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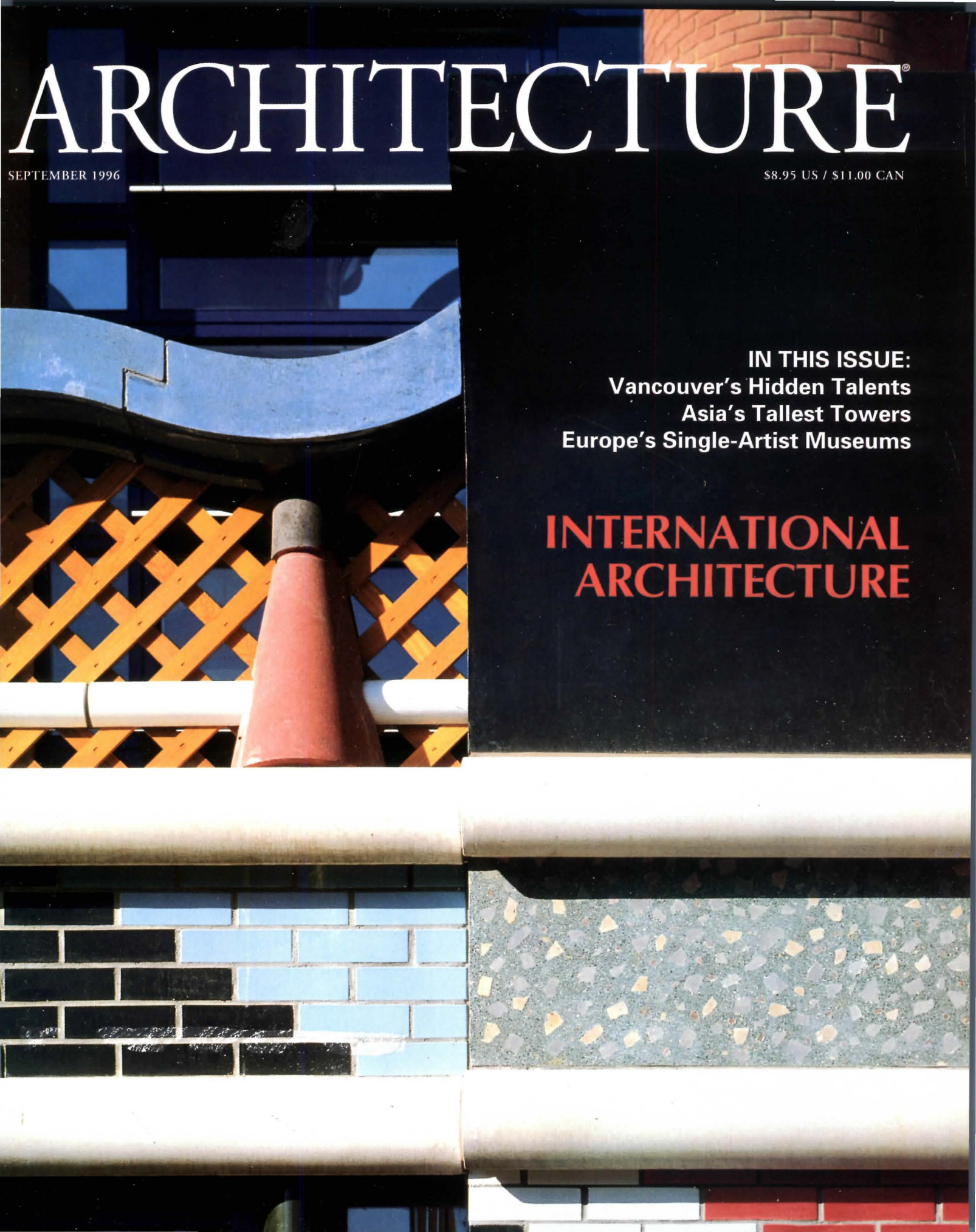

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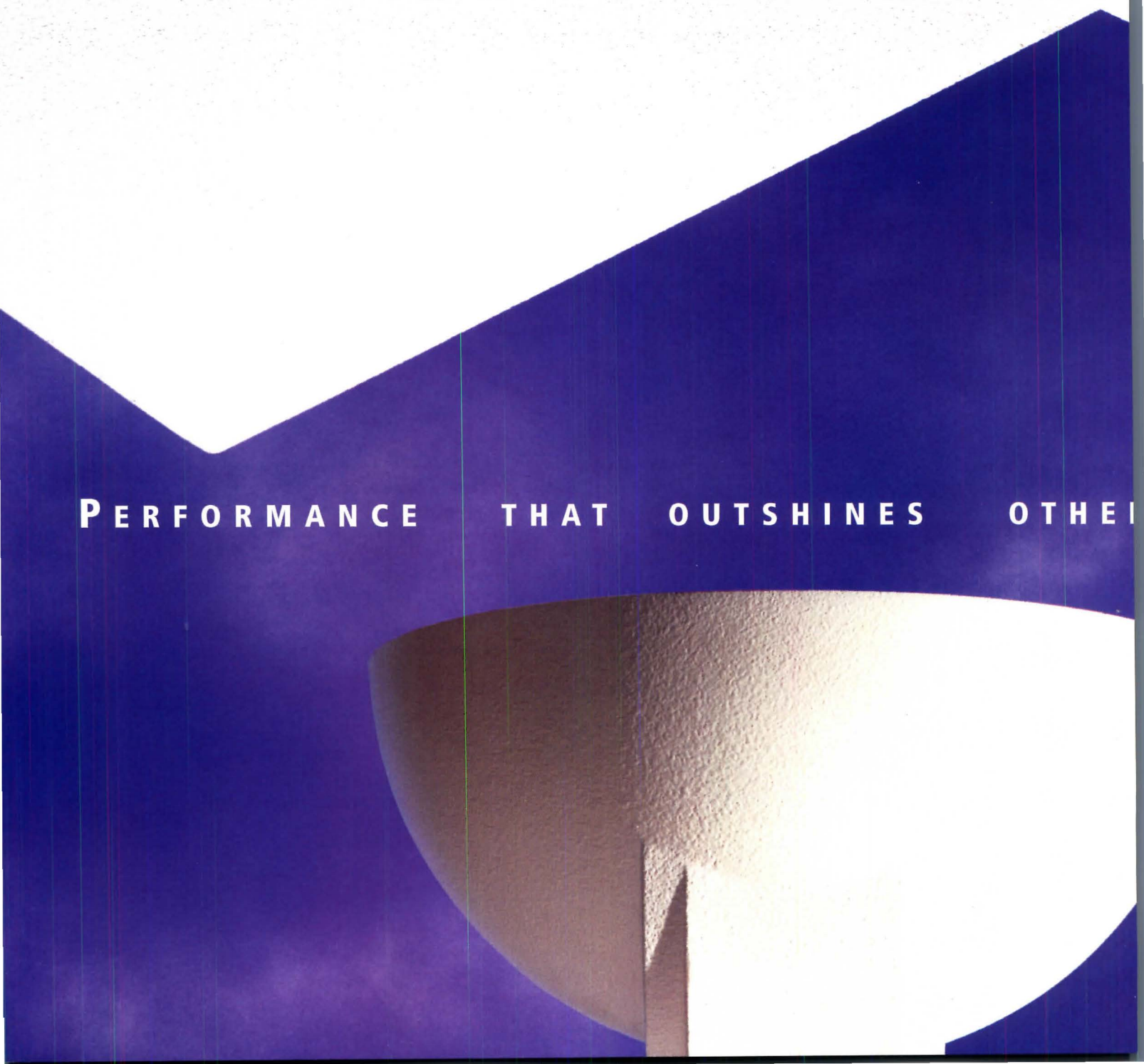

Putting ADA to the Test

Architects shouldn't let lawsuits or building codes stand in the way of designing accessible buildings.

Is the Americans with Disabilities Act (ADA) too tough for architects to handle? The ADA was enacted in 1990 to end discrimination against the 43 million Americans with physical or mental impairments. Surveys show that the law has effectively advanced the rights of the disabled in the workplace and public realm. But the ADA has posed difficulties for architects because it is a civil rights law, not a prescriptive building code. And architects are now being challenged in the courts for not meeting the intent of the law.

The recent case of *Paralyzed Veterans of America* v. *Ellerbe Becket* vividly illustrates architects' dilemma over the ADA. As ARCHITECTURE reported last month, the suit claimed that Ellerbe's design of the MCI Center arena in Washington, D.C., violates the ADA's Title III provisions for equal access to public accommodations. The arena's seating plan, the veterans contend, locates wheelchairs where sight lines would be blocked by standing crowds. The plaintiffs sought both a civil action to change the seating plan and an injunction to halt the project until the changes were made.

Lawyers for the veterans maintained that Ellerbe failed to comply with the ADA's Section 303, which states: "Discrimination includes a failure to design and construct facilities...readily...usable by individuals with disabilities." But the judge decided that Ellerbe is responsible only for design, not both design and construction, of the MCI Center, so the owner and developer—but not the architect—could ultimately be liable for violations of the ADA. The case against the owner and developer goes to court this fall.

The architect of a Hershey, Pennsylvania, medical office building fared less favorably when a Department of Justice investigation revealed that the two-story structure was inaccessible (it contained stairs and an elevator shaft, but no elevator). Architect Bradley, Chambers & Frey was held accountable along with the building's owner. An elevator was installed, and the case never went to trial. The architect paid a fine of $8,000.

Such legal action promises to continue unless architects comply with ADA's guidelines. Many practitioners feel that they can't be expected to meet the letter of the law when the three model building codes aren't sanctioned by the Justice Department as conforming to ADA's strict criteria. Currently, only the state of Washington's code officially complies with ADA's guidelines. The AIA is now working to introduce legislation in Congress that would enable the Justice Department to certify model codes detailing accessibility.

Such codes would eliminate ambiguity over the architect's role in upholding the ADA. But the profession shouldn't wait for such future measures to design accessible spaces. The ADA is already appendiced with regulations spelling out accessible design elements: wheelchair clearances down to the inch, the diameter of toilet-room handrails, and many other specifications derived with the assistance of architects. Revised model building codes would further strengthen these guidelines, but there are few excuses why architects can't comply with the law as written.

In a profession that resounds with the constant refrain of "loss of control," architects should take the lead in designing for the disabled. New codes will clarify ADA compliance, but will not guarantee good accessible design. Unless architects truly advocate accessible environments, commissions for important public buildings will be placed in the hands of those engineers, construction managers, and builders more willing to follow—and willing to urge their clients to follow—the law. The ADA is certainly one arena in which architects can prove their relevancy as a public service profession.

Deborah K. Dietsch

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Letters

LUISA CALDWELL

CURTAIN WALL: Caldwell's female space.

Design for design's sake

I find Wes Jones's remarks in "Importing New Design Talent" (ARCHITECTURE, July 1996, pages 125-129) repugnant on several levels for perpetuating the long-standing tradition of exploiting young architects. When he says, "In firms committed to design, people will work for free," Jones not only shows a lack of compassion but an apparent disregard for prevailing labor laws. I would like to know how often Jones is willing to work for free to further his esthetic ideals.

ARCHITECTURE would do well to hold a light to questionable hiring practices in the design industry. I hope that maturity will bring some humanity and humility to Jones.

Walter E. Levy, AIA
Levy + Levy Architects
Woodcliff Lake, New Jersey

Damning solution

I read your June 1996 Protest (page 73) with profound dismay. I remember playing along San Antonio's Paseo del Rio as a child, and I have delighted in returning to the revitalized Riverwalk as an adult and architect. I share your outrage at the insensitivity of the Sumner Suites' design. To one who has taken shelter from the urban cacophony of downtown traffic along a river lined with live oaks, the hotel's quintessentially suburban solution is especially damning. This project's failure to exploit a very special context is economically wasteful and may well negatively affect future development.

J. Peter Jordan, AIA
Honolulu, Hawaii

More on masculine space

"Male Space" (ARCHITECTURE, June 1996, pages 77-83) was brought to my attention in regard to my site-specific installation at Long Island University's Brooklyn campus. In "Curtain Wall" (above right) I have hung artificial drapes (paper-covered wood flats) in floral patterns on the window bays of a very "masculine" building, which lacks any sensuous properties. The installation is open to the public and on display through October.

Thank you for discussing such gender issues. I am optimistic about the directions that public art and architecture will go with the ever-increasing influence of the feminine approach in these fields.

Luisa Caldwell
Brooklyn, New York

In "Male Space," Joel Sanders claims that the Air Force Academy in Colorado Springs is designed entirely for men. To suggest that the campus was conceived to exclude women based solely on the lack of ornament and organic forms may go too far. The academy is more about Modernism than masculinity.

Since the first female cadet graduated in 1980, the academy has adapted well to changes in the military profession. Its design incorporates many gender-neutral tenets of officer training: decisiveness, durability, and attention to detail. It is difficult to imagine a cadet's room with carved moldings, wallpaper, and plush furniture. Based on Sanders's criteria, this would make the space more "feminine" but would sacrifice the Modernist whole. For cadets, it is difficult enough to clean terrazzo, aluminum, and glass to the satisfaction of their commanders!

Lt. Jim Stanislaski
Hanscom Air Force Base
Bedford, Massachusetts

Corrections

Architectural Lighting Design collaborated with Fisher Marantz Renfro Stone on the new San Francisco library's lighting (July 1996, pages 80-91). Case Window and Door manufactures aluminum-clad wood windows, not wood-clad aluminum windows (July 1996, page 157).

1. New expanded multiline text object has automatic word wrap and flexible text alignment.
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Events

Exhibitions

CHICAGO. "Architecture and Design for Commercial Aviation," October 19-January 5, 1997, at the Art Institute of Chicago.
Contact: (312) 443-3600.

NEW YORK. "NYNY: City of Ambition," through October 27 at the Whitney Museum of American Art. Contact: (212) 570-3676.

"A Place For Us: Vernacular Architecture in American Folk Art," through January 5 at the Museum of American Folk Art.
Contact: (212) 595-9533.

SAN FRANCISCO. "Gnomon," an installation by the Interim Office of Architecture and graphic designer Tom Bonauro, through December 1 at the Museum of Modern Art.
Contact: (415) 357-4000.

Conferences

AUSTIN. Green building conference, November 7-10.
Contact: (512) 264-0004.

BALTIMORE. Restoration conference, October 18-20.
Contact: (508) 664-5822 by fax.

BELGRADE. "Architecture and Urbanism at the Turn of the Millennium," November 13-15.
Contact: 381-11-605-620.

BOLOGNA. Church architecture conference, October 18.
Contact: 51-282-111.

BOSTON. Project Management Institute annual seminar, October 4-10. Contact: (610) 734-3330.

CHICAGO. "Financial Management for Design Firms," October 31-November 2.
Contact: (405) 848-1111.

PHILADELPHIA. Organization of Black Designers annual meeting, October 31-November 3.
Contact: (202) 659-3918.

NEW YORK. Interplan design exposition. November 7-9.
Contact: (800) 950-1314

SEATTLE. Frank Lloyd Wright Building Conservancy annual conference, September 25-29.
Contact: (312) 663-1786.

WASHINGTON, D.C. Professional design/build conference, October 10-11, sponsored by the Design-Build Institute of America.
Contact: (202) 682-5860.

Competitions

Call for papers for the Making Cities Livable Conference. **Abstracts due October 1.**
Contact: (408) 626-9080.

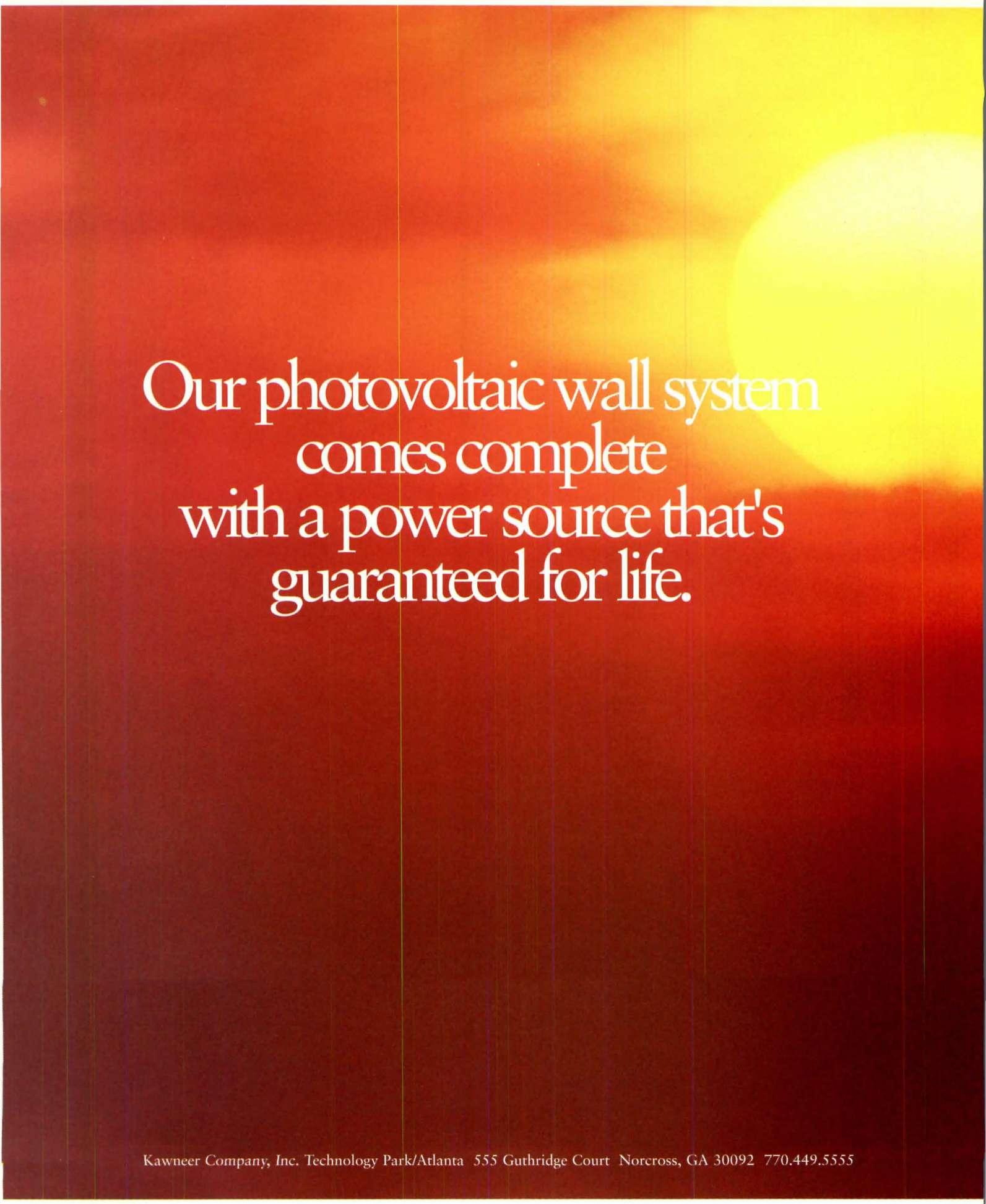
Wood Design Awards, sponsored by the American Forest & Paper Association. **Entries due October 11.** Contact: (202) 463-2769.

Rome Prize fellowships of the American Academy in Rome. **Applications due November 15.**
Contact: (212) 751-7200.

Little Bighorn Battlefield National Monument design competition, sponsored by the National Park Service. **Registration due September 24.** Contact: (800) 969-2830.

Howard Street Corridor design competition, sponsored by the Baltimore Young Architects Committee. **Submissions due December 4.**
Contact: (410) 727-4620 by fax.

United States Institute for Theater Technology architecture awards. **Deadline November 4.**
Contact: (212) 807-7171.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News

SERGE HAMBOURG

LIBRARY SITE: Near Santa Fe Depot and American Plaza office tower (center).

San Diego Taps Quigley For Downtown Library

Rob Wellington Quigley, an architect who has stuck by conservative San Diego for more than 25 years, has finally received a major civic commission in his hometown. Quigley's team bested 26 blue-ribbon candidates—including Philip Johnson, Michael Graves, Arata Isozaki, Mario Botta, and Ricardo Legorreta—in the city's quest for an architect for the library of the future.

On August 5, the San Diego City Council selected Quigley and his collaborators, San Francisco-based Simon Martin-Vegue Winkelstein Moris (SMWM) and San Diego firm Tucker, Sadler, to design the city's $62 million public library on a prominent site northeast of the historic Santa Fe Depot. A citizens' design-review committee winnowed the field of 27 teams to nine interviewees. Four finalists made public presentations at a day-long forum: Will Bruder, architect of the Phoenix Central Library; Moshe Safdie, architect of Library Square in Vancouver; Quigley and his codesigner, SMWM's Cathy Simon, who collaborated with Pei Cobb Freed & Partners on the new San Francisco Main Public Library; and Cesar Pelli with KMA Architecture & Engineering.

The new library, which will replace an outdated, overcrowded 1954 facility, is expected to open in 1999 or 2000. Some observers caution that its estimated budget and size (260,000 square feet) are already inadequate. A sketch by Quigley for a six- to eight-story domed library shows a concept that could gracefully ease the difference in scale between the new building and the adjacent 33-story American Plaza office tower and trolley station designed by Murphy/Jahn. Such an arrangement, Quigley points out, would echo a favorite domed complex across town in Balboa Park: the historic, highly visible California Tower and its tile-domed neighbor, now part of the San Diego Museum of Man.—*Ann Jarmusch*

A. Jarmusch is the architecture critic of The San Diego Union-Tribune.

Architects and Designers Killed in TWA Crash

The crash of TransWorld Airlines Flight 800 from New York to Paris on July 17 killed all 230 passengers aboard—including four architects and designers. New York architect **Miriam Bellazoug,** 30, was on her way to visit the Paris apartment renovation she was supervising for Peter Marino & Associates. A Yale graduate, Bellazoug worked for several firms in Paris before launching her own practice, MB/JC Architects, in 1994; she had returned to the U.S. in March to join Marino's firm.

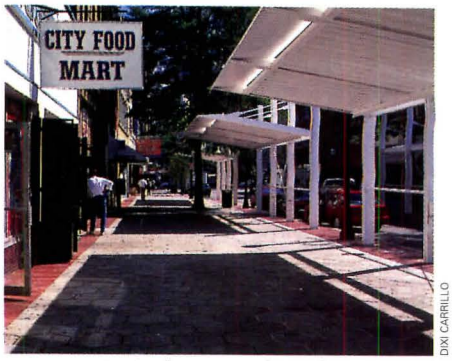
Bucks County, Pennsylvania, architect **Joan Benjamin,** 58, had worked for Philadelphia firms such as Geddes Brecher Qualls Cunningham Architects and, most recently, Bower Lewis Thrower Architects, which she left in 1992 to take on freelance design work.

The most acclaimed designer killed in the crash, **Jed Johnson,** 47, gained reknown as much for his graceful interiors as for his roster of celebrity clients. In fact, it was an early collaboration with Andy Warhol that started Johnson on his career in interior design. He launched Jed Johnson & Associates in 1978, joining forces with architect Alan Wanzenberg to form Johnson/Wanzenberg & Associates in 1981. Johnson had just issued a line of fabrics called Chelsea Editions.

Pittsburgh-based architect **Jill Watson,** 32, had recently completed a trio of housing projects for the elderly and a community center in Pittsburgh's Hill district. She received her B.Arch. degree from Carnegie Mellon in 1987, and joined the faculty as an adjunct professor in 1989. Watson's distinguished work and community commitment led the AIA to name her one of four outstanding women architects in western Pennsylvania in 1990.—*Raul A. Barreneche*

D. LOGOTHETIS

ABERNATHY CORRIDOR: Neighborhood renovation boiled down to medians.



DIXI CARRILLO

BROAD STREET: Anthony Ames's market canopies.

NEIL DENT

BIRTH OF ATLANTA: Monument atop mall

DIXI CARRILLO

HOMAGE TO KING: By Xavier Medina Campeny.

Atlanta's Urbanism Falls Short of Plans

Atlanta's brand of Olympic urbanism, unveiled for this summer's Centennial Games, turned the ancient Olympic ideals of "faster, higher, braver" into slower, lower, and meeker. When the world's top athletes and their fans gathered in July for the games of Zeus, they were greeted by mediocre new sports venues shaped by a stubborn attachment to home-grown ideas—and scarcely the best of those. Worse, the games' chief organizers, the Atlanta Committee for the Olympic Games (ACOG), had only the dimmest views toward urban design: To ACOG, a panel of prominent local business executives guided by suburban real-estate lawyer Billy Payne, urban design translated into a banner, literally, on every lamppost.

ACOG's myopia was remedied somewhat by the Corporation for Olympic Development in Atlanta (CODA), a quasi-public office spun off from ACOG in 1993 to develop an ambitious plan for renovating public spaces around the Olympic venues. But unfortunately, CODA coalesced too late. The group's unfinished business reveals the scope of lost opportunity.

It took CODA six months as it prepared its master plan to raise $75 million from private foundations and a smattering of corporate gifts. That sum was merely loose change to ACOG, which, all told, spent $500 million—and raised $57 million within days from commercial headliners to raze 21 struggling acres of inner city for Centennial Park. That space, the site of the notorious July 27 pipe-bombing that killed two people, served mainly to siphon the life off surrounding streets and into its carnival of corporate marketing.

"If there were ever a city that epitomizes political decisions in urban design, it's Atlanta," observes activist Atlanta architect and planner Richard Rothman. In awarding design and construction contracts, ACOG allowed only Atlanta-based architects to lead design teams for sports venues, and strict joint-venture rules effectively locked out smaller, more inventive local design firms from participating.

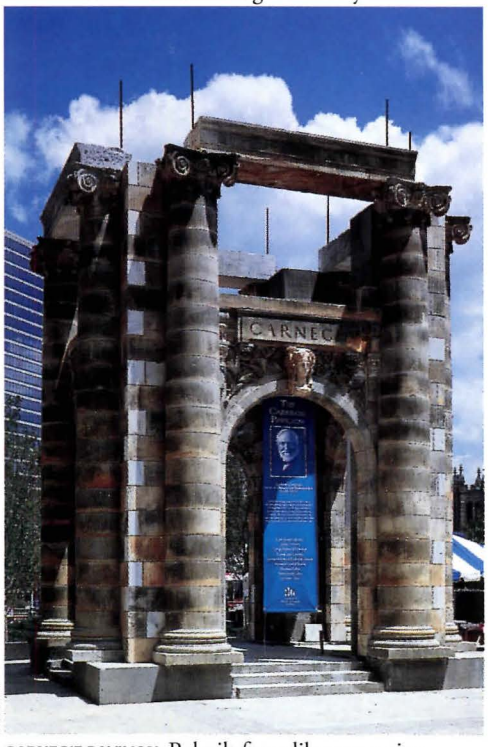
In the case of Olympic Stadium, the joint-venture rules produced a marriage of multiple giants—Heery International, Ellerbe Becket, and Rosser Fabrap—and middling design. The stadium may as well have been detailed at Atlanta's own Home Depot; attention was focused less on heroic symbolism than on skyboxes' glazing, seats with cup hold-

MARK DARLEY

CENTENNIAL PARK: Corporate displays such as Swatch pavilion (right) by Peter Pfau and Eyecandy clutter space.

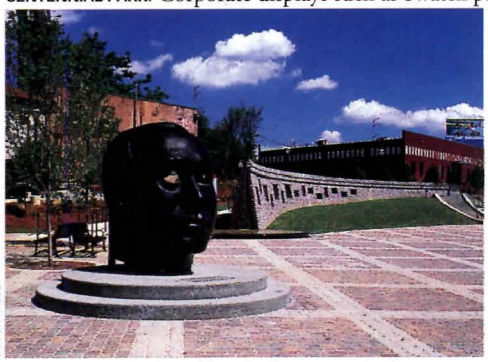
DIXI CARRILLO

WOODRUFF PARK: Revitalized green at city center.



NEIL DENT

CARNEGIE PAVILION: Rebuilt from library portico.



DIXI CARRILLO

DOBBS PLAZA: Sculpted head of community hero.

NEIL DENT

DECODE/RECODE: Conway + Schulte's canopied corner.

ers, and wrought-iron all around.

CODA took a more worldly approach, staging charettes and international design competitions to commission streetscape improvements and public-art pieces such as *Homage to [Martin Luther] King*, by Barcelona artist Xavier Medina Campeny. Yet, "We planned to rebuild four neighborhoods in five years," recalls H. Randal Roark, CODA's planning and design director. Major makeovers occurred in two of them—Auburn Avenue, where CODA spruced up the historic center of Atlanta's black community, and the Atlanta University Corridor, where $12.5 million bought 6 miles of streetscape upgrades.

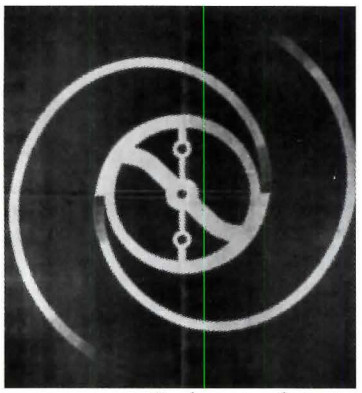
But CODA met as much disillusionment as success in places like the Ralph David Abernathy Boulevard corridor, where priorities changed and plans for a 30-block renovation came down to $4.2 million in festive landscaped medians and a humble roadside park.

Several of CODA's new public spaces more successfully activate the center city. Richard Rothman & Associates designed a handsome pedestrian corridor along Capitol Avenue, linking Olympic Stadium with downtown's nearest MARTA station, aptly fusing traditional Olympian imagery with a contemporary esthetic. Woodruff Park, formerly a rather bland downtown space, has been refurbished as Atlanta's central green, with a new bandstand, benches, and a stunning, 25-foot-high water-wall designed by landscape architect Nimrod Long & Associates with Thompson, Ventulett, Stainback & Associates. Also a hit is the beautifully constructed Dobbs Plaza on Auburn Avenue, designed by architect Stanley Love-Stanley with EDAW as a serene, richly paved commons centered by a large sculptural mask of community hero John Wesley Dobbs.

By far the best of CODA's public-space projects are architect Anthony Ames's Broad Street Vendor Market canopies, whose sleek, white modules brightly contrast with the worn red brick of seedy storefronts. And architect Jova, Daniels, Busby of Atlanta retrieved parts of the city's lost Carnegie Library in a prison boneyard and rebuilt a four-square of its bays to create a magisterial pavilion overlooking a hill on West Peachtree.

Appreciable fuss surrounded two installations that show much less discretion. The *Birth of Atlanta* monument by artist/architect Amy Landesberg with architect Lord, Aeck & Sargent, comprises an abstract phoenix made of fiber-optic cable and stainless steel rising wobbily from the end of a brick arcade atop Atlanta's Underground mall. Site and sculpture create a klutzy match. And a small plaza called Decode/Recode Atlanta, designed by architect Conway + Schulte, redresses a downtown traffic island with a serviceable pavilion and a place to sit. But why did CODA take such pains to develop an anonymous traffic triangle downtown while communities such as Summerhill, near Olympic Stadium, went begging?

Atlanta's second rebirth in as many centuries should motivate the city to keep working on its poorer neighborhoods. CODA deserves at least a silver medal for its progressive outlook and concern for the city's future. ACOG, however, comes in last. In trying to preserve the distinct flavor of Georgia, ACOG couldn't tell the peaches from the pits.—*Bradford McKee*



ENDLESS THEATER: Duchampian design?

Questions of Plagiarism Upstage Kiesler Show

In 19th-century France, paintings spurned by the academies were sometimes exhibited in *salons des refusés* to great notice. That tradition is being re-enacted in Paris, where a catalog essay rejected for the current retrospective on architect Frederick Kiesler at the Pompidou Center was published independently. Written by Columbia University architectural historian Marc Dessauce, the appropriately titled "Machinations" is now upstaging the show.

Kiesler, an Austrian expatriate who worked in New York from 1926 through his death in 1965, is celebrated for his installation at the "Art of This Century" exhibition (which opened the Peggy Guggenheim Gallery in New York in 1942) and the Shrine of the Book in Jerusalem, a volcanic structure designed with New York architect Armand Bartos to house the Dead Sea Scrolls. The Pompidou Center show, like an exhibition mounted at New York's Whitney Museum of American Art in 1989, presents the wide-ranging oeuvre of the avant-garde architect.

A large exhibition space, designed by Israeli architect Zvi Hecker in a spinning plan akin to Kiesler's proposal for the Endless Theater (1924), generously offers many sketches, hard-line drawings, and models by an architect whose restless curiosity moved between Constructivism, De Stijl, Surrealism, and organic design with ease and—until Dessauce's essay—with impunity.

Buried in a biographical chronology at the end of a handsome monograph for the show, however, is a revealing fact: in 1924, in Vienna, Dr. Jacob Moreno-Levy sued Kiesler for plagiarizing the circular stage design of the Stegreiftheater, an improvisational theater. (Moreno-Levy called him a plagiarist and a "scoundrel" in public.) Authorship is, basically, the subject of Dessauce's essay—and he doubts the originality of many of Kiesler's ideas. Dessauce suggests that sculptor Constantin Brancusi's egg became, with little transformation, Kiesler's Endless Theater, and that South American artist Roberto Matta Echaurren's volcanic tableaux led to the architect's Shrine of the Book.

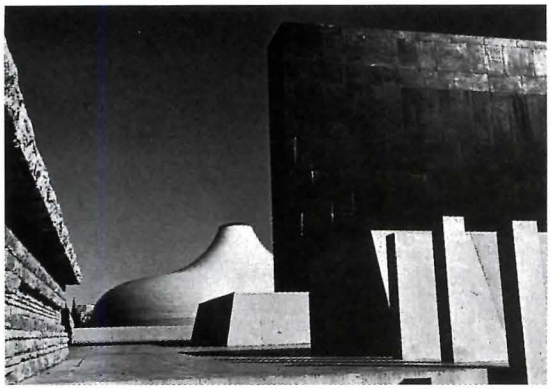
In support of this argument, Dessauce refers readers to another essay, written by New York architectural historian Rosemarie Bletter for the 1989 Whitney retrospective—an essay that was also rejected. (Her unpublished essay started with Philip

Johnson's remark that Kiesler was a "con artist.") As Dessauce and Bletter point out, dates are a major problem: the historians say Kiesler backdated his works, rewriting his history.

The exhibition, on view through October 21, starts with two masterful early drawings for the Endless Theater: in a display of investigative scholarship, Dessauce argues they are literally copied from drawings by Kiesler's friend, Marcel Duchamp. According to Dessauce, these are drawings typical of Duchamp's studies in precision optics—two-dimensional drawings that spiral in illusionistic three-dimensional space when turned on the end of a rotating motor. These mature drawings have little precedent in Kiesler's opus, but they are consistent with Duchamp's work at the time. A related essay in the catalog simply notes that the ideas of both artists "repose on the same form: the rotating spiral."

Retrospectives have the ability to establish the arc of an artist's work, and often the trajectory is revealing in a way individual works cannot be. Even without the questions raised by Dessauce's essay, the Pompidou exhibition displays so many changes of direction, non sequiturs, and inconsistencies of quality in concept and execution that it is difficult to deduce what Kiesler's work, finally, is about. Only by reading Kiesler's own essays in a separate volume (*Selected Writings*, published by Verlag Gerd Hatje this year) can we understand that the architect consistently pursues the notion of continuities—endlessness—but the observation is not self-evident across the discontinuities of his jumpy opus.

This exhibition would have been much more convincing, provocative, and fairer to Kiesler had Dessauce's essay been absorbed in its argumentation, refuted, or at least discussed in terms of appropriation, *zeitgeist*, or other frameworks that deal with source and inspiration. Certainly Kiesler was a catalyst and a cross-pollinator between movements, continents, and architectural figures, and his career in theater (he worked as a stage designer for the Julliard School of Music for many years) and in museum installation was long and fruitful. But the exhibition organizer, Chantal Beret of the Pompidou Center, missed the opportunity to resolve the confusing issues of credibility and authorship that have now come to haunt Kiesler's work.—*Joseph Giovannini*



SHRINE OF THE BOOK: Houses Dead Sea Scrolls (1965).

ENDLESS HOUSE: Like Theater, employs egglike form (1950).

HADID'S DESIGN: Tilting walls expanded display space for futuristic exhibits.

Hadid Designs Machine Show in Vienna

The history of the future—the trail of technological visions inventing a better life—is already centuries old. This summer at the Kunsthalle in Vienna, more than 600 objects, from flying contraptions to visionary megastructures, teemed on the dynamic walls of "Wish Machine World Invention: A History of Techno-Visions since the 18th Century," an exhibition designed by London architect Zaha Hadid.

The subject of "Wish Machine," which closed last month, was cavernous, and the exhibits were barely containable, even in this warehouse of a space on Karlsplatz. But the curator, Brigitte Felderer, divided these mechanical catalysts of the future into four general categories, which Hadid accommodated in a forcefield of interpenetrating walls that careened through the tall, open gallery. Flying machines and the artificial life of automata constituted two sections; systems of order and idealized cities made up the others.

The plethora of objects, drawn from high art and popular culture, was the strength and the weakness of the exhibition. The critical mass of helicopters, bicycle carriages, megacities, space stations, and artificial limbs clearly depicted the belief that engines can alter our inherited condition. Yet the very number of objects expanded the show beyond focus. "Wish Machine" represented the big attic of our collective imagination and our longings to both control and leave the earth.

There is, as Joseph-Michel and Jacques-Etienne Montgolfier's gliding aeronautical machines and

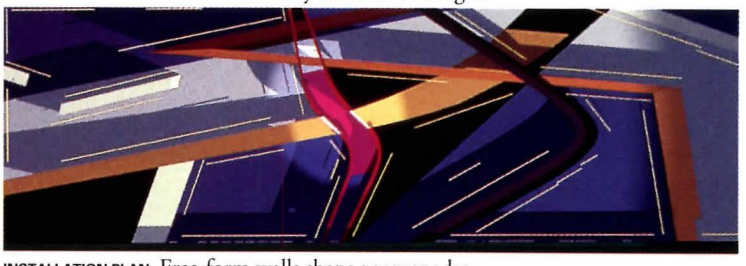
Antonio Sant'Elia's turbinelike structures demonstrated, magnificence in this aspiration, but there is also threat. Films showed how the Taylorized factory assembly lines are internalized by the human psyche, as robotic mothers feed children in lablike kitchens designed for efficiency.

Hadid's installation, done with architect Patric Schumacher, made spatial sense out of this welter of drawings, slides, and movies. She expanded display space by inventing a landscape of tilting, rising, and vaulting walls streaming through the hall in what seemed an excerpt from one of the early Modernist architectural utopias on view. Her boomeranging, wiggly, angled partitions, which were thick enough to support themselves and house projection equipment, exhibited the visual dynamism of this world of movement and change, passing through each other and shaping repository spaces that accommodated the show's four categories while opening them spatially to each other.

The main walls sprang out from a central point near the entrance, where visitors could choose to go left or right. A third course leading up a staircase over the intersection of forms afforded an overview of the provocative landscape. Unlike, for example, the crushingly rational urban visions of Le Corbusier's redesign of Paris (on view in the architectural section), Hadid's free-form walls shaped open promenades with several points of entry and exit. The constantly changing lines of the partitions pulled the eye like visual vectors, and transitive spaces opened and closed, propelling visitors into new zones. A wide wall with a top resembling a jet runway cut dramatically through the composition, veering up and off in a lifting curve.

Hadid never piously neutralizes her installations in favor of the blank white box. Embodying the spirit and content of the show with its driving force, her design thrust visitors into an equivalent of one of its visions, collapsing the future and the future's past into a present of earthly delight.—*J.G.*

INTERPENETRATING WALLS: Evoke early Modernist designs.



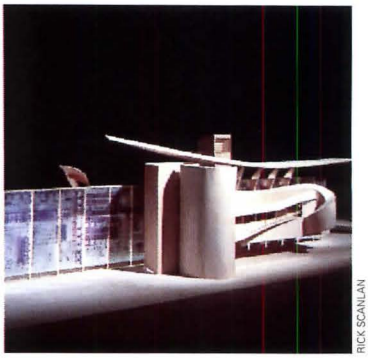
INSTALLATION PLAN: Free-form walls shape promenades.

Exhibitions

Architecture shows in New York, San Francisco, and Venice range from the folksy to the esoteric.

Vernacular Architecture
Needlework, quilts, tin boxes, and scrimshaw are some of the unlikely media with which 18th- and 19th-century Americans recorded the built world around them, celebrating the nation's growing prosperity by depicting buildings from the White House to the corner store. Some 100 of these objects are assembled in an exhibition at New York's Museum of American Folk Art, "A Place For Us: Vernacular Architecture in American Folk Art," on view until January 5, 1997.

World's Fair Drawings
The Art Moderne paradise lost with the closing of the 1939 New York World's Fair is regained through mid-January in an exhibition at the Museum of the City of New York. "Drawing the Future: Design Drawings for the 1939 New York World's Fair" displays original renderings by artists such as Hugh Ferris and Raymond Loewy of more than 40 long-demolished and never-realized Fair buildings, including Harrison and Fouilhoux's legendary centerpiece, the Trylon and Perisphere.



RICK SCANLAN

Glass Buildings
"People in Glass Houses…," curated by SITE principal Alison Sky, explores the creative potential for the use of glass in building, while drawing connections to its role in art, film, and other disciplines. Drawings, models, and photographs depict a range of Modern work from Bruno Taut and Ludwig Mies van der Rohe as well as more recent projects by Hariri and Hariri and Diller and Scofidio. The show is on view at the Robert Lehman Gallery in Brooklyn through September 30.

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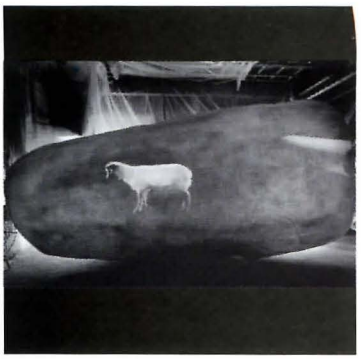
Big Apple Visions
The genus loci of New York City is captured in "NYNY: City of Ambition," on view through October at the Whitney Museum of American Art. Paintings, photographs, films, and models depict the city's changing *zeitgeist* from the turn of the century to the 1960s. Architectural highlights include original models of the Empire State Building and Rockefeller Center. Also on view are works by Edward Hopper, Roy Lichtenstein, Georgia O'Keefe, Diane Arbus, Alfred Stieglitz, and Weegee.

Kahn's Travel Sketches
The travel sketches of architect Louis Kahn are accompanied by models and drawings of the architect's synagogues in an exhibition on view at the Jewish Museum in Manhattan through December 15. "Louis I. Kahn Drawings: Travel Sketches and Synagogue Projects," pairs each religious building with a brilliantly colored, abstracted travel sketch, revealing the typological and geometric relationships between Kahn's view of ancient monuments and his built forms.

Americans in Venice
Austrian architect Hans Hollein curated "Sensing the Future: The Architect as Seismograph" for the 1996 Venice Biennale to illustrate how architects have an "ability to look towards the future." Among the 30-odd architects invited to contribute models, drawings, and photographs of recent buildings are Americans Peter Eisenman, Frank O. Gehry, Steven Holl, Eric Owen Moss, and Henry Smith-Miller and Laurie Hawkinson. The show is on view through November 17.



CHRISTINE ALICINO

San Francisco Installation
Through November, a whale-shaped object—18 feet long and 8 feet high—will drift around a gallery in the San Francisco Museum of Modern Art, its movements controlled by satellite. Obscured images will be projected from within on its surface. Collaborators Bruce Tomb and John Randolph of the Interim Office of Architecture and graphic designer Tom Bonauro intend their creation, dubbed the "Gnomon," to challenge museumgoers' conventional perceptions of space.

Cathedral Controversy Embroils Los Angeles

Historic preservation, or religious oppression? A summer-long fight over the fate of Los Angeles's oldest cathedral has pitted the city's Roman Catholic Archdiocese against the Los Angeles Conservancy, the region's most potent preservation group. But what started as a battle over a building has moved beyond arguments of historical and cultural merit to issues of freedom to worship and the future of L.A.'s downtown.

Cardinal Roger M. Mahony announced plans last year to tear down 120-year-old St. Vibiana's Cathedral, badly damaged in the 1994 Northridge earthquake, and build a new, $50 million cathedral—a commission captured in June by Spanish architect Rafael Moneo.

Earlier this year, the archdiocese and the Conservancy studied ways to redevelop the site without demolishing St. Vibiana's, but the archdiocese proceeded to remove the stained glass and statuary in late May.

The feud heated up on June 1, when three cranes and a wrecking ball ordered by Cardinal Mahony arrived and pulled off St. Vibiana's cross and wood-frame cupola like a cork. Shocked preservationists raced to court to obtain an order halting demolition, because the landmark was being torn down without a proper permit—without following the year-long review period stipulated by the city's landmarks law.

Archdiocese officials claim the city building department ordered demolition to "abate" potential danger caused by damage sustained during a 3.6 earthquake on May 23 (which one preservationist calls "the Mahony quake"), though no other damage was reported downtown.

With its demolition attempt blocked, Mahony decried the landmarks law as treading on religious freedom and threatened to abandon downtown to build his new cathedral elsewhere. The threat spooked the mayor and the city council, who viewed the move as a serious blow to the already ailing city center. By a vote of 14 to 1, the council gathered behind the archdiocese and swiftly stripped the cathedral's landmark status. Within two hours of the council vote, the archdiocese obtained its demolition permit.

Meanwhile, the Conservancy immediately obtained another court injunction delaying demolition until a July 25 hearing. At the hearing, the judge rebuked the council, ruling that while the church had been de-listed from the city's historic register, it remains historically significant, and that state law still requires a thorough environmental impact study before it can be razed. He found the archdiocese's concerns over religious freedom unconvincing.

Upon appeal, a three-judge appeals panel agreed that no infringement of religious freedom had occurred: "While it is true that the cathedral remains unoccupied and cannot be used," the judges wrote, "that would also be the case if the cathedral had been demolished."

The Conservancy now awaits setting of two court dates this fall: one

for a suit concerning whether demolition is necessary to abate structural damage, and another to decide the extent of environmental review required before demolition can occur. Ironically, notes Linda Dishman, the Conservancy's executive director, if in 1995 Mahony had only followed the landmarks law's requisite one-year waiting period after announcing demolition plans, he'd have his cathedral down by now.—*Bradford A. McKee*

New Commissions

Eisenman Architects is designing a 130,000-square foot headquarters for a software-engineering company outside Bangalore, India. Spread over a 12.5-acre site, the facility will include housing and medical facilities. **Antoine Predock** has been chosen to design the Alumni Gateway Center for the University of Minnesota in Minneapolis. **Lee H. Skolnick Architecture & Design Partnership** has been commissioned for a site plan and 9,000-square-foot interpretive center for the 6,200-acre Mohonk Preserve in New York's Shawangunk Mountains. **Gunnar Birkerts** is master-planning a 37-acre historic market district in Riga, Latvia. Washington, D.C.-based **David M. Schwarz/Architectural Services** has been awarded the renovation of Severance Hall in Cleveland. Thomas Edison's laboratories and house in West Orange, New Jersey, are being restored by **Ford Farewell Mills and Gatsch, Architects. Schwartz/Silver Architects** is designing a 15,000-square-foot building for the Robert Abbe Museum of Stone Age Antiquities in Bar Harbor, Maine. The final hurdle blocking the renovation of the landmark Gordon Bunshaft-designed Lever House (1952) has been cleared. New York City's Landmarks Preservation Commission has approved **Skidmore, Owings & Merrill**'s scheme to replace the landmark's curtain walls, visually replicating the old ones but employing nonferrous metal and contemporary sealants.

COURTSEY OF SKIDMORE, OWINGS & MERRILL

GOLDSMITH'S MODERNISM: *Republic* Newspaper Plant in Columbus, Indiana (1971).

Obituaries

American Modernist **Myron Goldsmith** died of heart failure on July 15 in Wilmette, Illinois, at the age of 77. Goldsmith, a lead designer for Skidmore, Owings & Merrill's Chicago office, was responsible for designing the McMath Pierce Solar Telescope Facility (1962) outside Tucson, Arizona; *The Republic* Newspaper Plant (1971) in Columbus, Indiana; and the Oakland Alameda County Coliseum (1966). Educated at the Illinois Institute of Technology, Goldsmith worked in the office of Ludwig Mies van der Rohe from 1946 to 1953. After studying in Rome with engineer Pier Luigi Nervi, he returned to Chicago to work for SOM in 1955, where he remained until his retirement as partner in 1983.

British landscape architect **Geoffrey Jellicoe**, 95, died on July 17 in Devon, England. Jellicoe, a graduate of the Architectural Association in London, founded Britain's Institute of Landscape Architects and coauthored *The Landscape of Man.*

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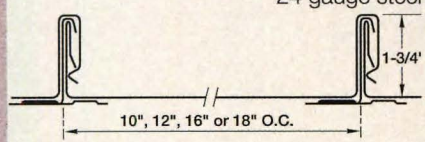

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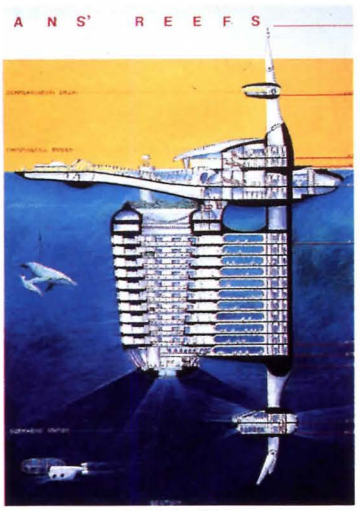

WINNER: Hotel as jellyfish.

Oklahoma Students Win Hotel Competition

Hotels located in space, underground, among the clouds, and beneath the ocean's surface were envisioned by international architecture students for a competition organized by the Association of Collegiate Schools of Architecture, in collaboration with Honolulu-based firm Wimberly Allison Tong & Goo (WATG). The "Hotel of the Future" competition called for visions of travel accommodations in the year 2045, drawing nearly 600 entries from over 100 schools in 35 countries. The entries were juried in June by WATG principals Gerald L. Allison and George Berean, and by Jon A. Jerde of the Jerde Partnership.

The $5,000 first prize was awarded to Oklahoma State University students John Campbell, Brian Fitzsimmons, Chad Schmidt, and Feng Han Tan. Their floating hotel is inspired by the mechanics of jellyfish. Its floating upper portion provides buoyancy, and a submerged portion houses guest rooms.

A group of students from Silesian Technical University in Gliwice, Poland, won the $2,500 second prize for their design of a floating hotel supported by helium-filled balloons. Third prize and $1,500 went to Emily Fisher of Ball State University in Muncie, Indiana, for a hotel recycled from an abandoned office tower.—*N.C.*

NCARB Requires Degree for Certification

Since 1984, the National Council of Architectural Registration Boards (NCARB) has required applicants for NCARB certification to hold a degree in architecture from a program accredited by the National Architectural Accrediting Board, but granted an exception to architects who could prove extended professional practice experience. Now NCARB has repealed the grandfather clause that exempted experienced U.S. and Canadian architects, making certification possible only for those with accredited professional degrees in architecture.

The repeal takes effect on July 1, 2000, but will not affect those practitioners who are already certified by NCARB, and future applicants from outside the U.S. and Canada.—*N.C.*

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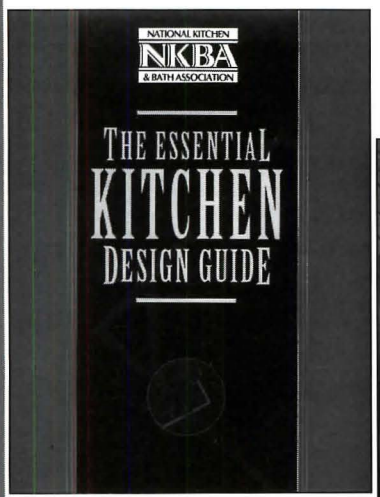

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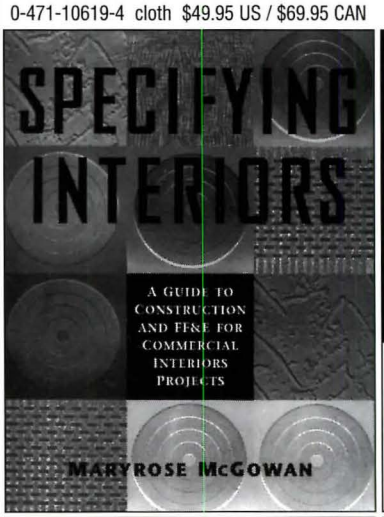

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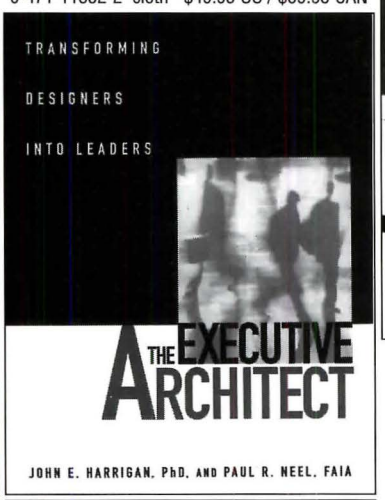

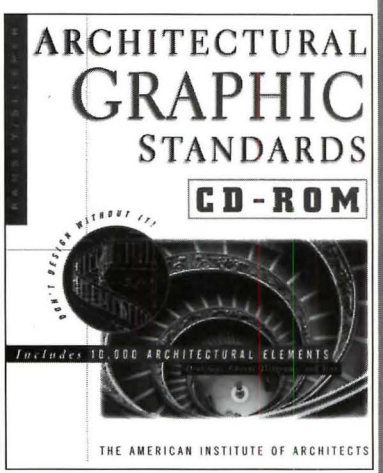

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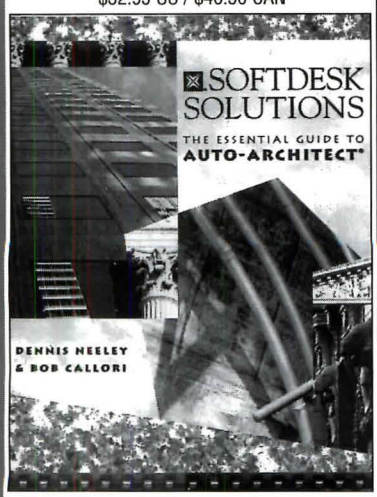

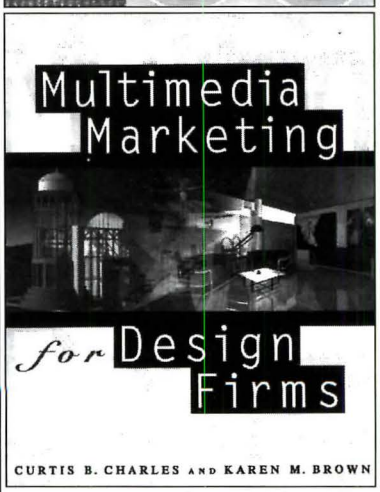

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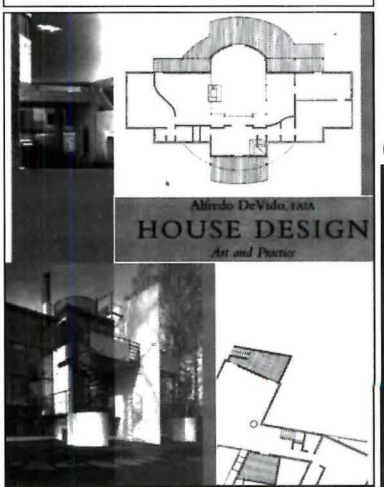

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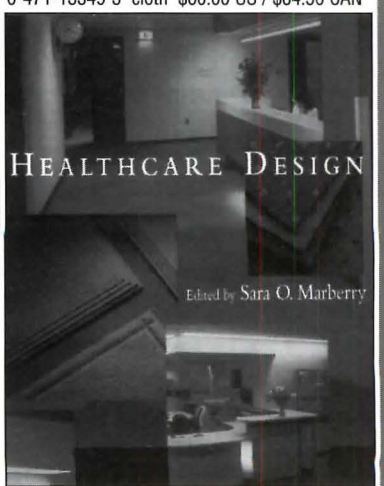

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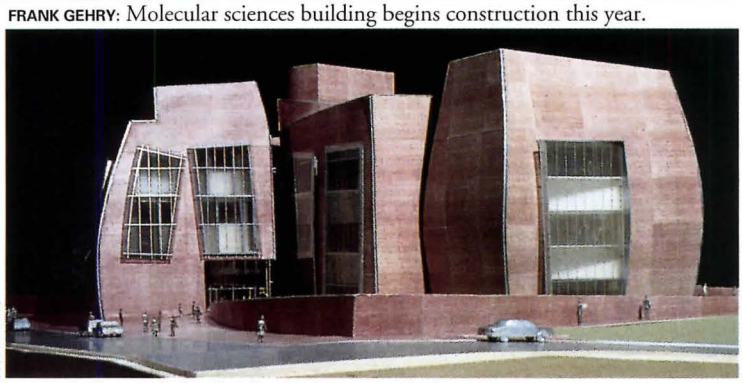
University of Cincinnati invests $500 million in new buildings for its campus.

JOSHUA WHITE

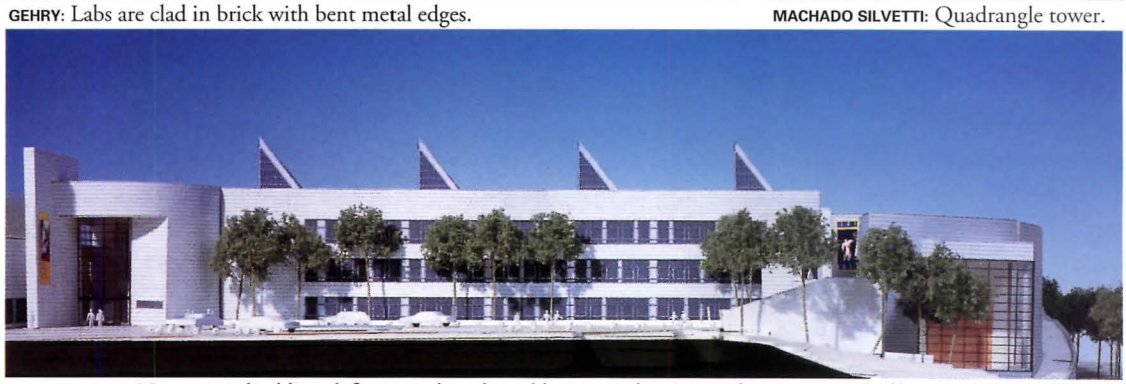
FRANK GEHRY: Molecular sciences building begins construction this year.



JOSHUA WHITE

GEHRY: Labs are clad in brick with bent metal edges.

MACHADO SILVETTI: Quadrangle tower.



PEI COBB FREED: New music building defines quadrangle and houses auditoriums, classrooms, and offices.

New Buildings at the University of Cincinnati

A 1991 master plan by landscape architect George Hargreaves is the underpinning for a massive building initiative on the 212-acre University of Cincinnati campus, where this country's best architects are remedying insensitive 1960s and 1970s developments. In addition to Peter Eisenman's Aronoff Center of Design and Art (ARCHITECTURE, August 1996, pages 114-125), recently completed projects include Michael Graves's Engineering Research Center, a power plant by Cambridge Seven, and an outdoor staircase by Wes Jones. In fact, so much major building is taking place at the "University of Construction" that the school commissioned David Childs of Skidmore, Owings & Merrill to design a building for offices dislocated during campus construction.

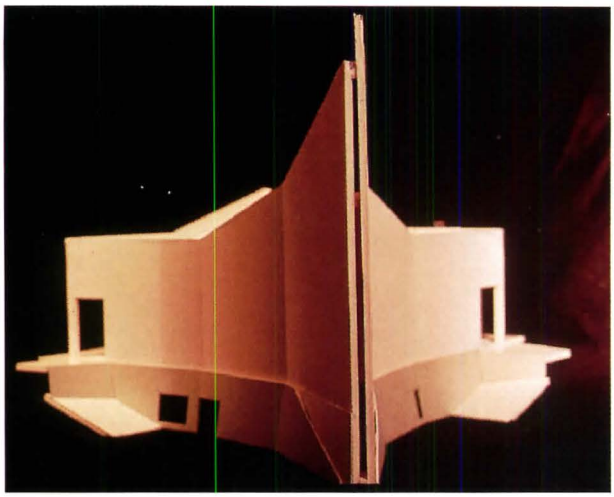
Eisenman credits Jay Chatterjee, dean of the university's College of Design, Architecture, Art, and Planning, as the "motivating force" behind not only his Aronoff Center, but in bringing Hargreaves, Graves, and other big names to the campus.

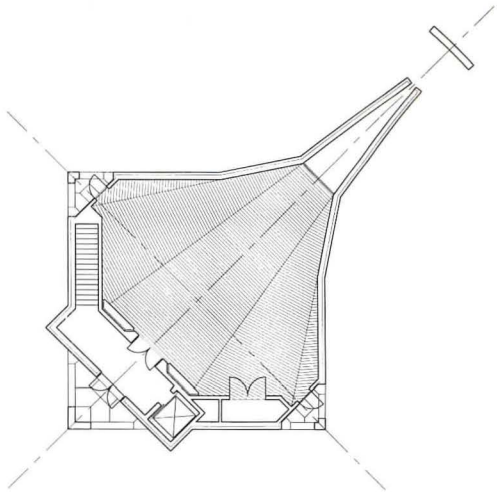
Construction shows no signs of slowing. Major projects by Pei Cobb Freed & Partners, Machado and Silvetti Associates, and Frank O. Gehry & Associates are on the boards or under construction. Pei Cobb Freed & Partners' College Conservatory of Music consists of new and renovated buildings grouped around a quadrangle on the campus's southwestern edge. A 1922 dormitory will become practice studios and offices, and a 1910 gymnasium has been converted into a vocal-arts center.

Machado and Silvetti's Sigma Sigma Tower will provide a focal point for a new quad near the center of campus. Icons representing the donor, the Sigma Sigma service fraternity, rise above a granite base forming the initials "UC." A wooden shaft and stainless steel block on top of the base abstract the fraternity's symbolic hammer; further up, a precast-concrete cube is carved in the shape of the ancient Greek letter "Σ," or sigma. A spiraling glass flame crowns the 60-foot-tall tower. Machado and Silvetti was also recently selected to design two dormitories for the university.

On the southeast border of campus, a sculptural, brick molecular-sciences building is being designed by Frank O. Gehry & Associates. At the center of the cruciform-shaped complex is an atrium dividing labs on the north from offices on the east and west. The project breaks ground this fall.—*N.C.*

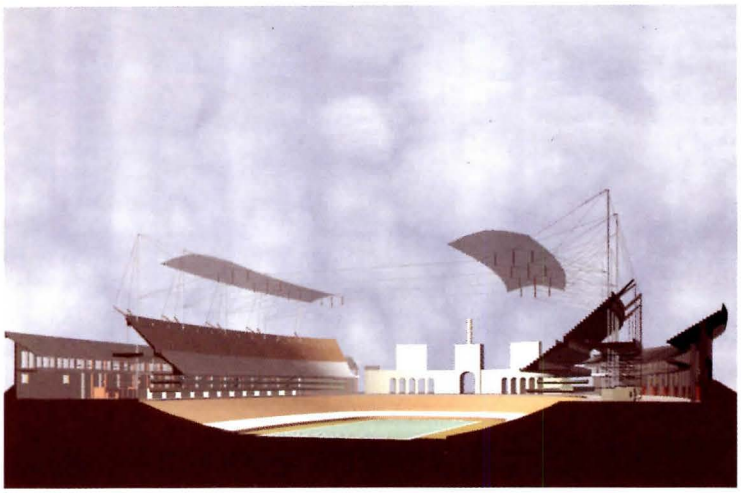
On the Boards





Pilling Chapel
Millikin University
Decatur, Illinois
Gunnar Birkerts and Associates
and BLDD Architects

A 5,000-square-foot ecumenical chapel designed by architect Gunnar Birkerts with BLDD Architects will terminate an axis running through a new quadrangle on the 45-acre Millikin University campus in Decatur, Illinois. The limestone-clad, diamond-shaped shrine sits on the edge of a low hill and is oriented southwest-northeast. The main entrance is located in the southwest corner; the opposite corner, containing the sanctuary, projects out into a sharp edge. This prowlike form is a favorite formal gesture of Birkerts, who has employed it in additions to the Ohio State Law School and the Kemper Museum in Kansas City. A thin vertical window along the projecting corner, the chapel's only natural light source, illuminates the wood-clad interior. The $1 million chapel is scheduled for completion next year.—*N.C.*

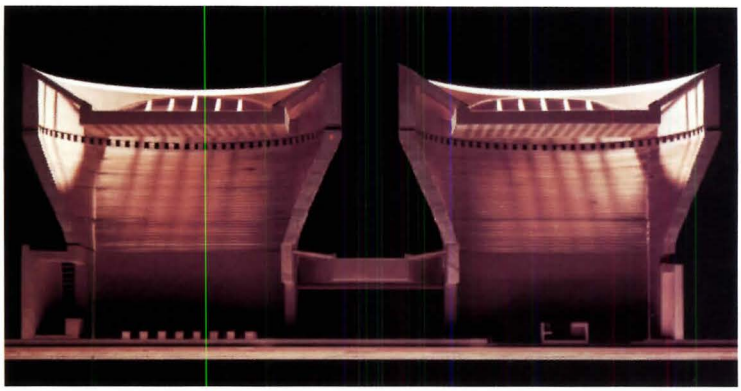


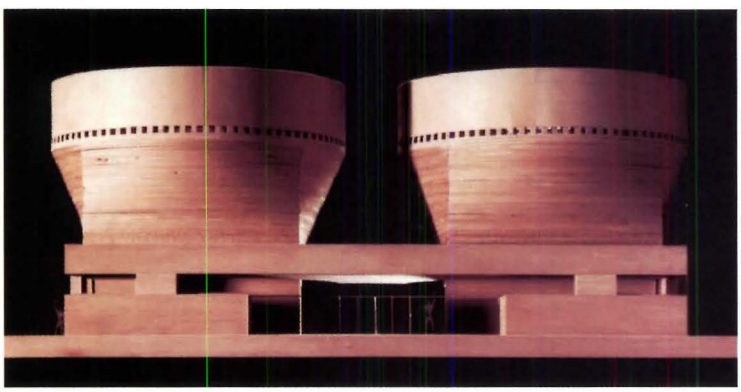
Los Angeles Memorial Coliseum
Los Angeles, California
Barton Myers Associates

Having recently lost the Rams to St. Louis, Los Angeles is considering the construction of a new stadium to lure another National Football League (NFL) team to the city. The controversial question of where to build may be answered by developer William McGregor's proposal, designed by Barton Myers Associates with engineers Ove Arup & Partners, to renovate and expand L.A.'s Memorial Coliseum. Originally designed by local architects John and Donald Parkinson, the Coliseum (1923) is best known as the site of the 1932 and 1984 Olympics.

Myers recommends removing the existing upper tier and replacing it with a bank of seats and boxes cantilevered out toward the field, over the remaining lower tier. Additionally, a new promenade inserted between the seating and surrounding original colonnade would accommodate revenue-generating concession stands. According to Myers, the proposal has been well received by the commission controlling the Coliseum, as well as by the mayor and city council. Unfortunately, the NFL commissioner has prohibited any discussions between football teams and potential L.A. buyers until after January 1, 1997, discouraging Angelenos' hopes of ever regaining a team.—*N.C.*

On the Boards

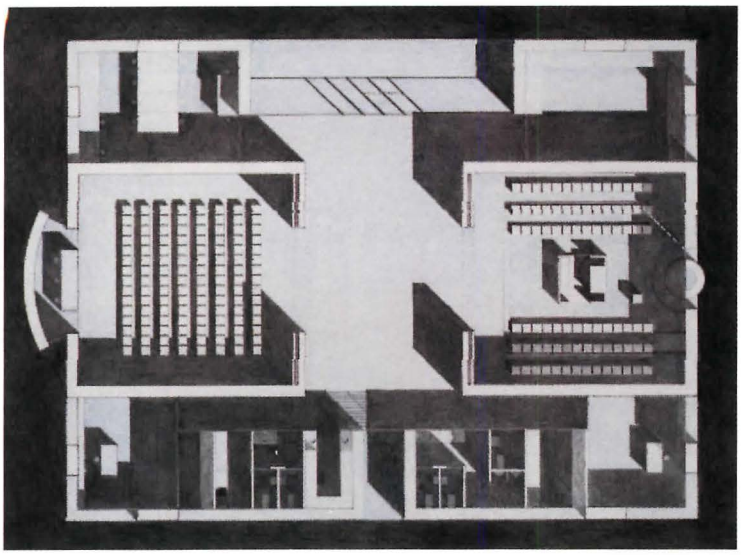


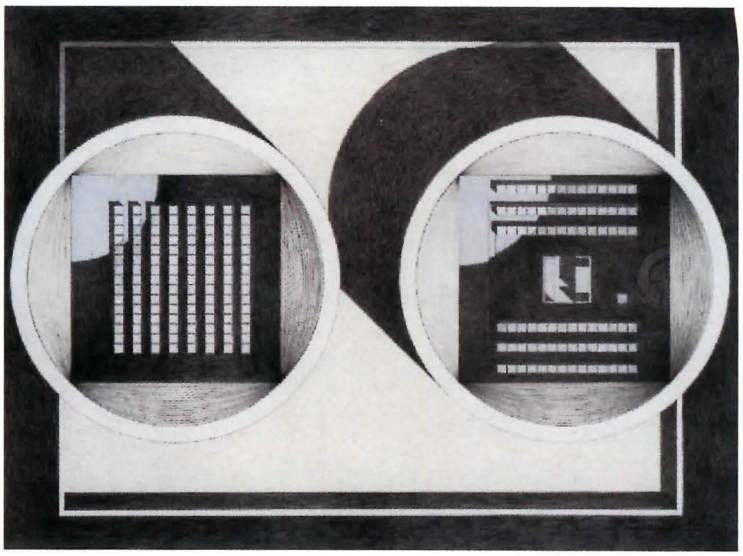


Cymbalista Synagogue and Cultural Center
Tel Aviv University
Tel Aviv, Israel
Mario Botta, Architect

The Cymbalista Synagogue and Cultural Center at Tel Aviv University gives architect Mario Botta a double opportunity to employ his signature cylindrical form. To distinguish the center's sanctuary and auditorium, Botta extended two drums from a one-story rectangular building.

The 8,600-square-foot center, to begin construction in October, is entered from the north; an entrance hall separates the sanctuary to the east from the auditorium to the west. The two chambers match, with minor exceptions: Niches opposite the rooms' entrances differ in form to accommodate the speakers' platform in the auditorium and the Ark in the synagogue. The rooms' furniture is likewise laid out according to function. In the auditorium, seating faces the platform; in the synagogue, two banks of seats face each other





across a central aisle and *bimah,* or altar. Services and support spaces line the building's southern flank.

Botta exerts his greatest effort in the design of the 35-foot-high brick-clad drums. The architect's typically simple geometries are supplanted here by more complex configurations. The round forms are not pure cylinders, but pendentives which expand to support cylindrical friezes that are larger than the squares on which they rest. The square plans of the spaces are mirrored by square ceilings within the drum above. Interstices between the square ceilings and surrounding drums are glazed, admitting light into the rooms below.

Tel Aviv University comprises an assemblage of quiet Modern buildings, and Botta's Cymbalista complex provides a much-needed dominant architectural symbol for the school. However, the question of that symbol's appropriateness is another matter. Botta's geometric gymnastics may be closer here than ever before to his great influence, Louis Kahn, but a Kahn building has never been mistaken for a nuclear power plant.—*N.C.*

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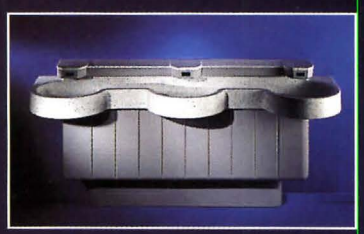

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– Mike Svoboda
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An addition to a 1970s building demeans not only the original, but the entire city streetscape.

BUILDING 8: Corrigan added six stories to existing five-story Union Building by John Andrews, with no reverence for original.

WEST ELEVATION: Corrigan's collage is propped with struts over original.

CORNER DETAIL: Chaotic materials.

Urban Contempt in Melbourne, Australia

As an architect and theater set designer, Peter Corrigan loves to deflate the polite pretensions of Melbourne, Australia, a tweedy city that takes itself too seriously. Corrigan's latest work, Building 8 at the Royal Melbourne Institute of Technology, however, not only displays his contempt for the city, but damages the very order of its major north-south civic and commercial axis.

Building 8 adds a library, computer space, lecture rooms, and offices for the Institute's business and architecture schools on six levels above the existing five-story Union Building (1978), designed by Sydney-based John Andrews. Andrews first became famous internationally with his Scarborough College (1963) at the University of Toronto, and confirmed his importance with Gund Hall at Harvard's Graduate School of Design (1968), and his superb Intelsat Headquarters Building in Washington, D.C. (1988).

In Melbourne, Andrews's glass-block-and-concrete building partly sinks below the street in a moatlike depression. Its prestressed concrete floors prevented Corrigan from cutting any holes for his vertical circulation and services. So, with shocking disdain for the Andrews building, Corrigan propped up his edifice with two diagonal struts borrowed from Viollet-le-Duc. He pushed the services to one side to avoid the existing building's footprint, causing deep floors of offices and lecture rooms to end up spatially static and leaving no choice but to insert large corridors with offices lined up along them.

Corrigan incorporates as many items as possible on the facades, with explosive impact. His west facade conceptually approaches Antonio Gaudí's mosaics for Barcelona's Parc Güell, but Gaudí's simple, rich palette of stone and broken ceramics has a strong, consistent unity. Corrigan, on the other hand, merely applies every kind of material—including glass, steel decking, concrete, and stone—with no unifying gestures or artistry.

The effect is that of a harlequin screeching along the drab, sober streetscape. Corrigan's glitzy pile humiliates Andrews's Union Building, showing that blarney alone does not make good buildings. In place of ideas, Corrigan offers only rhetoric and insults.—*Philip Drew*

Philip Drew, an Australian architecture critic, is currently working on a biography of Jørn Utzon.

AND TO THINK OTHER WINDOW MANUFACTURERS SAID I'

Architect Richard Smith grew up in Montana's Flathead River valley, exploring its forests, paddling its lakes and streams and marveling at the abundance and variety of its wildlife. So when he was asked to design a home perched above the waters of Flathead Lake, his inspiration was the majestic bird that makes its home in the same idyllic setting: the osprey.

Since the windows would be the key element in creating the look of a bird in flight, Richard spoke with all of the top manufacturers. More than one claimed they were impossible to build. Others were eliminated from consideration because their solutions compromised the design. Still others, because they couldn't provide the low maintenance finish the owner requested. Only one company rose to the challenge. Marvin Windows & Doors.

True to Richard's vision yet mindful of builder Len Ford's timetable, Marvin's architectural department began designing the windows and creating the necessary production specifications. But a change in plans became necessary when the owner brought up his concerns about the frequent high winds coming off the lake. So Richard designed a special steel framework for the window openings and Marvin produced 24 direct glazed units with custom radii. Not only that, they were clad in extruded aluminum that exceeds A.A.M.A. 605.2-92 standards; the industry's most

Halt: Who Goes There?

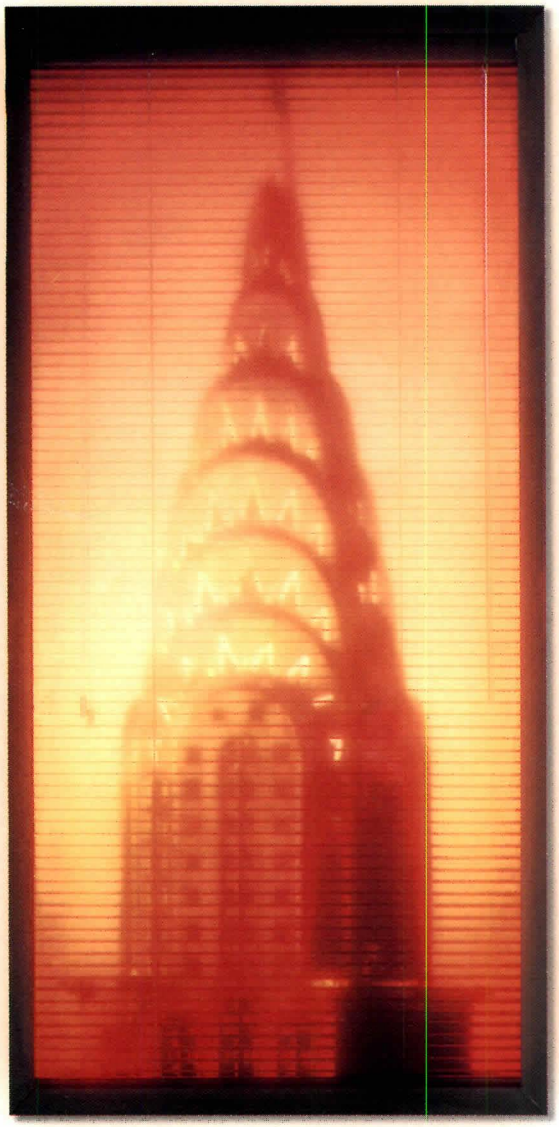
Urban control zones in Europe offer important lessons for securing U.S. cities.

CITY AS FORTRESS: Police presence increased in West Belfast after Orange Order parade riots this July.

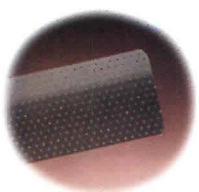
Cities almost everywhere have entered an age when unrestricted public access can—and will—no longer be taken for granted. The bombings of Atlanta's Olympic Centennial Park, Manhattan's World Trade Center, and Oklahoma City's federal building, and the spate of attacks against the White House, brought home the news that urban terrorism has finally come to American shores. But compared with places in Europe, North Africa, South America, and the Middle East, cities in the United States are behind in adopting permanent measures to control access, detect threats, and deter terrorism.

Restrictive urban security measures are now routine in Algiers, Beirut, Jerusalem, and Belfast—cities where the threat of low-level warfare has been a near-constant presence for years. In 1995, lethal parcel bombs in the Paris Métro system and at street-level gathering spots transformed that city overnight into an openly acknowledged (and widely welcomed) police state. French authorities deployed 20,000 police and soldiers for indefinite duty on streets and subways; 9,000 others were detailed to airports, train stations, museums, and utility companies. Nearly 2 million identity checks and personal searches were performed in a single two-week period. Parisians welcomed these steps, even applauding the nationwide ban on parking in front of schools, one of which was the target of a car-bomb attack in Lyon. Makeshift barriers such as metal barricades and concrete bollards sprang up all over Paris, and more than a few seem likely to stay in place.

In *Kingdom by the Sea,* a 1983 account of a solitary walk around the edges of the British Isles and Northern Ireland, novelist Paul Theroux observed probable signs of an urban future: "Someday all cities will look like this, I had thought in Belfast…Londonderry, and now Enniskillen. The center of these places was a Control Zone, with an entrance and an exit. All cars and people were examined for weapons or bombs, and the



IMAGINE. SUN SCREEN FOR THE OFFICE.



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tight security meant that within the Control Zone life was fairly peaceful and the buildings generally undamaged. It was possible to control the flow of traffic and even to prevent too many people from entering. It was conceivable that this system would in time be adapted to cities that were otherwise uncontrollable. It was not hard to imagine Manhattan Island as one large Control Zone."

The essential purpose of urban "control zones" and secured enclaves is to permit authorities to exercise control over persons entering. Urban control zones may comprise streets, sidewalks, alleys, and open spaces such as parks. Within such zones are housed a number of other public and private areas such as shops, museums, houses, offices, government facilities, libraries, churches, and so on, each of which may be turned into a miniature control zone with restricted access. Entrance to all areas is controlled by checkpoints at the zone's perimeter.

Urban control zones can be designed to be physically attractive. In this country, secured enclaves such as corporate headquarters, government complexes, and criminal justice centers have received a great deal of attention from architects, much of it directed toward making security measures "invisible" or unobtrusive. But design has had much lesser influence on urban areas. In Washington, for example, traffic bollards installed "temporarily" in 1986 around the Capitol and other buildings—long before the closing of Pennsylvania Avenue—are still in place today. These eyesores may keep cars away, but they mar the streetscape.

It may be easy to envision, as Paul Theroux began to do, how center cities could be sealed, but actually making that happen in America is another story. Not only are Americans loathe to surrender the "right" to drive wherever they please, but our cities, many with streets laid out on a grid and with little or no mass transit, pose additional challenges. New steps must be taken to secure urban areas, at least on a limited scale. Police and security authorities agree that control zones can help to curb such widespread problems as possession of concealed weapons, armed robberies, assaults, and open-air drug dealing. Reducing portals and providing checkpoints greatly eases the tasks of patrolling, pursuing, and apprehending.

City centers approached over bridges might be able to impose basic controls; older cities (or sections of them) could implement historical security design features: gates, walls, bollards, and sentries. Cities without rivers or other natural barriers, such as downtown Oklahoma City, are far more difficult to control in this way. The aftermath of the 1995 bombing of the Murrah Federal Building produced a single overriding security recommendation: a minimum 100-foot stand-off, or "keep out," distance between government buildings and vehicles. But, considering that the explosive-laden truck damaged an area 5 miles square and destroyed dozens of nearby

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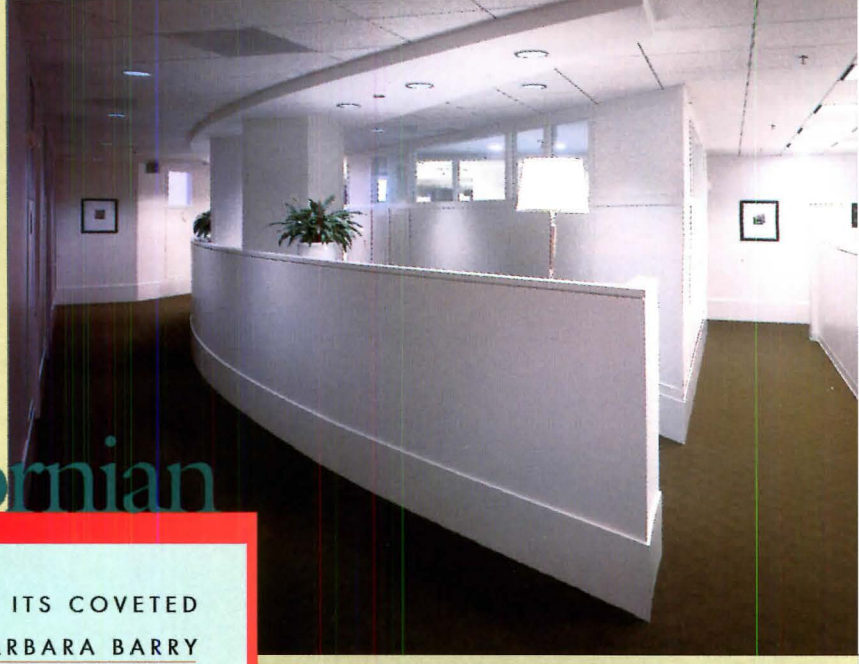

Crisp and Californian

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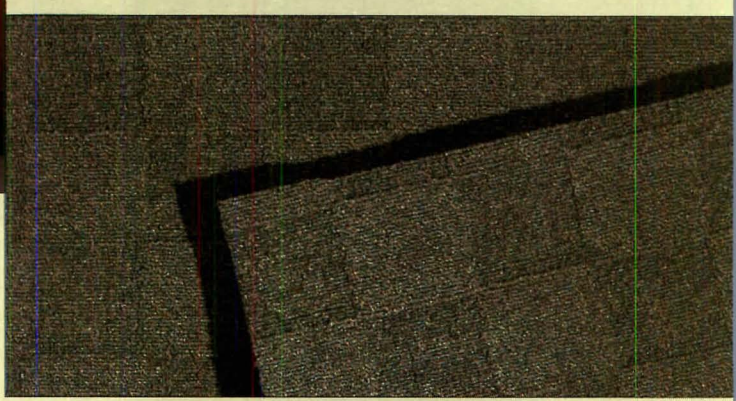

For details about the 1996 DOC AWARDS, call Monsanto, 1-800-543-5377 or 1-770-951-7600.

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Winning design team shown above (L to R): Armando Iarussi, Debbi Baron and Barbara Barry (seated).
Photography © Erhard Pfeiffer 1995 (installation) and © Don Rank (product).

buildings, what good would such a perimeter (if it were at all practical) actually have done? What about the high school or Southwestern Bell just a couple of blocks beyond?

To implement such zones in a manner palatable to a broad cross-section of the urban population—and in order to yield broad benefits to urban life—we need more and better ideas, solutions, and precedents. We also require a clearer, stronger commitment to Euro-style urbanism—mixed use, higher densities, mass transportation—if we really expect to protect public institutions.

Why? Because, although extended urban control zones could provide more effective security and many other benefits, they will not necessarily become more common unless they receive significant public and private support. As long as the quality of basic city services continues to decline and elude public solutions, property owners and real estate developers will turn to private solutions.

We are thus likely to see more secured enclaves, which do far less for the city commonweal and may even detract from it by moving "healthy" street life indoors (or at least removing it from public sidewalks). With such private oases, we will shuttle from safe haven to safe haven. To ensure that at least a perception of security is restored, portions of cities seem headed inexorably toward modern approximations of medieval bourgs, complete with new versions of the messy, impoverished, and dangerous faubourgs outside the gates. We should not resort only to private security enclaves. Americans must now embrace—and learn to design—control zones for the public. Most importantly, architects and urban planners must prepare to address the need for increased security by delivering designs that accommodate restricted-access requirements without creating oppressive, fortresslike environments.—*Thomas Vonier*

Architect Thomas Vonier recently directed a special research project on embassy security for the U.S. Department of State.

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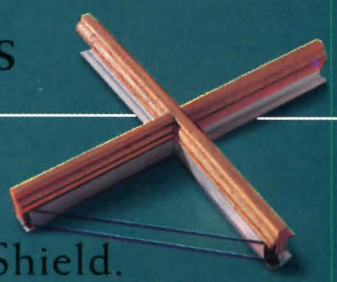

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Tim Dean, *Tim Dean Construction Bozeman, MT*

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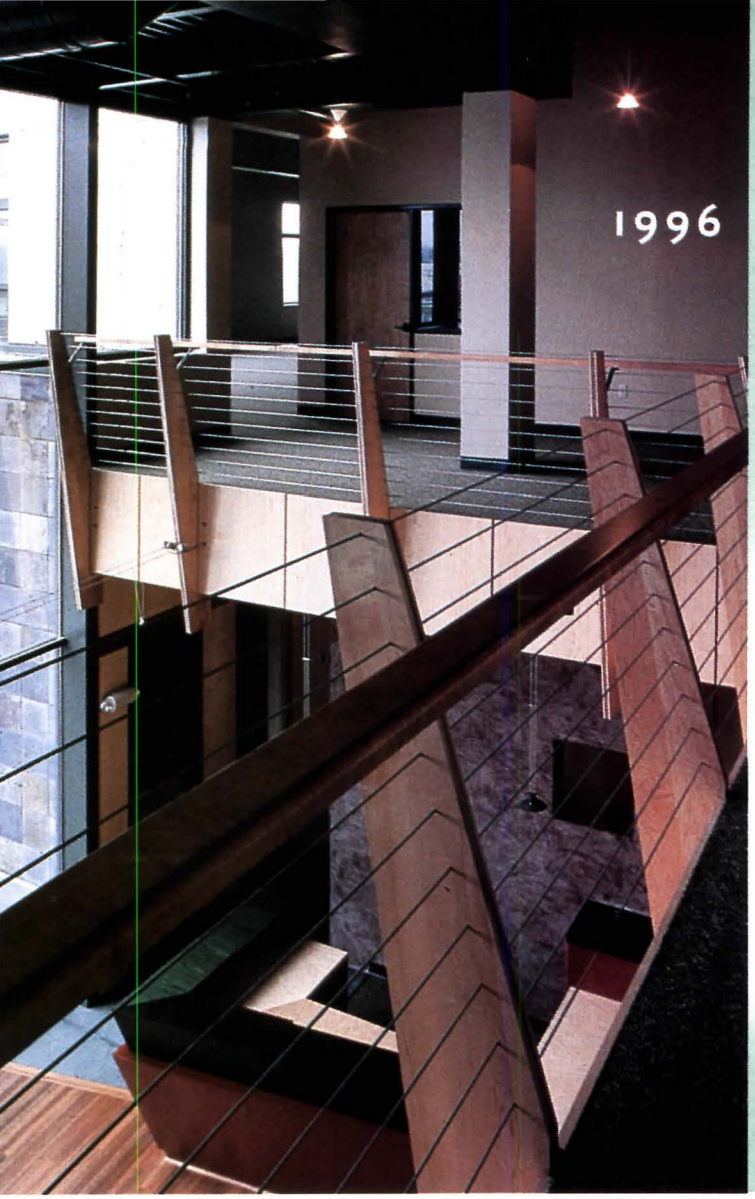


ARCHITECTURE + ENERGY

1996 Design Awards

Juror's Comments

"..the placement of the building to take advantage of a southern slope and run-off to a wetland protected and enhanced as a bioswale, is an admirable gesture to conservancy."

AWARD OF HONOR

Norm Thompson Headquarters
Hillsboro, OR

Architect / Firm
Sienna Architecture Company
Portland, OR

Contractor
McCormack Pacific
Tigard, OR

Lighting / Energy Consultant
Portland General Electric
C.Z. Brown, U of O Director of Energy Studies
Portland, OR

Owner
Multi-Employers Property Trust
c/o Trammell Crow Company

Photographer
Ed Hershberger, Portland, OR

This was the fourth year of the **Architecture + Energy** Design Awards. As before, winning projects had to demonstrate energy efficient designs that were integral to successful architecture. Along with daylighting, the jury expected exterior and interior architectural excellence, combined with efficient mechanical and lighting systems for award consideration. All projects receiving Awards of Honor or Merit integrated daylight into the design in an effective and meaningful way.

The Norm Thompson Headquarters demonstrates how to achieve a highly refined building through simple, even banal (as with tilt-up construction) means. The architects set stringent economic goals for themselves concomitant with the clients need for liberal, unadulterated daylighting. The bland white surfaces of the tilt-up slabs of the building skin are punctuated by well proportioned openings set off by the elegant light shelves of perforated steel in tubular steel frames on the south, east, and west sides. Sensitivity to building orientation, the use of light shelves for shading and reflecting light on all but the north side, and the avoidance of tinted glass typifies the clarity of their approach. As well, the placement of the building to take advantage of a southern slope and run-off to a wetland protected and enhanced as a bioswale, is an admirable gesture to conservancy.

The 'Loft' concept for the interiors-eliminating secondary finishes to expose structure and services and open space planning followed their straight forward "less is more" approach. But, if a criticism can be made, the interiors seemed to depart from the architectural concept and contradict, rather than compliment, the simplicity of the building shell. Over decorated surfaces and forms romanticizing the lobby and vendor conference areas are at cross purposes with an otherwise laudable constraint shown in the building envelope. The building, as a whole however, demonstrates how a tight budget can challenge a sensitive architect to do outstanding work.

Arthur Erickson, Hon. FAIA, FRAIC, ARCA, MRIBA

AWARD OF MERIT

Science Facility Two - Biology
Western Washington University

Bellingham, WA

Architect / Firm
Zimmer Gunsul Frasca Partnership
Seattle, WA

Contractor
Baugh Construction
Seattle, WA

Engineers
KPFF Consulting Engineers
Portland, OR

Lighting / Energy Consultant
Sparling
Seattle, WA

Owner
Western Washington University

Photographer
Strode Eckert Photographic
Portland, OR

This building uses sensible, logical design principles to organize and stack the multitudes of lab space. The lab block itself is an intensively serviced 'machine.' The design team took a 'high-tech' approach to minimizing energy use by employing heat pipe heat recovery (capturing the fume hood exhaust heat and transferring this to the make up ventilation air). This strategy provides all needed pre-heating for the system for outside temperatures above 35 degrees Fahrenheit. Individual fume hoods use sash-position control to significantly reduce the energy required to ventilate and heat the building.

The team applied 'lo-tech' thinking by making a number of simple, but far reaching decisions. First, grouping all offices in a separate wing allowed the use of operable windows for natural ventilation. The large percentage of glass and the high ceilings brings daylight not only to the offices, but to the corridors beyond via glazed transoms. The off-set geometry of this wing completes the quadrangle on campus in a sensitive, interesting way.

Secondly, a bold decision not to use mechanical cooling in this building deferred significant capitol and operating costs. The highly mechanically-ventilated lab block coupled with the naturally ventilated facility wing allows the strategy to work in this classic northwest coastal location and provides the client with an energy efficient building.

Kevin Hydes, PE

AWARD OF MERIT

Science & Technology Building

Portland Community College, Rock Creek Campus
Portland,OR

Architect / Firm
SRG Partnership
Portland, OR

Contractor
Robinson Construction
Hillsboro, OR

Engineers
Kramer Gehlen
Portland, OR

Lighting / Energy Consultant
CBGK
Portland, OR

Owner
Portland Community College

Photographer
Strode Eckert Photographic
Portland, OR

The designers arranged the lab and classroom spaces to focus inward, creating compact, resource-efficient clusters. The challenge then became to bring light into the internal spaces. The single loaded corridors provided the perfect opportunity. The circumference space was used as a 'thermal buffer' zone protecting the conditioned occupied spaces from extreme heat or cold. The buffer zone is nominally heated and marginally cooled allowing a broad temperature range which minimizes energy consumption. Low, operable windows provide simple but effective natural ventilation to assist comfort control. Courtyard classrooms have north and south glass. The team used light shelves only on the south side, minimizing solar gain and maximizing daylight.

Carbon dioxide sensors control ventilation and minimize the use of unnecessary mechanical ventilation during low occupancy periods.

Trellises, planted with vines, provide excellent summer shade and allow all available winter sun and light into south facing areas.

The team's efforts result in a building expected to use 30% less energy than the current Oregon state energy codes.

Kevin Hydes, PE

ARCHITECTURE + ENERGY

Jurors

Harry T. Gordon, FAIA
James R. Benya, PE, FIES, IALD
Arthur Erickson, Hon. FAIA, FRAIC, ARCA, MRIBA
Jerry A. Bancroft, AIA
Kevin R. Hydes, PE

AWARD OF MERIT

Sleeping Lady Retreat & Conference Center

Leavenworth, WA

Architect / Firm
Jones & Jones
Architects and Landscape Architects
Seattle, WA

Contractor
Sleeping Lady Construction
Seattle, WA

Engineers
HOWE Engineers
Redmond, WA

Lighting / Energy Consultant
Ecotope
Seattle, WA

Owner
Harriet Bullitt

Photographer
Jones & Jones
North Light Photography

The Sleeping Lady Retreat and Conference Center, reminiscent of traditional rustic mountain architecture, demonstrates a keen response to contemporary issues of energy efficiency and environmental responsiveness. Many of the buildings are a careful renovation of six decade-old CCC camps. The designers carefully sited the buildings to establish a predominantly pedestrian and natural environment.

The new and renovated buildings are very well insulated with double envelope walls and stress skin panel roof assemblies. Careful details avoid thermal bridges. Deep roof overhangs provide summer shading. The skillful integration of daylighting produces handsome and well detailed interior spaces.

Waste management practices reduced the materials from the construction and demolition process to 15% of traditional construction. Reprocessed wood and gypsum waste material became soil amendments. In addition, using engineered wood products limited the need for full dimension lumber.

The designers minimized the need for high technology solutions by designing buildings that respond to the climate. Appropriate low-tech elements include kitchen and laundry heat recovery and solar heating of the swimming pool.

The Awards Jury praised the architectural and engineering integration of well selected energy and environmental design strategies to create a handsome vernacular character.

Harry Gordon, FAIA

AWARD OF MERIT

Metro Headquarters
Portland, OR

Architect / Firm
Thompson Vaivoda & Assoc., Inc.
Portland, OR

Contractor
Hoffman Construction Company,
Portland, OR

Engineers
KPFF Consulting Engineers,
Portland, OR

Lighting / Energy Consultant
Glumac International
Portland, OR

Owner
Metro

Photographer
Strode Eckert Photographic
Portland, OR

Metro is an elected regional government entity with primary responsibility for the management of solid waste disposal and recycling programs for the area. With its 159 tons of salvaged material, 7,000 tons of rubble used as clean fill, and 725 tons of recycled drywall, metal, cardboard, and wood, Metro literally put their governmental policies into practice by example, not just prescription.

Several major challenges faced the Metro design team. The large floor plate, appropriate for retail and storage use, was directly at odds with the proposed office occupancy. Additionally, the long building axis is ninety degrees off optimum orientation for a daylighted building.

The design team's introduced a linear atrium penetrating through the third floor into the second floor. This strategy, in effect, breaks the building into a series of narrow cross section floor plates with increased perimeter zones enhancing lighting and office layout opportunities. Through the use of borrowed light, appropriately light colored surfaces, and careful detailing of the atrium space, the negative aspects of the existing large floor plate have been effectively mitigated. The existing high ceilings proved quite beneficial to the daylighting scheme used along the perimeters allowing deeper natural light penetration and improved distribution.

Jerry Bancroft, AIA

SPECIAL CITATION

for Integration of Electric Lighting & Daylighting

NW Federal Credit Union
Seattle, WA

Architect / Firm
The Miller/Hull Partnership,
Seattle, WA

Contractor
Lease Crutcher Lewis,
Seattle, WA

Engineers
H.K. Kim Engineers,
Seattle, WA

Lighting / Energy Consultant
Tom Paladino
Sidney Genette
Seattle, WA

Owner
NW Federal Credit Union

Photographer
The Miller/Hull Partnership,
Seattle, WA

The Northwest Federal Credit Union Building was designed from the beginning to be an environmentally responsible building. The result is an excellent model of responsible design using relatively ordinary materials and systems and built on a conventional budget.

Thoughtful site placement and massing permitted the architects to design an excellent envelope and external shading devices permitting daylight penetration all the way into the core. The use of a moderately dark, high performance glazing (0.39 shading coefficient) prevents the windows from becoming too bright, yet permits sufficient light to illuminate the ceiling plane. This careful balance is virtually optimum for most office work.

Electric lighting systems are equally well chosen. A direct/indirect system with T-8 lamps and dimming electronic ballasts is controlled by an ambient light photosensor. The result combines the efficiency of direct illumination with the inherent comfort of indirect lighting. The designers made certain all ceiling volume surfaces were painted white and neatly organized.

This attention to detail earned the designers the jury's award of a special citation for the integration of electric and natural light.

Jim Benya, PE, FIES, IALD

The **Architecture + Energy** Steering Committee and the AIA/Portland Chapter extends its thanks and appreciation to Bonneville Power Administration and Portland General Electric for its continued support and sponsorship of this Design Awards Program. For more information, please call Robyn Cooper-Olson, Program Director, AIA/Portland Chapter, 503-223-8757.

ARCHITECTURE

GLOBAL TRADITIONS

This year's review of international architecture focuses on European and Canadian architects who are drawing on venerable traditions of place and building type to enrich campuses, museums, and their own cities. Five of Britain's best architects add to Cambridge's tradition of strong, self-assured university and college buildings, guided less by stylistic concerns than by the particulars of site and program. Norman Foster, for example, articulates his sleek Law Faculty building to fit comfortably alongside its older neighbors, while Michael Hopkins opts for a more traditional outlook at Emmanuel College, favoring meticulously engineered arrangements of stone and timber for a new theater building. John Outram cloaks energy-efficient building systems in fanciful interpretations of history and mythology at his polychromatic Judge Institute for Management Studies. And MacCormac Jamieson Prichard and Jeremy Dixon, Edward Jones create quiet campus precincts through simple groupings of brick-clad student housing.

Some of Europe's best new museums are devoted to the work of one artist. The architects of these buildings have adapted the 19th-century monographic museum typology to meet today's demand for commercially successful institutions. Swiss architects Gigon & Guyer and Mario Botta, for instance, augment their museums with galleries for changing exhibitions, cafés, and other modern amenities. New incarnations of the single-artist museum also reprise the age-old debate over whether museums should be neutral containers or art in their own right. Renzo Piano makes a convincing case for neutrality with his minimalist envelope for sculptor Constantin Brancusi's studio in Paris; Daniel Libeskind argues for more interpretive spaces, creating an unsettling composition that evokes the persecution of an artist killed in the Holocaust.

One of the fastest-growing cities on the Pacific Rim, Vancouver boasts a rich architectural tradition: an optimistic Modernism that respects the city's diversity and dramatic setting. Our portfolio of projects by three of Vancouver's lesser-known architects underscores the city's growth as a center for design innovation.

For American architects, the international projects that follow in this issue offer a valuable lesson—that building on time-honored traditions is often the best opportunity for invention.

EUROPE'S NEW MONOGRAPHIC MUSEUMS

Museums devoted to the work of a single artist have enjoyed a longstanding tradition in Europe, and more of these monographic museums are now taking shape with the donations of extensive art collections. Five new museums—the Congiunta Foundation in Giornico, Switzerland (1992); the Kirchner Museum in Davos, Switzerland (1992); the Tinguely Museum in Basel, Switzerland (1996); the Brancusi Studio in Paris (1997); and the Nussbaum Museum in Osnabrück, Germany (1998)—are designated for a specific artist and, with the exception of the Congiunta, are located in the artist's birthplace or longtime place of residence.

European monographic museums have their roots in the 19th century. One of the first, the Gipsoteca in Possagno (1836), was dedicated to the Italian Neoclassical sculptor Antonio Canova. Exhibiting plaster casts, terra-cottas, and paintings in addition to finished marbles, the Gipsoteca portayed an inclusive vision of the artist's lifework, a model that has been followed into the 20th century: French architect Roland Simounet's renovation of the 17th-century Hôtel Salé in Paris to house the Picasso Museum (1985) is one example. In the United States, recent exceptions to the relative rarity of single-artist museums are Robert A.M. Stern's Norman Rockwell Museum (1993) in Stockbridge, Massachusetts; the Andy Warhol Museum (1994) in Richard Gluckman's renovated Pittsburgh warehouse; and the Cy Twombly Gallery in Houston (1995) by Renzo Piano Building Workshop.

These museums display an artist's legacy in his studio or in an environment that approximates it. However, doubts about whether their limited, unchanging contents will entice visitors back have prompted their founders to incorporate spaces for changing exhibitions. Are temporary displays compatible with monographic collections? And is contemporary architecture adaptable to this 19th-century building type?

The new museum for the works of Expressionist painter Ernst Ludwig Kirchner by Swiss architects Gigon & Guyer is an example of the monographic hybrid. Its required program for neutral architecture produced minimalist galleries that are better suited to contemporary art than to its permanent collection of Kirchner's paintings. Changing exhibitions of work related to Kirchner's are planned for the future and may provide the means with which this small museum realizes its great potential. Mario Botta's formal museum for sculptor Jean Tinguely, conversely, should do justice to his work without capturing his spirit. However, two years after it opens next month, the main gallery will be subdivided for temporary exhibitions by hanging partitions and may create spaces that feel repetitive.

In a category of its own is the Congiunta Foundation, designed by Zurich architect Peter Märkli to house the little-known sculpture of Hans Josephson. The austere museum is well suited to the stony ruggedness of Switzerland's Ticino district and complements Josephson's rough-surfaced, existential figures well. And its lack of the commercial amenities typical of most museums has not deterred visitors.

In Paris, Renzo Piano Building Workshop has designed a curious combination of museum and studio for Constantin Brancusi's sculpture, to be sited on the Pompidou Center's piazza. Knowing that his freestanding studio was slated for demolition, the artist arranged for it to be reconstructed within the city's Museum of Modern Art. Maintenance and security problems prompted the present solution, wherein visitors will view the studio without entering the sculptor's workplace.

The artist as symbol of the Holocaust is addressed by Daniel Libeskind in his museum for Felix Nussbaum, a German-Jewish painter who died at Auschwitz. Libeskind's dramatic design should serve the museum's double agenda of art and politics. But it remains to be seen if its narrow entrance passageway will fulfill its intended function as an exhibition space as effectively as it will evoke the horror of persecution.

The 19th-century monographic museum's simple program is now complicated by pressures to increase museum attendance. Even when dedicated to a single artist, a wide spectrum of interpretation is possible: In Paris, Brancusi's studio as well as his work will become a discrete object within a museum; in Giornico, Josephson's sculpture and its architectural setting fuse into a seamless whole that surpasses the sum of its parts. Both buildings provide a setting uniquely suited to their subject—a requisite for the successful monographic museum. Without such specificity, the single-artist institution fails to realize its traditional ideal, as is the case of the Kirchner and Tinguely museums. In contrast, Libeskind's masterful control of form and its symbolic potential may prove more evocative than the contents of the Nussbaum Museum.

Whatever its degree of success in capturing the spirit of an artist, the monographic museum avoids the sameness of art and architecture common to so many new museums. Each of the following European examples establishes an integral relationship with its location. Each contains a distinctive collection. For these reasons alone, the monographic museum should be commended and encouraged.—*Victoria Newhouse*

Victoria Newhouse's new book, Towards a New Museum, *will be published by the Monacelli Press next year.*

THIS PAGE: Congiunta Foundation's tall entrance space is topped by off-center clerestories that create asymmetrical display area for Josephson sculptures.

CHRISTIAN RICHTERS FOTOGRAF

Congiunta Foundation
Giornico, Switzerland
Peter Märkli, Architect

CHRISTIAN RICHTERS FOTOGRAF PHOTOS

Peter Märkli's 2,760-square-foot museum for sculptor Hans Josephson could be described as a simple, raw concrete box, but it is simple like a Barnett Newman painting is simple. The 43-year-old Swiss architect is a theoretician who works from a complex dimensional module and who leaves the realization of his buildings to a colleague. Even the irregularities of the exterior's formwork patterns are carefully planned.

Like San Nicolao, a nearby Romanesque church, the museum turns its back on the town of Giornico. No path leads to it. Sited at the end of a hayfield, the building's severe linearity continues the rows of adjacent vineyards. Without base, crown, or windows, its concrete volume appears as a stone monolith from the exterior.

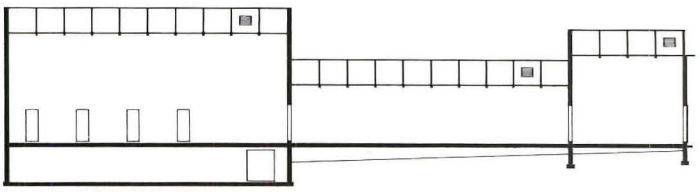
Within, Märkli has designed three different spatial experiences that depend only on changes in height and length. They are firmly punctuated by awkward, high thresholds at the entrance and between the rooms that emphasize the museum's hermetic quality. Light penetrates the galleries through translucent Plexiglas clerestories that form the sides of a lantern running the length of the sheet-metal roof. Four small, skylit rooms adjoin part of the third gallery.

Josephson, born in 1920, is a German-Jewish refugee from Königsberg, Germany, who has lived in Zurich since 1939. Because the artist's existential, representational sculpture of human figures consists largely of reliefs and some one-sided, freestanding pieces, the work doesn't need to be seen from a distance, and the galleries' narrow spaces are uniquely suited to it. The museum's changes in proportion, natural light, and concrete walls are a perfect foil for Josephson's somber bronzes.

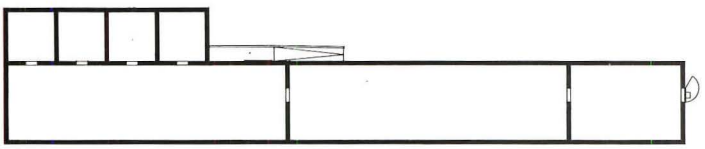
TOP: Peter Märkli designed incomplete patterns in exterior formwork to evoke vagaries of construction.
ABOVE: Off-center entrance door on northwest facade marks axis of three-room enfilade.
FACING PAGE: Located in Alp foothills, linear museum stands on slope between boulder-strewn Ticino River and Gotthard railway.

RURAL SHRINE

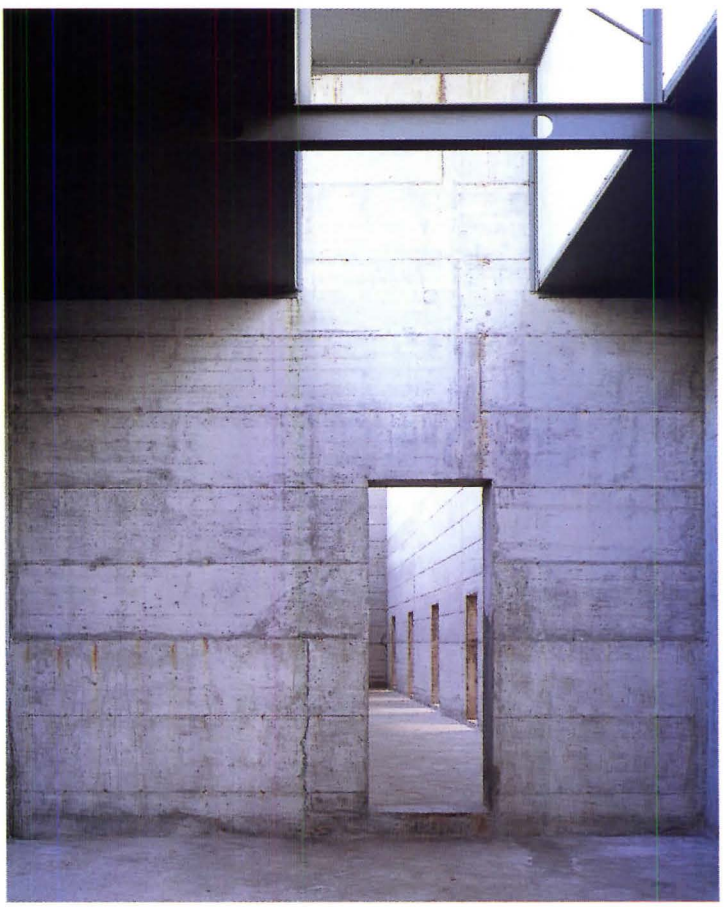
The Congiunta Foundation, a nonprofit group of art lovers, funded the land purchase, construction, and maintenance of the museum bearing its name. Built of exposed concrete, it is without electricity, water, climate control, security (the key is available at a local café), entrance fee, or facilities for the kind of social and commercial activities that most museums engage in today. Märkli's rural shrine offers a contemplative alternative to today's profit-conscious institutions.



SOUTH-NORTH SECTION



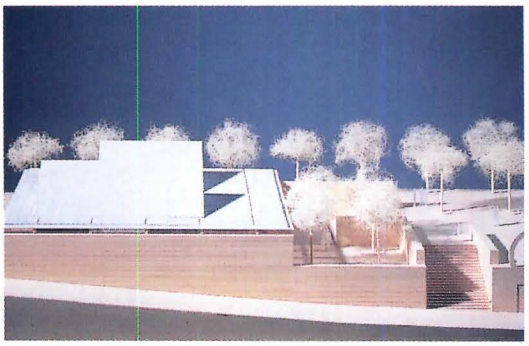
GROUND-FLOOR PLAN

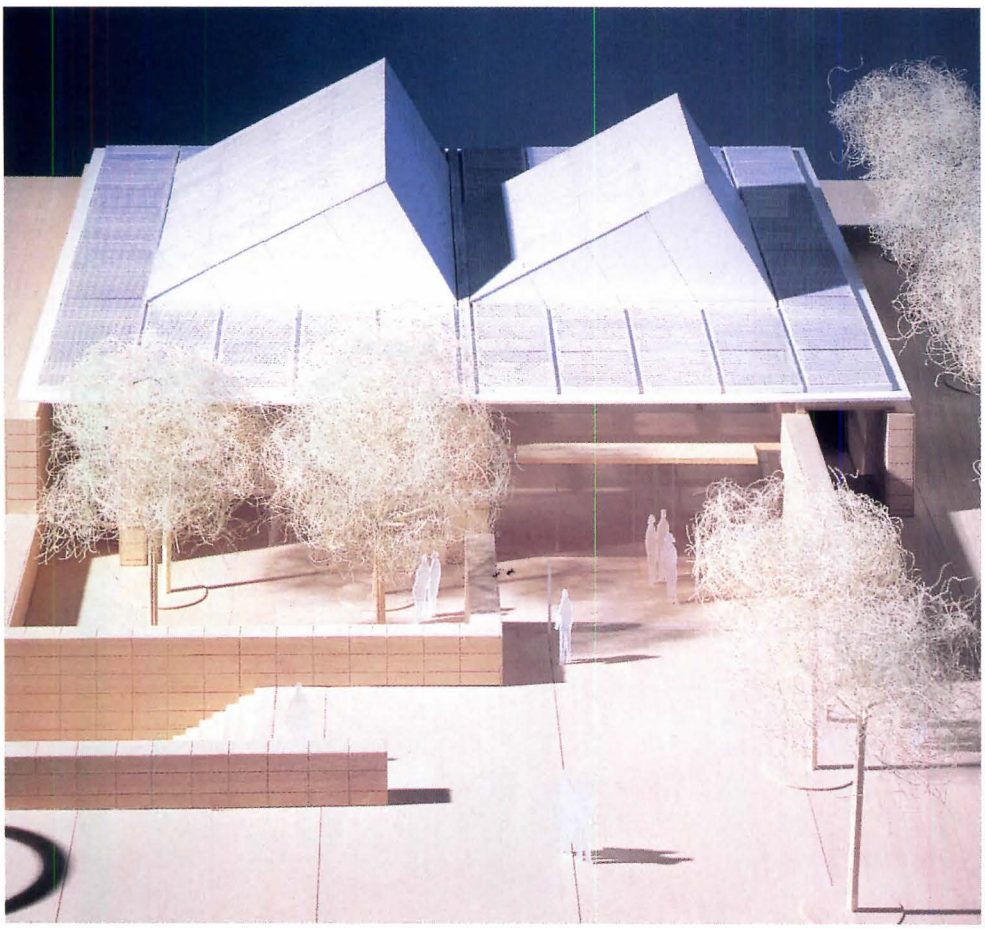


TOP: Steel I-beams support plywood ceiling, which opens to clerestory lantern that lights sculpture indirectly.
PLAN AND SECTION: Just under 138 feet long, museum consists of three 17-foot-wide galleries and four rooms adjacent to southernmost gallery.
ABOVE LEFT: Small, skylit rooms suggest experience of chapels.

ABOVE: To avoid interior design intervention, Märkli left concrete formwork patterns to mason.
FACING PAGE: Lofty end gallery achieves monumentality of great church apse. Reverential tone heightens isolation of Josephson's figures.

Brancusi Studio
Paris, France
Renzo Piano Building Workshop, Architect





MICHEL DANANCE/ARCHIPRESS PHOTOS

The studio of Romanian-born sculptor Constantin Brancusi (1876-1957) was first reconstructed in Paris within the National Museum of Modern Art, then in a prefabricated structure at the north side of the piazza fronting the Pompidou Center. The current reconstruction, located slightly closer to the Pompidou, will enjoy a more elegant container, but visitors will no longer be able to enter the studio.

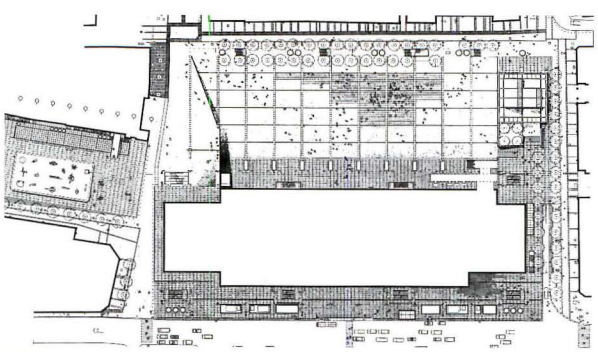
From the north end of the Pompidou piazza, a stairway will rise between two low walls to the terrace on which the new pavilion sits. The east wall protects a Japanese-style garden that shields half the pavilion's largely glazed entrance facade. Behind the other half, Piano has created a transition zone from the boisterous piazza to the serene studio. Within the rectangular pavilion, the asymmetry of the studio's three-bay display area and two-bay living and working area leaves room for documentation of Brancusi's life and work.

The artist's Paris studio will be meticulously recreated, but with floor-to-ceiling glazing substituted for windows, doors, and most of its south wall. Brancusi's *Endless Columns* will be displayed before the studio's remaining south wall. Over the studio, north-facing sheds replicate the original's profile. Viewing corridors are topped by flat roofs with slightly curved glass panels overlaid with perforated stainless steel.

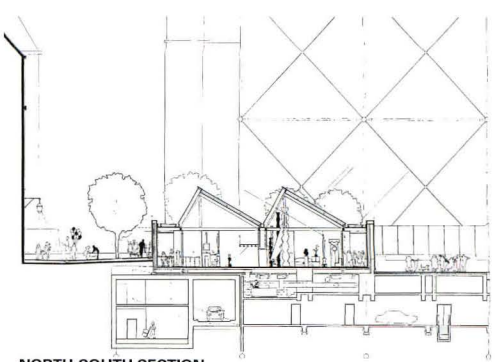
A simplified version of his Cy Twombly Museum in Texas, Piano's layered roof consists of an exterior shading device, a middle glass panel, and an interior vellum ceiling. The glazed roofs will appear to float above the exterior walls. Owned and operated by the Pompidou Center, the museum is under construction and scheduled to open in January 1997.

BOXING BRANCUSI

TOP: Limestone-walled courtyard *(right) of Renzo* Piano's Brancusi Studio in Paris contains Japanese garden.
ABOVE: Behind glazed facade, entrance lobby will lead to timber replica of studio under shedlike roofs.
SITE PLAN: Pavilion (top right) will stand between piazza and rue Rambuteau.
SECTION: Pavilion housing studio is inset into existing granite-paved terrace above Pompidou Center piazza.

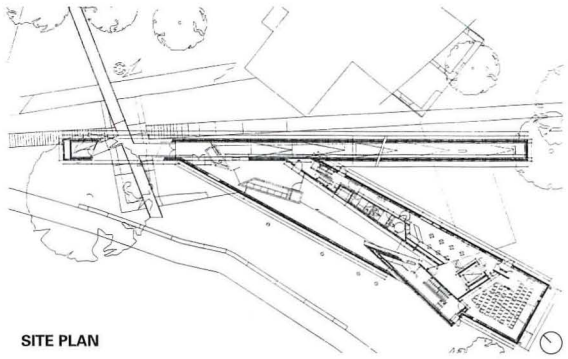


SITE PLAN



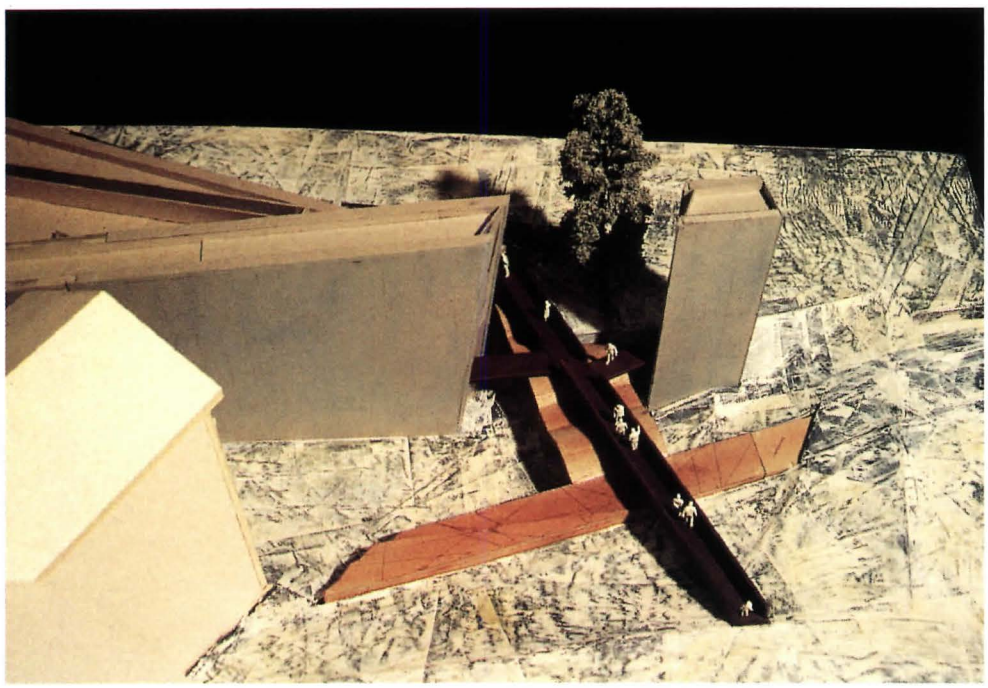
NORTH-SOUTH SECTION

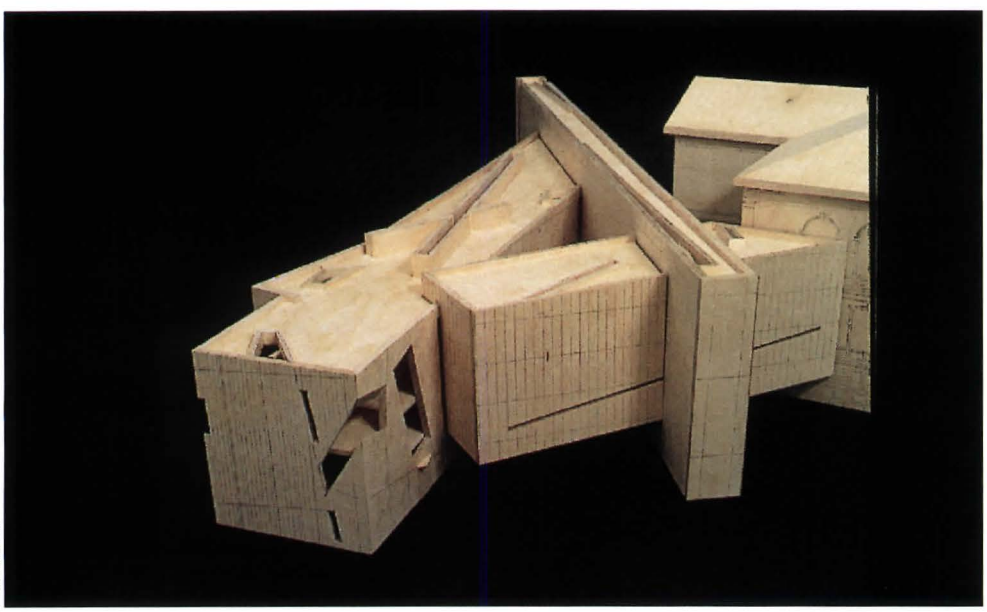
***Felix Nussbaum* Museum**
Osnabrück, Germany
Daniel Libeskind, Architect



SITE PLAN

UNEASY ASSEMBLAGE





CHRIS DUSBERG

The 27,000-square-foot Felix Nussbaum Museum will create a dramatic new entrance to the existing Cultural History Museum in Osnabrück by depicting the Holocaust's debasement of this city's culture. Sited in a park that faces the town's former city wall, the tripartite museum consists of a long, narrow concrete gallery with a ramped floor that adjoins a rectangular wooden "house" containing galleries, auditorium, and café, and a zinc-clad bridge leading to the older museum.

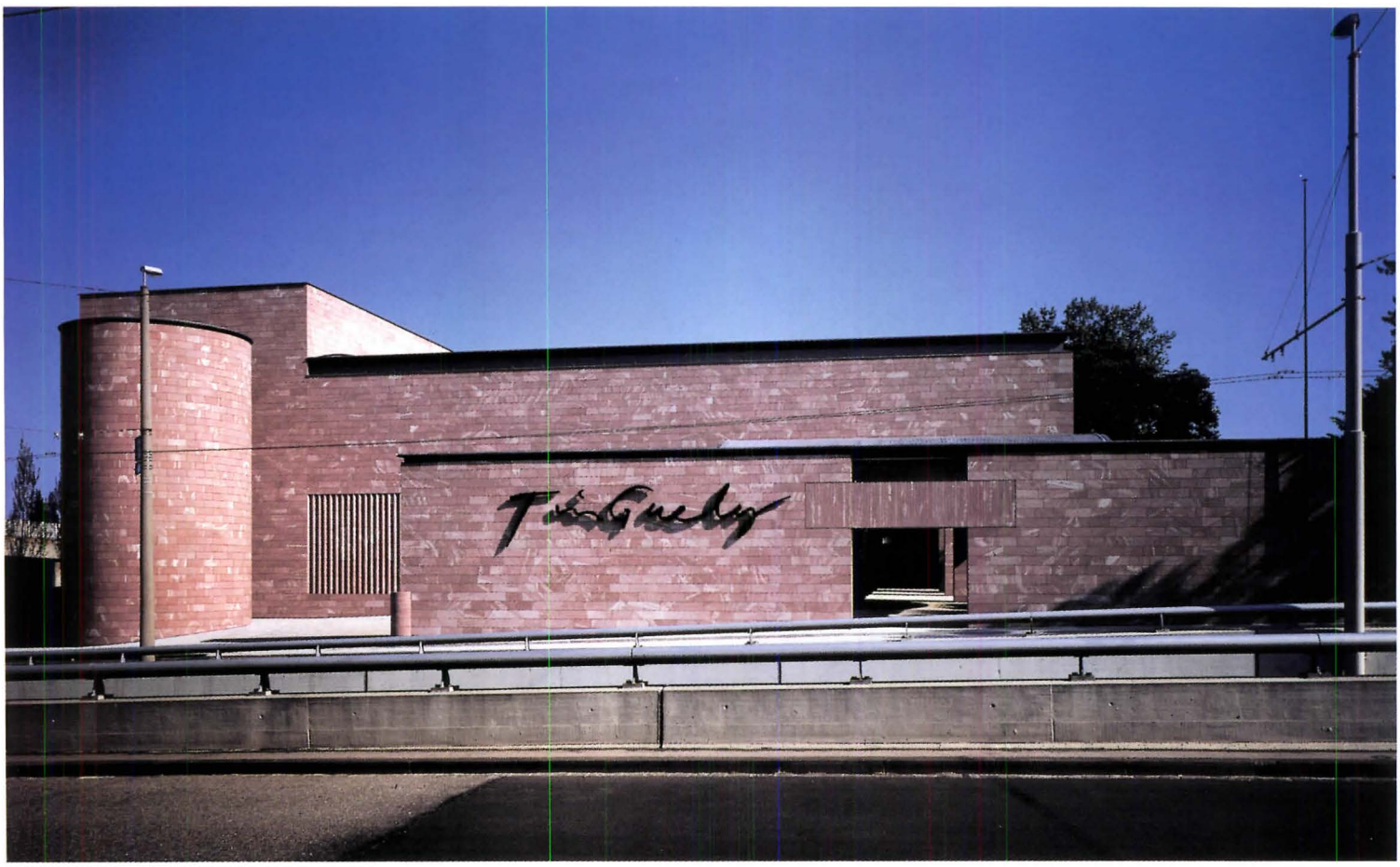
The gallery's claustrophobic space will evoke the conditions in which Nussbaum, born in 1904, worked while in hiding. Hounded by the Gestapo for 11 years, the artist was captured and sent to his death in 1944. His name was almost unknown until it became associated with Libeskind's.

Work that Nussbaum painted while in prison will be hung on the narrow gallery's concrete walls. The galleries in the house and bridge will accommodate temporary exhibitions and the permanent collection. Pre-1933 work will be shown in the house's plaster interiors, representing the illusion of normalcy; later, more troubled work will hang on the bridge's metallic interiors.

Libeskind's design is a study in diagonals. The oblique angles at which the three segments meet, the asymmetry of the auditorium within the house, and the slipped roof over the passageway all contribute to a feeling of unease while providing lively viewing spaces. Construction begins this month, and the museum opens in 1998.

PLAN: Suspended bridge links narrow gallery and "house" to existing Cultural History Museum.
TOP LEFT: Gap in Nussbaum Museum accommodates historic 250-year-old bridge.
LEFT: Bridge transects narrow gallery (center) and penetrates house (left). Window slashes refer abstractly to geometries of Nussbaum's flight.

Jean Tinguely Museum
Basel, Switzerland
Mario Botta, Architect



CHRISTIAN BAUR PHOTOS

TOP: Slotlike decorative brickwork signals nonstructural nature of Tinguely Museum's red limestone facade.
ABOVE: Covered arcade, which will connect diagonally with park's southwestern gateway, leads to entrance.
SITE PLAN: Museum gives new visual terminus to neighborhood.
FACING PAGE, TOP: Unsupported bridge beams house partition walls.
FACING PAGE, CENTER: Curved wall will support sculpture by Niki de Saint Phalle, Tinguely's companion.
FACING PAGE, PLAN: Circulation leads from ticket lobby, around perimeter on exterior terrace overlooking Rhine, and back into mezzanine.

SITE PLAN

Born in the Swiss town of Fribourg, Jean Tinguely (1925-1991) grew up in nearby Basel. There, he produced hydraulic wheel sculptures with sound, precursors of his famous automated, aural, and occasionally self-destructing works.

Given a choice of sites in the city's historic Solitude Park, architect Mario Botta placed the museum over an underground water-treatment reservoir, determining its bridge structure. The requirement of a 10-foot-high wall along the street to protect the park from noise explains the bland northeast facade. In contrast, its park facade is glazed and crowned by the roof's lozenge-shaped metal framework, reminiscent of Botta's festive celebration tent in Bellinzona.

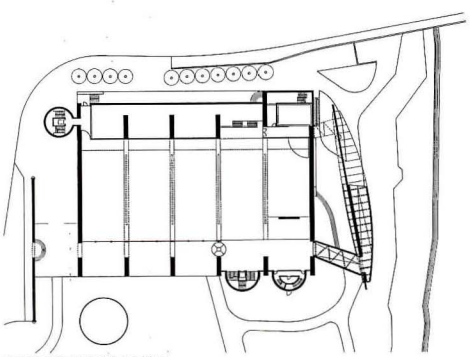
From the lobby, visitors look into the museum without access to it: to reach the galleries, they must pass along a glass-enclosed terrace overlooking the Rhine. Once inside, they encounter four different plaster-walled, pine-floored galleries. The first space is a long, narrow mezzanine overlooking the main gallery, and is divided into three bays for sculpture, and one for drawings and Tinguely's sports car.

Directly above the mezzanine, an enfilade lit by chamfered clerestories recalling Karl Friedrich Schinkel's Altes Museum will exhibit small sculpture and the artist's letters. The basement will contain a series of discrete 18 1/2-foot-high spaces dedicated to Tinguely's religiously inspired work, for which the artist ruled out natural light.

Last on the circuit is the vast, daylit main gallery, likened by Botta to "a covered town square," which was designed for Tinguely's monumental sculpture. For changing exhibitions, this gallery can be divided into smaller areas by lowering four 59-foot-wide partitions from bridge beams supporting the roof's metal framework.

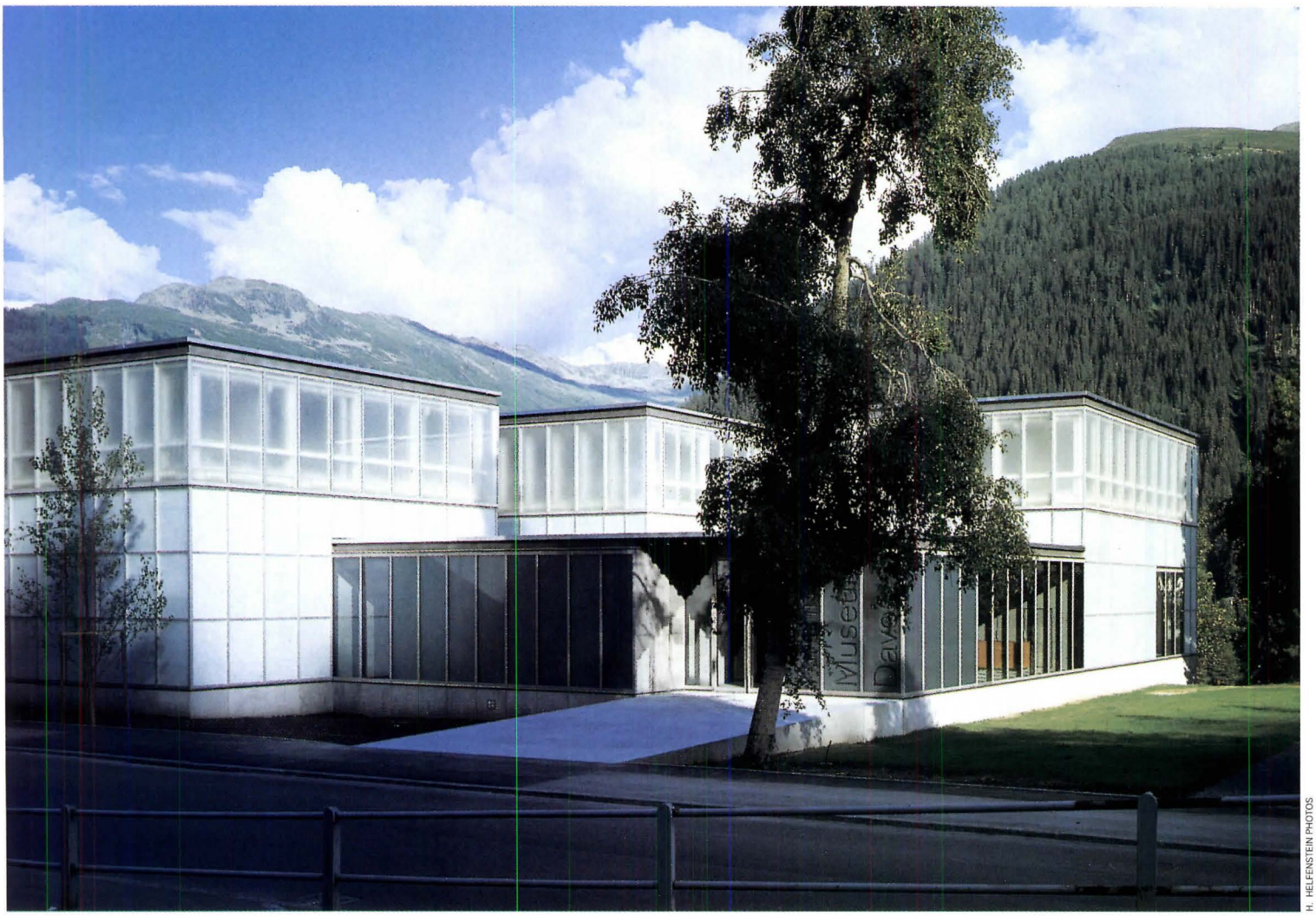
ARTISTIC CONTROL

Tinguely Museum Director Pontus Hulten, former director of Paris's Pompidou Center, has planned the installations with great sensitivity. However, the museum exudes a surprising formality, given the artist's rebellious personality and long-time rejection of what he termed "museumification." Although Botta has designed elegant spaces in which to show sculpture, the museum fails to capture the anarchic flavor of the artist's life and philosophy.



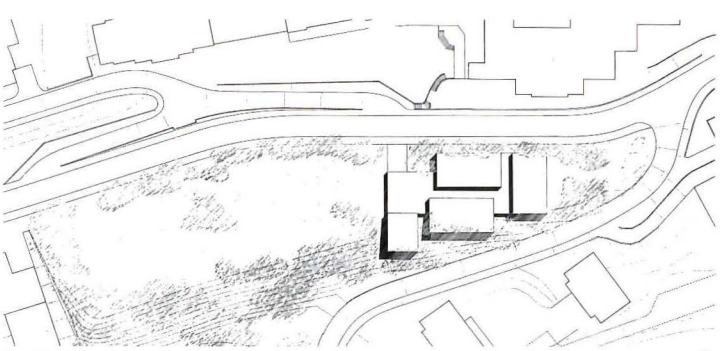
SECOND-LEVEL PLAN

Ernst Ludwig Kirchner Museum
Davos, Switzerland
Gigon & Guyer Architects



H. HELFENSTEIN PHOTOS

TOP: Transparent glazing is applied to entrance and corridors; frosted glass covers structural concrete; luminescent glazing screens lanterns.
ABOVE: Entrance addresses main street.
SITE PLAN: Set in small park, lower level is exposed to park's slope at southeast.
FACING PAGE, TOP: Two galleries are separated by lanternless corridor.
FACING PAGE, SECTION AND PLAN: Support functions are housed in basement. Galleries are designed as discrete volumes separated by low, wide corridors.



SITE PLAN

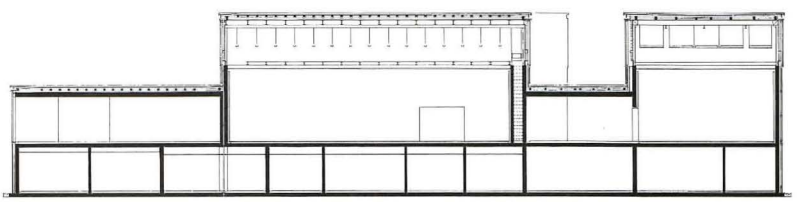
CRYSTALLINE CONTRAST

The first building completed by Zurich architects Annette Gigon and Mike Guyer (she began her career with Zaha Hadid, he with Rem Koolhaas), is an elegant addition to the surprisingly dowdy architecture of Davos, the Swiss cure and resort town described by Thomas Mann in *The Magic Mountain.* Like Gigon & Guyer's recent addition to the Kunstmuseum in Winterthur (1995), the Kirchner Museum explores glazing's versatility.

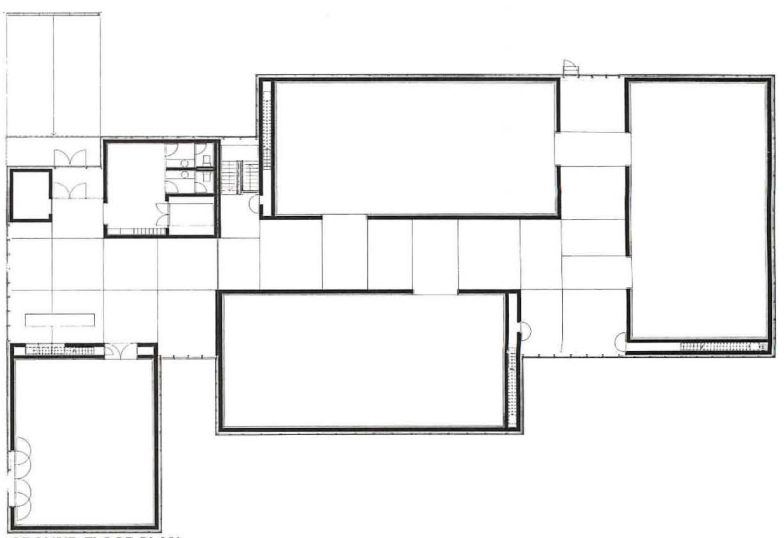
The glass skin is frosted to appear opaque before the concrete walls of the main level, luminous before the airspace of the roof lanterns, and transparent around entrance and circulation areas to allow views into the museum and outward to the spectacular mountains that Kirchner painted. Perched like a pristine ice cube on the Davos hillside, where its glass surfaces reflect light in a dialogue with the surrounding snow and ice—even the flat roof is surfaced with shimmering crushed glass instead of pebbles—this building is perfectly suited to its site.

Comprising 23,680 square feet on two levels, the museum's main level contains three spacious galleries and a smaller gallery, which do not adjoin one another; each must be entered from low, concrete corridors. The austerity of this interconnection makes the pleasing proportions, refined detailing, and sublime light of the spaces all the more captivating. Since roofs in the Alps are often covered with snow, the architects devised opaque roof lanterns that crown each gallery: their insulating glass walls admit daylight only laterally.

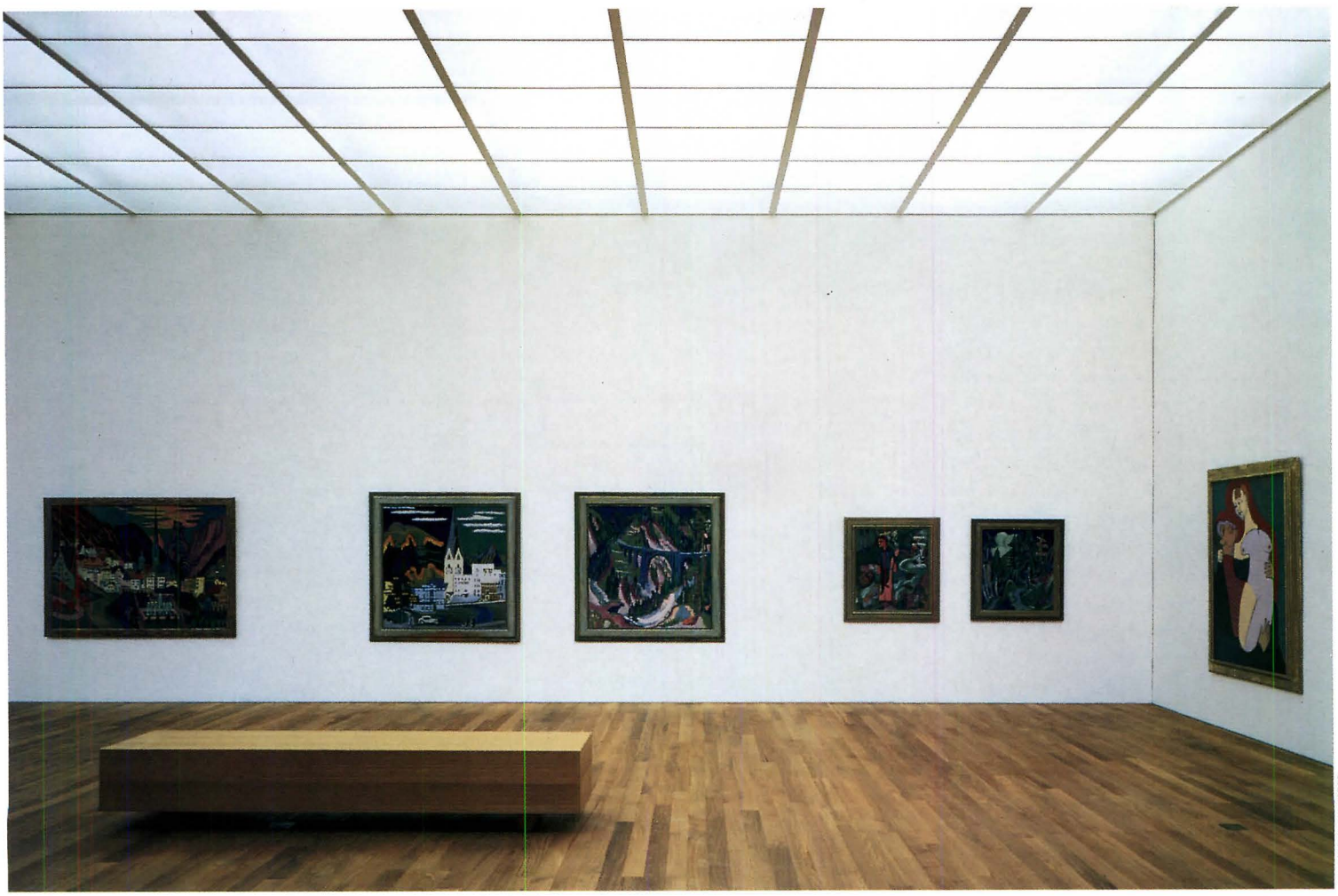
Ernst Ludwig Kirchner (1880-1938), the German Expressionist founder of the bold, often brutal, art movement Die Brücke, lived in Davos from 1917 until his suicide at the age of 58. His easel paintings, sculpture, and furniture—the latter two inspired by sensual South Sea Island carving—were created for somber, intimate spaces, but the museum's pared-down galleries fail to give them this context. Even the sophisticated illumination systems that enhance most later 20th-century art is not ideal for Kirchner, who did not work in pervasive natural light; furthermore, the diffused lighting poses problems for hanging paintings and drawings together.



SOUTHWEST-NORTHEAST SECTION



GROUND-FLOOR PLAN



H. HELFENSTEIN PHOTOS

TOP LEFT AND RIGHT: Low ceilings and concrete surfaces of entrance foyer and corridors recall industrial spaces. **ABOVE:** Matte-glass ceilings diffuse natural and artificial light in galleries. Plaster walls with no baseboards are separated from ceiling by reveals. **FACING PAGE:** Plaster walls, oak floors, and diffused light differentiate ethereal galleries from mundane, concrete-encased corridors.

CAMBRIDGE EXPANDS

A clutch of Britain's most interesting new buildings has recently been completed at Cambridge. These buildings, constructed over the last two years, accommodate some 25,000 square meters and were built by the university and its independent colleges, which vary from the ancient, fabulously wealthy Trinity to the relatively new, impoverished Darwin. Together, the university and colleges make up a museum of fine architecture.

High-quality, tailor-made buildings are more affordable during recessions like the one Britain suffered after 1989. Now that the economy appears to be recovering, university building may well slow down, but other new projects are under way. Norman Foster has designed buildings for the English and Criminology faculties, to lie just north of his Law Faculty (following pages), that await funding, and MacCormac Jamieson Prichard is master-planning a large western extension.

Two recently completed buildings are for the university: the Law Faculty consolidates a once-dispersed department, and the Judge Institute of Management Studies houses a reoriented faculty that combines the teaching of business with apprenticeships in industry and corporations. The other three are for colleges: Burrell's Field and Frank Young House—two new dormitories for Trinity and Darwin colleges—in part reflect the student population's increasing difficulty finding housing in town. The Queen's Building at Emmanuel College contains common rooms and a theater. The Queen's Building and the Judge Institute are located on demolition-cleared lots in the old city center, where the few remaining sites are jealously guarded by the colleges that own them. The other three buildings are sited on the far side of the River Cam, near Newnham College; also in this area is the Sidgewick Avenue campus, which has grown to incorporate Selwyn College, the History Faculty, and now Foster's Law Faculty.

The buildings share few characteristics apart from beautiful construction and a responsiveness to context. Even the High-Tech Law Faculty, won by Foster in a limited competition, is contextual, though it spurns the stone and brick associated with Cambridge, intruding like some sleek and glassy spaceship. A creamy precast-concrete wall mirrors the Portland stone facade of Selwyn College, which it faces, and a splayed entrance at its western end echoes the geometry of the History Faculty, a High-Tech forerunner by Foster's one-time tutor, James Stirling. Indeed, the new building updates the glass-shed library theme. In contrast to the History Faculty's mechanical-industrial esthetic, tight planning, and coercive spirit, the Law Faculty is more elegant and generous. If the former suggests academic toil, the latter evokes fat-cat corporate lawyers. This image jars in Cambridge, yet the Law Faculty knits together its surroundings so that Selwyn and the History Faculty no longer simply clash.

The Queen's Building is designed by former Foster partner Michael Hopkins, who also made his name in High-Tech. Hopkins remains committed to the fastidious display of construction and material. Now, however, in response to historical context, his selected materials are often traditional, albeit used in an up-to-date manner. Built in the same Ketton limestone as the nearby chapel by Christopher Wren, the theater stands out from the other recent buildings in Cambridge; its simple form is enclosed in a single unvarying facade, and it defers to context only in scale and material.

Burrell's Field, a student dormitory, is 15 minutes west of Trinity's main buildings on a large, triangular site containing four Edwardian houses and two 1970s dorms. Like the Law Faculty, MacCormac Jamieson Prichard's design, which also won an invited competition, brings a new coherence to its setting, reordering the grounds and access to the older buildings while creating framed symmetrical views. Burrell's Field emphatically edges a meadow on the flood plain of Bin Brook that marks one side of the site. Built in a buff brick used elsewhere in Cambridge, the geometry of the stubby towers reflects MacCormac's studies of Frank Lloyd Wright, although the linking garden walls and pergolas were inspired by a Schinkel etching. The vocabulary is new to Cambridge, yet the complex looks as if it has always been there.

Frank Young House, another residence hall, is a short distance southwest of Darwin's main buildings. Jeremy Dixon and Edward Jones have designed a streetfront that resembles a pair of semidetached houses, whose brick is not as lively as that of Burrell's Field. The rear is more like a villa with arms that embrace a courtyard and views of a playing field.

The Judge Institute's wild polychromy is foreign to Cambridge, but architect John Outram, who won the invited competition, has only exaggerated the polychromatic patterns of the original 19th-century hospital he expands. A match for Richard MacCormac as an articulate intellectual-theoretician, 62-year-old Outram wants each building to represent his myth of architecture's origins, yet his esoteric concerns are matched by pragmatic technical expertise. Like the Law Faculty, the Judge Institute is energy-efficient: enjoying abundant natural light, it too exploits the high thermal inertia of exposed heavy structure so as to mix natural and mechanical ventilation and avoid air-conditioning.—*Peter Buchanan*

PETER DURANT

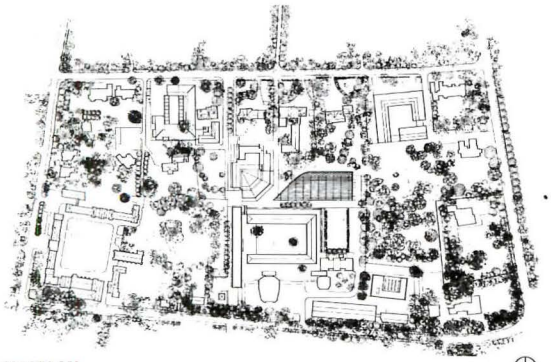
DENNIS GILBERT/ARCAID

DENNIS GILBERT/ARCAID

PETER DURANT/ARCAID

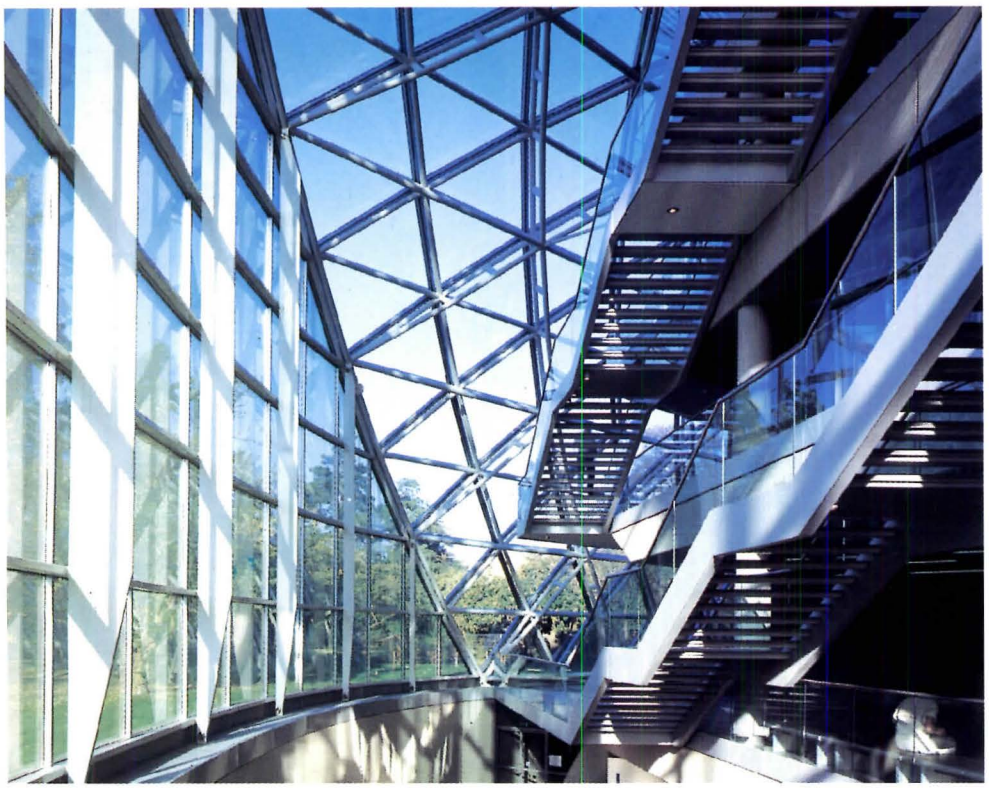
JOHN EDWARD LINDEN/ARCAID

TOP LEFT: Burrell's Field housing, by MacCormac Jamieson Prichard. **TOP RIGHT:** Queen's Building, by Michael Hopkins. **CENTER:** Frank Young House, by Jeremy Dixon, Edward Jones. **LEFT:** Judge Institute of Management Studies, by John Outram. **ABOVE:** Law Faculty, by Norman Foster and Partners.



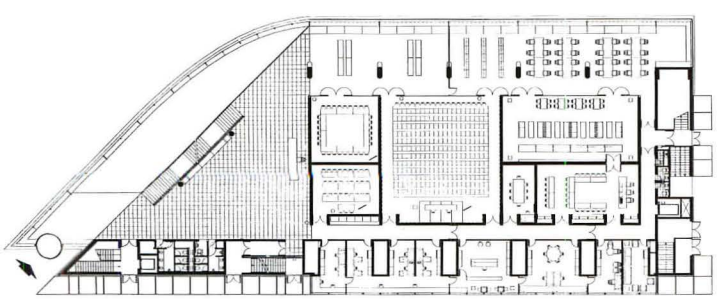
SITE PLAN

Law Faculty
Cambridge Universtiy
Cambridge, England
Norman Foster and Partners



Edicts not to exceed the height of the 1950s Selwyn College to the south and Stirling's 1967 History Faculty to the west led Foster and Partners to bury two floors of lecture halls in the basement of the 90,000-square-foot Law Faculty, and to splay the end enclosing an atrium. The library occupies the upper three floors, with stacks in the middle, study carrels in a glazed projection from the south facade, and reading tables in a prime location along the north edges, on floors that stagger back in section. Here, views of lawns and trees are admitted through the curving glass, supported on a steel Vierendeel structure. The triangulated geometry of this tubular structure, which defines a partial cylinder, is echoed by repetitive glazing, so that the atrium's splayed wall follows a sensual sinusoidal curve in plan. Though this elegant and airy building is not one of Foster's best, it fits its setting better than photographs suggest. Unfortunately, despite attempts at acoustical absorption, noise intrudes on the library from the hard-surfaced atrium.

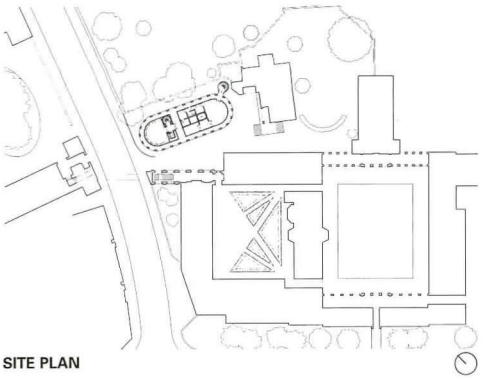
JUDICIOUS STRUCTURE



GROUND-FLOOR PLAN

JOHN EDWARD LINDEN/ARCAID PHOTOS

SITE PLAN: Law Faculty lies east of History Faculty and north of Selwyn.
ABOVE: Main stairs climb side of atrium enclosed by curving, splayed wall.
PLAN: Ground level houses lecture hall (center), staff common rooms (right), and faculty offices (bottom).
RIGHT: Entry is recessed in glazed wall.



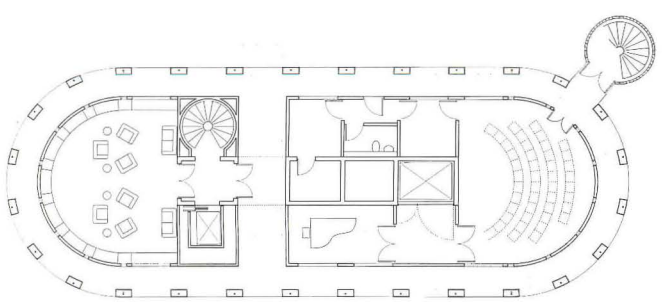
SITE PLAN

The Queen's Building
Emmanuel College
Cambridge, England
Michael Hopkins & Partners

STONY THEATER

The Queen's Building, housing a multipurpose theater and common rooms, compactly condenses architect Michael Hopkins's current formal and material predilections: it is oval in plan, built of loadbearing masonry limestone, with a pitched lead roof supported on internally exposed wood rafters with stainless steel struts and ties. The 16-inch-deep stone piers are post-tensioned and diminish in width at each floor, where precast-concrete "kneeling blocks" support almost flat stone arches. The stone infill panels are set flush with this structural frame, as are the windows. Inside, a 170-seat, daylit auditorium with an apsidal stage fills two-thirds of the two upper floors. The opposite apsidal ends of these floors house a reception and common room. On the ground floor are reading and seminar rooms, music rooms, and a passage connecting Emmanuel College to the campus.

The result is paradoxically reticent, yet with its rounded ends, too bulgingly assertive on its cramped site. With its invisible entrance, too-narrow ground-floor arcade, and dark windows, the Queen's Building is creepily unwelcoming—less like a building than a beautifully crafted casket.

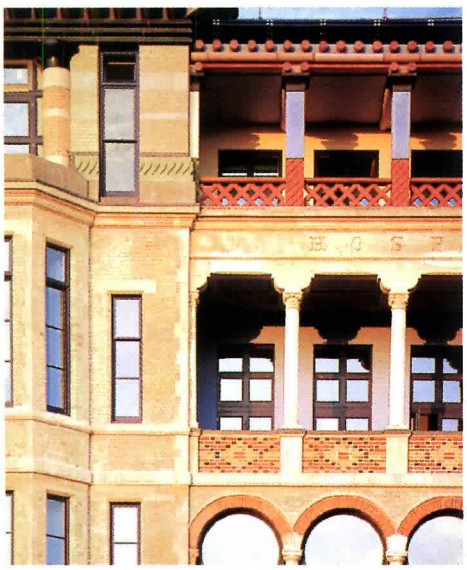


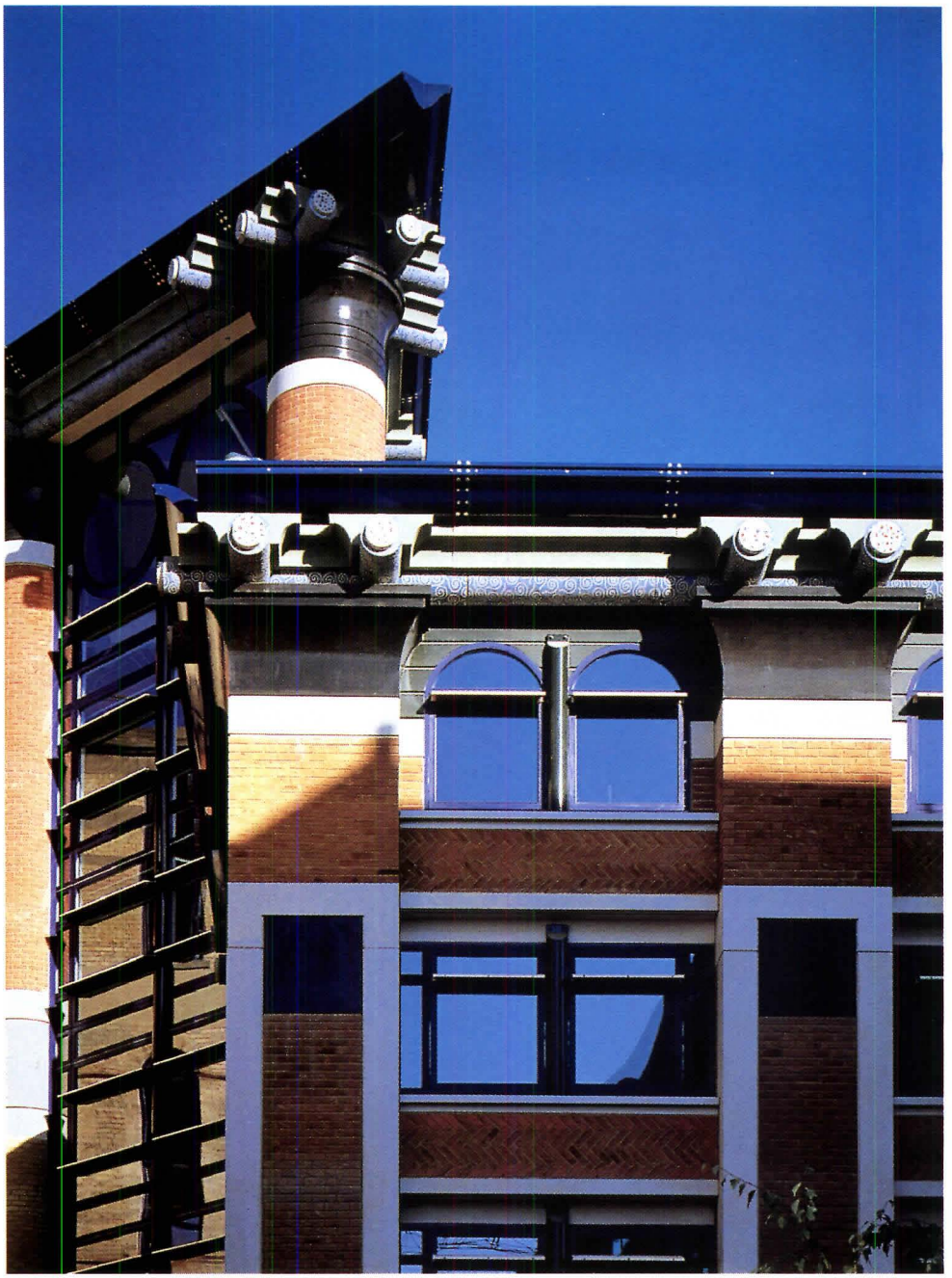
GROUND-FLOOR PLAN

DENNIS GILBERT/ARCAID PHOTOS

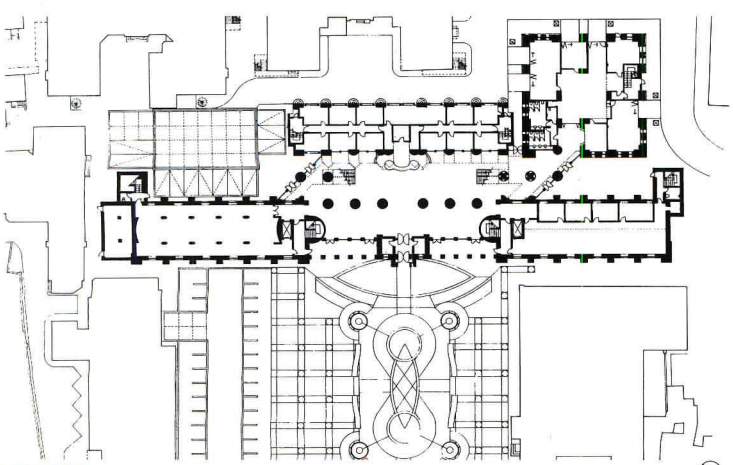
SITE PLAN: Hopkins's oval lecture hall straddles path connecting Fellows Garden with Emmanuel College. **ABOVE:** Stainless steel struts and ties support wood ceiling of apsidal reception room on third floor. **RIGHT:** Ketton limestone is wrapped smoothly around southeast facade.

Judge Institute of Management Studies
Cambridge University
Cambridge, England
John Outram Associates



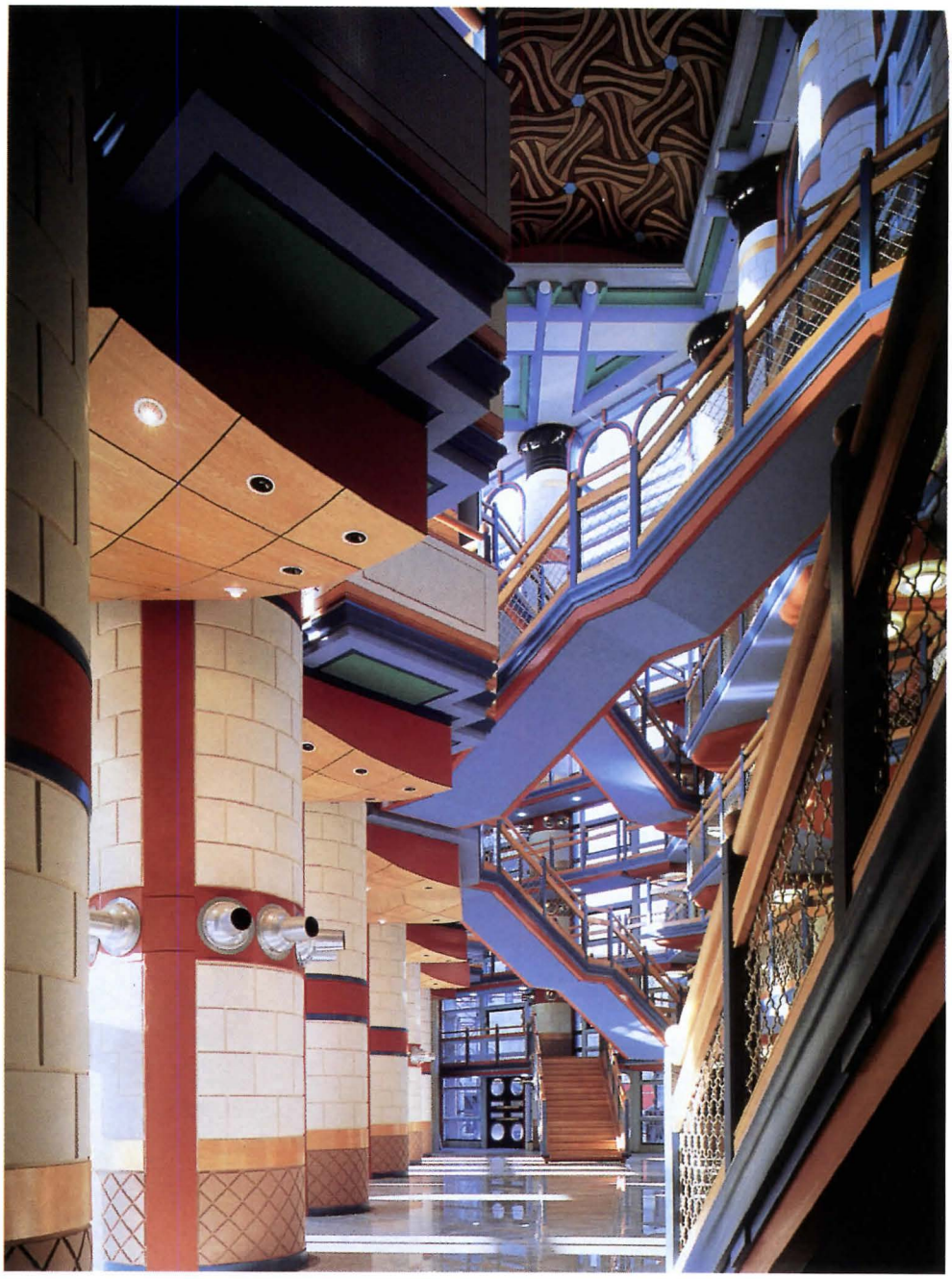


ABOVE AND BOTTOM RIGHT: Outram intensified polychromy theme of original hospital facade with bright-colored attic arcade, cornice, and pediment.
RIGHT: Corner of Castle; Gallery behind.
SITE PLAN: Gallery, offices, and lecture rooms were added to 1865 hospital.
FACING PAGE, TOP: Stairs fly across Gallery with patterned wood ceiling.
FACING PAGE, BOTTOM LEFT AND RIGHT: Tall windows span between robot columns.



SITE PLAN

PETER COOK/ARCHIPRESS PHOTOS



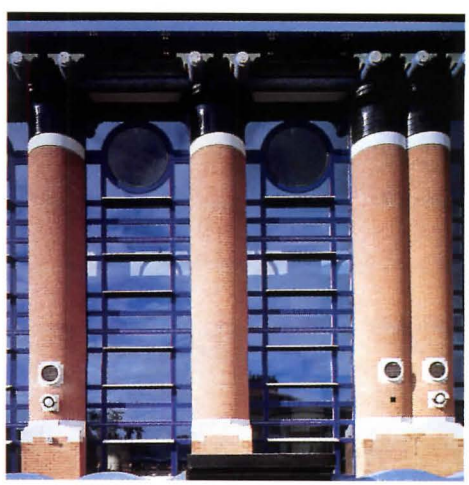
By using each of his buildings to retell his myth of architecture's origins, John Outram hopes to recharge architecture with psychological depth and meaning. Outram's quest is to learn from history rather than to mimic its styles. But his colorfully and relentlessly ornamented buildings exploit current conditions in financing, technology, and materials as well. He is especially innovative in applying technology for coloring materials to convey his esoteric narratives.

For Outram, architecture's mythic origins are fluvial: each polis or ideal city metaphorically occupied a valley. And that valley is recapitulated as the communal heart of each building, in a hypostyle hall with huge columns of the "robot" order, so-called because each column encloses, along with a pair of structural posts, all the building's various services. (Indeed, Outram claims to have invented a sixth order.) These services branch out from the columns, avoiding suspended ceilings and raised floors that would blanket the thermally stabilizing heavy structure.

At the Judge Institute, Cambridge University's business school, this hall is called the Gallery. It lies between existing 19th-

COLORFUL BUSINESS

century hospital wards, now converted to a library and seminar rooms, and new additions: the Ark, containing staff offices, and the Castle, housing lecture rooms. The Ark's roof garden is treated as the valley's head, and stairs cascade across the well of the hall like rivers, carrying all movement between floors. This display of circulation and the seminar balconies that project from a second-floor common room foster the social encounters that make this the communal heart of the building.



Burrell's Field
Trinity College
Cambridge, England
MacCormac Jamieson Prichard

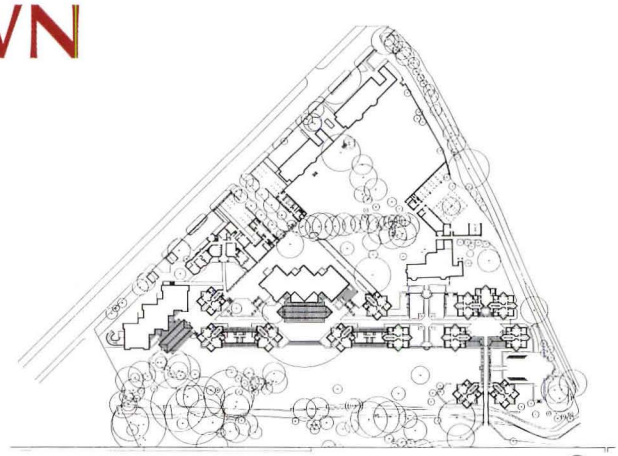
MacCormac Jamieson Prichard is renowned for its housing, educational, and urban design projects, experience consolidated in the Burrell's Field student housing for Trinity College. The 80 student rooms are contained in clusters of three-story towers, with two rooms and a kitchen on each floor. The study/bedrooms and kitchens are fronted by triangular bay windows that, together with the triangular stair landing, yield a Froebel-type geometry of two squares interlocked at 45 degrees to one another. Capping the lead roof of each tower is a belvedere study/bedroom.

The towers frame symmetrical vistas down and across an L-shaped pedestrian route. Along this are lower buildings linking the towers and housing more student rooms above apartments for fellows, and also lozenge-shaped common and seminar rooms. The latter are sited both to partially obscure the 1970s dormitories by the late Cambridge architect David Roberts and to tie them into the scheme.

PETER DURANT PHOTOS

WALLED TOWN

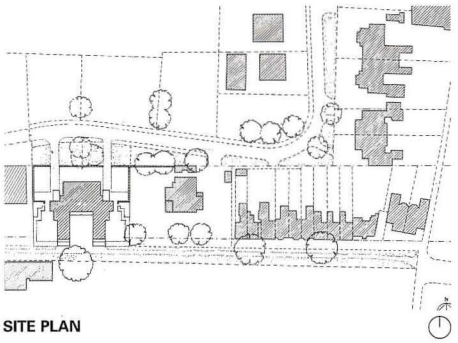
Seen from the bridge, this superlatively composed and crafted ensemble affords the impression of a walled town rising from the Bin Brook flood plain. The emphatic separation of building and meadow weds them into a complementary whole. The static, earthbound stretches of almost monolithic buff brick and sandblasted, beige precast concrete form another complementary contrast with the more dynamic arrangement of windows, especially the sills and gutters that fly out from them.



SITE PLAN

TOP LEFT: Spinal pedestrian path is overhung by study/bedroom bay windows.
TOP RIGHT: Pairs of student rooms share bay-windowed kitchen.
ABOVE: Pair of housing towers form gateway to bridge over Bin Brook.
SITE PLAN: Towers linked by lower buildings form symmetrical groupings with existing dormitory.

Frank Young House
Darwin College
Cambridge, England
Jeremy Dixon, Edward Jones



SITE PLAN

In response to context, Jeremy Dixon and Edward Jones designed Frank Young House, a dormitory for 28 Darwin College students, as formally schizophrenic. The northernmost face fronts a suburban cul-de-sac as a semidetached brick house with medium-sized windows and dormers above them, divided by a rainwater pipe. But big canopies over the two side entrances, lantern-topped stair towers, and rooftop protrusions all reveal the building's real size. To the rear, this

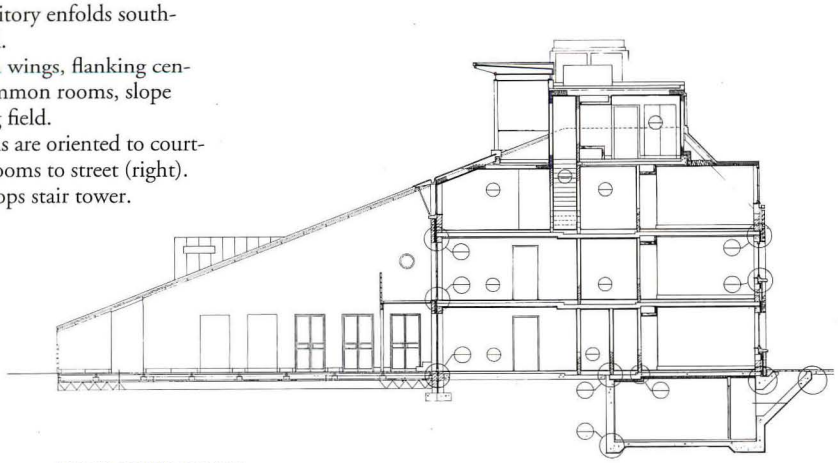
DOUBLE-SIDED VILLA

larger building is expressed as a white, stuccoed villa. Yet from its tall central facade, capped by a gallery overlooking a playing field, arms slope forward to enclose the courtyard and meet the pedestrian path at a more intimate scale.

This court, the scheme's social focus, is overlooked by pairs of kitchen/dining rooms stacked below the gallery. Second- and third-floor kitchens have direct access to the court through a stair that descends between the first-floor kitchens. So that the social activities of kitchens and courtyard do not disturb students in the study/bedrooms, none of these face the court. Instead, some face the street, and others are staggered to look past each other or over the sloping roof at the playing field.

Although cleverly organized, Frank Young House remains schematic and stiff in its development. It would have benefited from more refined detailing of many of its more conspicuous elements, and opening the kitchens to the court and corridors would have encouraged greater sociability.

SITE PLAN: Dormitory enfolds south-facing courtyard.
ABOVE: Bedroom wings, flanking central block of common rooms, slope down to playing field.
SECTION: Kitchens are oriented to courtyard (left); bedrooms to street (right).
RIGHT: Lantern tops stair tower.



NORTH-SOUTH SECTION

DENNIS GILBERT/ARCAID

VANCOUVER'S VITAL SIGNS

Vancouver is the fastest-growing city in a country that the United Nations has identified as having the highest quality of life in the world. With a population of nearly 2.5 million, its metropolitan area beats out all other North American cities, as well as Sydney, Melbourne, and Singapore, as the new home of choice for the richest, best-educated citizens of Hong Kong and Taiwan, worried about their future in the shadow of a more powerful China. In an era when quality of life matters more than any other factor in attracting growth and new residents, the city's boom is due to its vast parks, alpine and ocean vistas, clean beaches, cohesive neighborhoods, public safety, and racial tolerance. Capitalizing on these assets to foster an information- and investment-based economy, Vancouver is emerging as a crucial nexus in the world's fastest-growing region—the Pacific Rim.

Vancouver's identity as portal to Asia is at last having a demonstrable impact on its urban form and, to a lesser extent, its architecture. This change is most evident in the huge consolidation of downtown lands around False Creek, once the site of Expo '86 and now owned by the world's sixth-richest man, Hong Kong industrialist Li Ka Shing. Forming the southern edge of peninsular downtown Vancouver, the site was sold by the government at fire-sale prices only seven years ago, when no Canadian or American developer would take so large a risk in what was then a boom-bust city dependent on natural-resources industries. From a population of zero just three years ago, there are now 15,000 people living in high-rise towers in Li Ka Shing's Concord Pacific and adjacent Yaletown developments. While the towers are architecturally undistinguished, Concord Pacific at least had the insight to hire local architect Peter Busby to design its showroom, where prospective buyers survey the site from his deftly detailed glass box.

Busby is one of this continent's leading exponents of the technologically expressionist tendency in contemporary architecture associated with Richard Rogers and Norman Foster. His stylistic and past employment links with these London architects represent one strain of Vancouver's architectural culture; locals joke that B.C. stands for "British California" and call its thriving film industry, "Brollywood." Historically, most architects here were British-born, and Vancouver remains a city of architectural immigrants. With the gold rushes of the 1870s and 1880s, architectural and builderly influences arrived from California, and Vancouver was home to Canada's boldest experiments in Art Deco and Streamline Moderne.

A more indigenous architectural culture for Vancouver began with the efforts of painter B.C. Binning, who studied in Los Angeles in the 1920s, befriended Richard Neutra, and brought him to Vancouver to advance the cause of Modernism and promote the establishment of an architecture school, which finally opened at the University of British Columbia in 1946. Binning's modest West Vancouver house was one of the earliest Canadian examples of the International Style and an inspiration to his students and protégés, who included Arthur Erickson and Ron Thom.

Erickson began his global practice from Vancouver with sublime early works such as the Smith House and Simon Fraser University. After many years of commuting to satellite offices in Toronto and Los Angeles and a lot of ultimately unbuilt, unpaid work in the Middle East, Erickson has returned to Vancouver. Here he grandly serves as the *éminence gris* of the local scene, still practicing and living in his converted garage, set within stunning naturalistic gardens of his own design.

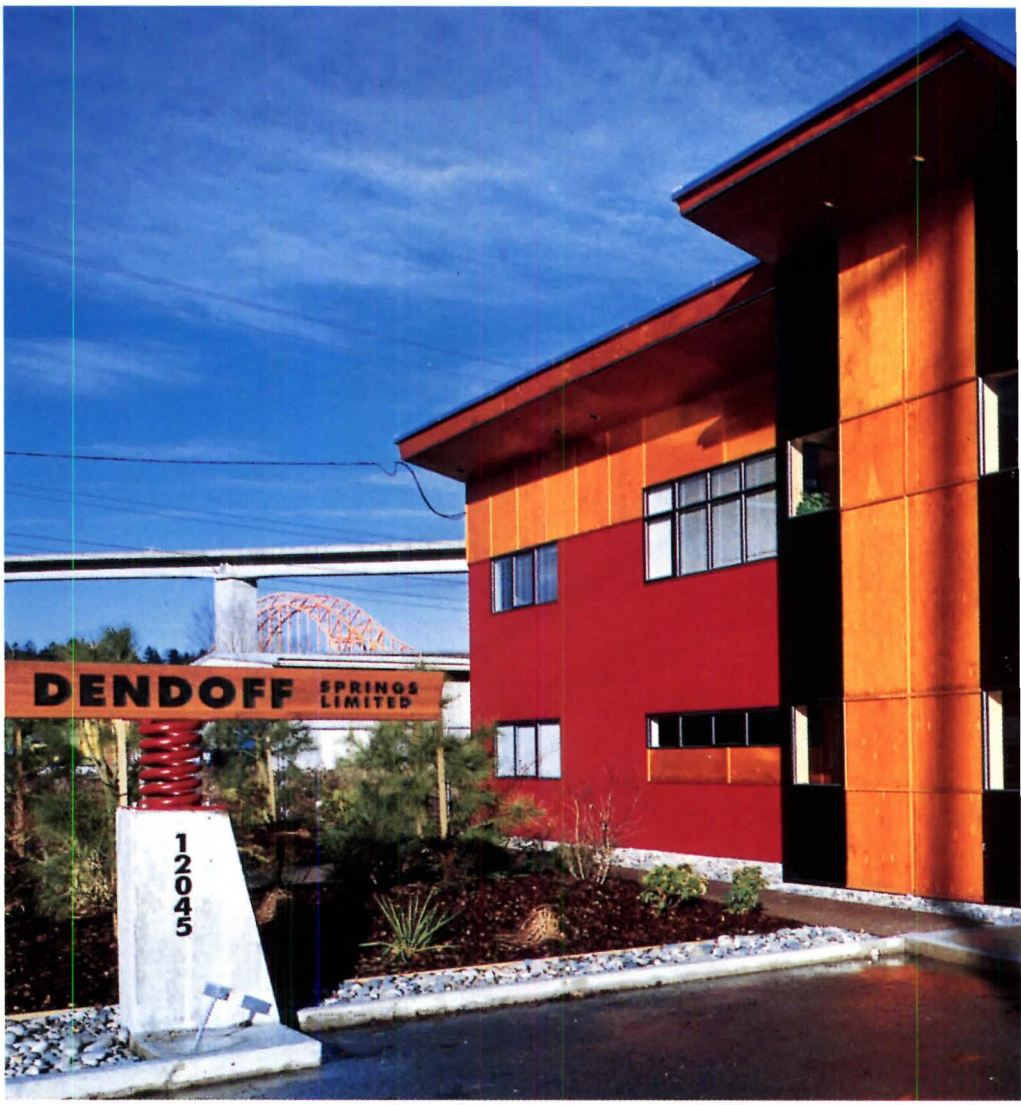
The post-Erickson generation of architects is represented by the Jamaican-born Richard Henriquez and his son and partner, Gregory, who demonstrate interests in the fine arts and a currency with contemporary cultural theory, and Curacao-born Joost Bakker, a commited urbanist best known for his design—with partner Norman Hotson—of urban infrastructure for Granville Island and Lonsdale Quay. Architectural links to Britain continue with figures such as Nigel Baldwin (responsible, with former partner Roger Hughes, for the Renfrew Aquatic Center and some superb schools) and Peter Cardew (ARCHITECTURE, September 1995, pages 66-73). The husband-and-wife team of John and Patricia Patkau, practicing and teaching in Vancouver since 1983, have produced a magnificent corpus of quietly dignified, lovingly sited, and brilliantly detailed houses and institutions. A younger generation is represented by Acton Johnson Ostry, whose recent live-work project to the east of False Creek demonstrates Vancouver's continuing status as a place of housing innovation.

Vancouver's contemporary architecture is finally receiving overdue international recognition. Richard Henriquez's *Memory Theatre* installation will be shown in the main pavilion at the Venice Biennale this fall. A major retrospective of the Patkaus' work will be featured at the Biennale's Canadian Pavilion, along with a show of Bruno Freschi's architectural prints—proof positive, if any were needed beyond its remarkable buildings and humane urbanism, of the increasing stature of Vancouver as a design center.—*Trevor Boddy*

Architectural historian and critic Trevor Boddy has just returned to Vancouver after eight years in Ottawa.

THIS PAGE: Downtown Vancouver combines high-density housing, Stanly Park (top right), and commercial core, including sail-like forms of Eberhard Zeidler's Canada Place.
LEFT INSET: Arthur Erickson's 1976 Museum of Anthropology.
CENTER INSET: Richard Henriquez's *Memory Theatre* installation.
RIGHT INSET: John and Patricia Patkau's 1994 Newton Library.

Project Portfolio
Acton Johnson Ostry
Vancouver, British Columbia



TRANSCENDING STYLE

The Vancouver firm of Acton Johnson Ostry (AJO) typifies an emerging generation of Canadian architects quietly becoming recognized for modest, precise, and thoughtful work—straight goods as opposed to star turns. The partnership was founded in 1992 by Russell Acton, Gregory Johnson, and Mark Ostry, who share a commitment to "a thorough design process," in Ostry's words, implying a rigorous and far-reaching approach to site, program, tectonics, and the aspirations of clients, which the firm resolves from the outset through models. What this credo amounts to is architecture conceived and practiced as a social art.

Working with building committees rather than single clients seems to bring out the best in AJO, as proven by the Chief Matthews Primary School, located on a Haida Indian reserve at the northern tip of the Queen Charlotte Islands. The commission was part of an enlightened program instituted by an architecturally minded employee of the British Columbia branch of the federal Department of Indian and Northern Affairs. Her idea was to team First Nations bands wishing to take back the education of their young with architects of collaborative bent willing to try crossing social and cultural boundaries. The schools were built by band members supervised by an outside construction manager, generating income and skills where both were desperately needed. Around a dozen farflung schools went up before the program was canceled in 1995, allegedly for budgetary reasons. Some suspect federal bureaucrats resented its high profile and the impressive quality of the results.

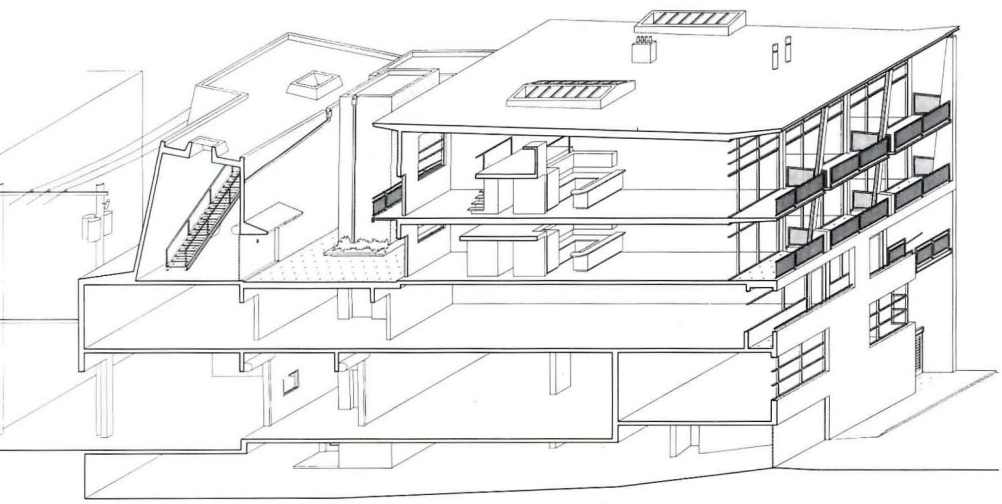
AJO's design, completed in September 1995, was one of the best. To do the job right, the firm conducted extensive research into the tradition and significance of the longhouse, the hallowed prototype of First Nations institutional buildings. Similarly, their plans for a synagogue currently under construction in Vancouver (following pages) entailed research into Biblical accounts of King Solomon's temple.

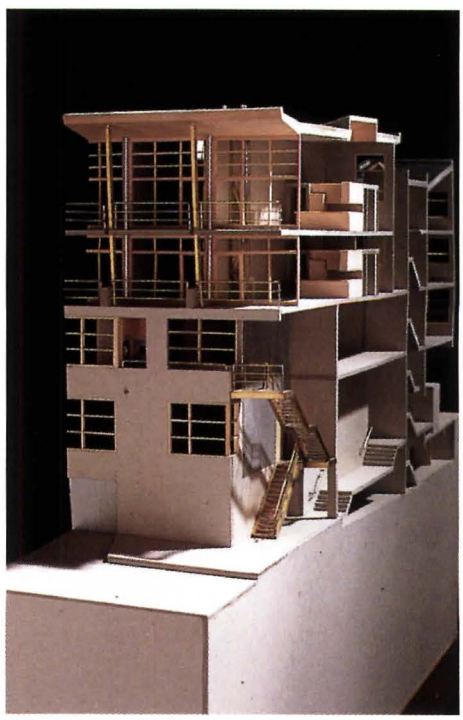
In addition to projects inviting the transformation of symbolism into structure, the firm has designed a Vancouver building containing 10 live/work studios and warehouse space for artists (facing page), a conversion of a 1920s warehouse into high-end condominiums, and a small front addition to a factory that manufactures industrial springs (above)—their only project for an individual client, a young woman in her thirties who was looking for drama on the cheap.

A close-knit crew, AJO employs a staff of four. Though the partners are born and raised Vancouverites, each traveled east to study—Johnson, 45, to the University of Montreal; Acton, 35, to Carleton University in Ottawa; and Ostry, 35, to the Technical University of Nova Scotia in Halifax. Before joining forces, Johnson worked for the leading Vancouver firm of Patkau Architects, and Acton for Peter Cardew. All three hold to the goal of making meaningful architecture that transcends a house style. Quips Ostry: "Style? We haven't come across that in our office yet."—*Adele Freedman*

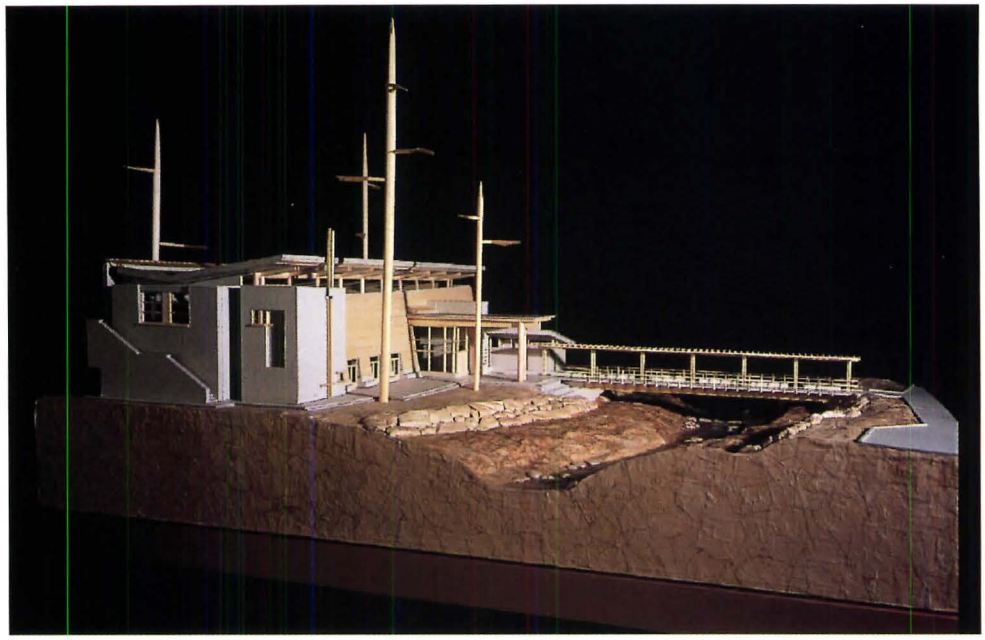
Adele Freedman is a Toronto-based architecture and design critic.

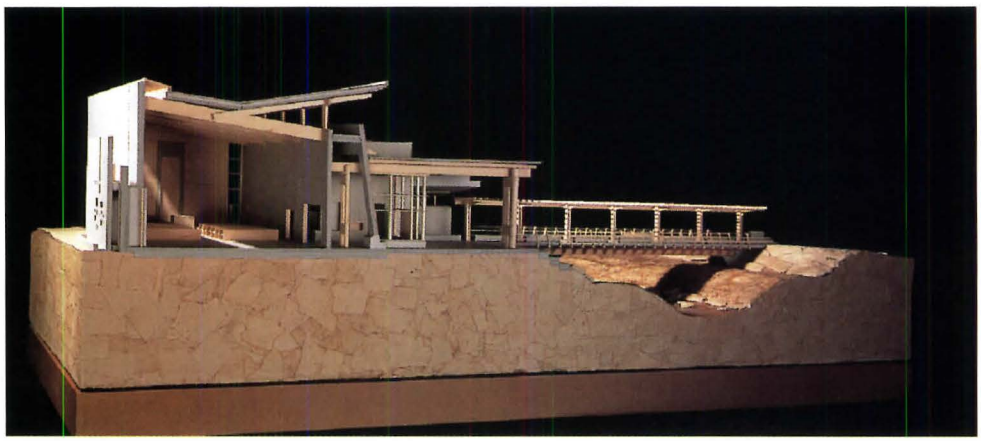
THESE PAGES: Two-story factory addition, clad with galvanized sheet metal, stained plywood, and corrugated fiberglass, puts bold new face on industrial warehouse in Surrey, B.C., for Dendoff, a manufacturer of springs.
BELOW: Spring-suspended steel staircase playfully advertises Dendoff's identity.
BOTTOM AND AXONOMETRIC: Artists Live/Work Studio and Warehouse in Vancouver stacks two floors of studios above two floors of warehouses, with parking below and outdoor circulation.





Har-El Synagogue
Vancouver, British Columbia
Acton Johnson Ostry





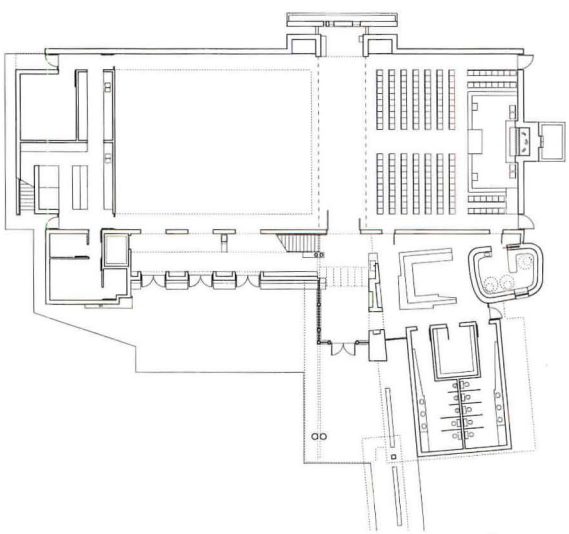
Walls are both substance and subject of this conservative Jewish house of worship on Vancouver's North Shore. Located near a highway intersection and bisected by a creek, the 2.5-acre lot is noisy yet scenic. The program called for a sanctuary and social hall that could be combined into a single room, a Hebrew school, a rabbi's study, and plenty of mingling space. Exploiting the creek as a natural barrier, Acton Johnson Ostry oriented the synagogue southwards to the water for protection from traffic sounds.

The building has a simple plan—lofty sanctuary to one side, two-story social hall to the other, foyer in between—but holds surprising spatial variety. Derived from Biblical descriptions of the Temple of Jerusalem, its robust symbolic spaces include a colonnaded bridge over the creek, a landscaped courtyard mediating between synagogue and creek with a covered porch, and an angled, steel-framed wall (to be clad in Jerusalem stone) recalling a fragment of the

SYMBOLIC SANCTUARY

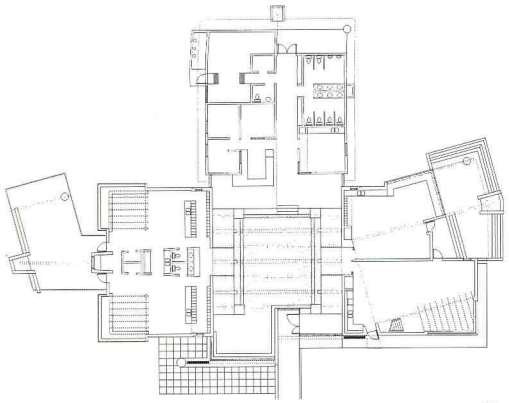
foundation of the mythic temple. A wedge-shaped Ceremonial Wall slices through the angled wall and will contain cabinets and a tiled washbasin. A Yahrzeit (or Memorial) Wall held back from the main structure, glazed at either end, forms a contemplative alcove. The Holy Ark, which contains the *scrolls, is* expressed on the exterior as a tall, tapering, rectangular volume of concrete.

Floor-to-ceiling windows, clerestories, and skylights cast shadows on the exposed concrete-block walls, rosy-colored and shot-blast to look like stone. The roof structure of exposed beams and drywall-clad 2-by-10s adds West Coast charm to an essentially rugged building. Under construction, the synagogue is scheduled for completion in December.



GROUND-FLOOR PLAN

TOP: Synagogue is oriented to creek; back wall protects against expressway.
ABOVE: Entry sequence (right to left), composed of pedestrian bridge, covered porch, and angled wall, forms gradual transition from profane parking lot to sacred sanctuary.
PLAN: Foyer leading to contemplative *niche* (top) divides sanctuary (right) from social hall and classrooms (left).
FACING PAGE, PLAN: Classroom wings extend to form sheltered play areas.
FACING PAGE, TOP: School's roof is framed in glulam beams and open web joists.
FACING PAGE, CENTER: Winged roof rises for drama, dips for weather protection.
DRAWINGS: Computer-generated views from child's perspective show descent into library/resource center.



GROUND-FLOOR PLAN

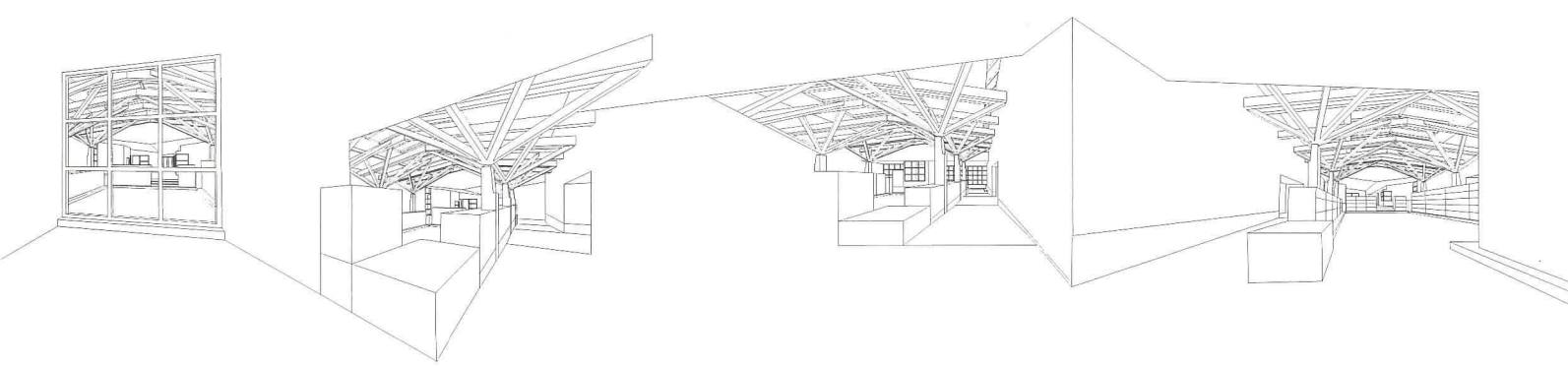
Chief Matthew's Primary School
Graham Island, Queen Charlotte Islands, British Columbia
Acton Johnson Ostry

TRIBAL TRADITIONS

In designing this remote school on Graham Island, Acton Johnson Ostry was mandated by the band council of the First Nations Haida People to respect their traditional architecture while expressing their cultural rebirth. Research led to the discovery that the traditional Haida longhouse embodied a cosmological system with a longitudinal axis—seaworld, middleworld (earth), and skyworld—united in the image of a tree. Settlement in the middleworld followed a latitudinal axis of houses strung closely together along the shoreline.

Merging precedents, program, and poetry, AJO designed an 8,085-square-foot building with three independent classroom and administration wings. Each are set at a different grade, skewed to suggest houses huddled along the beach. The wings surround a sunken, skylit library/resource center attained by two concrete ramps inlaid with pebbles, a contemporary version of a focal space encompassing the three worlds. Concrete-and-Douglas-fir columns, alluding to the cosmic tree, help define the space.

The school's strong frontal presence is accentuated by a boardwalk running the length of the front facade. Rough-sawn, cedar-board cladding is echoed inside by vertical reverse board-and-batten cedar walls on either side of the ramps. Haida artists carved wooden panels and a concrete bas relief to mark the entrance.



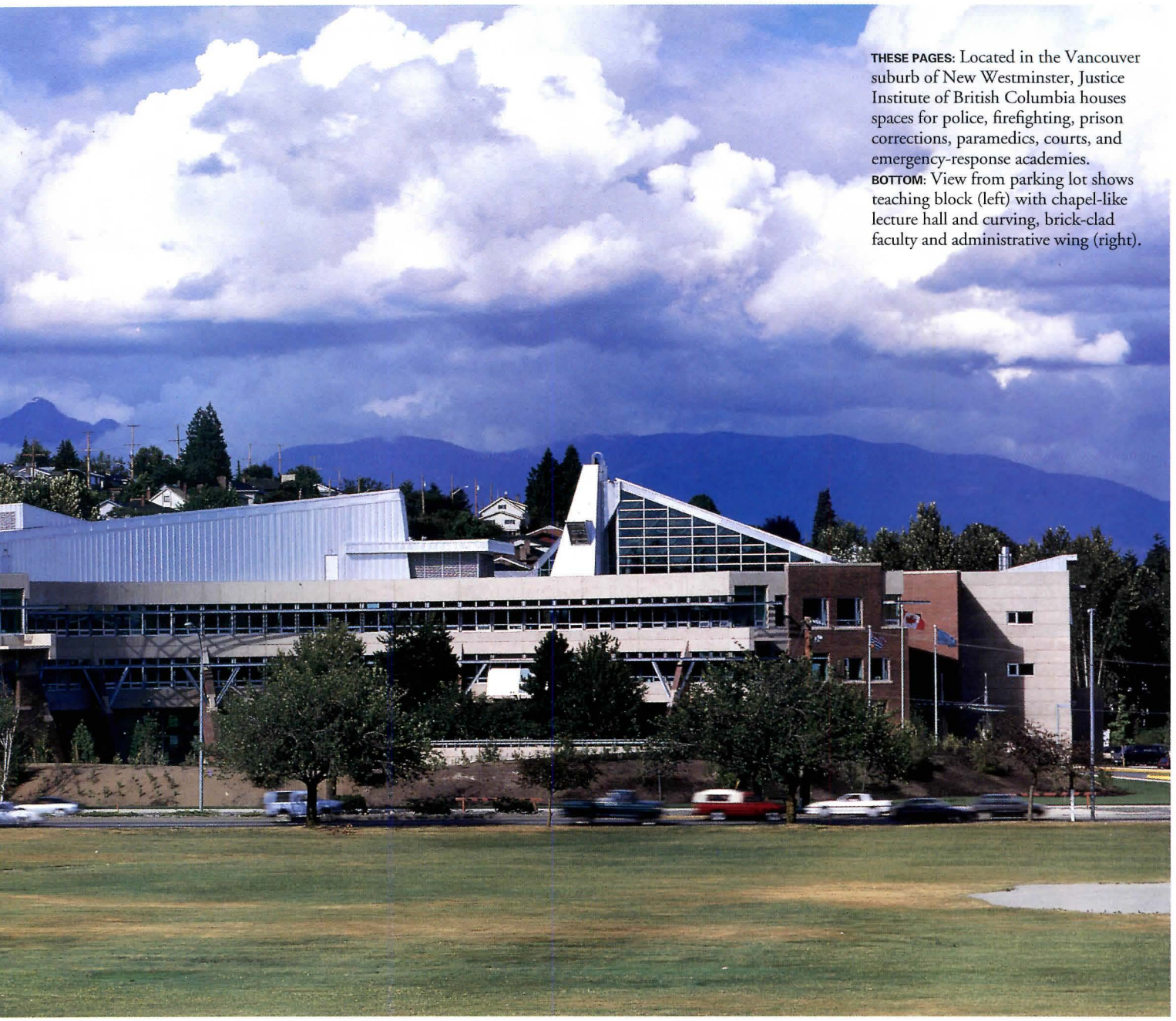
Justice Institute of British Columbia
New Westminster, British Columbia
Henriquez • Partners and IBI Group
Architects in Joint Venture

FOR THE PUBLIC GOOD

Peace, order, and good government are founding constitutional concepts for Canadians. Not for us the histrionics of "give me liberty or give me death!" or the inclusive trio of "liberté, égalité, fraternité." One consequence of Canada's constitutional commitments is a remarkable, much-appreciated civility and tranquility, maintained by police officers, firemen, prison guards, ambulance attendants, and the other servants of the public good. The Justice Institute of British Columbia, in the Vancouver suburb of New Westminster, is dedicated to the training, testing, and professional upgrading of all these public-safety personnel from the province and, occasionally, foreign countries. That Vancouver architect Richard Henriquez was able to achieve so striking and original a building is a tribute not only to the design skills of his firm and joint-venture partner the IBI Group, but to the architects' ability to artfully consolidate a vision of a new building type, containing a heterogeneous variety of spaces for six formerly independent public-safety academies.

In the plainest possible language, the Justice Institute is a cop college, an ambulance academy, and a finishing school for firemen. Henriquez began with sorting out sensitive questions of where to maintain individual facilities and offices for the six academies (including law enforcement, firefighting, prison corrections, paramedics, court officials, and emergency-response teams), and where to overlap functions with shared rooms and equipment. The Justice Institute combines rooms for classes and seminars; equipment-practice laboratories; and other informal spaces used to simulate disasters and hostage-takings, with

THESE PAGES: Located in the Vancouver suburb of New Westminster, Justice Institute of British Columbia houses spaces for police, firefighting, prison corrections, paramedics, courts, and emergency-response academies. **BOTTOM:** View from parking lot shows teaching block (left) with chapel-like lecture hall and curving, brick-clad faculty and administrative wing (right).



BELOW: Semicircular office wing protects landscaped courtyard; waterfall screens traffic noise.
BOTTOM: South-facing street facade's twin entrances are oriented to follow tangential line of curving office block.

professional actors sometimes employed to portray the people who public-safety professionals routinely encounter on the job.

Luckily, Henriquez's clients consisted solely of a committee of representatives of each of these public-safety professions. He contends that his ultimate programmatic, spatial, and symbolic experiments would have been "absolutely impossible" with clients less disposed to innovation, or if his design had been milled through the editing of a public-works bureaucracy.

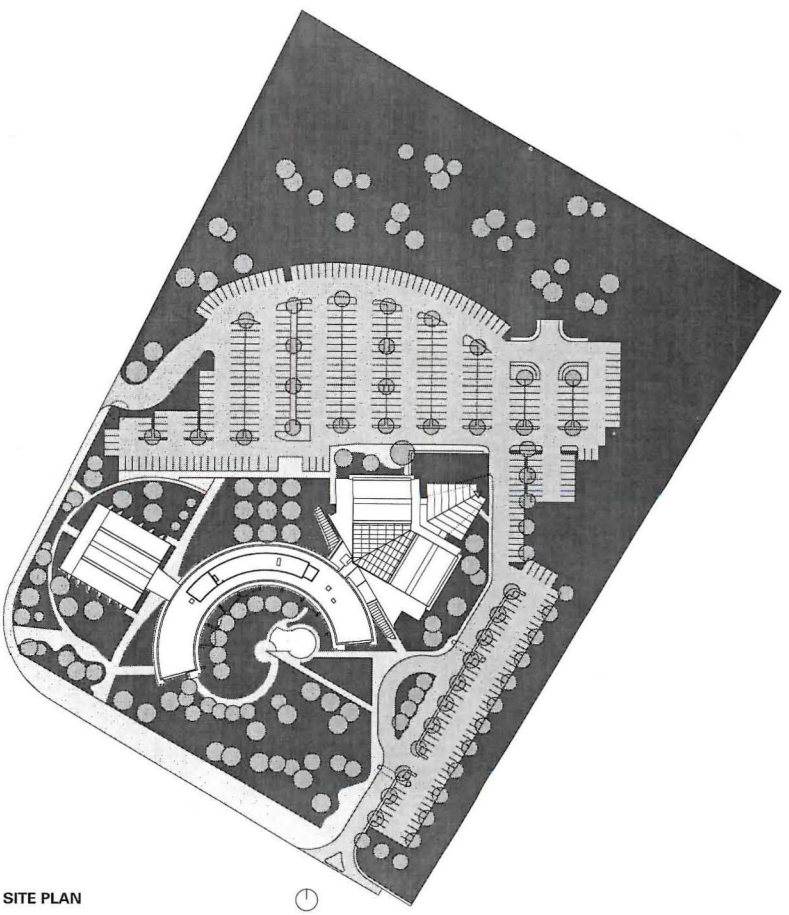
"Public order is created and maintained more by the nurturing of communities than by the demonstration of force," avows Henriquez, describing his philosophy for the Justice Institute. His building avoids the macho, monolithic, and militaristic clichés of public-safety architecture by proposing a learning community that boldly celebrates its heterogeneity, much as Vancouver itself does.

The view south from the parking lot reveals a diverse collection of individualistic pavilions. The gymnasium on the west side reads like a power plant or other dour industrial installation; the curving, bricked modulation of the central office wing recalls the Royal Crescent in Bath, England, and similar Georgian terrace housing; the classroom wing to the east seems a cross between a palace and a suburban corporate headquarters. Strangest of all is the lecture theater, an angled prow shape at the eastern end of the classroom wing. With its terminating campanilelike air-exhaust tower and exaggerated bracketed roof, the iconography of the lecture theater is decidedly religious. Its forms and some of its detailing evoke Frank Lloyd Wright's Beth Sholom Synagogue near Philadelphia, as well as the Scandinavian churches of Jørn Utzon and Arne Jacobsen.

Henriquez's accomplishment is most apparent in the building's siting. Only the stand-alone gymnasium picks up the geometry of the New Westminster street grid; the main mass of the building—a curving office and support wing—embraces a pond and garden set within its open arms. On a sunny spring day, lunching cadets spill out of the cafeteria to gather around the pond, clearly interested more in Socratic dialogue than the Heimlich maneuver.

Housing martial arts instruction, fitness programs, recreational court games, and even disaster simulations and concerts, the crisply efficient gymnasium demonstrates Henriquez's approach at its best. Butterfly-

BELOW: Butterfly-roofed clerestories and light scoops illuminate gym.
SITE PLAN: Gymnasium (left) aligns with street grid. South-facing office wing (center) defines courtyard. Lecture hall (right) terminates classroom block.



SITE PLAN

EAST-WEST SECTION: Campanilelike tower serves as exhaust chimney for mechanical room below raked floors of lecture hall (right).

NORTH-SOUTH SECTION: Classrooms, seminar rooms, and laboratories flank atrium (center), dominated by sculptural stair and ovoid portal leading to administrative wing beyond.

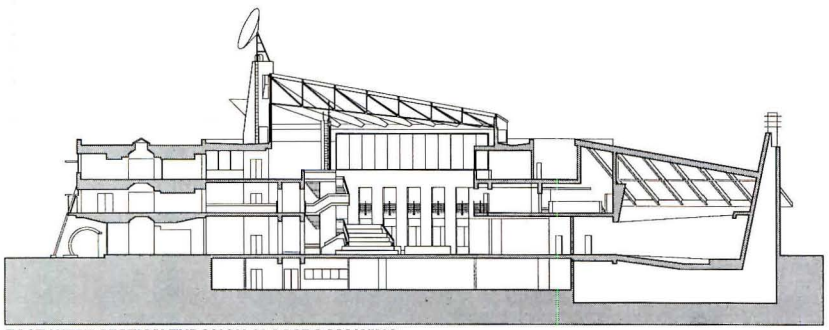
PLAN: Gymnasium adjoins cafeteria and student lounge in curved office volume. Paired classroom blocks define atrium with prow-shaped lecture hall.

FACING PAGE, TOP LEFT: Main entrance to Justice Institute is announced by anthropomorphic concrete stanchions holding angled glass canopy.

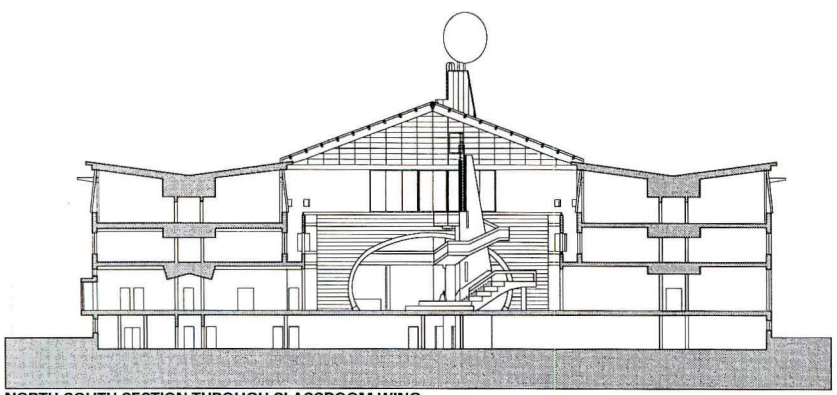
FACING PAGE, TOP RIGHT: Braces set on angled masonry piers support ringed aluminum brise-soleil.

FACING PAGE, BOTTOM LEFT: Kahnian "moongates" on masonry piers define walkway around parklike courtyard.

FACING PAGE, BOTTOM RIGHT: Dominated by exhaust tower, lecture hall recalls geometries of Wright's synagogue.



EAST-WEST SECTION THROUGH CLASSROOM WING



NORTH-SOUTH SECTION THROUGH CLASSROOM WING

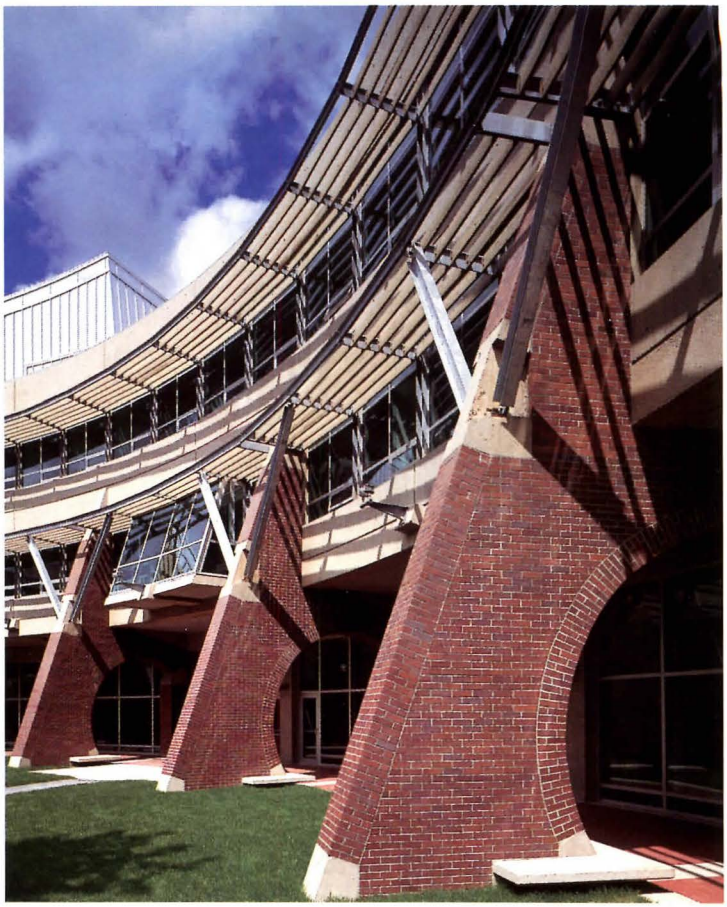
GROUND-FLOOR PLAN

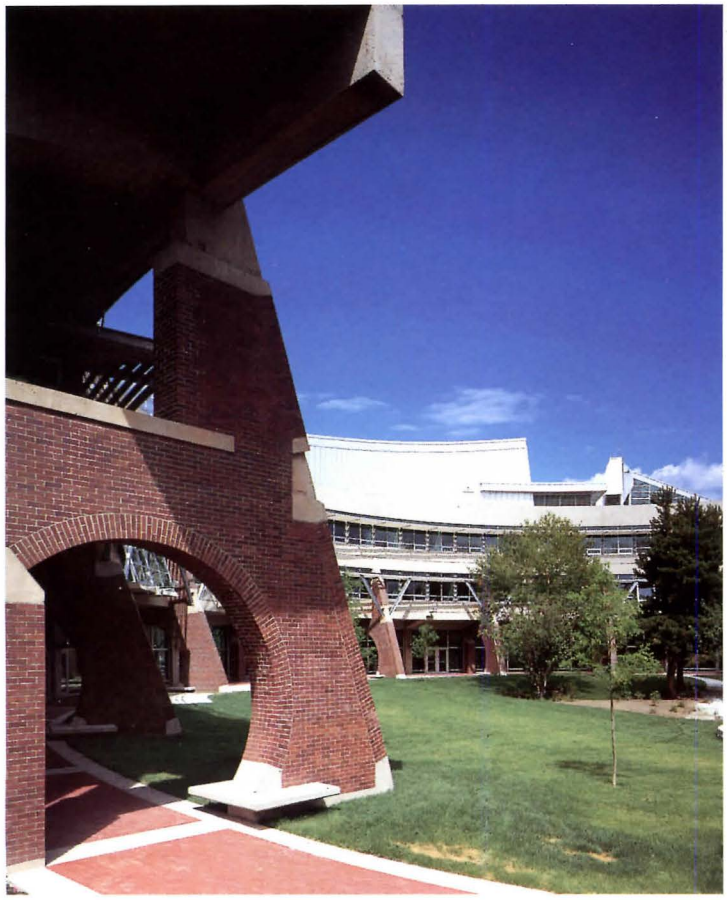
roofed clerestory windows and analogous wall-mounted light scoops break the bulk of what is too often a clubfooted building type, imparting dimensionality to the elevations and bathing the interior in a glow of natural light, enforced by Canadian maple paneling around the basketball courts. Players are never distracted by direct sunlight in their eyes, and the room possesses sufficient architectural distinction to serve as a location for graduation ceremonies.

Terminating the east side of the curving main office block is the classroom and lecture hall, with a triangular atrium at its center. Henriquez designed the complex plan and sectional geometries of this volume to provide a variety of niches for observation, repose, and assembly, as well as serving as a stage set for rescue simulations. For example, the balcony of the brick-ringed atrium might accommodate an actor portraying a potential suicide; cadets act out other roles in a moot courtroom behind glass at the classroom wing's top level.

The atrium also demonstrates Henriquez's sheer architectural verve in showing how a rich collision of voids, volumes, and vertices can be loaded into a single space. The line of tangency between this volume and the circular office wing serves as an arrival axis from both the parking lot to the north and public transit to the south. The importance of this entry corridor is emphasized visually by an angled glass canopy set on anthropomorphic concrete stanchions, which look surprisingly like a row of eager cadets saluting at parade.

This line is accented with walkways on the second and third floors, and then set within flanking brick walls breached by an ovoid opening, which serves as a kind of proscenium for the theatrical atrium and, when approached from the cafeteria side, as an entrance portal. This device looks like a flattened version of Louis Kahn's "moongate" openings for the Exeter Li-





RIGHT: Second-story walkway connects office volume and classroom wing.
BELOW: Freestanding masonry walls define two sides of triangular atrium in classroom wing.
BOTTOM: Second-story balcony overlooks atrium. Top-level moot court behind glass serves as mock courtroom.
FACING PAGE, FAR RIGHT: Atrium's complex forms are dominated by asymmetrical stair draped around tapering concrete tower.

brary. Further Kahnian touches include two masonry screen walls defining two sides of the atrium.

However, the triangular atrium comes dangerously close to flying off in all design directions, so loaded is the space with assertive custom detail and borrowed views and light. It is fortunately grounded by an asymmetrical, sculptural stair that wraps a tapering chimney vent. But the stair, too, seems to suffer from the same surfeit of geometer's art and detailer's science. It is redeemed by Henriquez's careful placement of a second tapering tower, this one for communications equipment, on the adjacent rooftop as a needed reminder of the world beyond the institution. By trumping the effect of his own sculptural stair, Henriquez shows remarkable design sophistication and humility: Babel's tower is both built and conceptually leveled by the same application of the architect's art.

Similarly, the curving exterior elevations of the office block are dominated by angled masonry buttresses that are pierced by Kahnian arches, with angled steel braces supporting the ring of brise-soleil above. While the perspective effects of the walkway defined by them are marvelous, from the street side they seem bulky and self-important. But at each end of the semicircular office block, the T-shaped concrete perimeter beam continues on past the final bay to float in the air. This detail is not waiting for phase two—future growth will be accommodated elsewhere—rather, it is a powerful gesture of incompletion, of the necessarily porous boundary between an institution and the society it serves.

This dramatic gesture is further evidence of Henriquez's dedication to institutions: With tectonics, formal ordering, and innovative detail, he wants to remind these public servants of their deeper purpose and oft-forgotten obligation to foster rich and complex communities.—*Trevor Boddy*

HIGH-TECH CIVITAS

Vancouver's Busby + Associates Architects design technically oriented architecture that is rooted in British High Tech. The firm's construction-focused approach has produced buildings that champion the assemblage of articulated building components in the service of rational, socially and environmentally responsible strategies. This affinity for High Tech is not coincidental. Firm founder and principal Peter Busby, now 44, worked on the Hong Kong and Shanghai Bank as a young graduate in Norman Foster's office. His early exposure to Foster's technical rigor has been an ongoing source of inspiration for the office, where more than half the staff has had British or other European experience: Busby's former partner, Paul Bridger, emigrated to Canada 20 years ago from Britain. Earlier this year, Bridger left the firm to start his own practice; the buildings on the following pages are the result of the collaboration between Busby and Bridger.

But Europe's diversity of building-component manufacturers encourages constant innovation, and Vancouver's slim industrial base has little of that drive. Also, European budgets are typically twice those in Canada on a square-foot basis. Busby's architecture of technique has consequently focused on designing custom elements to be integrated with off-the-shelf systems.

The firm's comprehensive approach, including a parallel industrial design firm, has attracted many types of clients and projects. The technical knowledge gained from experience with "dumb" buildings such as tilt-up industrial structures began Busby's palette of assembled parts, including cast glazing attachments and laser-cut steel frames, which he draws on to this day.

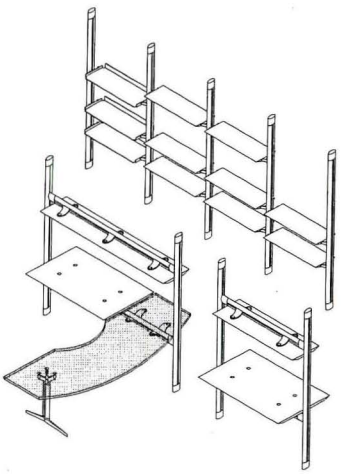
In contrast to the landscape preoccupations of some of Vancouver's best firms, from Arthur Erickson to Patkau Architects, Busby's work cannot be called regional, except that the temperate climate is rarely hostile to architecture with large areas of glazing. But Busby's lack of regionalism is not accompanied by a lack of environmental respect. The firm's fruitful collaboration with engineers has served it well in meeting ambitious energy-conservation targets, such as those for the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) Headquarters (page 128).

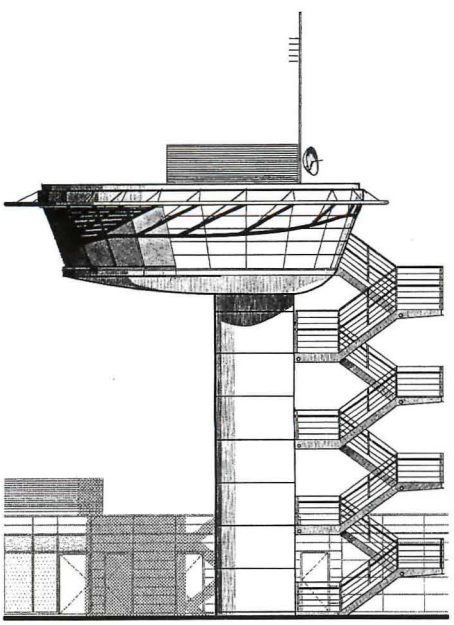
Busby's office is Modern in its belief that technical innovation can be a social tool to enhance working conditions. For the APEGBC, deep penetration of daylight allowed the director's offices to be positioned at the back of a main workspace. This anti-hierarchical arrangement is a triumph in a city where view is a direct indicator of status.

Busby's social agenda is also central to his esthetic sobriety—he is clearly more interested in the pragmatic work of Foster than the organic expressionism of Nicholas Grimshaw or Santiago Calatrava. His expressive technical delight is not self-conscious, but rooted in a rational exploration of physical human needs.—*Bruce Haden*

Bruce Haden is a Vancouver-based architect and correspondent for Canadian Architect.

THESE PAGES: Fritted-glass louvers shield continuous glazing on south facade of Metro McNair lab facility.
AXONOMETRIC: Busby's industrial design includes office furniture system with desk and shelving clipped to vertical aluminum extrusions.
ELEVATION: Control tower for British Columbia Rail achieves monumentality amidst industrial wasteland.
BOTTOM CENTER: Steel tensile structure and fabric light reflectors create esthetic of assemblage in open workspace of engineering association.
BOTTOM RIGHT: Busby replaced flat mullions of North Vancouver District Municipal Hall's standard wall system with custom extrusion.





North Vancouver District
Municipal Hall
North Vancouver, British Columbia
Busby Bridger Architects

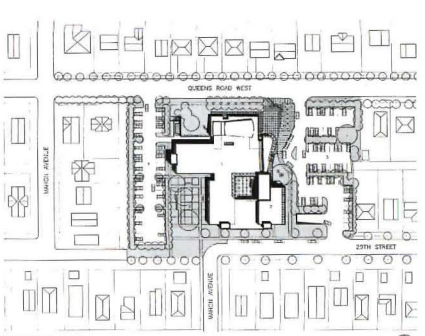
CIVIC TRANSPARENCY

An extensive renovation of the North Vancouver District Municipal Hall by Busby Bridger Architects provides a suburb with a sleek administrative heart. The firm cut into the portly concrete structure of the original 1950s building and wrapped it with new additions. For example, the council chamber used to face the street with an unperforated concrete wall; now, the remnants of the wall nest in a larger, glazed volume that opens views of the chamber to the street.

Busby's most dramatic incision is a new central atrium to orient those in need of municipal services. Its focus is a stair, oriented on the diagonal to energize the atrium's rectilinear volume, which is topped by a fritted-glass roof supported by wood-resin composite beams. The delicate resolution of this roof assembly contrasts with the original building's plump concrete columns. A gypsum-board coating hides the columns' status as remnants of the old structure.

While the detail articulation of the municipal hall project reveals Busby's usual care, instead of concealing the state of the older building, the firm might have developed a tension between the heavy, amorphous Modernity of the original and the taut, planar elements of the new. Nonetheless, Busby's simple yet elegant linkage of transparent open spaces provides North Vancouver with an appropriate monument to the democratic process.

TOP: Entrance plaza on north side leads to council chamber at street.
ABOVE: Laser-cut steel brackets support translucent glass canopy of lobby. Curved glass wall is tied to steel posts with cast-aluminum brackets.
RIGHT: Original building columns are integrated into atrium. Composite roof structure acts as layered light filter. Glass-and-steel handrail detailing is characteristic of firm.
SITE PLAN: Suburban single-family houses surround municipal hall.



SITE PLAN

British Columbia Rail Offices
and Control Tower
North Vancouver, British Columbia
Busby Bridger Architects

TECTONIC CONTROL

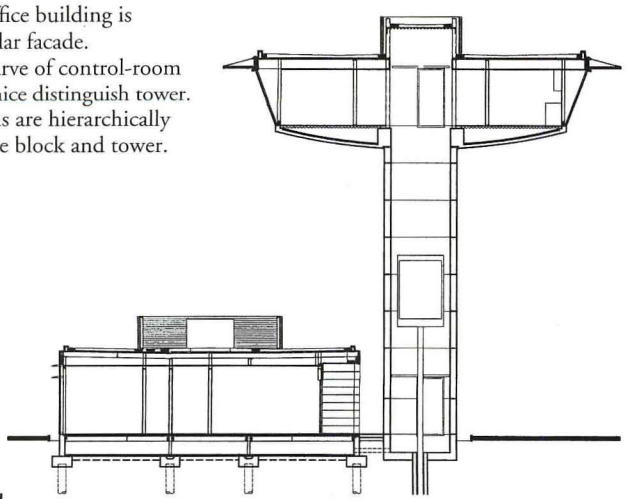
Recent industrial architecture is rarely monumental. Busby Bridger Architects addressed that problem in British Columbia Rail's North Vancouver building by contrasting an understated office shed with an exuberant control tower. This bipartite scheme reflects the client's two distinct programmatic objectives of sorting yard observation and staff integration.

The control tower dominates the view. Its angled concrete shaft and ovoid observation room exhibit a dynamic compositional balance, with the forward thrust of the control room offset by the reverse pull of the steel access stairs. Mullionless raked glazing affords the train controllers unobstructed sight lines without glare.

The tower reflects sophisticated engineering and the visual celebration of its tectonic results. The shaft's jointed precast sections are a pragmatic response to the problems of construction, control of finish, and cost restraints. Their interlocking design allows a crane to stack them like Lego blocks. Structural engineer Fast and Epp also planned the erection of the control room's concrete floor slab so that its dish-like form was cast in a plywood-lined pit and dropped on top of the shaft, allowing a quality finish for the slab's prominent underside while avoiding costly scaffolding.

Busby integrated blue- and white-collar workers in a humble, one-story elongated shed adjoining the tower. This office facade is unarticulated in comparison to other facades designed by the firm, perhaps because of budget constraints. The tower is clearly the star of this show—the result of the in-depth collaboration between architect and engineer to enliven the utilitarian environment of a railyard.

TOP: One-story office building is marked by modular facade.
ABOVE: Double curve of control-room slab and steel cornice distinguish tower.
SECTION: Functions are hierarchically divided into office block and tower.



EAST-WEST SECTION

Association of Professional Engineers and Geoscientists of British Columbia Headquarters
Burnaby, British Columbia
Busby Bridger Architects

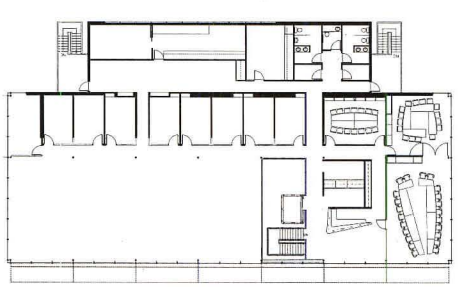
RIGHT: East facade, articulated with angled, fritted-glass sunshades, overlooks landscaped hollow.
BELOW: Sunshades create layered screen over modular facade. Entrance (lower right) leads to upper level, where APEGBC offices are located.
BOTTOM: View of reception area shows fabric light reflectors on ceiling.
PLAN: Conference rooms are arranged on building's north (right) side.

ENGINEERED SHOWCASE

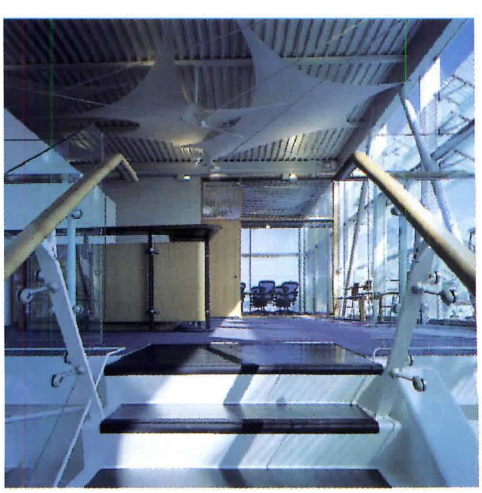
The headquarters of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) is the most completely integrated building of Busby's recent work. The APEGBC wanted the building to project both an image of the 21st century and be a showcase for the engineering profession, goals in harmony with Busby's rational Modernism.

The building is placed for maximum visibility from the adjoining highway, and its parti is straightforward. The east side is a two-story, transparent office volume that looks onto an adjoining landscaped garden; the opaque west side houses service space. The bottom floor is leasable; the upper story holds the APEGBC offices. The narrowness of the lower-level entry is forgotten upon ascent to the upper level, edged with thickly layered surfaces made up of round steel columns, diagonal struts, wing-shaped vertical aluminum mullions, and angled, fritted-glass sunshades outside.

Busby's collaboration with the engineers produced a coherent design vision: Electrical engineer Reid Crowther & Partners carried out daylighting studies for the design of the light shelves and sunshades. Keen Engineering incorporated geothermal heating and cooling and low-energy heat pumps into the mechanical system. Structural engineer Read Jones Christoffersen developed the roof as a minimal web of tensile steel elements, into which luminous fabric light reflectors are interwoven. The result is more than visual. The building rates an energy efficiency of ASHRAE 90.1, much higher than required by code. The client reports great satisfaction with the building's acoustic and thermal comfort, and the project came in under budget.



SECOND-FLOOR PLAN



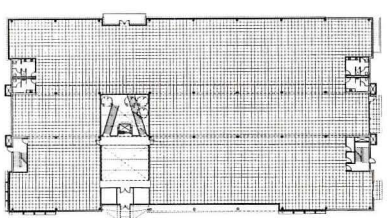
Metro McNair Laboratory
Burnaby, British Columbia
Busby Bridger Architects

The Metro McNair blood-sample testing facility sits in the type of research park where the buildings display a self-conscious, clean-limbed technical sophistication to assert membership in Vancouver's new high-tech economy. Within this display of tech muscle, the Metro McNair lab is relatively restrained. The appearance of precast-concrete spandrel panels hanging on a concrete structure, however, is partially deceptive. In fact, the panels are loadbearing, supporting a concrete deck and a steel truss floor. The standard curtain wall that spans between the panels is enlivened by fritted-glass sunshades supported on cast-aluminum brackets. At the entrance canopy, similar brackets fix glass to arching, 4-inch-diameter steel tubes lashed back to the building with tension rods.

As is typical with Busby's projects, the plan is simple: the glazed box is anchored with service cores at its east and west ends. A skylit atrium spanned by steel bowstring trusses orients visitors. In a clever display of code-busting gymnastics, the atrium drops a glazed skirt below grade to garage level, allowing staff to move to and from their cars at all hours within sight of the secure reception area.

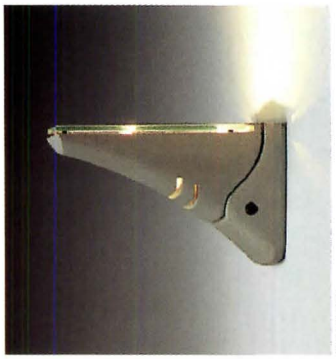
COLLEGIAL SCIENCE

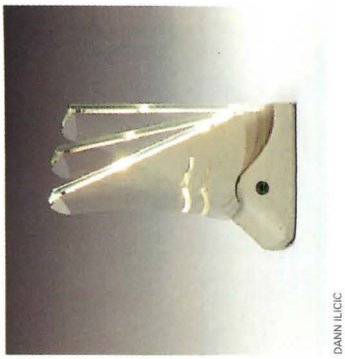
TOP: South facade incorporates loadbearing concrete spandrels.
ABOVE: Atrium descends to garage.
LEFT: Canopy is glass and steel.



GROUND-FLOOR PLAN

A glass-enclosed elevator, open stairs, and the exposed corridors wrapping the atrium produce an effect of monochromatic collegiality, with white-coated technicians softly calling to one another over glazed handrails. The owner's addition of a few potted plants at the base of the atrium may indicate resistance to this sober architectural sensibility. Nonetheless, the building's transparency yields a pleasant working environment, with views and good light even at the center of the facility.


DANN ILICIC


DANN ILICIC

Peter Busby founded his industrial design company, Designlines, in 1987 to broaden his firm's scope beyond architecture. Designlines' two industrial designers are completely integrated with Busby + Associates' architectural staff, and much of the studio's work is designing components of Busby buildings. The architects often structure projects as design/build to allow Designlines to take responsibility not only for component design, but also for manufacturing and delivery.

Typically, products are incorporated into multiple buildings to spread the costs of detailed component design over several projects. For example, a system of interchangeable furniture components was first installed in a chain of optical stores, then refined for an office shelving-and-workstation design; the third generation is a residential version for kitchens and bathrooms.

The experience acquired from this work has allowed Designlines to take on proj-

INDUSTRIAL DESIGN

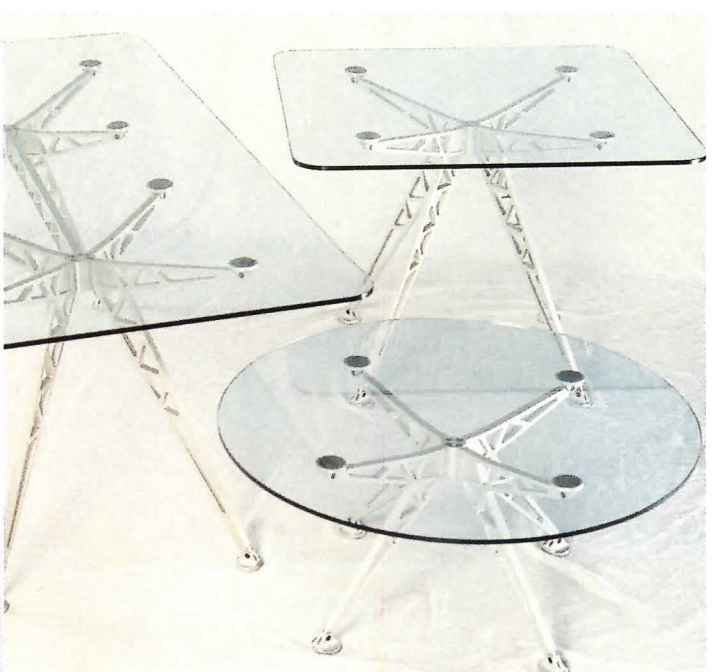
ects of its own—for example, a customer-activated kiosk for electronic ordering in a California chain of Taco Bell restaurants. The office also initiates product designs, such as a fluid, cast wall-sconce that has been available in Canada for five years.

Designlines' most ambitious experiment to date is now on the boards. Busby and his team are planning to equip a Vancouver hotel tower with prefabricated bathroom units and a well-wired wall unit, which can be manufactured off shore for a price similar to the $30,000 typically budgeted for room fit-out, but with a much lower labor component in the cost. If successful, this intriguing project could shift power over the construction process back into the hands of the architect.

TOP: Designed for market by Designlines, cast wall sconce's jointed double casting permits adjustments to light angle. Slots allow two slim lines of downlighting.
ABOVE: Workstation includes tempered glass desk (foreground) and aluminum-and-maple-plywood shelving unit.
RIGHT: Four prototypes of customer-activated fast-food kiosk were installed in Taco Bell restaurants in California.

LEFT: Residential furniture system for kitchens includes interchangeable cabinets fixed to vertical aluminum extrusions with cast shoes.
BELOW: Counter is formed from granite powder and resin mix; drawers are maple with perforated steel sides.
BOTTOM LEFT AND RIGHT: Round and square coffee tables share vocabulary of glass and engineered aluminum supports, computer-milled from Designlines' CAD files.

DANNIEL ILICIC



DANNIEL ILICIC

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Technology & Practice

This month's Technology & Practice section continues our international coverage with a focus on American technical ingenuity abroad. The latest concrete technology and most sophisticated computer programs are being applied by U.S. firms to construct the tallest and most geometrically complex buildings in the world. Cesar Pelli & Associates is breaking high-rise records through the application of high-strength concrete in the 452-meter-tall Petronas Towers in Kuala Lumpur, Malaysia, which now overshadow by 10 meters the previous record-holder of 22 years, the steel-framed Sears Tower in Chicago.

EXPORTING EXPERIENCE

American know-how is being applied to the most visible structures in Asia and Europe.

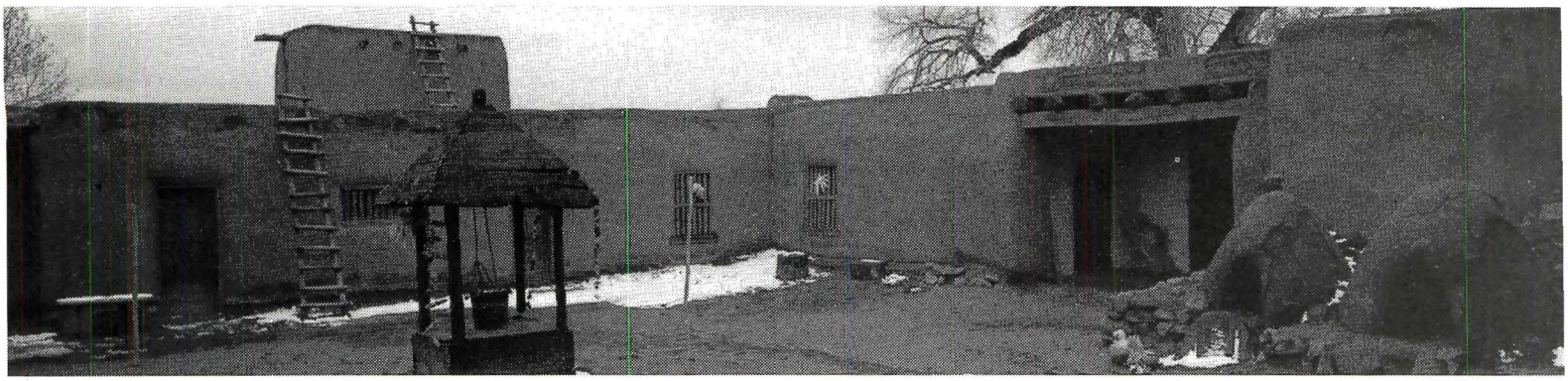
High-strength concrete is also the structural material for two high-rises in Shanghai's Pudong district, China's newest financial center. The Jin Mao Building, designed by high-rise expert Skidmore, Owings & Merrill (SOM), is climbing steadily toward its 421-meter height; Kohn Pedersen Fox Associates' 460-meter-tall Shanghai World Financial Center, scheduled for completion in 2001, is proceeding through final design reviews as site excavation begins.

In Bilbao, Spain, Frank Gehry's new Guggenheim Museum is also progressing, revealing how state-of-the-art computer capabilities are successfully translating his complex curves into a metal-clad, steel-framed structure. Gehry's design is digitally modeled in Catia, a three-dimensional program developed by the French company Dassault and employed in the design of automobiles and aircraft; as well as in A&ES, a more conventional software program developed by SOM in conjunction with IBM. Because of the complexity of the design, overseas engineers and contractors are using the architect's electronic files as construction guidelines in lieu of traditional documents.

Gehry's admitted recalcitrance toward the computer, despite its invaluable contribution to the Guggenheim project, is a sentiment shared by many architects. Our computers feature helps take some of the guesswork out of choosing a new plotter or printer by familiarizing readers with some of the variables to consider, including speed, resolution, and, of course, cost.

While Gehry's museum charts unfamiliar formal and methodological territory, a series of houses abroad reflect the lasting influence of Modernism. Four houses in Europe and one in Australia designed by local architects share an affinity for exposed structure, geometric volumes, and generous natural light.

IT'S DISCOVERING WHAT THIS COUNTRY WAS LIKE BEFORE IT WAS CALLED AMERICA.



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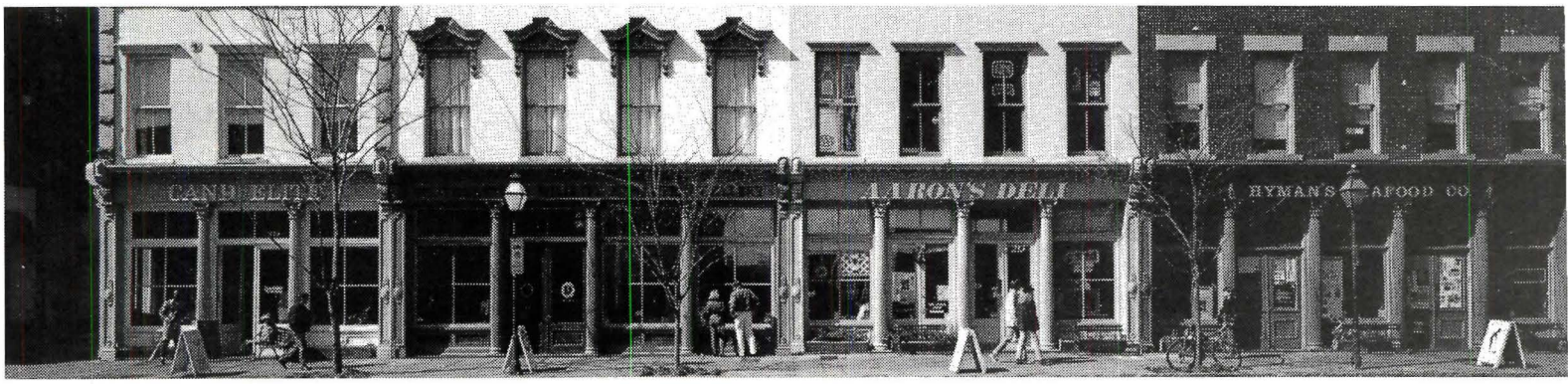

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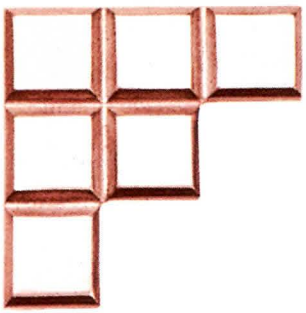

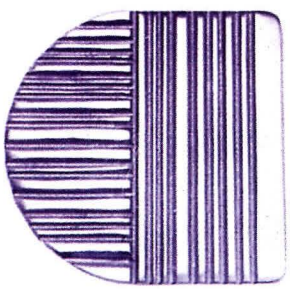

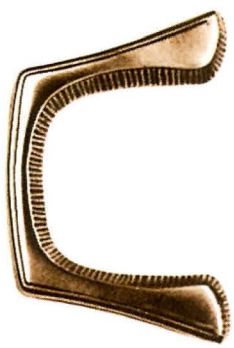

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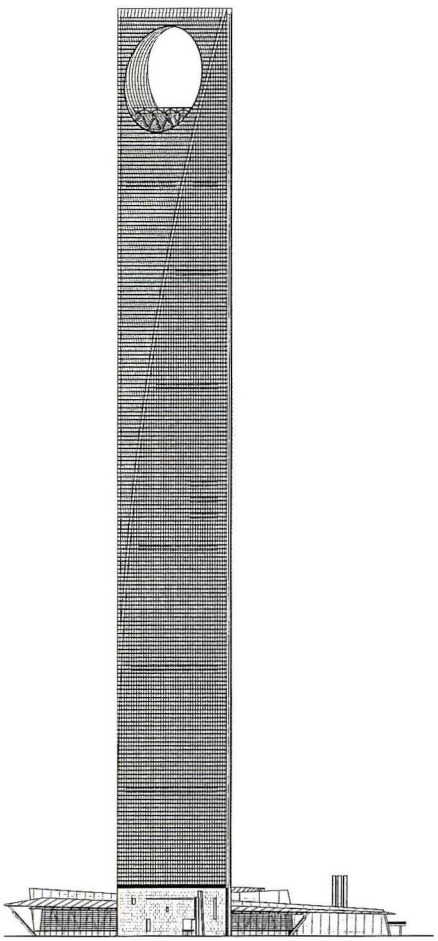
High-strength concrete is enabling American architects to design the highest structures in the world.



ABOVE: Kohn Pedersen Fox Associates' 460-meter-tall Shanghai World Financial Center relies on concrete core and steel-reinforced perimeter frame.

ASIA'S TALLEST TOWERS

Asian cities with surging economies and ambitious urban plans are now hosts to the tallest buildings in the world. Previous record-breaking towers depended on steel frames, including Chicago's Sears Tower (1974) designed by Skidmore, Owings & Merrill (SOM) and New York's World Trade Center (1974) designed by Minoru Yamasaki and Emery Roth and Sons. Today, high-strength concrete is the material of choice for super-tall buildings. Cesar Pelli & Associates' Petronas Towers in Kuala Lumpur, Malaysia, and two skyscrapers by SOM and Kohn Pedersen Fox (KPF) Associates in Shanghai, China, will be constructed of concrete boasting strengths of as much as 12,000 pounds per square inch.

Loosely defined as concrete with compressive strength that exceeds 6,000 pounds per square inch, high-strength concrete carries loads more efficiently, requiring smaller, lighter structural members than conventional concrete. At the same time, high-strength concrete has greater damping characteristics, which enable it to absorb more external forces—reducing sway and improving occupant comfort—than a steel structure of equal strength. As Raymond Crane, managing principal at Ove Arup & Partners, explains, "The main criterion in the design of a super-tall building is acceleration control under wind loading"—an especially important consideration when designing high-rises in typhoon-prone regions such as Shanghai.

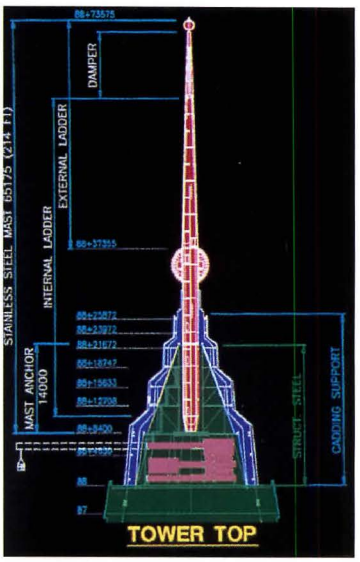
Greater access to high-strength concrete, improved methods of pumping concrete up to high elevations, and refined formwork have propelled high-strength concrete's application over the last 10 years. These technological advances, however, are less earth-shattering than the cultural implications of the towers—they are the first skyscrapers with record-breaking heights to be built on foreign shores. Cesar Pelli's 452-meter Petronas Towers in Kuala Lumpur captured the title of world's tallest in April, following a controversial decision by the Council on Tall Buildings and Urban Habitat to include the towers' stainless steel masts in calculating their height. The masts gave the Petronas Towers the boost needed to surpass the Sears Tower—despite the fact that their highest occupied floors are 45 meters lower than the Chicago skyscraper's. The council ruled that the 66-meter masts are integral to the buildings' design, while the Sears Tower's radio antennas are not.

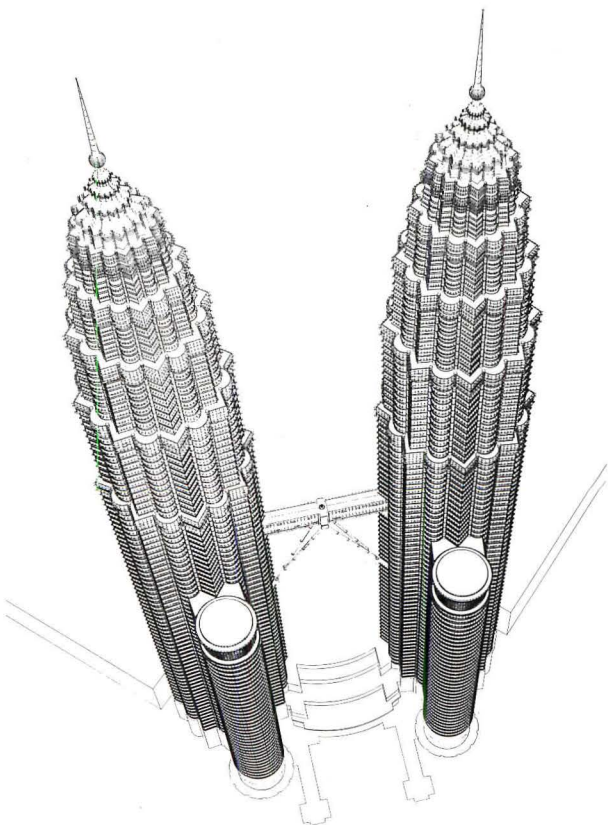
While Chicagoans lament the loss of their city's 22-year-old record, residents of Kuala Lumpur may not have much time to gloat. Foundation work is beginning in Shanghai for KPF's 460-meter Shanghai World Financial Center. And in Hong Kong, Arthur C.S. Kwok Architects & Associates is waiting for final approval from the civil aviation authority to proceed with plans for the 468-meter-tall Nina Tower, which is projected to reach more than 500 meters with the assistance of a mast. Engineered by Ove Arup & Partners, the Nina Tower will incorporate a reinforced concrete core and high-strength concrete columns with external steel bracing.

In light of the Petronas controversy, the Council on Tall Buildings decided to expand its record keeping on super towers. While the distance to the top of the tower or mast will remain the standard for determining height, data on the heights of the highest occupied floor and the roof will also be collected. For now, Chicagoans can console themselves with the world's highest observation deck atop the Sears Tower.—*Ann C. Sullivan*

Petronas Towers
Kuala Lumpur, Malaysia
Cesar Pelli & Associates, Architect

FRED BYFIELD





Cesar Pelli & Associates' 88-story twin towers for Petronas, the Malaysian national oil company, were topped off in March at 452 meters. Designed with Adamson Associates of Toronto, Ontario, the Petronas headquarters building is part of the first phase of Kuala Lumpur City Centre, an 18 million-square-foot commercial and retail development on the 100-acre urban site of a former racetrack.

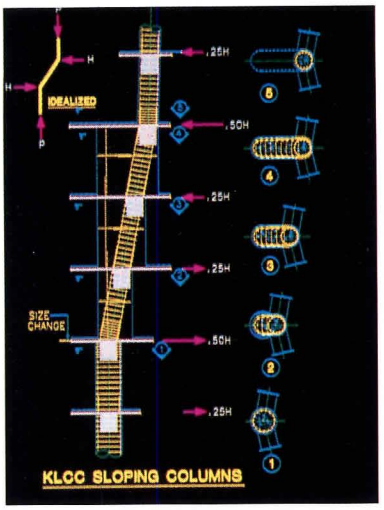
Scheduled to open early next year, the two towers are identical: slender cylinders measuring 46 meters in diameter are connected by a two-story pedestrian bridge at levels 41 and 42 and flanked by narrower, 44-story towers, called "bustles," that attach to their north face. Clad in stainless steel and glass panels, the main towers are set back at levels 60, 73, 82, 85, and 88, and culminate in steel spires.

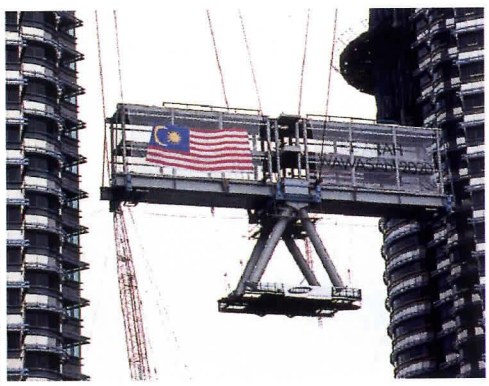
New York City-based Thornton-Tomasetti Engineers, with Malaysian engineers Ranhill Bersekutu, designed the structure so that a central concrete core and concrete perimeter columns carry the vertical loads. At the setbacks at floors 60, 73, and 82, the columns slope over three stories to eliminate the need for transfer girders, which would not fit within the towers' standard 4-meter floor heights.

Lateral strength is bolstered by concrete ring beams that link the columns to frame the main towers and bustles. Unlike the deep spandrel beams typical of concrete high-rises, the ring beams feature a haunched shape to provide clearance for mechanical components within the ceiling plenum. To balance vertical loads, concrete outrigger beams connect the central core and perimeter frame between levels 38 and 40.

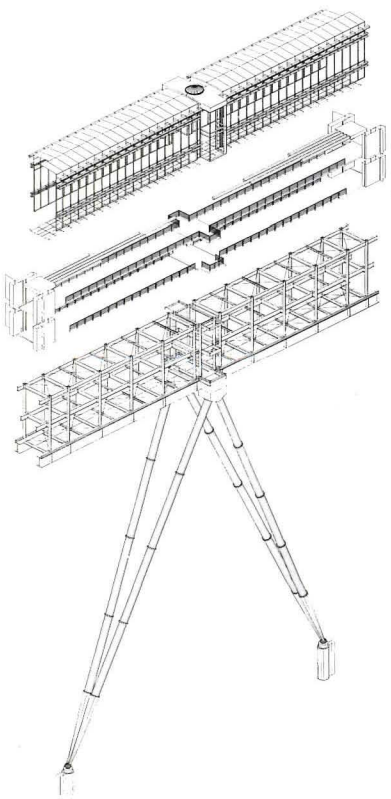
Structural steel is limited to areas requiring longer spans and smaller, easy-to-install members. On each level, wide-flange steel beams carry concrete-filled metal-deck floor

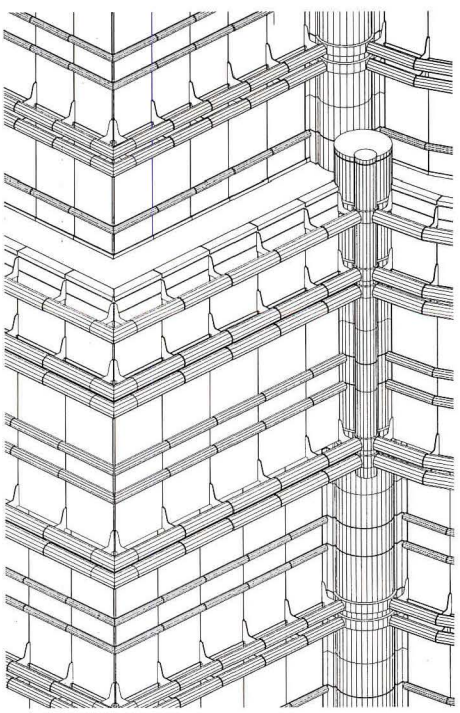
TOP LEFT: Petronas Towers surpass Sears Tower's height by 10 meters.
TOP RIGHT AND ABOVE: Pinnacle and mast are framed in steel.
AXONOMETRIC: Shorter towers enlarge floor plates of lower stories.
FACING PAGE, TOP LEFT: Hinged bridge supports extend 51 meters.
FACING PAGE, CENTER LEFT: Bridge's pre-assembled central section was raised intact with hydraulic jacks.
FACING PAGE, BOTTOM LEFT: Twin steel girders support bridge's bolted steel frame and glazing.
FACING PAGE, TOP RIGHT: Perimeter columns slope to accommodate setbacks without transfer girders.
FACING PAGE, CENTER RIGHT: Haunched beams accommodate lights and ducts in ceilings.
FACING PAGE, BOTTOM RIGHT: Triangular and semicircular extensions cantilever beyond stepped column.





J. PICKARD/CP&A PHOTOS





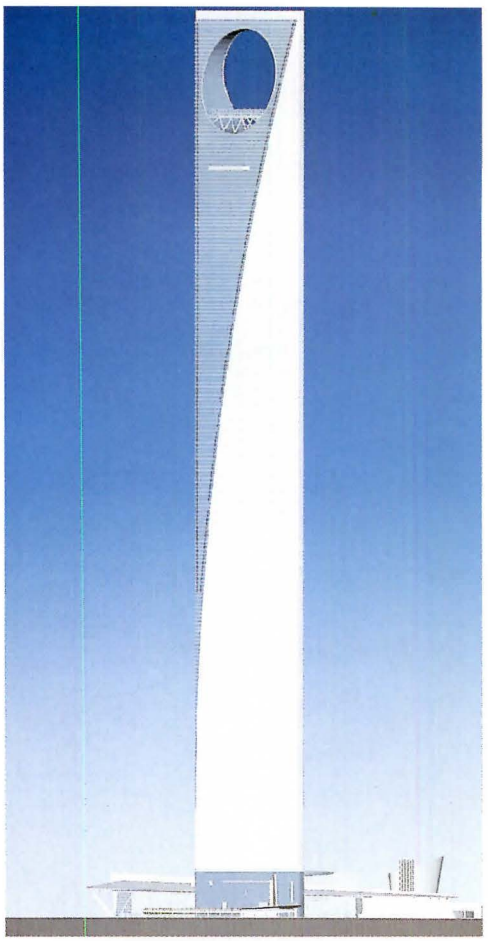
slabs; prefabricated steel trusses support semicircular and triangular floor extensions that cantilever outside the column ring. Above level 84, columns and ring beams are fabricated of steel, as are the towers' pinnacle and 66-meter mast.

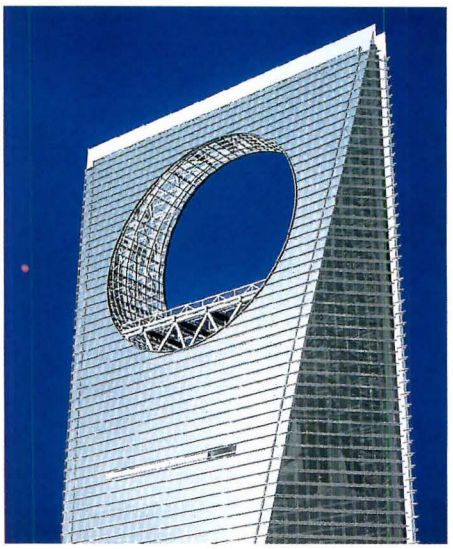
Steel is also the primary structural material of the two-level, 58-meter-long skybridge, which is supported on twin parallel steel girders. The secondary framing consists of steel beams bolted to steel columns that bear on the two main girders. Like wishbones, pairs of steel pipes diagonally extend from spring points at level 29 to prop the bridge at midspan. Spherical bearings at these spring points accommodate the towers' torsional movement.

Fortunately, wind loads are not high in Kuala Lumpur. Expansion joints allow the bridge to tolerate building movement up to 800 millimeters, reducing the impact of deflection on bridge glazing; a box girder in the center of the bridge helps resist twisting. The inherent damping characteristics and stiffness of the towers' large concrete sections will keep occupant perception of building movement and acceleration to a minimum, predicts wind consultant Rowan Williams Davies & Irwin of Guelph, Ontario.

Soil conditions also did not pose formidable problems. Kuala Lumpur is built up on stiff, silty sand with limestone bedrock buried 60 to 180 meters below grade. The distance to bedrock made it impractical to extend bearing piles. Instead, 208 concrete friction elements called Barrette piles distribute the towers' loads. Cast through slurry-wall techniques, the rectangular barrettes measure 2.8 by 1.2 meters and extend 60 to 115 meters. Twin 4.5-meter-thick, cast-concrete raft foundations mediate between foundation piles and tower columns, and an 800-millimeter-thick perimeter diaphragm wall encircles the site.

Shanghai World Financial Center
Shanghai, China
Kohn Pedersen Fox Associates, Architect





LEFT: Tower terminates in circular aperture inspired by moongate.
BELOW: Pedestrian bridge will span tower's 54-meter-diameter aperture.
BELOW LEFT AND CENTER: Square base tapers to 78-by-3-meter apex.
SECTION: Floors above mid-height hotel lobby shift to oblong plan.
FACING PAGE, TOP: Bridgeless preliminary scheme shows exposed steel framing.
FACING PAGE, BOTTOM: Stainless steel and reflective glass panels clad perimeter structures.

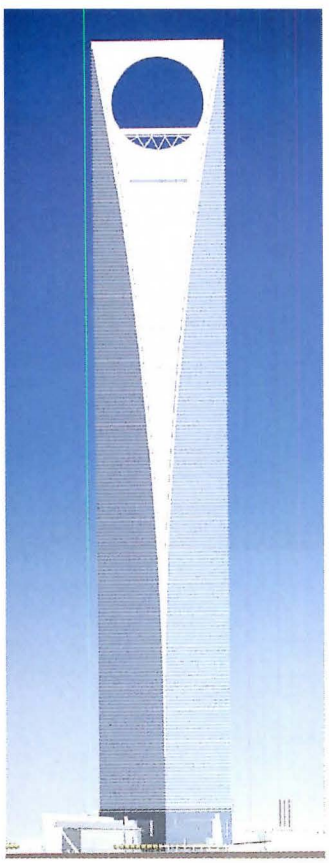
If construction begins next year and proceeds on schedule, Kohn Pedersen Fox (KPF) Associates' Shanghai World Financial Center will capture the title of world's tallest building from the Petronas Towers and replace its neighbor, the Jin Mao Building, as China's tallest. The chiseled profile of this latest contender, to be completed in 2001, will stand 460 meters tall and overshadow Malaysia's twin towers by 8 meters, without resorting to spires, masts, or antennas.

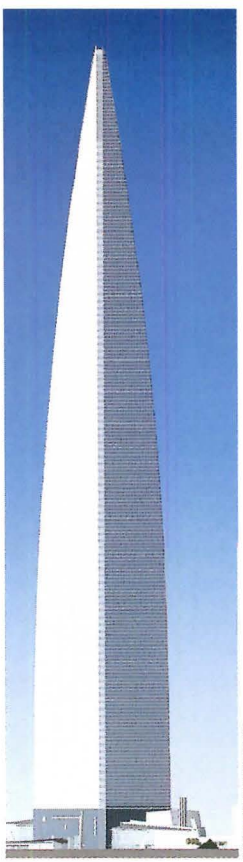
Instead, the office and hotel tower terminates in a giant aperture carved out of a tapered stainless steel- and glass-clad shaft. Inspired by a Chinese moongate, a motif often found in Chinese gardens as an opening inserted in walls or partitions, the aperture is intended to reduce wind load at the top of the tower.

This sculptural, abstract terminus contrasts dramatically with the Jin Mao Building's pagoda-inspired pinnacle to the west. Commissioned by a division of the Tokyo-based Mori Building Company, the World Financial Center will be the second of three high-rises to be built as part of a new financial center in the Pudong district.

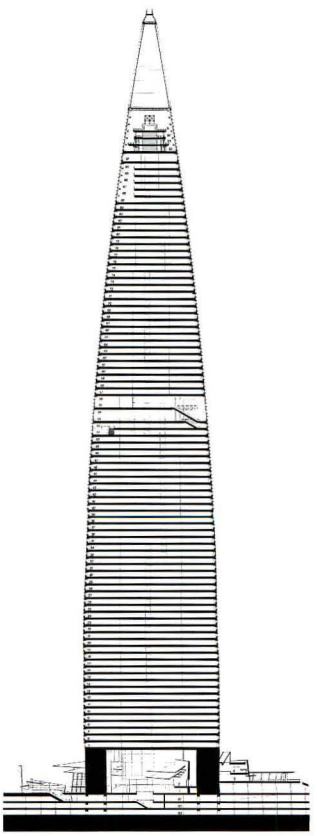
Instead of designing a lateral system based on a central structural core, engineer Ove Arup & Partners specified a perimeter tube system which comprises steel columns encased in reinforced concrete for resisting lateral loads and internal steel columns for carrying gravity loads. The perimeter columns are spaced 3.6 meters on center and connected at each floor by concrete-encased steel spandrel beams.

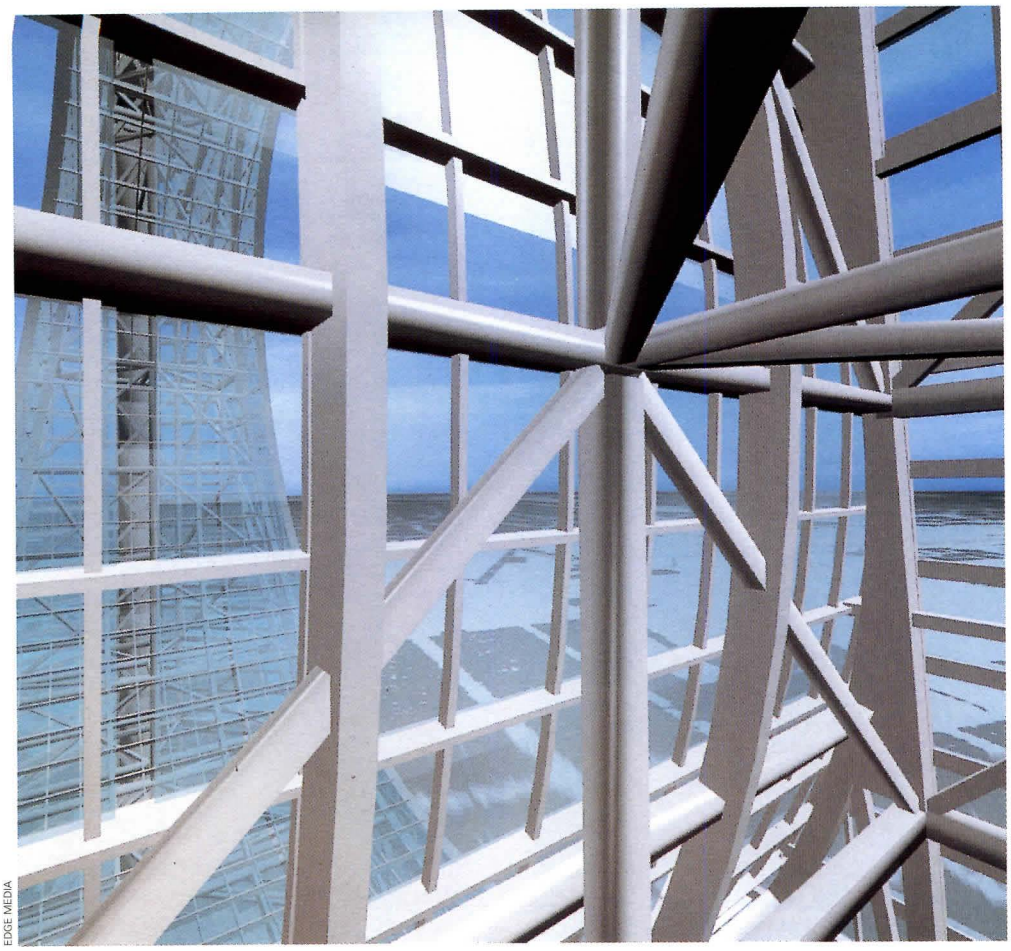
"The steel allowed us to make the columns' sections quite small; encasing them in concrete gave us the advantage of high damping characteristics," explains Raymond Crane, managing principal at Ove Arup & Partners. "The perimeter tube is a very efficient structural form, be-





EDGE MEDIA RENDERINGS





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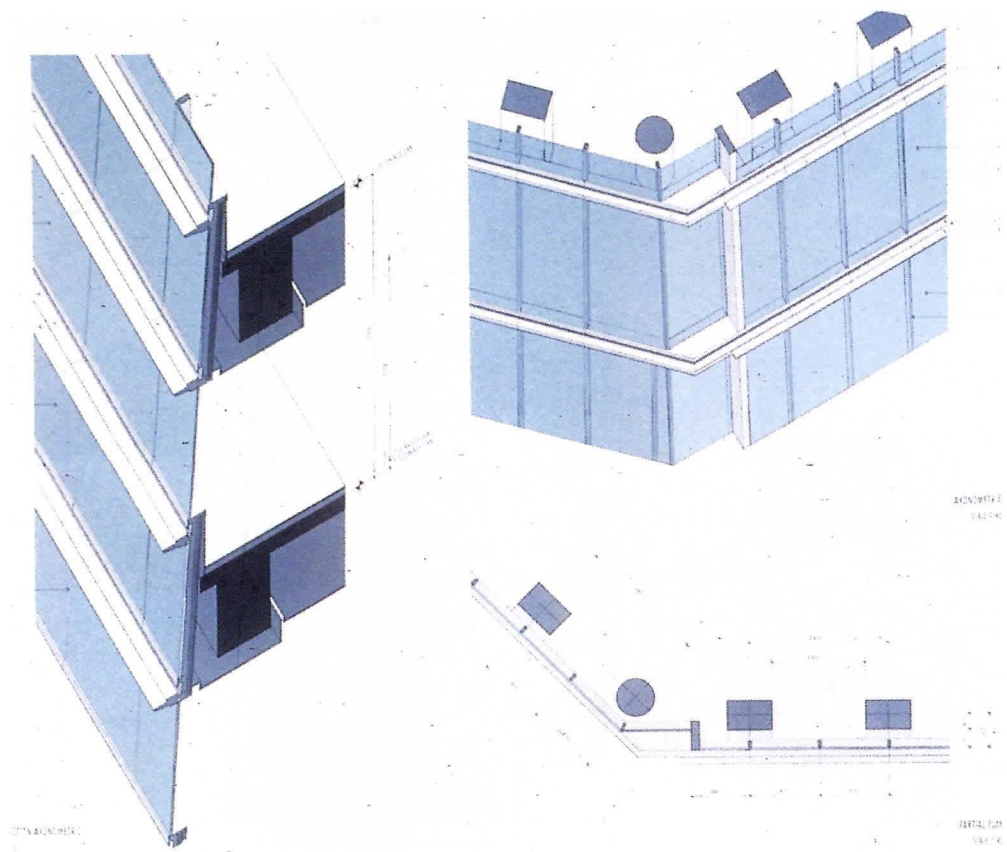


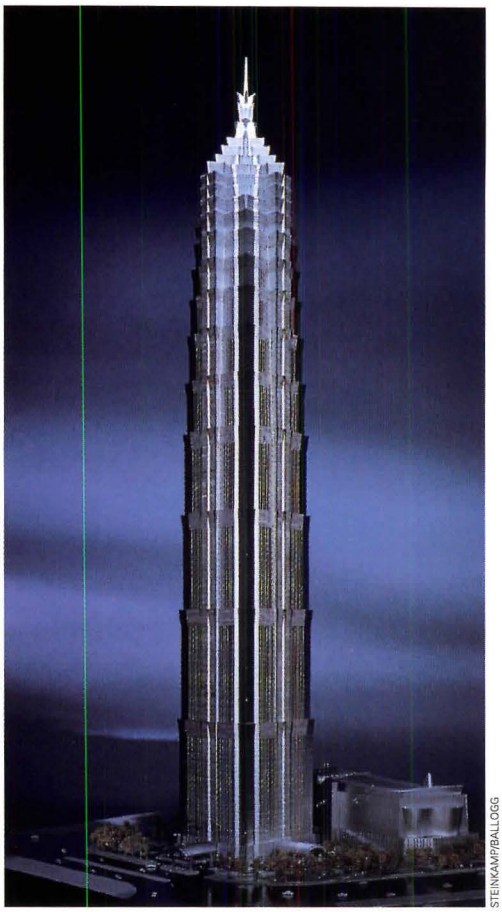
cause the entire width of the building is utilized to resist lateral loads, rather than more conventional systems that rely on cores only, or cores with outriggers."

Economics, however, have altered the design. Under the control of Tokyo-based Shimizu Corporation, the architect and engineer of record who won the construction bid, Arup's preliminary scheme has evolved into a hybrid double-tube structure. Shimizu essentially reversed the ratio of steel to concrete: The perimeter columns will remain the same size and spaced at 3.6-meter centers, but are now specified as steel-reinforced concrete. To supplement the slender perimeter columns, Shimizu added a second concrete tube around the core. The core and perimeter are tied together approximately every 15 levels to increase lateral resistance.

KPF and project architect Forest Overseas encountered the same soil conditions that challenged Skidmore, Owings & Merrill in designing the Jin Mao Building. KPF's tower relies on friction piles extending 50 to 70 meters below a 4-meter-thick concrete foundation mat.

Chinese building codes impose notoriously strict drift limitations to protect against the typhoons and earthquakes that plague the region. While the irregular geometry of the Jin Mao Building tends to break the wind and reduce exterior pressure, the World Financial Center stands like a solid block, 78 meters wide at the top. To reduce drift and increase occupant comfort, Shimizu specified "super-sloshing," tuned-mass dampers: eight 7.5-meter-diameter, 5-meter-tall tanks of water will be mounted in groups of four on the northeast and southwest ends of the tower's apex. Their volume and position are calculated so that, in a wind storm, the movement of the water in the tanks will counterbalance the motion of the building.

Jin Mao Building
Shanghai, China
Skidmore, Owings & Merrill, Architect



STEINKAMP/BALLOGG

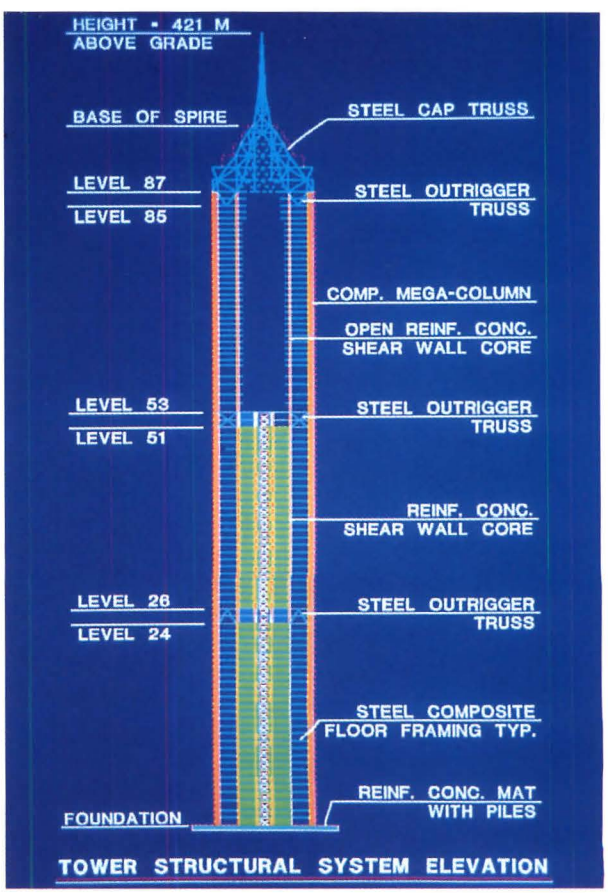
Difficult site conditions influenced Skidmore, Owings & Merrill's structural design of the Jin Mao Building in Shanghai. The region is prone to typhoons, susceptible to earthquakes, and situated on a delta of clay and sand with no bedrock within 100 meters. Despite the harsh environment, the 88-story tower—which will be the tallest in China—is now under construction and scheduled for completion in late 1998. Designed for the China Shanghai Foreign Trade Centre Company, it is part of a 3 million-square-foot, mixed-use development in the nation's developing Pudong district.

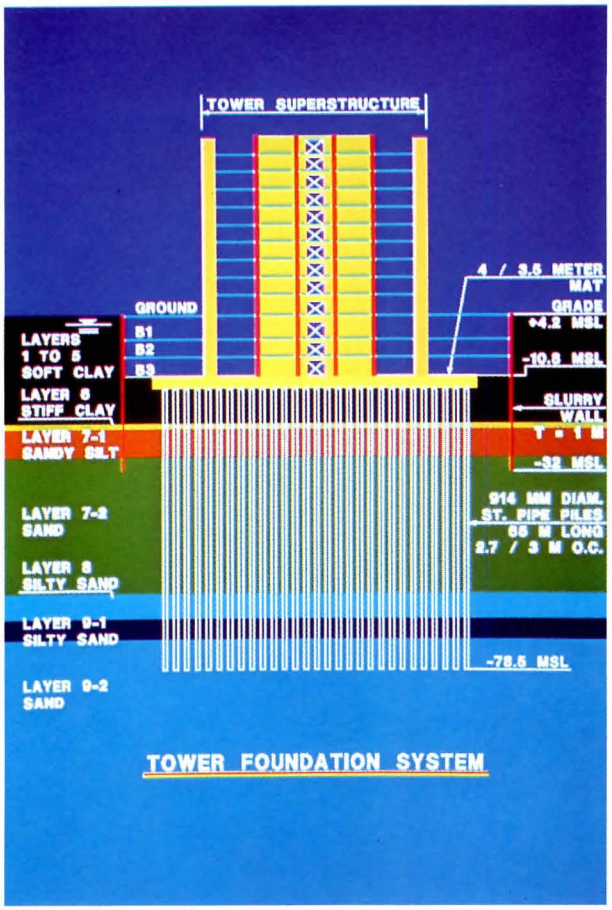
SOM designed the 421-meter-high office and hotel tower to withstand natural forces through a combination of high-strength concrete and structural steel. Above grade, a reinforced-concrete core and eight perimeter supercolumns are linked by outrigger trusses to resist lateral and vertical loads. Beneath the frame is a 4-meter-thick concrete mat and a grid of 429 hollow steel piles extending 65 meters. Stiff sand below the piles provides some bearing capacity, but the foundation primarily depends on friction for support.

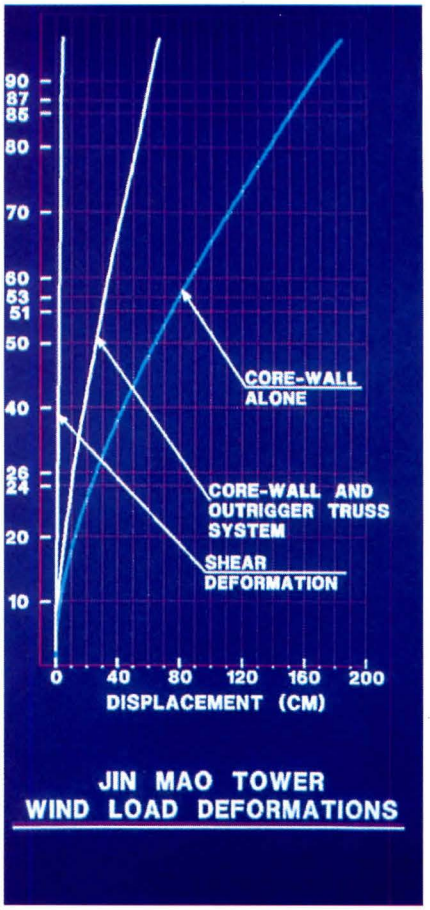
The concrete core measures 850 millimeters thick at the base and 450 millimeters thick at the top. On the first 52 floors of office space, the core is filled with elevators and mechanical rooms; for additional strength and stiffness, it is spanned by concrete web walls. In the hotel above level 53, the core is open, creating a 34-story atrium with glazed elevator shafts at its center. Corridors are cantilevered off the core.

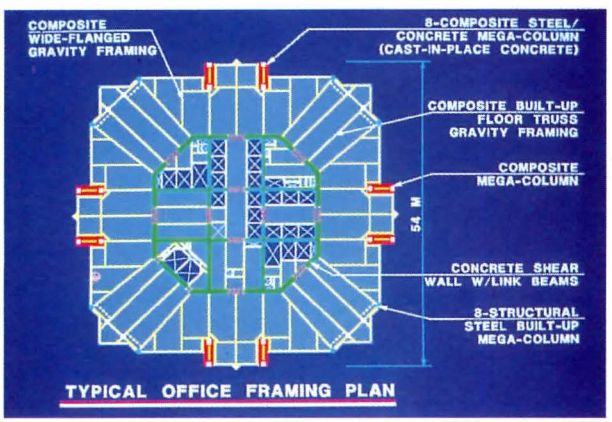
Fabricated from structural steel sections encased in reinforced concrete, the eight supercolumns are positioned in pairs and centered on four sides of the tower. The rectangular composites measure 1.5 by 5 meters at the bottom and taper toward the top. The floor plates

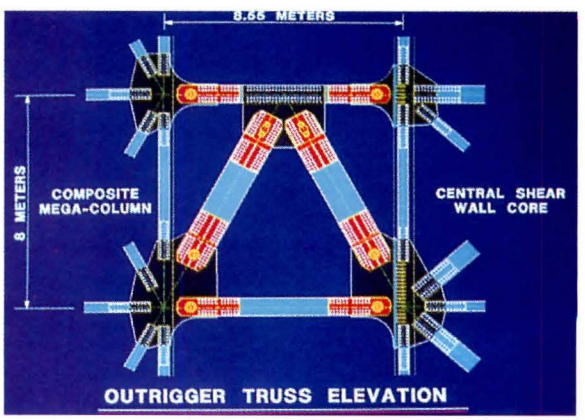
ABOVE: SOM's 88-story Jin Mao Building tapers to structural steel spire inspired by pagoda.
TOP RIGHT: Granite, stainless steel, and aluminum curtain-wall mock-up was tested for wind resistance.
CENTER RIGHT: Octagon-shaped core and set of eight columns invoke Chinese lucky number eight.
RIGHT: Solid core opens to atrium at level 53. Steel outrigger trusses divide tower into three segments.
FACING PAGE, TOP LEFT: 429 steel piles reach 65 meters below surface.
FACING PAGE, TOP RIGHT: Outrigger trusses combined with core improve tower's wind resistance.
FACING PAGE, CENTER: Pairs of supercolumns are aligned on each face; steel columns anchor diagonals.
FACING PAGE, BOTTOM: Pin connections at outrigger trusses reconcile structural members' movement.











narrow as they approach the pagoda-shaped steel spire, but the eight supercolumns remain essentially vertical to maximize the building's structural depth—a deeper section is more resistant to lateral forces.

Three sets of eight outrigger trusses, each two stories high, connect the columns to the core at floors 24 and 26; 51 and 53; and 85 and 87. These monumental steel-and-concrete trusses "act like levers or struts between the central core and the outside columns," explains Mark Sarkisian, SOM associate partner and senior project structural engineer. "As the core tries to bend in a typhoon or seismic event, it is restrained by the trusses on four sides."

To accommodate the relative movements of the core and columns during construction, the engineering team devised a way of temporarily fastening the outrigger trusses. For example, the trusses between levels 24 and 26 are being erected this month and temporarily stabilized with pin connections that allow the concrete core and composite columns to move freely. After the construction team installs the second set of trusses, the bolts and pins will be locked on the lower set.

The tower includes structural steel components designed to assume only gravity loads. Eight steel columns are interspersed among the perimeter supercolumns to provide a column-free interior on the office levels. The floor framing, too, consists of steel members with a composite metal deck slab.

Wind-tunnel testing validated SOM's choice of high-strength concrete and steel. No supplemental dampers are necessary, as was revealed by drift analyses performed by the University of Western Ontario. And despite the tower's exposure to Shanghai's strong winds, occupants' perception of building movement will be minimal, falling below internationally accepted levels.

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Five new houses demonstrate Modernism's continuing appeal in Europe and Australia.

CHRISTIAN RICHTERS FOTOGRAF

ABOVE: Detail of Köchlin House by Herzog & de Meuron juxtaposes sliding glass walls with fixed stucco walls.

MODERN LIVING ABROAD

Europeans have always been much more receptive than Americans to Modern residential architecture. The result is a vast repository of housing that ranges from the intimate, seminal works of Le Corbusier, Mies van der Rohe, and Alvar Aalto to the contemporary explorations of Mario Botta, Rem Koolhaas, and Elias Torres. This issue of ARCHITECTURE reviews several new houses in Europe—and one in Australia—that embody the enduring authority of Modernism as a philosophical platform on which to build.

Like their more ideologically pure predecessors, these houses share a fascination with structural expression, daylight, and free-flowing spaces. But several also acknowledge historical context and precedent, and one even pokes gentle fun at its philosophical heritage.

European and Australian architects are particularly fascinated with Modernism's blurring of structure and finish materials. For instance, Spanish architects Iñaki Abalos and Juan Herreros express the metal frame, trusses, and roof decking of a house in Madrid, wrapping the house in a satiny steel sandwich panel system that suggests both sensuality and machined precision.

The striated, almost leathery stucco of Herzog & de Meuron Architects' house in Basel also appeals to the sensual. But its ashen tones exude an earthbound, moody presence, and its inscrutable opacity yields to light and transparency only at its atrium-lit center. In short, while they enjoy toying with some of Modernism's more popular characteristics, Jacques Herzog and Pierre de Meuron never stray far from the movement's infatuation with stereometric simplicity, expository detail, and the ephemeral properties of light.

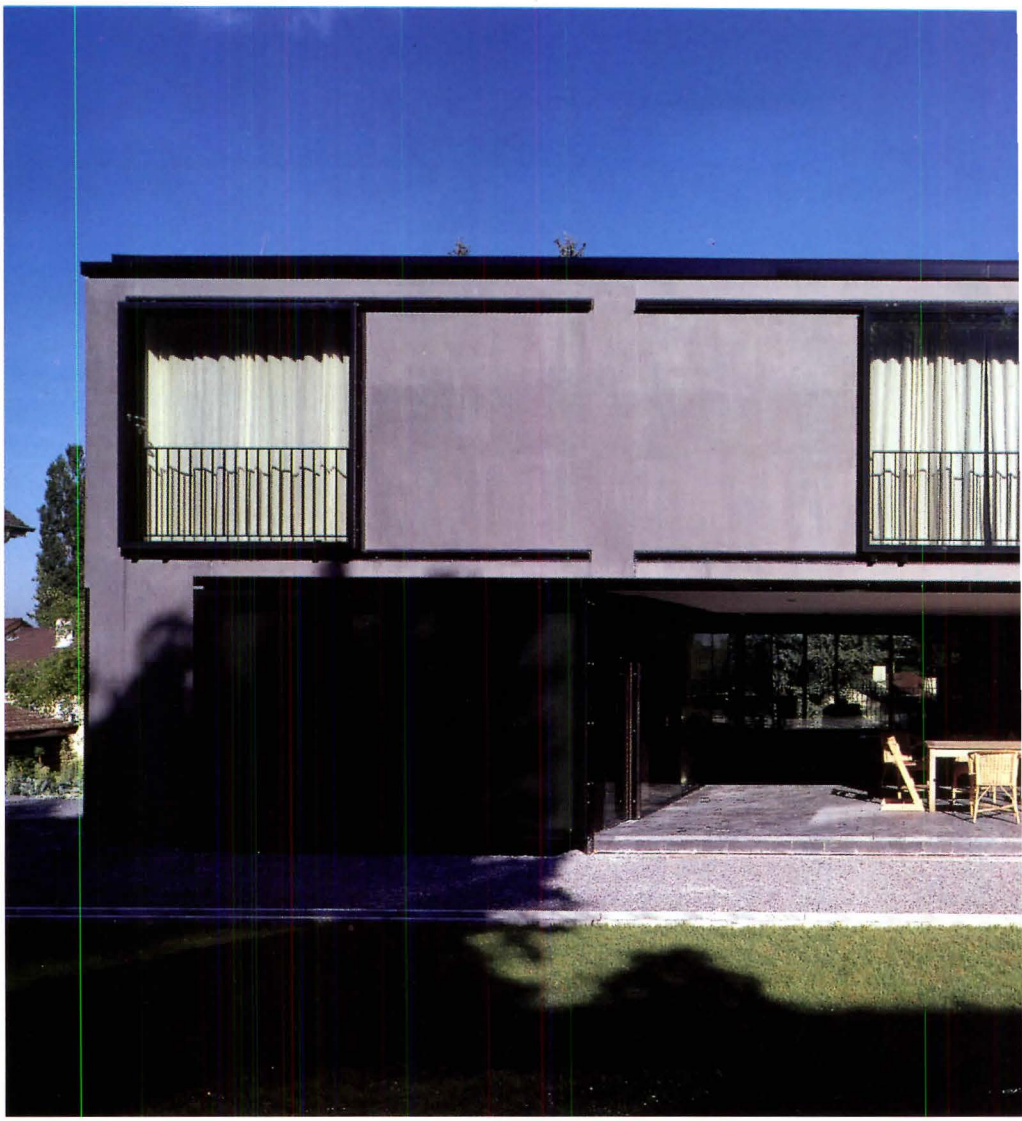
Slipped between the ocean and the foothills, Ed Lippmann's house near Sydney, in Wombarra, New South Wales, is a regional response to the same stimuli. Its elegant envelope gives way to an outback understanding of beauty in necessity. Once again, structure is exposed, but this panel system consists of plywood screwed directly into a bolted galvanized-steel frame that hovers above the storm-washed ground, resting on only six points. Louvered windows and corrugated-metal roof lines exude informality.

In a remote corner of Spain, Carlos Ferrater and Joan Guibernau also draw on regional precedents to transform an abandoned barn. Their design for the Llampaies house may be rustic in its articulation, but it is no less Modern. The stone living room, plaster bedroom, wooden guest house, and cement-paneled photography studio are all rectangular or cubic solids punctured by expanses of glass—impassive, abstract masses grouped loosely in the center of a farming village.

Heinz Bienefeld's Strecker House in Delligsen, Germany, departs from this model only slightly, relying on formal abstraction but with more direct regional references: the central pavilion rests under a gabled roof that recalls the local vernacular. The roof, however, and the clean volumes beneath it are stretched, flattened, and stripped of ornament—Abbot Marc-Antoine Laugier's primitive hut writ large.

Taken as a whole, this group of houses confirms Modernism's continuing international influence in residential architecture. It also belies the notion that Modernism's natural proclivities of abstraction, rigor, and invention engender sterility or redundancy. The flexibility and inclusiveness of these designs suggests that the most significant development of 20th-century architecture is still alive and well—overseas.—*Reed Kroloff*

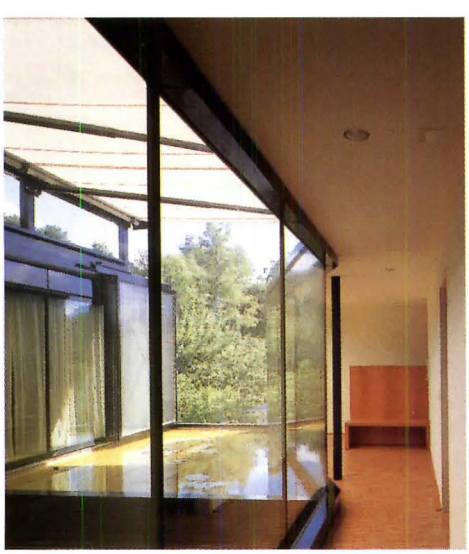
Köchlin House
Basel, Switzerland
Herzog & de Meuron
Architects



Jacques Herzog and Pierre de Meuron wryly subvert the tenets of Modernism in the leafy suburbs of Basel. At first sight, their 456-square-meter Köchlin House seems the very picture of Modern abstraction: a pristine concrete cube perched atop a verdant rise. But the house is rendered in brooding gray stucco, not sparkling white; its windows are asymmetrically arranged, yet awkwardly oversized; and the parking court carved from the front of the site is irregularly shaped.

On closer inspection, the house is not a cube at all, but a steel-framed trapezoid. It is set back from the parking court and connected to it umbilically by a daylit, subterranean concrete entrance corridor reached through one of several identical glass doors facing the court (the others lead to a garage and laundry room). Above the terminus of the corridor is a U-shaped floor of public rooms wrapped around a two-story atrium shared by a floor of bedrooms above. The two living floors are rotated 90 degrees to each other about the axis of the atrium, creating dynamic spatial and lighting conditions within the static frame of the building.

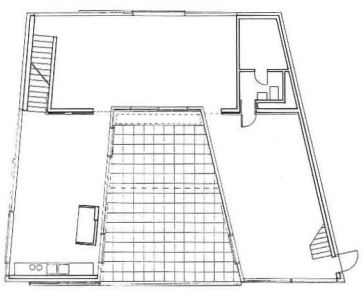
As in other Herzog & de Meuron compositions, issues of transparency predominate. Exterior walls alternate between striated stucco infill panels and enormous sheets of sliding glass in oversized, surface-mounted frames developed specifically for this project: with a flick of the wrist, window can become wall and void can become solid. Surrounded by glass on both levels, the atrium becomes the source of interstitial views and internal daylight. On the third level, a reflecting pool built over the roof of the dining room pulls the sky down into the house, splashing reflected sunlight onto the interiors. Occupants can send the sky packing by unfurling the atrium's fabric cover.—*R.K.*



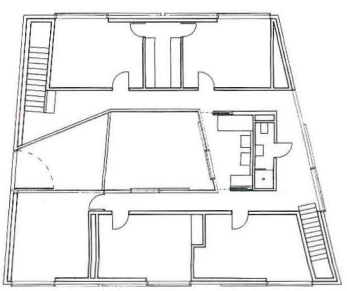
CHRISTIAN RICHTERS FOTOGRAF PHOTOS

FACING PAGE, TOP: Rear of house appears to float on glass and air.
FACING PAGE, BOTTOM LEFT: Reflecting pool sits atop dining room/kitchen.
FACING PAGE, RIGHT: Second and third levels share atrium.
ABOVE: Irregular entrance court hints at trapezoidal shape of house.
FAR LEFT: Glazed interior walls extend perception of space.
LEFT: Perspectival corridor is skylit.

CHRISTIAN RICHTERS FOTOGRAF PHOTOS



SECOND LEVEL PLAN



THIRD LEVEL PLAN

Gordillo House
Madrid, Spain
Abalos & Herreros Architects

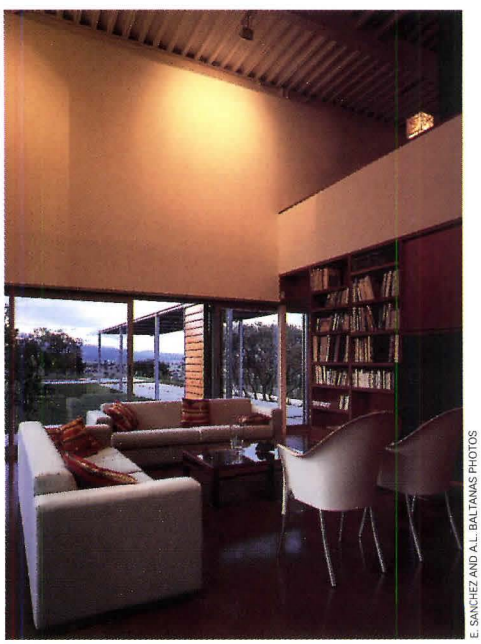
Since opening their practice in 1984, architects Iñaki Abalos and Juan Herreros have mastered the art of cool, neutral abstraction in their urban housing blocks and public buildings throughout Madrid. The 290-square-meter Gordillo House, designed for a painter and his family, adapts their fascination for simple industrial structures and materials to a residential scale.

The stepped two-story box is built of lightweight systems on a modest slope. A concrete foundation supports a rigid steel frame. The frame, trusses, and metal roof decking are exposed throughout the interior.

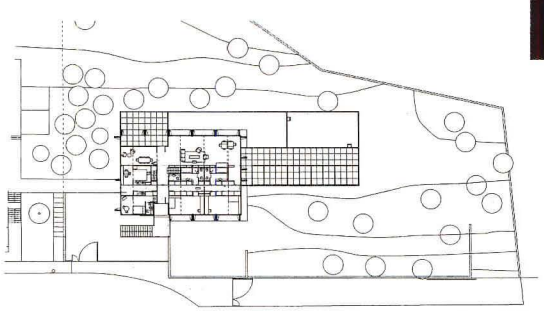
The exterior is clad in 50-millimeter-thick steel sandwich panels fastened to the frame. This quiet, hermetic skin is interrupted by only minimal fenestration: long, low windows framed in anodized aluminum wrap most of the house's base, with smaller oblong apertures on the second floor. Louvered shutters made of *pino melis,* a Spanish wood retrieved from the region, fold open along flush tracks on the exterior.

Interior walls can be moved; only the central corridor containing services and storage is fixed. The basement-level garage and entrance connect by a stair to the kitchen and dining areas grouped at the first floor's southern end. A narrow, shuttered porch and entrance recedes into the southwest corner. The double-height, window-walled living room occupies most of the house's western side, balanced by two bedrooms on the eastern side.

The set-back upper story contains two bedrooms and a study in an L-shaped configuration, with the study open to the living room below. A terrace runs the full length of the house's eastern side; a small stair leads to a terrace on the flat roof. The house's solemn composition reflects Abalos & Herreros' pursuit of simplicity in integrating structure and design.—*Bradford McKee*



E. SANCHEZ AND A.L. BALTANAS PHOTOS



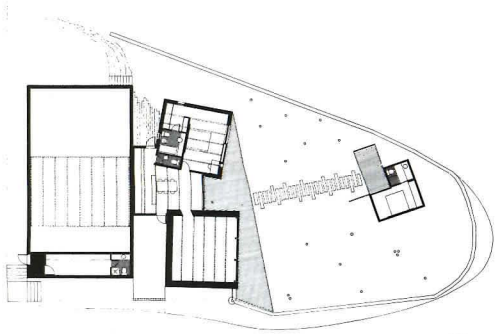
GROUND-FLOOR PLAN

TOP: Wood shutters punctuate steel sandwich panel cladding.
ABOVE LEFT: Deep foundations emerge as concrete walls of basement.
ABOVE: Living room with exposed metal roof opens to study above.
SITE PLAN: House is oriented to views of mountains to west and skyline to east.

House and Photo Studio
Llampaies, Spain
Carlos Ferrater and Joan Guibernau, Architects

LLUÍS CASALS PHOTOS

TOP: Each room of Llampaies house is clad in different material.
ABOVE: Living room's wooden shades cantilever to cover patio.
ABOVE RIGHT: Rolling screens open studio to top and side daylighting.
RIGHT: Studio's end wall (left) mimics existing stone barn (right).
SITE PLAN: Guest house is located beyond main building.



GROUND-FLOOR PLAN

In a remote Spanish village in the province of Gerona, near the French border, Carlos Ferrater and Joan Guibernau built upon the simple authority of a fieldstone barn to create an abstract vacation house and photography studio. Maintaining the existing barn in a condition as close to the original as possible, the architects transformed the structure into a living room by laying a new concrete floor, replacing the roof within the profile of the barn's east and west walls, and enclosing the southern face with a wall of steel-framed glass. They then added a bedroom pavilion and joined the two with a hall that serves as entrance foyer, dining area, and kitchen for the 90-square-meter main house. (The roof of the hall also doubles as a sun deck.) Attached to the kitchen's north side is the 180-square-meter photo studio, which looms above the smaller volumes of the public areas and acts as their visual backdrop. A freestanding, 16-square-meter guest house claims the triangular site's southernmost point.

Each room of the house is distinguished by different materials: cement panels and stone clad the studio; the bedroom is finished in plaster; masonry dominates the entrance hall; and the guest house is sheathed in plywood. The varied forms and surfaces give the compound the air of a small village.

Despite the buildings' apparent solid mass, each volume can be flooded with daylight or protected from the sun by an inspired collection of shading devices. A wall of glass defining the southern edge of the living room is shaded by wood screens that can be activated to sweep up and cantilever 90 degrees, creating a covered patio; a roll-up wood screen opens or seals the bedroom. And the studio features a cable-driven screen that when retracted permits nearly the entire ceiling to be open to the sky.—*R.K.*

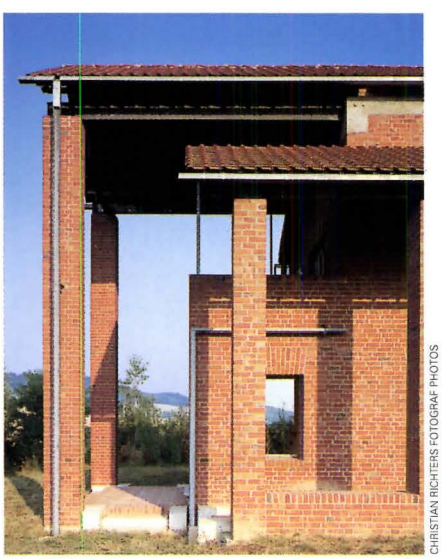
Strecker House
Delligsen, Germany
Heinz Bienefeld, Architect

It is unusual in Germany to find a single-family house on a 6,000-square-meter site, and even more unusual for such a house to comprise a three-building complex. But that is the late Cologne architect Heinz Bienefeld's solution for a family's year-round residence in Delligsen, a village in northwestern Germany.

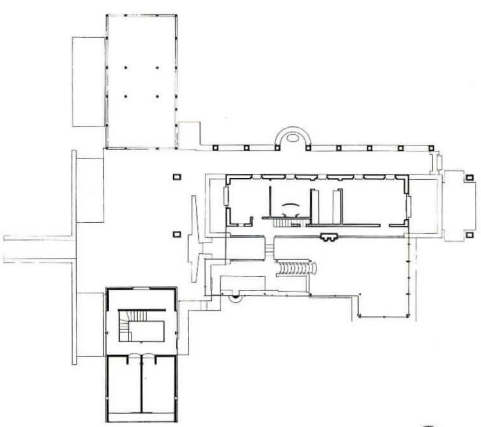
Bienefeld was known for detailed brick facades; clear, unobstructed plans; and patterned floors that unify large, daylit spaces. The T-shaped Delligsen complex exemplifies this approach. It includes a 200-square-meter main house flanked by a four-bedroom children's house and a garage. Arranged on a hillside overlooking the village, the buildings define a small brick courtyard sunken slightly below grade.

The long main house, with a 9-meter-high gabled roof, contains kitchen, dining, and living rooms and a large glazed terrace on the first floor, and two bedrooms and baths on the second. The imposing structure and its porticoed east veranda are clad with local brick applied with a mortar derived from Bienefeld's own recipe: chalk and sand combine to create a warm ochre color. The spruce-panel-clad garage and children's volume are simple cubes that complement and accentuate the Classical proportions of the main structure.

Bienefeld, who worked in the 1940s and 1950s with Dominikus Böhm and, briefly, his son Gottfried, was known in Germany for his ecclesiastical buildings and meticulously detailed houses. His work, though contemporary in its spaces, materials, and structure, recalls ancient buildings in its formal vocabulary—in Delligsen, locals have dubbed the house "the Acropolis." When Bienefeld died last year at age 69 of cancer, he had a house in Berlin and a church in the Cologne suburbs on the boards. His second-oldest son, Niklaus, plans to complete his father's projects next year.—*Heidi Landecker*



CHRISTIAN RICHTERS FOTOGRAF PHOTOS



SECOND-LEVEL PLAN

SOUTH-NORTH SECTION

THESE PAGES: Porticoed main house reveals Classical inspiration.
FACING PAGE, CENTER LEFT: Brick detail recalls historic Cologne buildings.
FACING PAGE, PLAN AND SECTION: Main house is flanked by cubic volumes of children's house and garage.
BELOW: Glazed wing faces south.
BOTTOM LEFT: Patterned brick floor designed by Bienefeld unifies levels.
BOTTOM CENTER AND RIGHT: Stair leads to second-story balcony corridor; steel railings complement brick floor.

CHRISTIAN RICHTERS, FOTOGRAF I HJØRS

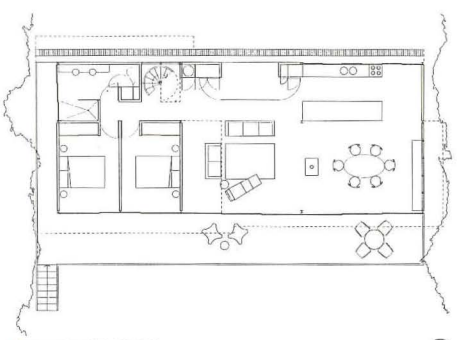
Cashman/Pickles House
Wombarra, New South Wales
Lippmann Associates, Architect

The houses of Australian architect Ed Lippmann, like the work of his compatriot Glenn Murcutt, translate an interest in open, transparent forms into lyrical responses to the tough Australian landscape. In his 144-square-meter Cashman/Pickles House, built between steep mountains and a beach near Sydney, Lippmann's favored minimalism serves ecological ends. Site conditions—unstable soil, high rainfall, and an adjacent nature preserve—prompted the choice of lightweight steel construction, resulting in a house that barely treads on its shallow swale between two tree-covered hillsides.

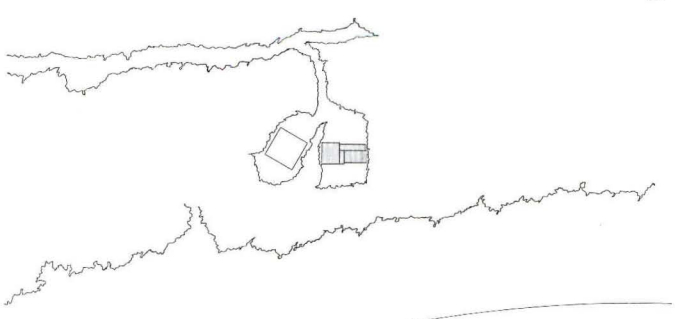
The open-plan glazed pavilion, 20 meters long and 7 meters deep, touches the ground at only six points, upon concrete piers driven 6 meters into coal and connected by concrete grade beams to resist soil movement. The piers support clustered steel struts holding up the steel floor deck. The deck frame cantilevers from these triangulated struts to achieve a weightless effect. On the house's ocean side, glass sliding doors and aluminum-framed glazing open the interior to full outside view; on the mountain-facing side, Lippmann completes the envelope opaquely with ochre-stained plywood wall paneling. Louvered high bays and clerestories allow cross-breezes to reduce heat.

The plan segregates the entrance, living room, dining room, and kitchen at the northern two-thirds of the longer pavilion. A steel spiral stair connects these rooms to a study and bedrooms in the taller volume: two bedrooms on the first floor and a master bedroom on top. Lippmann tempers the house's orthogonal edges with a gently curving barrel roof, whose corrugated-steel sheets are spring-arched atop steel purlins and cantilevered over steel supports to feather the edges and protect the envelope from rainwater.—*B.A.M.*

FARSHID ASSASSI PHOTOS



LOWER-LEVEL PLAN



SITE PLAN

FACING PAGE, TOP: Plywood clads west elevation; clerestory lights living area.
FACING PAGE, CENTER: Louvered bay reveals steel spiral stair. Roof is spring-curved over purlins.
FACING PAGE, PLAN: First-floor living area is minimally partitioned.
FACING PAGE, SITE PLAN: House is situated in clearing above beach.
TOP LEFT: Aluminum-framed glass and sliding doors divide east elevation.
LEFT: Stair hall features both exterior and interior glazing.
ABOVE: Louvered clerestories allow cross-ventilation.

E.SANCHEZ AND A.L. BALTANAS PHOTOS

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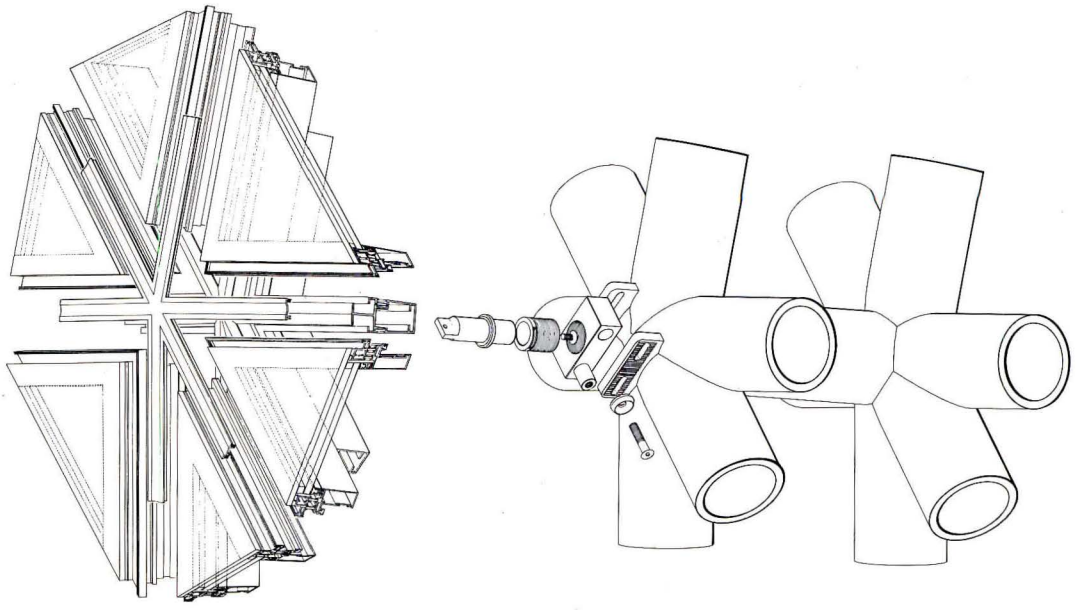
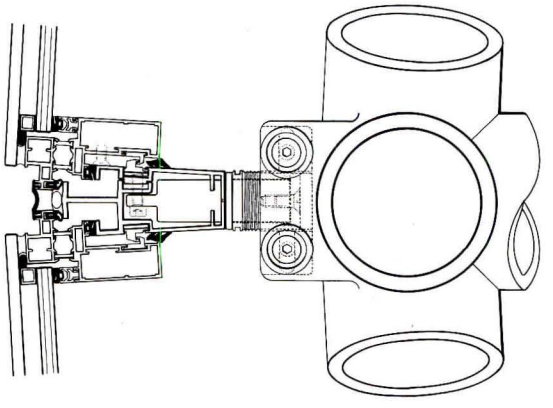
Details

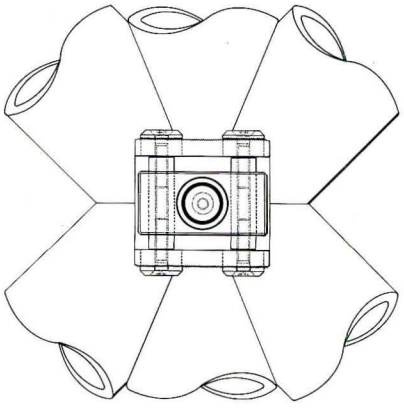
A steel-framed glass curve opens a new law library to the Cambridge campus.



DETAIL OF CLADDING CONNECTION TO STRUCTURE



CLADDING SECTION



JOINT DETAIL

Law Faculty
University of Cambridge
Cambridge, England
Norman Foster and Partners

Norman Foster and Partners' latest building, for the law faculty of the University of Cambridge, evidences the architect's signature attention to structural and material efficiency. The six-story, concrete-framed building is distinguished by its vaulted, glazed north facade, which encloses an atrium overlooked by three levels of library reading areas.

The elliptical, curving enclosure was developed by Foster with German cladding consultant Emmer Pfenniger Partner and British structural engineer YRM Anthony Hunt Associates. It spans roughly 40 meters and reaches a maximum height of 19 meters above grade. Stainless steel cladding applied at the top of the curved wall functions as the building's roof. Metal louvers extending out from the roof shade the north-facing, fourth-floor reading area from direct, overhead sun.

The curved enclosure is supported by a steel Vierendeel truss composed of two separate tubular steel frames joined at regular intervals. The tubular steel sections measure roughly 14 centimeters in diameter. On the outer frame, the nodes connecting individual structural members are spaced 3.9 meters on center; in the interior frame, the members are joined at double the exterior spacing, at 7.8-meter intervals.

The triangular glazed units that span between the truss members are factory-mounted into aluminum frames, which are then attached to the exterior nodes of the structure. The outer panes of the double-glazed units are mounted flush with the exterior of the frame; a silicon seal, overlaid with a neoprene cover strip, is inserted between the glass panels. An interstitial channel provides drainage within the frames.

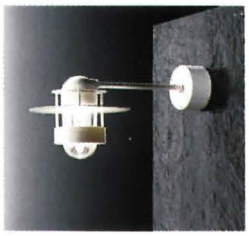
To accommodate tolerances over the large surface of curved facade, the joints between structure and cladding are adjustable in three directions. Each joint assembly comprises a steel block that slides on steel pins. The pins are fixed through slots in cast brackets welded to the steel structure. A rod screwed into the steel block allows the cladding to be adjusted vertically.

The library's south facade contains the building's primary service core and administrative offices. The core is clad in Portland stone panels, while the curtain wall enclosing the office wing is fitted with translucent glass panels. Each office is equipped with operable horizontal windows, which are shaded from direct sun by externally mounted electric blinds. A rooftop photoelectric sensor calculates the sun's angle in the sky and adjusts the blinds according to the sun's changing path.—*R.A.B.*

Waterfront and Satellit – parts of the project

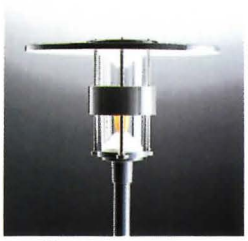
Escondido Civic Center, Escondido, CA.
Architect: Moore Ruble Yudell, Architects & Planners, Santa Monica, CA.

The Waterfront bollard and Satellit Post fixtures were chosen as two of the lighting solutions for The Escondido Center project in California. A variety of product families makes it easier to choose the right light fixtures for your special project, and if you want special designs or features, you will always find Louis Poulsen as one of the most flexible and innovative partners. Louis Poulsen is one of the oldest manufacturers of specialized lighting design. We look forward to serving you the optimal light solution for your project.

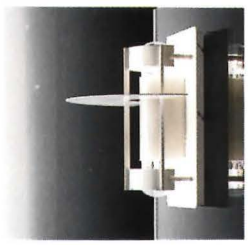


Orbiter Wall

Orbiter Pendant



Satellit Maxi Post Top



Saturn Wall

Waterfront Bollard

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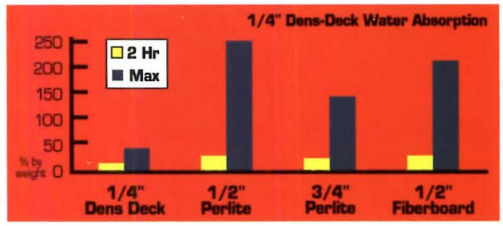

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