

75TH ANNIVERSARY YEAR

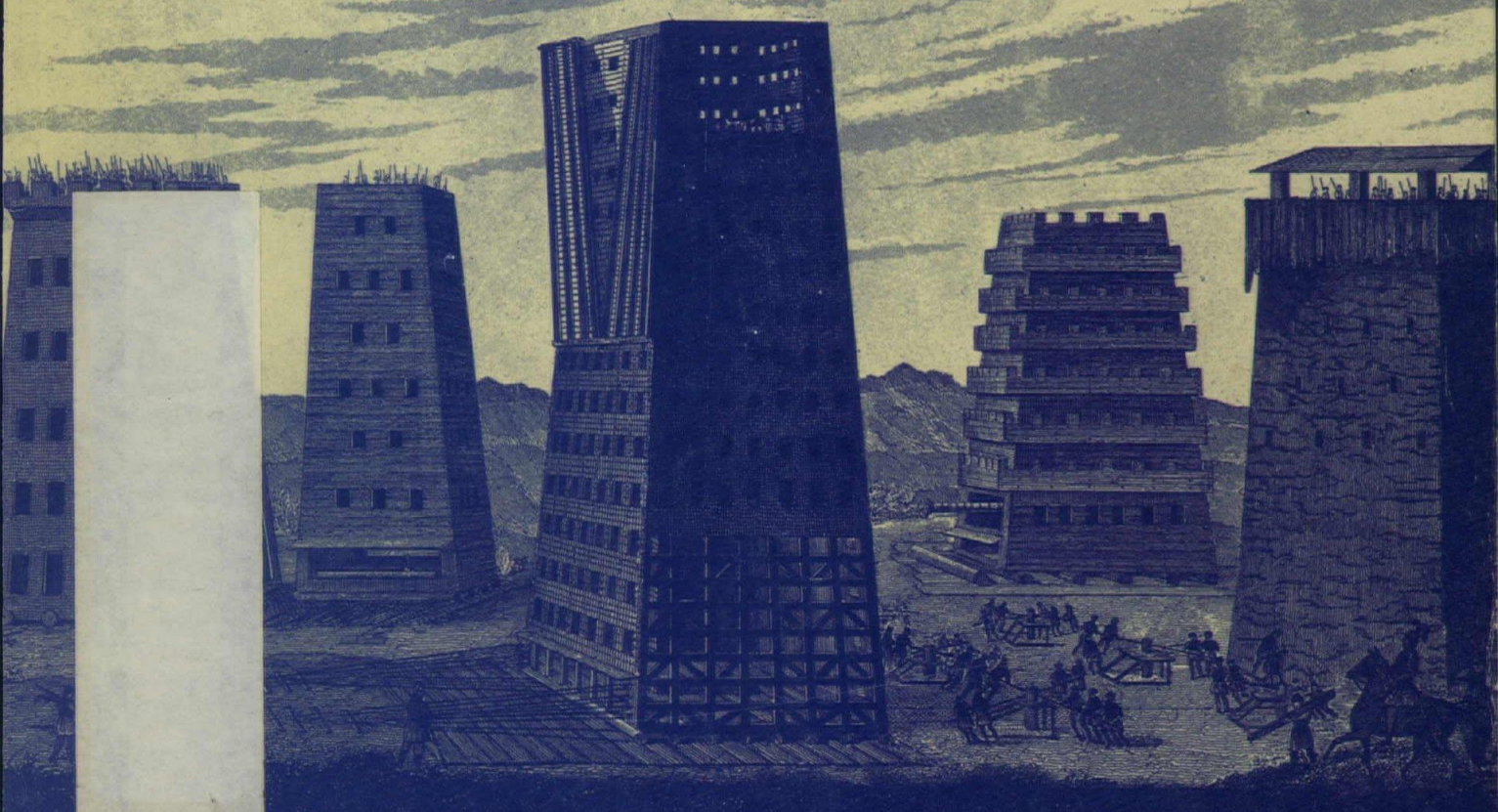
**PA**

Progressive Architecture

A Penton Publication September 1995

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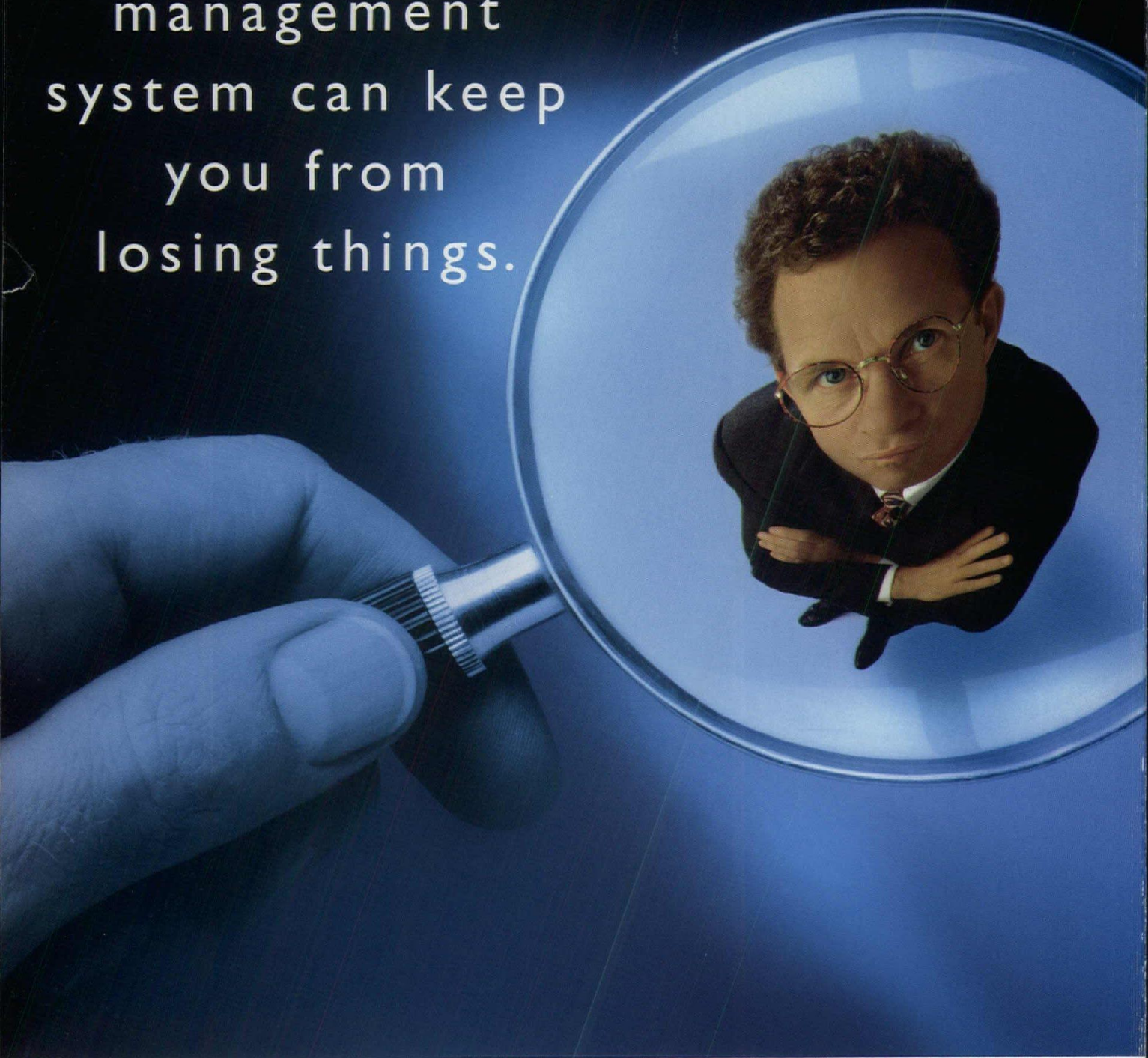
- Profile: Patkau Architects
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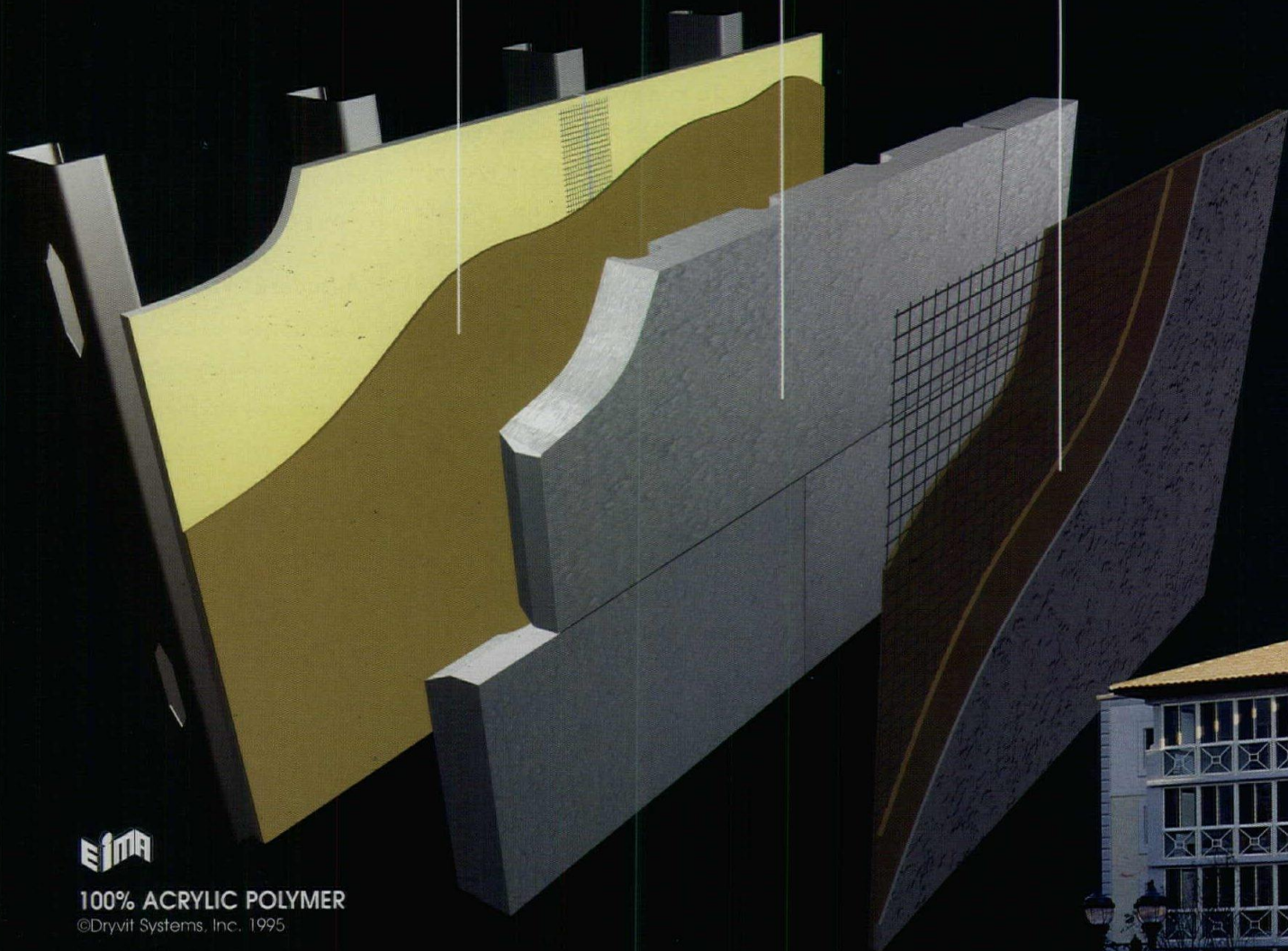
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Ultimately, the Dryvit

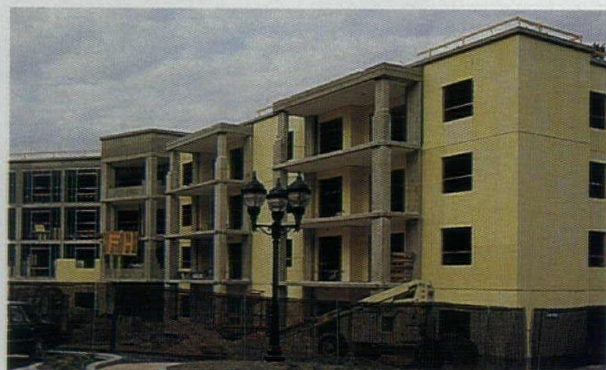
INFINITY PE System™ delivered the extraordinary performance and efficient design that the architects and owners of the Villa Cortese were looking for.

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Developer: IDI-MD, Inc., Silver Spring, MD

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# INTEREST.



and Graphite Grey for the frames.

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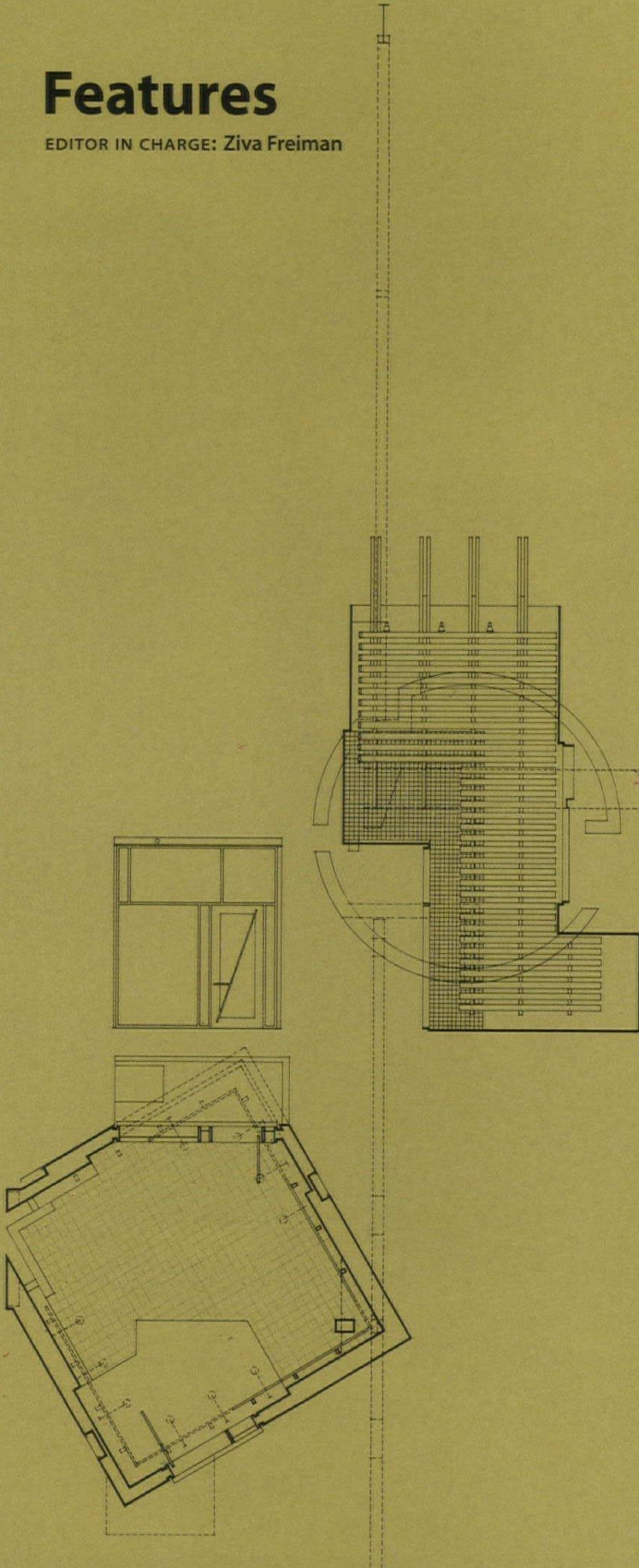
COVER  
*Illustration of movable Medieval attack towers.*  
Cover design by Julie Anne Yee.

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*Plan and elevation of courtyard gallery in the Canadian Clay and Glass Gallery, Waterloo, Ontario, by Patkau Architects (p. 52).*



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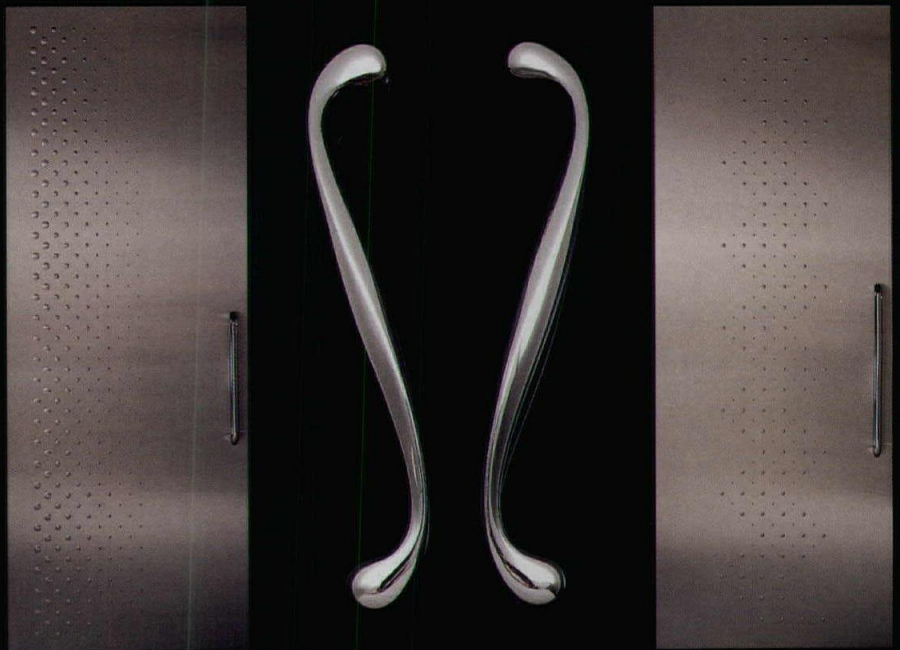
Modern Reconstruction, De La Warr Pavilion

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# Architecture's Economic Value

Who among us hasn't envied the solidity and durability of older architecture or been discouraged by clients who don't see the point of investing in better construction or longer-lasting materials? Some have concluded from this that architecture is less important than it once was in our culture. But what we have seen is not a decline so much as a shift in architecture's importance, as buildings have become valued less for their intrinsic qualities and more for their usefulness in controlling the economy and in providing financial security, both of which have reduced the durability and longevity of construction.

This came to mind while I was reviewing the tapes from the first of a series of symposia I took part in last year, entitled "The Question of Economic Value," hosted by the Center for American Architecture and Design at the University of Texas. (The second in the series will take place October 20-21 in Austin.) At that event, people from a range of disciplines debated the centrality of economics as a measure of the value of things. What deserves more discussion, however, is the related matter: the centrality of architecture, and building generally, in our economy.

Consider the government's use of interest rates to slow down or speed up economic growth. There are other more direct - although perhaps more cumbersome - means of controlling the economy, such as altering the amount or the rate of the government's spending on various programs. But by varying interest rates, the Feds use durable goods, of which buildings are by far the most expensive, as a kind of ballast, weighing down or lightening up the economy.

However effective it may be, this policy adversely affects the construction industry. As architect Ezra Ehrenkrantz has observed on numerous occasions, long-term innovations become almost impossible in an industry so affected by the hard stops and starts of interest-rate shifts. And as every architect knows, these stops and starts also lead to large fluctuations of work and occasional layoffs, making it difficult to achieve efficiency or continuity in an office.

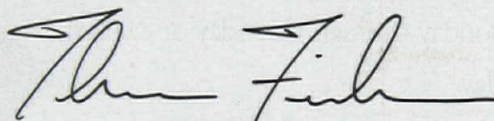
There are, of course, compensatory benefits, such as mortgage-interest deductions and the accelerated depreciation of property, to offset the pain inflicted on our industry by

varying interest rates, but these too have negative effects. Mortgage-interest deductions, as one of the largest government benefits for the middle class, have become a sacred cow politically, as the recent proponents of a flat tax have discovered. But here again, the government's use of the construction industry as part of its economic policy has affected the quality of what we build. Compare, for instance, mass-market housing in the U.S. to that in the Western European countries where no such deductions exist; our single-family housing may be more plentiful and, on average, larger in size and less expensive, but theirs is better built, more carefully designed, and considerably less wasteful of land and resources. Such differences are sometimes passed off as cultural - our frontier ethic against their urban one. But economic policy also plays a part by creating a situation in which people buy housing not just for shelter and security, but for tax deductions and retirement funds. Buildings are not less valuable; they have simply become valued for reasons only marginally related to their quality.

Depreciation, too, affects how we build. If a structure depreciates in a matter of decades, why build for the centuries? One of the brilliant, if somewhat cynical, aspects of the architecture of the Santa Monica school is its forging of an aesthetic out of the realities of rapid write-offs, where the buildings look as if they just might make it to what the accountants consider to be the end of their useful life. Most buildings, of course, last much longer than that, which once again shows how, in an effort to stimulate construction, and through it, the economy, the government ends up discouraging investment in longer-lasting materials and higher-quality construction.

There may be little, in the end, to be done about such policies, although we should certainly oppose current efforts at instituting a flat tax, which (apart from its regressiveness) would remove whatever buffer we have against interest-rate manipulations. The government's use of construction to affect the economy is, for us, a kind of devil's bargain: it increases the volume of construction while reducing its quality. Were we to lobby for other policies less punitive to our industry, our buildings might become more durable and solid, but there would almost certainly be fewer of them - and fewer architects. □

**The decline in the quality of construction is a direct, if unwitting, result of public policies that use buildings as economic and financial tools.**



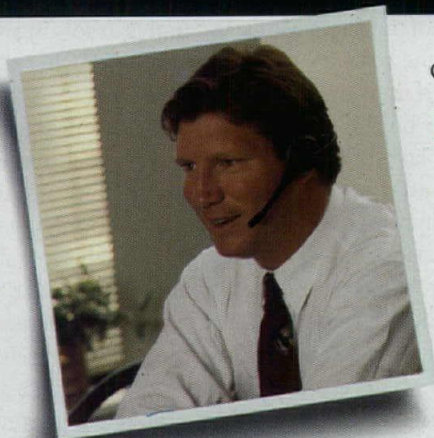
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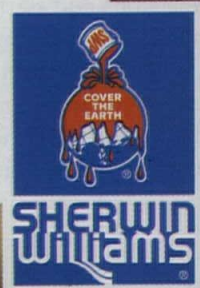
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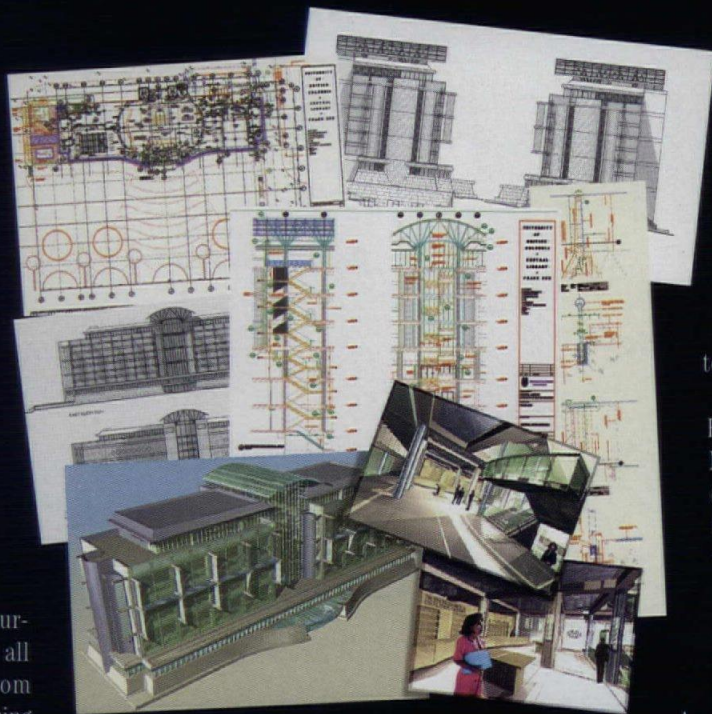
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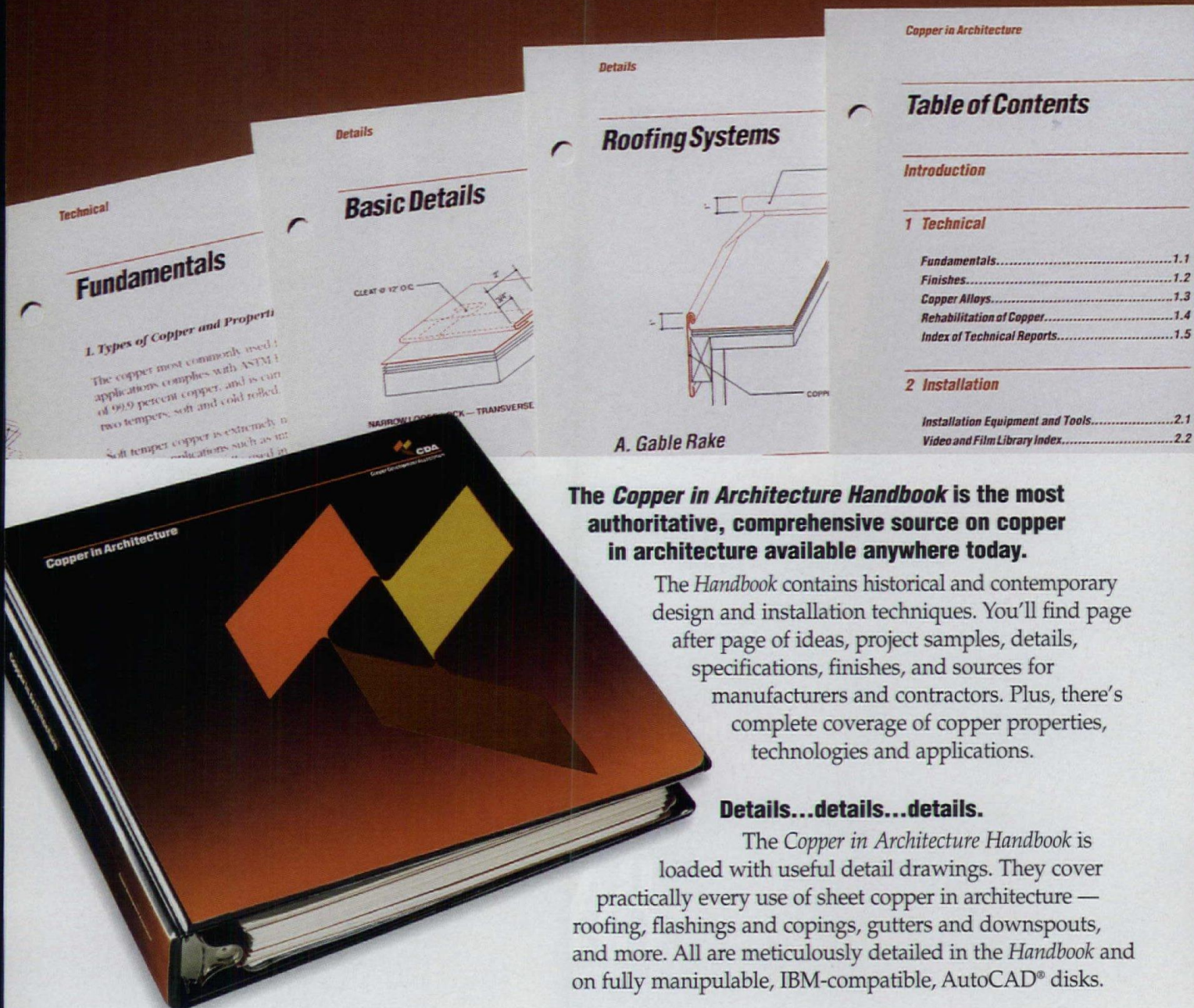
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**Details**

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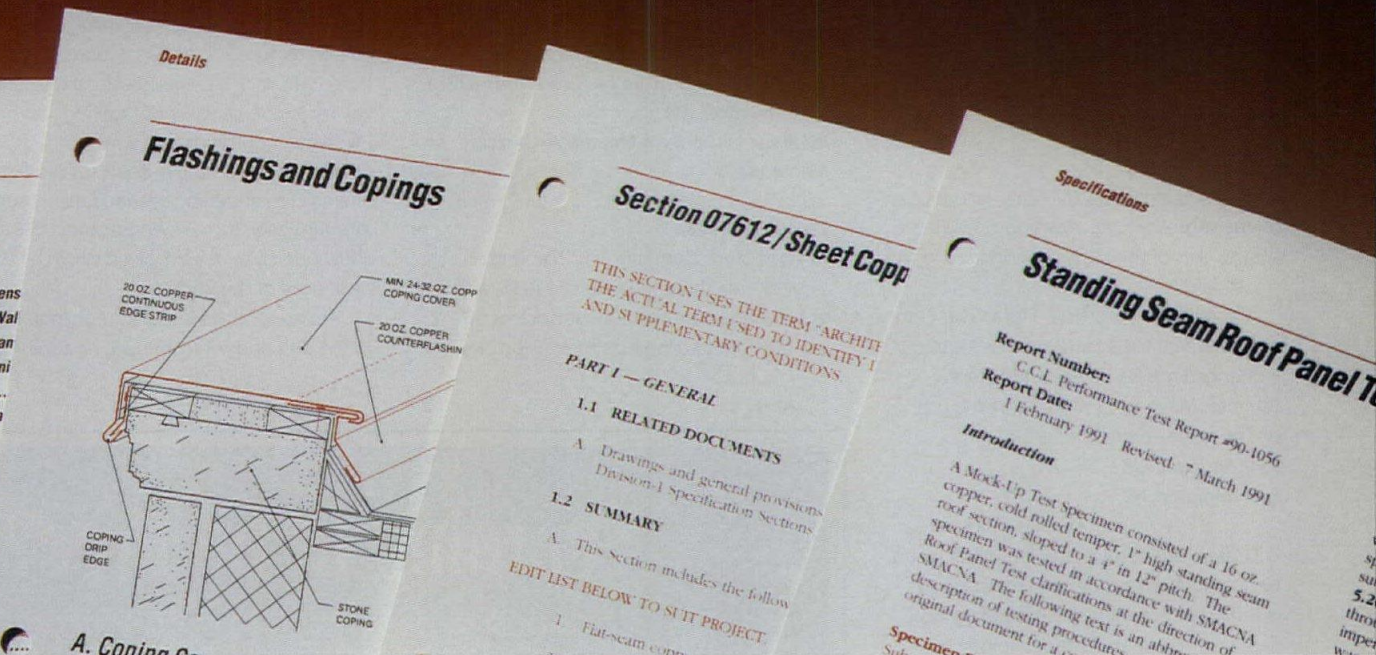
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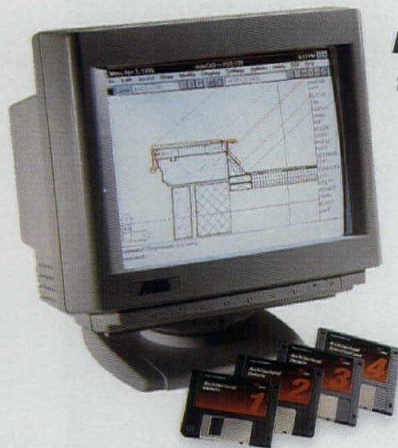
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## July Editorial

I thought your editorial (P/A, July 1995, p. 11) went to the core issue: where are the enlightened clients? I look at *Forbes's* 400 richest people in America and ask myself, "Where are the patrons?" The bucks are there but the desire to create great legacy architecture does not exist in the newly

**"The profession is brutal to its elders, dismissing them as washed-up has-beens. The architectural media are constantly trumpeting the latest, the youngest, the hottest young architects, however shallow or inexperienced they may be." – Robert Gerloff**

minted rich. What has Bill Gates undertaken on the shores of Lake Washington? Where are the likes of the Medicis or Strozis in the U.S. today?

I also liked your article "Eight Over Eighty" with two architects featured that most influenced me, Ed Barnes and Joseph Esherick. Maybe you should do an article on the great American clients.

**John Springer, AIA**  
East Hampton, NY

Bill Gates, legendary president of Microsoft, held an invited competition for the large residential compound he is building near Seattle. It has been designed jointly by James Cutler and the firm of Bohlin Cywinski Jackson, both recognized for design excellence. – **Editors**

## Eight Over Eighty

This is an unabashed fan letter. I have been delighted with P/A's makeover from the *Vogue Magazine* of the architecture world to the profession's thoughtful journal of ideas.

What pushed me over the edge to write a fan letter was the "Eight Over Eighty" section in your July issue (P/A, July 1995, p. 70). Architects season slowly. Frank Lloyd Wright at 65 had built only half his *oeuvre*; Frank Gehry didn't build his first Gehry-esque building until he was (I believe) 48.

Yet the profession is brutal to its elders, dismissing them as washed-up has-beens. The architectural media are constantly trumpeting the latest, the youngest, the hottest young architects, however shallow or inexperienced they may be.

Your "Eight Over Eighty" article is the first

time I've seen one of the magazines systematically try to learn from our profession's elders, to try to disseminate their wisdom to young architects like me who are struggling to learn not only the basics of designing a building and getting it built, but also the larger question of how and where architects fit into and contribute to society. Are we artists? Are we craftsmen? Are we citizens first?

Reading the thoughtful, insightful comments of Barnes, Esherick, Fisher, Fry, Goldberg, Harkness, Johnson, and Lapidus made me realize just how valuable – and how untapped – their experience is. What a wonderful book these interviews would make.

Keep up the good work, and I hope advertisers begin to see the wisdom of your redesign so America's architects can continue to enjoy thoughtful architectural journalism.

**Robert Gerloff, AIA**  
**Mulfinger, Susanka & Mahady Architects**  
Minneapolis

## Design and Time

In your interesting editorial, "The Time Squeeze on Design" (P/A, April 1995, p. 7), you compare architecture and science in the attempt to downsize the design element

in the architectural process. This really cannot be done accurately since science and architecture are different in terms of the objectives and processes involved in reaching their objectives. Science overall has an analytical approach and specific experimental processes. Architecture overall is a creative endeavor, relying heavily on human energy and creativity in the design process. The latter cannot be "squeezed" too hard.

The design element in the architectural process cannot be coerced into smaller analytical components as can be done in the manufacturing or servicing of industrial productive processes. The rare human element of creativity is involved.

A knowledgeable, experienced economist or businessman will review the *entire* process of architecture in cutting costs and time. But those who lack knowledge and experience will try to coerce without thinking of what is involved or of the consequences.

The Europeans have been successful overall in maintaining a stand against such ignorant coercion. We Americans should not allow ourselves to be mowed down by the onslaught of the same.

Architects have an obligation to acquiesce to the demands of (*continued on page 16*)

**Yearning to be Free?**

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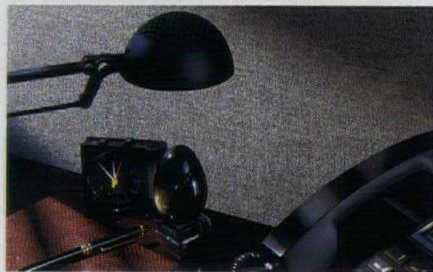
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(continued from page 14) business (however ignorant it may be at times) not only in order to survive economically, but also to maintain standards of culture. A tight squeeze on design by the ignorant may lead us in the long run to become reliant on and in agreement with prearranged mechanical designs effective in terms of cost-cutting, without working them out and without considering whether they satisfy the standards of societal culture.

This is written by someone who would like to see the architectural profession maintain a

somewhat higher profile in society as a whole, not leaving it to only the denizens of harsh and unthinking cost-cutting to run all and everything.

**Madeleine K. Parvin**  
Cleveland

**P/A and Unpaid Interns**

Will the P/A Awards jury include architects who have employed unpaid interns? I admire very much the way you have been calling attention to important issues in the profes-

sion, such as the exploitation of interns (P/A, July 1994, p. 69). You have shown justifiable pride in publishing letters expressing positive reaction to the essay. And in the July 1995 issue you report that the AIA has decided not to honor architects who use unpaid interns. You note that the AIA board will even require speakers and authors to certify that they do not engage in that unethical practice. Does P/A have any policies of this kind?

**Derek Moore**  
Columbia University  
New York

We agree that P/A should have a policy for our own awards program similar to the AIA's. Accordingly, we have decided that, beginning with next year's program, we will ask those involved to certify that they do not use unpaid interns. — Editors

**Post-Structuralist Architecture**

How tantalizing to see the phrase "proving Post-Structuralist architecture is buildable" in reference to the construction documents presented for the Twin House in your June issue (P/A, June 1995, p. 80).

Surely this analysis would mesh with the issue's topic of the "downsized" profession — showing how innovation has relevance via thoughtful practitioners.

The proof of our collective pudding is in the act of building innovation. Until built, any amount of 2-D technique or 3-D artistry is simply not relevant to anyone outside our little world of professional narcissism.

Yes, the Twin House is a good lesson. A lesson of what we do that makes us irrelevant for the population at large. Virtuosity is great for the patron, and can provide delight for the observer, but unbuilt, it is meaningless to all but those who can find fantasy fulfilling.

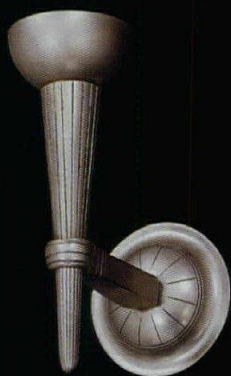
Unintentioned or conspired, the analysis of a \$200+ psf unbuilt project depicted with pseudo-scientific precision reveals our profession's lemming-like obsession with an ethic which has utility for a tiny percentage of our client base. As I read the words of the laid-off architects in the previous article, and the words of Mr. Leaser: "I didn't find anything that wasn't buildable," I found their order reversed. Our inability to see the non-viability of an attitude that budgets are an afterthought relegates us to societal irrelevance — marginalized by a view that dooms us to a "downsized" future.

**Duo Dickinson**  
Madison, CT

**CORRECTIONS**

The illustrations for the article on exterior tile cladding (P/A, August 1995, p. 98) were drawn by George Morgan.

New additions to  
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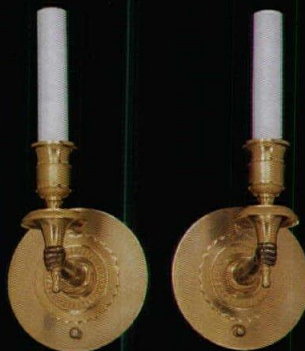
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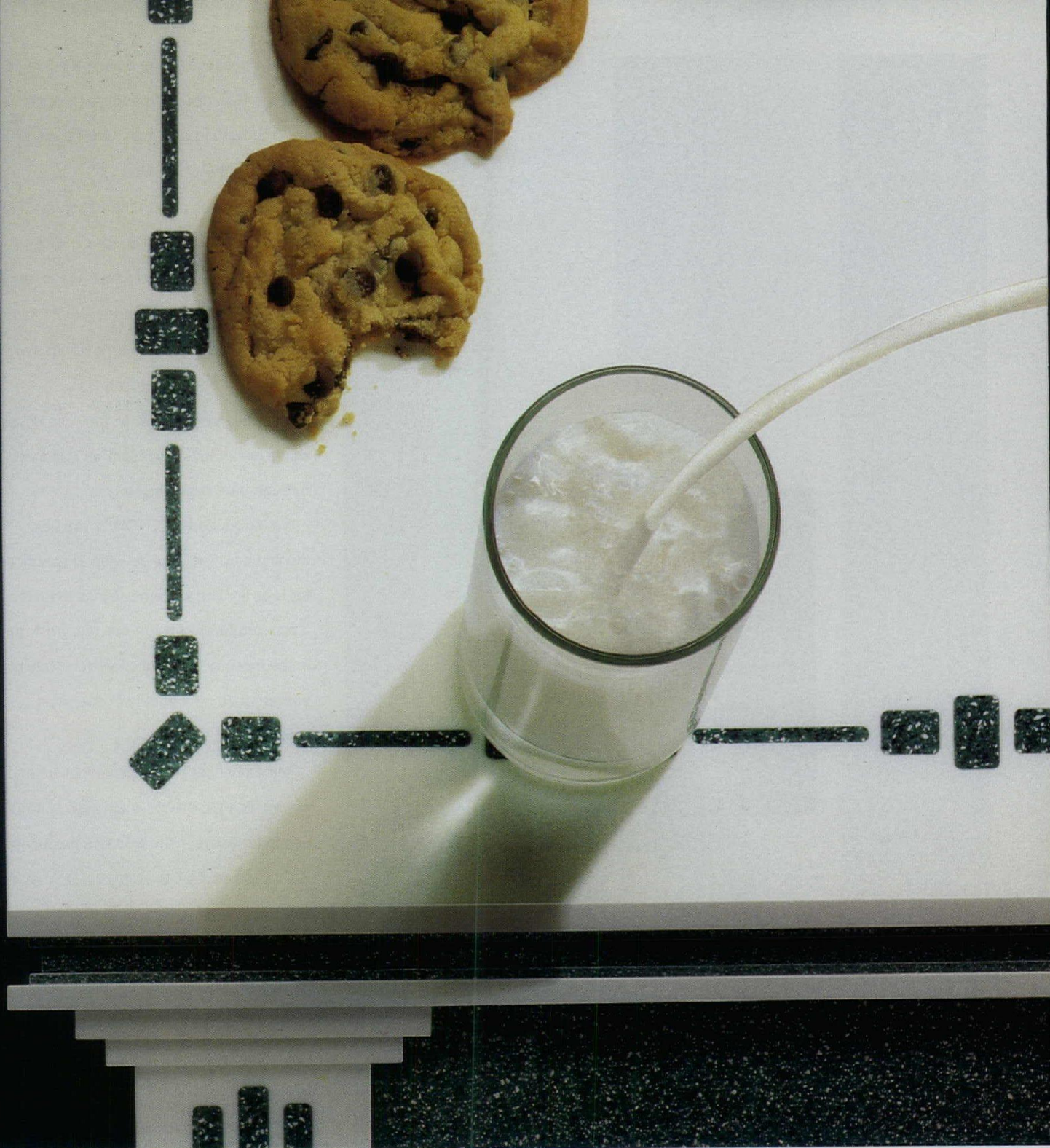
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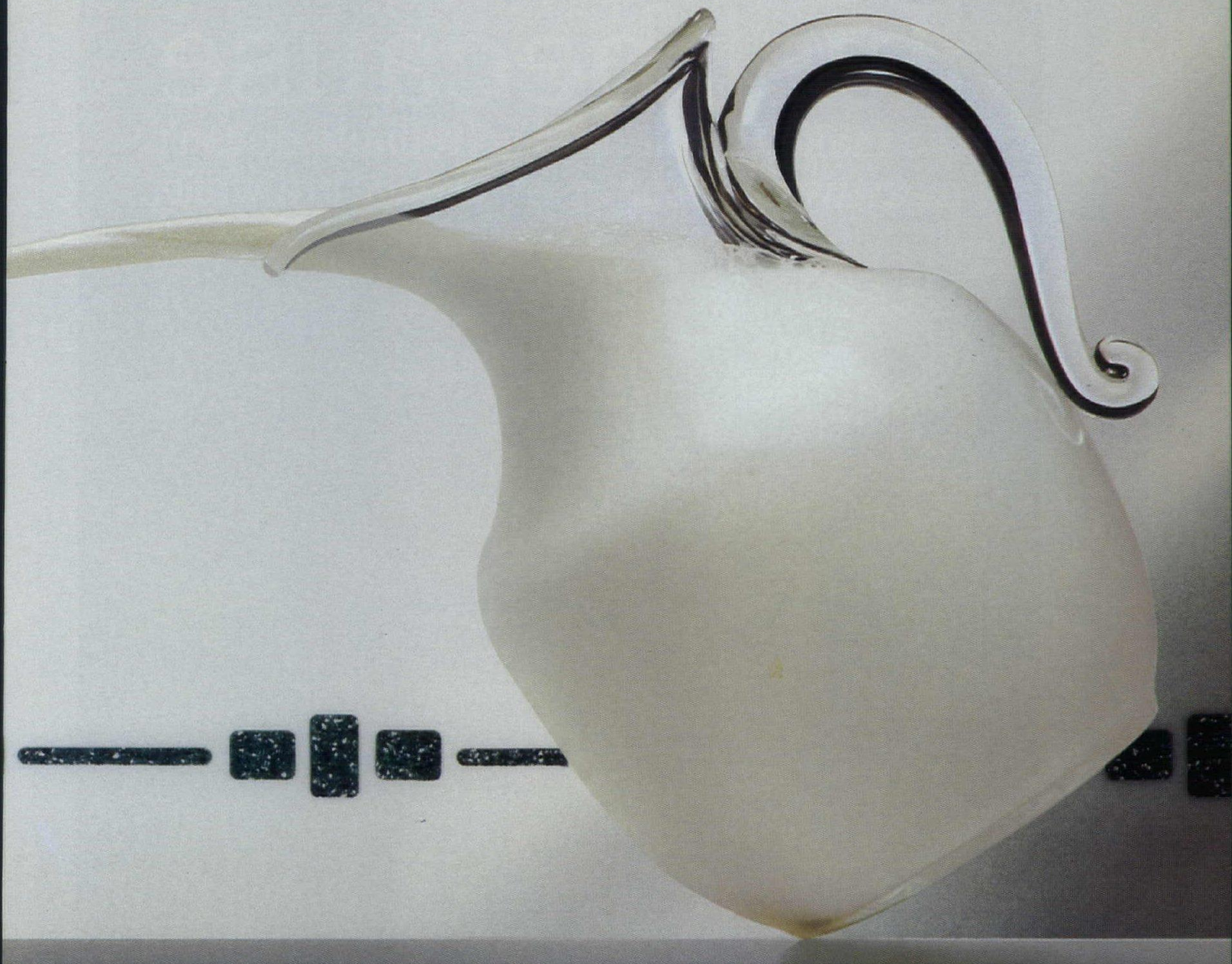


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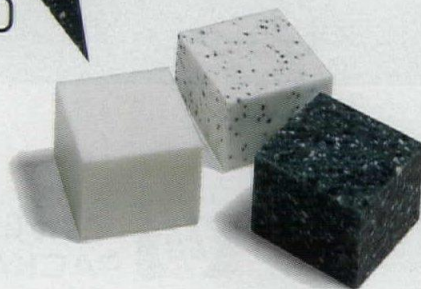


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## Long-Awaited Memorial to FDR is Under Way



After 21 years of preparation, construction started last month on Lawrence Halprin's memorial to President Franklin Delano Roosevelt, which will occupy 7 1/2 acres on the Tidal Basin in Washington, D.C.'s West Potomac Park. The first of 300,000 blocks of Carnelian granite – each piece cut and numbered at quarries in South Dakota and Minnesota – arrived in the capital, where they will be assembled into a wall 12 feet high and 800 feet long, supported by 900 steel pilings.

The wall will frame four separate outdoor rooms, linked by landscaped passageways, illustrating Roosevelt's four terms in office. John Benson is inscribing FDR's words in the red-dish granite, and events in Roosevelt's life are being sculpted by artists Leonard Baskin, Neil

Estern, Robert Graham, George Segal, and Tom Hardy. When completed in 1997, the memorial will occupy the last of four ceremonial sites designated in the McMillan Plan of 1901.

Halprin was selected in 1974 after more assertive designs by Pedersen & Tilney and Marcel Breuer were scuttled in the 1960s in favor of a more contemplative approach. The origins of the memorial go back even further, to 1955, when the FDR Memorial Commission was formed by a joint resolution of Congress. The San Francisco landscape architect has designed not a single shrine, like the nearby Washington, Lincoln, and Jefferson memorials, but rather a journey through a president's years in office, from 1933 to 1945. The memorial will depict the stark days of the Great

**Aerial rendering of Lawrence Halprin's design for the FDR Memorial in Washington, D.C., showing its series of granite-clad outdoor rooms.**

Depression, the powerful drama of World War II, and the social, economic, and cultural upheavals that shook the nation. There will be no depiction of Roosevelt in a wheelchair, which some advocates of the handicapped had asked for, but the text of an engraved chronology will tell of FDR's being stricken with polio, and the entire memorial is designed to be wheelchair-accessible. As the designer approaches his 80th year, this tribute to FDR may well be Halprin's greatest achievement in terms of design and symbolism. It is certain to be his most enduring. **Lynne Creighton**

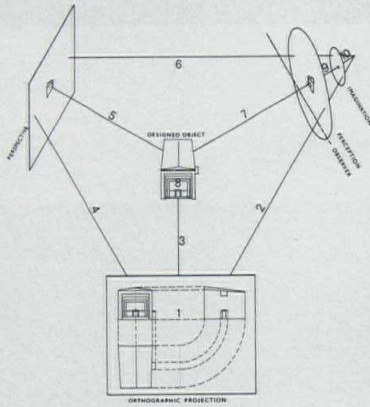
## A Good Building Dies Young

An award-winning office building on the Fort Point Channel in Boston was evacuated in June when it was discovered that its precast concrete pilings were crumbling and it was in danger of imminent collapse. The building known as 303 Congress Street was designed by the Boston firm Notter Finegold Alexander Architects (now Finegold Alexander + Associates) and was completed just 12 years ago. The *Boston Globe* said further investigation of the structure caused the city to condemn the building. City officials pronounced the building a public safety hazard and ordered it demolished.

The failure reportedly occurred in the precast concrete pilings that support the building as it cantilevers over the channel (right). Sulfates in the polluted water of the channel apparently reacted with chemicals in the concrete, causing the material to crumble. The façade facing the channel began to tilt toward the water. Other Boston buildings built on pilings during the same period may have used the same concrete, so city officials have begun to inspect them. San Vel Concrete Corporation, which manufactured the pilings, has gone out of business. Given the extent of its product's failure here, good riddance. □



## Books


**The Projective Cast: Architecture and Its Three Geometries** by Robin Evans, MIT Press, Cambridge, Massachusetts, 1995, \$50.

Within this densely reasoned book lies an important message for architects: not "to fall victim to the illusion of plans." Robin Evans, who died in 1993 of a cerebral hemorrhage at the age of 48, documents the complex historical and philosophical relationships among the three geometries of architecture – compositional, projective, and signified – and he shows how in recent architecture, "geometry itself has to be the thing symbolized or represented. It becomes the subject matter." This argument comes at a critical time, as Rationalists, with their focus on the intellectual order of plans and elevations, Post-Modernists, with their belief that "a sign is more significant than what follows from it," and Post-Structuralists, with their treatment of complex geometries as ends in themselves, all seem to be living, to varying degrees, under the illusion of plans.

**City of Bits: Space, Place, and the Infobahn** by William J. Mitchell, MIT Press, Cambridge, Massachusetts, 1995, \$20.

William Mitchell, the Dean of MIT's Architecture School, thinks deeply and writes clearly about the effect of electronics on the future form of the city, the business world, and various building types. It's a provocative book, but it makes the faulty assumption that technology determines how we live rather than the other way around. The book also fails to answer a question that it raises in the reader's mind early on: are "digitally mediated environments ... the sorts of communities that we will want to have?"

**Mockbee Coker: Thought and Process**

edited by Lori Ryker, Princeton Architectural Press, New York, 1995, \$27.95.

Mississippi architects Samuel Mockbee and Coleman Coker of Mockbee Coker do small-scale residential work in one of the poorest areas of the country, yet their architecture offers many lessons for projects of all scales and locations. It is an architecture that both celebrates and transcends its regional influences. As the generic strip mall and superstores invade this predominantly rural landscape (and much of the country), the work of Mockbee Coker, convincingly presented in this monograph on the firm, "provides us with a glimpse of the possibilities to be found in an architecture more concerned with goodness than greatness," as one essayist in the book puts it.

**Building Sex: Men, Women, Architecture, and the Construction of Sexuality**

by Aaron Betsky, William Morrow & Company, New York, 1995, \$27.50.

Asserting that men design the exterior world – skyscrapers, civic buildings, cities – and women the interior world – the home – Betsky takes us on a journey through the history of sexual politics. He argues that women were the first leaders of human tribes – dominating the nomadic life that centered around the campfire – and that they were dethroned by the male desire to create settlements and conquer nature rather than respect its (women's?) superior role. The argument – and the book – would be more convincing had it not devolved into a "who's who" of psychoanalysis. All too dominantly on display is Betsky's prowess in name-dropping.

## Briefly Noted

**The Architecture of New Prague, 1895–1945**

by Rostislav Svacha, MIT Press, Cambridge, Massachusetts, 1995, \$50.

Exhaustive documentation of Prague's Modernist heritage; comprehensive text and beautiful black-and-white photos by Jan Maly.

**The Japan Guide** by Botond Bogнар, Princeton Architectural Press, New York, 1995, \$19.95.

Brief descriptions and photos, some with plans, of 630 Post-War projects.

**Scenes of the World to Come: European Architecture and the American Challenge, 1893–1960** by Jean-Louis Cohen, Flammarion, New York, 1995, \$50.

North America's influence on European architecture and (pop) culture; published in conjunction with an exhibition of the same title at the Canadian Center for Architecture through September 24.


**Hans Scharoun** by Peter Blundell Jones, Phaidon/Chronicle, San Francisco, 1995, \$75.

Hefty monograph on the Organic Modernist. (Shown above: Recent view of the Philharmonie Concert Hall, Berlin, 1956–1963.)

**Frank Lloyd Wright: The Phoenix Papers, Vols. I and II**, University of Arizona Press, Tucson, Arizona, 1995, \$79.95, set.

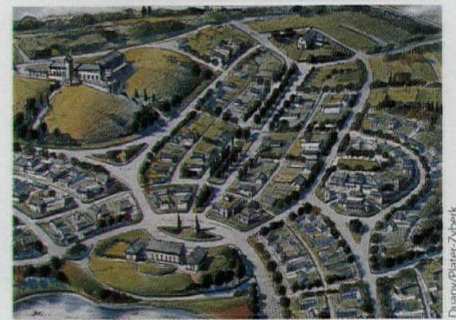
Two volumes, *Broadacre City* and *The Natural Pattern of Structure*, from the Herberger Center for Design Excellence at ASU in Tempe.

## Obituaries

**Max O. Urbahn**, FAIA, designer of many government buildings, including NASA's Vehicle Assembly Building at Cape Canaveral, Florida, died July 9 at his home in Stonington, Connecticut. President of the AIA in 1972, Urbahn, 83, had his own firm, originally Reisner & Urbahn, in New York from 1946 to 1978. The NASA building is said to be the world's largest.

**Samuel E. Lunden**, architect of the Art Deco Pacific Stock Exchange in downtown Los Angeles, the Doheny Memorial Library at the University of Southern California, and the 1928 wing of the Biltmore Hotel, died June 17 at his home in Rancho Palos Verdes, California. President of the AIA in 1965, Lunden was 97.

**David Roth**, principal in David W. Roth Architects in New York, was one of three people killed by a gunman in the Chelsea neighborhood of Manhattan June 20. Roth, 56, designed apartment buildings, offices, sound and movie studios, and several recent houses. He had just completed work on both the Swedish and the Finnish consulates in New York. □



## In the Spirit of Nolen

This is one of the few places that is growing that can still do it right," Miami architect Andres Duany declared in Madison, Wisconsin, during a June conference on how to use John Nolen's 1908 Madison plan to shape today's development in the state capital region. One part of the "Nolen in the '90s" conference, spearheaded by *Isthmus*, a weekly newspaper, and promoted by architects, planners, landscape architects, and civic activists, was a discussion of Duany & Plater-Zyberk's design for the Middleton Hills development (above) in the rapidly growing suburb of Middleton. Just as Nolen's plans for suburbs such as Mariemont, Ohio, and Myers Park, North Carolina, were once considered models of community planning, local developer Marshall Erdman (a onetime Frank Lloyd Wright apprentice who hired DPZ) said, "I am hoping that Middleton Hills will be something of a model for developments in greater Madison." The 1.5-acre development, whose architecture draws from the Prairie School, received a go-ahead from the town council in July. □



## The Vanishing Expo

Some Japanese are upset at the decision of Tokyo's newly-elected Governor Yukio Aoshima to cancel the World City Exposition, which was to run from March 24 through October 13, 1996, in the Japanese capital. Aoshima said he called off the fair because its organizers had failed to generate wide public support and because the event, conceived during Japan's speculative "bubble" years, was ill-suited to a country now in recession. Politicians and bureaucrats protested that canceling the expo less than a year before the scheduled opening – with many pavilions under construction and 26 million tickets already sold – would damage Tokyo's image abroad and would actually cost about \$170 million more than letting the event proceed as planned, since participants will have to be compensated for their losses.

The fair's avowed purpose was lofty, if nebulous: "The consideration of proposals and experiments aimed at solving urban problems throughout the world." The event was also intended to jump-start a 1,107-acre development on reclaimed waterfront land, Teleport Town, which has been billed as an "ideal, future-oriented city" providing international financial and telecommunication services, but whose prospects have become doubtful because of the overbuilding of office space and a sharp drop in land prices.

Four architects – Toyo Ito, Kazuhiro Ishii, Akira Kuriyu, and Riken Yamamoto – were in charge of design for the host organization, the Tokyo Frontier Association, and they expect to be paid in full for producing, among other things, a theme pavilion and a 1.4-kilometer-long main street featuring an aqueduct. Yamamoto suggested that architects have mixed feelings about the cancellation. "The exposition is a bankrupt, 19th-Century idea that is no longer relevant to our age," he said. "New and exciting things are happening in everyday life that outstrip anything that a fair can present."

**Hiroshi Watanabe**

## Johnson to Design Gay/Lesbian Church

Philip Johnson once kept his homosexuality a secret for fear of losing commissions. Now, two years after he came out of the closet in a *Vanity Fair* interview, his sexual orientation may have secured him a job. The Cathedral of Hope, a gay and lesbian congregation in Dallas, has hired Johnson to design a new 2,500-seat sanctuary. Said the Rev. Michael Piazza: "It seems only fitting that the largest gay and lesbian church in the world should inhabit a building designed by the greatest living architect, who also happens to be a gay man." □



Michael Graves, Architect

## When One is Not Enough

Michael Graves may get a chance to design not one but two new sports stadiums along the banks of the Ohio River in Cincinnati. The Hamilton County Regional Stadium Task Force has chosen the Princeton architect, a 1958 graduate of the University of Cincinnati, as design consultant for a football stadium for the Bengals and a baseball park for the Reds, to be built to each side of the historic Roebling Suspension Bridge. The proposed Reds stadium echoes the irregular form of traditional ballparks and is to be an intimate place positioning roughly 45,000 fans close to the field. By contrast, the Bengals stadium is proposed to seat 70,000 and is to be organized as an open-air oval around a grass gridiron. It will be entered through spiral ramps located in four circular columniated towers on the perimeter.

Because the Reds stadium will activate the west riverfront only during the baseball season, Graves has proposed creating two adjoining public spaces: the large, circular Tony Perez Plaza, which will include restaurants, shopping, entertainment, and a Reds Hall of Fame; and a formal promenade called Johnny Bench Park. Architectural plans, now in a conceptual stage, call for buildings of red, ochre, and terra cotta brick with deck canopies in copper or another metal, visually linking them to the brick warehouses and mills and other old structures in the vicinity. One source of financing for the stadiums is a proposed county tax hike, which has prompted heated disagreement among the citizens, who are expected to vote on it in a public referendum.

**Robert A. Benson**

## Reskinning a Meier Building

For months, a mesh kept the white cladding panels on Richard Meier's Canal+ building in Paris (P/A, Dec. 1992, p. 44) from falling to earth. This summer the building underwent a thorough skin rehabilitation after only five years in use. "The panels were not installed properly," says Meier, citing unauthorized shortcuts a construction contractor took with the fastening system in rushing to complete the job. When a number of the building's hundreds of white rectangular panels were jarred loose by a window-washing gantry, it became evident that all of the panels would require thorough inspection and reinstallation. The design was not at fault, and the architectural firm was not drawn into the protracted negotiations over the cost of rectifying the problems, Meier says, but "it is painful to see your building wrapped in a net." **Thomas Vonier**



Jack Barries

A fine rope mesh was stretched over the entire Canal+ building to stop panels from falling.

## Calendar

### COMPETITIONS

#### Town Plan and Courthouse

Deadlines, registration: October 2; stage one submission: November 20  
Two two-stage design competitions, one for a town plan and one for a courthouse, in Williamsburg, Virginia, have been announced. Contact The Williamsburg Competitions, James City County, 101-E Mounts Bay Road, PO Box 8784, Williamsburg, VA 23187-8784.

#### Construction Specifications

Deadline, submission: October 10  
This national competition honors quality construction documents. Contact Construction Specifications Institute, 601 Madison St., Alexandria, VA 22314-1791. Tel. (800) 689-2900.

#### Remembering Cities Essay Contest

Deadline, submission: October 31  
Unpublished manuscripts that focus on specific ideas about the survival of cities may be entered in "Remembering Our Cities." Contact Kenchiku Bunka Editorial Dept., Shokokusha Publishing Co., Saka-machi 25, Shinjuku 160 Tokyo, Japan. Tel. 81 3 3359-3231. FAX 81 3 3353-5391.

#### UIA Ideas Competitions

Deadlines, registration: October 31; submission: April 30, 1996  
Organizers of the UIA World Congress (Barcelona, July 3-6, 1996) have announced three international ideas competitions. They are: the Service Area for the Logistic Activity Zone of the Port of Barcelona; the Environs of the Barcelona Football Club; and, open to students only, housing and public space in Barcelona's historic center. Contact UIA Barcelona 96, Plaça Nova 5, E 08002 Barcelona, Spain. Tel. 34 3 301 50 00. FAX 34 3 412 39 64. E-mail: uiabarcelona96@servicom.es.

#### Rome Prize

Deadline, application: November 15  
The American Academy in Rome announces its 1996/1997 Rome Prize fellowship competition in 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.

#### AIDS Memorial

Deadline, submission: November 25  
The Key West City Commission and the Key West AIDS Memorial Planning Committee have announced an international competition for the design of an AIDS memorial. The winning design will be built. Contact Key West AIDS Memorial Competition, 1113 Fleming St., Key West, FL 33040. Tel. (305) 292-7722. FAX (305) 292-2162.

#### A House for Tomorrow

Deadline, submission: December 8  
Designs for a 2,250-square-foot, single-family house using APA-trademarked engineered wood products may be entered in Design for Tomorrow, formerly the Innovations in Housing competition. Contact Design for Tomorrow, PO Box 11700, Tacoma, WA 98411-0700. Tel. (206) 565-6600, ext. 172. FAX (206) 565-7265.

### EXHIBITIONS

#### Herzog & de Meuron

September 8-October 28  
Forum for Contemporary Art, St. Louis, Missouri.

Work by the young Swiss architects Jacques Herzog and Pierre de Meuron (P/A, Feb. 1995, p. 92) is documented with drawings and photographs by Thomas Ruff.

#### Architecture in Perspective

September 15-October 15  
Lawrence Technological University, Dearborn, Michigan.  
Winning entries in the annual juried international competition sponsored by the Society of Architectural Perspectivists will be on view.



Waterloo International Terminal, London, by Nicholas Grimshaw & Partners.

#### Light Construction

September 21-January 2, 1996  
Museum of Modern Art, New York.  
Seeking to address an emerging architectural sensibility, curator Terence Riley has gathered recent projects from 11 countries that are defined by transparency and lightness.

### CONFERENCES

#### P/A Conference on Practice

September 23  
Washington, D.C.  
"New Directions in Architectural Practice" is a one-day forum conducted by P/A. Design management professionals and practitioners will discuss topics such as the changing economics of architectural practice. For details, see p. 95.

#### Las Vegas as Urban Paradigm

September 30-October 3  
Las Vegas Nevada.  
"Urban Theater: A New Urban Paradigm Rising in Las Vegas?" will explore the urban qualities of Sin City. Contact Richard Beckman, College of Architecture, University of Nevada, 4505 S. Maryland Parkway, PO Box 454018, Las Vegas, NV 89154-4018. Tel. (702) 895-0934. FAX (702) 895-7592.

#### Model Making

October 8-10  
Milwaukee, Wisconsin.  
Technologies and materials will be discussed at this annual conference. Contact Wendy Sommers, Association of Professional Model Makers, 118 King St., Suite 543, San Francisco, CA 94107. Tel. (415) 957-0130. FAX (415) 957-1107.

#### Computer Design

October 19-22  
Seattle, Washington.  
The Association for Computer-Aided Design in Architecture has announced the theme of its annual conference: "Computing in Design: Enabling, Capturing, and Sharing Ideas." Contact Dr. Branko Kolarevic, U. of Miami, School of Architecture, 1223 Dickinson Dr., Coral Gables, FL 33146. Tel. (305) 284-6521. FAX (305) 284-2999. E-mail: branko@mail.arc.miami.edu.

## Practice Notes

### Jobs for Graduates Are Up

The Center for the Study of Practice reports that job prospects of architectural graduates are up. Of the 367 firms surveyed, 56 percent plan to hire at least one graduating student, versus 44 percent in 1994 and 35 percent in 1993. The best prospects are in the northern plains and Pacific northwest states. The average starting salary of \$22,125 is up 3 percent over last year. Contact: CSP at the School of Architecture, University of Cincinnati, PO Box 210016, Cincinnati, OH, 45221-0016.

### Bonanza for Project Managers

Project managers, according to a survey by the Association for Project Managers, have a median salary of \$60,000, up \$7,000 from 1994. Some 41 percent of the firms report having trouble finding project managers and nearly 62 percent lost at least one project manager last year. Contact: the Association for Project Managers, 1227 West Wrightwood Avenue, Chicago, IL 60614 (312) 472-1777, FAX (312) 525-0444.

## Technics Notes

### Lighting Design Guide

The Illuminating Engineering Society of North America has just released *Design Criteria for Lighting Interior Living Spaces*. The 59-page book covers residential and commercial spaces, such as reception areas, dining rooms, and lounges, that need to convey a residential atmosphere through their lighting. The book considers common lighting problems and their solutions. Contact: IESNA Publications, 120 Wall St., New York, NY 10005; phone (212) 248-5000, ext. 112; FAX (212) 248-5017.

### Housing Consortium Formed

A new industry consortium has been created to design, test, and build innovative housing. The Consortium for Advanced Residential Buildings consists of manufacturers, such as U.S. Steel, Owens-Corning, and Weyerhaeuser, along with the consulting firm, Steven Winter Associates. CARB is partly funded by the U.S. Department of Energy/National Renewable Energy Laboratory's Building Energy Technology Program. CARB will build a series of prototype townhouses and full-scale developments to test new materials, construction methods, and energy-saving technologies. Contact: Steven Winter Associates, 50 Washington St., Norwalk, CT 06854; phone: (203) 857-0200; fax: (203) 852-0741; e-mail: CARB@aol.com.

## City-Building the Classical Way



**Red** OFFICE OR RETAIL;  
RESIDENTIAL ABOVE  
**Green** URBAN-DENSITY  
RESIDENTIAL

**Yellow** TOWN-DENSITY  
RESIDENTIAL  
**Gray** WAREHOUSING &  
MANUFACTURING

The defining moment of the Classical Architecture League's July conference on "The Art of Building Cities" came when the European architect, Leon Krier, received an emotional standing ovation from more than 300 architects, educators, and city planners. Since the early 1970s, when Krier's bold proposals for building entire towns based on traditional models encountered widespread opposition or indifference, much has changed. The Chicago conference testified to one of the most important changes: many younger people have embraced Krier's ideals and taken them into the realm of construction. The conference – whose speakers lunched in the Cliffdwellers Club, where planners of the World's Columbian Exposition convened just over a century ago – focused attention on a remarkable number of recent town designs.

One of the most far-reaching presentations was by Angelo Alberto, a town planner in Cherry Hill, New Jersey, who is pursuing a regional approach in a series of town centers in South Jersey (Peaslee City, New Jersey, above). His plans tie together the shopping mall, the industrial park, the research park, and other important elements of modern life that Neo-Traditional planners have tended to ignore. Few speakers addressed problems of American cities, such as crime, a declining tax base, housing for the poor, and aging infrastructure. In fact, the beautifully rendered conference packet cover, showing an easel holding a rendering of a verdant, idealized city over a gritty, parking-lot-infested downtown, prompted one person to quip, "Perhaps the exhibit should be called 'The Art of Delineating Cities.'" Nonetheless, the new towns seemed well-conceived, shaped around the ideas of continuity and community. As the home computer becomes the 21st-Century equivalent of the medieval spinning wheel, allowing people to live and work in the same space, the trademarks of the New Urbanism – proximity of neighbors, common ground, and civic buildings – will only grow in importance.

**Ralph C. Muldrow**

## GUM Retools for Capitalism

Moscow's GUM department store, a 102-year-old landmark that has outlived Communism, will soon receive a \$250-million renovation designed by the Dallas office of RTKL Associates. RTKL intends to restore the exterior, add canopies, signs, and elevators, update the mechanical systems, increase the floor area, and convert third-floor office space and basement service space to retailing as part of the redevelopment organized by International Realty Investors of Washington, D.C. Built under Alexander III as a department store, the building became offices and later a hospital under the Soviets before resuming its function as a department store in the 1950s. Even before the latest undertaking, GUM had begun the transition to a Western-style mall, with retailers like Benetton appearing next to tiny mom-and-pop operations. RTKL associate Jeff Gunning says the developers intend to "keep it a place where Russians can buy things." He says the team is determined to retain the building's famous barrel-vaulted skylight rather than replace it, despite persistent leakage.

**Mark Alden Branch**



Rendering of the interior of Moscow's GUM department store after its proposed renovation by RTKL. The historic elevations and barrel-vaulted skylight will be restored.

RTKL Associates



Illustration: Thomas Schaller

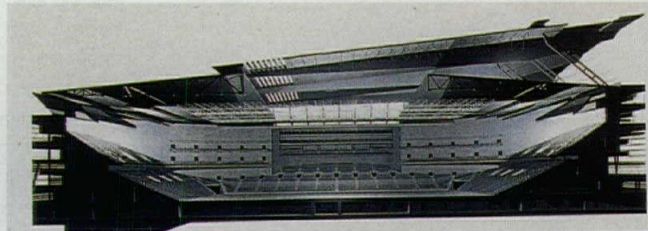
## It's a Wonderful Life

Architects have an ally in *Life* magazine. For the second year in a row, the magazine has set out to prove that "inventive, architect-designed houses needn't belong only to the rich." The house *Life* commissioned last year from Robert A.M. Stern was inventive, but many questioned its affordability. (The magazine reports that many readers "complained that in their region the structure could not be built for our \$150,000 target price; estimates ran as much as \$200,000 higher.") This year, though, New York architect Dennis Wedlick has designed a house for *Life* that appears to meet the affordability test. A gable-roofed rectangle with a perpendicular garage wing, the house has a single room downstairs, with a central dining room separ-

ated from the kitchen on one side by a pair of columns and from a living room/library by a two-sided fireplace. Upstairs, three bedrooms flank a large stairhall, with two bathrooms tucked partly under the garage's hip roof. The exterior of the house, with its steeply pitched roof and banks of windows, crosses Tudor with early Frank Lloyd Wright, while inside, the open plan and continuous plate rail seem to mix Mies with the Arts and Crafts. But the best combination of all is that of an architect and a widely read consumer magazine, demonstrating that the profession not only cares about affordable housing, but can deliver something better than most of what exists on the market. □



WEST ELEVATION



LONGITUDINAL SECTION

100/30m

### Stadium as Entertainment Hub

Continuing the revival of downtown sports complexes made popular in the U.S. in recent years, the Saitama Prefecture, 30 kilometers north of Tokyo, held an international design competition for a \$750-million sports and entertainment center to enliven its urban core. Won by Ellerbe Becket of Kansas City, Missouri, in association with Nikken Sekkei, the domed complex is designed with movable walls and seats so that it can be converted from a 20,000-seat arena for basketball and hockey to a 30,000-seat stadium for football and soccer. A 250,000-square-foot entertainment and cultural facility wrapped around the stadium will include sports-themed restaurants, theaters, virtual-reality simulators, a Japanese Sports Hall of Fame, and interactive educational exhibits. The complex is scheduled to open in the fall of 1999. Other competition entrants were Cesar Pelli, Kevin Roche, the Jerde Partnership, Richard Rogers, Renzo Piano, Rem Koolhaas, Jean Nouvel, and Arata Isozaki.

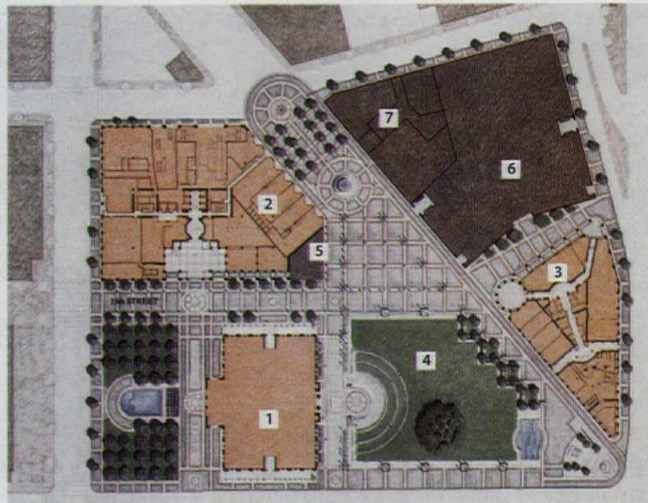


BIRD'S-EYE PERSPECTIVE FROM SOUTHWEST

Ellerbe Becket



MODEL VIEWED FROM SOUTHWEST



SITE PLAN N ↑ 100/30m

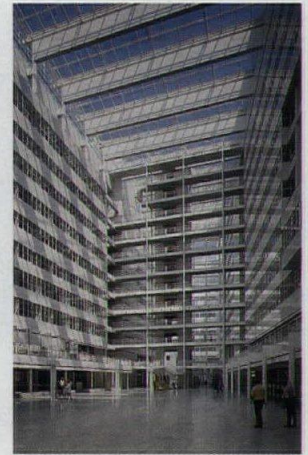
- 1 RENOVATED CITY HALL
- 2 NEW DALZIEL BUILDING
- 3 BROADWAY BUILDING ADDITION
- 4 THE "CITY ROOM"
- 5 EXISTING PLAZA BUILDING
- 6 THE ROTUNDA
- 7 WESTLAKE BUILDING

### A Government With Grandeur

Having spent \$81 million carrying out a restoration and installing an earthquake-reinforcement system in its Beaux-Arts City Hall, Oakland, California, is now planning to make the 1914 municipal building the centerpiece of an enlarged government complex. While many municipalities have been shortsightedly reducing their architectural aspirations, Oakland sponsored a national competition to design a \$200-million complex that includes two new administration buildings, a 4.5-acre civic plaza, structured parking, and a renovated landmark trian-

gular office building. Won by C.W. Fentress J.H. Bradburn & Associates, the competition included as finalists Heller & Leake Architects, San Francisco, and Michael Graves Architect, Princeton. The project will produce a coherent grouping, with the new buildings adopting colors, materials, scale, and massing consistent with what already exists. The new structures will be six and eight stories, ensuring that the 19-story City Hall will remain the focal point. Construction is to start next month, and will conclude in the spring of 1998.

## The Hague City Hall: Anywhere But Here



Richard Meier & Partners' competition-winning design for The Hague's City Hall and Central Library (P/A, Apr. 1987, p. 27) – the subject of much debate on its selection – is nearing completion. The 1,217,500-square-foot white complex houses a wing of municipal offices, the public library, a commercial office wing, shops, and parking.

Its two main office wings flank the Citizens Hall, a monumentally scaled public atrium.

Conceived as an early 20th-Century superblock, the complex purports to echo the existing urban morphology, but it introduces a variation in scale that finds no equal in the historic fabric and texture of the city. Organized by the two grids that form its wedge-shaped site, the building, however, is not the first to break the intimate scale of the city's downtown.

Until the mid-1980s, The Hague was characterized by large public squares, wide avenues, mansions, and low-density residential neighborhoods. But during the last decade, the transformation of its structure has developed to a degree that could best be compared to the changes under way in Berlin. New ministry buildings, corporate offices, and a network of highways and railroads have sprung up around the central public transit station. The new city that is emerging, punctuated by overscaled buildings like the new City Hall and Library, recalls most vividly an American downtown.

Announced in 1986, the competition for the city hall saw the participation of many renowned architects, including Rem Koolhaas, whose scheme was selected by the jury and then replaced by Meier's. The desire to create a city of international stature must have played a major role in the jury's choice, but their selection triggered a rigorous debate in a country that had rarely seen foreign architects involved in large-scale projects.

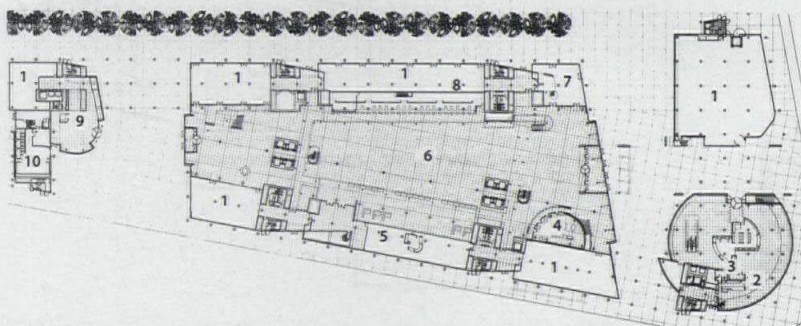
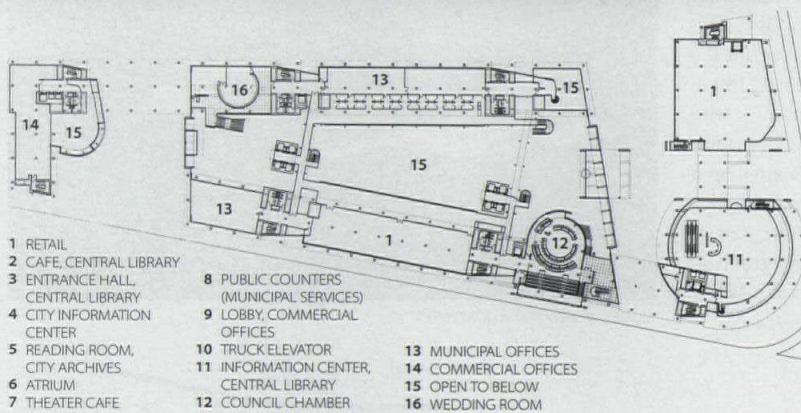
What could Meier's entry offer to this new image of the city? He has set up a formula to generate buildings that convey a sense of modernity and prosperity. Absent any real consideration for, or evocation of the *genius loci*, the architecture is tranquil, rational, and takes very few risks. With The Hague joining the ranks of European cities competing for the Meier signature, another tradition-rich city misses an opportunity to create a civic ensemble with a meaningful sense of place.

**Maristella Casciato**

*The author is an architectural historian who teaches at the University of Rome and specializes in 20th-Century Dutch architecture.*



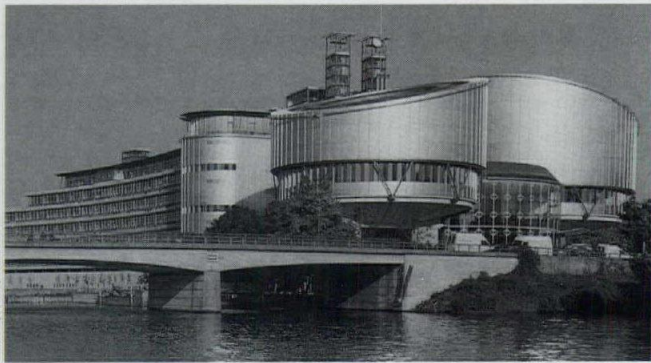
Photos this page: Brian Rose



FIRST FLOOR PLAN, SECOND FLOOR PLAN (ABOVE)

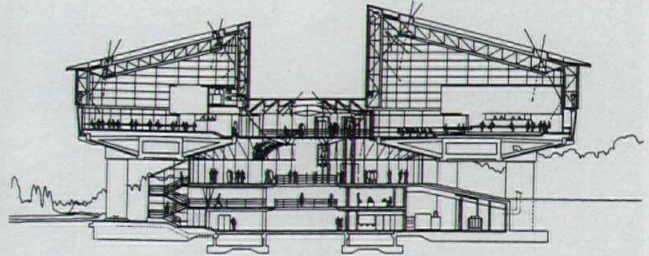
N ← 100/30m

Courtesy, European Court



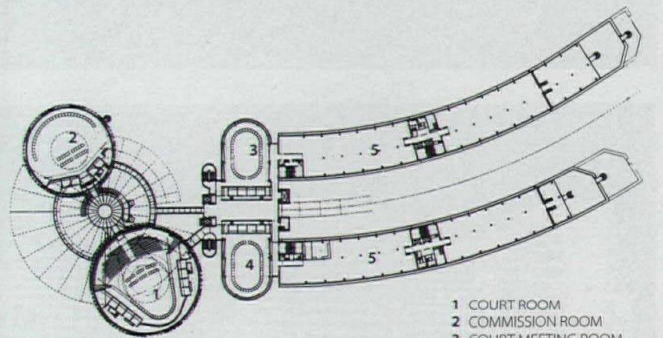
### Rogers's Vision of Human Rights

Richard Rogers Partnership and French architect Claude Bucher have designed a building in Strasbourg for the court rooms, chambers, conference rooms, and offices of the European Court and Commission of Human Rights. Standing at a curve of the River Ill, the 323,000-square-foot building has a "head," comprising a group of curving stainless-steel-clad forms containing the courts and meeting rooms, and a "tail," containing offices with operable windows and continuous planting beds of ivy along each floor. However well it might work, the building's references to an animal (the head and tail look a bit like a salamander) and its Buck Rogers forms, for which Richard Rogers is famous, are somewhat strange for an organization dedicated to the old-fashioned Enlightenment ideal of human rights.



CROSS SECTION

100/30m



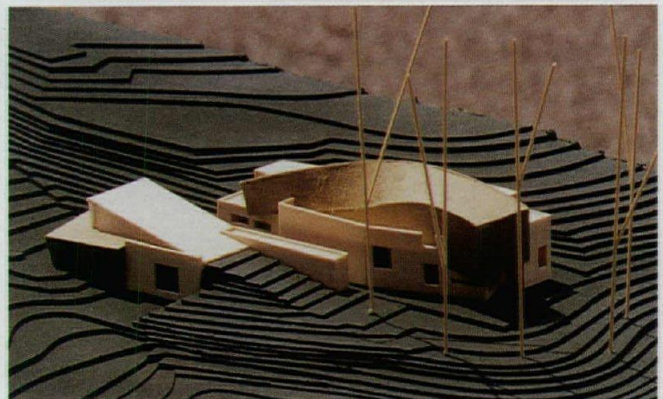
SECOND FLOOR PLAN

- 1 COURT ROOM
- 2 COMMISSION ROOM
- 3 COURT MEETING ROOM
- 4 DELIBERATION ROOM
- 5 OFFICES

N 100/30m

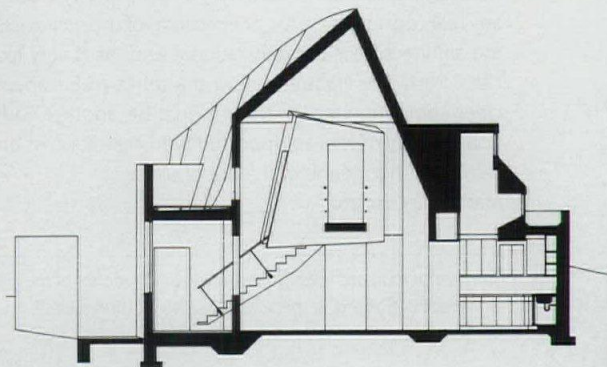
### Death Defying Act

When architect Michael L. Hughes was asked to design a retirement home for his parents, images of lifeless geriatric architecture ("tastefully decorated activity rooms") inspired him to create just the opposite. This house, currently under construction on a heavily wooded, lakefront site in Eastanollee, Georgia, is designed not to lull his parents into retirement, but to confront the issues of aging: "Is retirement rebirth or rein-terment?" he asks. The house's interlocking forms and curving roof/second story, clad in standing seam galvalum, suggests movement and activity, rather than stagnancy. Hughes has balanced this aggressive composition with the needs of growing older: the main functions of this 4,000-square-foot, four-bedroom house, with an attached garage/workshop, are contained on one level and handicap accessibility is built-in. The house is to be completed by the end of the year.



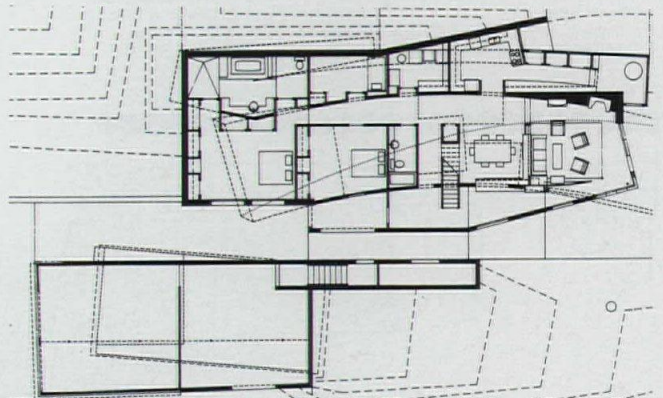
MODEL VIEWED FROM NORTHWEST

Courtesy: Michael Hughes



CROSS SECTION LOOKING EAST

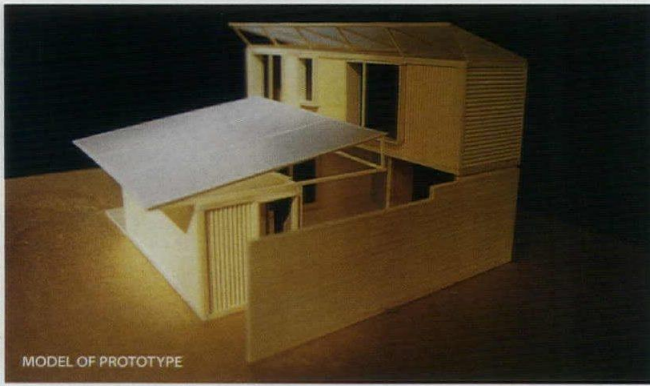
10/3m



GROUND FLOOR PLAN

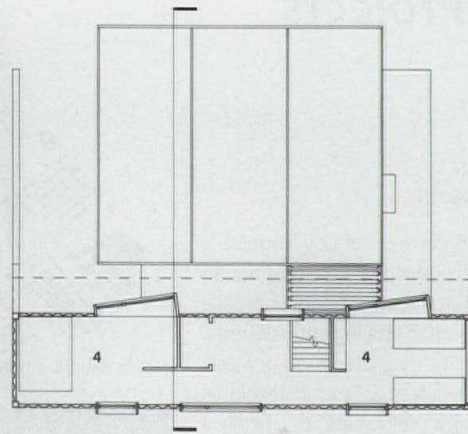
N 40/12m

Courtesy Andre B. Kikoski

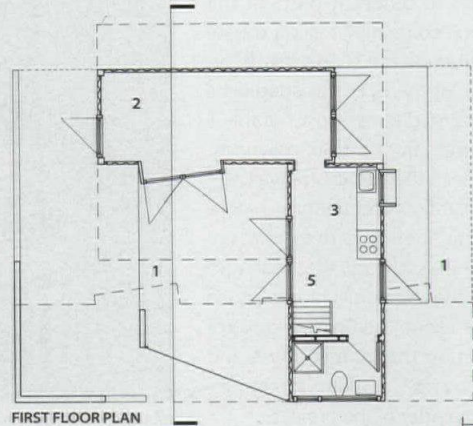


## Containers for Modern Living

Reviving the investigation of low-cost manufactured housing that pre-occupied many mid-century Modernists, Andre B. Kikoski, a young architect working in New York, has devised a strategy for converting shipping containers into housing. Commissioned by Genstar Container Corporation and intended for urban port locations in developing areas of Latin America and Asia, his prototype is designed to be a simple and adaptable combination of components. The construction system includes the company's weatherproof Corten steel containers and a kit-of-parts (six types of windows and doors, roof trusses, sunshading louvers, and interior panels and partitions). Indigenous materials will be selected for the roof and the courtyard/street walls. The 660-square-foot courtyard units have two bedrooms and occupy a 40' x 28' lot. Construction costs are estimated between \$8 and \$17 per square foot.



SECOND FLOOR PLAN

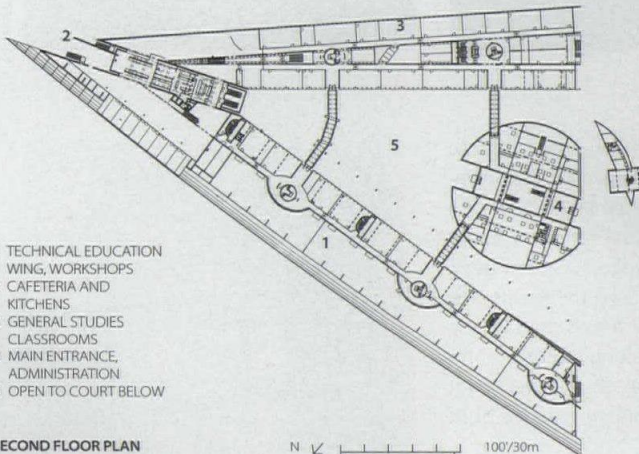


- 1 COURTYARD
- 2 LIVING/DINING
- 3 KITCHEN
- 4 BEDROOMS
- 5 LADDER

FIRST FLOOR PLAN

## Sci-Fi à la Jules Verne

Architecture Studio of Paris took the namesake of this secondary school quite literally when they conceived its design. The 54,450-square-foot Lycée Jules Verne, on a wedge-shaped parcel in a rapidly expanding suburb of Paris, could be the ship that took Verne's characters on their *Journey to the Center of the Earth*. Its spaceshiplike metal and glass structures house facilities for both general and technical educational programs. A single axis links the two distinct teaching wings, while the common spaces are contained in two other buildings: a monolithic structure (housing a cafeteria and kitchens) positioned at the meeting point of the two wings and a cylindrical structure (for school reception and administrative functions) in the space where the wings splay outward.



- 1 TECHNICAL EDUCATION WING, WORKSHOPS
- 2 CAFETERIA AND KITCHENS
- 3 GENERAL STUDIES CLASSROOMS
- 4 MAIN ENTRANCE, ADMINISTRATION
- 5 OPEN TO COURT BELOW

SECOND FLOOR PLAN

N 100/30m



Urquijo/Rhéal

## Chinese Lessons

Frederick Fisher & Partners of Los Angeles is collaborating with Cordoba Corporation, an L.A. planning firm, to create a huge wholesale produce market called Beijing International Marketplace. With its associated food processing, office, retail, residential, and institutional functions, the project will create practically a satellite town for Beijing. Two town centers will serve as gateways to different parts of the complex, which will contain 27 million square feet of new construction on 2,060 acres. In organizing the development, Fisher adapted a number of Chinese traditions, most notably a grid and block pattern from the Sung dynasty. A central avenue, with the administrative compound at its head, reflects traditional Chinese notions of hierarchy. Another form that has endured through China's history, the courtyard garden, is used in the residential blocks and in an office park. The client, the Chinese government, is constructing the infrastructure and the first buildings, and is seeking foreign investors for the remainder of the project.

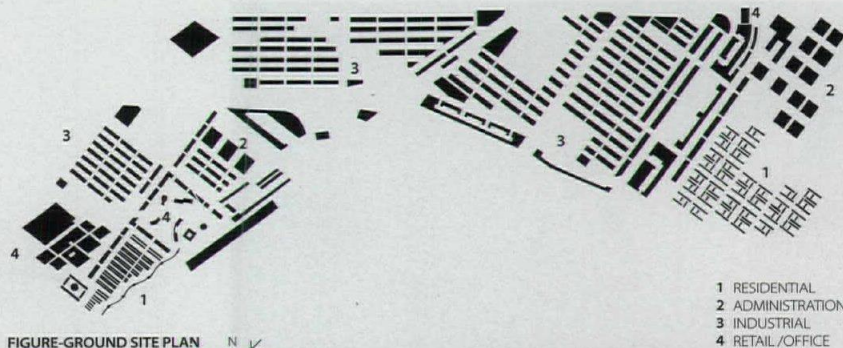
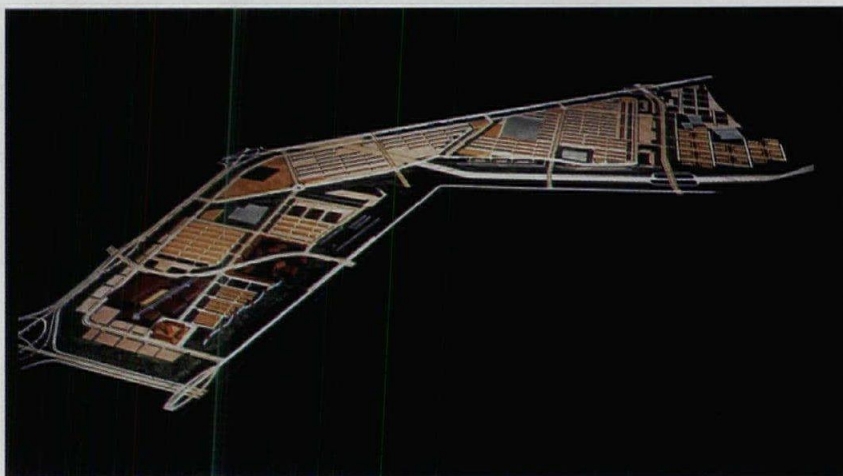


FIGURE-GROUND SITE PLAN

- 1 RESIDENTIAL
- 2 ADMINISTRATION
- 3 INDUSTRIAL
- 4 RETAIL/OFFICE

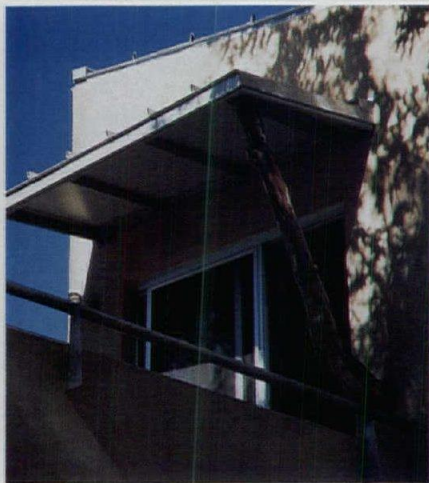


MODEL OF MASTERPLAN

Mark Lohman



Peter Malinowski



Michael Holliday

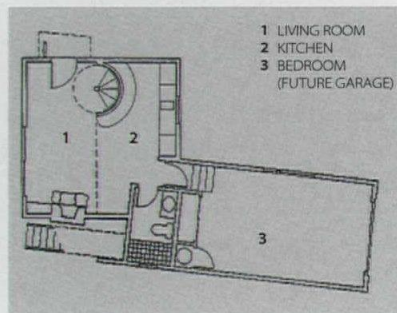


Peter Malinowski

## Dreaming Big, Starting Small

A young bachelor commissioned the local firm DesignARC to design a residential compound that would include a main house, a guest house, and a garage on a sloping, semi-rural site in Santa Barbara. He asked the architects to complete the garage and the guest house, where he would live until he was able to build the main residence. But this was more easily said than done. A city ordinance calls for a maximum of 550 square feet for a guest house and 750 square feet for a garage. The

solution: design a garage with a guest house attached to it. Both structures have walls of integrally colored plaster that matches the color of the site's soil, and galvanized metal standing seam roofs that evoke rural imagery. Galvanized steel is also used for the details, and varnished Douglas fir trim is used for the doors and windows. Not long after the completion of the first phase, the bachelor got married, so the main house may be built sooner than planned.



FIRST FLOOR PLAN

N ← 10/3m



## The Better Part of Modern Valor

José Rafael Moneo's competition-winning scheme for two important museums, now under way in Stockholm, provides the contextual antithesis to the placeless "signature" architecture of Richard Meier, as seen in The Hague's new City Hall (featured in this section, p. 27). Moneo's new Museum of Modern Art and Museum of Architecture are unequivocally contemporary, yet they go to great lengths to reflect the geographic and urbanistic character of the site. The project was premiated in 1990, from a field of competitors that included all Swedish architects and a handful of invited foreigners: Tadao Ando, Frank Gehry (who did not participate), Kristian Gullichsen, and Moneo's early mentor, Jørn Utzon.

Located on the island of Skeppsholmen, once a strategic center for the Swedish navy but now a "cultural zone," the new building for the Museum of Modern Art displaces an existing pavilion used for the same function; the Museum of Architecture is housed in part within a converted gymnasium (adapted to the purpose in the 1950s) and in part within a new extension by the Spanish architect. Both museums adjoin the ropery, an austere historic structure that runs the length of the site like a spine. Moneo (in an interview published in *Casabella*, March 1995) notes that while the program for the museums was highly detailed, the "choice of locating these elements was left to the architects."

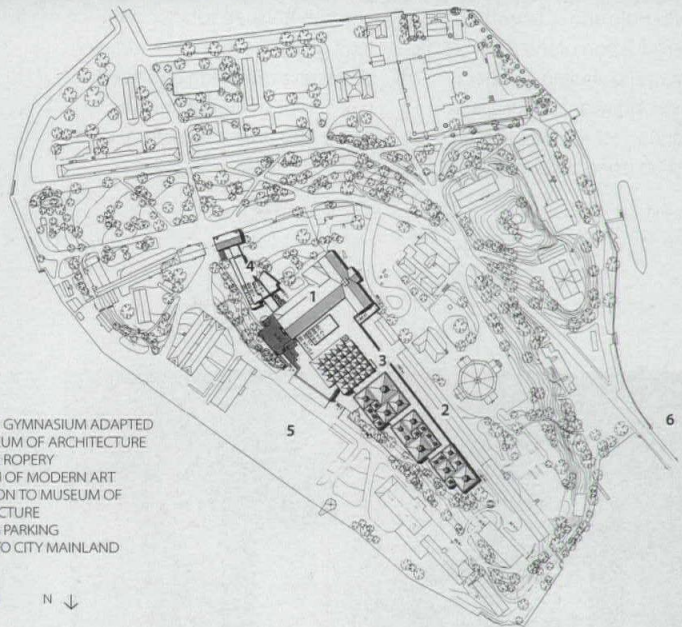
Accordingly, Moneo placed great importance on the siting, seeking "to improve the overall utilization of the space on the island," and to create a building "whose impact would be minimal to the island's fragile architecture." The museums are conceived as a series of discrete pavilionlike structures, echoing the incremental, "antimonumental" island architecture, as well as reflecting the fragmentary nature of Stockholm's urban fabric.

This strategy is particularly apparent in the aggregation of the Museum of Modern Art's permanent exhibition galleries. These variously scaled, tall volumes are daylighted from above in the manner of John Soane's Dulwich Gallery; full-scale mockups enabled Moneo to refine their proportions, check lighting and acoustics, and study trims and finishes.

In the early 1960s, Moneo, then a student, applied to Utzon to apprentice in his studio and was accepted. The Spanish architect's reasons for doing so remain central to his work: "An awareness for the civic obligations of architecture with respect to society was something Swedish architectural culture could offer," Moneo says. It is fitting that this contextually responsive ethos should come home to roost.

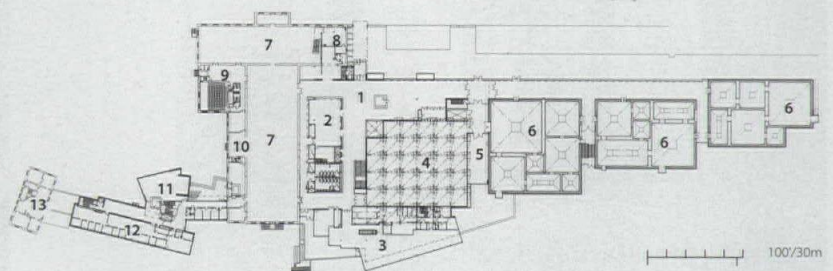


PHOTOMONTAGE OF MUSEUMS VIEWED FROM THE NORTH



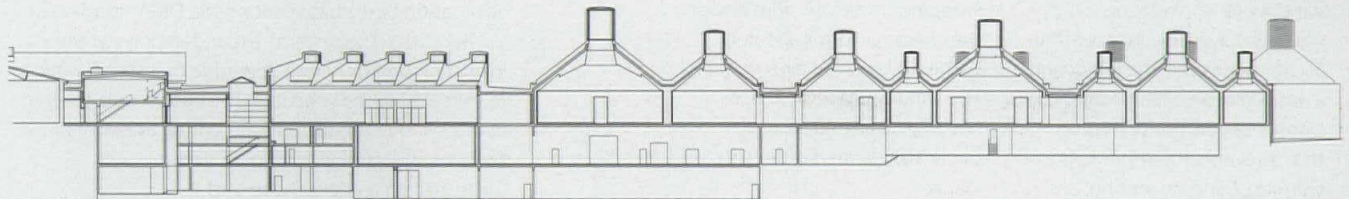
- 1 EXISTING GYMNASIUM ADAPTED TO MUSEUM OF ARCHITECTURE
- 2 EXISTING ROPERY
- 3 MUSEUM OF MODERN ART
- 4 EXTENSION TO MUSEUM OF ARCHITECTURE
- 5 EXISTING PARKING
- 6 BRIDGE TO CITY MAINLAND

SITE PLAN N ↓



MAIN FLOOR PLAN (THIRD LEVEL)

- |                                    |                                                 |                            |
|------------------------------------|-------------------------------------------------|----------------------------|
| 1 ENTRANCE TO MUSEUM OF MODERN ART | 5 TEMPORARY EXHIBITS STORAGE                    | 8 TICKETING                |
| 2 BOOKSHOP                         | 6 PERMANENT COLLECTIONS, MODERN ART             | 9 CONFERENCE ROOM          |
| 3 RESTAURANT                       | 7 MUSEUM OF ARCHITECTURE, PERMANENT COLLECTIONS | 10 PUBLIC ARCHIVES         |
| 4 TEMPORARY EXHIBITS               |                                                 | 11 LIBRARY                 |
|                                    |                                                 | 12 RESEARCH LABS           |
|                                    |                                                 | 13 LODGING FOR RESEARCHERS |



LONGITUDINAL SECTION

N ← 40/12m



### Office Desk by Franco Albini

KnollStudio announces the reintroduction of the Albini Desk, designed by Italian architect Franco Albini as part of a larger collection for Knoll in 1948. It has a polished plate-glass top,

chrome-finished tubular steel legs, and a "floating" two-drawer pedestal available in ebonized oak or white lacquer finishes. Circle **100** on reader service card



### Rockface Veneer Blocks

Bend Industries announces the availability of Rockface concrete veneer blocks for restoration, renovation, and new construction in residential and commercial applications. Commonly used in the early part of the century, the product gives projects a rusticated surface designed to imitate split stone. Rockface unit is fire-proof and is available in 3 $\frac{5}{8}$ " x 8" x 16" veneer blocks. Circle **101** on reader service card



### Double-Hung Windows

Marvin's Integrity Double-Hung window series, with Low E II glazing, is available in more than 50 standard sizes. The windows incorporate an exterior shield of Ultrex™, a composite material that "prevents the window from warping, bending, rotting, and

corroding." Bulb weatherstripping on all four sides and at the check rail forms a sealed barrier to keep out air and water. The window system exceeds NWWDA Grade 40 ratings.

Circle **102** on reader service card



### Single-Application EIFS

Sto Corporation's Signature EIFS features a single-step application base coat, meeting the EIMA standard of 1/8" thickness. The system's expanded polystyrene insulation boards have a drip edge that stops water from reaching the substrate. The base coat is covered with a silicone-enhanced wall coating available in two textures and various aggregate sizes.

Circle **103** on reader service card



### Ceramic Floor Tile

Hastings Tile & Il Bagno Collection has introduced the India series of ceramic floor tile. The series is designed to look like natural stone and have the consistency of pattern and durability of ceramic tile. It is available in four colors and comes in square or rectangular shapes. Available sizes are 6" x 6", 6" x 12", 12" x 12", and 12" x 18". Circle **104** on reader service card



### Industrial-Style Light Fixtures

JJI Lighting Group announces the formation of d'ac, a company that manufactures lighting fixtures for fluorescent, halogen, and incandescent light sources. Its first collection, "Soft Industrial," is

designed by architects Shelton, Mindel & Associates, New York. All d'ac products are UL-listed and carry lifetime warranties. Circle **105** on reader service card



### Color-Integrated Wall Base

Armstrong introduces a wall base product designed to integrate with its lines of commercial sheet and tile floors. The wall base is available in 36 colors and is scratch- and scuff-resistant. It comes in coved-toe and straight profiles, and is available in a variety of sizes in vinyl or rubber. Circle **106** on reader service card



### Conference Furniture

Wilkhahn introduces the Confair line of functional furniture for interactive conferences. The series includes a stackable chair; a folding desk; a folding table for eight; a mobile server for catering

or audiovisual equipment; a double-sided pin board; an adjustable-height flip chart; and a movable lectern. Circle **107** on reader service card

### Roofing Specifications Manual

The Single-Ply Roofing Institute (SPRI) has announced the availability of the 4th edition of the *Flexible Membrane Roofing: A Professional's Guide to Specifications*. This edition features six new sections, updated product data sheets, a fastener selection guide, application guidelines, and an index of roof detail designs cross-referenced by manufacturer.

Circle **108** on reader service card

### Ceramic Tile Catalog

American Marazzi Tile's 1995/96 Product Catalog is available. The catalog describes the manufacturer's 18 product lines, with features and benefits, durability classification and suggested applications, and product numbers and sizes. There are also specifications and technical sections.

Circle **109** on reader service card

### Liability Insurance Policy

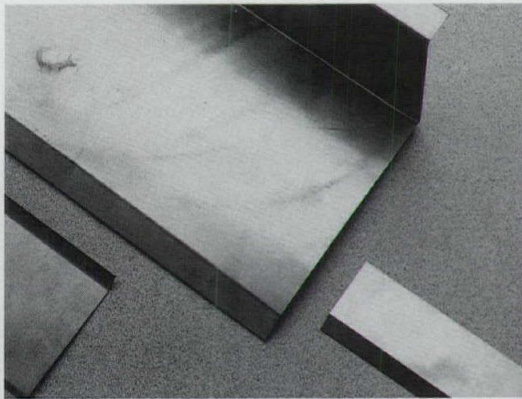
Victor O. Schinnerer & Company introduces its revamped Professional Liability Insurance Policy for Design Professionals. The new policy features worldwide project coverage and coverage for various environmental issues and occurrences. Current policyholders will automatically receive the new policy upon approval by state insurance commissioners.

Circle **110** on reader service card

### Accessible Building Product Guide

The *1995 Accessible Building Product Guide* from John Wiley & Sons is divided into 17 product categories and contains descriptions, CSI numbers, and contacts for more than 650 products. Each category has a list of desirable features.

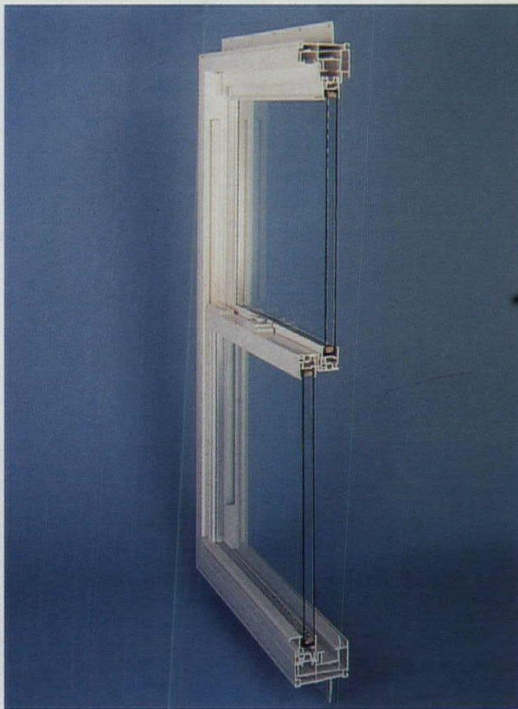
Circle **111** on reader service card



### Stainless Steel Flashing

Dur-O-Wal introduces Stainless Steel Flashing and Drip Edge Flashing for masonry. The drip edges are manufactured with 26-gauge stainless steel and are hemmed for linear stability. Through-wall flashing systems and other gauges can be ordered.

Circle **112** on reader service card



### Double-Hung and Casement Windows

Rehau introduces its S-777 double-hung windows and S-773 prime casement windows for new residential and commercial construction, respectively. The double-hung windows have dual weatherstripping, positive interlocks, tilt-in sashes for easy cleaning, and an R-30 energy efficiency rating. The casement windows feature a T-mullion for multiple lites within a continuous frame and a provision for direct exterior glazing in the frame and T-mullion.

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### Decorative Laminate

Laminart introduces the Inclusion line of NEMA-grade laminates. A sense of depth and movement is created when light strikes the laminate's randomly embedded particles. The Inclusion line is available in three patterns.

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# Computer Products

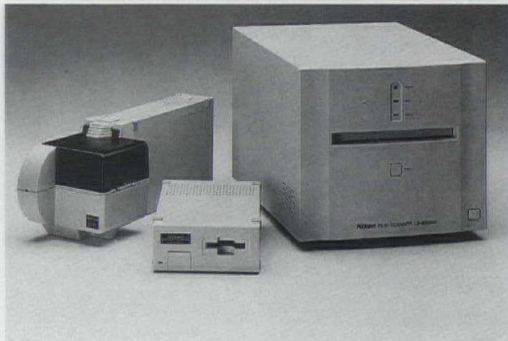


## Window Design Software

Marvin Windows and Doors has developed a Windows-based, AutoCAD-compatible software system, called MDS, that streamlines the design and

specification of this company's products. The full line of Marvin's wood windows and doors are detailed.

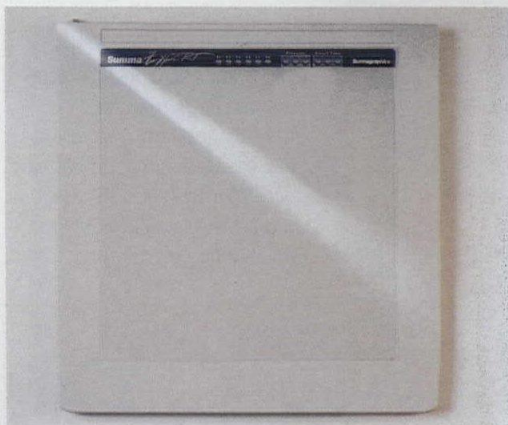
Circle **115** on reader service card



## Film Scanners

Nikon has announced the release of two new film scanners: the LS-1000 SuperCoolscan and the LS-4500AF Multi-Format Film Scanner. The former, allows the scanning of 35mm slides; the latter accommodates negatives and 35mm and 4x5 transparencies as well as gang scanning of up to 6 slides at once.

Circle **116** on reader service card



## Digitizer Tablets

The Summa Expert™ by Summagraphics, is a new addition to the company's line of digitizer tablets. The slim, 12"x12" or 12"x18" tablets offer customizable menu buttons and a high degree of pressure sensitivity to increase the speed and precision of work. A cordless, four-button cursor is also available.

Circle **117** on reader service card

## Solar Analysis on Windows

SARC 3.0 is now available in a Windows format, called WinSARC. Marketed by Tait Solar, the solar program calculates solar angles and clear-sky solar-radiation intensities for any date and time. Users can input up to 20 surfaces as well as window-related information such as shading coefficients and solar heat-gain coefficients.

Circle **118** on reader service card

## ADA Compliance Software

Compliance Software, Inc. has developed PC-based software, ADA Fac-Check™, that helps building owners and architects determine whether or not a facility complies with the Americans with Disabilities Act. Records of what has been done to comply with the ADA can also be kept by the program.

Circle **119** on reader service card

## Construction Estimating Software

Greater speed and accuracy are said to be among the benefits of Go Figure Estimating© from Go Figure®. It helps users organize information according to common categories such as labor types, material costs, equipment requirements, and the like.

Circle **120** on reader service card

## Updated 2D/3D Software

MiniCad, the popular Macintosh CAD program by Graphsoft, is now in its fifth version. Available with database and spreadsheet capabilities, Version 5 is up to 100 percent faster, and features walkthrough and flyover capabilities, new drawing tools, and balloon helps.

Circle **121** on reader service card

## FM Software on Windows

Link Systems' facility and asset management software, Visual Resource Manager, is now available for Microsoft Windows. The lease management module pinpoints property locations, accommodates photos of facilities, shows their leased areas, and alerts management to expiration and notification dates. Circle **122** on reader service card

## "World's Fastest" Workstation

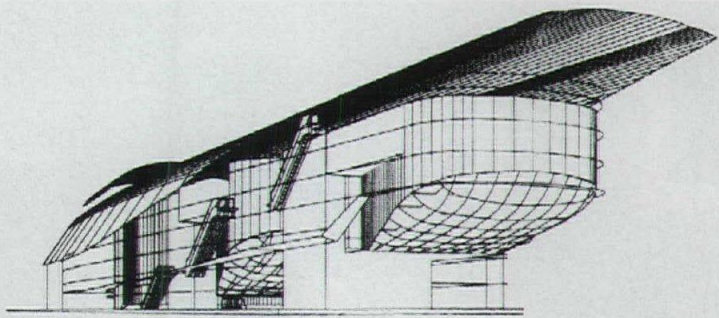
Digital's AlphaStation workstations, claimed to be the fastest on the market, now have two CAD applications for machines running the Windows NT operating system: AutoCAD Release 13 from Autodesk, and MicroStation Modeler from Bentley Systems. Circle **123** on reader service card

## New Version of Design Software

IBM has announced Version 2.3 of its Architecture & Engineering Series (A&ES) software. Now able to read and write AutoCAD™ files, this new version of A&ES connects the most popular CAD software – AutoCAD – with a high-powered 3D design program able to create presentation-quality images. Circle **124** on reader service card

## Convert Photos to 3D Models

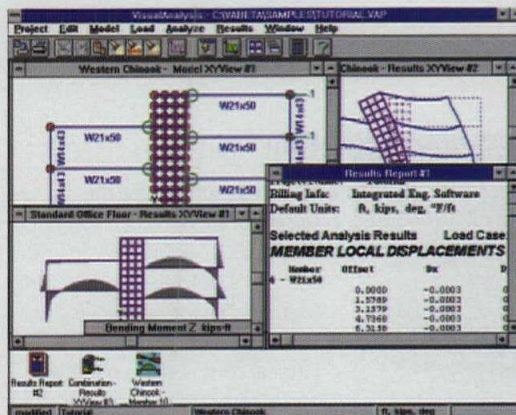
PhotoModeler™ from Eos Systems converts "rapidly and efficiently" the 2D information of a building in a photograph into an accurately measured 3D model, able then to be exported to other 3D software for manipulation. Working from photos, two from different angles for every surface of a building, users mark every point they want turned into 3D coordinates. Circle **125** on reader service card



## 3D Design Software

ARC+ offers a 3D solid modeling software package by the same name that allows architects and related design disciplines to work in 2D and 3D simultaneously, extracting working drawings directly from the 3D model. Available

in dozens of languages, the PC-based software is used by over 6,500 firms around the world. (Shown here: Tours Convention Center by Jean Nouvel, Emmanuel Cattani & Associates.) Circle **126** on reader service card



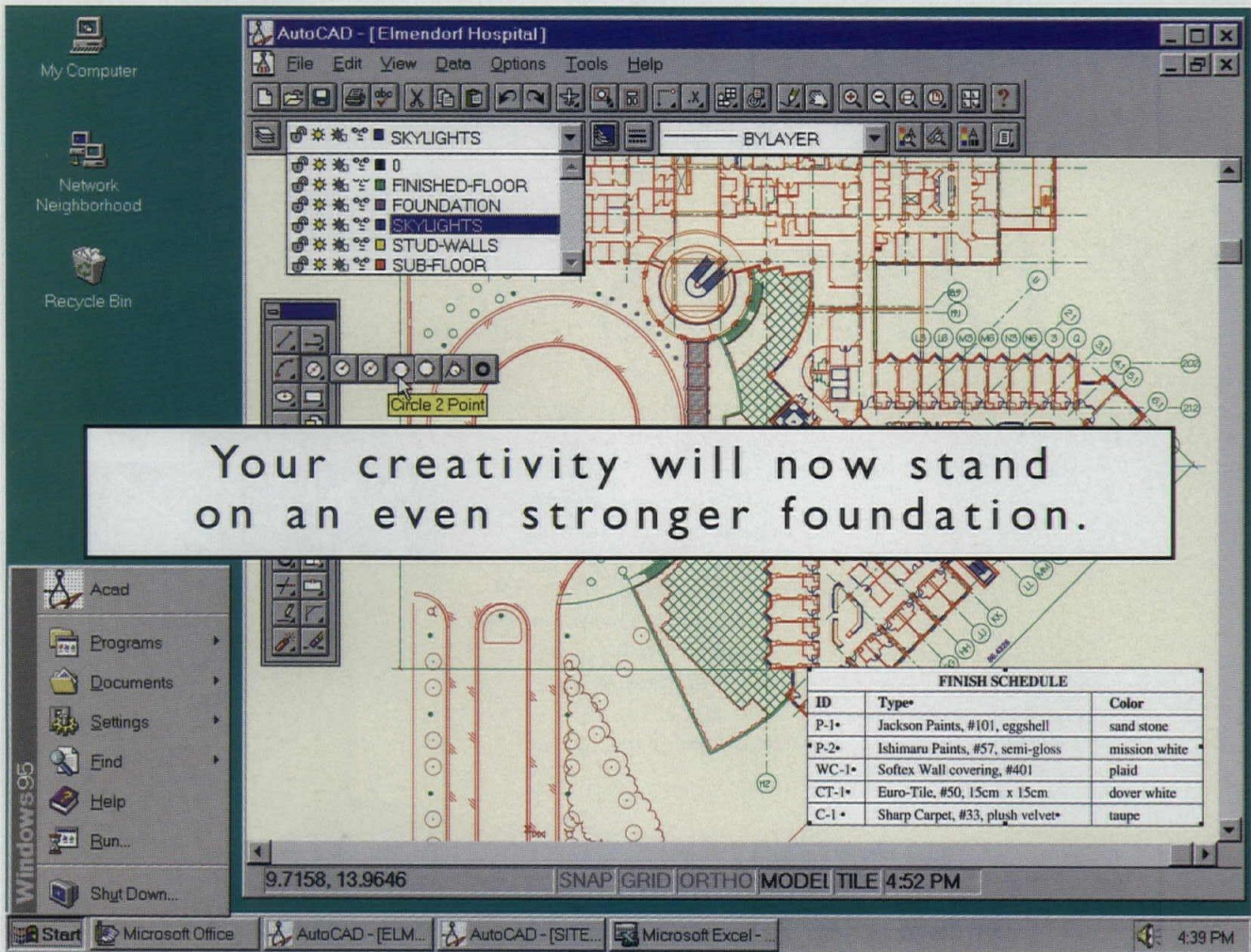
## Graphical Structural Analysis

VisualAnalysis, by Integrated Engineering Software, is a Windows-based package that allows users to analyze structures visually. Low in cost and easy to learn, the software lets architects and engineers draw models on the screen, apply loads graphically, and see the results. Circle **127** on reader service card



## Digital Media Storage

Plan Hold has introduced a new line of cabinets, overfiles, and high-density mobile storage systems designed to store magnetic tapes, cassettes, compact discs, magnetic diskettes, and removable hard drives, as well as micro-fiche and micro-film. Built of steel, the units are available in 17 colors. Circle **128** on reader service card



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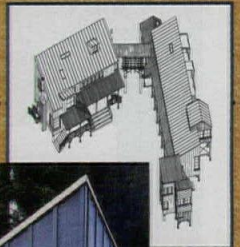
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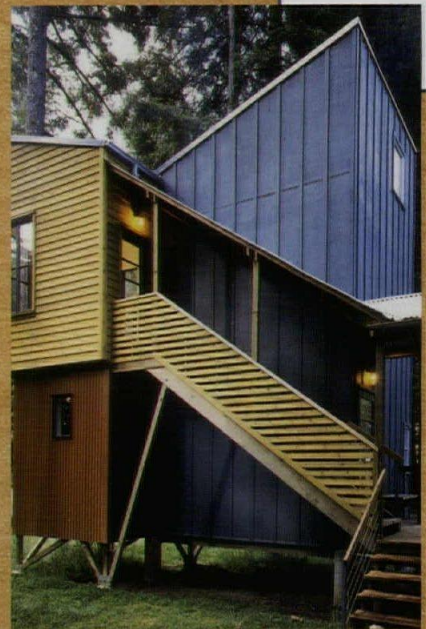
**THE JURY:** **FRANCES HALSBAND,**  
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*Klimint & Halsband*  
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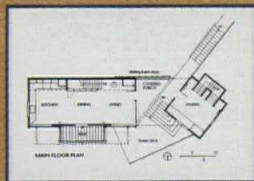
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## Students Weave a Computer Web

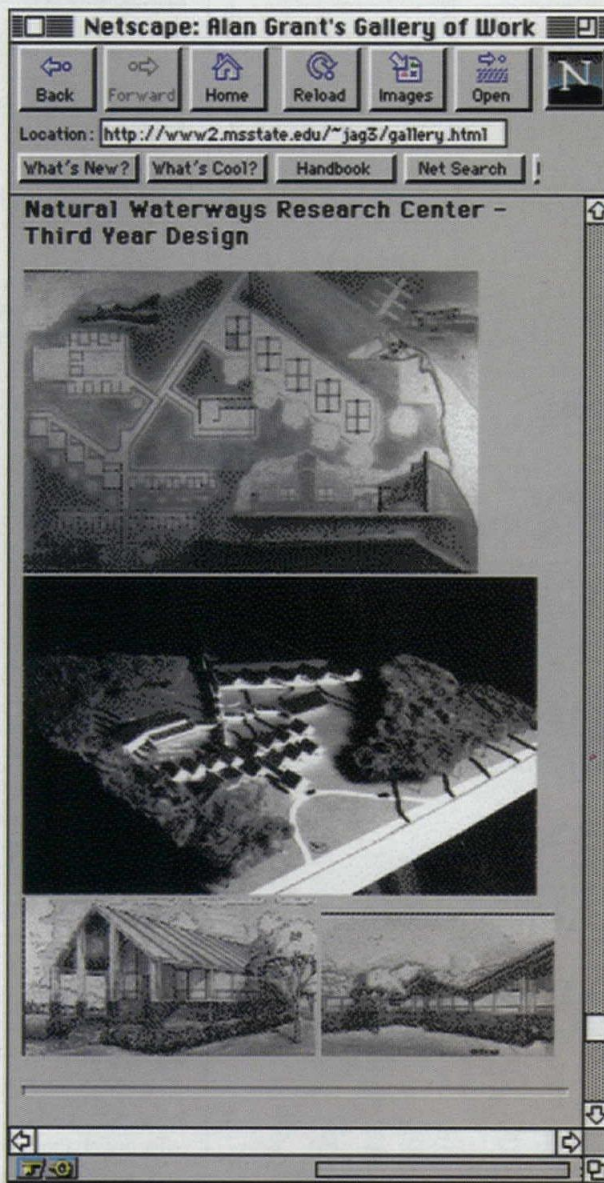
The architects of tomorrow are disseminating their work among practitioners, teachers, and students across the globe. *by B. J. Novitski*

Nearly every university has gone on the Internet, the network of networks, linking thousands of computers all over the world. And among the many resources on the Internet, one that's gaining an enthusiastic following among architecture students is the World Wide Web, a particularly graphics-based system that enables users to "browse" through a huge array of documents by using a simple point-and-click interface. Via programmed links, the Web guides users to a variety of graphic, text, video, and audio material stored in the computers on its network. Students with design creativity and computer know-how are using this new tool to "publish" their work – organizing it on pages resembling those in a magazine and distributing the results on the Web.

*Portfolio*, the annual student publication of Carnegie-Mellon University's Department of Architecture, shows just how dramatically the Web can expand a student's reach. For three years, the university printed *Portfolio* on paper, distributing 300 copies on the Pittsburgh campus and at other schools. This year, instead, it placed *Portfolio IV* on Internet "pages," and, for the first time and at virtually no cost, reached thousands of readers. Anyone with an Internet connection can call up the department's "home page," an introductory screen that offers links to all the department's Web-based information. Those who have tapped into Carnegie Mellon's home page are thought to include students and faculty members at that university, people at other schools, potential employers, and high school students looking for colleges, not to mention random Web "surfers."

The electronic *Portfolio IV* – juried by a student editorial staff, just as the paper version was – presents a broad collection of Carnegie Mellon student work, including computer-based models and renderings, hand-drawings that have been scanned in, digital photographs of furniture projects, and philosophical musings. Professor Paul Rosenblatt, the faculty adviser, sees this electronic portfolio as an important way for students to showcase their work.

*B.J. Novitski is a freelance writer in Eugene, Oregon, who specializes in computer-aided design and practice issues. Her Internet address is: bjn@efn.org.*



As part of his personal on-line "gallery," Mississippi State University student Alan Grant displays some of his design projects (left).

To "visit" these schools:

- Carnegie Mellon University, <http://www.arc.cmu.edu>;
- University of Miami, <http://rossi.arc.miami.edu/home.htm>;
- Mississippi State University, <http://www.sarc.msstate.edu>;
- University of Washington: <http://www.caup.washington.edu/Default.html>.

For a listing of numerous other schools worldwide, <http://www.clr.toronto.edu:1080/VIRTUALLIB/ARCH/prog.html>

### Aiding the Job Search

"One of the most exciting uses for this technology," Rosenblatt says, "will occur when our students interview for jobs overseas. The cost of sending a conventional color portfolio is prohibitive. With the Internet, the employer can conduct an interview over the telephone while looking at the student's complete on-line portfolio. You could never do this by mailing a few examples." Potential employers can "cruise" the Web anonymously, looking for stu-

dent work and narrowing their search before conducting any interviews. According to Michael Berk of the School of Architecture at Mississippi State University (MSU), job recruitment is one reason his students set up their own home pages. The Web helps employers find students who are skilled in both digital technology and design.

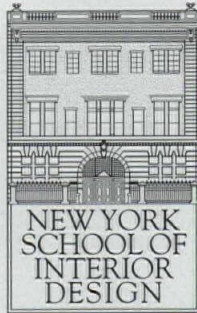
People creating pages on the Web have had to work with the arcane Hypertext Markup Language (HTML), but (*continued on next page*)

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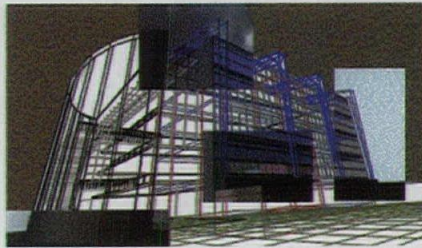
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## Reports

### Student Web (continued from previous page)



A digital image of a project designed by Stacey Nakano, pulled off the Internet.

software currently under development will make home page production easier, more like desktop publishing. Carnegie Mellon student Mark Tinkler is developing a method whereby students with virtually no computer ability can place their work on the Internet. Some practitioners have even called for standardized home pages – with a coding system to identify people who are willing to relocate or who have certain kinds of work experience.

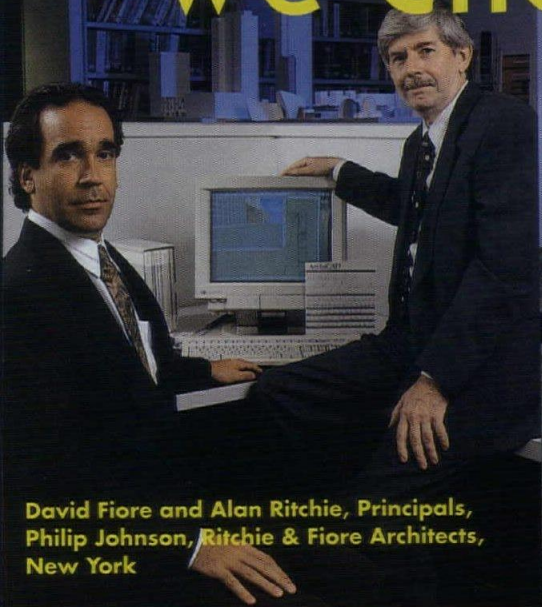
#### Critiques from Around the World

Meanwhile, Harvard, M.I.T., and other universities have been exchanging digital drawings in worldwide "virtual studio" experiments. This year Professor Erick Valle of the University of Miami School of Architecture organized a program that included on-line jurying of student work. Students designed and documented their work on computers and then placed their final presentations on the Web. For four days, architecture faculty members around the world reviewed the students' pages, graded the designs, and transmitted comments to the students and their instructors by electronic mail. Valle says the Internet, with its instant exchange of ideas, presents "tremendous implications for the future of education and professional practice."

Creating their own home pages gives students both an avenue for self-expression and a certain status among their peers. MSU student Christopher Holland says his home page, equipped with links to his favorite information sources all over the world, is a short cut for finding resources. University of Washington graduate student Dace Campbell, who has employed the Web to publish his thesis-in-progress about the use of architectural metaphor in the design of virtual environments, says he has received far more feedback about his work than he would have without digital publication. By developing his own set of Web pages, he has also learned about the "design of information," including its organization and typography and the cognitive maps that readers need in order to navigate. Scott Starr, who teamed with Campbell to publish the award-winning "Virtual Habitat" (P/A, July 1995, p. 24), says he looks forward to the time when sound and digital video will play a more important role on the Web. "An on-line architecture publication could show movement and acoustics in addition to still images," he says. "It could display the effect of changing daylight and other aspects of architectural space that are difficult to describe in a print magazine."

Despite such enthusiasm, the medium does have downsides. Students express concern that plagiarism may be more difficult to detect on the Web than in more conventional presentations. Many students feel burdened by the time required to keep an on-line portfolio current. MSU student Michael Speck notes that it is difficult to tailor a presentation to an unknown audience. Also, says Carnegie Mellon student Jackson Tam, differences in the software that people use for browsing the Web mean that a page will not necessarily appear exactly as designed. Nevertheless Tam, like the others, is optimistic about the future of this medium. "Pretty soon three-dimensional Web browsing will be available," he says. "Home pages will be demolished to make room for 'home worlds.'" □

# "We Chose ArchiCAD."



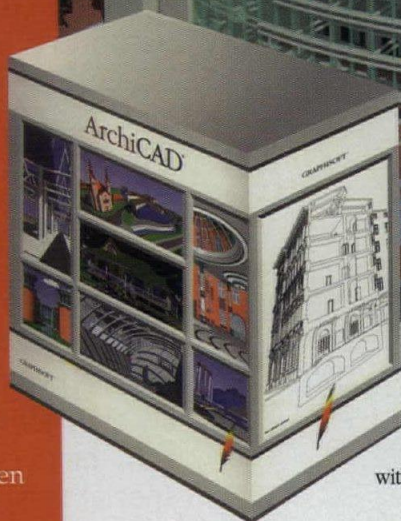
David Fiore and Alan Ritchie, Principals,  
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So much of our work is done on computer these days that the choice of CAD software becomes critical to the overall efficiency of the office. We chose ArchiCAD so that the entire office can standardize under one system. Since our approach is to have the senior staff do as much of the 'hands on' work as possible, an integrated software allows them to spend more time on project management and less time on system management.

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The Shanghai Complex Competition was definitely a situation where a small project team was able to produce a large quantity of high quality presentation drawings in a matter of days. Any other method of approaching the project would certainly have taken several more people, and we would have had to scale back our presentation.

*David Fiore, Principal  
Philip Johnson, Ritchie & Fiore Architects,  
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*"With ArchiCAD, senior staff can begin design work on the computer. We found that the software 'thinks' like an architect."*

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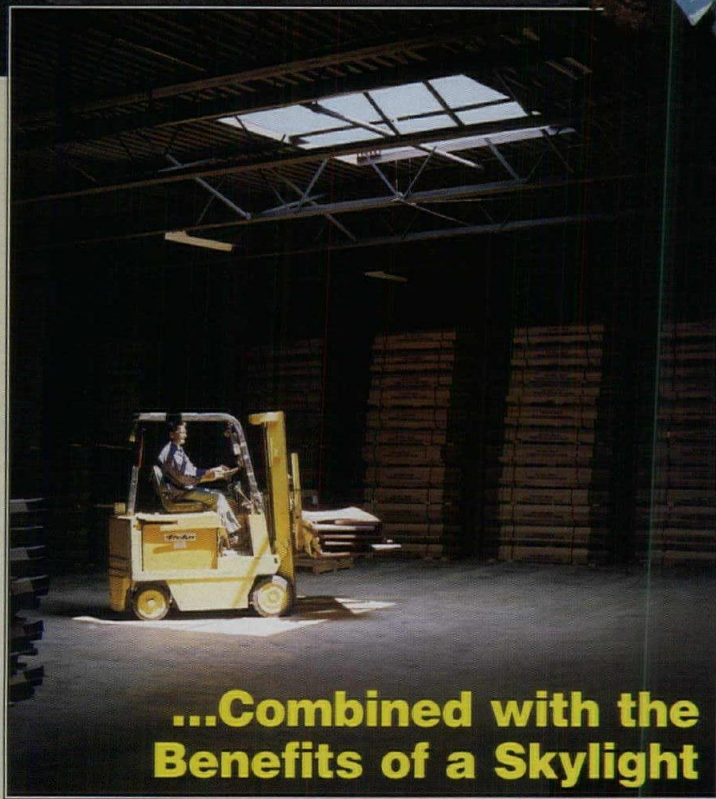
GREATER SHANGHAI COMPLEX COMPETITION,  
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## Healthcare Architecture Re-formed

Out of the debate over healthcare reform has come an opportunity for this profession to search for a new paradigm of architectural order. *By Michael Bobrow and Julia Thomas*

**W**hile Congress and the Administration have failed to agree on a national healthcare policy, the anticipation of reform has caused the healthcare industry to reform itself: managed care has become the goal if not the norm, hospitals throughout the country are consolidating or closing, and individual facilities are becoming part of an integrated health system. Healthcare architecture is being rapidly re-formed in the process. The following are a few trends that will affect the design of healthcare facilities in the near future:

*The closure of marginal institutions and the creation of fewer larger megacenters:* With the number of beds per 1,000 population decreasing from 4.0 in the 1980s to a projected 1.5 in the year 2000, many small hospitals are not viable. Some will close, others will be absorbed by regional networks, and still others will become ambulatory centers for regional networks. Large hospitals will shrink, although most will survive, developing highly flexible, adaptable buildings. These will be downsized, with certain departments eliminated and diagnostic and treatment functions integrated.

*The reuse of closed facilities will become a significant social and architectural opportunity:* Empty hospitals or nursing units will create reuse opportunities as elderly housing or care facilities or as shelters for the homeless. These institutions are often located in urban areas where the need for these services is greatest.

*The full integration of ambulatory care into the hospital campus:* Inpatient settings are becoming the minor space users in hospitals. In newly constructed hospitals the dominant space will be for outpatient use and diagnostic services. However, outpatients often need care settings similar to those of inpatients, including operating rooms, diagnostic and treatment spaces, and recovery beds. So, while reimbursements will reduce outpatients' stay to less than a day, there will still be the need for centers of expensive technology.

*The authors, principals of Bobrow/Thomas and Associates/BTA, wish to thank David Burdick, AIA, Principal at BTA; Meredith Cherbo, Director of Programming at BTA; and, Anthony Roesch, independent healthcare consultant.*



BTA's redesign of The City of Hope Medical Center integrates architecture and landscape, while focusing on the psychological comfort of patients and their families and creating a special environment for genetic re-engineering and cancer treatment.

*The majority of patient beds will become designated intensive care or monitored care:* Inpatient units will also change, with each bed requiring a larger single room, full monitoring capabilities, access for emergency or intensive bedside treatments, and one-to-one nurse/patient ratios. Computerized charting will permit decentralization of nursing stations, with smaller charting areas dedicated to four to eight patient beds

*Academic medical centers and teaching hospitals will form the core of sophisticated medical networks:* Highly specialized, expensive tertiary services will lead to the creation of major ambulatory networks, handling both managed and traditional care. Communication technologies, enabling the accurate transmission of medical information, will also enhance satellite medical consultation, with Western U.S. hospitals serving the Pacific market, and East Coast hospitals serving Eastern Europe.

*Free-standing outpatient centers will challenge certain hospital-based services:* The

demand for easier patient access is driving the development of outpatient centers that can be electronically integrated with hospitals through improved communication technologies, becoming "spokes" of a provider "wheel." However, when they belong to a competing system or hospital, these outpatient centers can severely cut into a hospital's market.

*Re-engineering hospital processes will become a major thrust of design work:* Life cycle analysis shows that well-designed hospitals can minimize operating costs and achieve significant savings. As institutions become integrated delivery systems, facilities will be viewed as cost centers whose value can be increased through greater operational and staffing efficiencies. Since facilities average only 6 percent of overall operating expenses, the redesign of basic processes, such as admitting, nursing, treatment, and communications, is a way of leveraging huge savings in labor, 60 percent of overall operating expenses. (continued on next page)



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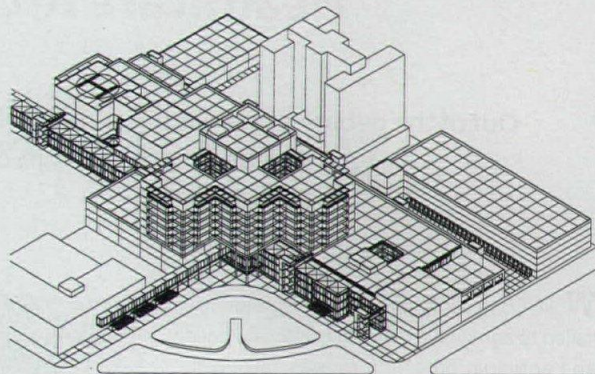
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## Reports

### Healthcare Re-formed *(continued from previous page)*



BTA's plans for the Cook County Hospital transform it from a safety net to a community network for ambulatory care, with an outpatient-oriented campus and a downsized inpatient component tied to nearby med schools.

*New drugs and technology will continue to alter utilization patterns in hospitals:* A recently developed drug that speeds up diagnosis of heart attacks will drastically reduce the use of ICUs for monitoring patients. New developments in gene therapy will increase the provision of chemotherapy in outpatient rather than inpatient settings. And diagnostic imaging and minimally invasive technology will continue to affect the technical core of facilities. Meanwhile, proliferating viral diseases will demand that patient rooms be able to be isolated.

Over the next several years, the greatest areas of reform will be at the extremes of the health care continuum: in ambulatory care, acute inpatient care, tertiary facilities, and academic medical centers. The challenge to today's architects will be to develop strategically driven master plans that will provide highly flexible conceptual frameworks. Master plan phases must be market driven, able to capture arising opportunities. And the clients of these plans will be atypical, such as: medical foundations, insurance entities, and managed-care plans as well as the traditional hospital.

As architects focus on improved operational and staffing efficiencies through facility redesign, the individual patient could get lost in the whole equation. The "Wal-Marting" of healthcare could occur, and architects, who have a professional responsibility to the larger public good, must ensure that the best of architecture is available to all patients and their families.

The opportunities to design optimum healthcare environments in a "reformed" era are great. Institutions are recognizing that settings and systems need to be radically restructured to provide both flexibility for rapid changes in care and specificity for the accommodation of new technologies.

Healthcare institutions have been studying other building types for ideas: hotels for comfort, laboratories for flexibility and technological servicing, airports for moving people, and shopping malls for the integration of retail services. While this cross-fertilization of ideas from other industries is necessary, it raises important questions. Is the form of healthcare architecture solely additive and as diverse as a shopping mall, or is there a more elementary "genetic" form of this architecture? Is there an architecture that can be both? This dialog is necessary if we are to raise the level of healthcare design to that of architecture. This Kahnian search for a new paradigm of healthcare architecture should flow out of a search for the essential meaning of new modes of treatment, and should create new forms whose elegance and truth would go beyond the stylistic diversions of today's reimbursement-driven marketplace. Healthcare reform provides us with an opportunity to form a new architecture that is integral to healthcare itself. □

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# THE SCHOOLS: How They're Failing the Profession (and What We Can Do About It)

The rift between the architecture schools and practitioners has never been greater, and the profession as a whole suffers. Is there a way to bridge the education-practice gap?

by Michael J. Crosbie

Ask any architect what he or she thinks of the quality of architectural education in this country, and the chances are excellent that you will get a prickly report. Practitioners are expressing disappointment, if not outright disgust, about how well students are trained for the profession. From their point of view, new graduates are virtually useless in practice, even as interns. While no one expects graduates to detail expertly or manage a project their first day on the job, practitioners observe that many grads have little awareness or appreciation of these skills, among scores of others important for the creation of architecture. Many architects now take it for granted that they will have to train them to be valuable employees, or they refuse to hire new grads altogether.

"Their education for general practice is terrible," related an architect in Miami, who recently responded to a survey on architectural education by architect Fred Stitt in his newsletter, *Guidelines*. "We



hesitate to employ graduates because of the training time it takes." In this architect's experience, the products of the ivy league schools "are the worst." An architect in Cincinnati observed that students "are not trained as potential leaders in their chosen field." In San Jose, an architect opined that "through no fault of their own, these people are unable to contribute meaningfully at any stage of a project's development." Another architect in Pennsylvania believed that most graduates are "hard-working, intelligent, and talented, but terribly abused by the system of education."

#### **Anecdotal Evidence?**

Before you toss off these quotes as nothing more than cranky complaints from a few moss-backed pencil-pushers who care only about the bottom line, consider some other evidence. When P/A surveyed its readers in 1989 on architectural education, 81 percent of those who responded concurred that architecture schools do not adequately prepare students for practice (P/A, Feb. 1989, p. 15). "If 80 percent or more of the graduates of medical schools reported profound dissatisfaction with major aspects of their education," says Stitt, "one might expect it would be a national scandal." Even faculty and students realize that something is wrong. In the P/A survey, 75 percent of the respondents who identified themselves as faculty and students agreed that education for the world of practice was inadequate.

Recent studies of architectural education have come to similar conclusions about the academy and its disengagement from the world of practice. Last year, the National Institute for Architectural Education released a report that laid out the problem succinctly: "There is serious dissatisfaction in architecture over the widening gap between theoretical and practical knowledge and the conflicting objectives of academic preparation and professional practice. Practitioners complain that recently graduated architects are not well prepared to function in today's office environment. New intern architects are said to lack skills as well as a sensibility to the real world environment of professional practice. Educators complain that architectural offices are so immersed in the pragmatics of practice that they do not grasp the connection between architecture and cultural evolution, connections that could increase architecture's influence as a creative force in society."

#### **Send in the Feds**

A disturbing assessment of the state of architectural education was just published by the National Academy of Sciences' National Research Council. The study, "Education of Architects and Engineers for Careers in Facility Design and Construction," arose from the perception of many federal construction officials that recent graduates in architecture and engineering lack sufficient training for careers in facility design and construction. Based on their experience in dealing with young architects, "Both in their own organizations and in private firms that design government buildings, these officials have observed that recent graduates are unfamiliar with practical problems of design and construction."

Because the study was also motivated by the concerns of owners, contractors, and other design professionals about the education of architects, the report considered "the needs of the entire design and construction community, not just federal agencies." Conducted by a committee of architects, engineers, and educators, the study investigated allegations of unpreparedness among graduates of engineering and architectural programs, specifically in the following areas: design, construction, technology, teamwork, business, economics, management, the liberal arts, and communication skills.

The report concludes that most architectural graduates possess a good understanding of the design process and broad design concepts, but lack knowledge of the practical and technical aspects of construction, such as designing to a budget. They leave school without a good understanding of the role of technology, and with little comprehension of business, economics, and management, which adversely affects their ability to serve their clients or to understand the concerns of their employers. The responsibility for this deficiency extends to the organizations that accredit these programs.

The study committee recommends that federal agencies consider measures such as to search out graduates of schools with curricula that match the needs of the clients and to conduct their own tests for candidate competence. Most alarming, they suggest that the government depart from the practice of hiring only from professional-level architecture programs: "Recruit from schools of construction and from schools of technology, many of which have good curricula that focus on applied knowledge."

It is one thing for the profession to air its concerns over the quality of education. But when the largest single client for architectural services in the country detects a problem, commissions its own inquiry, and is advised not to hire graduates from architecture schools, it is time for us to sit up and pay serious attention.

#### **The Great Divide**

Separating the world of practice from the world of architectural education, the firm from the academy, the practitioner from the professor, is a gulf that has existed in this country for many years and has numerous causes. As Princeton sociologist Robert Gutman has pointed out, the rift opened when the education of the architect moved from the atelier – where would-be architects apprenticed in a firm and studied under a practicing professional – and entered the university. The idea was to simulate the atelier in the design studio, where students studied under architects who split their time between teaching and practice.

But the university operates under its own value system and set of rules, which are often at odds with the values and needs of the profession. In a recent article published in *Practices*, Gutman writes that once professional schools – architecture as well as medicine, law, or journalism – become appendages of the university, they are "forced to accommodate themselves to the values and procedures that dominate the traditional disciplines: natural science, mathematics, the social sciences, and

**When the largest single client for architectural services in the country detects a problem, commissions its own inquiry, and is advised not to hire graduates from architecture schools, it is time for us to sit up and pay serious attention.**

## What Graduates Don't Know

Although practitioners complain about the general lack of comprehension by recent graduates of architectural practice, they usually aren't much more specific in their criticism than that graduates should know more about such things as management, business, and working drawings. Architect Bruce Dilg at Ferris State University recently undertook a comprehensive study (as part of a master's thesis) to understand exactly what grads don't know.

Dilg surveyed architectural graduates about how well they believed their education prepared them for the world of practice, and it is revealing. He based his survey on one developed by NCARB for determining what knowledge and skills are considered by practitioners as most important for a newly licensed architect to have. The survey has questions on 170 knowledge/skill areas and 116 individual tasks that newly registered architects should be able to perform. Dilg asked architectural graduates (out of school four years or less) to rate their own education in preparing them for practice. The results quantify the gulf between what the profession deems important, and how well these graduates were prepared.

To a general query as to how well their education prepared them for practice, 28 percent of the recent graduates responded "very well." But 39 percent felt that their preparation was "marginal" or "not at all," while a third reported that they were "moderately" prepared.

According to NCARB's survey, the practitioners rated these categories in the realm of "knowledge/ skills" as the ten most important for a newly licensed architect to have, in descending order: architectural construction drawings, building code requirements and constraints, ethics and professional conduct, life-safety codes and regulations, handicapped codes and regulations, coordination of architectural and consultant construction drawings, written communication, architect's liability, architectural design principles, and construction types. The recent graduates listed none of these in their top ten areas of preparedness.

When Dilg compared the mean survey scores of the practitioners with those of recent graduates, he found that the widest gap between what the practitioners valued most and what the recent grads were least educated for clustered around hard-nosed practice issues. The top ten were: interpretation of documents during bidding, negotiation, and contract award; specifications; evaluating alternatives during bidding, negotiation, and contract award; resolving conflicts between architectural and consultant documents during construction administration; architect's liability; preparation and issuance of contracts and addenda; duties and responsibilities of consultants; life safety codes and regulations; quality control; and performance/proprietary specifications.

Dilg also invited the recent grads he surveyed to comment on their architectural education. One wrote: "I didn't realize how little I learned at college until I answered this survey." Another observed: "Architectural education cannot prepare one totally for the real world. A coop program can assist in bringing a little more of the real world into the classroom, and make the transition upon graduation a little less shocking."

the humanities. More and more professional school faculties, to maintain their self-respect and to acquire status in the university system, are led to imitate the norms of these other fields, in terms of intellectual rigor, theoretical consistency, publication records, and critical attitude. Professional practice is defined as irrelevant; anyone who practices too strenuously or too successfully is suspect in the academic culture."<sup>1</sup>

Gutman and others I interviewed for this article believe that the schools are drifting further away from the world of practice as the university now exerts increasing pressure: more faculty need a Ph.D. to attain tenure and to enhance the university's standing; more of the school's resources are channeled into research and into capturing grants to improve the standing of the school within the university. More emphasis is placed on theoretical speculation divorced from any notion of how architects and architecture exist outside of the academy. The focus is on architecture as a discipline, rather than as a profession. This raises the ethical question as to whether schools that attract students by virtue of their status as accredited, professional-degree programs should emphasize the discipline over the profession.

"For the proponents of the disciplinary approach," observes Robert Beckley, architecture dean at the University of Michigan, "architecture is a language, with its own vocabulary, grammar, syntax, and history. It is pure and can be taught independent of political and social context. Architecture is timeless." Beckley notes that while this improves the chances that the architecture school will be taken seriously by others in the university, "Many members of the profession see this trend as counterproductive to the advancement of the profession. They see academic research as garbled nonsense, communicated in a language that can only be understood by scholars and researchers."

Meanwhile, the profession is moving in the opposite direction. Greater competition for jobs, lower fees, impossible deadlines, downsized staffs, and professional liability are just some of the forces that are making the practice of architecture more demanding. Practitioners have to be highly inventive merely to survive, thus they are experimenting with new forms of practice, new partnerships, new project delivery methods, and are trying to push the boundaries of their professional services. "Practice" is not as easily defined as it was five or ten years ago, so it is much harder to educate future architects about it. In fact, the architecture school in the university setting is traditionally so slow to adapt to change, and its professors are, for the most part, so divorced from what's going on in practice, that it is hard to imagine a worse setting for educating students about architecture as a profession. "Universities are dinosaurs," says Beckley. "They operate on the notion that you can take someone out of society, educate them, and then put them back and expect them to be useful."

The deficiencies in what the graduates know about practice and how useful they are as employees are magnified by the crunch under which their employers now labor. With narrower profit margins architects seek employees who are cost-efficient the first day on the job. Many claim they simply don't have the time or the money to train recent graduates. Others resent the schools' assumption that the practitioners will pick up the slack in the students' education.

It's not that graduates should be expected to know how to detail a cavity wall upon graduation. But they should have a working comprehension of drawing conventions, of the importance of such details in the completion of a successful design, and of the myriad demands on the profession. "Students used to have an understanding of architecture's graphic language," says Brooklyn architect Laurie Maurer, a former NAAB board member who has participated in more than a dozen accreditation visits around the country. "But now they don't know what they're drawing."

Maurer observes that with the introduction of CAD, architecture has become far less labor-intensive and the traditional entry-level positions for graduates to learn the ropes of drawing and practice are fewer. "There's no longer a need for people to hatch brick," says Maurer. "We used to have the opportunity to spend some time working out the details, and now there isn't that opportunity. Those jobs are disappearing."

### Building Bridges

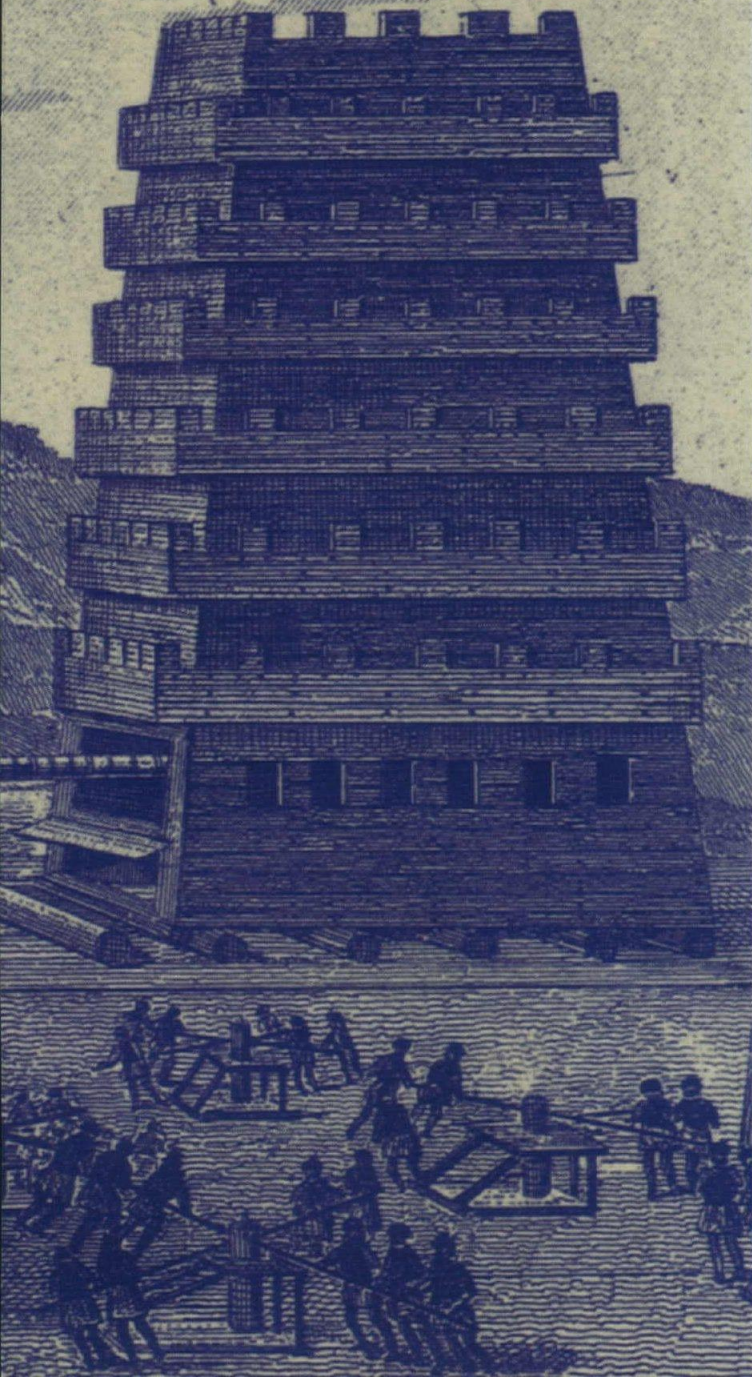
Because of the very structure of the realms of the academy and of practice, and the value systems under which they operate, it seems impossible to bring them closer together. But it is possible to mitigate the gap between them, and to ease the transition from one to the other, by making students more aware of what they might find after graduation. In fact, it is this general lack of awareness of how their education fits into the larger picture of practice that seems to trouble students most. Many report that they have little understanding as to how the courses they are exposed to relate to each other, or why the course content is important. "The schools spew out graduates who don't have any idea what they are going to be asked to do," observes Jon Gurney, a recent graduate who wrote his master's thesis on how the profession is changing. He believes that architectural education performs a disservice if it doesn't open the student's eyes to what to expect. Raising students' awareness can take a number of forms - everything from making sure they understand the profession they are entering and helping them to make informed career choices to increasing their contact with the world of practice.

### Tell the Truth

Universities exist to seek out the truth and to impart it to their students, right? Well, not always. It's not fair to say that architecture schools deliberately mislead their students about the profession, but they don't tell the whole truth, either. One professor at an ivy league school told me that he has witnessed faculty meetings where the idea of being more up-front with the students about the profession and its problems is routinely

<sup>1</sup> Robert Gutman, "Two Discourses of Architecture Education," *Practices, Center for the Study of the Practice of Architecture, University of Cincinnati, Volume 3/4, 1995, p. 13.*

The architecture school in the university setting is traditionally so slow to adapt to change, and its professors are, for the most part, so divorced from what's going on in practice, that it is hard to imagine a worse setting for educating students about architecture as a profession.



squashed. "They don't want to muddy the waters. It might upset the students."

Architecture schools are not typically awash with research grant money, nor do their alumni tend to be high earners providing the schools with generous endowments. Because architecture schools derive most of their income from enrollment, they are not eager to scare off the customers. "Education is a business existing primarily for the benefit of the administrators and the faculty," is the view of Sam Harris, a Philadelphia architect who has taught at a number of elite institutions on the East Coast. Harris says that schools are mainly interested in what they can sell, not what happens to students after they graduate, "and the product that they sell is the myth of the architect as the professional, respectable, responsible artist. There is a perception of glamour, and the school trades on that. This is at the expense of the view of the architect as servant, or technical consultant, or everything else we do."

Is it any wonder the grads are bewildered when they get out? Don't the schools have an ethical responsibility, after collecting tuition and fees approaching six figures, to level with their customers?

"Schools are responsible to tell the truth to students about the profession and about how the world works," says Cynthia Weese, architecture dean at Washington University. "In many cases schools are still applying past fixed mythologies that do not seem to fit contemporary fluid realities. Many still teach design as a separate endeavor. Instead, design should be seen more inclusively as a creative synthesis of aesthetic, ethical, social, and technical concerns. Many studios deal almost solely with the individual, while the complexities of contemporary practice require collaborative team work."

Another way schools can be truthful is to make students aware of the wide range of opportunities in architectural practice. Management consultant Peter Piven of the Coxe Group has offered a course at the University of Pennsylvania and at Rensselaer Polytechnic Institute that broadens the horizons of his students. "In the guise of practice seminars we talk about career planning, with the objective of helping the student to make informed decisions about their own careers," explains Piven. There are discussions of different kinds of practice, field visits to offices representative of a range of approaches, and student reports on how practices differ. "The final paper requires them to lay out a career path, so that they can think about what their next step is," Piven says.

Students should also be honest with their schools. If they feel that they're not getting the whole picture, they should suggest ways to improve their education. According to Fred Stitt, who heads the alternative San Francisco Institute of Architecture, his program gets some of its best suggestions for new courses, lectures, and exhibits from students.

#### **Broaden and Deepen the Coop Experience**

Work/study or cooperative education programs topped the list of suggestions that our readers offered in response to our fax-back page on how they would improve architectural education. A number of architects related (*continued on page 94*)

# Design as a Form of Inquiry

The work of Patkau Architects emerges out of a thoughtful inquiry into the dynamics of culture and the pragmatics of construction. *by Thomas Fisher*



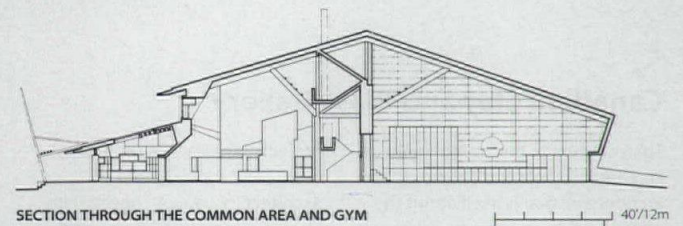
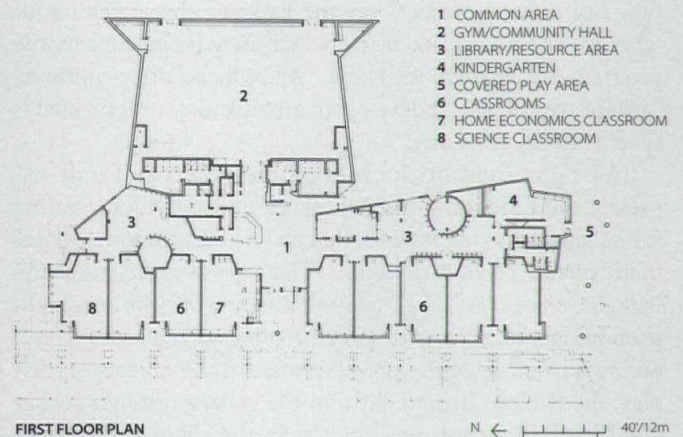
Patkau Architects in their office in Vancouver; John and Patricia Patkau seated at left.





We typically think of architecture as applying knowledge rather than creating it. But the Vancouver firm of Patkau Architects doesn't see it that way. In practice since 1978, the eight-to-ten-person firm, headed by partners John and Patricia Patkau and Michael Cunningham, views practice as a form of inquiry. "As architects," says John Patkau, "we should create knowledge and learn from each project in order to raise new questions." The five projects shown on these pages help make that point, demonstrating that the pursuit of broad cultural or theoretical questions is not antithetical to the making of good buildings, but is the very essence of it.

One line of inquiry the firm has pursued through a number of projects involves the role of architecture in an increasingly placeless culture. "Global culture has been doing really well," observes Patkau, "but not local culture," the culture on which most architecture, fixed as it is, depends. But if the decline of local culture has adversely affected architecture, that decline also suggests a critical role for our discipline. "There is a tremendous opportunity," says Patkau, "for architecture to 'concretize' local reality, for architects to understand the global context and to 'particularize' it." *(continued on next page)*



## Seabird School

This 23,500-square-foot heavy-timber school, built for and by the Seabird Island Band, contains ten classrooms, a kindergarten, offices, and a gym/community hall. The school faces south toward a community open space. Clerestories and skylight let light into the center of the building, while the gym presents a solid edge against the north wind. Inside, a meandering corridor opens to a central common space and library areas.

**Project:** Seabird Island School, Agassiz, British Columbia.

**Architects:** Patkau Architects (Greg Johnson, John Patkau, Patricia Patkau, Elizabeth Shotton, Tom Van Driel, project team; Gina Dhein, modelmaker).

**Consultants:** C. Y. Loh Associates, structural; D.W. Thomson Consultants, M/E/P; Hanscomb Consultants, costs; Christopher Phillips & Associates, landscape; Novatec, costs; Newhaven Projects, contract managers.

James Dow

The firm's Seabird Island School (p. 53; P/A, May 1992, p. 142-147), which serves a native community in British Columbia, shows one way in which that might happen. The building, containing community and recreation spaces as well as classrooms, has a folded, undulating wood-shingled roof and a spiky wood-and-cable-framed porch overlooking a community open space. At one level, the form of the building reflects the non-Cartesian geometry so popular in parts of the global architectural community right now.

But that is not where the power of this building lies. "Vaguely zoomorphic in character," as the Patkaus describe it, the building looks like some crouching animal, especially from the back, its humped spine echoing the shape of the mountains that surround it. The architecture seems to evolve out of and make concrete the animistic beliefs of native cultures, where even inanimate objects often are thought to embody spirit.

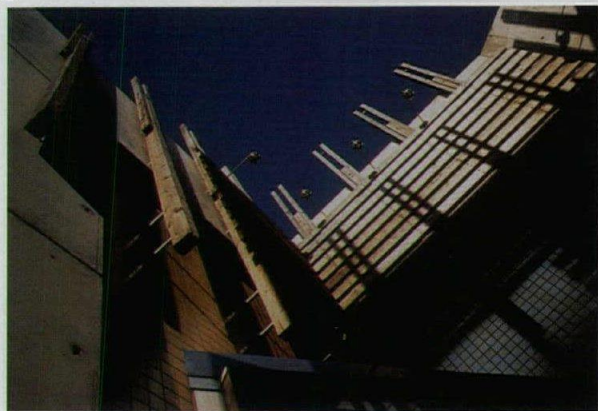
Few local cultures, however, are as distinct as the Seabird Island Band. In places without such a strong local culture or clear identity, what role can architecture play? An answer to that question is evident in the firm's Canadian Clay and Glass Gallery in Waterloo, Ontario (these two pages). This building emerges out of the craft culture of ceramics and glass making. "We begin every project," say the Patkaus, "by searching for what we call found potential," which may lie in the site, the program, the context, the client. "All of these," they continue, "are sources we use to develop an architectural order which is specific to circumstance."

In its glass and brick cladding the gallery not only expresses the function of the building but it provides a setting for its glass and clay artwork that avoids the windowless hermetic quality of most museums. That sort of space, argue the Patkaus, places "art on a pedestal," turning "works of art into pseudo-sacred objects divorced from everyday life." Here, taking advantage of the UV-resistance of the objects on display, the Patkaus bring light into the gallery through corner windows and clerestories, and let in the change of seasons



2

James Dow



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Patkau Architects, Steven Evans (facing page)

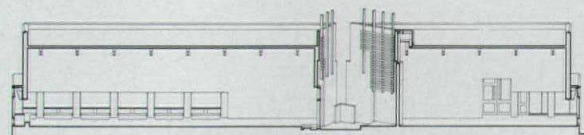
## Canadian Clay and Glass Gallery

This museum to the craft of making clay and glass objects prompted an architecture that is itself about the craft of making buildings with layers of assemblies. The plan is layered, with a front entry block, containing offices above, separated from the rear display space by a layer of vertical circulation. Layered too are the various construction assemblies. The heavy-timber deck rests on steel beams, which are supported by masonry walls, into which wood windows are set (2). This layering is expressed symbolically in the display courtyard, one of three concrete, totemic structures (3). The materials - glass, brick, concrete (4) - also symbolize the materials of the objects on view inside.

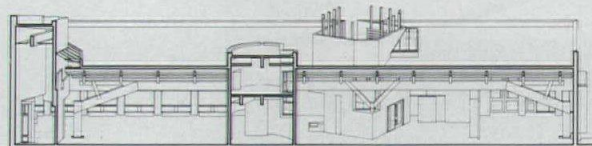
**Project:** Canadian Clay and Glass Gallery, Waterloo, Ontario.

**Architects:** Patkau Architects with Mark Musselman McIntyre Combe, Inc., associate architects (Michael Cunningham, Tony Griffin, John Patkau, Patricia Patkau, Peter Suter, project team).

**Consultants:** C.Y. Loh Associates, structural; Coanda Engineering, Keen Engineering, mechanical; R.A. Duff & Associates, Coanda Engineering, electrical; Gabriel Design, lighting; Hanscomb Consultants, costs; Sze Straka Engineers, field reps; Ball Brothers, general contractor.



SECTION THROUGH MAIN GALLERY AND COURTYARD GALLERY



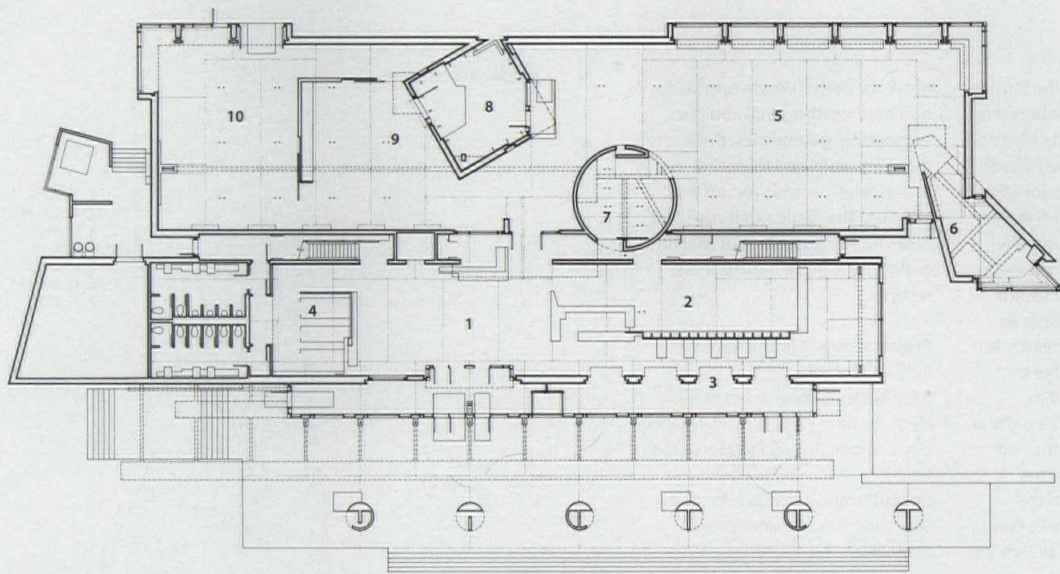
SECTION THROUGH MAIN GALLERY AND SMALL WORKS GALLERY

40/12m





4



- 1 LOBBY
- 2 GIFT SHOP
- 3 TEA ROOM
- 4 COATS
- 5 MAIN GALLERY
- 6 TOWER GALLERY
- 7 SMALL WORKS GALLERY
- 8 COURTYARD GALLERY
- 9 DEMONSTRATION
- 10 SUPPORT FACILITIES

FIRST FLOOR PLAN

N → 40/12m

through a courtyard cut out of the main space.

The courtyard represents a characteristic plan-making strategy of the Patkaus. That volume, like a couple of other round or trapezoidal spaces that violate the grain of the building's parallel bearing walls, are what John Patkau calls "totemic elements, highly developed components within a generic space." These elements draw you to them and, as foreground structures in an otherwise neutral grid, create identifiable places in the building.

But what if a building is too simple or too small to sustain such symbolic references or totemic spaces? The Barnes house (these two pages; a P/A Award winner, January 1993, p. 50–53) on Vancouver Island offers one answer. Perched in the woods, next to a rock outcropping, the house, with its narrow glazed face, browlike canopy, and high parapet walls, brings to mind the great totem poles of Pacific Coast natives. Inside, two concrete columns, with steel branches supporting an undulating canopy of wood beams, joists, and decking, are also totemlike in feel, recalling the surrounding forest.

If the Barnes house evokes aspects of the native culture and flora, it serves as well "as a landscape focusing device," according to the Patkaus. Approaching the house from below, you enter through a crevice-like opening, past a window looking out to the moss-encrusted face of a rock, up an open stair, through a swinging glass wall, and over a bridge to a terrace at the top of the outcropping, from which you can see mainland Canada, the Strait of Georgia, and the coast of Vancouver Island. Eschewing the "ideals" of both classical humanism and modern abstraction, the Patkaus see projects such as the Barnes House, with its interweaving of building, site, and culture, as "a form of pragmatism," where "architecture is not viewed as something distinct from the natural world."

**Revealing Assemblies**

That pragmatism – the taking of things "at face value, without idealization," as the Patkaus put it – has led them on another line of inquiry, one that deals with the way in which we

**Barnes House**

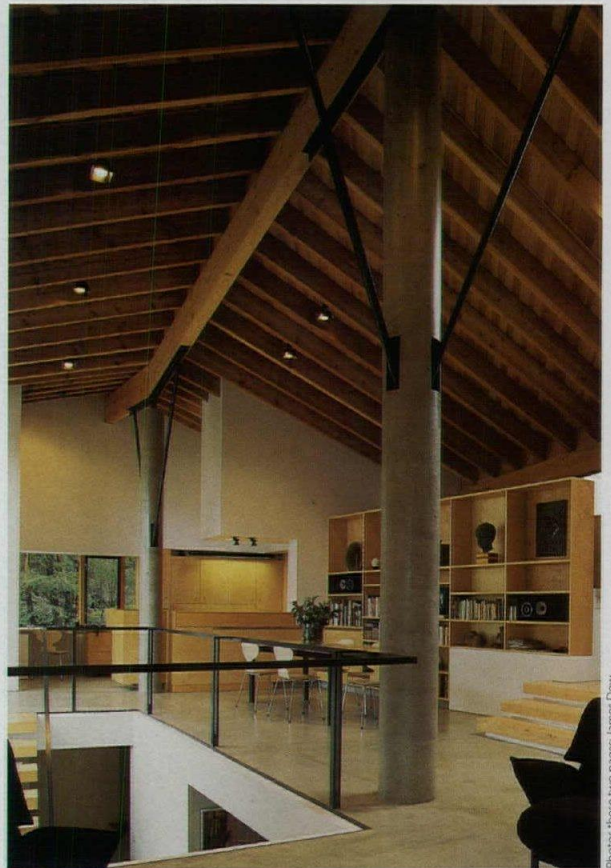
The trapezoidal shape of the Barnes House recalls the Tower Gallery, one of the totemic spaces in the Clay and Glass Gallery. However, the house's shape also derives from its location in a swale next to a rock outcropping, revealing the Patkaus' belief that architecture involves a "search for the particular," for the "found potential" of a site (6). Their pragmatism, what they call a "search for the real," stems from a belief that "architecture is not viewed as something distinct from the natural world." The treelike columns and undulating ceiling canopy, for example, recall the scale of the surrounding forest (5). The Patkaus are also interested in the "search for

heterogeneity," where opposing qualities – orthogonal and non-orthogonal geometries, thick masonry walls and thin steel accessories – are played off one another. The result is a house that looks highly irregular but that, in reality, feels quite natural in its setting.

**Project:** Barnes House, Nanaimo, British Columbia.

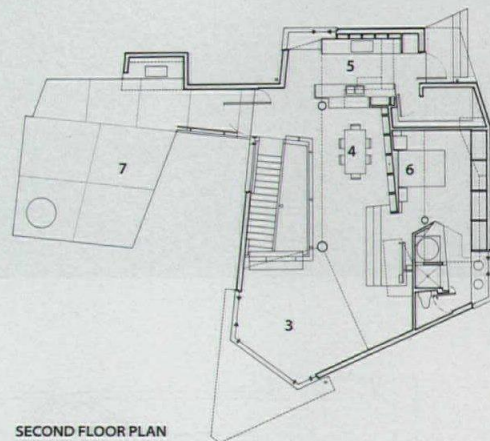
**Architects:** Patkau Architects (Tim Newton, John Patkau, Patricia Patkau, David Shone, Tom Robertson, project team).

**Consultants:** Fast & Epp Partners, structural; R.W. Wall, general contractor.

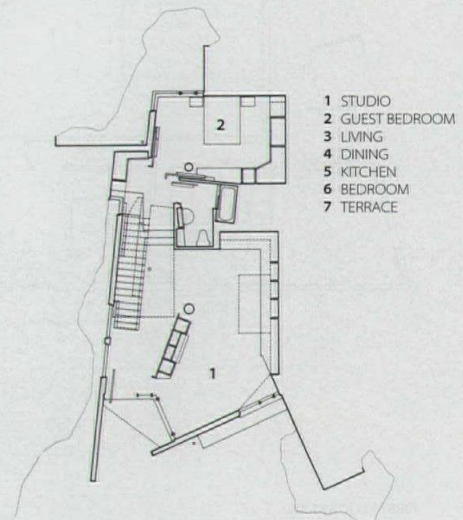


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Photos (these two pages): James Dow

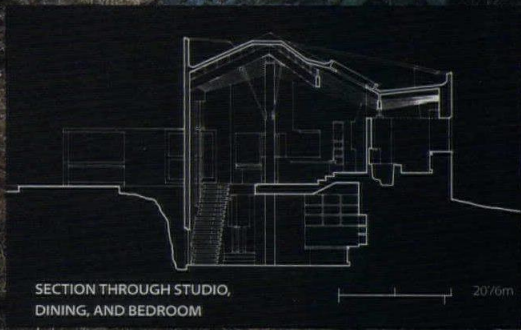


SECOND FLOOR PLAN



FIRST FLOOR PLAN

N ← 20'/6m



SECTION THROUGH STUDIO,  
DINING, AND BEDROOM

20'6m

put buildings together. "Modern construction," observes John Patkau, "is a construction of assemblies, of layers," even though, he adds, most architecture still treats floors, walls, and roofs as if they were monolithic. "We are obsessed with revealing the layers of assemblies," he continues, "with making the construction of a building explicit."

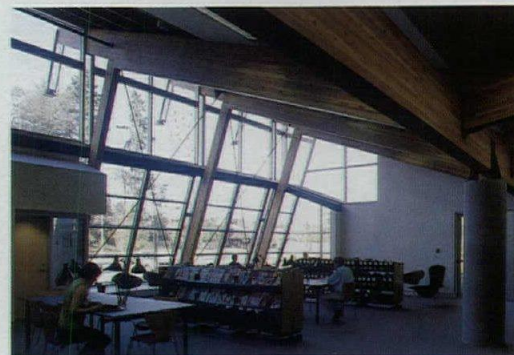
At the Clay and Glass Gallery, for instance, the building's program is expressed in plan as a series of layers, with a front zone of visitor facilities and offices, a middle zone of vertical circulation, and a back zone of display space. Likewise, the architects have exposed the layered construction of the building – the steel-framed roof, overlaid with a wood deck, supported by masonry walls. The layered wall assemblies are represented more symbolically in the diamond-shaped courtyard; here the Patkaus have pulled back the brick veneer to reveal a concrete back-up wall, in its turn cut back to reveal a tile surface (expressive of the insulation layer) that is overlaid with furring and lath to express the interior finish.

In their design for the Newton Library in a suburb of Vancouver (these two pages), the Patkaus have gone from symbolically representing construction assemblies to having each layer perform a different function in the building. Gypsum board, for example, covers only those parts of the ceiling where bounced daylight is needed to help illuminate reading and stack areas or to enclose mechanical ducts; elsewhere, the gypboard is cut back to expose the wood joists and deck. Other elements of the building have different roles. The architects have, for instance, peeled back the stuccoed walls where visual privacy is not needed to reveal walls of glass, and they have stopped the wood-framed roof short of the structure where enclosure and rain protection are not required. This gives the library an exuberant, if not somewhat frenetic character, as everything slips past everything else. However, unlike so much of the complex architecture one sees these days, this building seems to include nothing gratuitous.

The Strawberry Vale School in Victoria, British Columbia (p. 60–61; also a P/A Award winner, January 1995, p. 80–83), carries that purposeful layering out into the landscape. The



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Photos: these two pages: James Dow

## Newton Library

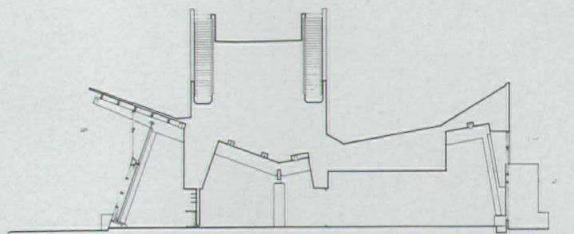
A 16,000-square-foot suburban library next to a senior center, also designed by the architects, this structure is as simple conceptually as it is active visually. The rectangular plan is split longitudinally by a circulation zone, with stack and reading areas to one side and staff and support areas to the other. A row of columns supporting a central glulam beam, into which are framed glulam bents that open out to the perimeter (9). Myriad architectural moves that give the building a very active quality. Some of the windows slope, for example, to follow the angled bents, others are straight (7). Some parts of the ceiling are sheathed in gypsum board to reflect

light, others are not (8). These moves create a building that has a dynamic presence in its dreary suburban context, like some great open book on which readers can fly away.

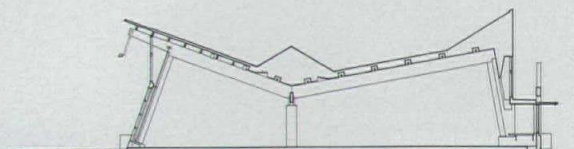
**Project:** Newton Library, Surrey, British Columbia.

**Architects:** Patkau Architects (Michael Cunningham, John Patkau, Patricia Patkau, David Shone, Peter Suter, Peter Wood, project team).

**Consultants:** C.Y.Loh Associates, structural; D.W. Thomson Consultants, mechanical; R.A. Duff & Associates, electrical; B.T.Y. Group, costs; Brown Strachan Associates, acoustics; Farmer Construction, general contractor.



SECTION THROUGH CHILDREN'S AREA, WITH MECHANICAL PLANT ON THE ROOF

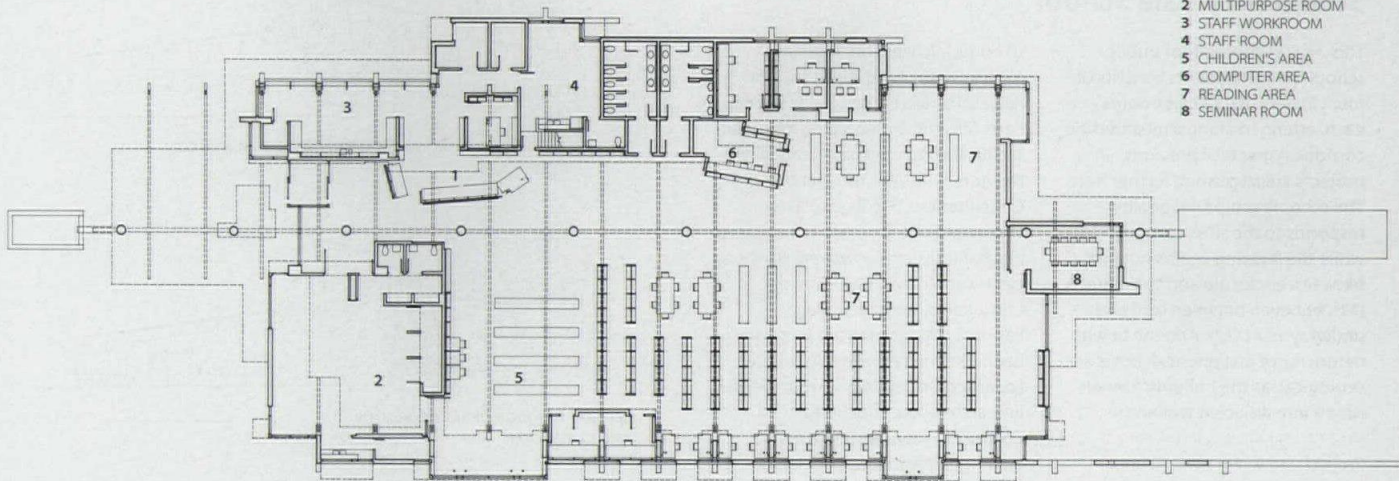


SECTION THROUGH READING AND STACK AREA

20'/6m



9



- 1 CIRCULATION DESK
- 2 MULTIPURPOSE ROOM
- 3 STAFF WORKROOM
- 4 STAFF ROOM
- 5 CHILDREN'S AREA
- 6 COMPUTER AREA
- 7 READING AREA
- 8 SEMINAR ROOM

FIRST FLOOR PLAN

N ↑ 40/12m

history of the site is presented sequentially from front to back, with the original schoolhouse serving as a kind of gatehouse, and the existing school (once it is demolished) providing outdoor play space inside its foundations. The new structure, currently under construction, stands at the back of the site, overlooking a marsh. The building and the ecosystem are also interwoven. Roofs will funnel rainwater into concrete trenches that will feed the marsh whose microbes will clean and filter it.

The architecture itself retains much of the layering found in the Newton Library. The concrete floors, for example, follow the contours of the site; the exposed steel framing supports wood joists and deck, which are clad in gypsum board only where luminosity is important; and the metal cladding of the roof peels back at the projecting eaves to expose the membrane underlayment. The Strawberry Vale School, says John Patkau, "takes the previous projects one step further," which in terms of its form, has involved a step back from the somewhat agitated quality of the library toward the tighter and more integrated form of the Seabird Island School.

**The Value of Research**

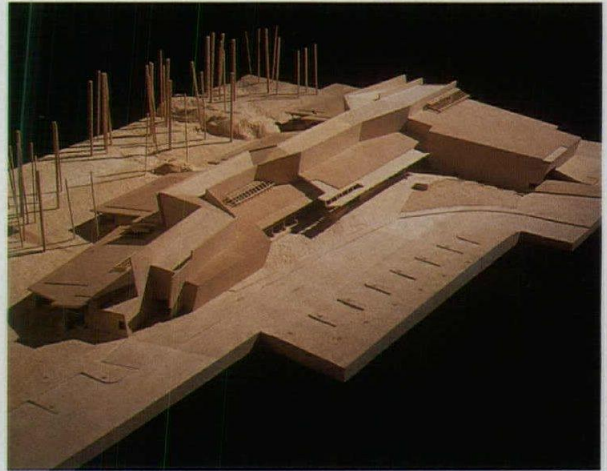
One way buildings transcend the local and the particular to become architecture is by attempting to address larger questions as well, about culture, aesthetics, material reality, and so on. Amid all of the difficulties just in getting buildings constructed, it is easy to lose sight of the larger questions, to set aside the demands of the discipline and deal with day-to-day problems. But the Patkaus' work shows that those things are not incompatible, that pragmatics can indeed be the basis for a number of lines of inquiry or areas of research. Moreover, their work suggests that there are certain types of questions, such as how to create a sense of place or how to make the world around us more comprehensible, whose answer depends, in part, upon architecture. In that light, we owe the pursuit of such questions, not only to our discipline, but to our clients and to ourselves. □

**Strawberry Vale School**

This 34,500-square-foot public school for 448 students consists of four clusters of four classrooms each, arranged along a meandering corridor. Aspects of previous projects are all pushed further here. The school's sculptural quality, responds to the site's contours (10), while the layering occurs not just between enclosure and structure (11), but even between roof and underlayment (12). And the fit with nature is not just physical, but is also ecological, as the building funnels runoff into adjacent wetlands.

**Project:** Strawberry Vale School, Victoria, British Columbia.  
**Architects:** Patkau Architects (Grace

Cheung, Michael Cunningham, Michael Kothke, Tim Newton, John Patkau, Patricia Patkau, David Shone, Peter Suter, Allan Teramura, John Wall, Jacqueline Wang, project team; Tim Newton, John Wall, modelmakers).  
**Consultants:** C.Y. Loh Associates, structural; D. W. Thomson Consultants, mechanical; Reid Crowther & Partners, electrical; Moura Quayle/Lanarc Consultants, landscape; Gage Babcock & Associates, fire protection; Barron Kennedy Lyzun & Associates, acoustics; Dr. Ray Cole, Environmental Research Group, U. of British Columbia, materials; B.T.Y. Group, quantity surveyors; Susan Morris Specifications, specifications; Vaitkunas Design, signage.

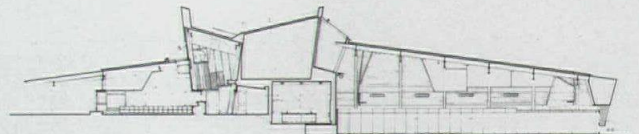


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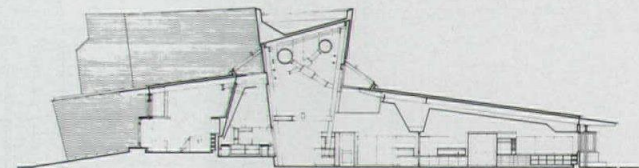


11

Photos these two pages: James Dow

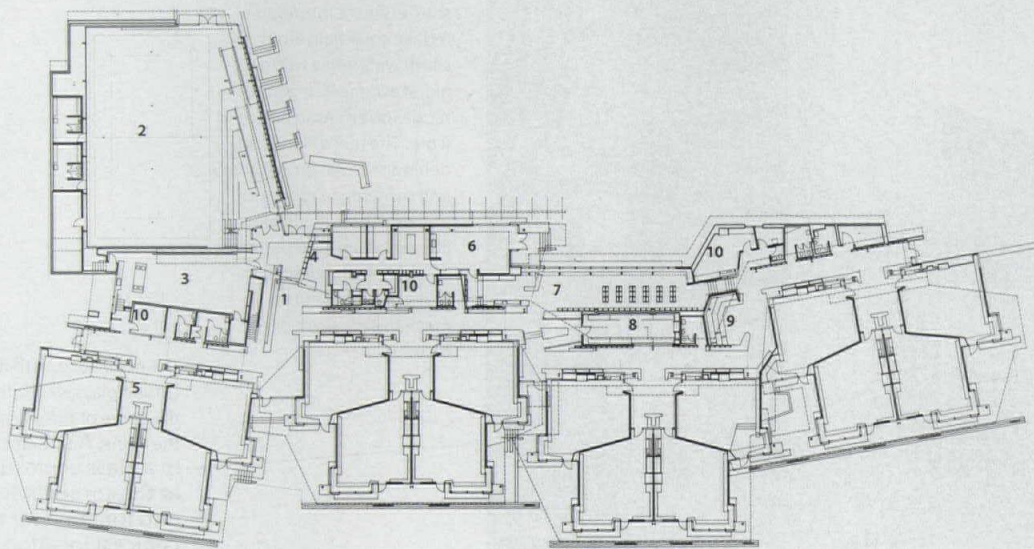
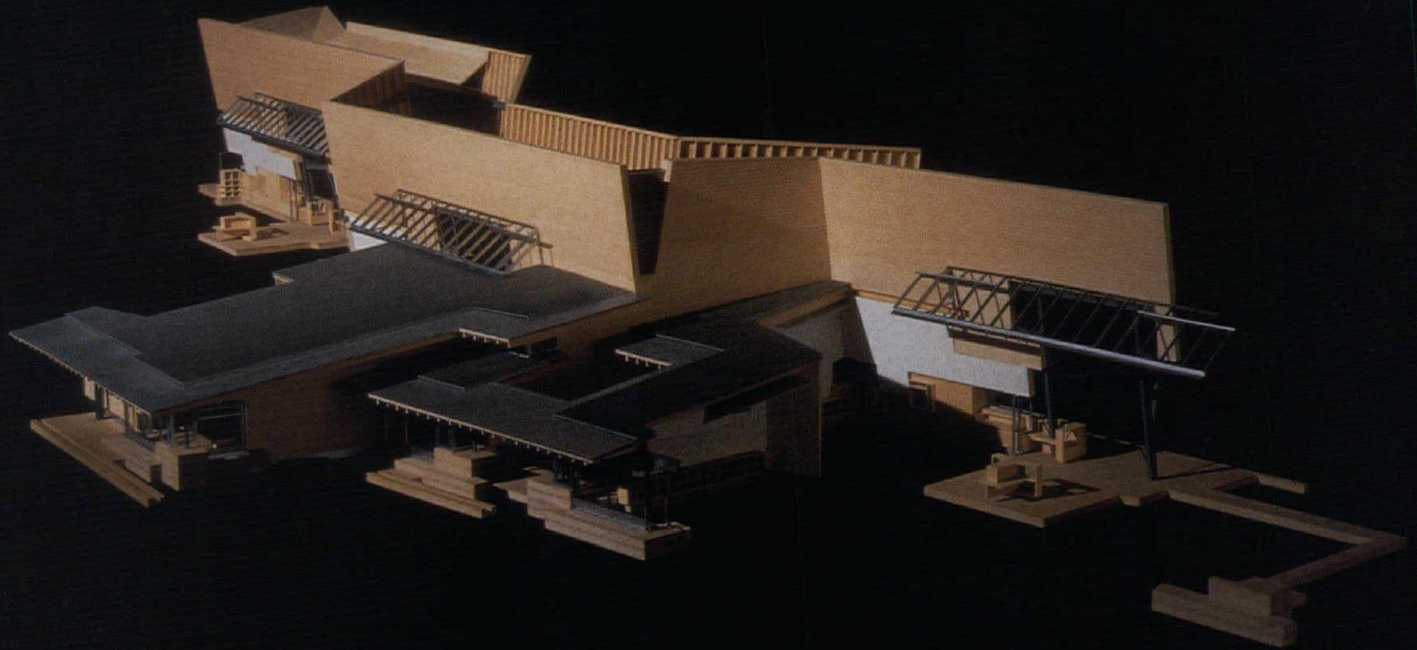


SECTION THROUGH CLASSROOM, MULTIPURPOSE ROOM, AND GYM



SECTION THROUGH LIBRARY, CORRIDOR, AND CLASSROOM

40/12m



- 1 ENTRY
- 2 GYM
- 3 MULTIPURPOSE ROOM
- 4 ADMINISTRATION
- 5 TYPICAL CLASSROOM CLUSTER
- 6 STAFF
- 7 LIBRARY
- 8 COMPUTER ROOM
- 9 STORY TELLING
- 10 SPECIAL EDUCATION

FIRST FLOOR PLAN

N ← ———— 40/12m

# Culture Clash

The Arab World Institute, one of the most admired of Paris's *grands projets*, is as much in need of repair as are the frayed relations of its French and Arab benefactors.

by Thomas Vonier



Stephane Couturier/© Archipress



Stephane Couturier/© Archipress

Although now an established fixture in Paris, attracting more than one million visitors each year, the Arab World Institute, or Institut du Monde Arabe (IMA), remains today pretty much what it has been virtually since its inception: a significant gesture that has thus far failed to achieve its full potential. After almost eight years in operation, the problems of the IMA as a building have become as apparent – and nearly as defining – as the limits of its success as an institution.

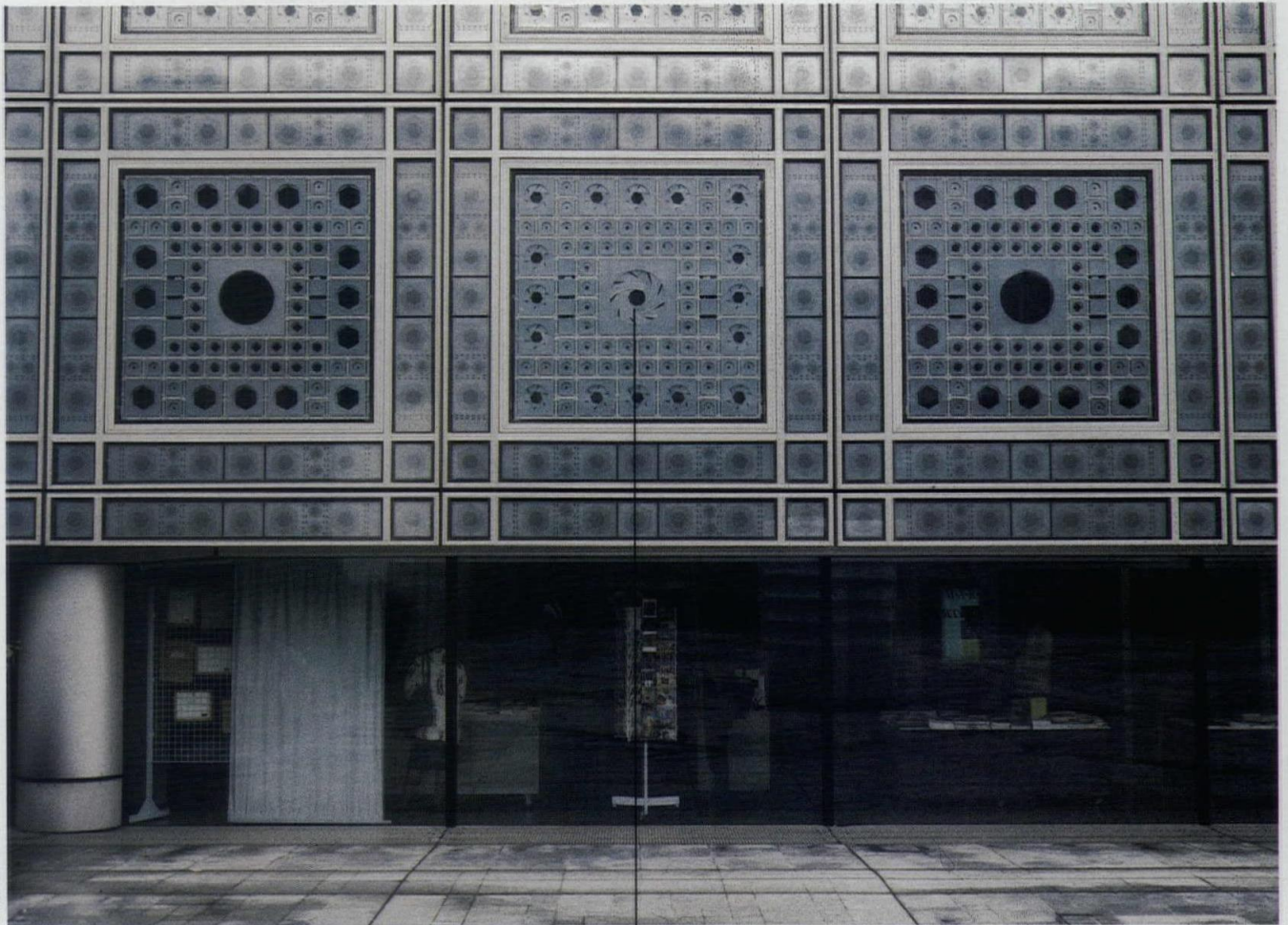
One of the earliest and most talked about architectural *grands projets* of the Mitterrand presidency, the IMA was to foster understanding of the Arab world, nurture cultural exchange, and play an active role in developing French-Arab relations. The Institute's home in the French capital would herald a new era in the checkered past France shares with the Arab states.

The widely published, competition-winning design (P/A, July 1987, p. 72; May 1988, p. 94) by Jean Nouvel, Gilbert Lezenes, Pierre Soria, and Architecture Studio accommodates library,

**The entry façade faces away from the street toward a wind-swept plaza.** The rows of iris-like shutters were intended to reduce solar gain along this south wall, while using a high-tech mechanism to recall ancient Arab lattice-work. The mix of functions behind the wall, from library and conference rooms to private offices, is visible in the varied lighting patterns at night. In the offices, in particular, the shutter mechanisms seem overbearing.

The north face, with its curved glass wall, follows the curve of the site along the Seine. **A spiral stair in a glass enclosure at the corner is an odd function for the choicest location.**





Jack Barnes



Stephane Courcier/© Archipress

The shutters behind the glazed south wall no longer work as they did when the building opened in 1987 (photo, left).

Rather than operate by photoelectric cells, the shutters are now run by computer, although they appear to be stuck in place, with some open and others closed. The entrance to the building on the south side is via sets of inconspicuous glass doors under a low overhang.

The building now seems poorly maintained. The mostly glass exterior appears unwashed and some of the aluminum has darkened.



Jack Barnes

museum, gallery, and auditorium functions, along with spaces for cultural programs, project staff, permanent staff, and private meetings. The stunning new building was to anchor and animate the eastern end of the Boulevard St. Germain where it meets the Seine, on a forlorn, post-industrial site.

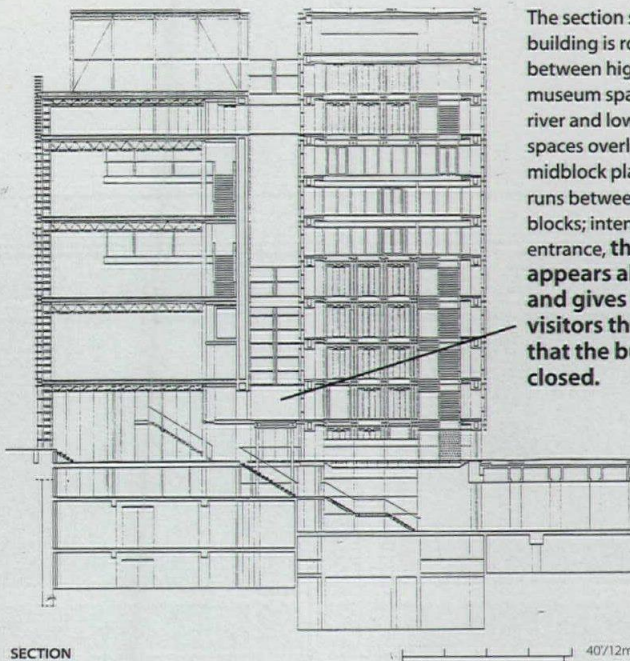
But the IMA today, like its surroundings, is bereft of the vibrancy sought by its creators. Both building and institution seem stranded, stymied in part by factors beyond their control: the steep decline in Arab-Western relations following the Gulf War; incessant squabbling among the nominal Arab-state partners; mounting tensions in France's Arab immigrant community; and profound changes in the French government.

The IMA as an institution has languished, and the IMA as a building has suffered. As if anticipating criticism of a design that was too complex and too clever by half, architect Jean Nouvel says "This was a *grand projet* apart from all the others," noting that half the building's initial cost was paid for by France, half by a coalition of Arab states. Because the Arab countries are not paying their shares of the maintenance funds, as was initially planned, says Nouvel, "there is not enough money to care for the building, and it has never been used to its cultural potential."

**Open and Shutters**

Clearly at odds with the Institute's present management, Nouvel also says that his design has never been properly appreciated. A frequent topic is the condition of its famous south façade apertures - hundreds of iris-like mechanisms patterned after the carved latticework found on some Arab *meshrabiye*hs. "People wanted to see the diaphragms move," Nouvel says, noting that they changed imperceptibly when controlled by the photoelectric cells that were part of the original design. "So [the building managers] just decided to open and close them every ten minutes," he adds. This isn't so, responds an Institute spokesman: "We have found it better to control them with a computer. This still conforms to actual weather and light conditions." But repeat visits to the building suggest that, for whatever reasons, the apertures no longer move at all. Some of the 240 large irises are frozen at varying degrees of openness while others remain closed.

The assemblage is now merely a vestige of what its designers called a "technological geometry rooted in the noblest elements of great Arab architecture." The apertures strikingly echo old forms, but are robbed of any new substance they may once have held. Observes a French architect who abhors the building and the fortune spent



SECTION

40/12m

The section shows how the building is roughly divided between high-ceilinged museum spaces facing the river and lower-ceilinged spaces overlooking a midblock plaza. An alley runs between the two blocks; intended as a VIP entrance, **the alley now appears abandoned and gives first-time visitors the impression that the building is closed.**

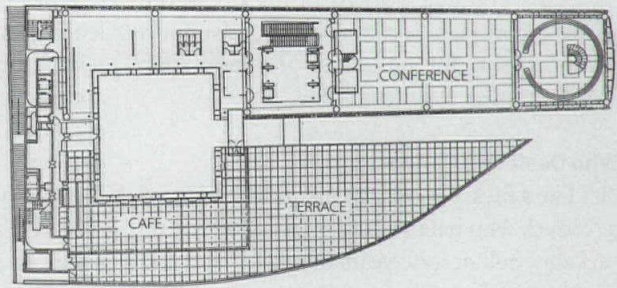
The main stairs and glass-walled elevators rise up through a light well. Although glazed on two sides, this space remains dim because of the shutters filtering light on one side and the alleyway blocking much of it out on the other. Moving through this space, however,

is a memorable experience, perhaps unnervingly so for anyone with vertigo. Also, because of its location just inside the entrance, **this core seems cut off from the rest of the building and gives no clue as to what is going on there.**

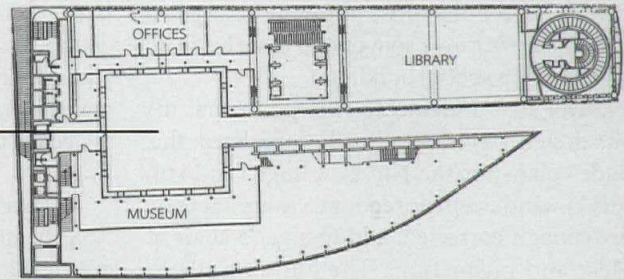


Stephane Courture/© Archipress

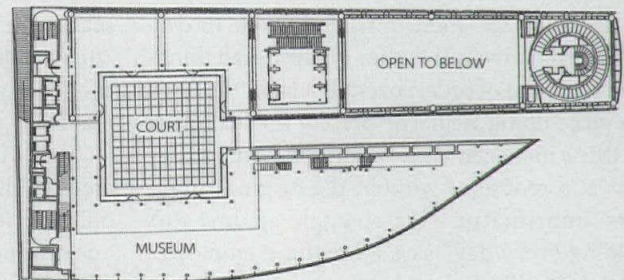
As the site plan shows, the building occupies a key location on the Left Bank. The building conforms to the site, with its pair of wings, one curved along the river and the other straight backed, standing on top of a podium containing parking and an auditorium. And yet, within this site-driven shape, functions are allocated in curious ways. The museum, which mostly occupies the curved wing, laps over in places into the low-ceilinged rectangular wing. A light court also separates the curved wing from the elevator core on some floors, adding to walking distances.



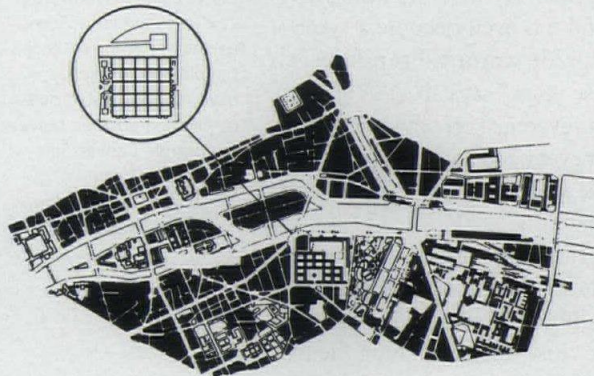
TENTH FLOOR PLAN




SIXTH FLOOR PLAN

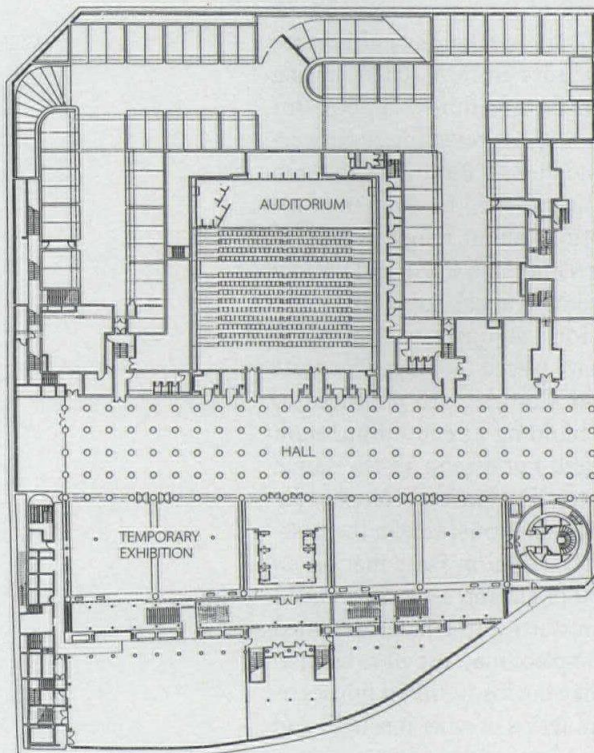


FIFTH FLOOR PLAN

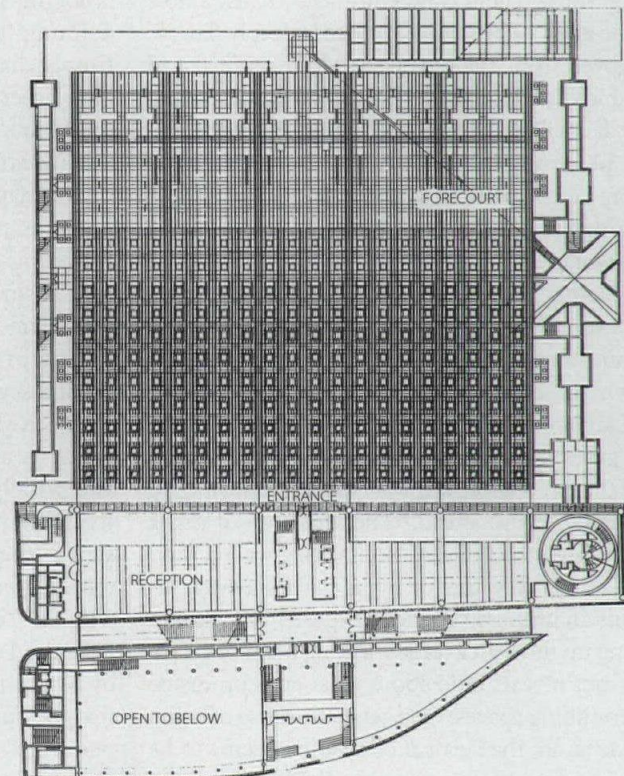


SITE PLAN

N  2000/60m



BASEMENT FLOOR PLAN



FIRST FLOOR PLAN

N  40/12m

on it, "This big idea worked in the press, but that's all." There is, however, widespread support for the view that the building's problems stem mainly from poor maintenance.

#### Who Dealt This Hand?

"It's like a messy baby with an unwashed face," says Nouvel, who believes the IMA is holding up remarkably well despite years of neglect and bad treatment. "And when something needs to be repaired or replaced, they just go to the corner hardware store," he adds, implying that good workmanship is rarely sought and that this is no way to handle a special building.

Nouvel also underscores the point that his team's design was never actually completed; this includes plans for the *parvis*, a huge (and still empty), windswept forecourt. Some factors, easily enough corrected, add to a general air of neglect and misfortune. The building is unwashed and shows it, especially on its sheer, curving façade along the embankment. It is littered with places where missing, broken, or dysfunctional hardware begs for repair. Small things seem to be out of order; overall, it lacks the mien of a place doing well. The present inclination of the IMA's management is to undertake modifications and redesigns without the original architects' imprimatur. "We struggle against this building every day," says a longtime employee.

With justification, he calls the entrance impractical and ill-suited to the IMA's public outreach role. "There is no entrance, it's just a hole in the glass." The main entrance is deeply flawed, removed from any connection to the street, and the building turns a very steely shoulder to the city. It is a finely textured structure, even delicate, but its strong metal-and-glass essence leaves many people cold. "It is not warm or welcoming outside," says a Parisian architect, "and this just gets worse inside."

Visitors keeping appointments on the building's upper floors can enter and leave without gaining any idea of what exhibitions are showing or what is scheduled. A spokesman says the original architects were invited to design changes for the ground floor that would improve the entry and the circulation, but were not heard from. "So we had to move ahead." The sensation of rising up through the building on its glass-walled (and now noisy) elevators or by its main stairwell remains an impressive kinetic experience – akin to riding up through a dark cracking plant or factory – but reveals little about what goes on inside surrounding spaces. One gets little sense of being inside at all; the vertical circulation seems to be outside of the building, itself a divided entity.

The plan's central "fissure" – a sort of alleyway leading into a courtyard said to represent an inward orientation characteristic of much Arab architecture – was to have served as a private VIP entrance. Today, this area looks abandoned, suggesting to some first-time visitors that the building is closed. This feature requires treatment (could it not become a more accessible public area?) and the entire building would benefit from a fresh, sympathetic reassessment by its designers. One area especially in need of reassessment is the office wing. Employees complain of cramped working quarters, a shortage of storage and meeting space, and the unrelenting environmental tyranny of low ceilings and hermetically sealed curtain walls.

#### A Flawed Symbol

Still, staff members say that the building is greatly admired and has even become a symbol of identity and pride among French-Arab youths. "In all these years," says an IMA spokesman, with his own reverence on obvious display, "this building has never been 'tagged' with graffiti and, if you look around this neighborhood, that really says something."

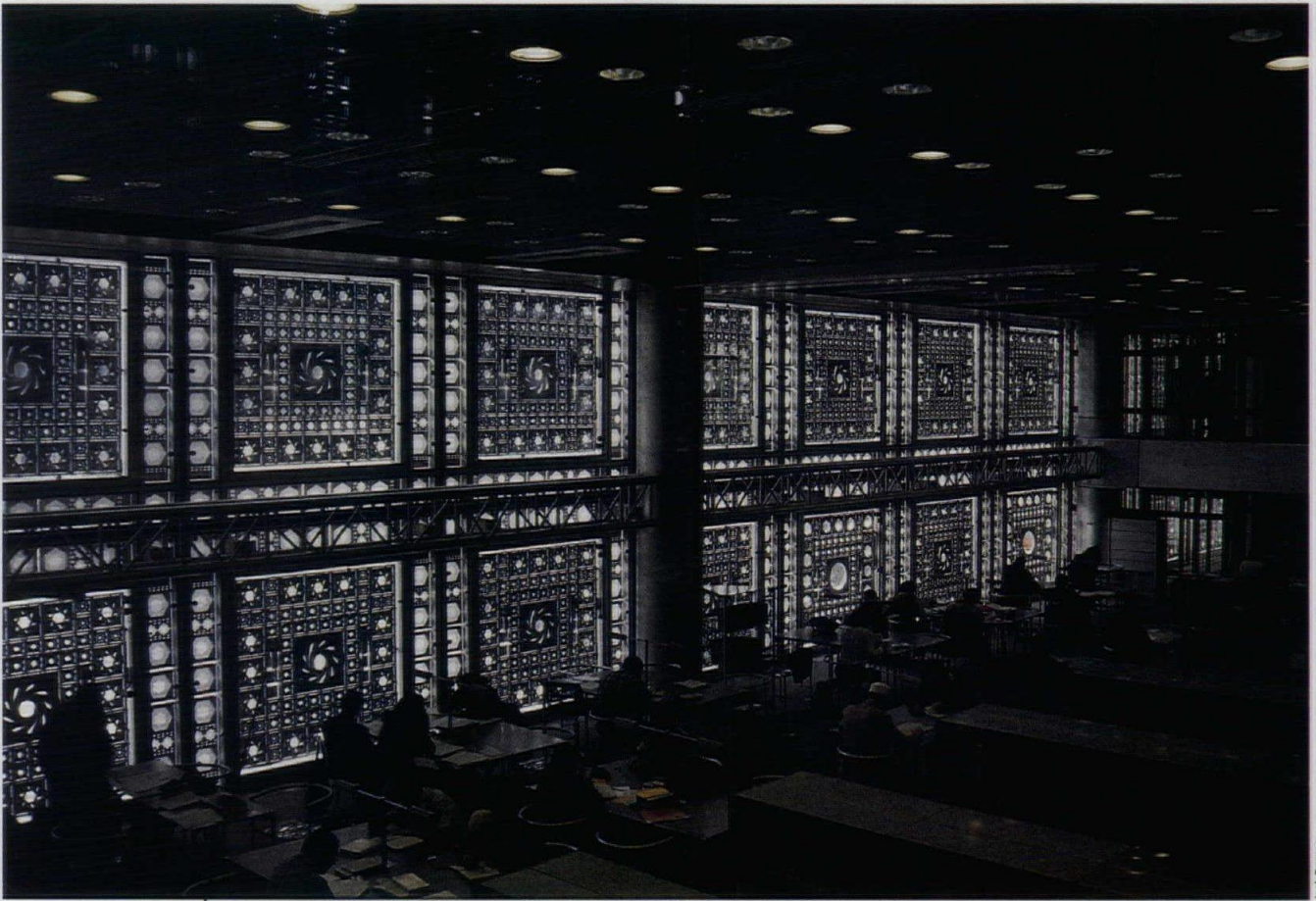
The IMA's programmatic promises, however, are unfulfilled. One staff member says it has held only five major exhibitions since opening, only one of which came close to approaching the historic dimensions, attendance levels, and acclaim he believes the institute should achieve. But this is not the building's fault; problems have arisen in defining the content of IMA programs. "If we simply display official or religious culture, we have no credibility," says an IMA staffer, noting that Arab sponsors have withheld support for initiatives they regarded as presenting controversial or inappropriate views. "But this is an Arab Institute, not an Islamic one," he continues, responding to questions about religious fundamentalism in parts of the Arab world and the fact that Islam has become France's second religion.

The organization's struggle to seek solid ground seems to have placed the frayed Institute of the Arab World along a path destined to make its alluring building a relic – important and widely admired, but a relic all the same. Its ambitious mission, location, and complex design assured the IMA a central place in the now-receding era of high design in Paris that began with the Centre Pompidou and essentially ended with the Fondation Cartier (the latter designed by Nouvel). But that place may also have assured that the building, like the institution it houses, is perceived mainly in terms of what it sought and promised to deliver, but never could. □

**Project:** Arab World Institute (Institut du Monde Arabe), Paris, France.

**Architects:** Jean Nouvel, Gilbert Lezenes, Pierre Soria, and Architecture Studio: Martin Robain, Jean-Françoise Galmiche, Rodo Tisnado, Jean-Françoise Bonne. (Jean-Jacques Raynaud, Antoinette Robain, Adeline Rispal, project architects; Pascal Debard, Jean-Louis Besnard, assistants.)

**Consultants:** Françoise Seigneur, interiors; Anne Fremy, Pierre Martin Jacot, graphics; Louis Gruittet, engineering; M. Armagnac, acoustics; Jacques Le Marquet, Michel Seban, scenography; Gary John Glaser, children's room; Z.A. Zaidan, architecture; Setec, mechanical; Cabinet Casso Gaudin, security; Epsi, diaphragms; Planitec, bureau de pilotage; Socotec, bureau de contrôle; Cabinet Sery Bertrand, museum consultants; Light Design, lighting for museum.



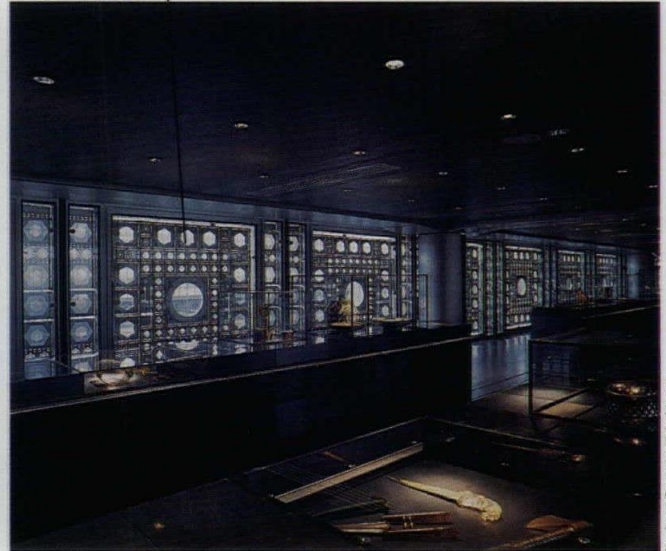
Jack Barnes

The library reading room in the rectangular wing has a high ceiling and an appropriately filtered light quality. **Regular users of the building, however, complain about the pervasiveness of hermetically sealed curtain walls.**

The two-story light-filled museum spaces are pleasant, but they obviously limit the kinds of objects that can be displayed there. Objects that are light sensitive can be displayed in more dimly lighted spaces in the office wing, but here, **the low ceilings and busy pattern of the shutters seem less than ideal.**



Stephane Couturier/© Achipress



Stephane Couturier/© Achipress

# Urban Showplace

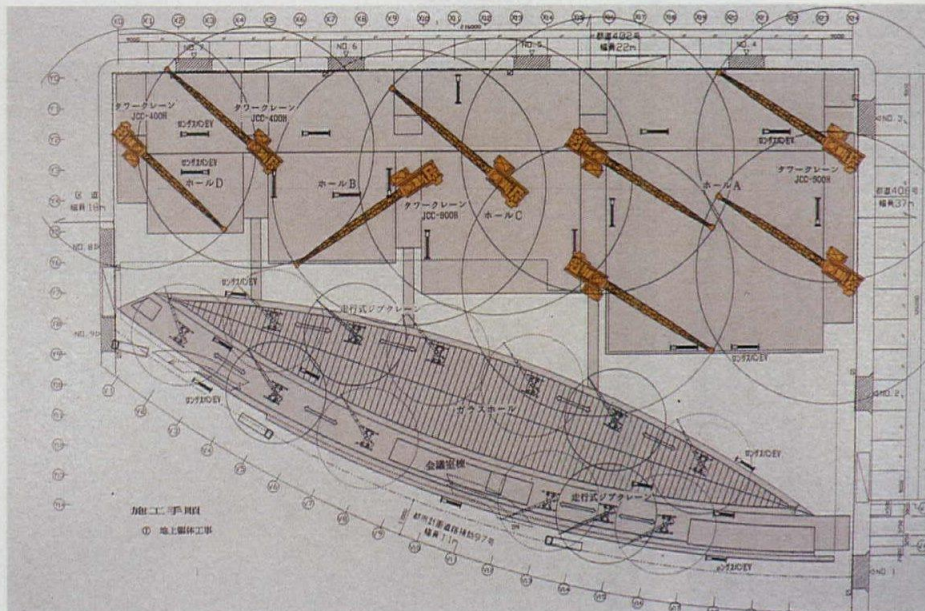
At the \$1.6-billion Tokyo International Forum, New York architect Rafael Viñoly is shaping a cultural/exhibition complex that will substantially enhance the Japanese capital. *by John Morris Dixon*

The Tokyo International Forum is certainly one of the plum commissions of the last decade. The opportunity to design a vast theater and exhibition complex, at the very core of Tokyo, was won in a 1989 open international competition by a New York firm, Rafael Viñoly Architects. Originally budgeted at about \$1 billion and now expected to cost \$1.6 billion (calculating at the rate of 100 yen to the dollar), the project is moving briskly along toward a 1996 completion.

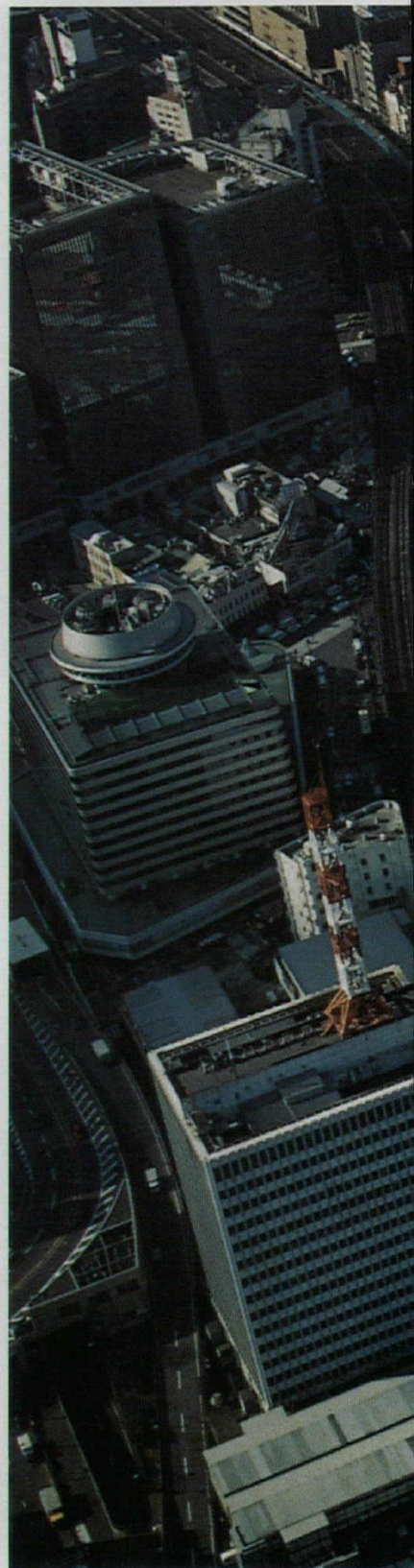
The Tokyo Forum is not only a vast addition to Tokyo's cultural resources, but it is located at the very core of the city's central business district, near the main railroad station and bracketed by two of its busiest subway stations. Its 6.7-acre site was formerly occupied by Tokyo's city hall, a 1956 landmark by Kenzo Tange that was replaced by a 1990 behemoth in the Shinjuku district by the same architect.

The competition for this complex was the first open international design competition the Japanese had ever held. While several European nations and Australia have been awarding their most prestigious commissions this way for decades, the Japanese had reserved their major public commissions for their own architects. By the 1980s, Japan was enjoying a fairly active exchange of architectural talent with other countries for private commissions; Tokyo boasts build-

A construction photo (2) of the Tokyo International Forum shows its full-city-block site, formerly occupied by the city hall, in the central business district. A portion of the Imperial Palace Gardens can be seen at the upper right. The long curve of the railroad viaduct as it approaches the main Tokyo Station (out of photo at bottom) established the geometry of Viñoly's design. A plan of construction crane locations (1) illustrates the quality of drawings produced by contractors on this job.

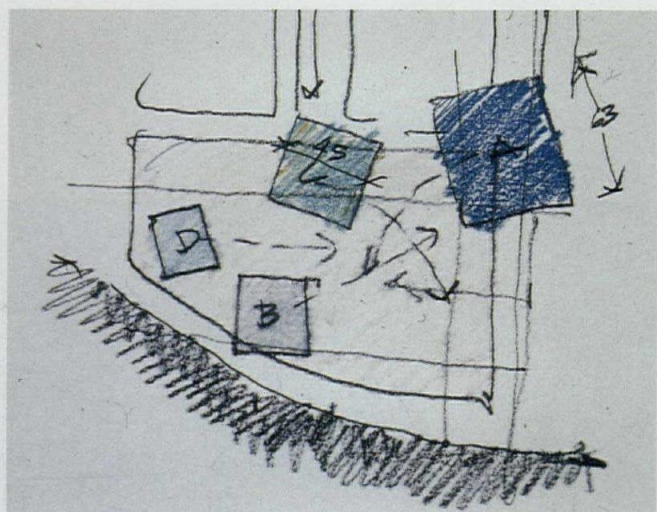


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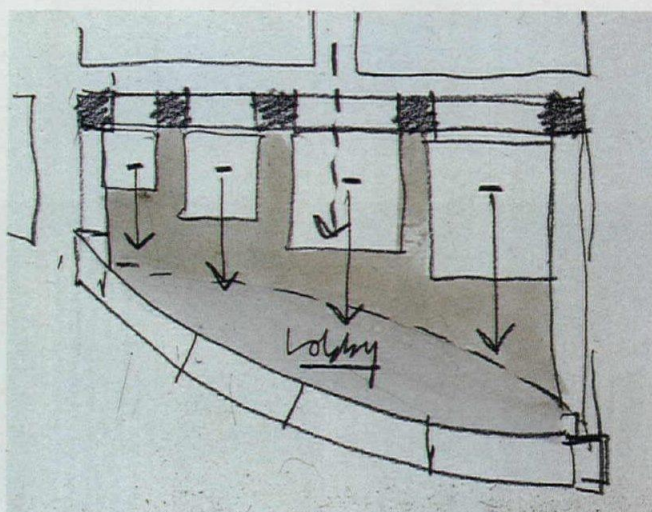


2





3



4

ings by Norman Foster, Philippe Starck, Peter Eisenman, and other foreign architects. But undoubtedly the perception that Japan was not sufficiently accessible to foreign businesses prompted its two big international competitions of 1989: the invited competition for the Kansai Airport terminal in Osaka Bay, a \$2-billion-dollar job that was won by Renzo Piano (P/A, April 1995, p. 70), and this open competition that any architect in the world could enter.

The Tokyo competition program called for four theaters for various musical and dramatic events, plus exhibition and conference spaces, restaurants and retail, a Metropolitan Information Center, and parking, for a total of 1.5 million square feet. Viñoly recalls that he invested much effort in developing the competition entry, because the program and the stature of the jury convinced him this was an exceptionally well-thought-through program with a high probability of being built. A jury that included I.M. Pei, Vittorio Gregotti, Arthur Erickson, Kenzo Tange, and Fumihiko Maki reviewed 395 entries from 50 countries – all anonymous, of course – and settled on Viñoly's. They admired the way the clearly graduated series of theaters were complemented across an open plaza by the distinctive Glass Hall, a volume with a lens-shaped plan that extended the whole length of the site. After the Viñoly scheme won, the design team opened key elements of the scheme to question – the bridges from Glass Hall to the theaters, for instance – but the fit between program and concept was so good that no significant changes were made.

#### When in Tokyo.....

Viñoly had never completed a building even approaching this size; before leaving Argentina in 1979, he had designed a major stadium and a national TV production center (P/A, July 1979, p. 78), but the output of his first decade in New York was more modest in scale, and he taught regularly. After winning this commission, his first decision was to get his own Japanese license and his own Tokyo office, rather than depending on a local associated firm. As an architect who had moved in mid-career from the professional world of Buenos Aires to deal

with the very different ground rules of New York, Viñoly welcomed the challenge of learning how the building process works in Tokyo. He was aware going into the project that he would be switching from the adversarial climate of U.S. practice, where all the minutiae of a contract must be defended, to a situation where the contract is just the basis for day-to-day negotiation (but then in Argentina, Viñoly recalls, the contract is an irrelevant formality).

Viñoly thoroughly enjoys the collaborative atmosphere of the Japanese design and construction process, where he observes that "finding solutions" takes precedence over "finding faults." But he points out that the Japanese way presents its own challenges. Since negotiation goes on daily, you must always be prepared to improvise on the spot. And if an error is made, you aren't even allowed to take the blame for it – much less assign it to someone else. Under these circumstances it's all too tempting to get coopted by the collaborative process and let the design be compromised. In Japan, it is considered rude, after all, to insist on any design point that is not supported by group consensus.

Viñoly admires the high quality of detail drawings produced in Japan, and not just by architects. Contractors and subcontractors (who have a greater role in detailing than their counterparts here) also produce fine drawings, all of them standardized in format and style, so that one can move from one set to another without having to translate.

In staffing his Tokyo office, Viñoly made some ripples on the Japanese architectural scene by giving responsible positions to women, whose progress in the Japanese profession has been very limited to date. Women in Japan often wield much technical expertise, Viñoly observes, but in ostensibly clerical positions. Viñoly says his example has already helped attack these barriers in Tokyo.

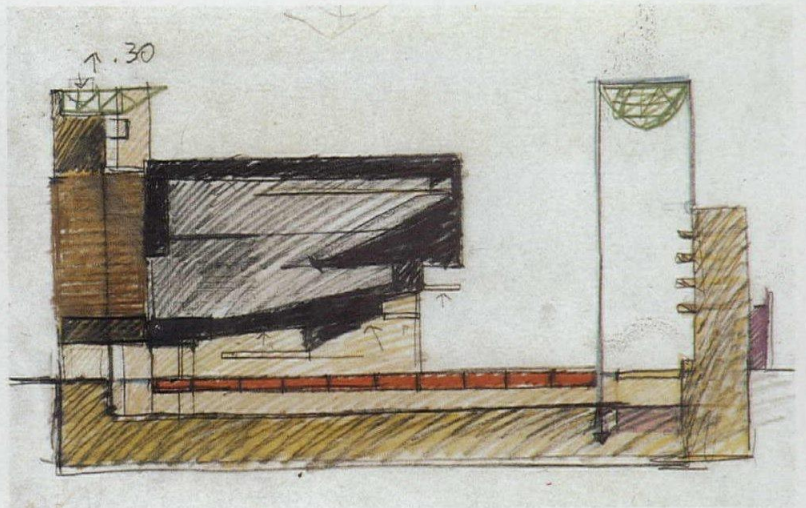
#### Everybody Is Part of the Team

Like most Western architects exposed to the Japanese construction industry, Viñoly praises the speed and the precision of Japanese contractors, and also the (continued on page 74)

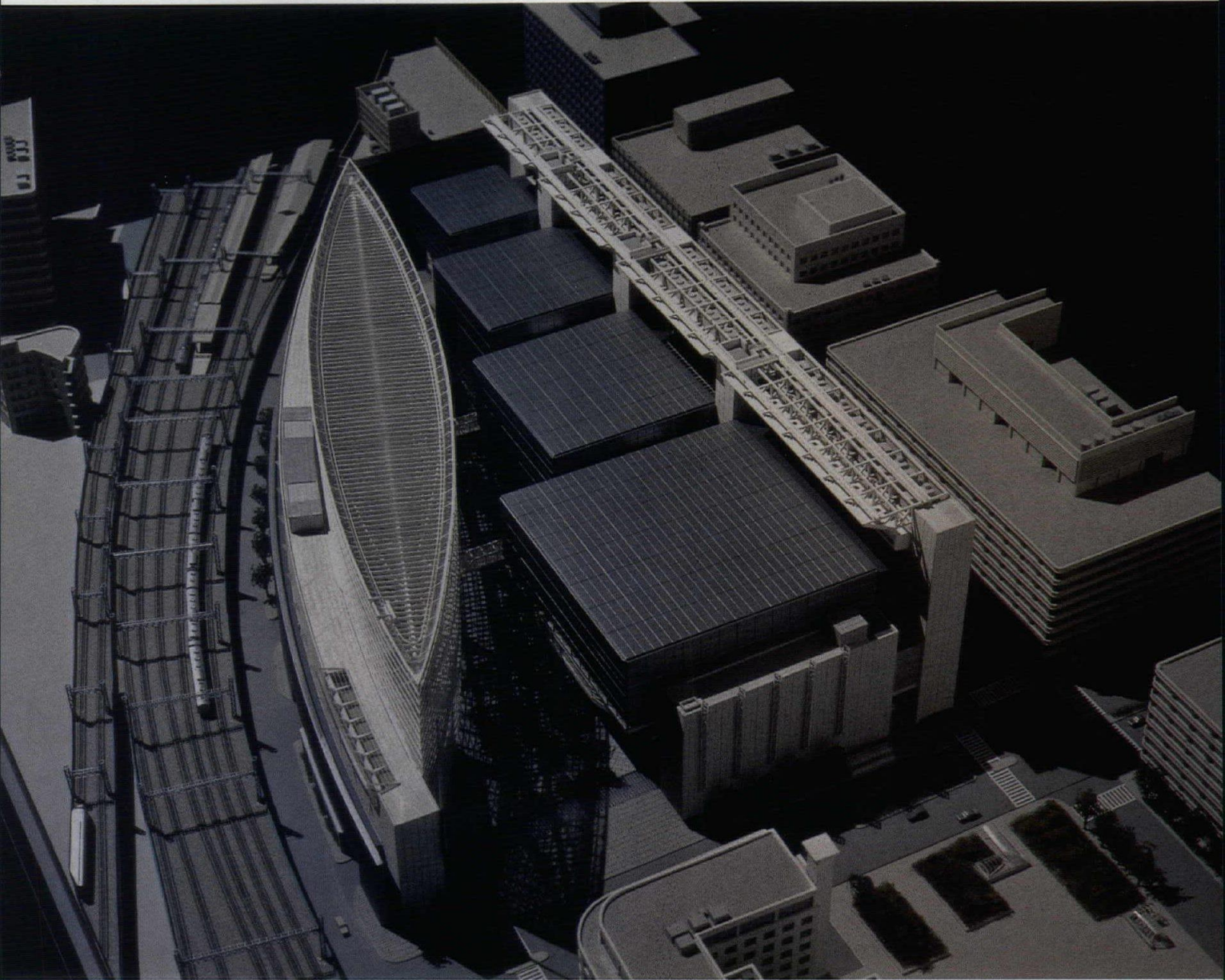


Early concept sketches (3, 4) show how the footprints of the four theaters specified in the competition program were organized to generate an initial parti that has been carried through with remarkable fidelity. The extensive conference spaces required in the program are stacked along the railroad side of the site to form one curved side of the grand lobby, which acquired the name Glass Hall after the decision to clad all its exposed walls and its roof in clear glass (6). A sketch section (5) shows the volume of the largest

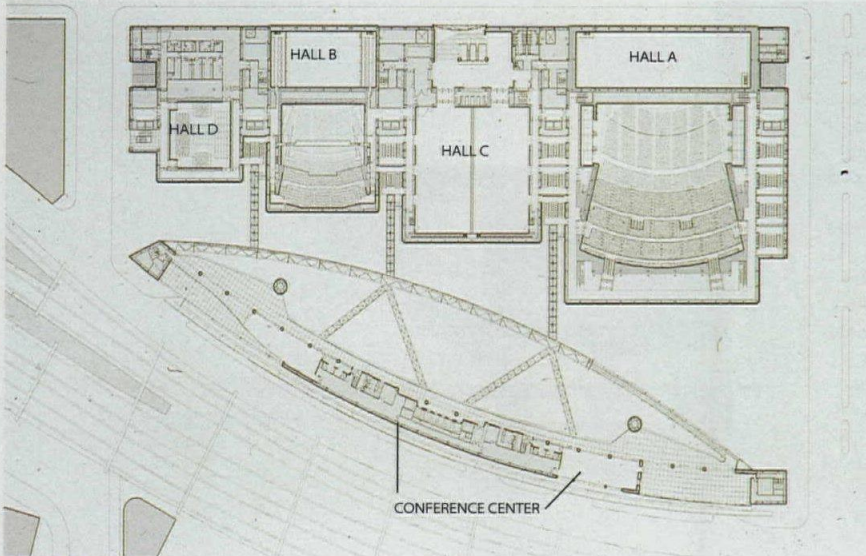
theater facing the Glass Hall across a funnel-shaped plaza that will serve as a much needed pedestrian route between major transit stations and surrounding office destinations; the plaza narrows and widens as it runs along the serrated line of the theaters, and it extends irregularly underneath them. The complex's long stagehouse wall (right in model), though interrupted by various entrances and elegantly detailed, will nevertheless present a massive barrier to the street and facing buildings.



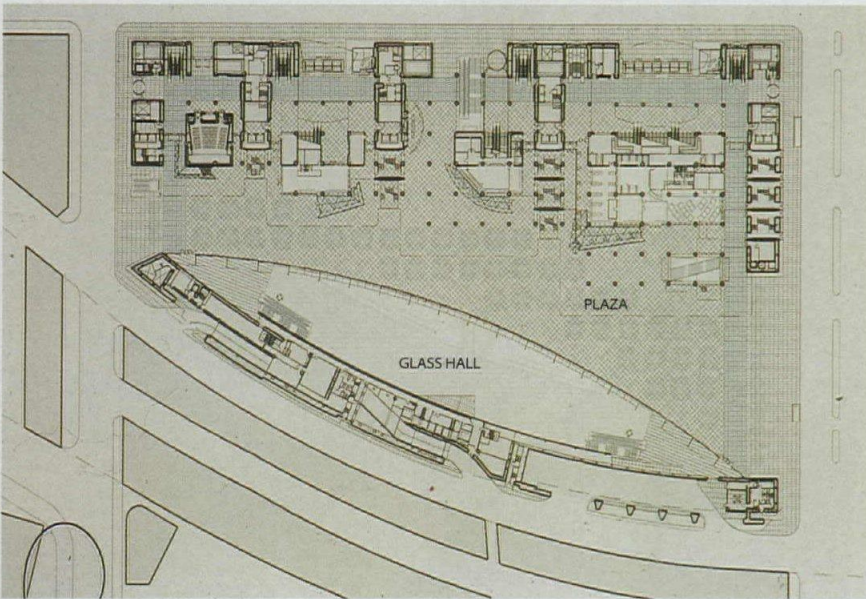
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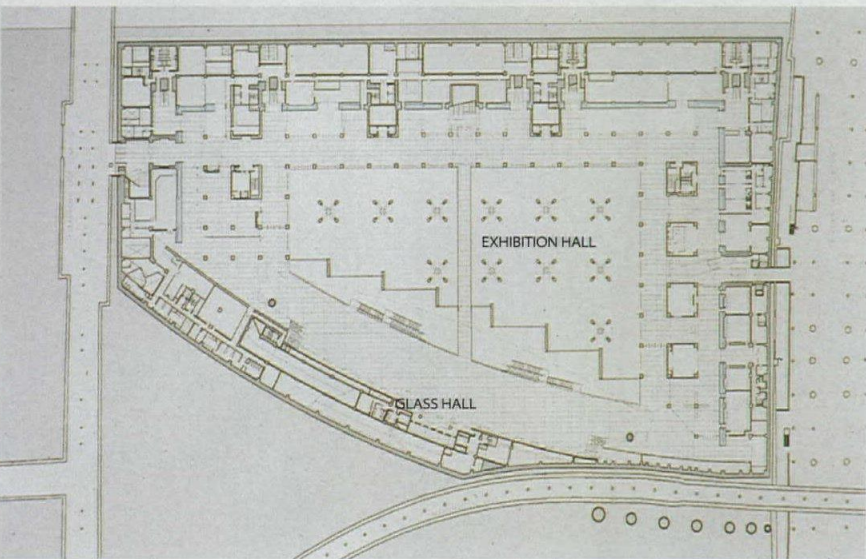
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THEATER LEVEL PLAN



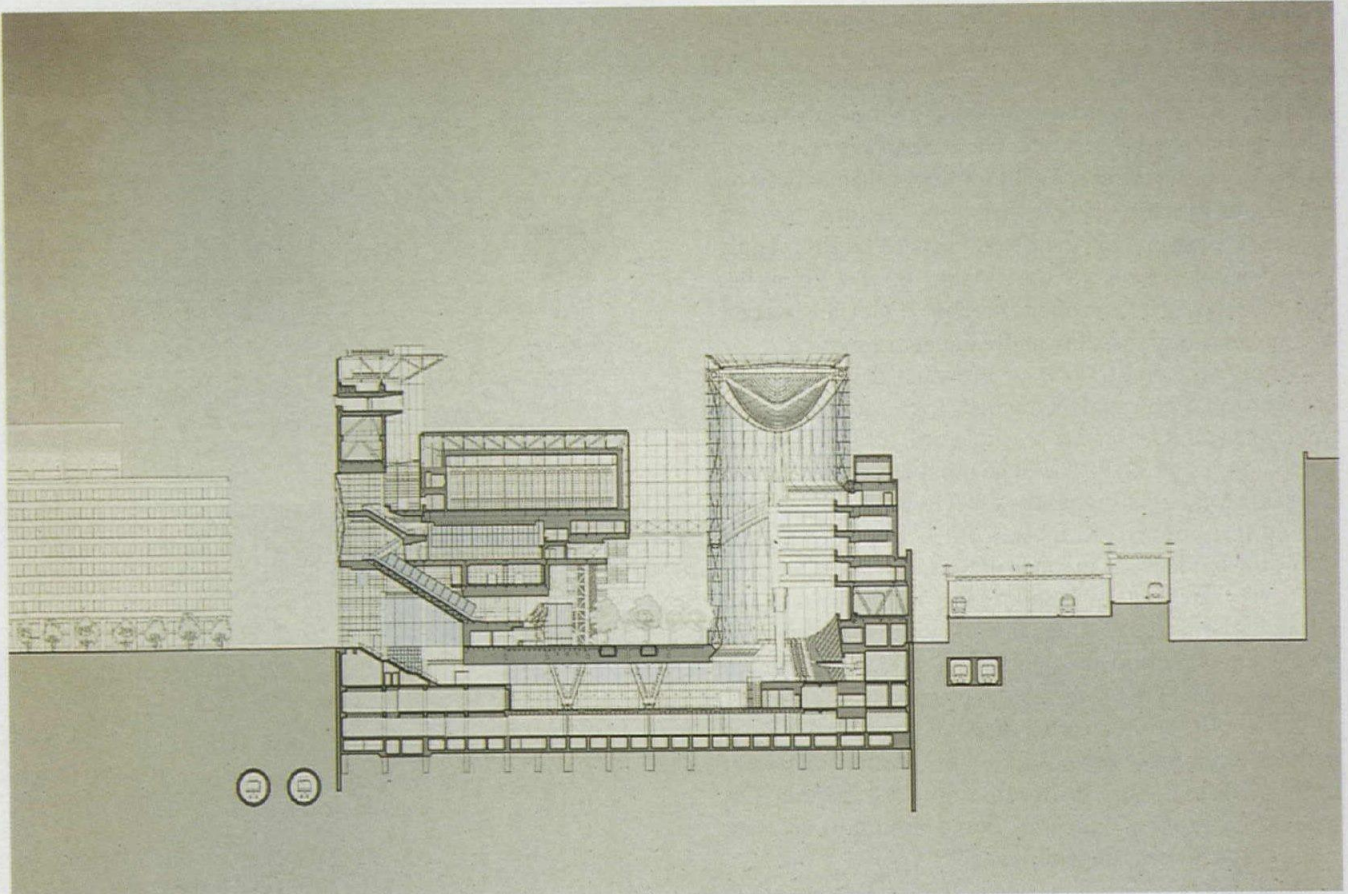
PLAZA LEVEL PLAN



CONCOURSE LEVEL PLAN

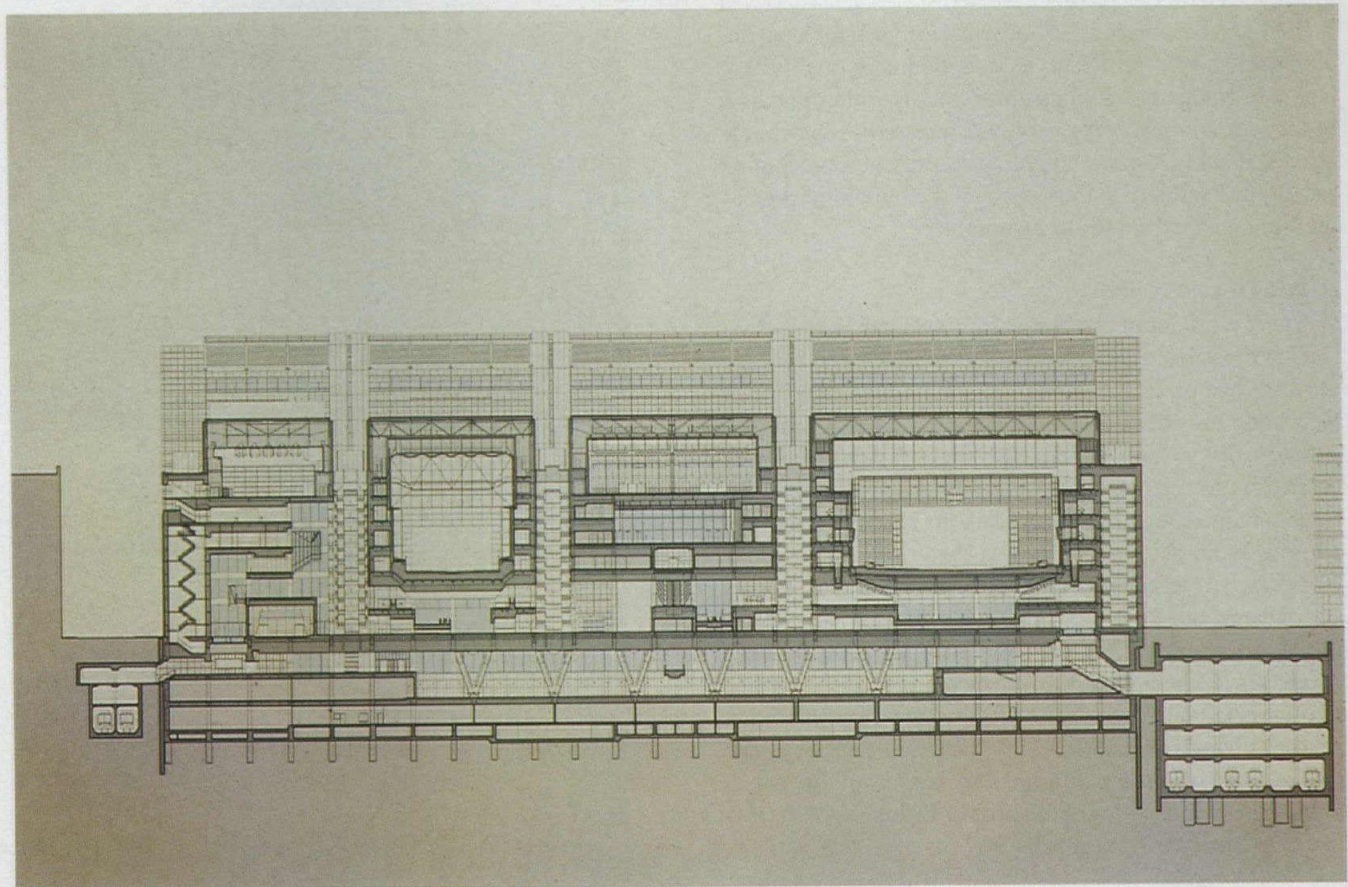
N → 100/30m

Detailed presentation drawings show the organization of the complex's programmatic elements. Arrayed along the west side are the theaters, which are identified in order of programmed size, not location: Hall A is a 5,000-seat multipurpose theater, with the largest stage in the city; Hall B is a 1,500 theater specifically for musical theater, but also appropriate for conferences; Hall C is a black box with variable seating for such events as conferences and fashion shows; Hall D is the smallest theater, with variable seating for theatrical performances and conferences. All of the theaters will "float" within their structural supports to minimize the effects of subways and busy streets. Building volume beneath and around the theaters will accommodate theater support spaces, educational facilities, and cultural information services; an observation deck will top this portion. The theaters are connected to the Glass Hall by a series of bridges, which link them to restaurants and other facilities there, but are not their sole entrances. Extending beneath the intervening plaza is a vast exhibition hall. Hugging the east side of the Glass Hall and presenting a windowless wall toward the main railroad line is a curved structure, which houses the conference center, the administration, restaurants, and other related functions.



SECTION LOOKING NORTH

100/30m



SECTION LOOKING WEST

100/30m

(continued from page 70) way the collaborative attitude extends to every last worker on the site. This is due at least in part to the *esprit* engendered by the assemblies with calisthenics that start each work day and by the “functional” music piped into the work site. The atmosphere of solidarity is also bolstered by some more-than-token efforts: on Fridays, for instance, it’s the management’s turn to sweep up. Since everyone on the site expects to be thoroughly briefed on the design and construction process, Viñoly has had to explain the logic of his building at morning worker assemblies, a responsibility undreamt of in America.

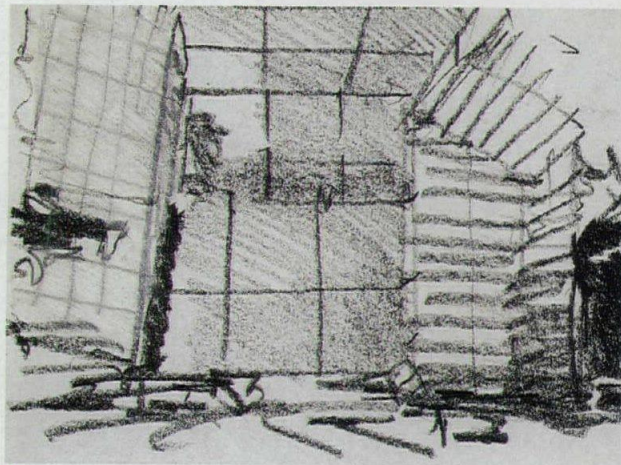
Viñoly also points to ways in which the managerial burden of the process is lightened. Even for a project of this size, there is no master schedule, and no staff committed to administering it. The huge number of construction workers on the site – typically 2,000 to 3,000 – have been smoothly administered by subcontracting with master workers who deliver van loads of 6 to 12 workers in their craft every day and take responsibility for their work, and through whom all pay is funneled. Dealing with a few hundred of these dependable middlemen reduces the burden of hiring and deploying the hordes of workers involved.

Perhaps the greatest virtue of their system, says Viñoly, is that design professionals and construction managers cannot isolate themselves from the process, as they can here. Their process “may look like collusion to us,” says Viñoly, “but it works incredibly well!”

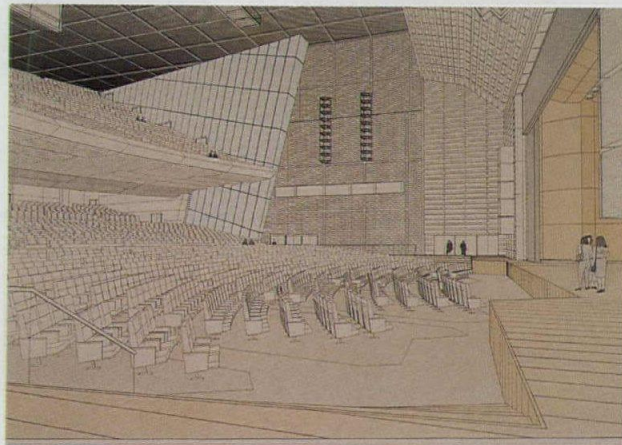
While impressed with the Japanese construction industry, Viñoly is quick to point out that some U.S. subcontractors involved on this project have performed at least as well as their local counterparts. One American sub for a particularly sensitive assemblage set a standard of quality that Japanese companies doing similar work on other portions of the vast complex were very hard pressed to match. He also felt that his American lighting consultant was bringing exceptional subtlety to this aspect of the building, whereas the Japanese tend simply to “overlight.”

**What Tokyo Is Getting**

There is no doubt that this vast project has had much to teach Viñoly and the staff members who worked for him on this huge project and, at their peak, numbered 220 in New York and 30 in Tokyo. What will the clients and the people of Tokyo have gained when the complex opens next year? Comparing it to the products of other open international competitions, this is unlikely to become the international symbol for its city, as Jørn Utzon’s opera house did for Sydney, or to herald a new architectural era for its city, as did Piano and Rogers’s Centre Pompidou for Paris. What the highly responsible jurors for this Tokyo competition chose was a scheme that transformed a complex program into a formal statement of great clarity yet was for the most part sensitive to the needs of its urban context. They could also tell from the competition entry that its authors could handle the complexities of the project with great skill, and that has clearly been the case. □



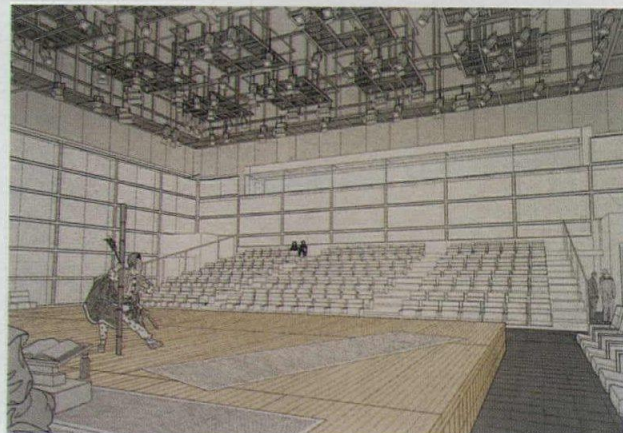
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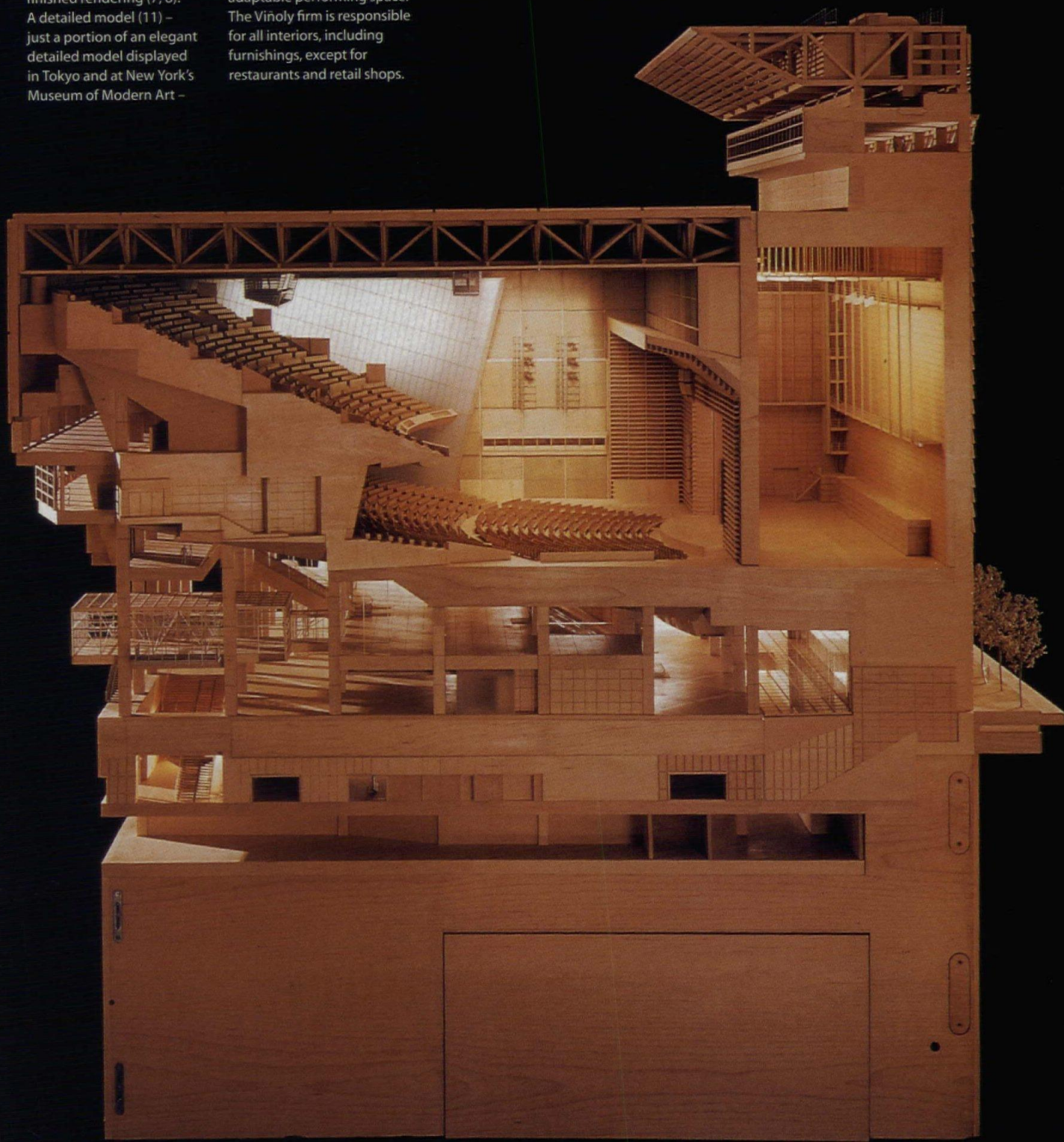
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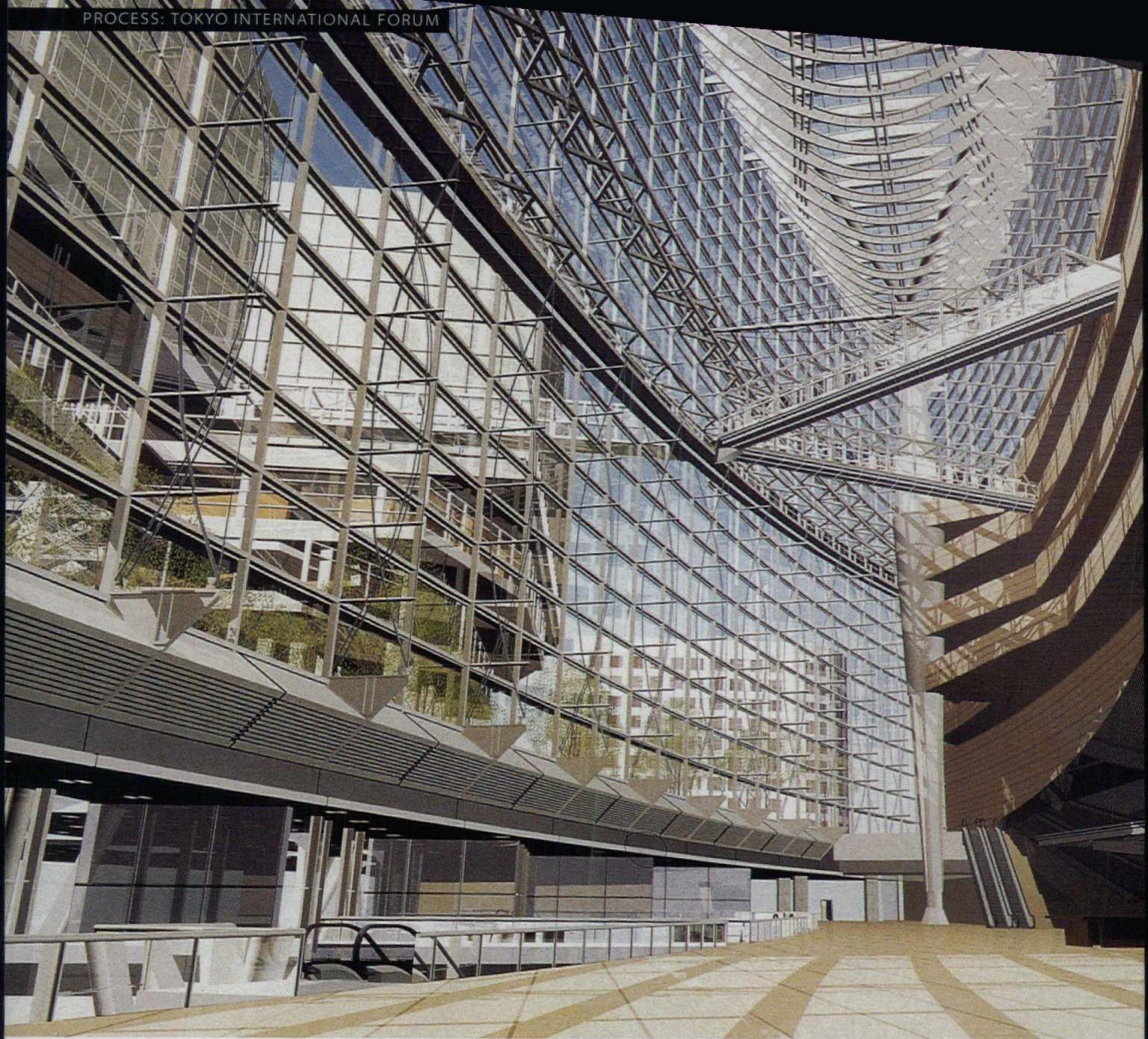


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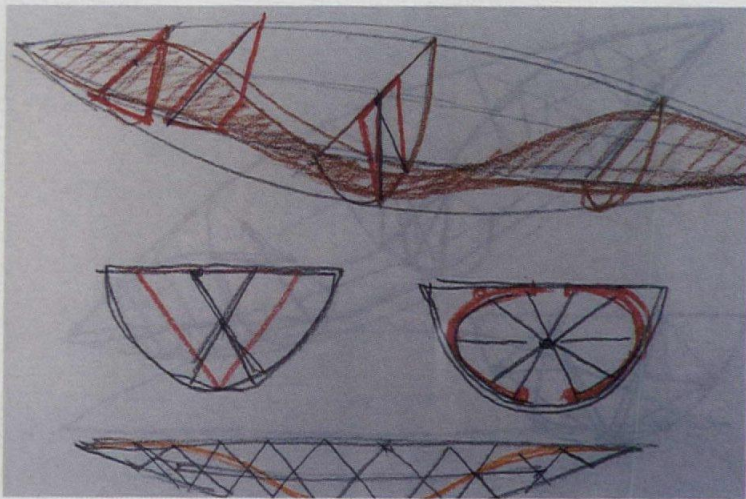
While they appear as Minimalist boxes on the exterior, the theaters are the most intricate and demanding portions of the complex in terms of design. The development of the Hall A design is illustrated in Viñoly's initial sketch and finished rendering (7, 8). A detailed model (11) – just a portion of an elegant detailed model displayed in Tokyo and at New York's Museum of Modern Art –

shows half the theater and the support and circulation spaces beneath and around it. A recent construction view (9) shows its key elements emerging within a grid of steel framing. By contrast, a rendering of Hall D (10) shows a more intimate, adaptable performing space. The Viñoly firm is responsible for all interiors, including furnishings, except for restaurants and retail shops.

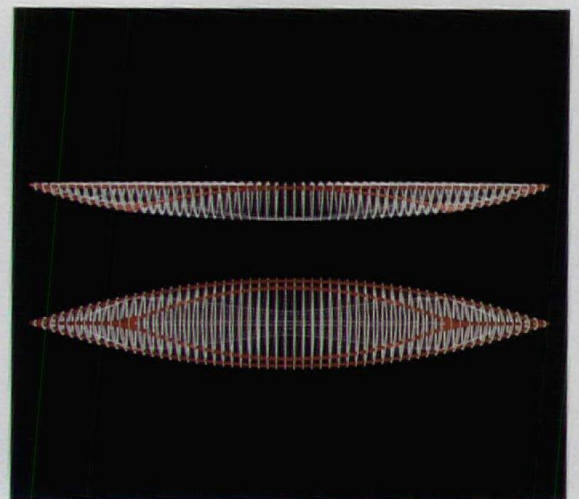




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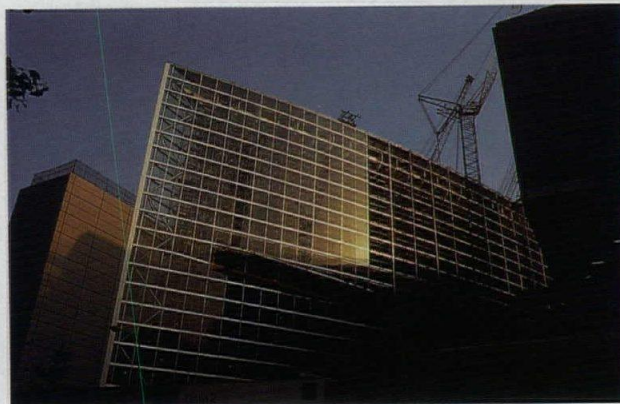


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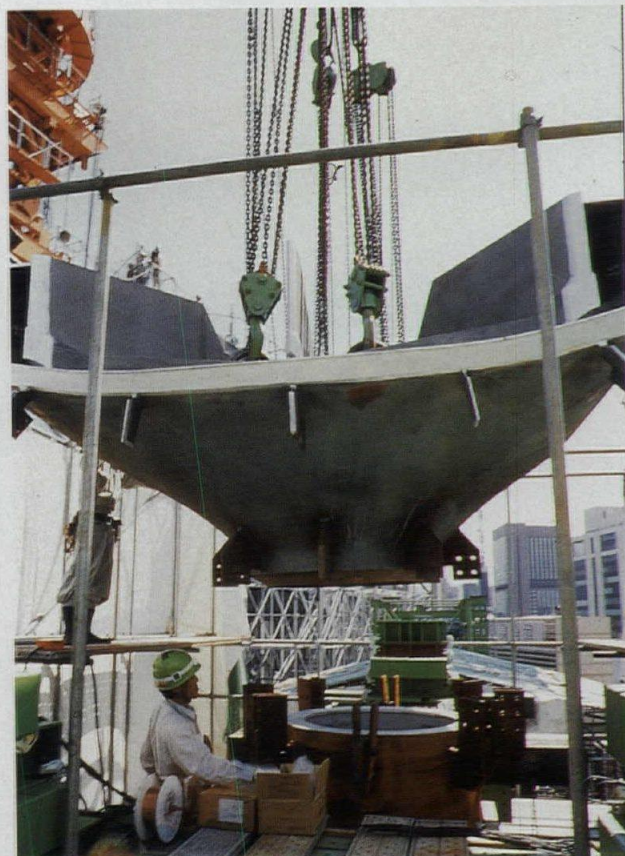


As the Glass Hall takes shape, Viñoly finds it even more vast than suggested by computer renderings (12), an effect he attributes to its "double forced perspective." The architects' early sketches proposed a long-span roof over this space (13) to free the interior and the envelope of columns. The architects and structural consultants developed this into an elegant structural system (14) with compression elements crossing the space and tension members threading through from end to end (17). The scale of the structure is suggested by a view of the cap being placed on one of the roof's two supporting columns (16). The 240-foot-long roof was actually constructed on scaffolding at a higher level, then lowered onto these columns as stress gauges monitored the process. During the design period, improvements in fireproofing technology allowed for coatings on the hall's steel framing members to become thinner. The glass curtain wall that now encloses the hall (15) had to be carefully engineered to meet seismic codes, and Viñoly feels the project will prove glass to be as safe as any cladding.

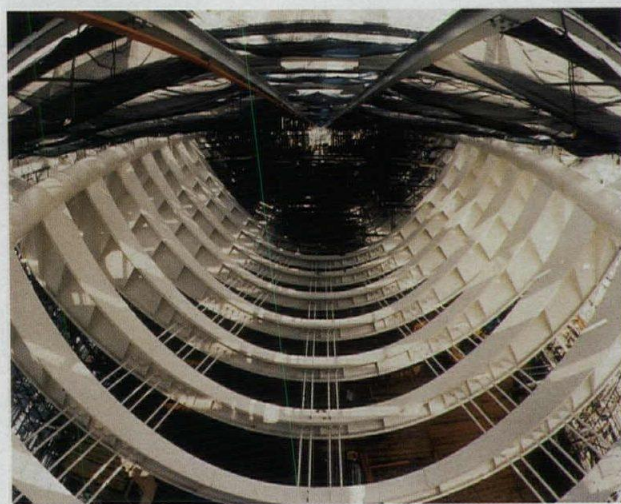
**Project:** Tokyo International Forum, Tokyo.  
**Architects:** Rafael Viñoly Architects, New York.  
**Associate Architects:** Masao Shiina Architects; GKK Architects and Engineers  
**Consultants:** Structural Design Group, structural engineers; P.T. Morimura & Associates, mechanical and electrical engineers; Theater Workshop, theater consultants; Jaffee, Holden, Scarborough Acoustics and Yamaha Acoustical Research Laboratory, acoustics; Lighting Planners Associates, lighting; John Van Deusen & Associates, vertical transportation; ALP Designers, landscape architects; Futabo Quantity Surveyors and ES Associates, quantity surveyors; Boundary Layer Wind Tunnel Laboratory, wind tunnel laboratory.  
**Photos:** Courtesy Rafael Viñoly Architects, New York.



15



16



17

# Modernism's Latterday Heroes

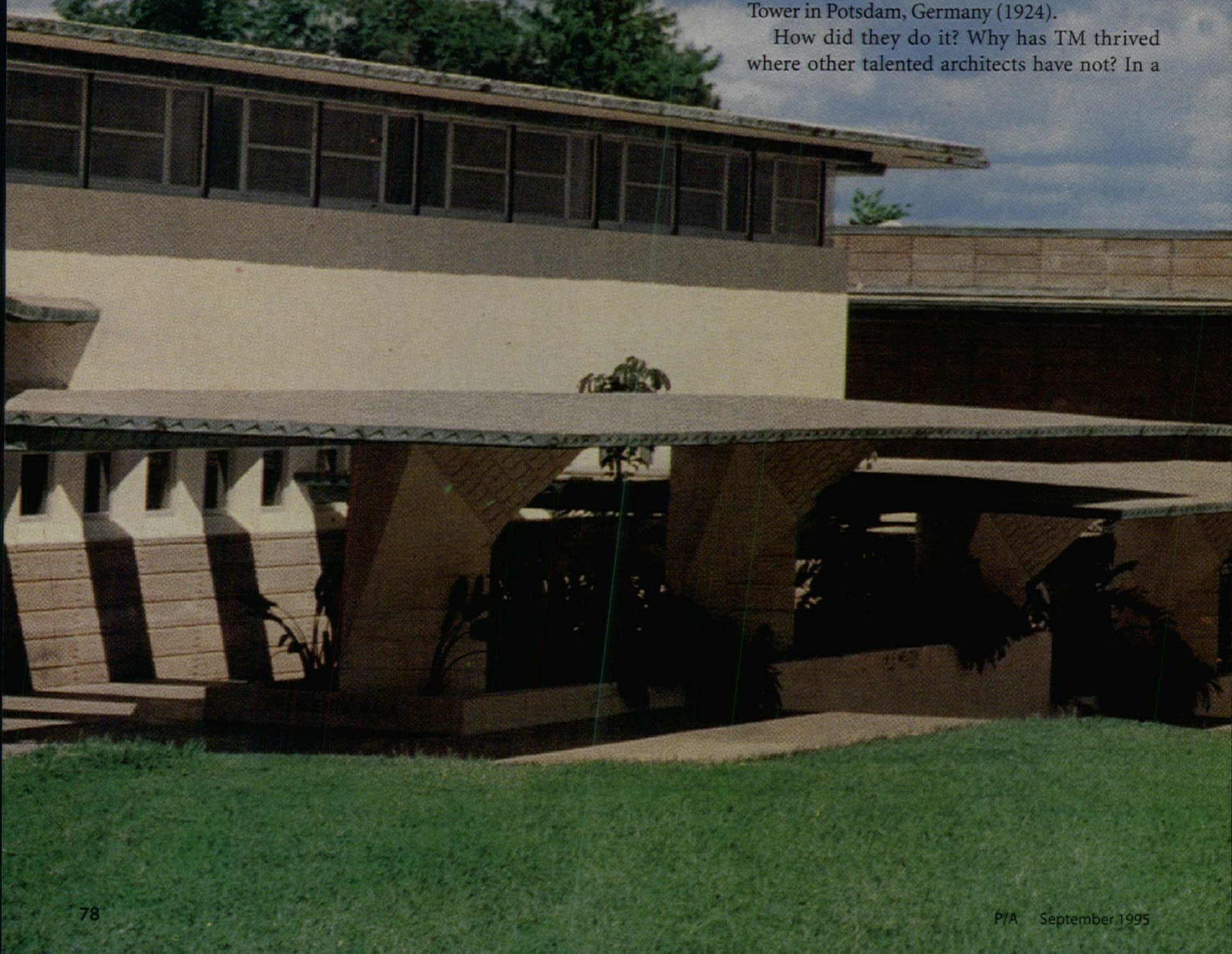
The London firm of Troughton McAslan is coming to the rescue of an impressive array of Modern landmarks, propelled by gutsy initiative, teamwork, and shrewd tactics.

by Ziva Freiman

If anybody still needs proof that being proactive can "grow" a practice, Troughton McAslan (TM) provides it in spades. The way the firm has carved a niche in the adaptive restoration of Modern landmarks is particularly instructive. From relatively humble beginnings converting industrial properties to new uses in the early 1980s (P/A, April 1990, p. 94), Jamie Troughton and John McAslan are now involved in some of the most desirable restoration projects on two continents (while continuing to do a good deal of diverse new construction as well).

In London alone, they have on the boards the restoration of Charles Rennie Mackintosh's last building at 78 Derngate (completed in 1916), the phased restoration of Wells Coates's pioneering Isokon Flats (1934), and, beyond the Modern *oeuvre*, a masterplan for restoring and extending Robert Adam's Royal Society of Arts (1770). Shown here are three of the most prominent works: Frank Lloyd Wright's West Campus for Florida Southern College in Lakeland (1941–1958); the De La Warr Pavilion in Bexhill, England, by Erich Mendelsohn and Serge Chermayeff (1935); and Mendelsohn's Einstein Tower in Potsdam, Germany (1924).

How did they do it? Why has TM thrived where other talented architects have not? In a





nutshell, the firm's success can be attributed to multidisciplinary teamwork, long-term strategy (applied in-house and in the service of clients), and the sheer gumption to create opportunities where none existed before.

### Risk and Reward

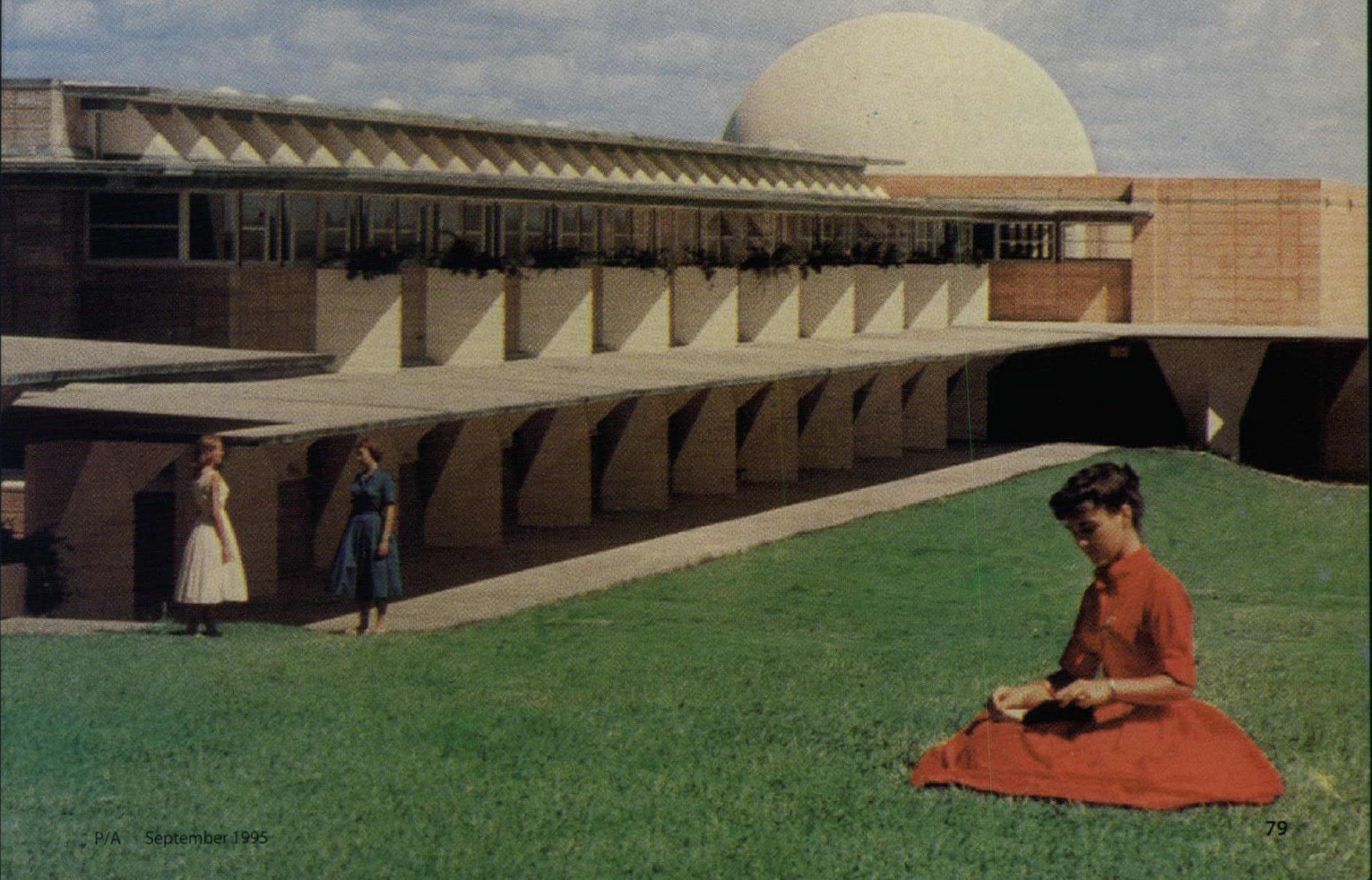
TM's strategic approach to generating work is based on having a broad base of expertise: a longstanding collaboration with Ove Arup and Partners backs up the firm's own strengths in materials research, project management, and engineering. McAslan has also become something of a whiz at finding money - helping owners to negotiate a maze of grants and matching-fund mechanisms. TM's canny instinct for prioritizing work comes in handy, too, whether in drawing intimidated clients into vast restorations by starting small (as happened at Florida Southern, see sidebar, p. 80), or opting to spend money where it would have the most visible impact and so generate more funding (as in the phased refurbishment of the De La Warr Pavilion, see sidebar, p. 82). Not least, the architects (together with Arup) offer clients crucial tactical guidance on the landmarks' life-cycle maintenance and long-term use.

Operating this way requires architects to take certain risks. At Florida Southern College, for instance, the initial study of the concrete block Wright used throughout the campus was conducted by TM and Arup without the assurance of fees. But the investment paid off: the College, impressed, gave the go-ahead for subsequent work on an ambitious scale.

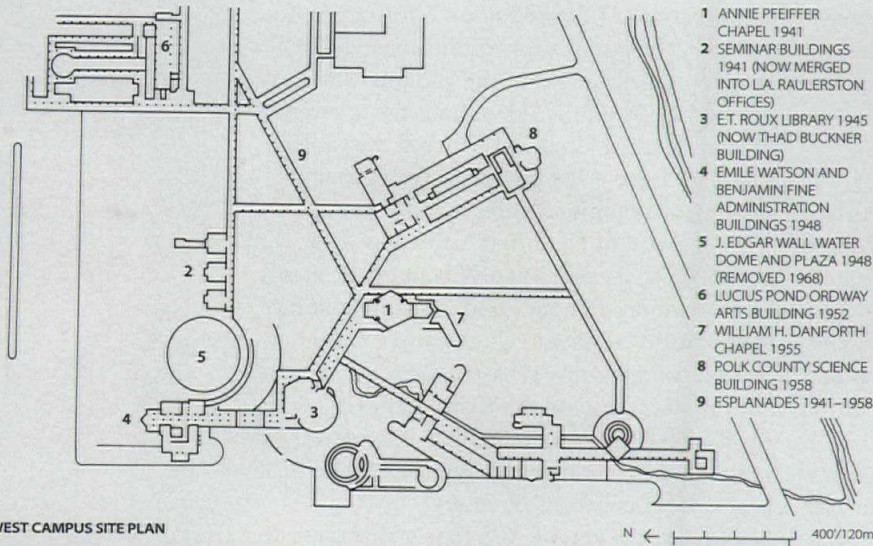
"We can't put a dollar value on what we get out of it," says McAslan. No doubt, the architects are doing a public good - saving buildings that should be saved. But beyond the satisfactions of altruism, McAslan recognizes other abiding benefits for the firm. "Working with Mackintosh, Coates, Mendelsohn, and Wright buildings is introducing a significant theoretical base to our new work," he asserts.

However reverent, the firm's approach to Modern landmarks is fundamentally adaptive, McAslan emphasizes. "We balance our commitment to protect the substance and archeology of the original work with our belief in the power of intervention, and our lack of inhibition to adapt fabric or replace services as part of the building's life cycle." Troughton McAslan's attitude, with its implicit belief in progress, sets the practice apart from a field traditionally reactive, and hidebound by a deep distrust of change.

A (somewhat romantic) view, circa 1950s, of the Polk County Science Building, used in the prospectus of Florida Southern College advertising the West Campus by Frank Lloyd Wright.



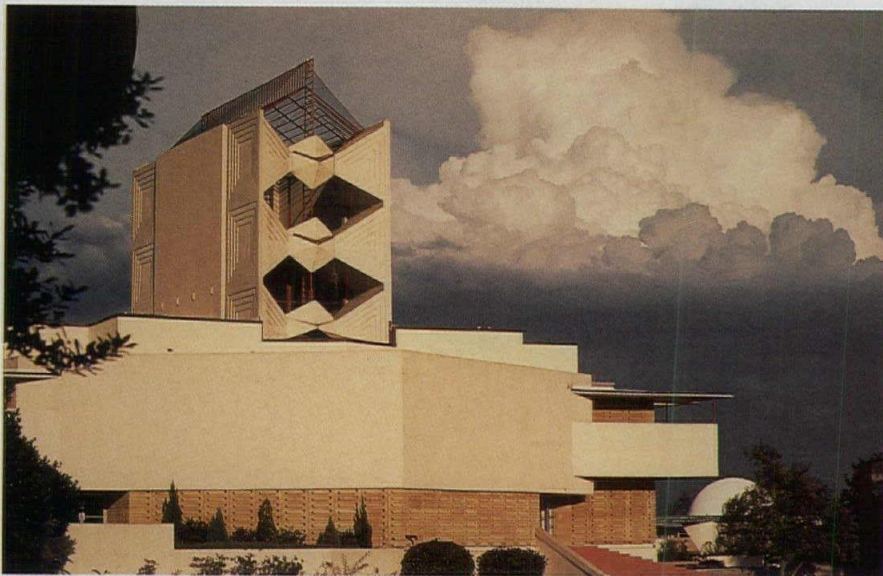
Courtesy: Florida Southern College



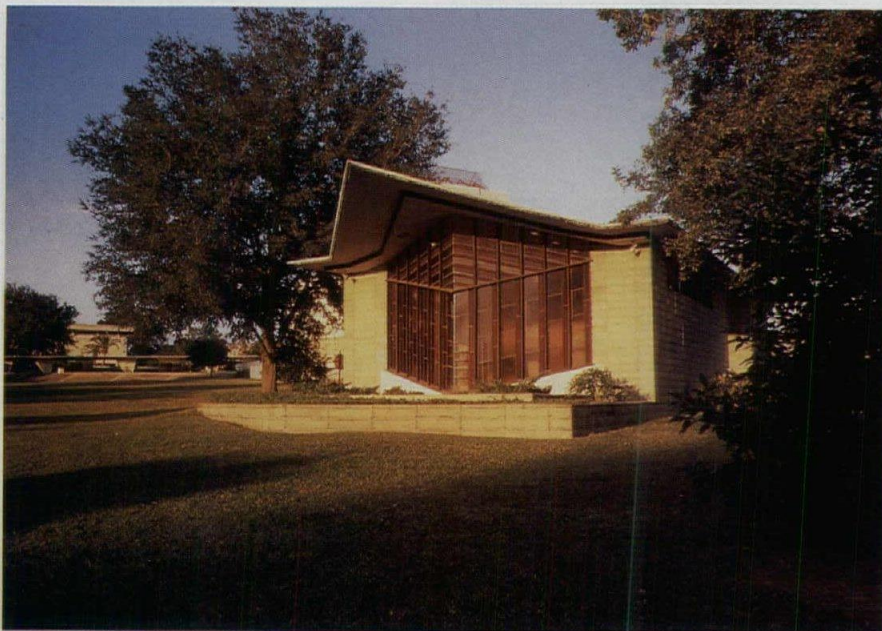
## Florida Southern College

With 11 buildings, linked by esplanades, the West Campus at FSC constitutes the largest single-site concentration of Wright structures. Most of them suffer from material decay and weather-related problems; many have also been adulterated by insensitive modifications. The College, John McAslan recalls, "greatly respected their extraordinary resource, but didn't quite know how to maintain it." McAslan and John Figg of Arup, perceived that the best way to set the daunting restoration in motion was to begin with something very basic and immediately useful. Following a visit to Lakeland in 1993, they *speculatively* produced a study of the reinforced concrete "textile block" Wright had used throughout (much of it made on-site), which had decayed badly. They approached the College with specific advice as to why the material had deteriorated, and what opportunities there were for its repair and replacement.

Their initiative led to a second phase, underwritten by an anonymous private donation of \$75,000, and matched by a Florida State Preservation grant. In addition to a more thorough analysis of the blocks and alternative replacement and repair techniques, the second phase yielded a detailed survey of the Polk County Science Building, including a prioritization study of repair options. Ever resourceful, McAslan enlisted students from the University of Plymouth to carry out a measured survey of all the buildings, while Arup produced a comprehensive life-cycle maintenance study as the foundation of a strategic maintenance regime. The third phase, approved to begin this month, will consist of a masterplan, to be produced in association with local architects Lunz & Associates.

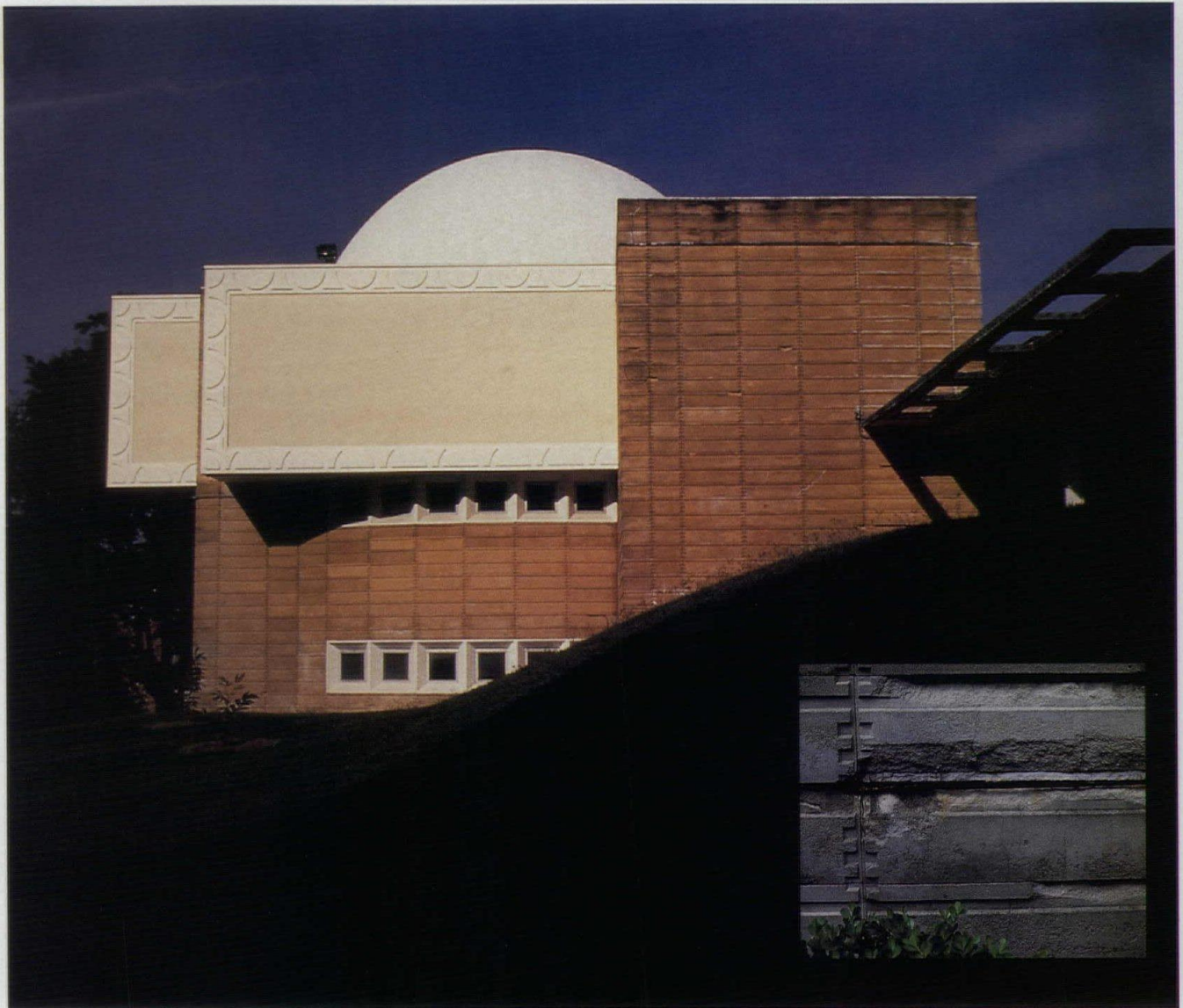


ANNIE PFEIFFER CHAPEL (ABOVE), ESPLANADES (TOP RIGHT), ALL PHOTOS THIS PAGE: CURRENT CONDITION.



DANFORTH CHAPEL

Photos these two pages: courtesy Troughton McAslan and Ove Arup & Partners



POLK COUNTY SCIENCE BUILDING IN ITS CURRENT CONDITION. INSET: DETAIL OF TEXTILE CONCRETE BLOCK DECAY

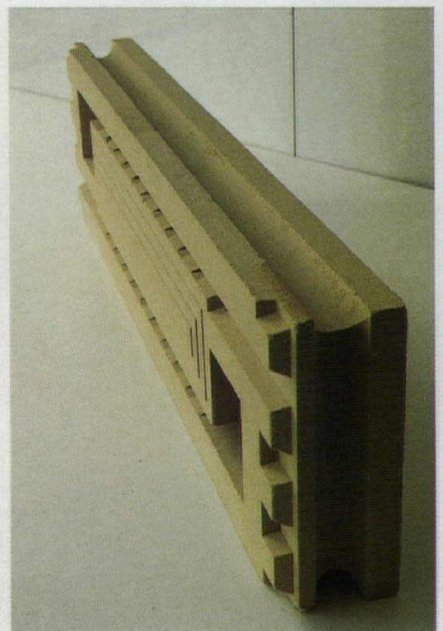


Courtesy: Florida Southern College

TEXTILE CONCRETE BLOCKS BEING MIXED ON SITE, circa 1940s

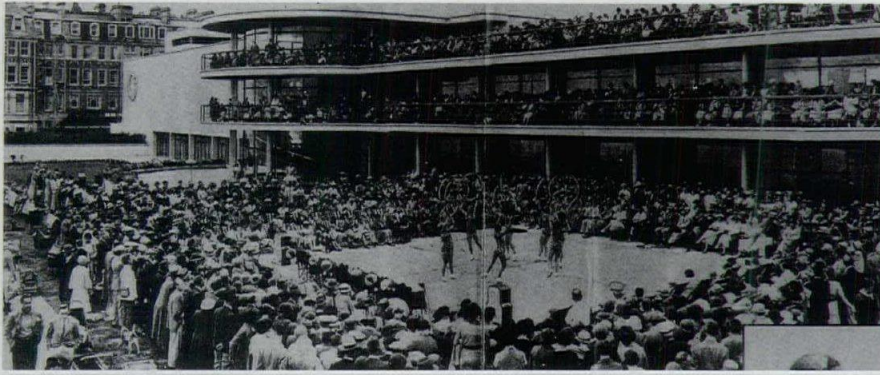


ORIGINAL FORMWORK FOR CORNER BLOCKS

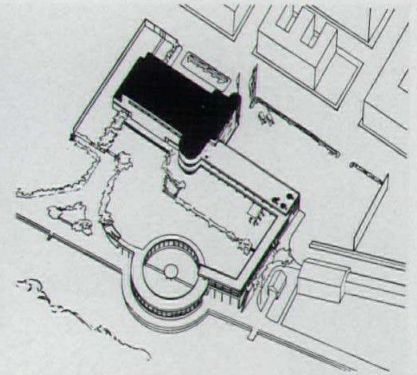


REPLACEMENT BLOCK PROTOTYPE

Courtesy Troughton McAslan and the Pavilion Trust



DE LA WARR PAVILION AT THE TIME OF ITS OPENING, 1935



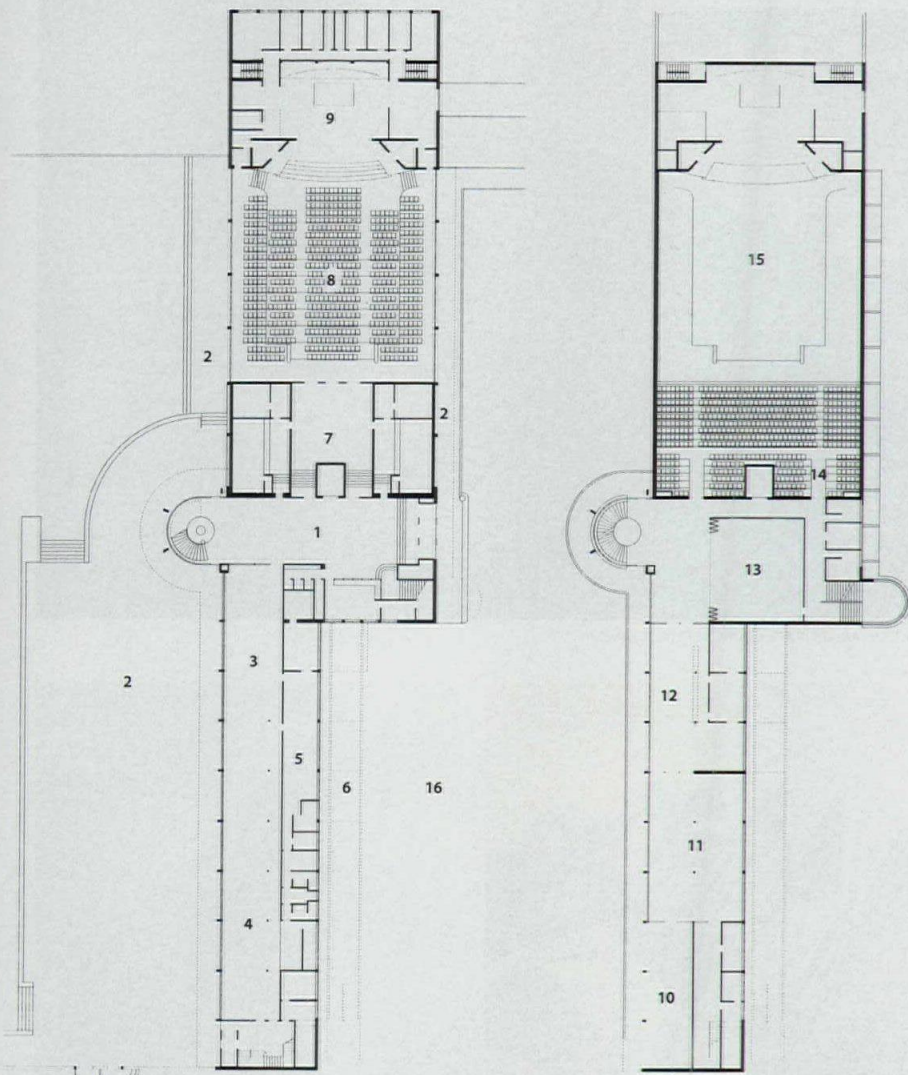
SITE AXONOMETRIC BY MENDELSON & CHERMAYEFF

## De La Warr Pavilion

Considered the crowning achievement of Mendelsohn's five-year stay in England, the De La Warr Pavilion in Bexhill-on-sea had become over the years underused and decayed as a result of insensitive alterations, and a lack of preventive life-cycle repairs particularly crucial in its seaside environment. In 1992, Troughton McAslan were appointed by owner Rother District Council and the De La Warr Pavilion Trust to prepare a strategy for the building's long-term use. This led to the Phase I repair and restoration of the building's external fabric (see Selected Detail, p. 100). The restoration work and a maintenance plan for future repair cycles were funded by a substantial grant from English Heritage.

In 1994, TM developed its proposals into a phaseable five-year strategy for the complete internal and external restoration of the building. In the newly completed second phase, TM prioritized the restoration of important public interiors – the former conference room, the bar/lounge and the library – with a mind to generating support for future phases. The architects were instrumental in pursuing grants from the European Commission Heritage Fund, triggering matching awards from the Sports and Arts Foundation, and going after £4 million in National Lottery funds for the remaining phases.

To forestall a future space crunch, TM is proposing in Phase V the construction of a linear two-story extension to run along the north façade. Whether or not the extension is implemented, the firm is bent on doing more for the De La Warr Pavilion than just propping up the venerable structure: the architects envision new arts and education uses, which would considerably enhance the building's viability.



FIRST FLOOR PLAN

SECOND FLOOR PLAN

N → 40/12m

- 1 ENTRANCE HALL
- 2 TERRACES
- 3 RESTAURANT
- 4 CAFETERIA
- 5 KITCHEN
- 6 SITE OF PROPOSED EXTENSION
- 7 FOYER
- 8 AUDITORIUM
- 9 STAGE
- 10 SUN PARLOR
- 11 ELIZABETH ROOM (FORMER READING ROOM, NOW REFURBISHED)
- 12 LOUNGE (AND BAR, NOW REFURBISHED)
- 13 EDINBURGH ROOM (FORMER CONFERENCE ROOM, NOW RESTORED)
- 14 AUDITORIUM GALLERY
- 15 OPEN TO BELOW
- 16 CAR PARK

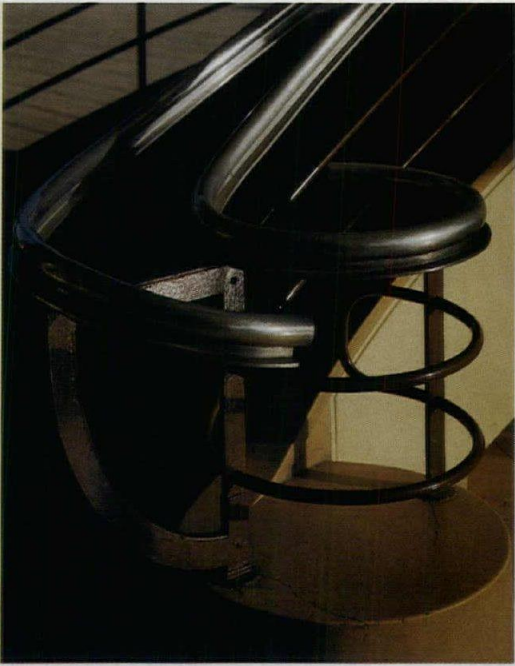


RECONSTRUCTED BALCONIES AND TERRACE ON SOUTH SIDE



VIEW OF RESTORED PAVILION FROM SOUTHWEST

Photos this page: Peter Cook



Peter Cook

DETAIL OF RESTORED SOUTH STAIR BANISTER



Peter Cook

RESTORED SOUTH STAIR AND PENDANT LIGHT



Robin Barton

THE BAR PRIOR TO RESTORATION



Peter Cook

THE LOUNGE AND BAR AS RESTORED

**Project:** West Campus of Florida Southern College, Lakeland.  
**Client:** Florida Southern College (Dr. Thomas Reuschling, president; Terry Dennis, business manager).  
**Original Architect:** Frank Lloyd Wright.  
**Restoration Architects:** Troughton McAslan, London (John McAslan, Adam Brown).  
**Consultants:** Ove Arup and Partners, London and New York (John Figg, Kendrick White, Lian O'Hanlon).  
**Associate Architects:** (masterplan: Lunz and Associates, Lakeland).

**Project:** De La Warr Pavilion, Bexhill-on-sea, England.  
**Original Architects:** Erich Mendelsohn and Serge Chermayeff.  
**Client:** Rother District Council and the De La Warr Pavilion Trust.  
**Restoration Architects:** Troughton McAslan, London (Jamie Troughton, John McAslan, Hugh Broughton, Adam Brown, Murray Smith, Shigehiko Ohira).  
**Consultants:** Rybka Battle, services; FJ Samuely & Partners, structural.  
**General Contractor:** R. Corben and Son.



VIEW OF TOWER FROM NORTHWEST, circa 1983

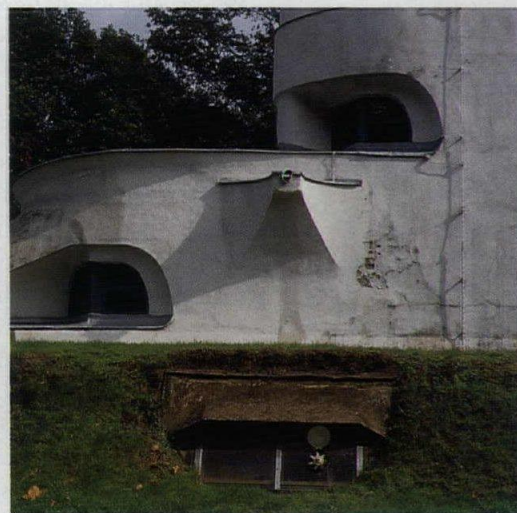
Photos this page: courtesy Troughton McAslan

## The Einstein Tower

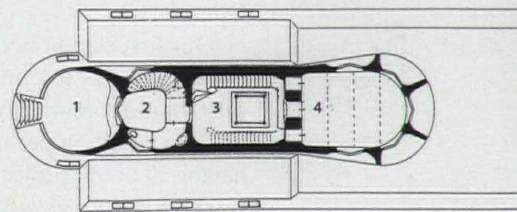
At the behest of Mendelsohn's daughter, Esther, John McAslan went to Potsdam to evaluate the condition of the iconic expressionist *Turm* conceived by Mendelsohn in his famous fantasy sketches of 1917.

Originally created for Albert Einstein's astrophysical research, the building is still used as a solar observatory. McAslan reports that despite the tower's continual use, the building fabric (primarily rendered brickwork) is now decaying, with no major repairs having been undertaken since its refurbishment following bomb damage in 1945. Supported by an anonymous donation, TM, with Ove Arup and Turner Townsend Project Management, produced a preliminary condition analysis of the building, based on site visits and samples extracted in the fall of 1993. The report is part of a three-stage strategy for a comprehensive restoration.

The status of the project is "unclear," McAslan says. The report has been presented to the Brandenburg Ministry, although now that the tower has been transferred to the Einstein Astrophysical Institute, there are better chances for further grants.



DETAIL OF WEST FAÇADE AS IT EXISTS TODAY



FIRST FLOOR PLAN

N ← 20'/6m

- |                      |               |
|----------------------|---------------|
| 1 ENTRANCE           | 3 TOWER STAIR |
| 2 TOWER OFFICES/LABS | 4 WORKROOM    |

Architects are still struggling with the stigma of "CAD Operator."

Here's how one firm broke the caste system and integrated CAD throughout the office.

by Michael McLaughlin

# There's No Such Thing

Like many firms, Flad & Associates began to invest in CAD computers in the early 1980s. However, while we spent a great deal of money on these computers, we did not really believe CAD to be a useful tool. The clearest indication of this disbelief is what I call "CAD Operator's Syndrome." This syndrome manifests itself in a number of ways. "CAD Operators" needed "CAD Managers," which in our case required a "CAD Department," which, in turn, required a section of our building dedicated to "CAD." When we needed to hire a person to work in this department, we placed an ad for a "CAD Operator." When we billed our services, "CAD Operators" were billed at hourly rates. The absurdity of this became apparent when we asked ourselves if an accounting firm should be billing clients for utilizing "Spreadsheet Operators."

## CAD Untouchables

Using CAD was perceived to be a dead end to a person's career. Therefore, the people we wanted to use CAD, our most experienced architects, did not show any interest. Those people who did use CAD believed they were nothing more than human Xerox machines, putting the paper in the feeder and waiting for the image to come off the printer. CAD users were typically not involved in the decision-making process of projects, they were rarely given the opportunity to try new techniques, and they almost never worked directly with the clients. Was it any wonder people wanted to avoid becoming "CAD Operators"?

Our first step in overcoming CAD Operator's Syndrome was to convince management that they should commit to using computer technology. As a result, upper management set a goal of having all of our projects utilize CAD to produce working drawings within a three-year period. Management not only stated this goal orally, but published it in the firm's long-term strategic plan, thus making it a priority.

Once we received management's commitment, the next step was implementation. We decided to decentralize our CAD department. CAD stations were put with the project team, and our CAD manager was asked to work full time on projects. The CAD manager then helped organize a CAD Steering Committee made up of a cross section of the office, including members of senior management. This committee was (and still is) responsible for developing standards, procedures and training methods, and for identifying new trends in CAD.

## Get a Buddy

One of the most successful processes in our evolution, and one that we still use, is what we call the "buddy system." A person needing CAD training is given our introductory course. That person is then placed on a project that requires CAD work along with a proficient CAD user. With a proficient user sitting close by, the novice wastes no time looking through manuals for answers or making phone calls for help.

We found this system to be very successful for a number of reasons. First, we continually double the number of people in our work force who are CAD-proficient. As each person becomes proficient, he or she becomes a teacher, responsible for training another person. Second, we don't have one person chained to the computer. In the past when only one person on the team knew CAD, that person had to stop whatever he or she was doing and operate CAD whenever a plot was needed, or a change made to a drawing. It is amazing how many people have trained themselves to use CAD after watching the team members produce work quickly and efficiently.

Project managers also should have some level of CAD skill. We believe that project managers should have the ability to call up a computer

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*The author is the former assistant operations manager for Flad & Associates in Madison, Wisconsin.*



# as a CAD Operator

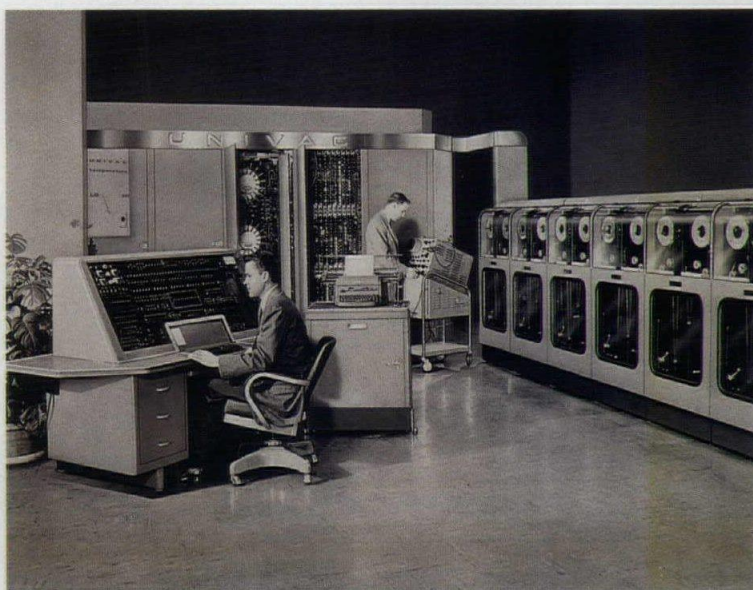
drawing, view the drawing, and if need be, plot it. Project managers need instant access to computer drawings, just as they need instant access to hand drawings to manage their projects efficiently and effectively.

## What We Learned

In the process of becoming CAD literate, we learned many things. Previously, people whose only skill was AutoCAD had been hired. This meant that we employed people we would not otherwise have hired. This is not, was not, and will never be successful. The temptation to hire a person who knows AutoCAD is great when you are trying to get up to speed; however, doing so is essentially inefficient. (Project managers found themselves redoing work, and many of the people we hired were frustrated because they did not understand architectural practice.) Now when we hire, whether or not the person is CAD proficient is not a deciding factor. If they are AutoCAD trained, we appreciate the additional skill; however, if they are not proficient, we train them. The gamut of architectural skills is important.

It's essential for firms to define full-time computer use. In our firm, full-time computer use means a person who utilizes a computer 40 percent of the time. Trying to save money by having people share one computer only causes employees to be frustrated and, in turn, they question the firm's commitment to providing them the tools they need to perform their jobs. The value of any tool is its availability when it is needed. If you have three people struggling to use a computer, you have diminished the value of that tool by a third. It's easy to think that if people could coordinate their schedules, one computer could be used by three people; however, would you consider having three people use the same drafting station? And, believe it or not, drafting stations are almost as expensive as computers.

I would not be honest if I said that overcoming our CAD Operator's Syndrome was inexpen-



Archive Photos

sive. In order to buy the equipment and train the people, we have had to spend much more on technology than we have ever before spent. CAD is a costly endeavor; however, now is the time to invest. Additional hardware can provide the horsepower to run CAD programs, and costs drop daily. Also, you should network your computers. The ability to share information has more than made up for the cost.

## CAD as a Stepping Stone

Overcoming the CAD Operator's Syndrome was not an easy process, but the results have been worth it. In the past, we had to sell people on the idea of having a computer on their desks; now they ask for one. In the past, the CAD operators rarely had client contact or became project managers. Now our young architects and engineers see CAD as a stepping stone on their career paths. After three years of investment, we now get a significant return, which manifests itself in our "bottom line." Most gratifying of all, I can't remember the last proposal that had the term "CAD Operator" in it. □

**In the past, we had to sell people on the idea of having a computer on their desks; now they ask for one.**

Compact disks are making it easier for architects to present their ideas to clients, and to deliver and store project documents. *by B.J. Novitski*

## CD-ROM Technology: Architects Take Charge

### Abstract

By allowing images to be stored and called up at will during presentations, CD-ROM offers architects a new technology for client meetings and other marketing efforts. The large capacity of CDs also allows project drawings, correspondence, sketches, and other materials to be stored on a single disk and called up from any computer station on a firm's network. Architects are also finding CDs useful for the delivery of contract documents and for keeping drawings up to date with revisions.



Over the past five years, the medium of CD-ROM (Compact Disc, Read-Only Memory) has become enormously popular for children's computer games. More quietly, the technology has also benefited the architecture profession. These high-capacity discs, each able to store the equivalent of thousands of images or hundreds of thousands of text pages, have been used to distribute software, databases, and product manufacturers' information. But architects have primarily been the recipients, not the producers, of this information. Now in the past year, the machines that write CDs have become more affordable. The medium promises, by virtue of its sheer capacity, qualitative improvements in the way architects do business.

The advantages are many. At four cents per megabyte, their cost compares favorably with

every other storage medium. Data recorded on a CD is permanent and cannot be modified. In contrast to computer tapes and floppy disks, which are susceptible to electromagnetic erasure and short shelf-lives, CD-ROMs have an estimated life expectancy of 100 years. And easy-to-use software has simplified the formerly difficult task of creating multimedia access procedures to archived data. The technology is still far from widespread within the profession, but already some architecture firms are reaping benefits not available through other media.

Two San Francisco architecture firms, Backen, Arrigoni & Ross (BAR) and Gensler and

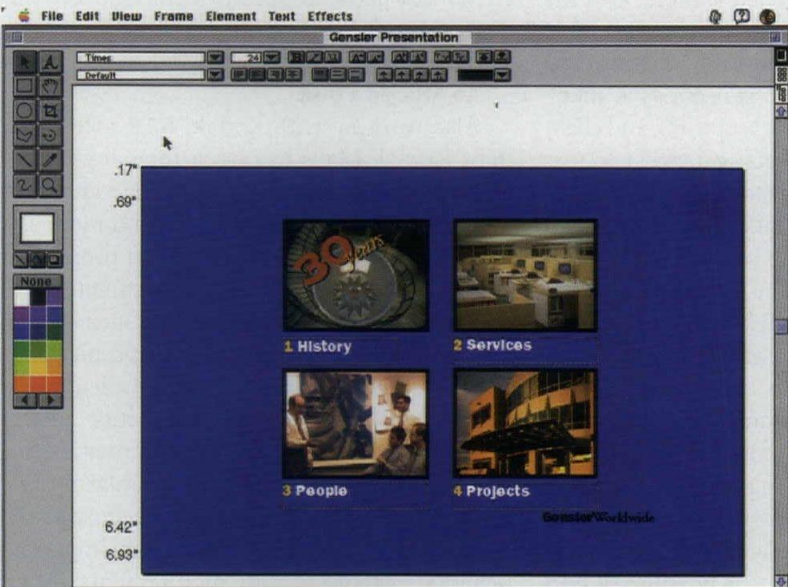
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*The author is a freelance writer in Eugene, Oregon, who specializes in computer-aided design and practice issues. Her Internet address is [bjn@efn.org](mailto:bjn@efn.org).*

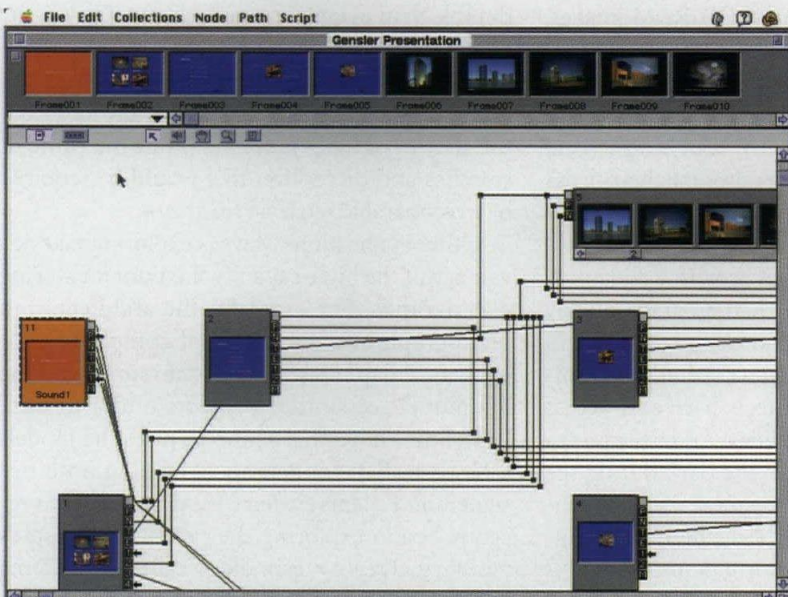


This CD-ROM workstation (facing page) includes a 100-disk capacity "juke box" (at right in photo).

To create printed project sheets, a photograph is digitized, brought into Adobe Photoshop for cropping, and placed in a page layout program, where text is added (left).



A menu from Gensler and Associates' Portfolio CD shows the four main subject areas. Displayed on a computer, an LCD, or a television screen, a menu panel is selected with a mouse or a remote control. The "people" image was taken with a digital camera and loaded directly from the camera's hard drive into the computer, then placed on the menu.



A simple branching layout in Kodak Arrange-It, from which a presentation script can be built. The presentation can be run from a computer or put onto a CD and run from an interactive television.

Associates/Architects, were among a half-dozen design firms selected by Kodak to "test drive" their CD-ROM hardware and software and other digital products. Kodak wanted professionals in fields other than photography to explore the potential of the medium for other applications. During their explorations, Gensler focused on the use of CDs for marketing presentations, and BAR looked at their potential for archiving project information. The results have been mixed. Both firms have found great potential benefit to their practices, while discovering ways that the technology must be further developed before it accommodates fully the architecture profession and its multifaceted data needs.

#### Put on a Show

At Gensler, associate Helen Dimoff, with the Corporate Communications Group, has been putting much of their recent slide archive onto disc. Their slide collection is used, as at many firms, to prepare brochures, proposals, and client presentations. But the collection is so large that it is often difficult for the staff to locate photographs with exactly the right characteristics for a particular purpose. Dimoff selected a few thousand images to begin with, had them scanned onto a Photo-CD by a local service bureau, and then developed an indexing system. With Kodak's Shoebox software, she described each image in terms of its building type, materials, and finishes, and linked that description to an existing database containing additional project data such as design team members, consultants, awards and publications, date, project size, and so on. This database makes it possible to find images according to particular characteristics and to arrange them in sequence for a slide show, although the "slides" are now CD-ROM images. With the Kodak software Create-It, Dimoff developed a multimedia front end to the graphic database so that clients can view an interactive presentation on a computer or television screen.

When Gensler architects present their firm's work during an interview, this technology gives them several advantages. They can present a planned sequence of images as with a slide projector, but it's also easy for them to jump quickly to particular images in response to questions. In fact, if a client raises issues not covered in the initial presentation, the architects have easy access to several thousand other slides. And because the clients do not have to sit in the dark during the presentation, they tend to be more alert and engaged. Dimoff says that such a technique "diminishes the stiffness and the formal quality of presentations, and makes the client feel less like an

audience and more like a participant." In addition, clients are becoming increasingly sophisticated about computers, and many prefer to hire architects who are "ahead of the pack" in their adoption of technology. Dimoff notes that "now, for the first time, the computer is being used as a great visual tool."

Also, she points out, multimedia "authoring" software makes CDs a viable medium for delivering other sorts of information to clients. For example, animations can make the results of analysis reports easier to comprehend. And because this visual language is often a more appropriate vehicle for architects than written reports, ideas can be communicated more clearly and forcefully. Now that the costs of animation, multimedia, digital photography, and other CD-ROM-facilitated media have dropped to a practical level, architects have more flexibility.

#### An Attic on a Disk

Also working with Kodak, BAR vice-president Patrick Mays has been focusing on the archiving potential of CD-ROM. He views the medium less as a marketing tool and more as a work horse. He archives completed projects by storing, on a single CD, all the pertinent documents and data for a project. This includes not only CAD working drawings and specifications, but also scanned-in hand drawings, client meeting notes, correspondence, construction administration records, and any other information that might be of future interest. By creating two copies of each CD, one for off-site storage and one for on-site use, he achieves several important benefits. Off-site storage requirements are far smaller than for paper drawings, and the expected century-plus life span makes the CDs more durable than magnetic tape archives. The on-site archive makes past work more realistically accessible as a reference for current projects. Any designer on the network can retrieve any files from the networked CD player without the difficult searches and disruption that would be required by a comparable retrieval from tape.

Other applications Mays is exploring take advantage of the high-capacity medium for storing photographs. For example, the architects can photograph interior details of completed projects and "map" these images onto surfaces in the 3D models of similar projects under design. With little effort, this texturing gives the models a more realistic appearance, helping both designers and clients evaluate the design. He has recently begun exploring the potential of Apple's new virtual reality technology called QuickTime VR. This allows six to 12 photographs of an inte-



Kodak's Shoebox software simulates a light table to provide a familiar environment for "sorting slides." In this setup at Backen, Arrigoni & Ross, a digital camera and a flat-bed scanner to the right provide ways to capture images for the digital photography collection. Above the secondary monitor is a video camera used in teleconferencing.



A compact disc writer (shown below the monitor) no larger than a computer, has become a permanent fixture in BAR's equipment room.



At BAR, a project photograph, once stored digitally, can be transformed into any number of media: a photograph on the wall, a television image in a Kodak Portfolio presentation, or a printed marketing brochure.

rior space to be "stitched" together to simulate a full 360-degree panorama. The software then transforms this into an interactive, immersive environment that users can "move" through with the click of a mouse. BAR plans to photograph newly constructed buildings and turn the resulting walk-throughs into an interactive index for facility managers. Users will be able to "walk" through the building and locate information about furnishings and equipment simply by clicking on objects in the photos. Mays expects this tool to open up a new realm of architectural services his firm can offer.

To make its software more appropriate for this profession, Mays says, Kodak must recognize that the data formats architects work with include more than just photography. To suit any data-intensive profession, the software will also need to handle vector-based graphic data, text, and relational databases with equal facility. In addition to the data's reuse on computers, Mays is interested in Kodak's Portfolio technology, which enables any of this data to be brought up in view-only mode on an ordinary television.

"Now, if you want to have spreadsheets, word processing documents, CAD drawings, and other types of files," says Mays "you would need to store each of those applications on the CD along with the files, and you'd get into copyright complications. To make the discs usable for more than five years, you'd also need to store a copy of your computer's operating system. But with multimedia players, you can convert all these file formats to one that's accessible on a computer or TV through a single, public domain viewing application. This is a major advantage of multimedia that hasn't been widely recognized."

#### CDs in the Field

LS3P Architects in Charleston, South Carolina, first began CD-ROM production a few years ago when a project for the federal Bureau of Prisons called for all construction documents to be delivered in electronic format. The firm provided this information on floppy disks, which proved to be onerously time-consuming to produce, difficult to manage, and subject to damage and deterioration. On subsequent jobs with the Bureau, LS3P provided the same data on CD-ROM discs, which protect the data from being altered and which are less volatile and expensive than floppies and paper. When construction is complete, the owner can use the digital data as the basis for facility management and for future additions and remodeling.

There are potential legal problems with architects giving electronic documents directly to

contractors with whom they have no contractual relationship. But there are practical advantages to contractors having access to this data. To circumvent the legal issues, and to limit the architect's liability, the firm gives discs only to the owner, who then gives them to the contractor.

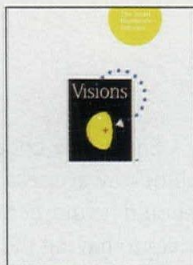
Currently, an LS3P architect, working as a field representative, has a CD-player-equipped computer on the job site to provide information to contractors on a daily basis. Working with the electronic data, he can zoom in on particular areas of interest and plot details at a larger scale as needed. He can also give the contractor very small-scale drawings – an entire floor plan reduced to an 8½ x 11 sheet – for tracking the progress of concrete pours, for example. The CD's read-only technology protects the data from accidental loss or deliberate modification, and the firm can issue revisions, also on CD, on a regular basis. The ease of use and low cost have meant that construction drawings can be updated frequently, so builders work with more accurate documents than was ever possible with paper drawings.

Although LS3P's current practice is to include only drawings, specifications, and schedules on the CDs, senior associate Robert Clarke says that in time they will also include 3D models and other visualization tools to help the contractor understand the building. For now, technical barriers prevent 3D models from becoming a practical part of the firm's construction documents, and legal barriers prevent a more direct communication with the contractor. But Clarke takes the long view and predicts that, in a few years, the technology will be making a larger contribution to the efficiency and accuracy of construction.

"A set of working drawings is the end-result of a technology," he says, "and that technology has changed. The result of a drawing process is a drawing that can be reproduced, but the result of a computer process is a set of files that can be distributed electronically. It's only a matter of time before we're providing contractors with bid sets on CD-ROM. If they know how to use them, it's inevitable that they will be able to do more accurate takeoffs and build the project with fewer errors. The big question is how long the legal system and architectural education are going to take to catch up with the technology."

But even before the design and construction environments change this radically, the profession can start reaping the benefits: in marketing, project archiving, and data distribution. Technological advancements have removed virtually all limits to the computer-based material architects can create, store, and publish. □

# Computer & General Products and Services Literature Digest



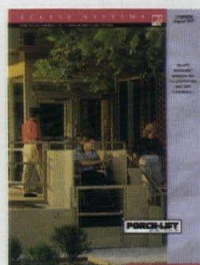
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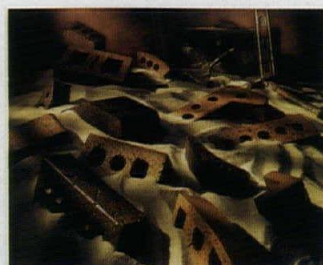
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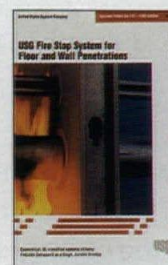
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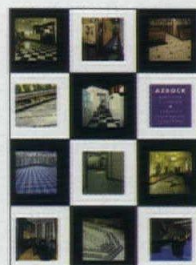
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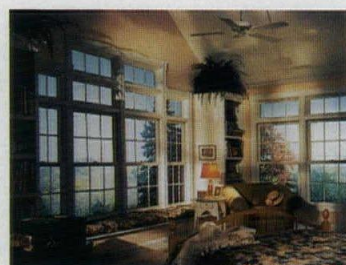
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# The Schools *(continued from page 51)*

to us that some of their best employees have been graduates of coop programs. Several schools have these programs, and their track records are generally good. Students combine work in an office with study, usually on an alternating basis per semester, which is the way the University of Cincinnati, the granddaddy of architectural coop programs, does it. Students can also work in construction, interior design, or other alternative practices. Rice University's Preceptorship program requires that students work in an office for nine months after their fourth year, and then return for a final year of study.

Because coop programs exist under the current NAAB accreditation guidelines, there is no reason why every school in the country shouldn't have one. "It gives students a taste for what the profession is like," says John Casbarian, who heads Rice's Preceptorship program. "It gives them more self-confidence, the ability to put things together, the opportunity to reflect on their education and to direct it. They realize the balance between theory and practice. They come back to the

## **Because coop programs exist under the current NAAB accreditation guidelines, there is no reason why every school in the country shouldn't have one.**

program more focused." Because they stay for twice as long as students in other coop programs, Casbarian believes that they are greater assets to the firm because they don't leave just as they get up to speed. Preceptorship contacts can also turn into job offers later on. Casbarian is wary, however, of the possibility for exploitation. He reports that in the last few years some high-profile design firms have been less eager to take Rice students, whom they must pay. "They say, 'We don't pay other people who work here. Why should we pay the students?'"

The deficiency in most coop programs is that they fail to build on the student's experience in the world of practice. "The connections between what they do in school and in practice could be made more explicit," says director Gordon Simmons of Cincinnati's coop program. This school has even greater potential for making those links through its Center for the Study of the Practice of Architecture. As in the Rice program, Cincinnati students write reports on their coop experiences. In later practice seminars they share their experiences with other students. "The school has to help the students to reflect upon the issues that they see in practice," says Dana Cuff, who has written extensively about the profession. "We should be challenging people to think more broadly about architecture and have vision about what they are doing, to be able to critique and take a critical view of what they do. Over the long run, the profession is its own engine for evolution and renewal." Indeed, such reflection underlines the fact that practice is worthy of theoretical speculation.

Short of a coop program, a school can broaden the student's awareness of practice in other ways. Practitioners should be more involved in the schools, and there are alternatives to having them as faculty. Mentorships, for example, can link students to practitioners. Compared to traditional apprenticeship programs, says John Gaunt, architecture dean at the University of Kansas, "a mentorship program would be more palatable and less intrusive to the educator, and less time-demanding for the practitioner, while accomplishing the requisite school/practice connection for the student." Gaunt suggests that even in a small office, an architect could take two or three students under his or her wing, discussing the firm's management and business philosophy, in two visits per semester, with no more than 20 to 30 hours per year. While Gaunt admits that this is not a revolutionary idea, "it is noteworthy that relatively few schools provide professional mentors to all students, while the connection to the realities of practice is the basis of professional demands for educational reform."

Mentorship programs could also get a boost from continuing education requirements, if practitioners could swap time spent with students for credit. This would require a dual flow of information between students and practitioners, such as that seen in an office-based design studio undertaken at the University of Minnesota. Students teamed up with the Minneapolis firm of Hammel Green & Abrahamson, which specializes in school design. "The students, faculty, and architects evaluated 25 years of the firm's work from a functional and theoretical viewpoint," explains Minnesota architecture dean Harrison Fraker. Then the students worked on a current HGA school project. "The firm brought its knowledge base into the school for critical appraisal," says Fraker, "It was a shared experience for both."

## **The Teaching Office**

Bringing the education of architects closer to the realm of practice suggests that an entirely new model, such as the teaching office, might be the best solution of all. Robert Gutman believes that the current quandary in architectural education can't be resolved any other way. The teaching hospital in medical education provides a model. "One reason why medical education is effective," observes Gutman, "is that it is largely conducted away from the university, in institutions run by physicians, namely the hospital." Gutman's idea of combining practice and education has similarities to the British system of architectural education, where students study for three years, spend a year in practice, study for two more years, spend another year in practice, and then can sit for the licensing exam. In the U.S., programs have appended practices for teaching purposes, such as the now-defunct Urban Innovations Group at UCLA, and a host of community design centers at schools around the country during the 1960s and '70s, some of which still exist.

This solution, however, will work only if there is plenty of work for every architecture student, *(continued on page 96)*



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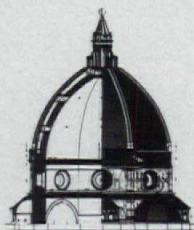
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## The Schools *(continued from page 94)*

and if one accepts a rather static notion of practice. As is true with the coop experience, the economy of large firms can accommodate students better than that of small firms. Even if small firms are paid by the university to take on students, will enough work be available in a small practice? And what qualifies as "practice"? Would experience in construction be permissible? Or working for a developer, or a government agency, or a nonprofit organization, or in furniture design, or in the film industry - just to name a few of the options available to architects? Would this requirement hem in the possibilities of practice?

### Transforming the Academy

While bridges between the realms of school and practice strengthen the student's understanding of the profession, they may also help in changing the values of the university. Ernest Boyer, with the Carnegie Foundation for the Advancement of Teaching in Princeton, is now completing a study on architectural education and its connections to practice, to be released next year. Boyer sees an important role for architecture schools in helping to transform the university. According to Boyer and others in the education field, institutions of higher learning are now moving away from the model of the ivory tower, and toward what has been described as the "engaged university."

"The idea is that higher learning has a mission that goes beyond research," explains Boyer. "There's a resurgence in the scholarship of applied knowledge, and outreach from the university to the community, relating theory to practice. Good theory is based on good practice. I feel that this trend is powerful and will persist."

Boyer believes that the architecture school, with an emphasis on architecture as a social art, is poised to help lead the way for other university disciplines. In so doing, it may also mend the rift between education and practice. □

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The appointment is expected to be at the



level of Professor with tenure. The appointment as Associate Director will be for a five-year term. Candidates should have outstanding records as a practitioner and/or scholar in architecture, as well as proven teaching abilities. Administrative experience in academia is preferred.

Applications, which must be received by **November 1, 1995**, must include a curriculum vitae and the names of at least three referees. The successful applicant is expected to take up the position on **July 1, 1996**. UBC welcomes all qualified applicants, especially women, aboriginal people, visible minorities and persons with disabilities. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents.

The salary will be commensurate with experience and the position is subject to final budgetary approval. Correspondence should be addressed to:

**Sandy Hirshen, Director**  
School of Architecture  
University of British Columbia  
#402 - 6333 Memorial Road  
Vancouver, B.C. CANADA V6T 1Z2  
Telephone: (604) 822-2206  
Fax: (604) 822-3808

### LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The London School of Economics is initiating a Master's Programme in City Policy, Architecture and Engineering and seeks a Programme Director to pioneer this new development. Cultural breadth of interests combined with the ability to think scientifically are the main requirements. The successful applicant will have the managerial skills needed to found and lead a major interdisciplinary initiative to be based on the relationship between social forces and the city fabric as exercised through the process of design. She or he must have the ability to attract and marshal resources as well as the ability to inspire and motivate post-graduate students. This is a long-term appointment, for three years in the first instance, beginning on or around January 1996, or as soon as possible thereafter. The first stage of the work will emphasize curriculum design and research initiatives. It is expected that students will enter the Programme in October 1997. Salary is negotiable on the order of £50,000, depending on background and other commitments. Interested applicants should respond before 20 October 1995, including a C.V. by writing to:

**Max Steuer**  
City Policy, Architecture and  
Engineering Programme  
London School of Economics  
and Political Science  
Houghton Street  
London WC2A 2AE  
United Kingdom

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Applications are invited before 15 October 1995 on the application forms available from: **Harvard University Graduate School of Design, Office of Faculty Planning, 48 Quincy Street, S203, Cambridge, MA 02138, Attn: Search Committee; FAX (617) 496-5310.** Applicants should not send portfolios or dossiers with their applications. Harvard University is an Equal Opportunity/Affirmative Action employer.



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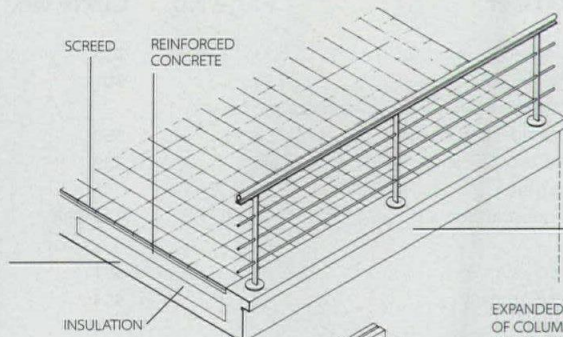
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ORIGINAL BALCONIES BUILT OF REINFORCED CONCRETE SANDWICH ON WELDED STEEL FRAME, MAJOR CRACKING AND CORROSIVE EXPANSION OF REINFORCEMENT RENDERED STRUCTURES UNSAFE. CONCRETE STRIPPED OFF FRAME, STEEL WETBLASTED AND PAINTED. NEW REINFORCED CONCRETE CAST WITH 3-LAYER MEMBRANE TORCHED ON TO TOP SURFACE.



CONCRETE PARAPETS, FASCIAS, AND SOFFITS FINISHED WITH SKIM COAT OF WATERPROOF RENDERING.

EXPANDED CONCRETE CASING OF COLUMNS STRIPPED BACK. CORRODED WELDED-STEEL BOX SECTIONS WETBLASTED TO REMOVE SALT DEPOSITS, PAINTED WITH PRIMER, DRILLED AND FILLED TO PROVIDE FIRE RESISTANCE.

SURFACE OF COLUMNS COATED WITH WATERPROOF RENDERING AS CEMENTITIOUS BASE FOR TILE.

NEW FAIENCE TILES TO MATCH SPALLED ORIGINALS.

NEW RAINWATER PIPES REPLACED ORIGINALS.

STEEL REINFORCEMENT SHOT-BLASTED TO FORM BULLNOSE PROFILE.

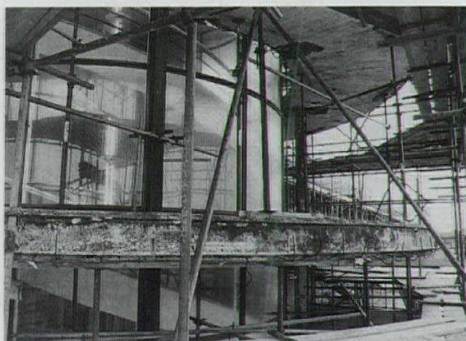
OLD LOW-GRADE STEEL BALUSTRADES CORRODED AND WEAK. NEW BALUSTRADES FABRICATED FROM GALVANIZED HIGH-YIELD STEEL WITH POCKET FIXINGS CAST INTO THE CONCRETE. ALL WELDED JOINTS FILLED, ASSEMBLY PRIMED WITH ZINC PHOSPHATE AND PAINTED.

SLIM STEEL SECTION OF SLIDING GLAZING WAS CORRODED AND HAD BEEN REPLACED WITH UNSUITABLE FIXED-TIMBER SECTIONS. IN PHASE III OF RESTORATION SLIDING STEEL SECTIONS WILL BE REINTRODUCED WITH HIGH-GRADE GALVANIZED TOUGHENED GLAZING SYSTEM, SEALED WITH WEATHERSTRIPPING AND BUFFERS. CAST IRON RADIATORS WILL REDUCE CONDENSATION.

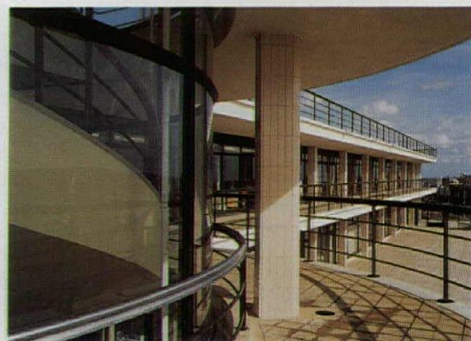
EXISTING CONCRETE PAVING TILES WERE CRACKED OR BROKEN, AND TERRACE FLOOR LEVELS UNEVEN. NEW PRECAST PAVERS WITH EXPOSED GRANITE AGGREGATE MATCHING ORIGINAL TILES WERE LAID TO ORIGINAL GRID, NEW TERRAZZO MARGINS, SIMILAR TO ORIGINAL, CAST IN PLACE WITH DIVIDERS.

CUTAWAY ISOMETRIC OF BALCONY RESTORATION

In the 1935 De La Warr Pavilion at Bexhill (p. 78), Erich Mendelsohn and Serge Chermayeff, working with engineer Felix Samuely, used new steel and concrete construction techniques. By the time British firm Troughton McAslan came to restore the exterior 57 years later, the structure had suffered severe decay from the corrosive effects of its sea-side environment. The south exposure, facing the beach, was most deteriorated. In restoring the pavilion's famous curvilinear balconies, for instance, Troughton McAslan had to strip back the concrete to expose and treat the original steel ring beams (photo, near right). Through sensible – and sensitive – interventions (isometric, above), the restorers have managed to recreate the crisp aesthetic of the white rendered exterior (photo, far right), while enhancing the landmark building's resistance to fire and to the onslaught of the elements. **Ziva Freiman**



courtesy Troughton McAslan



Peter Cook