent arise from a capacity to deliver an inkling of the victims' torment by approximating physical aspects of their experience – becoming an architecture of empathy, rather than spectacle. If we have the stomach for it, we may go even further to imagine a shocking, manipulative architecture that confronts us with what is most base in our humanity, even as it inspires what is most high. □

Project: United States Holocaust Memorial Museum, Washington, D.C.
Architects: Pei Cobb Freed & Partners, New York (James Ingo Freed, partner in charge/design; Werner Wandelmaier, partner/management; Michael Flynn, partner/technology; Craig Dumas, Bea Lehman, associate partners; Mike Vissicelli, Marek Zamdmer, Wendy Evans Joseph, Harry Barone, senior associates; Jean-Pierre Mutin, Stephen Ohnemus, Abby Suckle, Alissa Bucher, associates; Jou Min Lin, Steven Valentine, team members).
Associate Architect: Notter Finegold & Alexander, Washington, D.C.
Client: United States Holocaust Memorial Council.
Consultants: Weiskopf & Pickworth, structural; Cosentini Associates, mechanical/electrical; Jules Fisher/Paul Marantz, lighting; Jules Fisher, theater design; Jaffe Acoustics, acoustical; Boyce Nemas Designs, audio-visual; Hanna/Olin, landscape.
General Contractor: Blake Construction Company.

The institution expected something on the order of 500,000 visitors per year and is drawing almost four times as many. The high volume of traffic made it necessary to turn over the 15th Street entrance to group tours. The subsequent experience of the building varies accordingly: groups enter the permanent exhibit from concourse-level elevators, with the result that they come upon **the Hall of Witness – the museum's core space and its most expressive architecturally** – only at the conclusion of their tour. Museum officials plan to adjust the entry sequence to expose groups first to the Hall of Witness, as architect James Freed had envisioned. The hall itself has not benefited from later modifications: a cushioned bench (not seen in this photo) lines the sides of the metal platform in the foreground, encouraging visitors to use it as a makeshift lounge; **the information desk installed in the center, while modest, diminishes the impact** the atrium would have had as a vast, unfurnished volume.



By comparison to the Hall of Witness, **the Hall of Remembrance is decidedly underwhelming**. Originally designed as a place for private contemplation, it has been turned by museum officials into the institution's chief ceremonial site. Since visitors are now encouraged to penetrate the previously inviolate sunken floor area, **a clunky black lift for handicapped access, and similarly obtrusive handrails** were installed in an illconceived retrofit.



Lewis Mumford, one of the great architectural and cultural critics of this century, died in 1990 at the age of 94. And he was gone too soon. As I listen to debates over Deconstruction, Post-Modernism, or the New Urbanism, or hear concerns about architects' powerlessness or the public's ignorance of design, I miss Mumford's point of view. Whether or not you agree with everything he wrote, his perspective is one that we sorely need right now and one worth recalling on the centennial of his birth.

Not that Mumford would readily offer us his views on architecture were he still alive, as I discovered the first time I met him in 1974. I went to see him with an architect I worked for who had gone to school with Mumford's daughter, Alison. We drove to the hamlet of Amenia, New York, where Mumford and his wife, Sophia, lived in a small, white-clapboarded farmhouse, to elicit his support in our efforts to preserve the elaborate but dilapidated Gothic Revival house where we had our office; the owner wanted to paint the house yellow, and we had come to the author of *The Brown Decades* to back our claim that the house was originally painted somber, earthy colors and that it should again be dark.

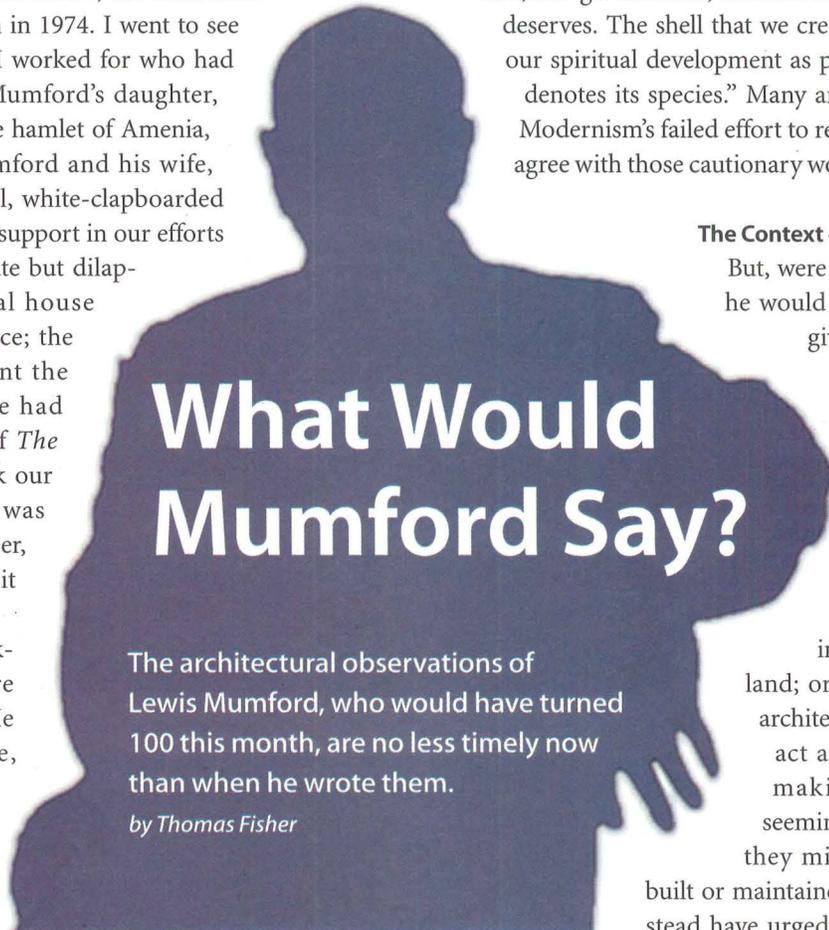
Mumford put off talking about architecture as long as possible. He showed us his house, took us down his "philosopher's walk" through the woods, and served iced tea on the terrace. Only when we retired to

his book-lined living room did we broach the subject of architecture, paint colors, and the Gothic Revival. Although he had written several books that dealt with 19th-Century architecture and urbanism and had penned articles on architecture for *The New Yorker* from the 1930s to the 1960s, he claimed to know little about the Gothic Revival and, since he was no specialist in architecture, could be of no help to us.

Understandably, he did not want to get involved in our preservation battle. But his claim to be "no specialist in architecture" did not mean that he had no interest in or knowledge of our field. "Architecture tells history," he once wrote, "for it shows how, and why, and to what end, people have lived." Architecture, in other words, was, for Mumford, what a source document is for a historian, such a fundamental record of human events that its importance goes without saying. As

Mumford said about Ruskin, "He discovered that buildings were alive; every stone had a tongue, and every tongue could tell a story. Many of us are still living by the enthusiasm that Ruskin awakened."

As he saw architecture as a reflection of culture, Mumford also recognized the limited ability of architects to change their culture. "It would be foolish," he wrote "to reproach the great run of architects for exploiting the characteristics of their age; for even those who in belief and design have remained outside the age ... have not been able to divert its currents Architecture, like government, is about as good as a community deserves. The shell that we create for ourselves marks our spiritual development as plainly as that of a snail denotes its species." Many among us, chastened by Modernism's failed effort to remake the world, would agree with those cautionary words.



The architectural observations of Lewis Mumford, who would have turned 100 this month, are no less timely now than when he wrote them.

by Thomas Fisher

The Context of Architecture

But, were Mumford alive, I think he would also caution us not to give up hope of affecting the world at all. The acceptance of limits gives no license to the cynicism of some Post-Modernists, who seem willing to turn the built environment into a version of Disneyland; or to the nihilism of our architectural avant-garde, who act as if there is bravery in making bold forms with seemingly little regard for how they might be used, let alone built or maintained. Mumford would instead have urged us not to withdraw or become resigned, but to change the con-

text in which architecture is produced. "Our architecture has been full of false starts and unfulfilled promises," he wrote, "precisely because the ground has not been worked enough beforehand to receive the new seeds. If we are to have a fine architecture, we must begin at the other end from that where our sumptuously illustrated magazines on home-building and architecture begin – not with the building itself, but with the whole complex out of which architect, builder, and patron spring, and into which the finished building, whether it be a cottage or a skyscraper, is set. Once the conditions are ripe for a good architecture, the plant will flower by itself."

Real and Apparent Complexity

And how might we prepare the ground for architecture? Mumford had no faith in efforts to educate the public about



Lewis Mumford in 1980.

Photos and drawings: courtesy of the Mumford Art Collection, Monmouth University, West Long Branch, New Jersey. Photo by David Gahr.

design. As far back as the 1920s, he argued that “If the circumstances which hedge in our architecture are to be transformed, it is not sufficient, with Mr. Louis Sullivan, to say that we must accept and enthrone the virtues of democracy; still less is there any meaning in the attempt of the Educational Committee of the American Institute of Architects to educate public taste in the arts.” The ground he had in mind was broader, requiring us to take an ecological approach to culture, one that recognizes the interrelatedness and complexity of all things, balancing our preoccupations with science, technology, and rationality. He hoped that architecture would both accommodate and express that ecological view of the world.

Complexity and ecology, of course, have their advocates in architecture right now, but I think Mumford would find our approach to such issues simplistic or single-minded. Architecture based on complexity theory, for example, would probably not be complex enough for Mumford. Indeed, he might argue that the formal complexity of these buildings simplifies, through geometric symbolism, the real complexity of life. “The actual world occupied by organisms is one of literally indescribable richness and complexity,” wrote Mumford. “Form, color, odor, tactile sensations, emotions, appetites, feelings, images, dreams, words, symbolic abstractions – that plenitude of life which even the humblest being in some degree exhibits – cannot be resolved in any mathematical equation or converted into a geometric metaphor without eliminating a large part of the relevant experience.”

Green architecture would no doubt have garnered more support from him. But even here, I think, he would have urged the advocates of such architecture to look at how structures work together in a sustainable region or relate to more sustainable patterns of living. “Any program,” he wrote, “sufficient to reverse the destructive success of technological affluence will demand not merely drastic restrictions; it will demand economic and social changes directed toward producing goods and services, modes of work and education and recreation, profoundly different from those offered by the power complex.

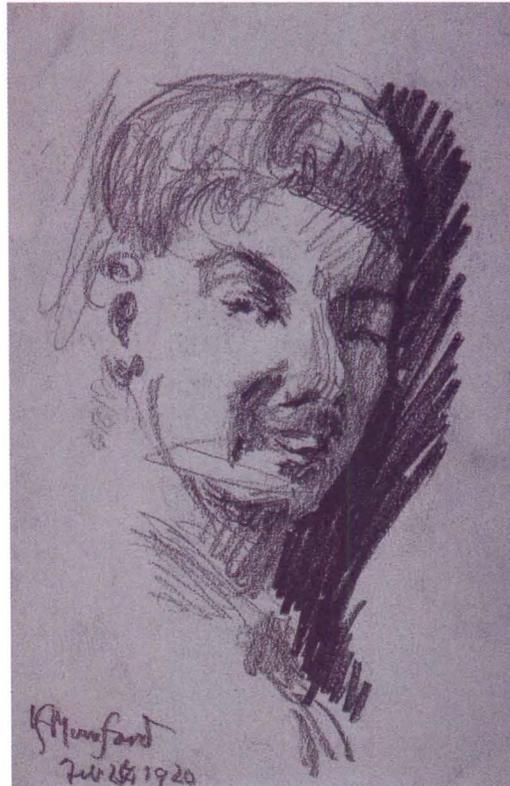
Reformers who would treat the campaign against environmental and human degradation solely in terms of improved technological facilities ... see only a small part of the problem.”

The New Urbanism, with its advocacy of pedestrian-oriented communities, also would have won his support. He would have opposed, however, its embrace of traditional architectural styles, possibly seeing in its nostalgic design codes “the need of this troubled age ... (for) enclosure, protection, security, durability, and continuity.”

Architecture and Media

The dependence of architecture on another technology, that of the printing press or the media generally, was another concern of Mumford’s still relevant today. “More than any other device,” he wrote, “the printed book released people from the domination of the immediate and the local Print made a greater impression than actual events, and by centering attention on the printed word, people lost that balance between the sensuous and the intellectual, between image and sound, between the concrete and the abstract To exist was to exist in print: the rest of the world tended gradually to become more shadowy.”

The effect of print media on architecture is apparent, for example, in our star system, where one’s existence is measured by the amount of print one commands. But the point of Mumford’s criticism goes beyond architectural publishing. If, as Mumford wrote, “the printing-press ... caused architecture to derive its value from literature,” then the more architecture tips toward the intellectual, the image-driven, or the abstract – as Modern, Post-Modern, and Deconstructivist architecture have all done at times – the more it is coopted by the dominant literary values of our culture, and the less architectural it becomes. Or, put another way, the more we assert the values inherent in architecture, which Mumford saw as balancing the senses and the intellect, the concrete and the abstract, the local and the regional, the more our discipline serves to even the imbalance of our technology-driven culture.



Self-portrait, 1920.

One reason Mumford liked architecture was the fact that it remains one of the least specialized of professions.

The Role of the Architect

The idea of architecture as a balancing act, however, runs up against forces pulling architects toward specialization, something that Mumford lamented. "Our life has been governed by specialists," he wrote, "who know too little of what lies outside their province to be able to know enough about what takes place within it: unbalanced men who have made a madness out of their method. Our life, like medicine itself, has suffered from the dethronement of the general practitioner, capable of vigilant selection, evaluation, and action with reference to the health of the organism or the community as a whole." I think that one reason Mumford liked architecture was the fact that it remains one of the least specialized of professions, where the ideal of the "general practitioner" is still valued. "Cut off though he is from the actual processes of building," wrote Mumford, the architect "nevertheless remains the sole surviving craftsman who maintains the relation towards the whole structure that the old handicraft workers used to enjoy in connection with their particular job." But Mumford was aware that our relation to the whole might not last. "It is impossible to say with any certainty whether our architects are doomed to be extruded by mechanism, or whether they will have the opportunity to restore to our machine-system some of the freedom of an earlier regime."

The Specialization of Architecture

As architecture has become more specialized, it has become a less central part of the intellectual life of our culture. Mumford was part of a dying breed of independent intellectuals who never became a full-time academic and who continued to write for the public in accessible – indeed, beautifully crafted – prose. And he was one of a very few generalist critics who used architecture as a vehicle for communicating his ideas, in part because buildings are part of everyone's concrete reality and are such an accurate reflection of our values. Whatever you think about what Mumford said, every architect should mourn his passing, because he did more to place architecture front and center in the minds of a literate public than

any educational or marketing efforts made by the profession.

Architecture in our own time seems to be disappearing from general public discussion (what's left of it), becoming a more arcane discipline, as academic authors turn out books in our field that are too often jargon-laden and obscure. At the other extreme, slick consumer magazines feed images of architecture to the public as if ours is a subset of the fashion industry, bereft of ideas. The

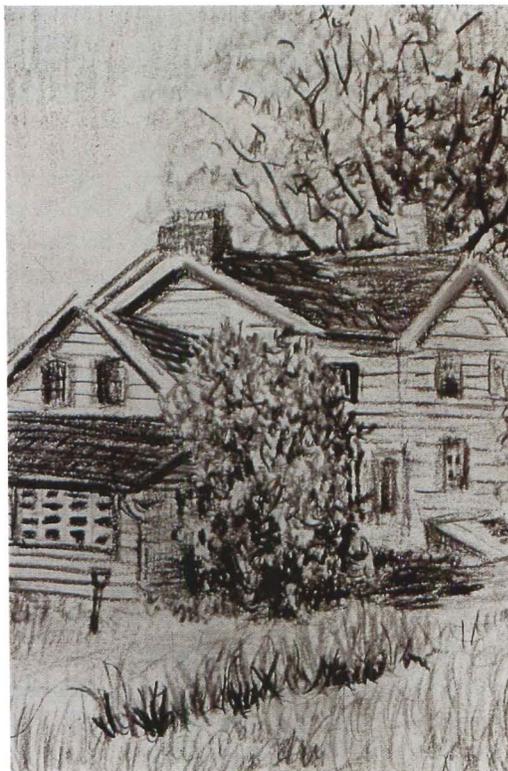
volume of books and magazines on architecture has never been greater, but what is the intellectual quality of all that quantity, Mumford might ask.

There are those among us, particularly in the architectural academy, who are quick to dismiss Mumford as a "moralistic" critic or, heaven forbid, as a "humanist." Some of that criticism is valid. Mumford became, late in life, something of a Jeremiah, speaking as if from on high about how people should live and how the world should run, predicting doom if his words were not heeded. Although such writing can be exhilarating when you're young and impetuous, I now find the apocalyptic tone of Mumford's last books in particular hard to take.

His message, however, remains a powerful one. Mumford urged us to look at the world holistically, ecologically, synthetically. And he hoped, at least early in his career, that architects, as generalists, might lead such an effort, envisioning communities that would be humanly scaled,

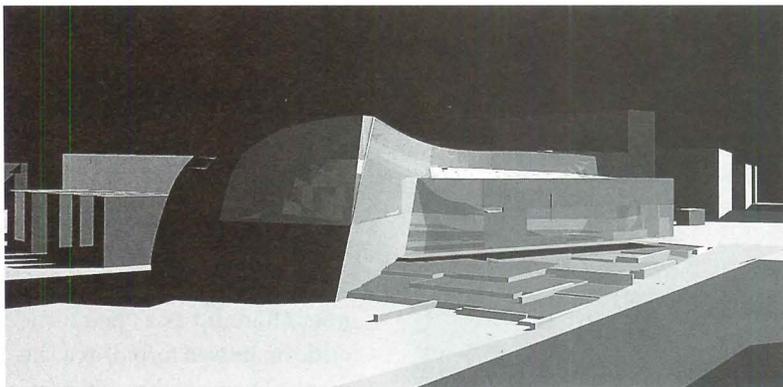
socially responsive, environmentally sound, and aesthetically self-confident, without lapsing into nostalgia on the one hand or nihilism on the other. We have not always heeded his call. Our practices have become more specialized and our education more narrow in scope. (In a letter Mumford once wrote to me, he outlined a reading list for the aspiring architect that included Plato, Emerson, Thoreau, and Ruskin; the best architect, in other words, was, in his mind, a liberally educated one.) Likewise, nostalgia and nihilism pervade our architecture as the public becomes increasingly skeptical of the architect's value. Lewis Mumford has died, but it remains for us to decide whether or not his hopes for our cities and our architecture died with him. □

The more architecture tips toward the intellectual, the image-driven, or the abstract ... the more it is coopted by the dominant literary values of our culture and the less architectural it becomes.



Mumford's home in Amenia, New York, drawn by him in 1944.

The Intertwining



1

The interaction of two contrasting volumes (1) gives the museum the mysterious sculptural quality admired by the competition jury, while reconciling the spatial dynamic of the pivotal site (2, lower left in photo). At the interface of the two volumes, the museum's main lobby/circulation space will follow a gentle curve, as envisioned in a competition watercolor by Holl (3). Public-oriented facilities that may be open beyond museum hours, such as the café and the auditorium, will be located on the ground floor; visitors can reach the galleries via a ramp leading up into the light-filled well between the two main volumes.

No country has more renowned Modern architecture per capita than the small nation of Finland, and its tradition of design competitions is one of the foundations of this success. For a new Museum of Contemporary Art in the Finnish capital, Helsinki, the sponsors opened a competition to all architects from the eight Baltic and Nordic countries, plus four invited architects from beyond: Coop Himmelblau of Vienna and Los Angeles, Alvaro Siza of Portugal, Steven Holl of New York, and Kazuo Shinohara of Japan. Out of a total of 516 entries, the prize went to Steven Holl's proposal, which was identified by the code name Chiasma, a term from the Greek meaning "intertwining."

The notion of "intertwining" is expressed in the way the dominant curvilinear portion of his museum curls around its rectilinear companion volume, in the complex route that leads through all 25 interior galleries, and in the exterior pathway that passes through these forms as it winds from the front of the museum to the back. The jurors were impressed with the "mysteriously sculptural" quality of the resulting exterior forms, but they were at least equally pleased with the way the galleries met the museum's display objectives: "Holl has clearly set out to create space for art."

Holl's design also had a particular compatibility with the traditions and recent directions of Nordic Modernism. The jury for this competition was composed not of internationally acclaimed architectural stars, but of architects,



2

public officials, and cultural figures – one of them Danish, the rest Finnish. This jury apparently reflected the sensibilities of the jurors who chose the winning design for Finland's pavilion at Expo 92 in Seville (P/A, July 1992, p. 93), which shared some basic formal moves with this one: that structure also had two parallel volumes, one resembling an upturned boat hull, the other crisply rectilinear, and a visitors' route that wound through both halves. Holl's scheme is much larger, of course, and formally more complex: his design makes critical responses to sun angles and its urban context – as the Seville pavilion did not – and its complementary volumes are not just juxtaposed, but intertwined.

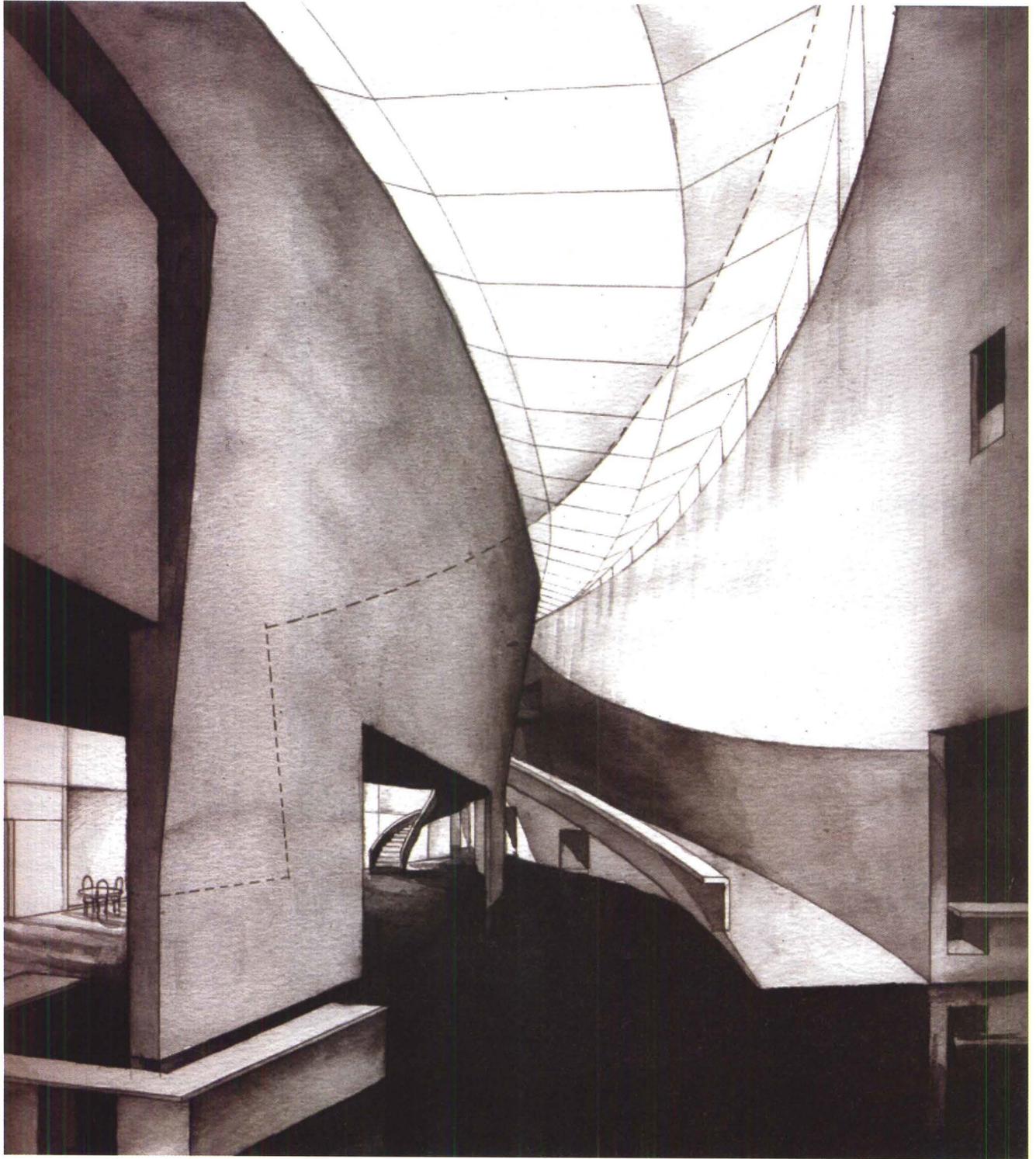
Reading the Context

Holl's first step after being invited to compete was to make a thorough study of the site, which is on Helsinki's main thoroughfare, Mannerheimintie, diagonally across from the Finnish Parliament and within a two blocks of both Eliel Saarinen's precedent-breaking railroad station of 1914 and Alvar Aalto's Finlandia Hall of 1972. The sketchbooks of his first visit record Holl's strong responses to the lighting conditions of this far northern latitude (comparable to Anchorage, Alaska) and the site's critical relationships to landmarks and open spaces, and his first concept sketches show the intertwining lines that would direct the building's design (page 76).

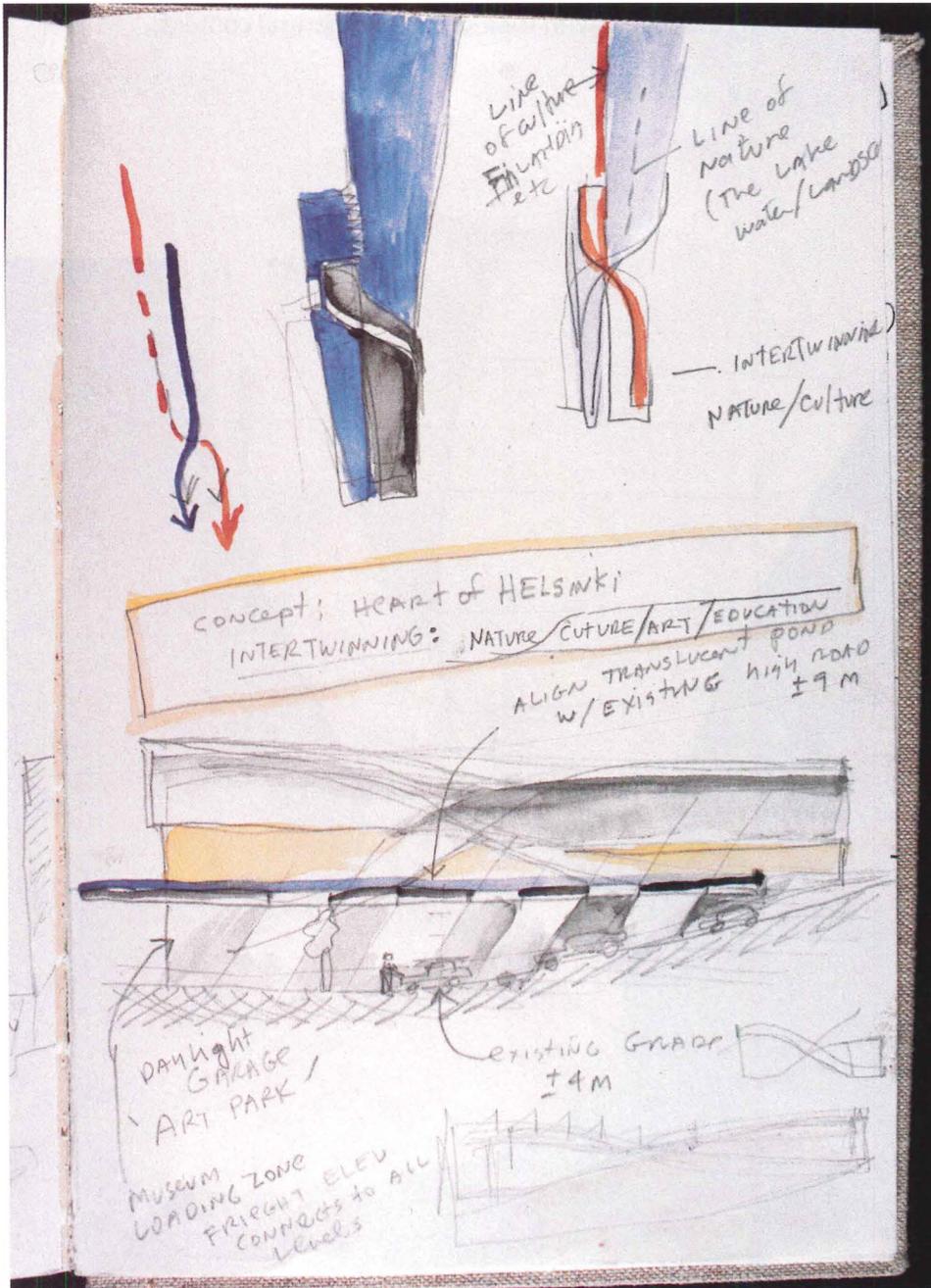
Encouraged by the competition program to envision urban planning (*continued on page 78*)

In his competition-winning project for the Museum of Contemporary Art in Helsinki, architect Steven Holl has organized sequences of galleries into forms that mesh with their urban and natural context. .

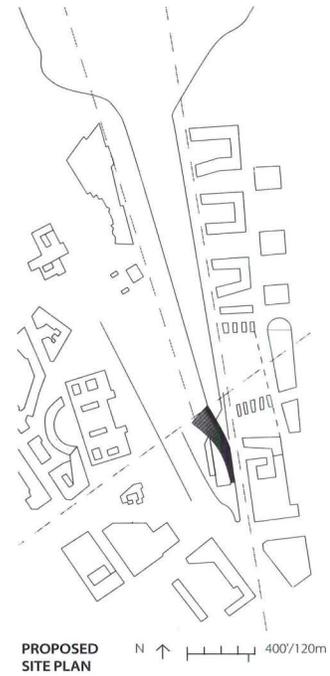
by John Morris Dixon



3

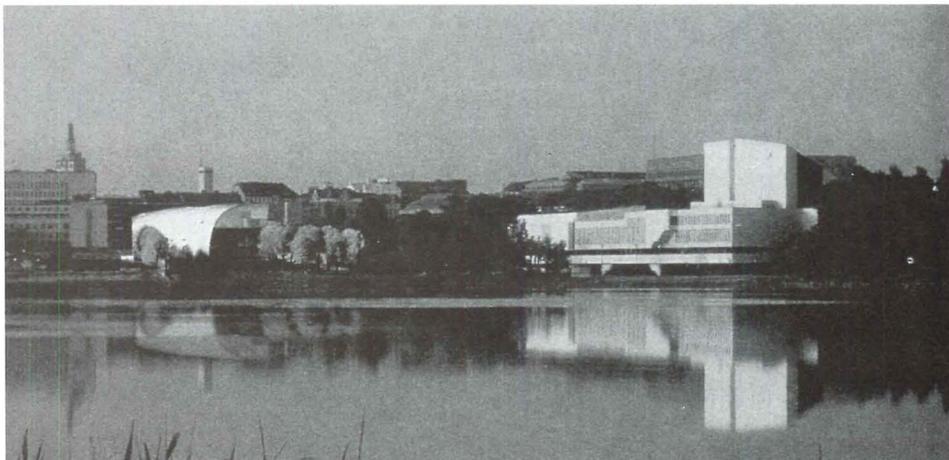


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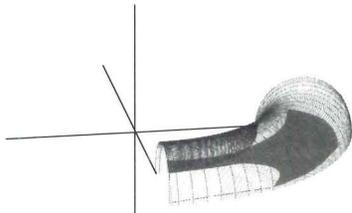


PROPOSED SITE PLAN

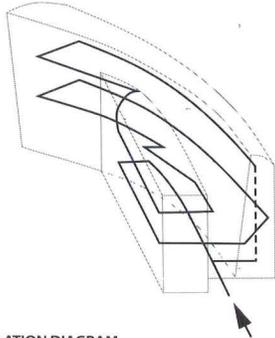
A sketch by Holl from his initial visit to the site (4) illustrates some of the basic concepts of the competition-winning scheme: the body of the building is seen twisting over a path to a proposed southward extension of Töölö Bay (plan above). A view from the competition submission (5) shows the volume of the museum superimposed on a view of the bay, with Aalto's Finlandia Hall at the right. Thumbnail drawings from the competition boards (facing page) encapsulate some of the museum's key design features. Geometrically, the museum's larger portion is sliced from a much larger toroid, thus yielding a constant curvature for structural purposes, in contrast to some of the free-form, multiply curved possibilities studied in early models (6). A switchback circulation path was conceived, starting at the south entrance and threading through the two gallery volumes. Structurally, the competition scheme called for tension rod support of lower gallery floors, but the need to support heavy sculpture on the top floor dictated intermediate columns, instead; the mechanical concept of air supply through the floors and return through the truss space has been maintained. Daylighting studies show how the low Helsinki sun can be partially reflected from the curved glass wall of the taller volume to create desired lighting in other portions of the museum. While the overall volumes were being shaped, the architects considered ways to configure the gallery spaces within them (7).



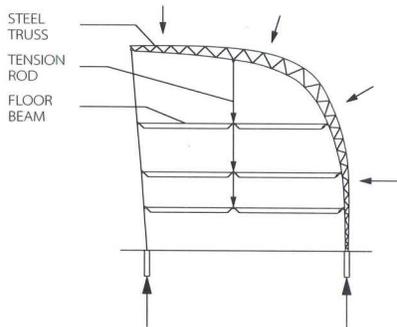
5



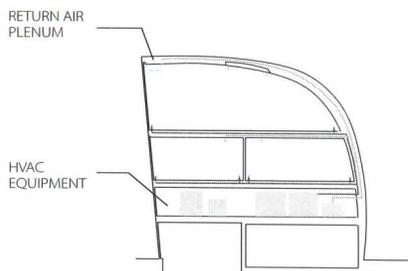
STRUCTURAL GEOMETRY



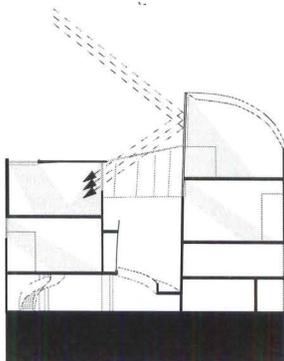
CIRCULATION DIAGRAM



STRUCTURAL DIAGRAM



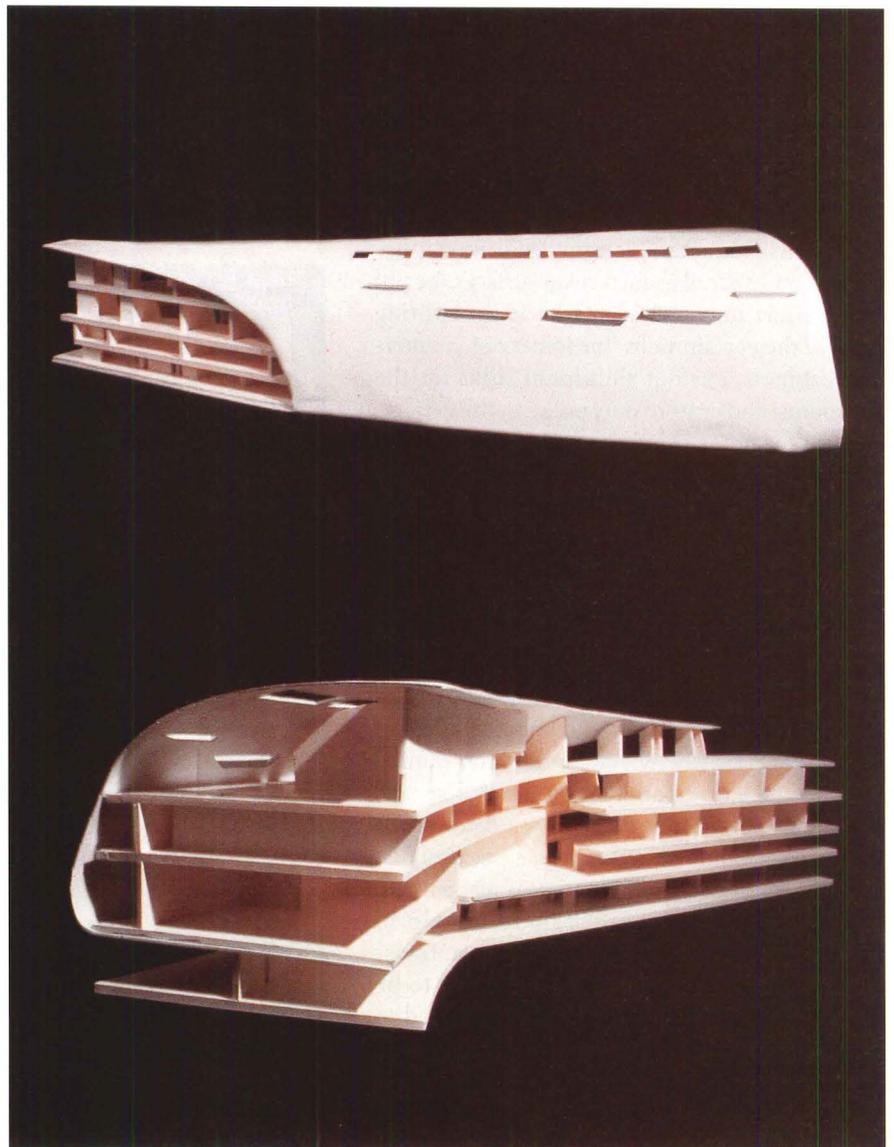
MECHANICAL DIAGRAM



SUN ANGLE STUDY



6



7

(continued from page 74) improvements to the area, Holl included in his entry a proposal to extend Töölö Bay southward past Finlandia Hall to the new museum, affording waterfront development sites on the now underutilized tracts it would pass through. At its southern terminus this arm of the bay would wind through the museum as a water-lined passage culminating in a reflecting pool along the building's west front.

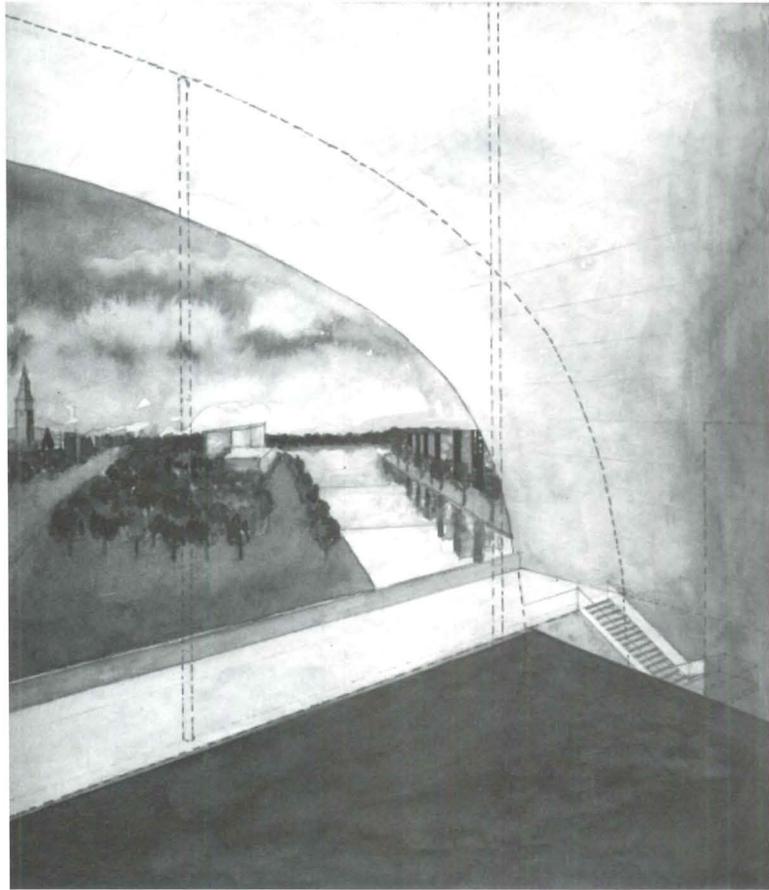
The Galleries Make the Museum

From the outset, of course, Holl was thinking not just of abstract lines in the cityscape, but of sequences of galleries, with appropriate consistencies and variations in size, height, shape, and lighting – the loftier, partially top-lighted spaces located in the taller, curved-roofed portion and lower galleries, with inward- and outward-facing windows, in the smaller, rectilinear portion. Between the two linear blocks of galleries he placed a multilevel circulation spine, beginning at a main entrance at the south end of the site, the point nearest the commercial core of the city.

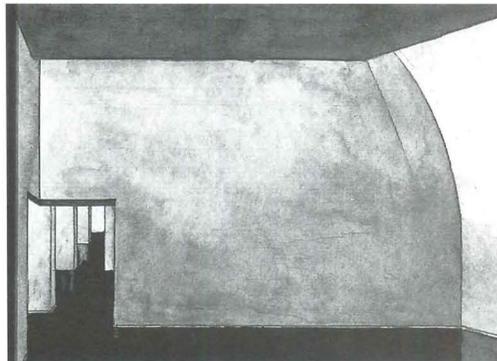
Throughout the design, Holl has been conscious of the need to defer to art. His approach is to use smooth surfaces and minimal detail so as to “eliminate intermediate-scale detail” that would compete with the works exhibited. Following his characteristic impulse to juxtapose idiosyncratic detail against clean surfaces, he put much effort into such elements as the shifting grids of the curtain walls, the joinery of counters and cabinets, custom aluminum sinks for the restrooms, and custom doorpulls.

Holl's scheme seems to have been well received in Helsinki, although there were some complaints about a “metal building” at this location. He chose as his local collaborator Juhani Pallasmaa, respected dean of the architecture school at the university in nearby Otaniemi.

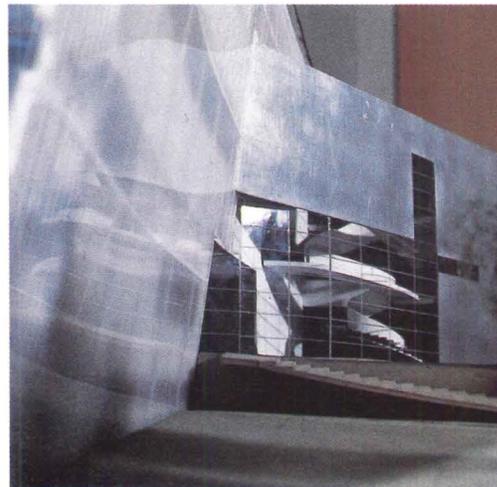
One hindrance was a controversy over Holl's proposal to relocate the statue of General Mannerheim to the south end of the site, a relocation permitted under the competition rules. A group led largely by veterans, which wanted the statue to have a park block to itself, objected, and after a six-month delay it was determined the statue is to remain where it is, a position that actually complements the museum just as well. Construction is now scheduled to begin in December. Holl's chosen name, Chiasma, transliterated by the Finns to Kiasma, seems to be sticking: the museum café, which is intended to be a revenue-generator beyond museum hours, is to be called Café Kiasma, and locals have been heard referring to the open space out front as Kiasma Square. (continued on page 80)



8

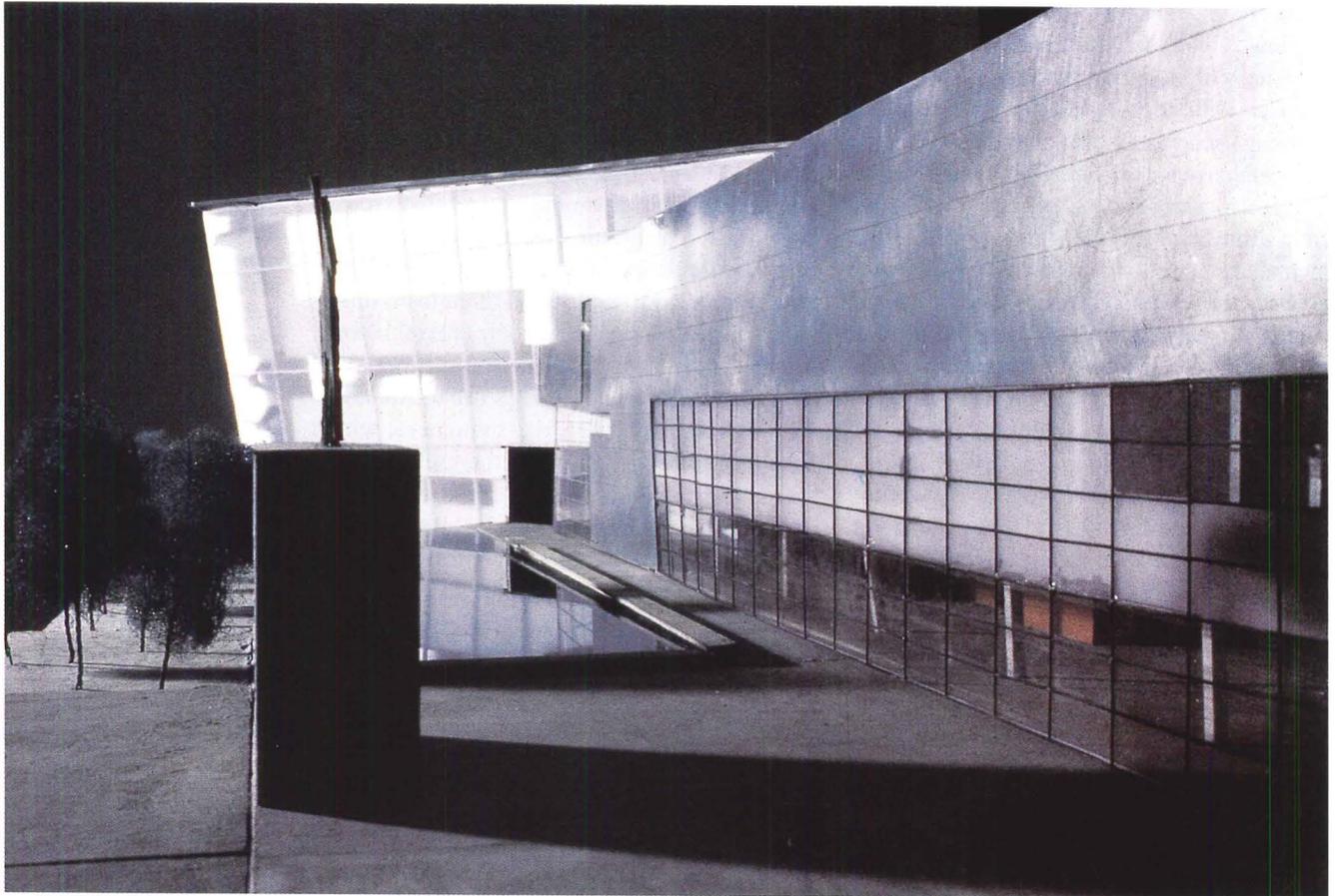


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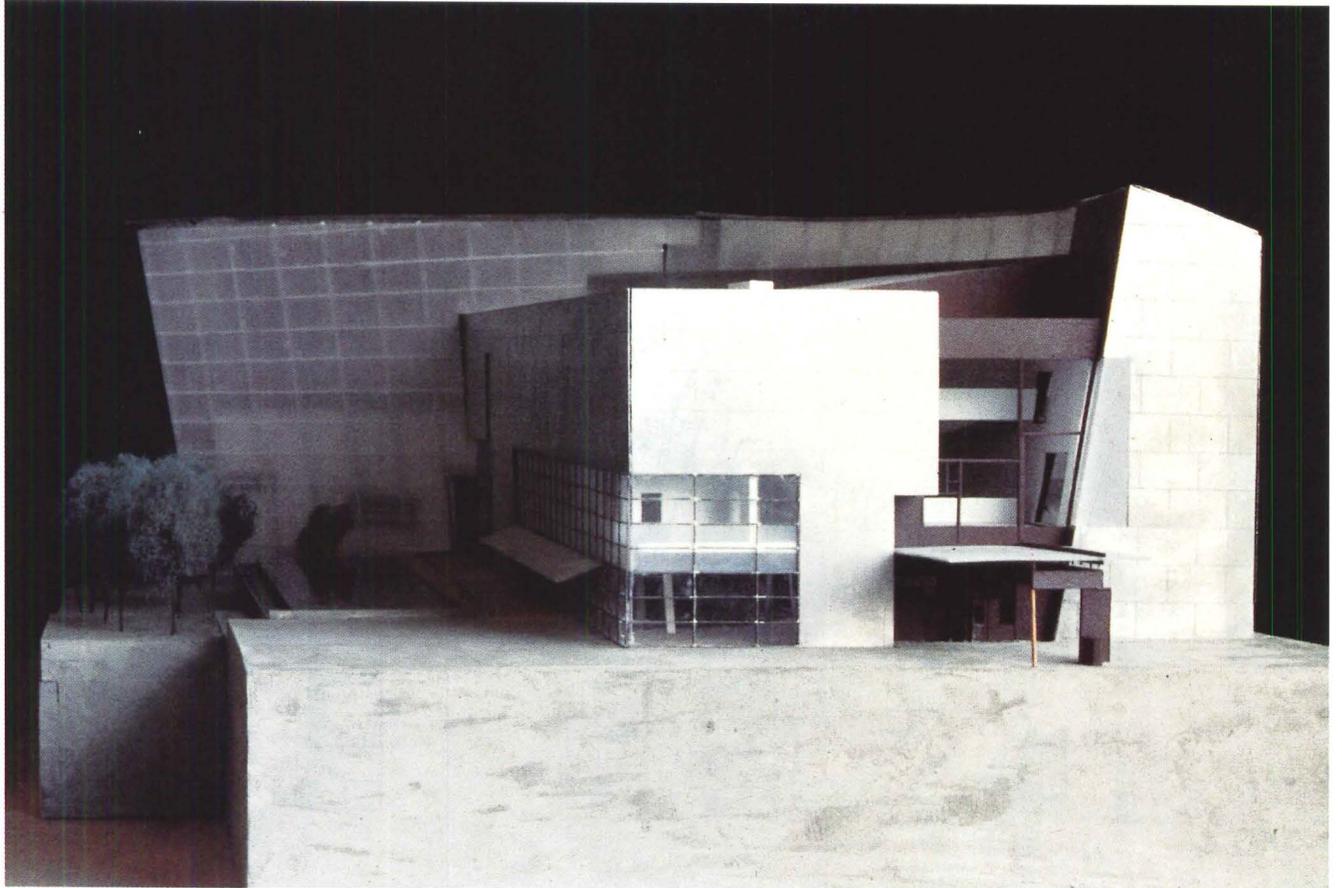


10

In developing the competition entry, the Holl office used a wide variety of traditional media. Holl himself did watercolor images of the key public spaces such as the column-free gallery at the north end of the top floor (8), the moderately scaled galleries on lower floors (9), and the main lobby/circulation space (3). The exterior, meanwhile, was studied mainly in model, as illustrated in views of the final, post-competition model, showing the west walls from different angles (10, 11) and an overall view from the south – main entrance – end (12). Since winning the competition in 1993, the firm has begun making wider use of computers for plans and other documentary drawings (following pages), as well as perspective renderings (not shown).



11



12

Another Landmark for Helsinki

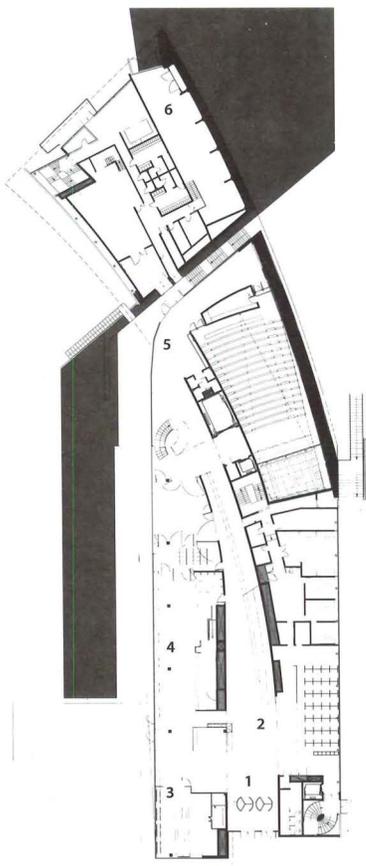
How is Holl's museum likely to serve as the repository of Modern Art in a city already well-supplied with good Modern architecture? The building's sculptural form promises to be especially effective for this relatively small structure exposed in a large-scaled setting; it will have a civic prominence without being at all monumental. And as it twists, his building will somehow succeed in establishing relationships with neighboring streets and buildings set at different angles. (A catalog of the runner-up competition designs shows how many trite ways these angles could have been exploited.)

There are a few potential quibbles. Unless or until Holl's proposed extension of Töölö Bay is carried out, the path that penetrates through the building will have no meaningful destination, and if it is carried out, the simple puncture through which it passes may seem too understated. Despite their contrasting forms, both of the building's volumes in fact house galleries on

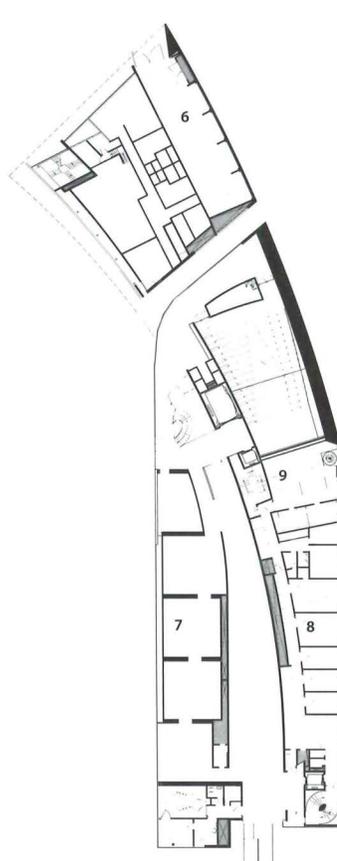
their upper floors above ancillary ground-floor facilities, though admittedly all of these spaces reflect in their scale and shapes the formal distinctions between the envelopes that house them. The crucial circulation space that links the two sides is given only muted expression on the exterior, mainly in the canopy that projects over the main entrance; on the interior, however, this circulation space will eloquently clarify the relationships, and reveal them from different angles as visitors repeatedly cross this zone.

The quibbles raised here are more than outweighed by the building's urbanistic effectiveness and by its spatial sequences, which promise to be delightful in themselves, while deferring to their contents. And studies to date of the envelope and the interiors promise that all surfaces and details (which include architect-designed hardware, furnishings, and sinks) will be handled at a level of skill that even Helsinki's understandably discriminating observers can appreciate. □

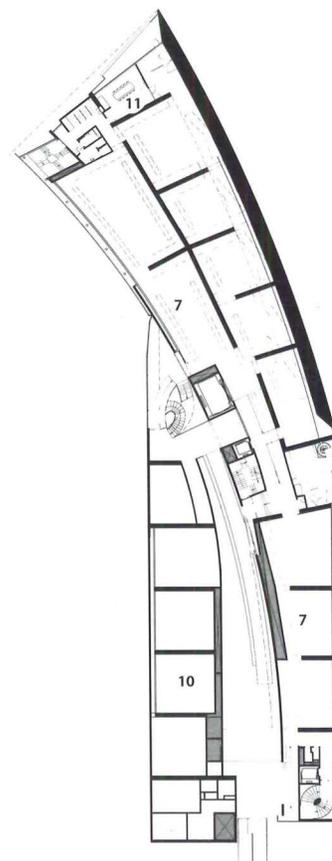
The current plans (below) show only minor adjustments to the space configurations in the competition scheme. Visitors will be able to follow a continuous route through the 25 galleries (see diagram, page 77) or choose only certain destinations. Elevations (facing page) barely suggest the architects' careful differentiation of surfaces: delicate curtain wall grids, with reddened brass framing elements, on the north wall that reveal the building section as if it were sliced off; the wall of translucent glass forming the curved west side of the taller volume; raw aluminum cladding on the west wall of the lower volume. At the south end, the reddened brass curtain wall framing reappears where the central circulation space is exposed at the main entrance.



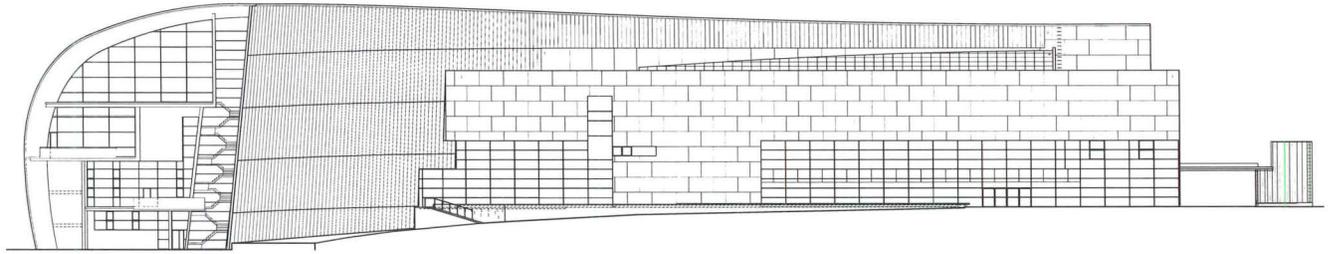
FIRST FLOOR PLAN



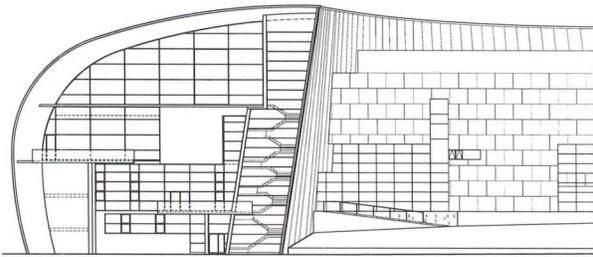
SECOND FLOOR PLAN



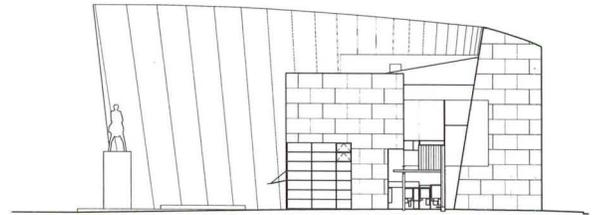
THIRD FLOOR PLAN



WEST ELEVATION



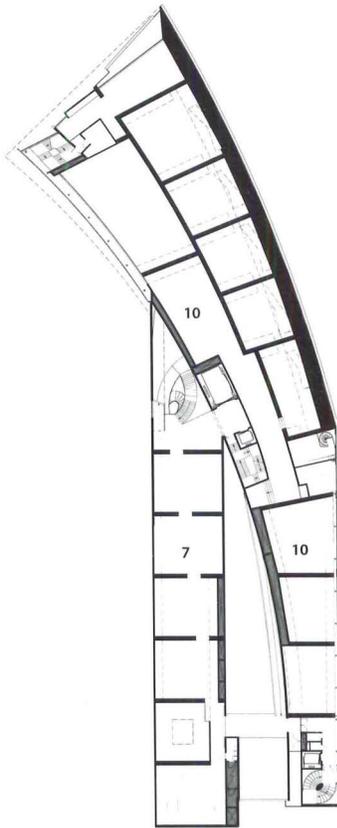
NORTHWEST ELEVATION (PARALLEL TO NORTH END WALL)



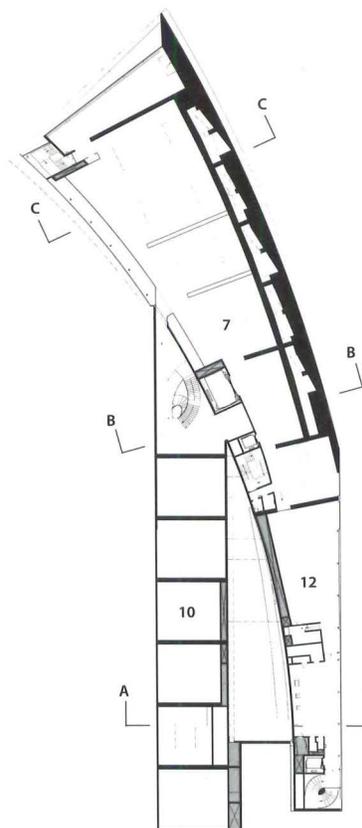
SOUTH ELEVATION

40/12m

- | | |
|--------------------|-------------------------------|
| 1 MAIN ENTRANCE | 7 GALLERIES |
| 2 COAT CHECK | 8 OFFICES |
| 3 BOOKSTORE | 9 LIBRARY |
| 4 CAFETERIA/BAR | 10 UPPER PORTION OF GALLERIES |
| 5 AUDITORIUM LOBBY | 11 CLUB ROOM |
| 6 MECHANICAL | 12 CHILDREN'S WORKSHOP |

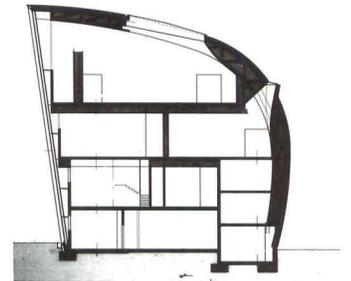


FOURTH FLOOR PLAN

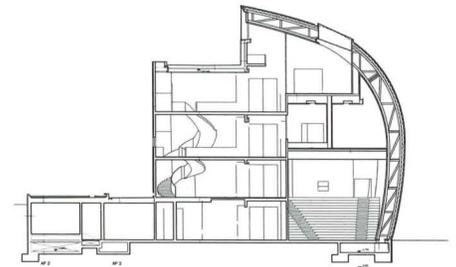


FIFTH FLOOR PLAN

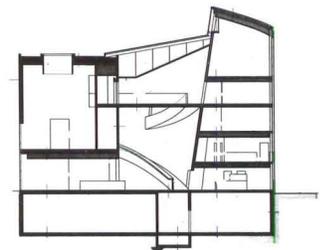
N ↑ 40/12m



SECTION C-C

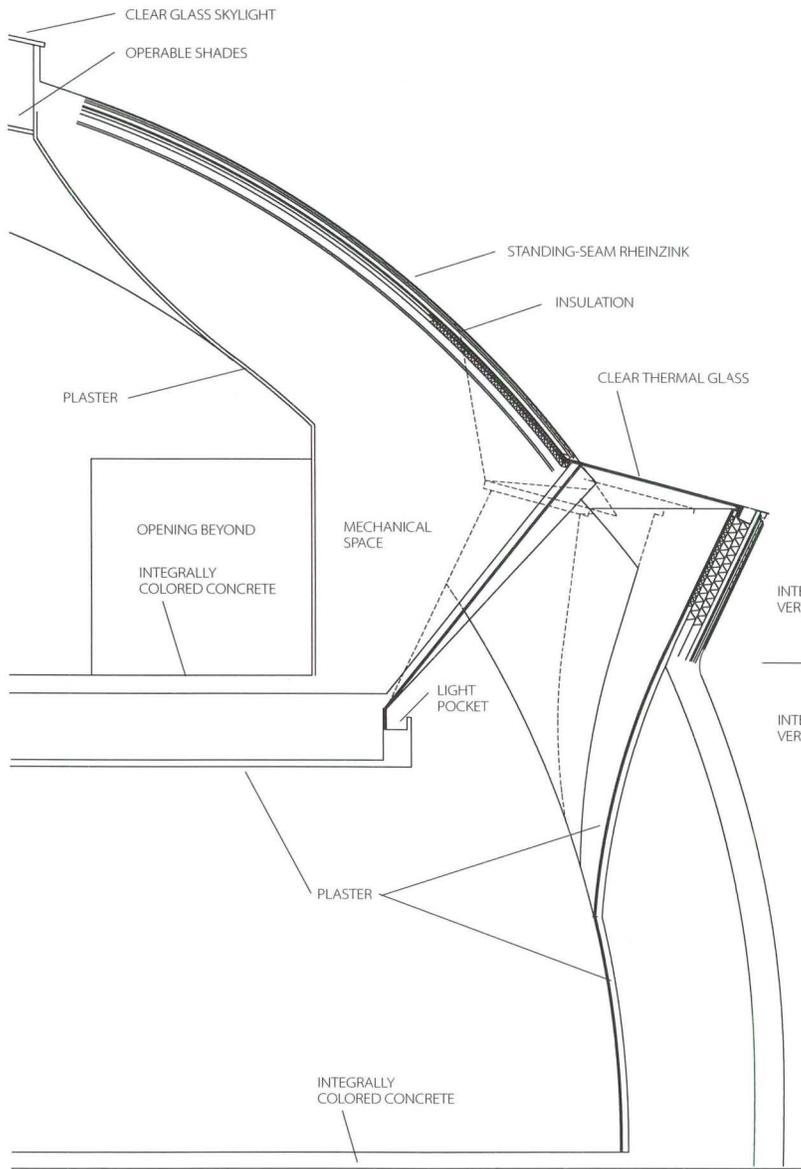


SECTION B-B

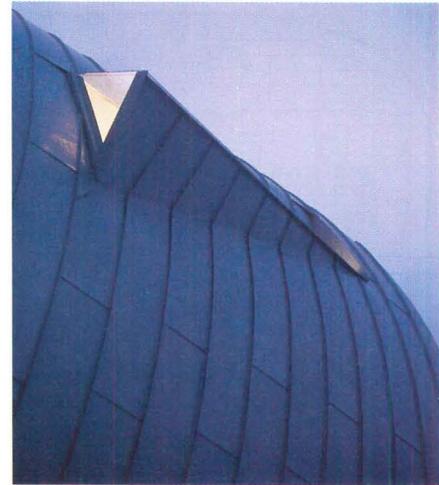


SECTION A-A

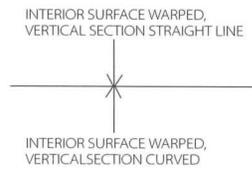
40/12m



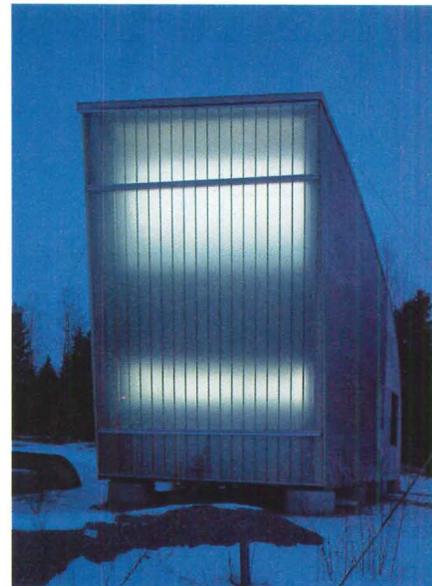
PARTIAL SECTION AT BOW TIE SKYLIGHT



13



14



15

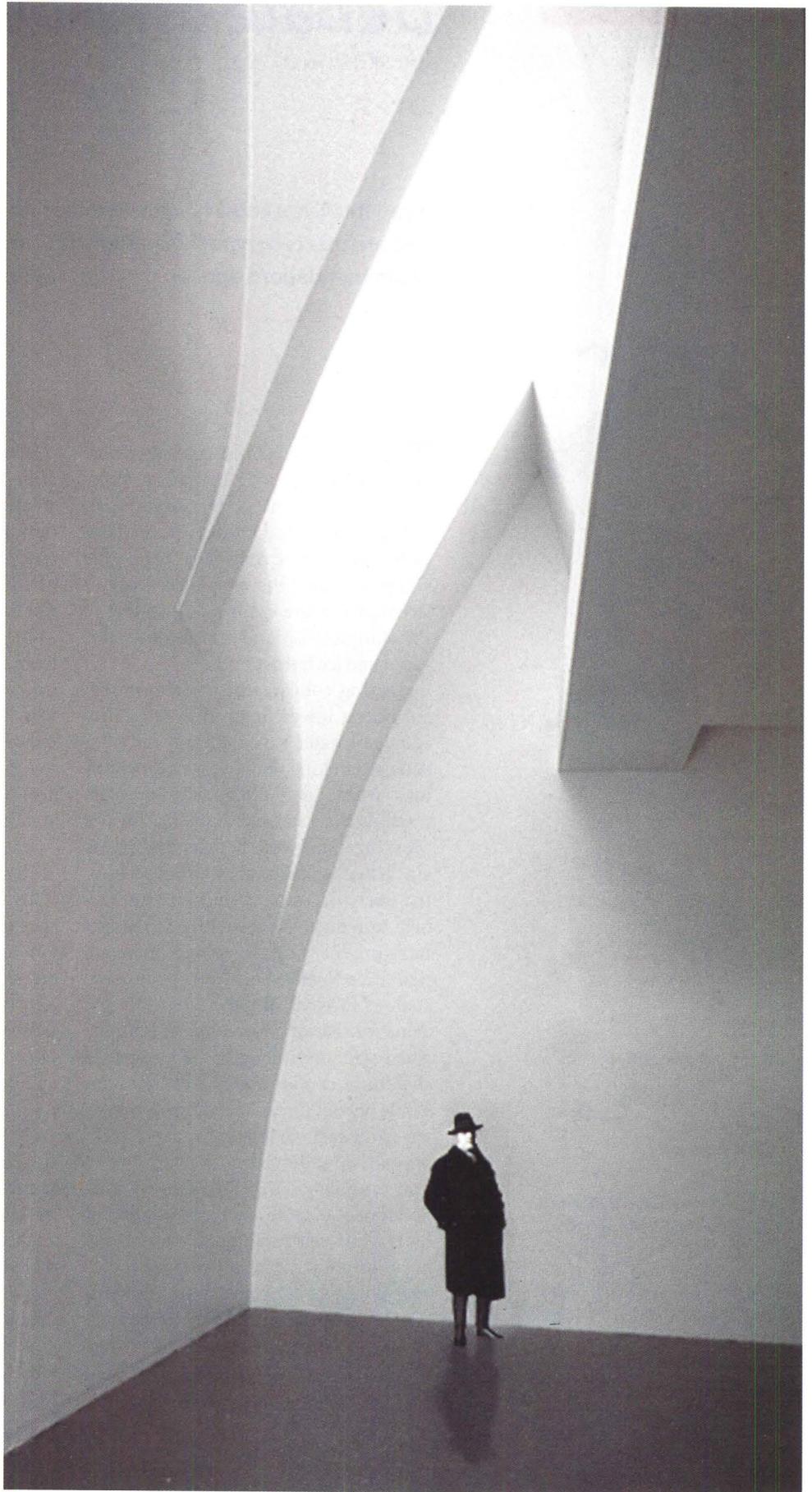
The museum's sweeping curved roof will be punctured with a variety of openings to light the top two levels of galleries. The partial section (facing page) shows a skylight for the column-free top-floor space and a "bow-tie" monitor (13) that funnels daylight into a third-floor gallery; these monitors give visitors a view of the sky through clear glass, but no direct sunlight will strike the gallery walls. The artificial lighting for the galleries, worked out with the consultants who did the Picasso Museum in Paris, will have no visible sources. A half-scale mockup of one museum bay (13–16) has been erected near Helsinki to test out lighting effects and cladding details, which are at full scale. One technical challenge was finding a glazing system adaptable to the warped surface of the west-facing curved wall (15) which twists from 9.5 degrees out of vertical at one end to 9.5 degrees the opposite way at the far end; the proposed industrial glazing system of U-shaped vertical glass elements can adjust to this unconventional geometry, offers the desired translucency and reflectivity, and provides adequate insulation for a city where triple glazing is the norm. An interior view of the mock-up (16), with a half-scale human figure, shows how light will be dispersed from one of the roof monitors.

Project: Museum of Contemporary Art, Helsinki.

Architects: Steven Holl Architects, New York (Steven Holl; Vesa Honkonen, project architect; Justin Rüssli; Chris McVoy; Janet Cross; Tomoaki Tanaka; Pablo Castro-Estévez; Justin Korhammer; Tim Bade; Anderson Lee; Anna Müller; Tapani Talo; Jan Kinsbergen; Lisina Fingerhuth). Steven Holl Architects competition design team: Steven Holl; Janet Cross, project designer; Mario Gooden; Stephen Cassell; Tom Jenkinson; Tomoaki Tanaka; Justin Rüssli, Molly Blieden.

Associated Architects: Arkkitehtitoimisto Juhani Pallasmaa KY (Juhani Pallasmaa; Timo Kiukkola, project architect; Timo Ruusuvaori; Seppo Sivula; Seppo Mäntylä; Heikki Määtänen).

Consultants: Insinööritoimisto OY M. Ollila & Co., structural engineers; Insinööritoimisto Olof Granlund OY, HVAC engineers; Tauno Nissinen OY, electrical engineers; Ove Arup & Partners, structural and mechanical consultants; L'Observatoire International, lighting consultants; Markku Kauriala Ltd., fire technical consultant; Aulis Bertin Ltd., glass consultant; Teatek, theater technical consultant; Arkkitehtitoimisto Alpo Halme, acoustical consultant.

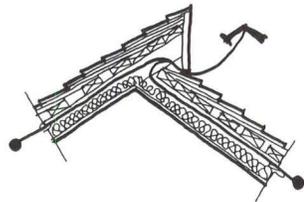


16

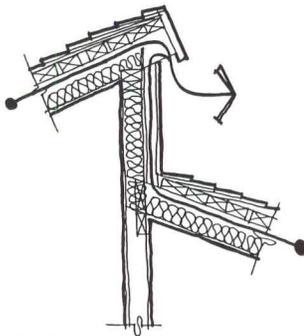
Debate on Wood Roofing

CSI SECTION 07720

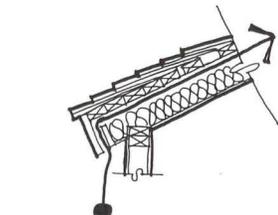
If you think you know how to ventilate a wood roof, think again. Two architects debate the matter with Timothy Taylor, whose recommendations appeared in the May issue of P/A.



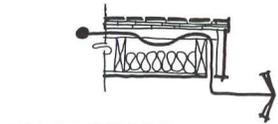
RIDGE VENT



RIDGE VENT



EAVE VENT



GABLE END CROSS VENT

Details recommended by Timothy Taylor in P/A, May 1995, p. 110.

Readers are invited to submit their questions regarding technical issues. You can mail, phone, fax, or e-mail your questions to the attention of Michael J. Crosbie, Senior Editor, Technics. The answers are presented in good faith, but P/A does not warrant, and assumes no liability for, their accuracy, completeness, or fitness for any particular purpose.

My problem with the answer given regarding wood-roof ventilation (May 1995, p. 110) is that it is misleading or, rather, incomplete. One of the most likely causes of moisture collecting beneath the shingles (where the danger of decay of structure is more significant than that of the shingles) is condensation of water vapor and ice formation.

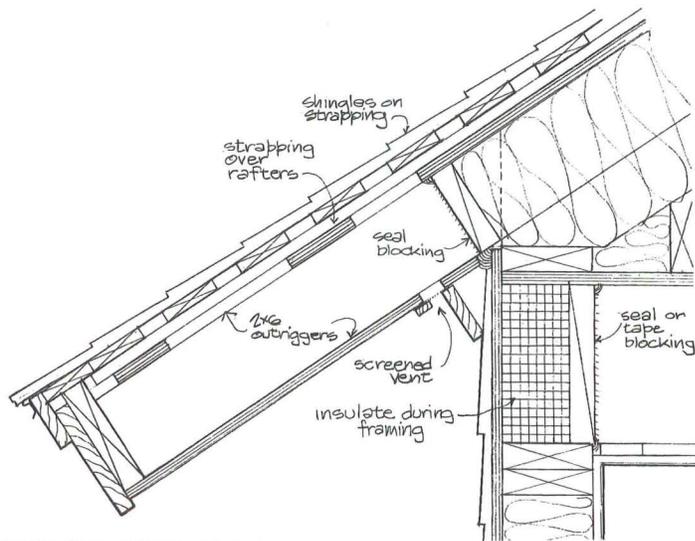
During cool weather, with a corresponding lower dewpoint, the chief source of water vapor is from activities such as cooking, bathing – and breathing – within the building. During warm weather the moisture remains, for the most part, molecularly dispersed in the air. While it is true that airflow within the joist spaces or within an attic will help to reduce the concentration of any moisture that finds its way in, there are penalties for the solutions proposed, such as the loss of effective insulating value for the total assembly and diminished structural integrity, since spaced sheathing cannot act as a diaphragm. While unconditioned buildings may benefit from such ventilation during warm seasons, conditioned ones typically will not, especially when the ambient temperature of outside air is low. In areas of high wind velocities or seismicity, we have no choice but to install shingles over plywood or oriented strand-board (OSB) diaphragms with felt underlayment. Of course, shingles and other roofing can still be applied to sleepers to allow ventilation where necessary.

Concerns for interior air quality aside, a vapor retarder is the most direct solution to keeping water vapor within a building from migrating into framing spaces. It can be applied to the underside of ceiling joists prior to installation of the finish, and should be sealed at the joints for continuity. Codes generally leave roof ventilation for moisture control to the discretion of building officials who know local weather conditions. Not incidentally, the UBC allows a reduction in vent size from $1/150$ to $1/300$ of the roof area, provided half of the required vent area is located in the upper part of the roof, or a vapor retarder is installed.

To ensure the performance and durability of a wood-shingle or shake roof, specify natural or treated materials resistant to decay, corrosion-resistant fasteners, correct exposure and lap for shingle length, and flashings; use adequate pitches, and set gutters to ensure drainage and to prevent ice damming in snow areas; and remind the owner to keep the roof free of leaves and pine needles.

The detail used to illustrate a gabled ridge vent (left) will allow wind-blown rainwater directly into the framing space from beneath the fascia, especially when negative pressures are induced within the framing space as a result of wind direction, force, and the aerodynamics of the building. There are patented continuous ridge-venting systems that are relatively unobtrusive, and that solve the water intrusion problem with baffles.

Gary R. Collins
G. R. Collins & Associates
Costa Mesa, California



GORDON TULLY'S RECOMMENDED DOUBLE-CONSTRUCTION ROOFING DETAIL

Roof ventilation is a leading contributing factor to moisture problems in wood-frame roof structures. Ventilation induces moist inside air to flow into the roof structure, where the moisture condenses and fosters rot.

The details shown accomplish two things: they maximize the possibility of structural roof failure through condensation and the attendant rot, while minimizing insulation value (the infiltration load, coupled with internal air circulation loops within the insulation, overwhelm most of the value of the insulation). Further, since there is no sheathing, direct leakage is maximized.

For a fail-safe roof, I use the European system of double construction (above). I make a tightly enclosed box with the rafters, roof sheathing, ceiling (with a good vapor barrier) and closure at the ends. I completely fill the rafter cavities with insulation, preferably blown-in, which does a much better job than fiberglass of preventing internal air flow; but a careful fiberglass batt job is acceptable and much cheaper. Over this assembly I place a vapor-transmissive sheet, such as #15 felt or housewrap (the latter is a problem for workers because it is slippery), then strapping, to which shingles are applied. For ordinary composition roofing, a second layer of sheathing is added. The cavities formed by the strapping are vented. Eave vents are required; ridge vents are optional. Not having to

vent the top of the cavities avoids the insoluble venting detail at a clerestory wall or parapet. Double-layer construction has the advantage that the strapping can be arranged to provide continuous ventilation across hips and valleys and around skylights and dormers.

Continuous ventilation within the rafter cavity is next to impossible except in simple gable roofs and causes so much trouble (through induced air flow from the interior) that ASHRAE is reconsidering their recommendations on the subject. Whether or not you ventilate, you need a good internal vapor barrier; it is of course essential if there is no ventilation.

Once the problem of moisture flow from the inside is eliminated, one should examine the need to install wood shingles on strapping. I don't know whether there is relevant data that disaggregate the effects of external and internal sources of moisture; I suspect not. It is certainly safer to install wood shingles on strapping, and it is probably essential in humid climates. I have installed wood shingles directly on plywood with no problems in the Boston area, but tend to prefer strapping for insurance. Under no circumstances should wood shingles be installed directly on an impervious moisture barrier, such as an ice and water shield. The membrane keeps their bottoms wet, so when they dry out in the sun they curl and pull the nails.

*Gordon Tully
Arlington, Massachusetts*

The author responds:

Portions of the comments by Mr. Collins and Mr. Tully go beyond the purpose of the original article, which focused on roof ventilation. I addressed the subject with the technical assistance of the Cedar Shake & Shingle Bureau (CSSB), within the space limitations of the Q+A column. Mr. Tully begins by suggesting that ventilation *causes* moisture problems in wood shingle roofs, but later seems to refute his own suggestion, so I assume he agrees with the essence of my article. In reference to Mr. Collins's mention of OSB, it should be noted that the building code authorities in Dade County, Florida, prohibited OSB for roof sheathing immediately after the devastation of Hurricane Andrew. His observation that spaced sheathing cannot act as a diaphragm is not true. According to the CSSB, spaced sheathing has been used in this fashion for centuries. Shingles nailed three-layers-deep directly into the spaced sheathing can result in an extremely rigid diaphragm.

*Timothy T. Taylor, AIA, CSI, ASTM
Skidmore, Owings & Merrill
Washington, D.C.*

The Perils of Performance Standards

Designing a roof that meets performance standards won't let the architect off the hook if something goes wrong, and it probably will. *by Carl G. Cash*

Abstract

Architects and certain owners have come to rely more on "performance" standards for roofing than on prescriptive specifications, but such standards leave plenty of room for misinterpretation on the part of roofing contractors, and incompatibility among elements of a roofing system. A better performing roof can be achieved by understanding its various components and how they should function above and beyond what codes may require.

The use of performance standards in the design and construction of roofing systems has been gaining popularity. Given the fact that more than 50 percent of roofing problems are caused by inadequate specifications or selection of materials, it is not hard to understand why. An almost religious zeal is now shown by many in favor of the "new" performance standards over the "old-fashioned" prescriptive standards for roofing. But in their fervor, the proponents overlook the often learned (and promptly forgotten) truism that "new" generally means untested.

The very term "performance standards" implies there is a discrete list of test values that can accurately predict the performance of a roofing system. There is no such list of test values. There is no test result or group of test results that accurately predicts the performance of all of the many roofing systems currently available. Some testing programs are useful in comparing the potential performance of an appropriately limited group of roofing systems (such as the decrease in the tear strength of glass-fiber-reinforced asphalt shingles after heat aging that may accurately suggest life-limiting properties of these shingles), but this same test is not useful for EPDM membranes (EPDM performance is probably controlled by the performance of its seams). If a list of such test values were known and specified, they would be a prescriptive standard.

Performance Standards Made in Heaven

A typical performance standard might require the roofing membrane and flashing to be leak-free for 20 years, to be resistant to fire, water, wind, and hail, and to require no maintenance whatsoever. An additional requirement might be that the roofing system be composed exclusively of materials available at no cost. Such a specifica-

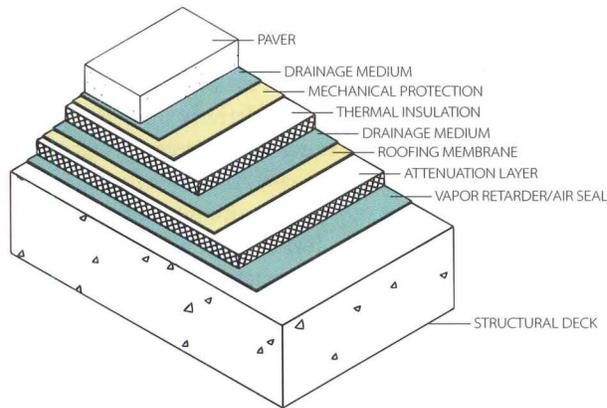
tion – aside from the humor – shows the impossibility of fairly defining what is an "acceptable" roof. No one is able to balance perfectly the conflicting requirements of materials, labor, and cost. The departure from the optimum design can result in one of two types of "error." One design error is the overuse of materials and labor – the belt and suspenders approach – which is likely to minimize leakage. The second design error is to minimize the cost of materials and labor, increasing the probability of leakage. I suggest that the first error would be preferred by most owners.

The G-Men Made Me Do It

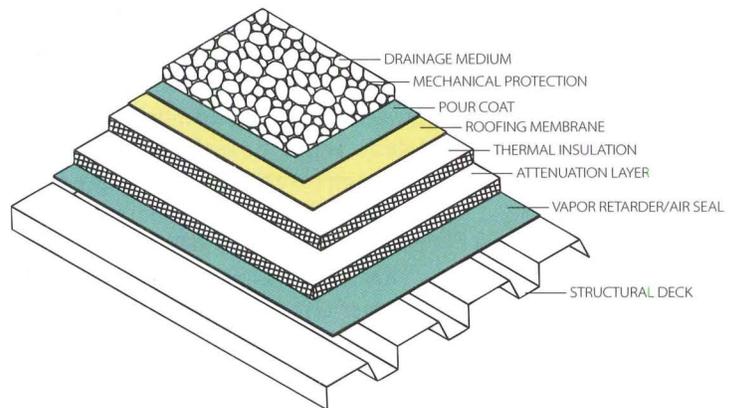
The performance standard concept is fostered by the federal and many local governments. In their zeal to promote competition and avoidance of proprietary materials and systems, they require designers to specify at least three alternatives, plus the ubiquitous "or equal," for each material. The alternative to this is a "performance specification" with no specific material named.

This common regulation does disservice to the contractor, the owner, and the taxpayer, as illustrated in the following hypothetical case. A designer for the reroofing of a government facility specifies a self-adhering single-ply roofing membrane by manufacturer "A" to be top-coated with the same manufacturer's protective material. The local roofers object on the basis that the specification is proprietary. The government requires the designer to name alternatives or develop a performance specification. The designer

The author is principal and vice president of Simpson Gumpertz & Heger Inc., consulting engineers and building pathologists in Arlington, Massachusetts, and San Francisco.



1 COMPONENTS OF A TRAFFIC-BEARING ROOFING SYSTEM (PLAZA)



2 COMPONENTS OF A CONVENTIONAL ROOFING SYSTEM

rewrites the specifications; the roof is to be: "... a self-adhering single-ply bituminous membrane with a liquid applied top coating, or equal." The work is awarded to the contractor with the lowest bid, and he submits, in part, a self-adhering single-ply bituminous membrane (which has never been used in roofing) and a top coating by manufacturer "B" (who made a special formulation for this job when manufacturer "A" refused to sell the contractor the top coating originally specified without the base-ply required by the manufacturer A's specification). The contractor's submittals are approved by the contracting officer without consulting the designer. The roof is applied, approved, and fails within a month.

Enough Blame to Go Around

Who's at fault in this hypothetical case? It would seem there is enough blame to reach all of the participants. The government, for its failure to require the designer to select specifically the materials to be used, and for assuming that the contracting officer is knowledgeable enough in roofing technology to decide what is or is not "equal." The designer, for failing to stick to her original material selection – assuming she made a sufficient study to establish that the materials she specified were appropriate for the roof in question – thus failing in one of her primary duties, as a designer, to select materials. The contractor, for selecting materials based on price rather than on past performance, and for failing to warn the owner that these materials had never before been used on a roof.

Getting the Components Right

While the performance standard concept is flawed, there is still some benefit from reviewing the functions required by the various layers in a

typical flat roofing system, and the minimum values needed for each function. The roofing system consists of the following functional layers from the inside to the exterior: the structural deck, the air seal, an attenuation layer, a vapor retarder, thermal insulation, the roofing membrane, the drainage layer, and the mechanical protection layer (1, 2).

The designer should be aware of the minimum requirements for each functional layer of the roofing system, which may exceed the requirements of the local building code. The functional elements that must be present in every effective roofing system are listed with an asterisk; the need for the other functional elements is dependent on the severity of the exposure and use of the system.

*Structural Deck** The structural deck shall have the capacity to support the full design load required by the mass of the system at its location. The live load capacity shall never be less than 30 lb/ft² (146 kg/m² or 14.4 kPa), to provide for loads during construction. Where appropriate, additional live-load capacity must be provided for snow and drifting snow loads, in addition to the load from water, if all of the primary drains are plugged. The maximum deck deflection shall be less than the length/240. There shall be no differential deflection between adjoining structural deck elements when either one of the elements has a full design load and the unloaded elevation of adjoining structural elements shall not differ by more than 0.25 inch (6 mm). The deck surface shall slope a minimum of 0.25 inch per foot (2 percent) to drains in new construction. A lower slope can be used, if permitted by the building code. In roofing reconstruction, 0.125 inch per foot (1 percent) may be allowed after creep, elastic deflection, construction tolerances, and sub-

surface soil consolidation have taken place.

Air Seal Air seals are used to retard the flow of air from under the roof deck into the volume between the roofing membrane and the structural deck. When air seals are used properly, they greatly improve the wind resistance of the roofing system. With care, the vapor retarder and air seal functions can be provided by the same materials.

*Attenuation Layer** The attenuation layer is the material installed to protect the roofing membrane from structural deck movements. Slip sheets or layers of thermal insulation board can serve these functions.

*Vapor Retarder** The vapor retarder slows the transfer of the moist-warm interior air into the roofing system. A vapor retarder must be used in

*Roofing Membrane** The roofing membrane may be single-ply or multi-ply, depending on the materials involved. The properties of the roofing membrane should be relatively unchanged after accelerated heat aging (80 degrees Centigrade for six months), UV exposure, water immersion, and fatigue cycling. The roofing membrane must be mechanically fastened to wood blocking at every perimeter and penetration.

*Drainage Layer** The drainage layer provides a path to conduct storm water to the roof drains. Ballast or roofing aggregate can be used as a drainage layer. Deformed plastic mats or polyester non-woven fabrics are frequently used as drainage layers under concrete pavers. Interior drains are required in climates where ice forms; they should be installed in the heated areas of buildings. Gutters are recommended only in warmer climates, or where interior drains are not practical. Scuppers should seldom be used as the primary drainage; they are required as emergency overflow for roofs with parapets. No part of the roofing system should be permitted to block the prompt drainage of water.

Mechanical Protection The mechanical protection layer helps resist impact and external fire, and in some systems also protects the membrane from destructive solar radiation. Metallic skins, aggregate, stone ballast, and concrete pavers are frequently used. The “inverted” roofing systems use extruded polystyrene insulation board and stone ballast for membrane protection.

The designer should be aware of the minimum requirements for each functional layer of the roofing system, which may exceed the requirements of the local building code.

northern climates on the warm side of the system over moist occupancies, and at locations where the quantity of moisture accumulated in the winter exceeds the moisture capacity of the materials in the system. Consider overall vapor transmission in each individual case.

Thermal Insulation Thermal insulation should be used wherever a building is heated or cooled. Where used, it should be installed in two or more layers with staggered joints. The lowest layer of insulation can be mechanically fastened on metal and wood structural decks, with a second layer of insulation fully adhered over the heads of the mechanical fasteners. Two layers of insulation can be adhered to any deck. Adhere the insulation layers to a vapor retarder mechanically fastened to low-density concrete or gypsum decks. Use only fiberboard or perlite board insulation for the layer directly under any fully adhered roofing membrane. Tapered insulation can be used where necessary to provide a 0.25 inch per foot (2 percent) slope to the drains for the top of the membrane. Use tapered insulation at all roof drains to reduce the insulation thickness at the drains. The insulation selected must be compatible with the membrane system selected, be dimensionally stable, and have the heat stability needed for the insulation and membrane application methods selected.

Conclusion

Of course the final and most crucial test is the weather itself. Designers should examine similar or identical systems, installed by local labor, that have been exposed to the weather near the building to be roofed. The successful roofing system candidates are those that show no appreciable change after five years of exposure. This procedure should help the designer avoid materials or combinations of materials inappropriate for exposure at the site, and should also assure that each of the candidate systems can be effectively installed by local labor.

Have all roofing plans, specifications, and flashing details reviewed by professionals specially skilled in roofing design; have the roofing system installation monitored on a full-time basis by personnel skilled in roofing technology and independent of either the contractor or the roofing material supplier. This will minimize the blame game later on. □

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Dissecting the American House

(continued from page 51)

developments such as Harbor Town and Midtown display knowledge of the styles of the early 20th Century and an ability to freshen the plans and elevations, adapting them to current conditions. “We all see ourselves as resistance fighters” against the mind-numbing “ooze” of thoughtless building that inundates expanding metropolitan areas, says Looney, borrowing a quote from another resistance fighter, San Francisco architect Daniel Solomon. Looney faults the frivolousness of most, but not all, building designers: “The kind of trendiness that is good for fall fashion is not good for a house we’re going to have to live with for 50 years.”

Starting Modestly

The way to win work from homebuilders, Looney says, is “not by telling them they’re idiots and fools, but by starting little by little, doing overlays on elevations and plans” to suggest improvements. If an architect proposes revisions to plans and then the redesigned houses sell better, he says, “you’ll have a guy who won’t go anywhere else.”

What sorts of things has Looney asked builders to do? Raise the foundation, raise the ceilings to nine or 10 feet, raise the doors of main rooms to eight feet, raise the window heads, improve the scale and proportions generally. When these things are tended to, there’s less reason for two-story spaces,

“The trendiness that’s good for fall fashion is not good for a house we’re going to have to live with for fifty years.”

elaborate ceiling treatments, and other costly devices. A good architect can “spread the savings around the house on such things as better cabinets, taller windows, and so forth,” Looney says. To make these and other changes succeed in the market, he notes, the builder’s sales staff has to be trained to point out the improvements to customers, encouraging them to compare the architect-designed house with a conventional house. Just as automobiles (including Cadillacs) have improved partly because government agencies, consumer organizations, and the most progressive automakers effectively educated consumers about gas mileage, safety, and other issues, a similar effort will be required if homebuyers are to make better choices.

What to Change

Architects’ involvement could entail rethinking some interior spaces and reducing or eliminating features that serve little purpose. Some architects, like Stephen Sullivan in Seattle, have done away with living rooms. Boston architect Jeremiah Eck recently designed a house that has the kitchen at its heart, on the premise that this reflects how the family lives and entertains. Ultimately, house sizes might be reduced, creating a smaller, but more usable and more satisfying dwelling. Ameri-

can houses ought to incorporate both the technical and the social progress of the past 50 years and the admired qualities of well-crafted pre-World War II houses – qualities that were savaged by new, cheap construction and design standards adopted during the postwar housing crisis, when inexpensive square footage became all that mattered.

Those who pursue work on production houses have to consider how much to charge and how much documentation and supervision to provide. Building designers often charge extremely low fees. In Texas, for instance, they often charge homebuilders 75 cents to \$1 per square foot for production house plans (a price that does not include construction supervision, which most builders would rather do without anyway). Across the country, there is tremendous variation in what architects charge homebuilders. One builder-oriented architect says the fee for designing a single-family production house can range from \$1 to \$4 a square foot, depending on local building regulations and conditions such as earthquake susceptibility.

For a 317-unit development called Prairie Crossing in Grayslake, Illinois, Shaw Homes was encouraged by the developer, Prairie Holdings Corporation, to use three accomplished Chicago architectural firms – Tigerman McCurry Architects, Frederick Phillips & Associates, and Nagle Hartray Danker Kagan McKay. Franklin A. Martin, president of Shaw Homes, says the architects were paid \$10,000 for each of the numerous plans they produced for houses priced at \$190,000 to \$400,000. Martin says architects working for suburban Chicago homebuilders typically earn \$7,500 to \$15,000 per plan (depending on the house’s size and complexity) for a complete set of design and working drawings. Because of liability exposure, some architects insist on an additional fee of \$100 to \$400 for each unit built.

Looney Ricks Kiss has adopted some of the methods of building designers. For instance, the Memphis firm provides the builder with just four or five sheets of documents: foundation and floor plans, elevations, cornice details, building section, and a “yes/no” drawing of column and beam locations. “We’re not detailing and specifying to an extensive degree,” Looney says. “Intern architects can do the production. What’s also important is that the builder waives any liability.” The architect’s fee still comes out higher than that of a typical building designer, he says, perhaps twice as high, “but if the house sells before it’s finished, versus sitting there for a long time, it’s worth it to the builder.”

And it’s worth it to everyone who has to live with what gets built. The 1959 Cadillac, which sold as well in its day as awkwardly assembled production houses do today, is gawked at in 1995. Nothing like that automotive monster is manufactured anymore, because it was an absurdity on wheels, expressing the fashions of the times and not much else. Cars today are immensely better designed. The whole automotive enterprise has changed. The same kind of change might lift the American house from its present absurdity, if only builders and the public can be convinced that there’s a better way to go. □

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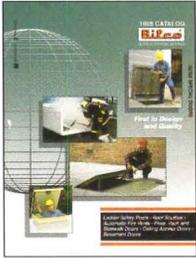
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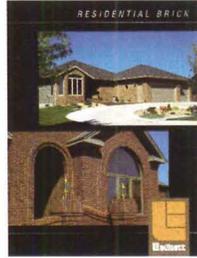
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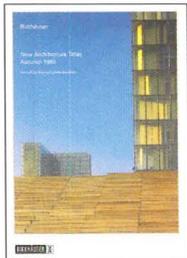
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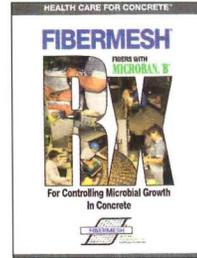
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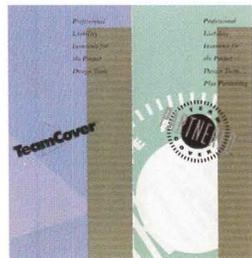
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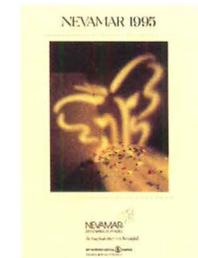
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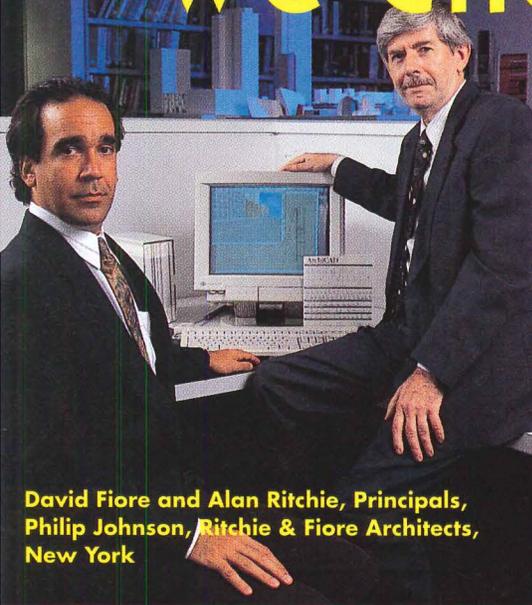
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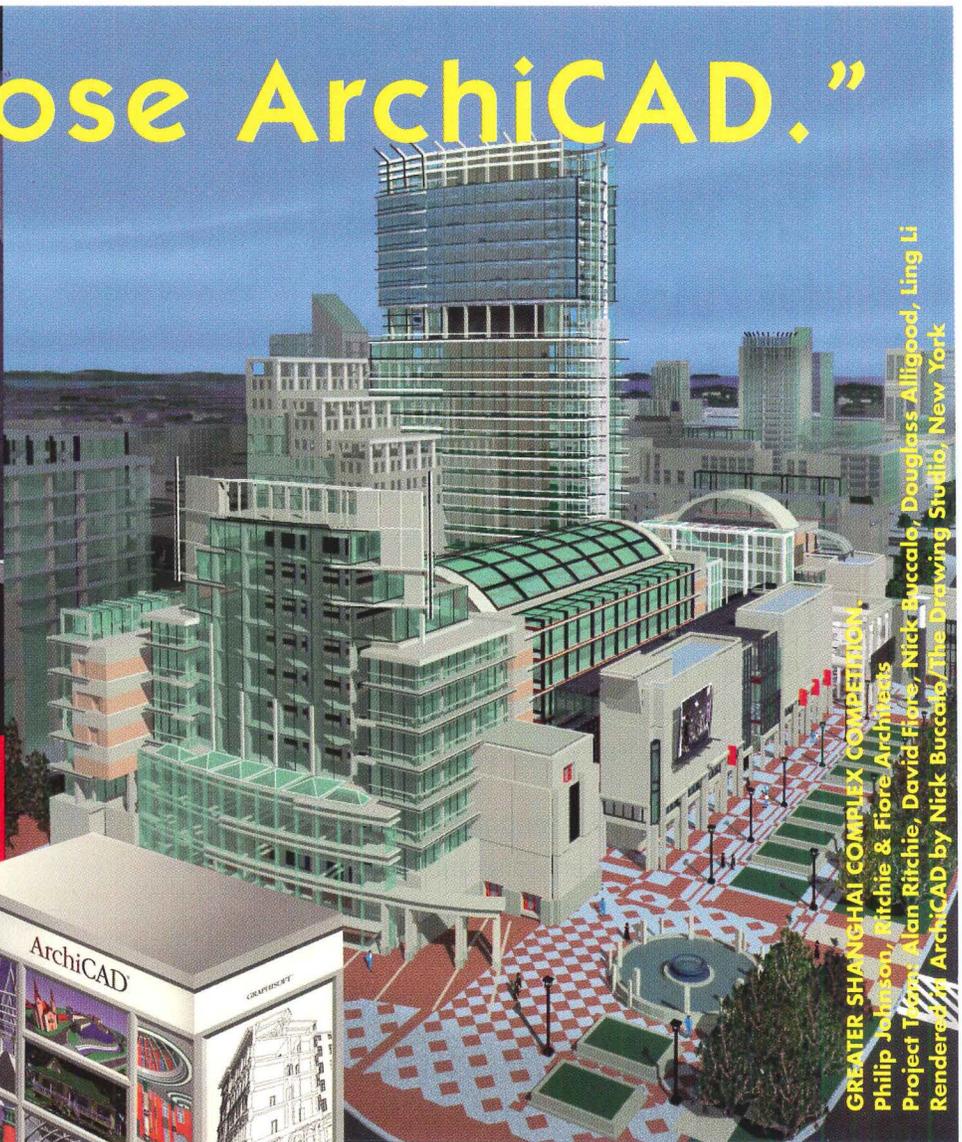
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Chicago, Illinois 60601
Two Prudential Plaza Suite 2555
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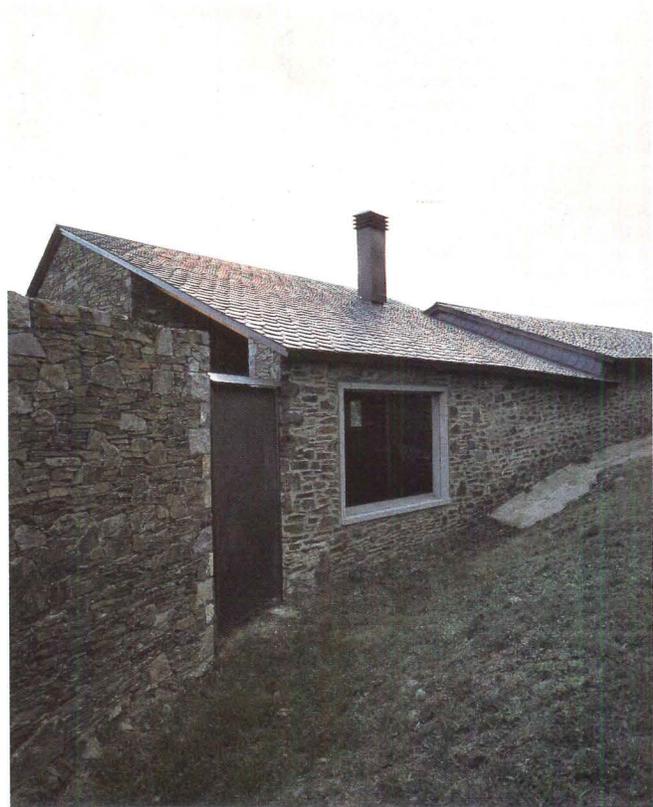
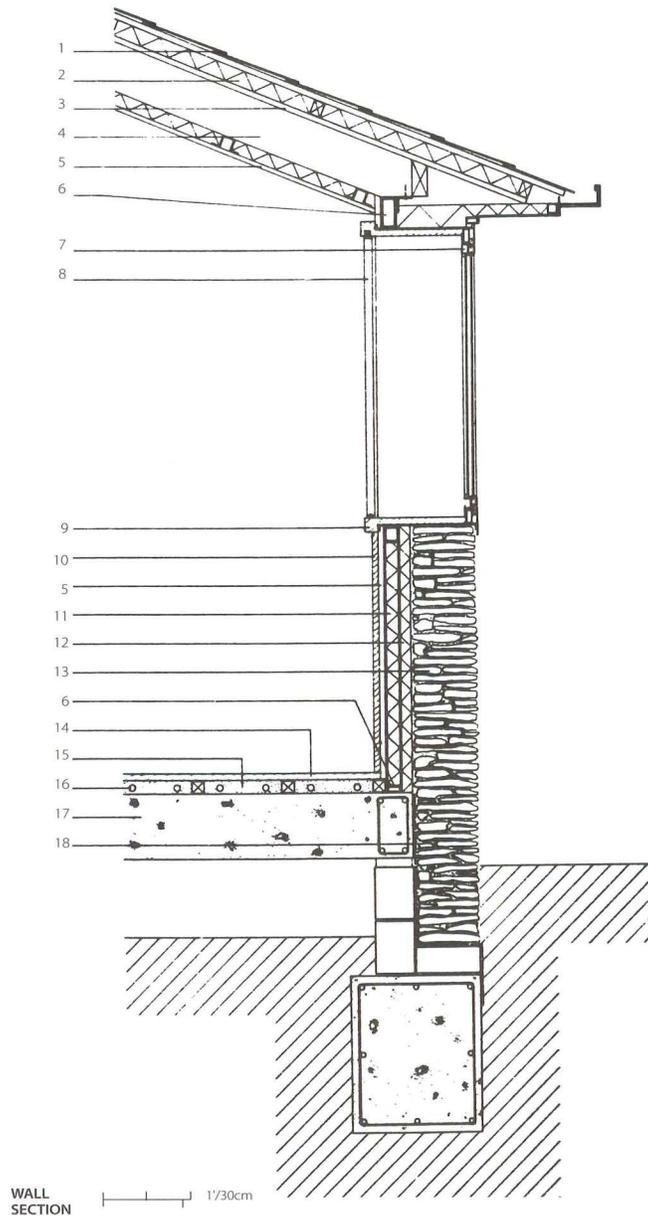
European Operations
John Allen, General Manager
Penton Publishing
36 The Green, South Bar
Banbury, Oxford
England OX169AE
Telephone, 44(0)295-271003
Fax: 44(0)295-272801

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Stone Wall Section, Casa Rius-Fina

CSI SECTION 04400



TYPICAL WALL CONDITION

- | | |
|---------------------------------------------------------------------------------------------|------------------------------------|
| 1 SLATE SHINGLES | 9 BEECHWOOD STOOL CAP |
| 2 6cm ROCKWOOL INSULATION | 10 BEECHWOOD WAINSCOT |
| 3 WOOD TONGUE-AND-GROOVE BOARDS | 11 4cm ROCKWOOL INSULATION |
| 4 WOOD RAFTER | 12 4cm POLYSTYRENE FOAM INSULATION |
| 5 PLASTERBOARD | 13 NATURAL LOCAL STONE |
| 6 TUBULAR STEEL FRAME | 14 OAK PARQUET |
| 7 GRAY ANODIZED ALUMINUM WINDOW FRAME WITH THERMAL BREAK DOUBLE-GLAZING WITH AN AIR CHAMBER | 15 TOPPING SLAB |
| 8 BEECHWOOD SHUTTER | 16 HEATING PIPES |
| | 17 SLAB |
| | 18 WATERPROOFING MEMBRANE |

New construction of load-bearing stone walls is a rare event these days. As we search, most earnestly, for the thinnest, lightest stone veneers available, architect Francesc Rius Camps has done things the old-fashioned way with the construction of his vacation house in Bolvir, Girona, Spain (see p. 56), albeit with a Modernist's eye for detail. The walls of local stone, varying in thickness from 20 to 50 centimeters, were constructed without mortar and sit on a concrete slab

foundation. At the rear of the house, which hugs the adjacent hill, the architect specified that the walls be built with mortar to minimize the potential for water infiltration. The walls are insulated with rockwool and polystyrene foam, each four centimeters thick. The interior is finished with beechwood wainscoting on a plasterboard substrate (except on the hill side of the house, which was left bare). The double-glazed anodized aluminum window frame, which meets the stone wall at a

beechwood stool cap, is sandwiched between the stone construction and a wood roof structure. In the "great space" between the living and sleeping quarters, where the absence of supporting walls and a ridge beam would have provided inadequate support, the rafters are reinforced with steel gussets and welded steel strongbacks. The roof, also insulated with rockwool, is shingled with slate. **Abby Bussel**