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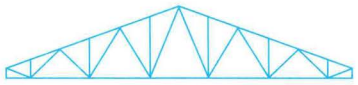

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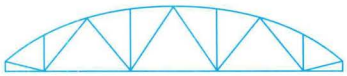

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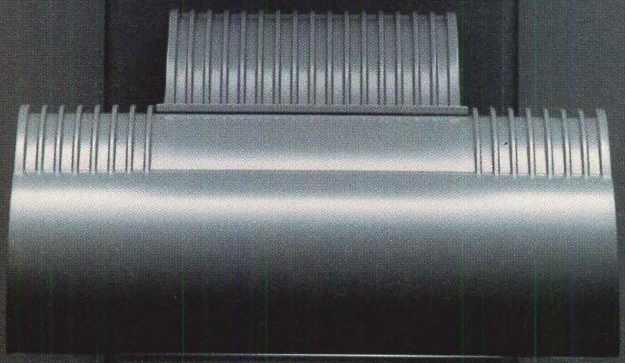

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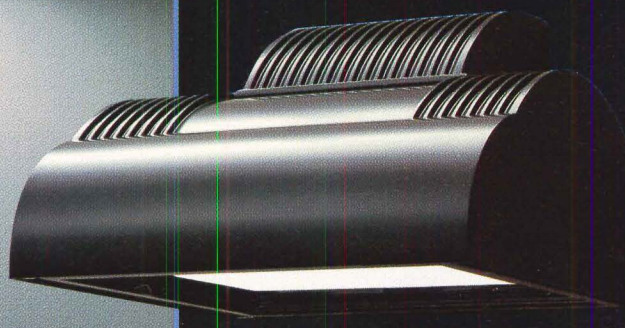

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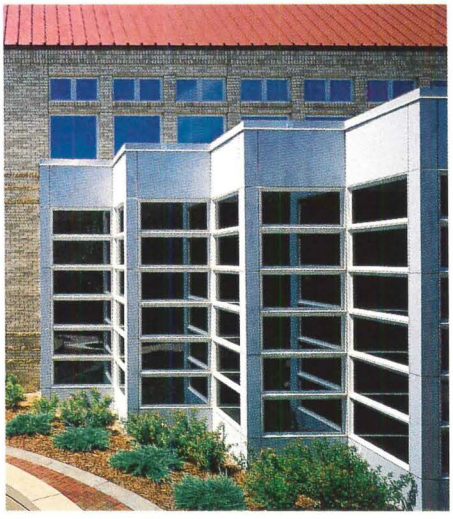

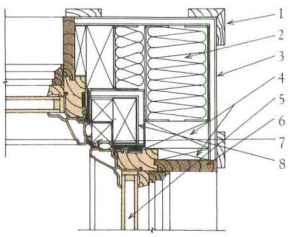

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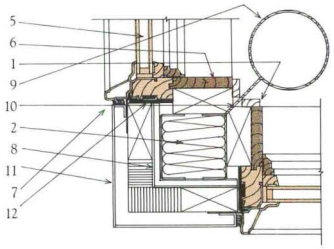

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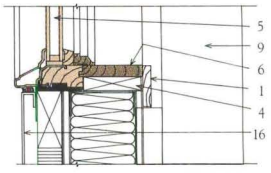

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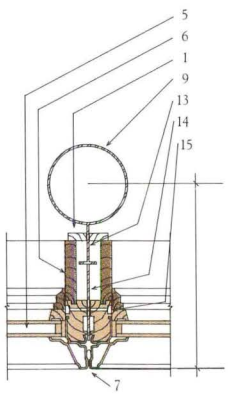

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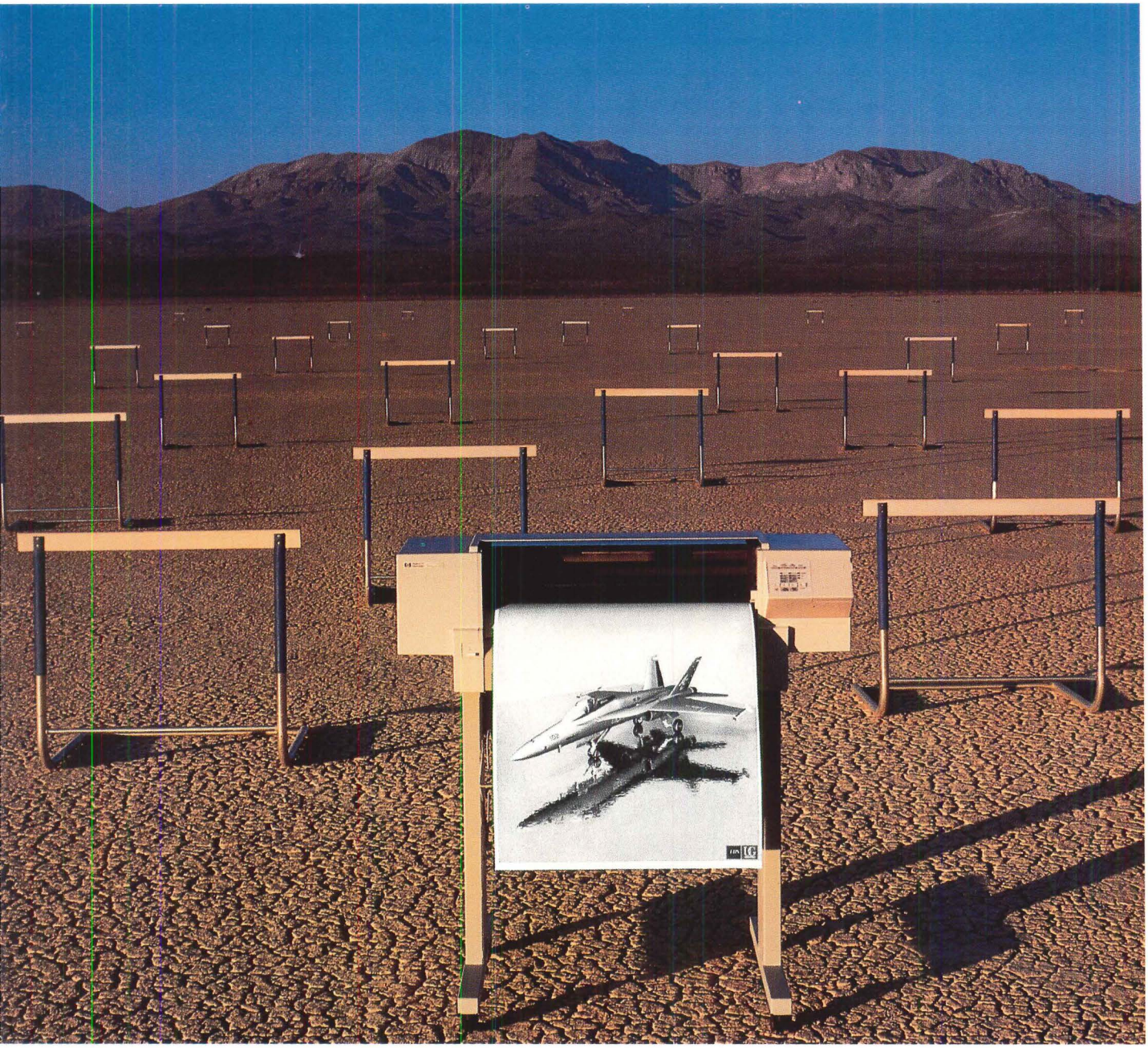

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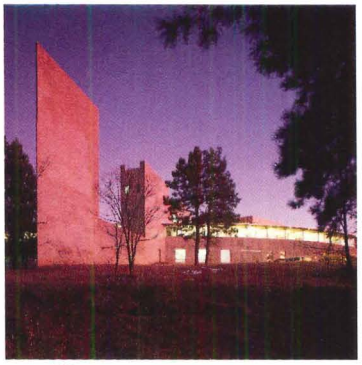

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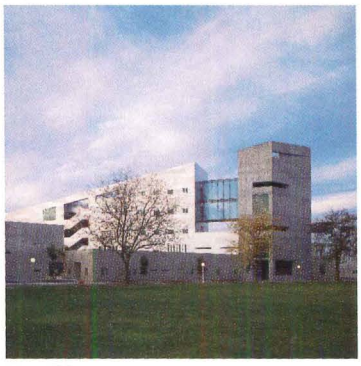

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TIMOTHY HURSLEY PHOTOS

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Cover
Solstice Wall at Ventana Vista Elementary School, Tucson, Arizona, Antoine Predock Architect (page 58). Photograph by Timothy Hursley.

Next Month
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New Buildings by Antoine Predock

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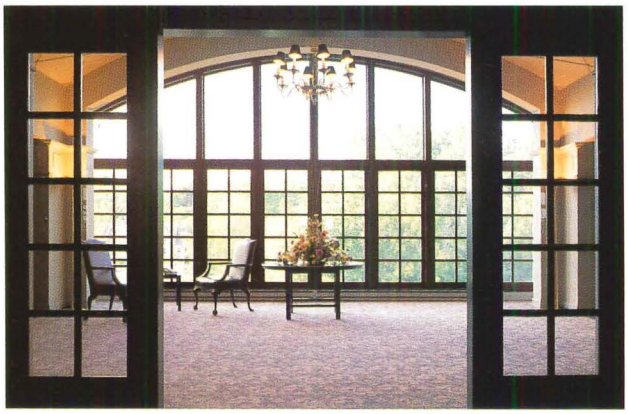

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Predock's Example

Our first issue devoted to an American architect underscores timeless principles.

Antoine Predock captures the soul of our land like no other architect. His spare, planar forms harness the desert sunlight, open our eyes to a mountain panorama, trace the meandering line of an ancient riverbed. Predock's forms are part of a long tradition of American architecture—from Indian settlements to buildings by Frank Lloyd Wright—that is firmly rooted in our landscape.

It is the American character of Predock's design, newly expanded into major institutional commissions, that we examine in this issue. Featured buildings in Arizona, California, and New Mexico represent the architect's move to larger-scale and more geographically diverse projects. Optimistic in spirit, their broad, primal gestures mark a welcome departure from the mannered, overwrought details of Eurocentric designs. They offer timeless principles for architects everywhere, including the following:

Respect the environment. Long before "green" architecture became fashionable, Predock listened to the land. His early projects, such as the La Luz Community (1967) and the Rio Grande Nature Center (1978), defer to their natural surroundings. More recent projects, such as the Social Sciences and Humanities Building at the University of California, Davis (pages 74-83), are also based on climate and topography. They begin with a collage of ideas about the site, such as that for the Arizona Museum of Science in Phoenix (above), and reach beyond their immediate context to reinterpret whole ecosystems through built form.

Explore new territory. Critics often complain that they can't find the front door in Predock's buildings. That disorientation is intentional: Predock believes architecture should encourage discovery rather than follow boundaries and expectations. His irregular geometries, hidden courtyards, and winding stairtowers and ramps are designed to surprise and delight.

Build for reality. While his contemporaries spout theoretical jargon or cling stubbornly to the past, Predock builds in a simple and direct manner. He does more with less. The nomadic tent pitched over the Ventana Vista Elementary School (pages 58-67), for example, will save thousands of dollars in cooling costs; the sweeping arc of the Mesa Public Library (pages 68-73) allows a smaller staff of librarians to supervise their territory. Predock manages to combine the practical with the poetic.

In an era when no one seems to agree on what direction architecture should take, these projects remind us, in very physical terms, that a building can draw power from the landscape and affirm our spiritual roots. America has a singular beauty, Predock avows, and it should be celebrated.

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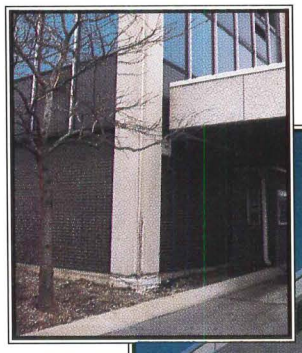

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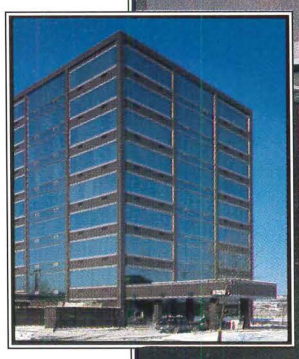

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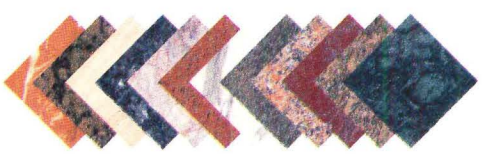

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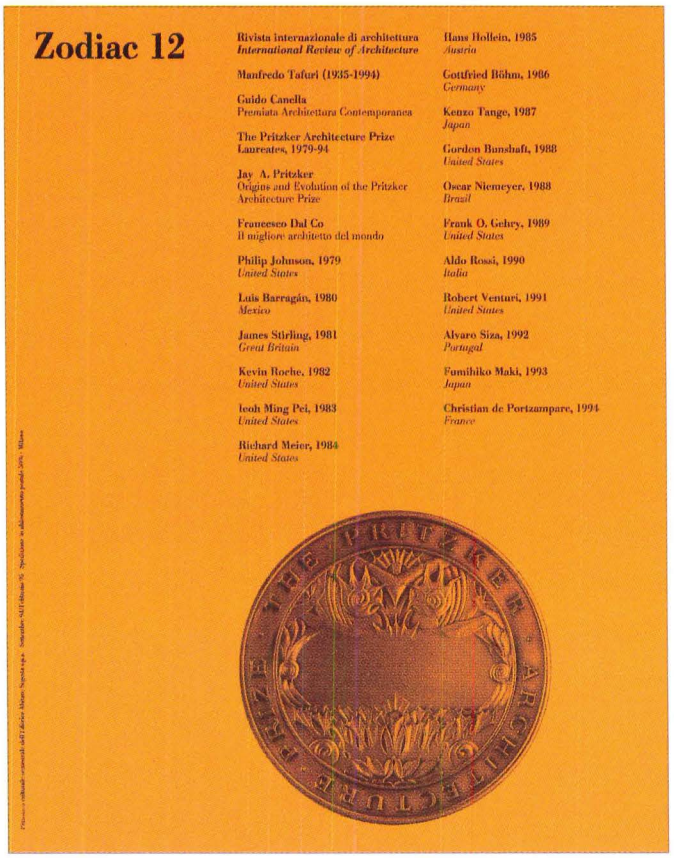

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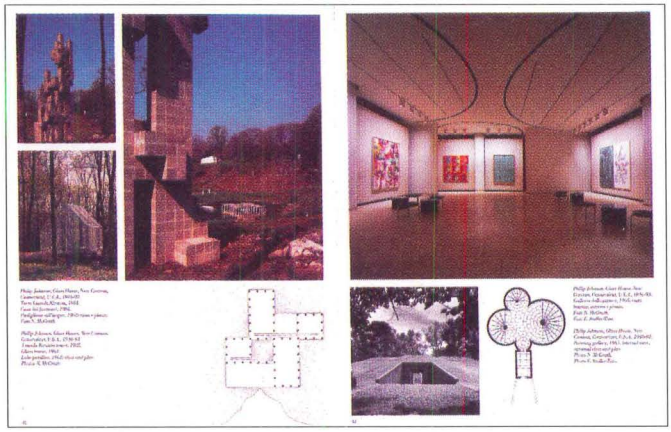

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Letters

Debating NCARB

Thank you for addressing an area of concern to a surprisingly large number of people within the profession in your November 1994 editorial (page 15): the increasingly stringent educational requirements necessary for potential architects.

While I wholeheartedly support stringent standards for licensure to increase the caliber of architects, a professional degree does not guarantee architects will be "better"; ethics, conscientiousness, and competency do not automatically accompany a diploma on graduation day.

Thousands of architects in practice today lack any formal education and are doing an equally fine job as those possessing a professional degree. However, there are far too many architects who, though fulfilling all NCARB requirements, lack the practical knowledge to effectively practice without the help of "uneducated" employees.

Elitism is a dangerous disease that has already begun to infect our profession. We desperately need architects who can play the entire field, not just the building designers accredited schools are graduating, many of whom want to contribute nothing to the profession except to design award-winning buildings.

Roger M. Williams
Williamsport, Pennsylvania

NCARB's requirements far exceed those of many state boards. On the other hand, many states need to be brought up to the realities in contemporary society as to the proper credentials of individuals involved with the building process. The designers of Europe's cathedrals would not qualify to be NCARB recipients. Societies change and requirements must run parallel. As a client, I would not want to hire an English major turned architect.

Despite having attended a nonaccredited college, I have met all NCARB requirements and feel that the NCARB is beneficial; with it I can get registered in most places, while the AIA will not assist me in being officially recognized as an architect without lengthy ado. AIA' yearly costs are no bargain. But "NCARB" after my name represer experience, effort, and qualificati

John L. Luttig, AIA
Overland Park, Kansas

NCARB is steadily becoming mor and more elitist and has entirely too much control over licensing with no regulation by the archite it purports to serve.

Living in an area bordering two states I have dealt with NCARB re quirements for reciprocity from t beginning. I always felt that not only did most of my practical knowledge come from my work e perience, but that the strict defini tion of education counteracted a long tradition of apprenticeship i the architectural profession. Also, was a lot less expensive to comple school when I did—the costly Ma ter's of Architecture degree requir ment denies career opportunity tc many talented men and women.

Sherry Guzzi
Tahoe City, California

Narrow standards

Heidi Landecker's criticism of Mario Botta's San Francisco Museum of Modern Art (SFMOMA) (December 1994, page 20) was based on a weary version of the "contextualism" argument, an angle that misses the richer and subtler resonances a building can have with its environment. The "match materials and line up cornices" approach to historical continuity is a confining standard that does little to illuminate the deeper intentions of such a rich urban composition.

The new SFMOMA is a complex volume that simultaneously makes a monument of itself while urbanizing and inflecting respectfully toward its surroundings. This building generates a traditional urban vitality that outclasses the combined frontages of the neighboring Yerba Buena project, yet the composition of terraces above the street declares its independence, blending the traditional street wall with the Modernist "object." The rotunda/skylight calls attention to itself but, ironically, also serves as a link to its surroundings, echoing the materials and striations of distant skyscrapers. When viewed from a distance, the museum's cascading massing formally and gently distills the scale of the surrounding towers into the scale of the neighborhood, mediating between the horizontal and the vertical, between nearby warehouses and financial district.

These dichotomies parallel the irony in the very institution of modern art museums: Though self-styled as iconoclastic and independent, modern art is fully institutionalized and inseparable from its financial context. Botta composed his work to engage and distance, to fit in and stick out.

Landecker's claim that the building lacks respect for context is too shallow. If sentiments published in our journals can't evolve from these narrow standards then we stand little chance as architects to communicate new approaches.

Mallory Scott Cusenbery
Benicia, California

December delight

ARCHITECTURE looks, reads, and communicates positive news on our profession in the most elegant manner; the December 1994 issue is superb. I especially like the Michael Hopkins Auditorium at Glyndebourne (page 78). It appears to be an excellent example of architecture combining tectonics, materials, and proportion to create an appropriate character that needs no verbalization to convert and convince. . . a real standard for the future.

Laurence Booth, FAIA
Chicago, Illinois

Thank you for the wonderful December issue. The photographs and drawings are excellent and the overall presentation comprehensive. Your article "Building to Recycle Nature" (page 101) was a breath of fresh air. This kind of architecture gives one hope that architects are indeed able to respond to the realities of a stressed but still beautiful planet.

Douglas Claude Rhodes
Whitefish, Mississippi

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Events

Exhibitions

NEW YORK. Work of graphic designer Deborah Sussman at the School of Visual Arts, March 20-April 7. Contact: (212) 592-2011.

NEW YORK. "Kitsch to Corbusier: Wallpaper from the 1950s," at the Cooper-Hewitt National Design Museum, April 11-August 27. Contact: (212) 860-6868.

Conferences

AMSTERDAM. "Habitat and the High-Rise," Fifth World Congress of the Council on Tall Buildings and Urban Habitat, May 14-19. Contact: 011-31-20-616-5151

ATLANTA. "Revisioning: Seeing Ourselves as Collaborative Leaders," AIA national convention and exposition, May 5-8. Contact: (800) 305-7737.

BOSTON. "Guidelines for Laboratory Design: Health and Safety Considerations," April 24-28 at Harvard. Contact: (617) 432-1171.

CHICAGO. "Preserving the Recent Past," March 30-April 1. Conference organized by National Park Service. Contact: (202) 343-6011.

HONG KONG. "Asia International Property Market," May 12-14. Contact: Jeff Gallagher (407) 683-6434.

LAS VEGAS. Hospitality Design Exposition and Conference, April 5-7. Contact: (800) 765-7616.

MIAMI BEACH. International Tile & Stone Exposition, April 26-29. Contact: (800) 747-9400.

ORLANDO. "Design-Build America '95," conference. March 30-31. Contact: (800) 537-7765.

PITTSBURGH. "Getting Your Waterfront Built: Market Analysis, Finance, and Packaging," sponsored by the Waterfront Center, April 18-20. Contact: (202) 338-6657.

SEATTLE. Association of Collegiate Schools of Architecture annual meeting, March 18-21. Contact: (202) 785-2324.

Competitions

Burnham Prize, sponsored by the Chicago Architectural Club. Portfolio submission deadline: **April 14**. Young Midwestern architects are eligible. Contact: Alan Armbrust (708) 940-9600, ext. 1295.

"Virtual Habitat," student CAD competition, sponsored by AIAS and Graphisoft U.S. with Habitat for Humanity International. Registration deadline: **April 15**. Contact: (202) 626-7472.

1995 Design for Transportation National Awards Program, sponsored by the U.S. Department of Transportation and the National Endowment for the Arts. Deadline for entry: **May 15**. Contact: Tom Grooms (202) 682-5437.

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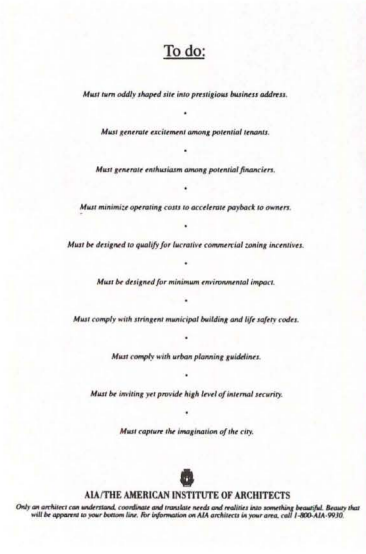
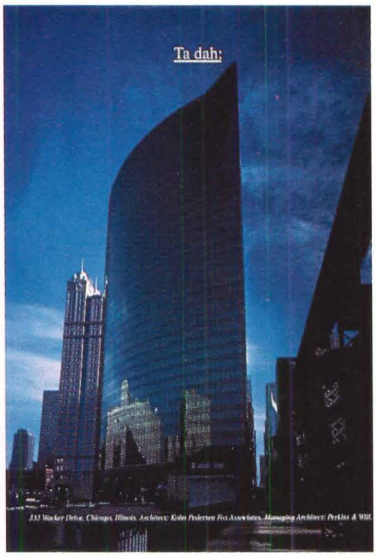
News





TOP: House in Seattle, designed by Morgan and Lindstrom Architects, is featured in AIA's first advertisement. **ABOVE:** 333 Wacker Drive, Chicago, designed by KPF, conveys architecture's technological advancement in second ad. A third ad, featuring Lord Aeck & Sargents' Mount Carmel Elementary School in Douglasville, Georgia, is presently in production.

AIA Advertising Campaign Hits the Newsstands

A campaign of national advertisements promoting the value of architecture to the public has just been launched by the AIA. The first ad debuted February 20 in *Business Week* magazine—nearly a year to the day after publishing guru Terrence M. McDermott joined the AIA as chief executive officer, vowing to revitalize the institute's image. McDermott maintains that while the creativity of architects is broadly recognized, the public underestimates their ability to devise concrete business solutions.

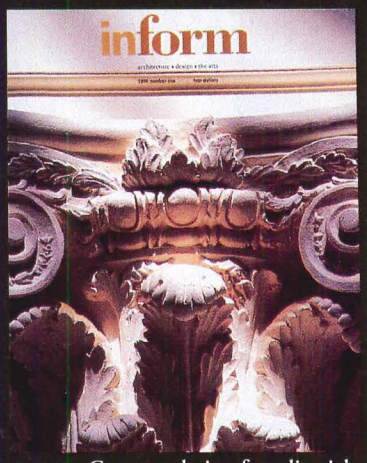
The Martin Agency of Richmond, Virginia, developed the campaign. The first installment consists of three ads that juxtapose diverse project requirements with the architect's solution. Buildings are drawn from AIA honor award winners.

In addition to *Business Week*, the ads are running in *Forbes*, *Architectural Digest*, and *Governing* whose readers influence architectural decisions in corporations, in government, and in the private sector.

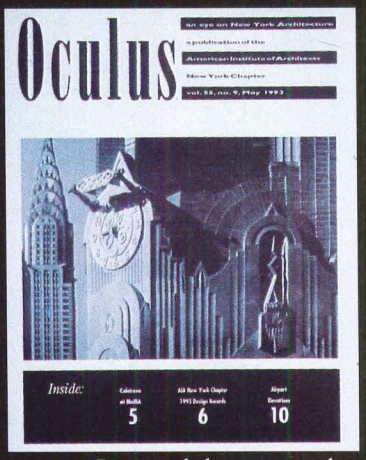
An AIA advisory committee selected the Martin Agency last July from a shortlist of advertising firms invited to submit qualifications and a campaign strategy. The agency achieved national recognition with the 1969 "Virginia is for Lovers" campaign; in the past three years, it has represented clients such as Mercedes-Benz of North America, Remy Martin Amerique, and Seiko.

The Martin Agency itself is the campaign's first convert. Currently occupying six buildings scattered throughout Richmond, the firm is in the process of interviewing architects for a new headquarters. President John Adams credits the AIA with enlightening his agency to the benefits of hiring an architect —even before its campaign hit the newsstands.—*Ann C. Sullivan*

IOWA ARCHITECT: Honor award.



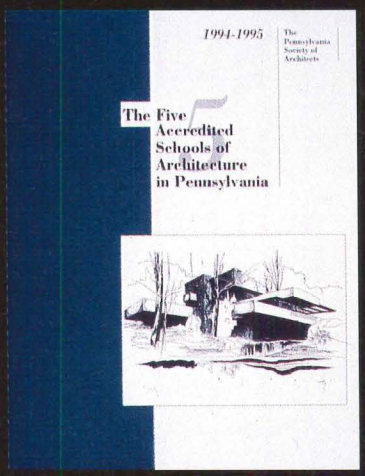
INFORM: Commendation for editorial.



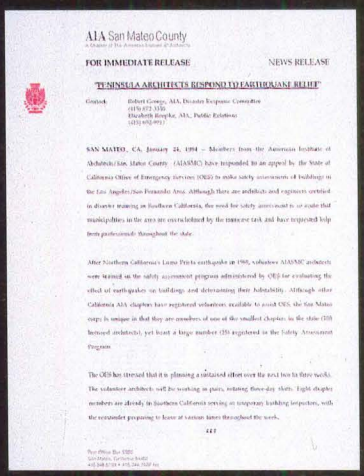
OCULUS: Commended as must-read.

AIA COMPONENT

The first AIA component publications awards program, cosponsored by the AIA and ARCHITECTURE, reveals the diverse range of magazines, newsletters, and communications programs produced by state and local chapters. According to the jury, editorial content is strong, but most publications would benefit from better graphic design.



PA GUIDE: Commendation for service.



SAN MATEO: Outreach commendation.

AIA and ARCHITECTURE Inaugurate Component Publications Awards

The AIA and ARCHITECTURE joined forces last year to sponsor an awards competition for AIA component publications. Our goal was to recognize the editorial and design excellence of magazines, newsletters, and publicity campaigns produced by local and state AIA chapters. The response to this program was gratifying: 83 state and local chapters sent in 120 entries, ranging from magazines to party invitations. The 11 winners—two magazines, three newsletters, five outreach programs, and a chapter's entire publication efforts—underscore the variety, professionalism, and effectiveness of grassroots communication.

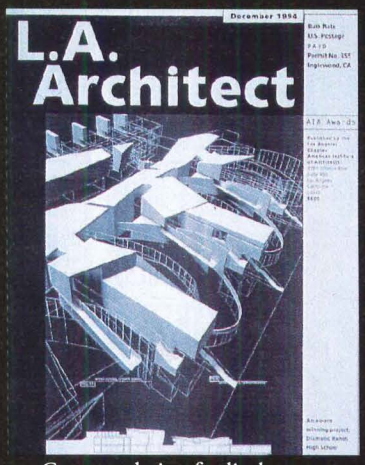
We balanced the jury with graphic designer William Longhauser from Philadelphia; architect Amy Weinstein, FAIA, principal of Weinstein Associates of Washington, D.C.; and journalist Mildred F. Schmertz, FAIA, from New York, former editor of *Architectural Record* and a contributing editor of ARCHITECTURE.

The trio debated the merits of each publication and concluded that most of the entries suffered from poorly designed layouts. "The importance of design to architects should be communicated through the graphics of their publications," noted Weinstein, who suggested that the AIA sponsor consultations with graphic designers at Grassroots next year to help improve the visual coherence of its publications.

The jury awarded top honors to *Iowa Architect* and *The Philadelphia Architect* for their "clean, crisp, and consistent" graphic design and lively editorial content. "I don't think of Iowa as a state sophisticated in design, but *Iowa Architect* clearly is," maintained Weinstein, who liked the magazine's typographical hierarchy. Added Schmertz, "It's first class." *The Philadelphia Architect*, selected as the best AIA newsletter, was unanimously praised by the jurors for its "lean elegance."

The jury also commended two newsletters from the AIA's largest chapters: New York's *Oculus* and Los Angeles' *L.A. Architect* were lauded for their newsy style and diverse editorial content. "*Oculus* is a must-read not only for New York architects but architects around the country," pointed out Schmertz, who did, however, agree with Longhauser that the graphics of both newsletters needed refinement.

Strong editorial content also attracted the jury to *Inform*—the quarterly magazine published by the

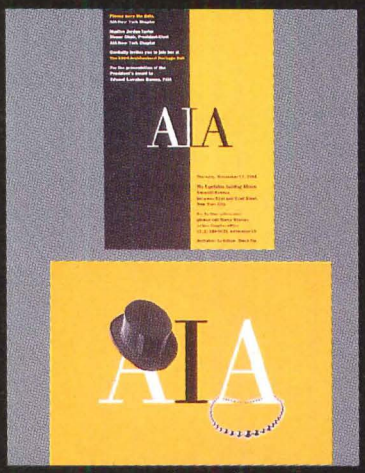


LA: Commendation for lively news.

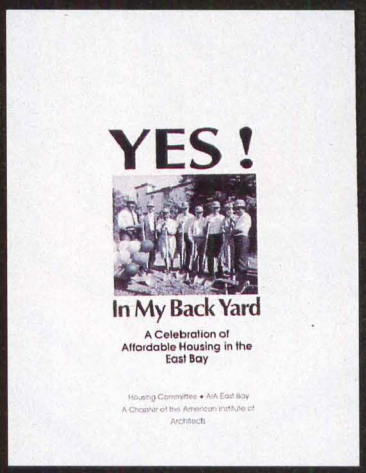
PHILA.: Honor award for newsletter.

TAMPA BAY CHAPTER: Commendation for communications program.

PUBLICATION AWARDS



NY AIA: Commendation for invitation.



EAST BAY: Commendation for guide.

LOS ANGELES AIA: Commendation for hip, regional design of poster.

Virginia Society of Architects—which was also awarded a commendation. "This magazine is fresh," said Longhauser. The jury especially liked *Inform*'s timely editorial themes, as exemplified in issues devoted to Classical buildings and to women in architecture.

Not every AIA component can afford to produce a four-color magazine, but the jury concluded that less expensive publications may be more informative and better designed than their glossy counterparts. "They don't have to be miniature versions of national professional journals," Weinstein pointed out. Indeed, Tampa Bay's small, black-and-white journal *Bay Architect* was commended for its simple format and focus on unbuilt work.

Other communications programs produced by the Tampa Bay Chapter similarly impressed the jury. They singled out the chapter's *Tuesday Transmission* as a model for other components to follow. The *Transmission*, faxed every week to AIA members, conveys up-to-the-minute information on events and legislative issues affecting the architectural profession. In addition, the jury liked the chapter events announcements, printed on cards with simple typography and photographs of architectural landmarks.

Five outreach programs were awarded commendations for their focus on the social and educational promise of architecture. Jurors were unanimous in praising *Yes! In My Back Yard: A Celebration of Affordable Housing in the East Bay*, a guide to architect-designed, low-income housing near San Francisco. They applauded the East Bay chapter for publicizing local architects' involvement in their community.

Five Accredited Schools of Architecture in Pennsylvania, a 20-page educational guide, was deemed "very informative" by the jurors in helping students decide which institution to attend. "More state components should do this type of outreach," they decided.

A similar focus on education and public awareness earned the San Mateo County AIA Chapter a commendation for its public relations program. This chapter has turned one of the most common outreach programs—press releases outlining AIA activities—into an asset. Clearly covering timely events, such as earthquake relief and charettes for an airport and train station, these releases not only offer basic information about architects' participation, but incorporate local press coverage on the results. As the jury noted, the public learns from this publicity about the important role of the AIA in the community.

Not every award targeted such lofty goals. The jurors commended a design awards poster and a party invitation for elevating the mundane into art. "Every chapter produces posters and invitations," noted Longhauser. "But few are designed really well." The Los Angeles chapter's poster, designed by Adams Morioka, was selected for its "hip" graphics that "say L.A." Quipped Weinstein, "It's good regional design." The Pentagram-designed invitation to the New York chapter's Heritage Ball was praised for its "smart, chic" design.

The honor awards and commendations were presented in January at Grassroots in Washington, D.C. Judging from the enthusiastic response at the ceremony, the competition will be repeated.—*D.K.D.*

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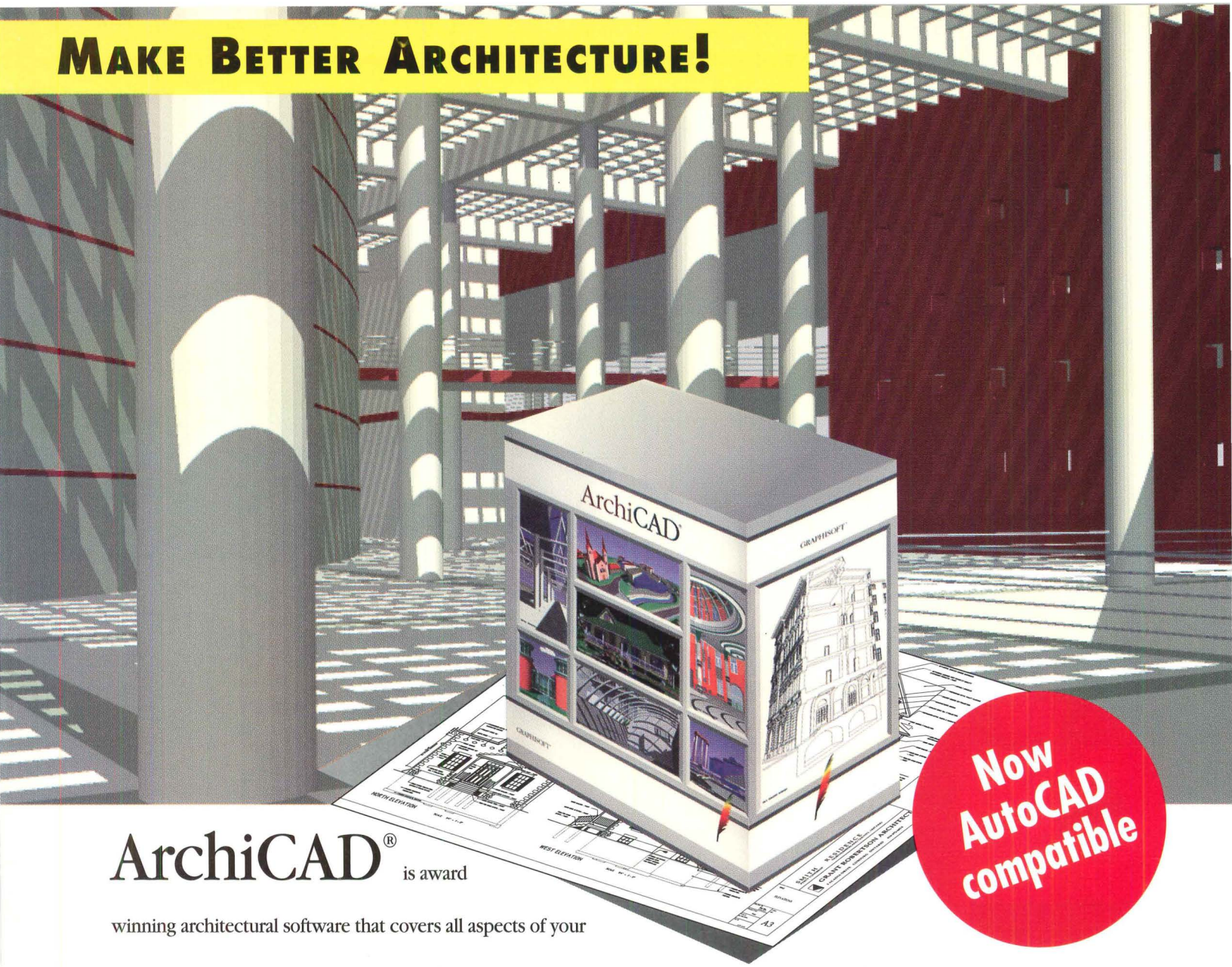

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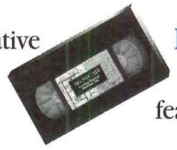

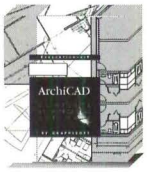

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Projects in California and Canada Win Concrete Design Awards

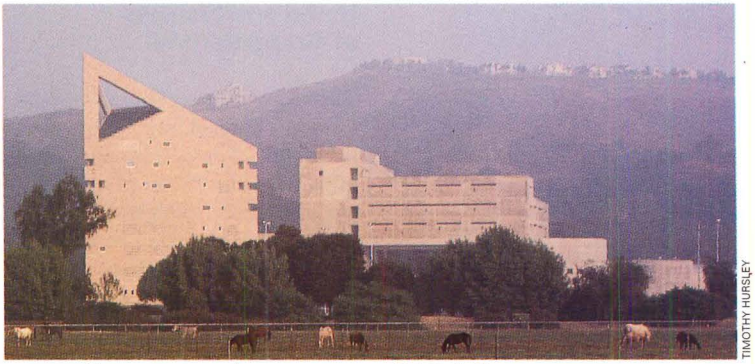
Portland Cement Association is directing its efforts at publicizing concrete's ecological attributes, underscored by the announcement of its 1994 Concrete Building Awards. Singled out for energy efficiency, environmental sensitivity, and structural and sculptural innovation, the five winners were selected by a jury comprised of Rand Elliott of Elliott + Associates in Tulsa; Hugh Newell Jacobsen of Washington, D.C.; and Andrea P. Leers of Boston's Leers, Weinzapfel Associates.

The trio honored four projects in California and one in Canada. At California Polytechnic University in Pomona, architect Antoine Predock demonstrates the dual role of concrete as a structural as well as a finish material. The jury praised the project for its sculptural presence, "a beautiful foil for the landscape."

In viewing Richmond Hill's Central Library in Ontario, the jury noted the integration of structural, mechanical, and electrical systems by Toronto-based architect A.J. Diamond, Donald Schmitt and Company. Similarly, the Rice Residence in Glendale, California, extols the compatibility of concrete with other materials. Lomax/Rock Associates Architects juxtaposed steel and glass and polished granite finishes with concrete. The jury further described the fluid sculpture of Ralph Allen & Partners' Century High School in Santa Ana, California, as "concrete in its purist form."

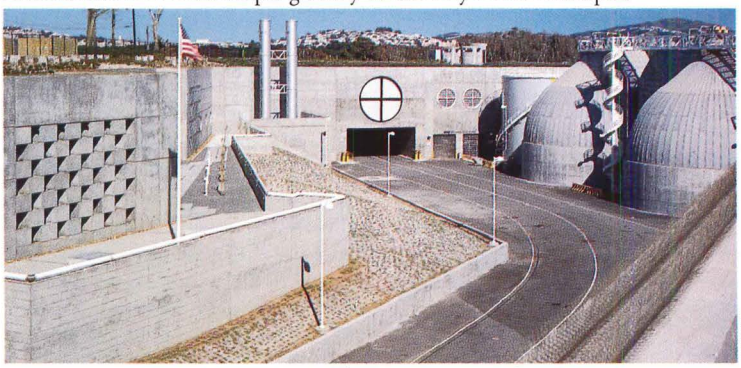
An equally challenging site was designated to the 522,000-square-foot Oceanside Water Pollution Control Plant. San Francisco's Simon Martin-Vegue Winkelstein Moris relegated 70 percent of the concrete building underground, thereby minimizing the mass of the plant. "It has made something that is serious infrastructure into a full-of-life design," lauded the jury.

Following the announcement of the winners last November, the Portland Cement Association helped mobilize the Environmental Council of Concrete Organizations (ECCO). ECCO distributes information about the performance of concrete building materials, focusing on the same qualities displayed by the 1994 award winners—low maintenance, thermal mass, and conservation of local resources.—*A.C.S.*



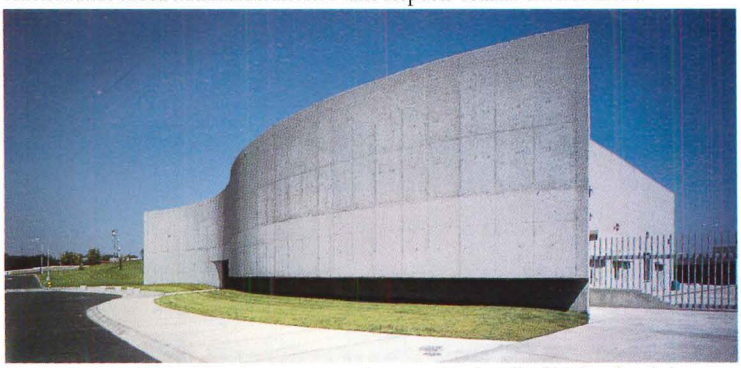
TIMOTHY HURSLEY

PREDOCK: Concrete tower shapes gateway to Cal-Poly Pomona campus.



JANE LIDZ

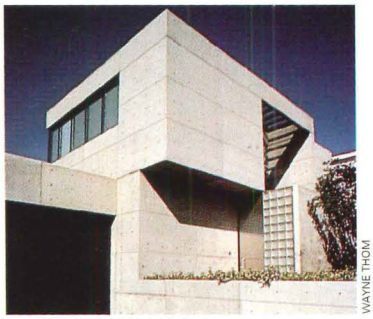
SIMON MARTIN-VEGUE WINKELSTEIN MORIS: Plant respects coastal environment.



RALPH G. ALLEN

ALLEN & PARTNERS: Cast-in-place concrete forms curved wall of high school theater.

A.J. DIAMOND, DONALD SCHMITT: Precast concrete panels shade library interiors.



WAYNE THOM

LOMAX/ROCK: Glendale house.

WAYNE THOM

LOMAX/ROCK: Steel and glass are joined.

Hadid and Bicycles at Grand Central

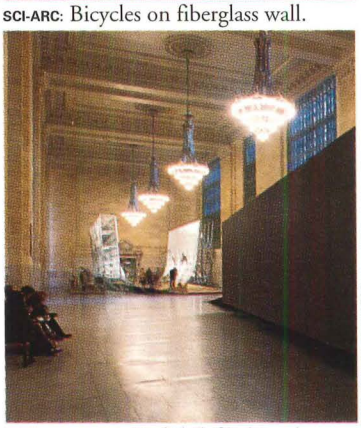
The Main Waiting Room of Grand Central Terminal was rechristened New York's foremost exhibition hall in January with the installation of two exhibitions sponsored by the Architectural League of New York: "Zaha Hadid: Projects" and "Cycles of Expression: The SCI-Arc Bicycle Workshop." In the vast 65-foot tall space, Hadid and Southern California Institute of Architecture (SCI-Arc) professors Danelle Guthrie and Tom Buresh designed ramped rooms within the room to house their respective exhibits.

In her generous, packed, and visually sumptuous show, Hadid focused on three projects: the Vitra Fire Station outside Basel, Switzerland; the Rheinhafen Art and Media Center in Düsseldorf, Germany; and her competition-winning scheme for the Opera House at Cardiff in Wales. Dense like an avant-garde show in revolutionary Russia, the exhibit demonstrated the many layers, techniques, and viewpoints that the 43-year-old architect so passionately and incisively investigates in her designs.

On the eastern side of the hall, 32 bicycles designed by the SCI-Arc students and teenagers from neighborhood gangs were displayed against translucent fiberglass walls supported by steel scaffolding configured like an inverted vault; students reinvented junk parts and challenged the physics of cycling. Some two-wheelers were magnificent Duchampian contraptions, others related to local street culture through arcane visual codes. All can be ridden—though not necessarily in a straight line.

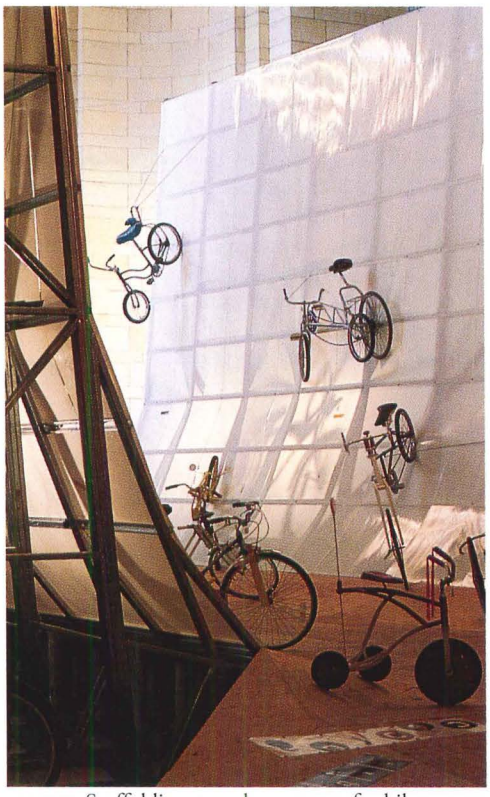
Together, the two shows breathed life into a hall that, with the demise of train travel, has become a vestigial space. On view until March 10, the event takes design and architecture out of the museums and serves it up in one of the most heavily trafficked venues in the country. Thousands came, saw, and rode home.—*Joseph Giovannini*

SCI-ARC: Bicycles on fiberglass wall.



WAITING ROOM: Hadid (left); bicycles.

MICHAEL MORAN PHOTOS



BICYCLES: Scaffolding served as mounts for bikes.

HADID: Drawings and models included Art and Media Center in Düsseldorf (foreground).

News

Kobe catastrophe

More than 45,000 buildings were damaged or destroyed during the January 17 earthquake in Kobe, Japan. A majority of ruined buildings were 30- to 40-year-old timber houses with tile roofs that collapsed under their own weight. Newer, Western-style engineered lumber homes fared better, according to Roger Williams, managing principal of Seattle-based Mithun Partners. Damage to steel buildings was reportedly slight, overshadowed by the spectacular failure of concrete bridge and highway structures.

While other artificial islands in the area have sunk as much as five feet, reports of subsidence around the perimeter of that containing Kansai International Airport have not been confirmed. The Tokyo office of Ove Arup & Partners—structural and mechanical engineer for the airport—reports no structural damage to the terminal, which was designed by Renzo Piano Building Workshop (ARCHITECTURE, January 1995, pages 84-93, 97-103).

Rebuilding estimates in Kobe exceed $100 billion—more than five times that of Los Angeles's January 1994 earthquake. The likely result: more stringent building codes and strengthening of infrastructure around the country. Japan's struggling construction industry stands to benefit, as do importers of building materials and foreign construction firms.

The AIA contacted the Japan Institute of Architects to offer assistance and plans to dispatch a relief task force at the end of March.

Tax tidings

Attention principals: Tax relief may be on its way! The U.S. House of Representatives' Ways and Means Committee marked up a bill in February to permanently reinstall the 25 percent tax deduction for the self-employed and their families that expired in 1993. Quick passage in both House and Senate is expected. The AIA is urging architects who may qualify to check the status of the bill before filing 1994 taxes.

Capitol cutback

In the Republican leadership's rush to trim the size of the federal government, House and Senate subcommittees jointly proposed in early February to privatize the 2,300-employee office of the Architect of the Capitol, headed by Nixon appointee George M. White.

White's office manages all planning, design, construction, and maintenance of the U.S. Capitol buildings and grounds. Under a restructuring proposed by U.S. Representative Ron Packard (R-California), a revamped Office of the Architect would comprise a few dozen contract managers, who would farm out maintenance to private companies. A final decision on the proposal has been deferred, pending hearings early this spring.

Turbine on the Thames

If only the Futurists could see this: Swiss architects Jacques Herzog and Pierre de Meuron are converting London's Bankside Power Station, stripped of machinery, into

a $160-million annex to the city's Tate Gallery for Modern Art—to open in 2000. Underground oil tanks will contain exhibition spaces. Herzog & de Meuron were selected from a shortlist of six firms, including Rem Koolhaas' Office for Metropolitan Architecture, Rafael Moneo, Renzo Piano Building Workshop, Tadao Ando Architect & Associates, and David Chipperfield Architects.

Western territories

Portland, Oregon-based Thomas Hacker and Associates has landed the $10 million Crate's Point Interpretive Complex, comprised of the Wasco County Historical Museum and the Gorge Discovery Center, sited outside The Dalles, Oregon. In Seattle, Stull & Lee of Boston is designing the $25-million King Street Station combining high-speed rail, commuter trains, bus lines, and commercial office space. Dworsky Associates with Harry Campbell Architects is designing the new 340,000-square-foot federal courthouse in Las Vegas.

Engineers' wrath

Can engineers design buildings? The National Society of Professional Engineers (NSPE) thinks so. In January, NSPE announced that it has asked the Antitrust Division of the U.S. Department of Justice to investigate whether the architectural profession unfairly shuts engineers out of the business of designing buildings. NSPE, in announcing the action, did not specify which organizations it asked the government to probe, but the AIA and the National Council of Architectural Registration Boards are likely targets, according to the AIA itself.

NSPE's unexpected move to take over architects' turf runs counter to its April 1994 joint statement with the AIA, which called such interprofessional disputes "counterproductive" and established official détente between architects and engineers. AIA President Chet Widom called the NSPE action "surprising and regrettable." No word is yet available on whether the Justice Department will hear the case.

Feds go green

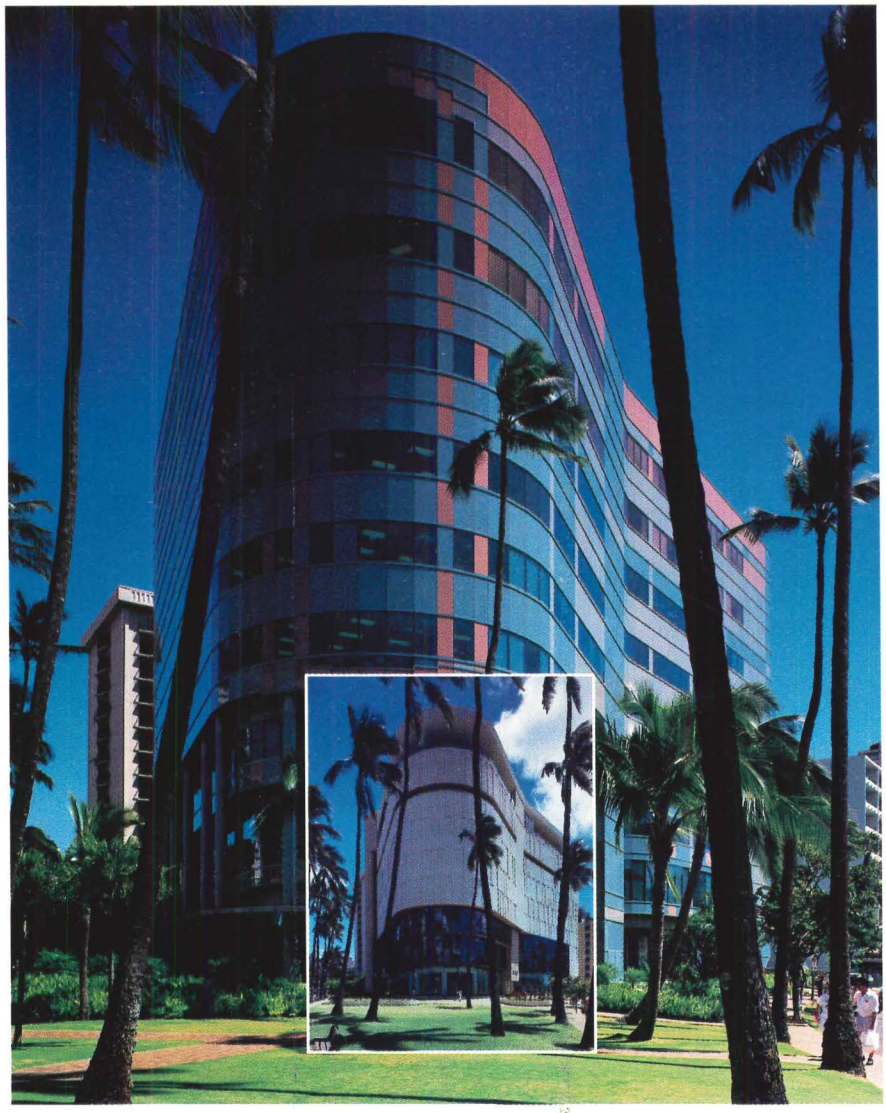
Following on the heels of the campaign to increase energy efficiency in the White House, the Rocky Mountain Institute (RMI) is currently launching the greening of the Pentagon—the budget for the 6-million-square-foot retrofit is $1 billion. At the request of the National Park Service, the Grand Canyon is next on RMI's list.

Sick building settlement

Architects Hellmuth Obata & Kassabaum, civil engineers Wright & Company, and general contractor J.A. Jones Construction emerged victorious from a two-year legal battle waged by DuPage County, Illinois, owner of a $53 million Judicial and Office Facility plagued by indoor air quality problems. The county blamed faulty design and installation. The court ruled on December 30 that it was improper operation and maintenance of the building's HVAC system that caused several hundred employees to complain of nausea, headaches, and dizziness. This ruling (one of the few cases to date that have gone to trial) sets an important precedent for A/E firms facing sick building claims.

Personnel notes

Architect Rex M. Ball has been appointed by the White House to serve on the seven-member U.S. Commission of Fine Arts. Jorge Silvetti is the new chairman of the Department of Architecture at Harvard University Graduate School of Design. Silvetti succeeds Mack Scogin, who will remain teaching at the GSD. Mike Rogers, an architectural manager for McDonald's Corporation, has been elected president of the National Organization of Minority Architects; at 34, Rogers is the organization's youngest president. Architectural critic and SCI-Arc professor Aaron Betsky has been named curator of the San Francisco Museum of Modern Art's Architecture and Design Department, housed in the new building designed by Mario Botta, which opened in January.



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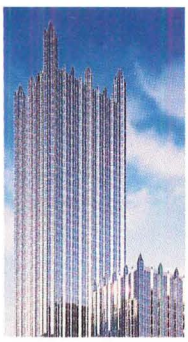

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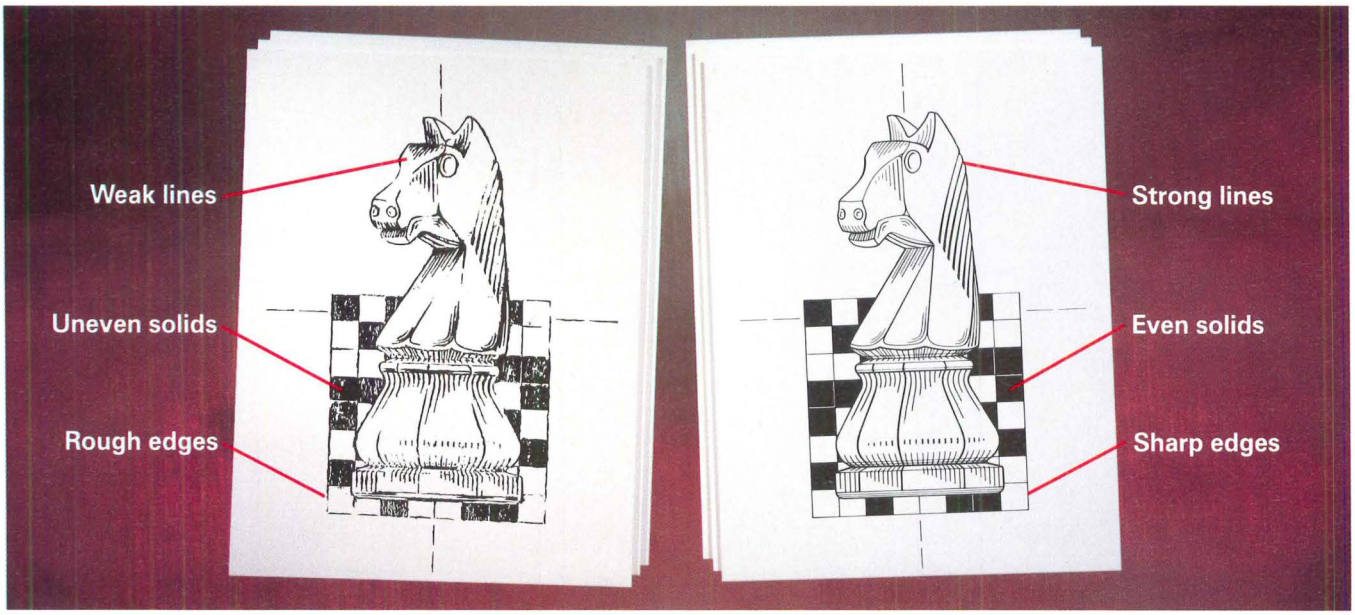
The decisive move to copy quality.



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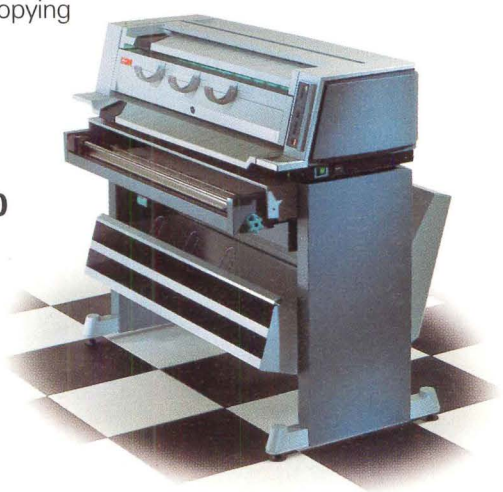

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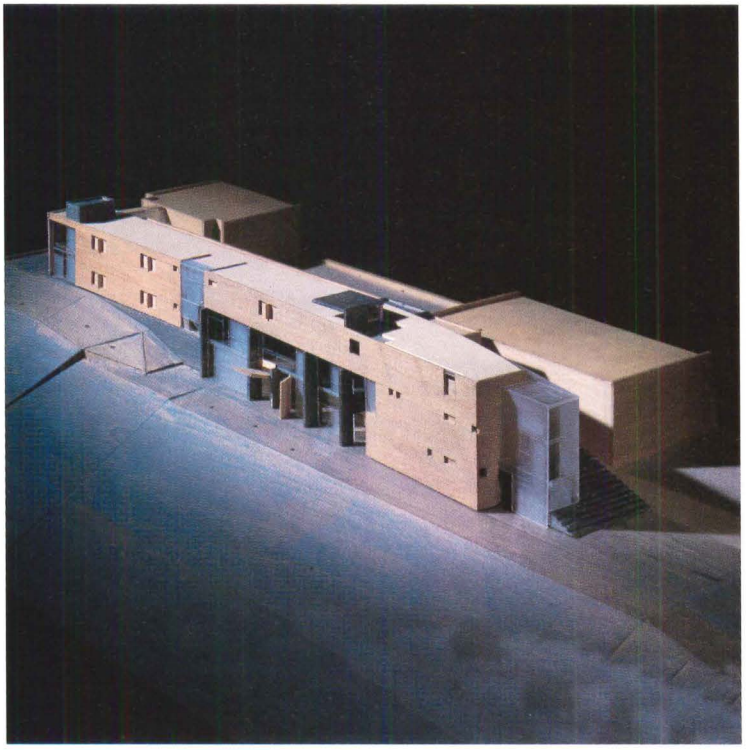
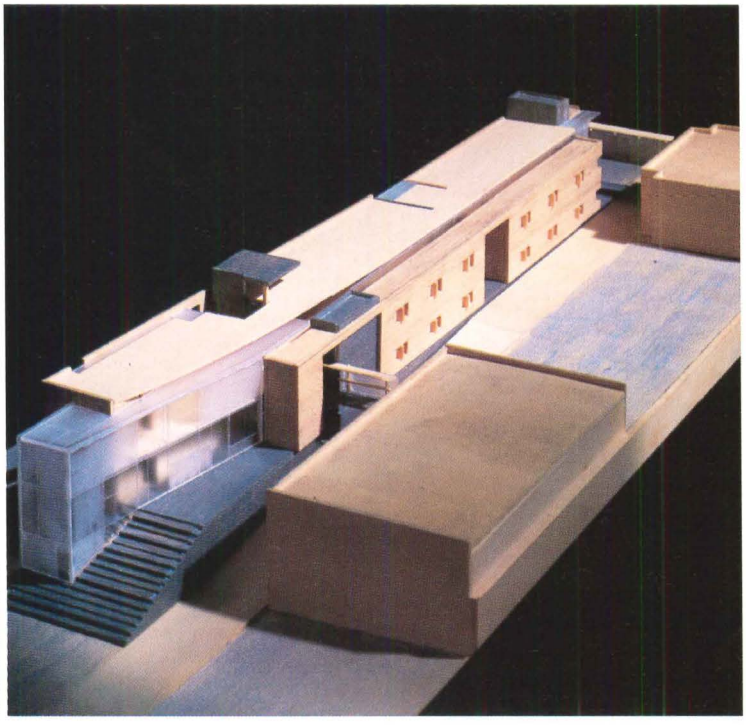
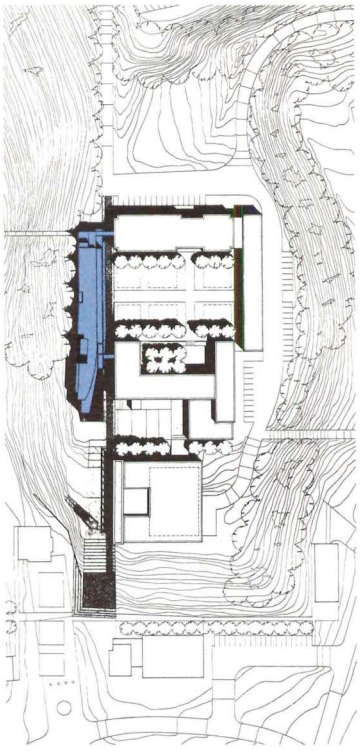
On the Boards

A new glass-edged center kicks off master plan for a Virginia campus.





JOCK POTTLE / ESTO PHOTOS



Education and Development Center
Clinch Valley College
of the University of Virginia
Wise, Virginia
Pasanella + Klein Stolzman + Berg

Sited on top of a 50-foot-high plateau in the Appalachian Mountains, the Education and Development Center at University of Virginia's Clinch Valley College represents the first phase of a 1989 master plan for the campus, proposed by The Cox Company of Charlottesville. New York-based Pasanella + Klein Stolzman + Berg revised the scheme and, in conjunction with Balzer and Associates, positioned the new building to unite two existing structures: a science block to the north and a multipurpose facility to the south. The 30,000-square-foot center will form the western face of a rectangular courtyard; opposite, a proposed addition to the science building will complete the quadrangle.

Inside the new steel-framed facility, classrooms, offices, and laboratories are organized along a double-loaded corridor. A double-height, glazed student lounge will anchor the southern terminus of the center.

Classrooms will be clad in brick veneer, while an aluminum-framed curtain wall will enclose stairwells and second-story pedestrian bridges joining adjacent buildings. Construction is scheduled to begin this spring.—*Ann C. Sullivan*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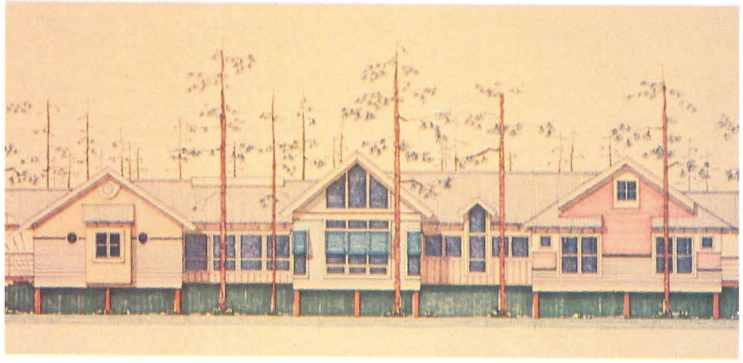
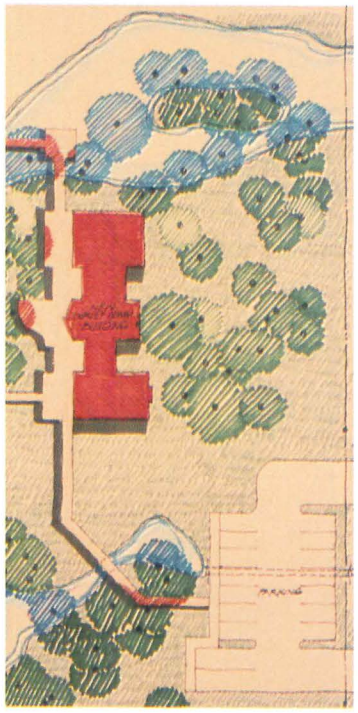
On the Boards



MICHAEL A. PIAZZA

St. Tammany Parish Tourist Center
Covington, Louisiana
Piazza Architecture Planning



The wood-lap siding, shutters, wrap-around porches, and corrugated metal roofs of St. Tammany Parish's tourist information center exemplify the architecture indigenous to this 890-square-mile county north of New Orleans. Designed by Mandeville, Louisiana-based Piazza Architecture Planning, the 4,000-square-foot visitors' center respects the region's natural resources and welcomes international tourism.

The center's three wings contain an information center, a gallery for local artisans' work, and a conference room flanked by research and office areas to the north and service components to the south.

Scheduled for construction starting this spring, the structure will rest on six-foot-high wood pilings for protection from floods.—*A.C.S.*

Eva Maddox, IBD, ISP, Eva Maddox Associates, Chicago, is co-founder of Archeworks, an interdisciplinary design laboratory. She is a specifier of carpets made of DuPont Antron® nylon.

EVA MADDOX

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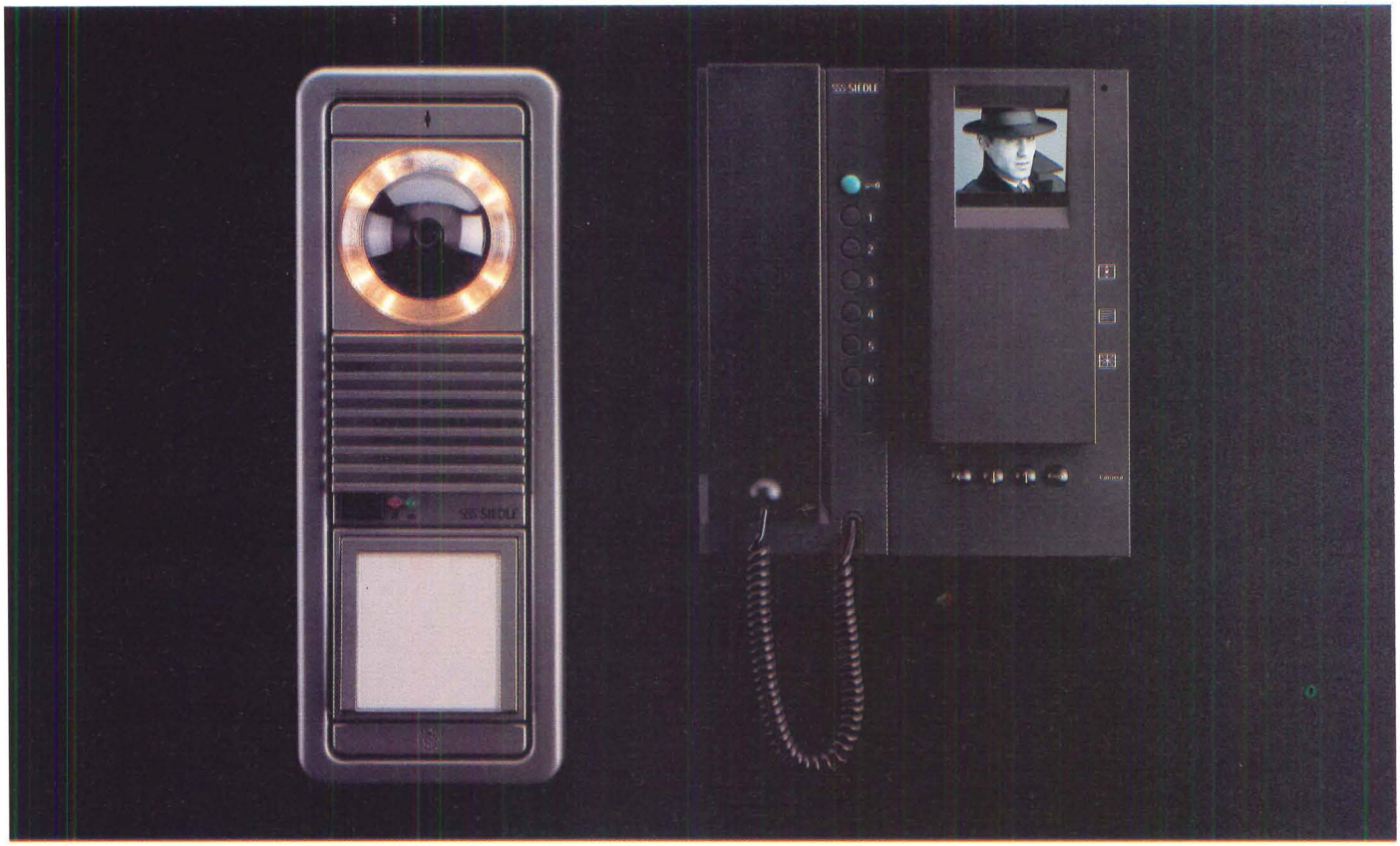

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AIA's Public Directors

Patricia Carbine and Jane Maas apply communications expertise to architects' benefit.

For the first time in its history, the AIA's board of directors has two public directors instead of one, and both are women. Jane Maas and Patricia Carbine follow in the footsteps of National Public Radio's Susan Stamberg, Kahn patron Jonas Salk, and others who have served as AIA public directors since 1977. Their mission is to help the AIA send the message that architecture is a public asset. As leaders in advertising and publishing, Maas and Carbine are clearly well qualified to carry it out.

Maas, chairman emeritus of Earle Palmer Brown, New York, has over 35 years of experience in advertising and television. She helped create the "I Love New York" campaign, which propelled New York City's once declining tourism to first place in the country. Carbine cofounded *Ms.* magazine in 1972 and served for 16 years as its publisher and editor. As director of the Ms. Foundation for Women, she started "Take Our Daughters to Work Day," a national event.

Maas and Carbine are advocates for women, but improving the status of female architects within the AIA is not what they see as the institute's greatest challenge. Both agree that the AIA's most pressing problem is the "encroachment of other practitioners on the architect's terrain," as Carbine explains, and the low esteem of architects as a result. "I worry that architects feel defeated," adds Maas. "Yet I look at our research and it says that architects are still the most admired of professionals." The advertising executive cites continuing education as important to the AIA, pointing out that education requirements will force the "mailbox member" to take action. "You won't be able to put 'AIA' after your name just by passively paying dues," she states. "Members will have to become more involved."

Since joining the AIA board in December 1993, Maas has worked on publicizing architects' talents by helping to launch a national advertising campaign, which began last month (page 23). Next on her agenda is upgrading the communications plan of the American Architectural Foundation, "Sending a Message of Excellence."

ROBERT GLICK

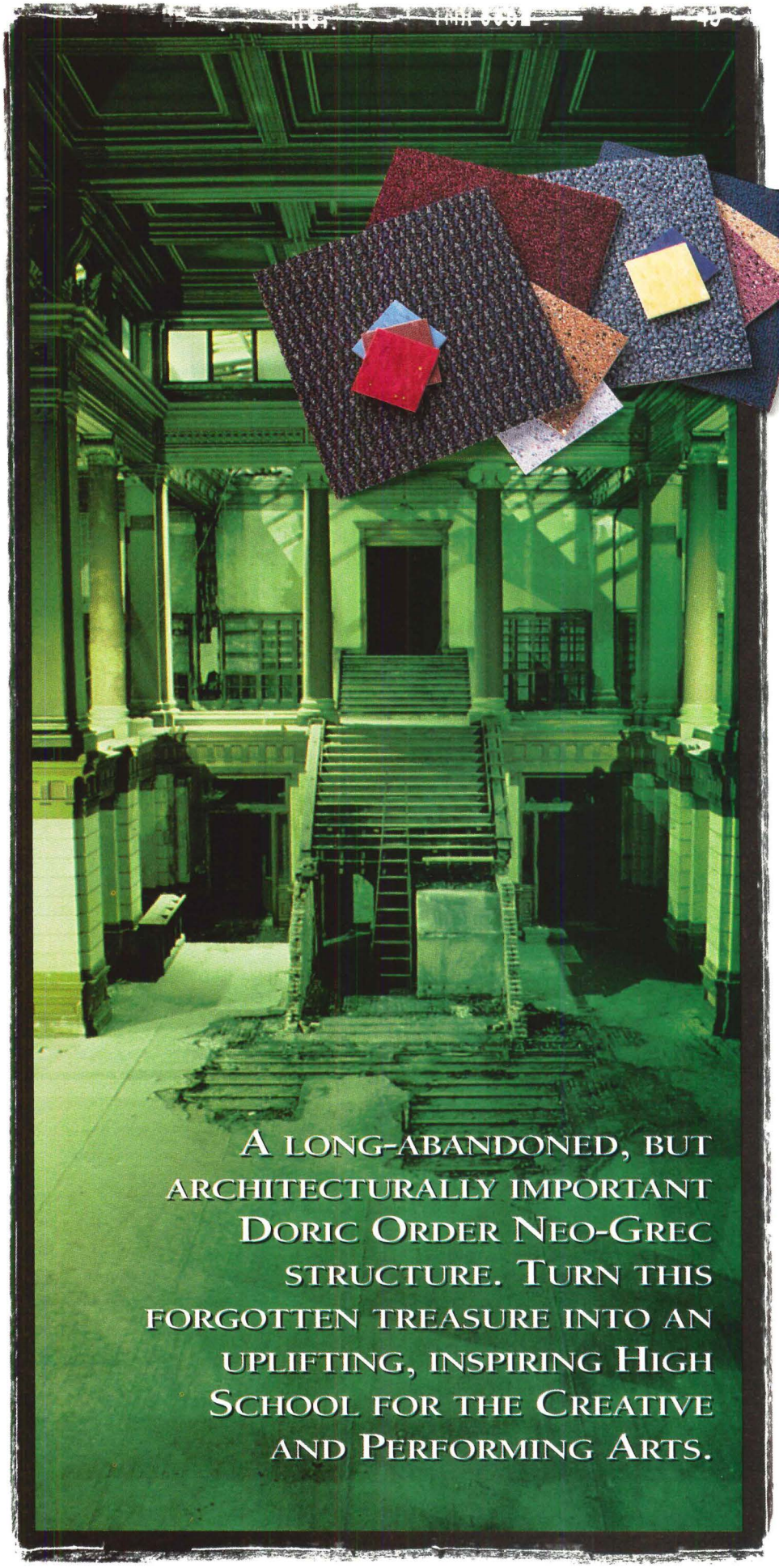
JANE MAAS Career highlights: Chairman Emeritus, Earle Palmer Brown, New York; Senior Vice President, Wells, Rich, Greene; Vice President, Ogilvy & Mather; Associate Producer, NBC, CBS; Trustee, Bucknell and Fordham universities; Board of Advisors, Graduate School of Business, University of Rochester

PATRICIA CARBINE Career highlights: President, Ms. Foundation for Education and Communication; Cofounder, Ms. Foundation for Women; Cofounder/Publisher/Editor, *Ms.* magazine; Media Committee Chair, National Commission on the Observation of International Women's Year; Director, NY Life Insurance

Carbine, who was nominated to the board by Maas and appointed last December, admits that "the AIA is much more complex than I imagined." Carbine views her role on the board as "asking a lot of questions" and urges the group to tackle issues such as homelessness, better design for the elderly, and diversity within the profession.

As for feminism within the AIA? "The architecture profession is still, regrettably, a white male picture," the *Ms.* cofounder laments. "But I was pleased to have heard issues such as maternity leave raised."

Characterizing architects as "smart, sensitive people," Maas sees the AIA changing for the better. "There's a negative perception about the AIA," she believes. "It will take a while to catch up with the positive changes that are now taking place." Maas and Carbine are evidence of those changes.—*D.K.D.*



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DENISE SCOTT BROWN: Principal, Venturi, Scott Brown and Associates

Breaking Down the Barriers Between Theory and Practice

Architectural practice requires the creative mix of scholarship and métier, argues Denise Scott Brown.

Rabban Gamaliel, the Talmudic sage, once said, "All study of the Torah alone, not accompanied by a trade, is destined to remain in vain or turn toward ill." A dean of an architectural school recently said "Ours is an academic school. Any professional training students get here is entirely by the way."

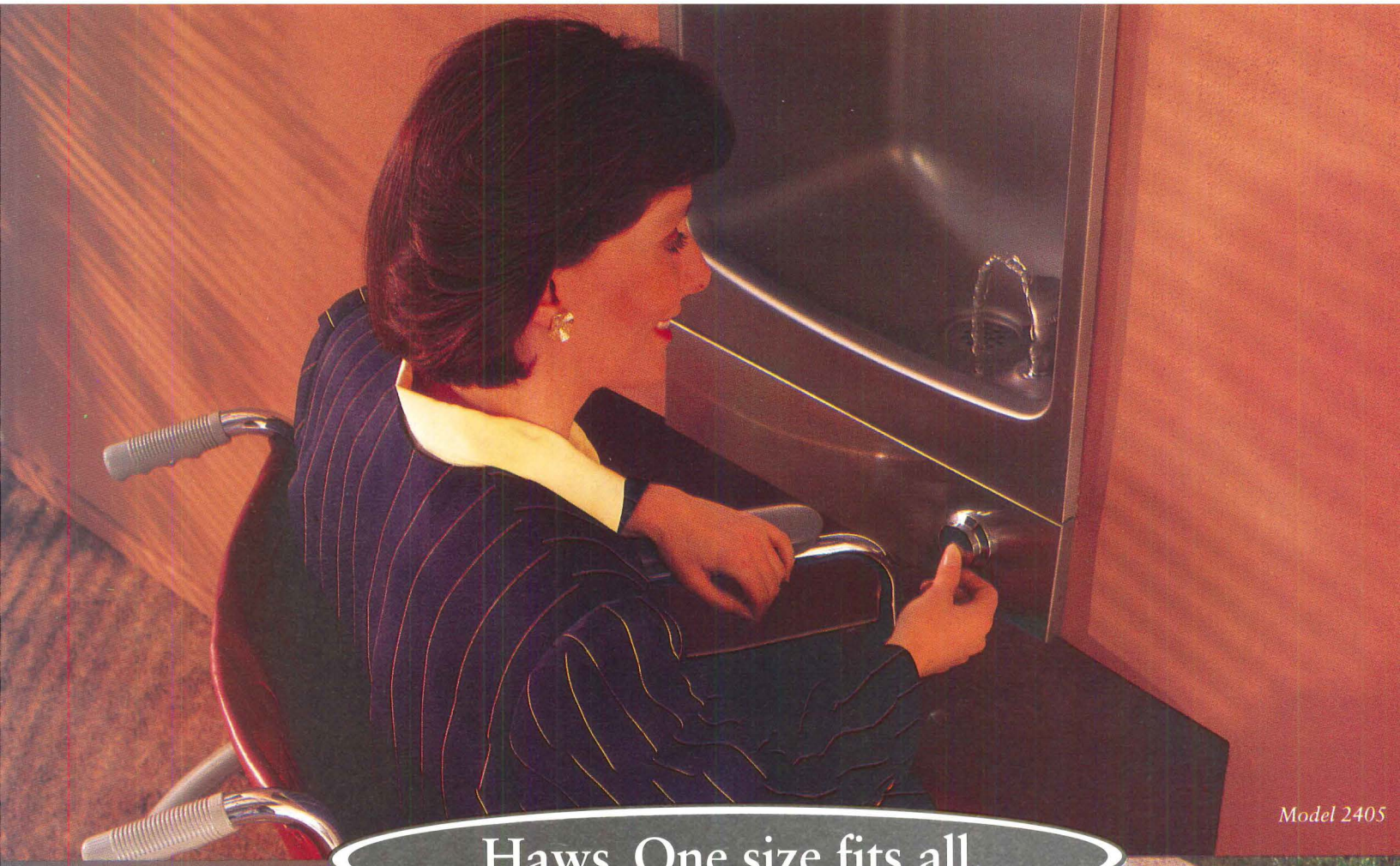
I side with the rabbi. I suspect the dean is niche marketing. His program may eventually teach only 30 students, all getting doctorates in the theory of architecture. I, on the other hand, live a professional life trying to keep theory and practice together, straddling several disciplines. As these pull in different directions, I try to guide them back into parallel tracks. In doing so, I urge young architects to read in fields adjacent to architecture: urban planning, landscape architecture, and art history, but also economics, sociology, and political science.

In our training we architects must learn to absorb knowledge from these related disciplines and apply it differently from the way it is normally used. We are accustomed to doing this with structures; there exists a body of theory on how engineering information should be purveyed to architects. The intention is not to make architects into structural engineers but to help them think architecturally about building structures.

The history of architecture is another area where we've had years of crossdisciplinary experience. Students may study architectural history as undergraduates and then take theory courses in architecture school. In the early 1960s, Bob Venturi taught a course called Architectural Theories at the University of Pennsylvania in which he analyzed the architectural design theories of various historical periods and showed how he, as a practicing architect, developed his own theories and principles of design. That's what I call the professionalizing of academic knowledge.

I've tried to do the same with sociology. Rather than as a required subject architectural undergraduates try to get through quickly, sociology should be studied as students are immersed in a studio on housing or neighborhood design, when they need to know how different groups and cultures within our society view the housing, for example, of the elderly. If sociology were an integral part of a studio on housing, architecture students would understand the value of considering and including sociological information in the design process. They would learn to apply sociological data for their own creative purposes—as an aid and inspiration.

We architects absorb scholarly information and professionalize it to suit our own context of designing and doing. This practical application is a valuable activity—rather different from scholarly learning. It's our strength. We learn to apply scholarly information primarily through the design studio, where we build the elements of an intellectual, artistic, technical, and manual education gradually, one on the other; learning it by doing it. Studio is the gem of our training.



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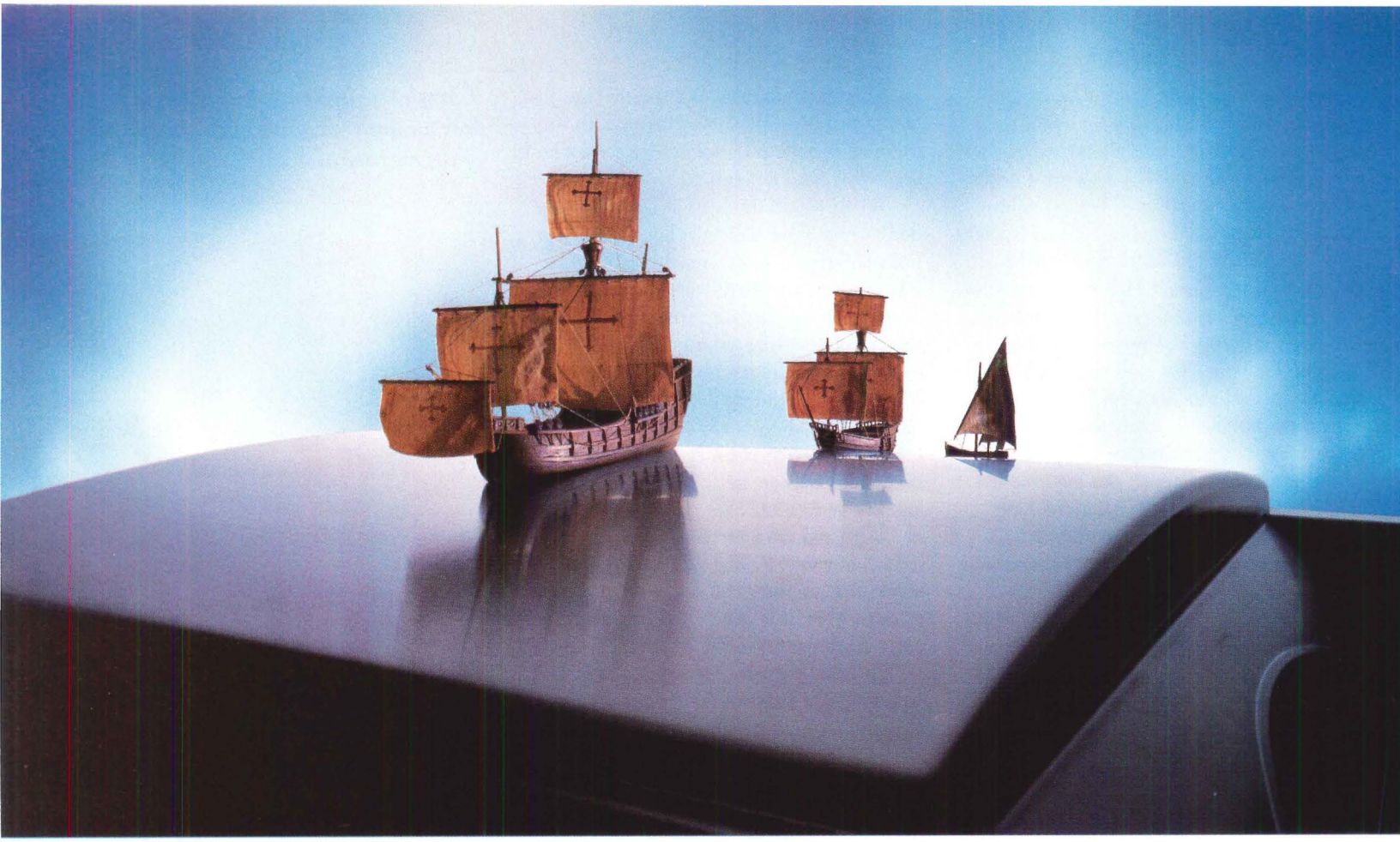
So to the dean's academic exclusiveness I say "Professional schools have a great deal to offer academic education. They provide an alternate educational model." When I taught at the University of California, Berkeley, during the Free Speech Movement, there was talk that a professional-type education—learning for doing, learning for deciding, learning for acting—would be more suitable for activist Berkeley undergraduates than an education designed to train academics, which is what most higher education is. In the education of activists, I argue, our learning-by-doing architectural studio has something outstanding to offer the university at large; we should be proud of it and not abandon it.

If the relationship between scholarly knowledge and professional thought and action is learned in school, how is it continued in practice? I sometimes think Bob Venturi and I are running a small university as well as an architecture firm. We straddle the academic and the professional because, for us, there's a circular procession between looking, theorizing, and designing.

When we see the strip in Las Vegas, we don't know if we hate it or love it, but we feel a shiver of excitement; this experience starts us looking intently at—in fact, researching—this amazing environment. It also starts us writing about the strip and in some way designing around it. Whichever comes first, writing or designing, the other inevitably follows shortly thereafter. At times we need to interpret for ourselves through research and writing, at others through designing. We've recently had a similar experience in Tokyo and are now grappling with the integration into our design discourse of this other amazing multicultural, electronic, and iconographic environment whose dissonant unity illuminates the city of now.

The links between perception, analysis, and design or between theory and action

Today's architectural theorists seem to lack an understanding of the circularity of the creative process.



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can't be simplified and made one-dimensional; one does not follow directly from the other. Reason alone does not lead to discovery. But although in science and art the process is not always completely logical, its results can be measured and evaluated by logic.

In writing, pressures of practice shorten our essays and give them urgency. We write as professionals, not scholars, mainly to clarify our own thoughts and to help ourselves to continue designing. But the realities and emergencies of day-to-day practice make our essays read like letters from the front line. Our daily battle prods our theories and pushes our designs; we write about what we're experiencing. Professional writing should, I believe, be like this.

Today's architectural theorists, being trained largely in the academy, seem to lack an understanding of the circularity of the creative process and of the design process that grows out of it. They read a book and then try to reform the whole of architecture by making simple-minded connections to Jacques Derrida or the latest guru to supplant him. These are half-baked academics. Real academics draw from broader scholarship to achieve deeper meaning.

Those who won't embrace the day-to-day problems of the trade risk losing creativity. In the *shtetl*, many rabbis pursued additional livelihoods besides religion and working people attended study circles much of their lives. When you creatively mix scholarship and métier you learn to face hard problems and to elicit strong solutions from them. From the problems of cities today we architects should derive designs of an agonized beauty by facing the stringent constraints and jarring conflicts urban work entails. For me, dragging beauty from such hard reality is the essence of functionalism. Therefore, I'm a functionalist for esthetic—among other—reasons.

So we're back to our rabbi, plying a trade and interpreting the Torah. If we architects separate theory from practice—if, for us, donning a sheepskin means doffing our muddy boots—then our theories will remain in vain and we will not offer the academy the richness of what we do. To quote another rabbi, whose name I don't know, "Behold a good doctrine has been given unto you, forsake it not."—*Denise Scott Brown*

Denise Scott Brown, principal of Venturi, Scott Brown and Associates, is the author of Urban Concepts. *She is currently working on new buildings and planning projects in the United States, France, and Japan.*

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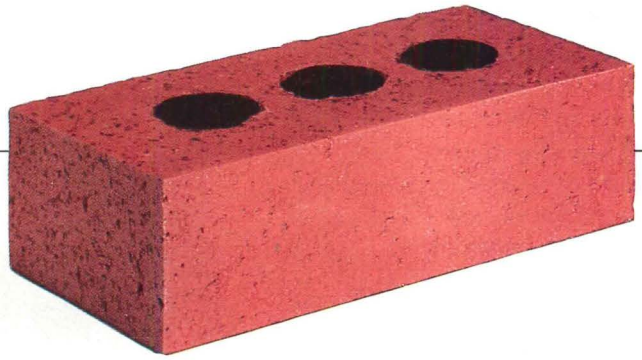

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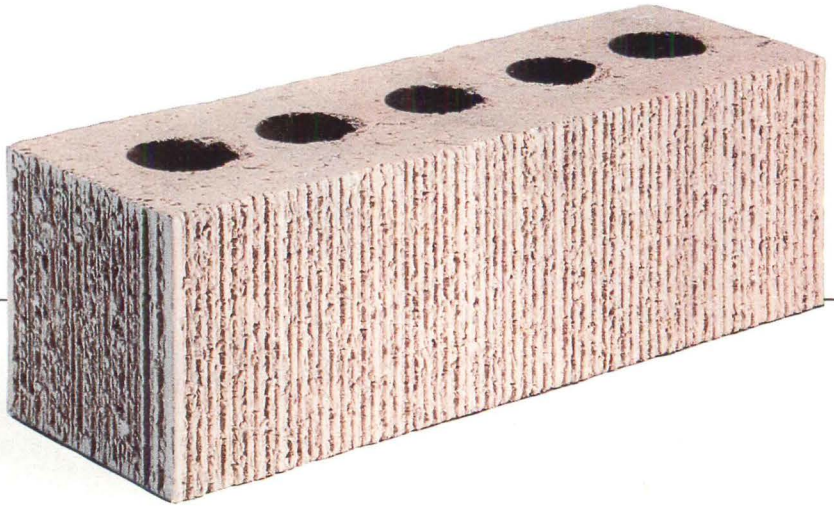

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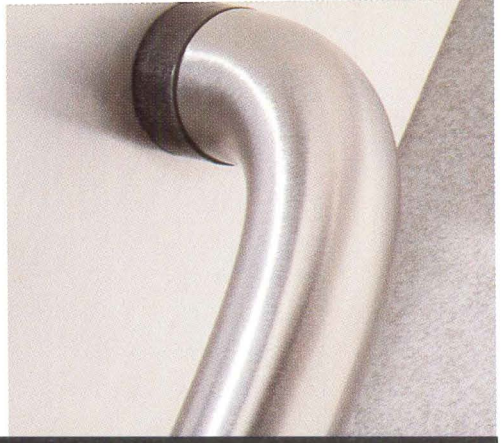

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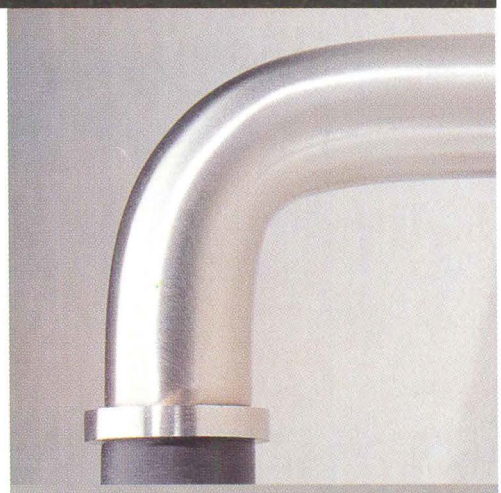

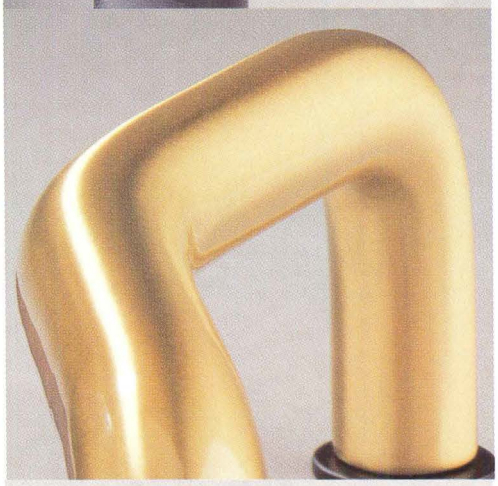

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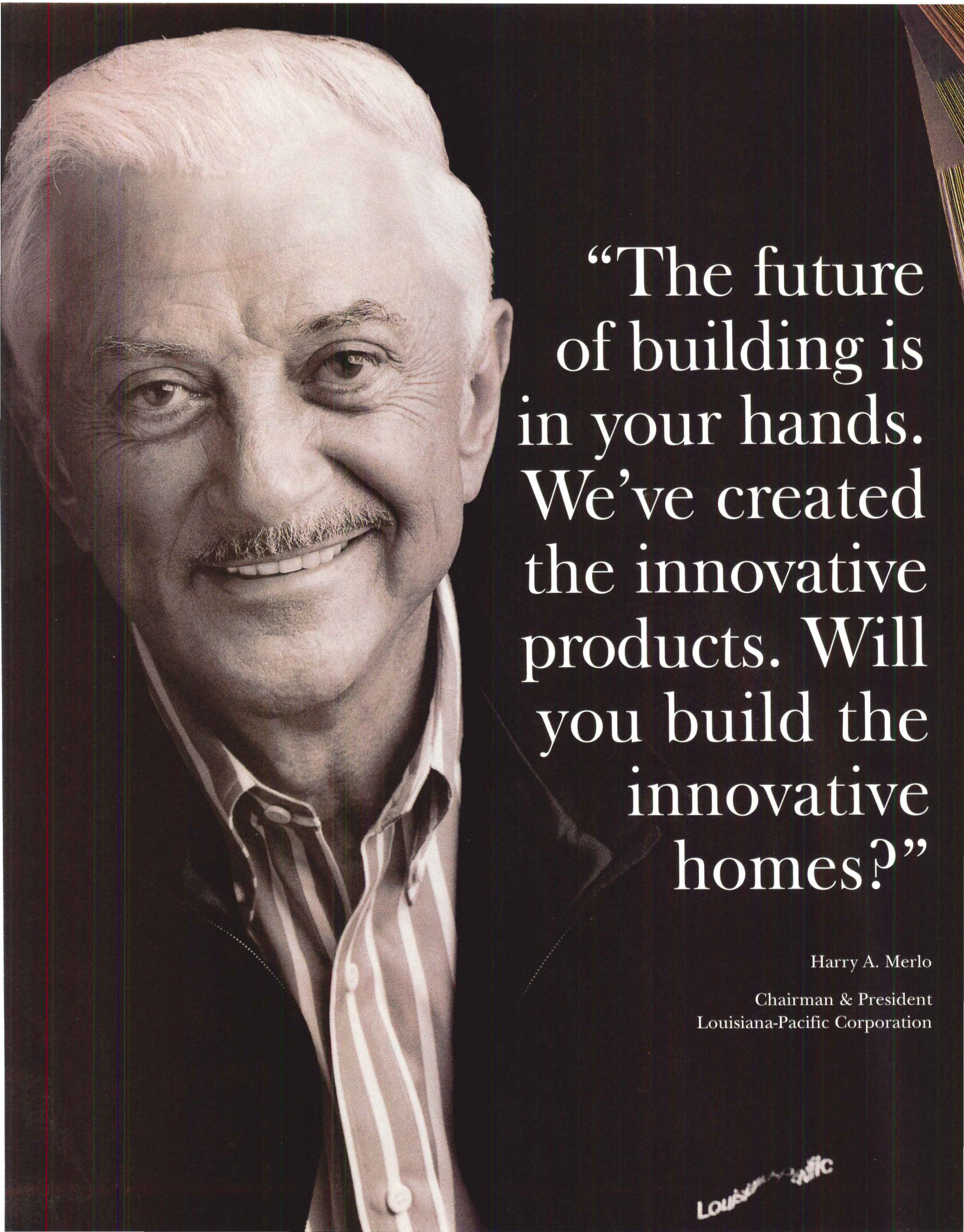
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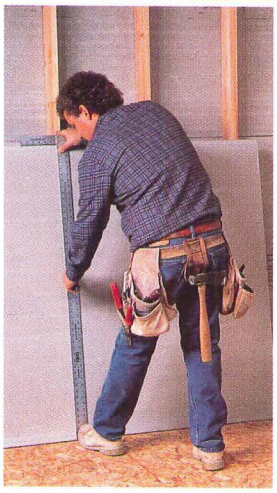

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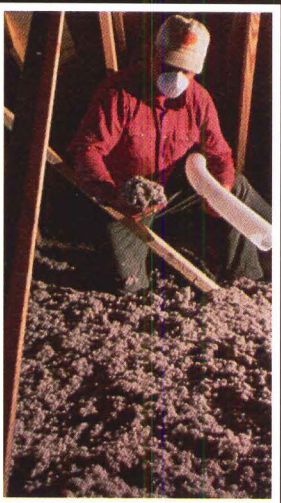

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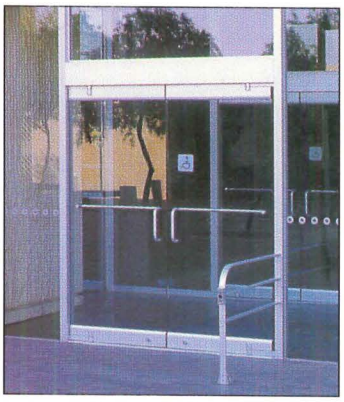

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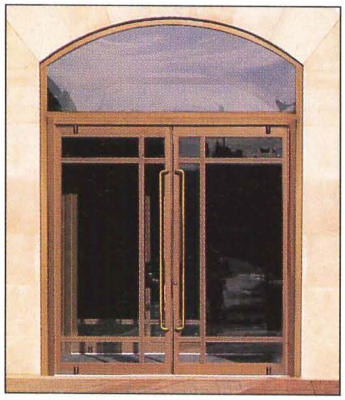

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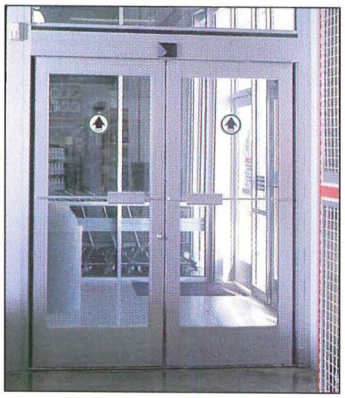
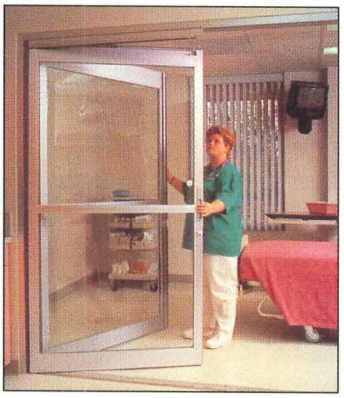


R-1 Automatic Swinging Doors



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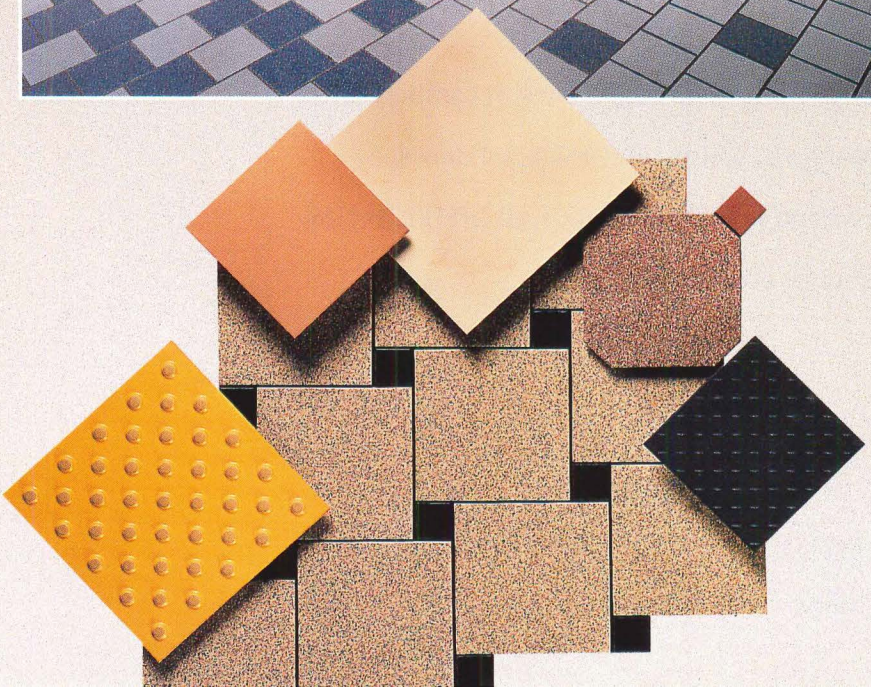

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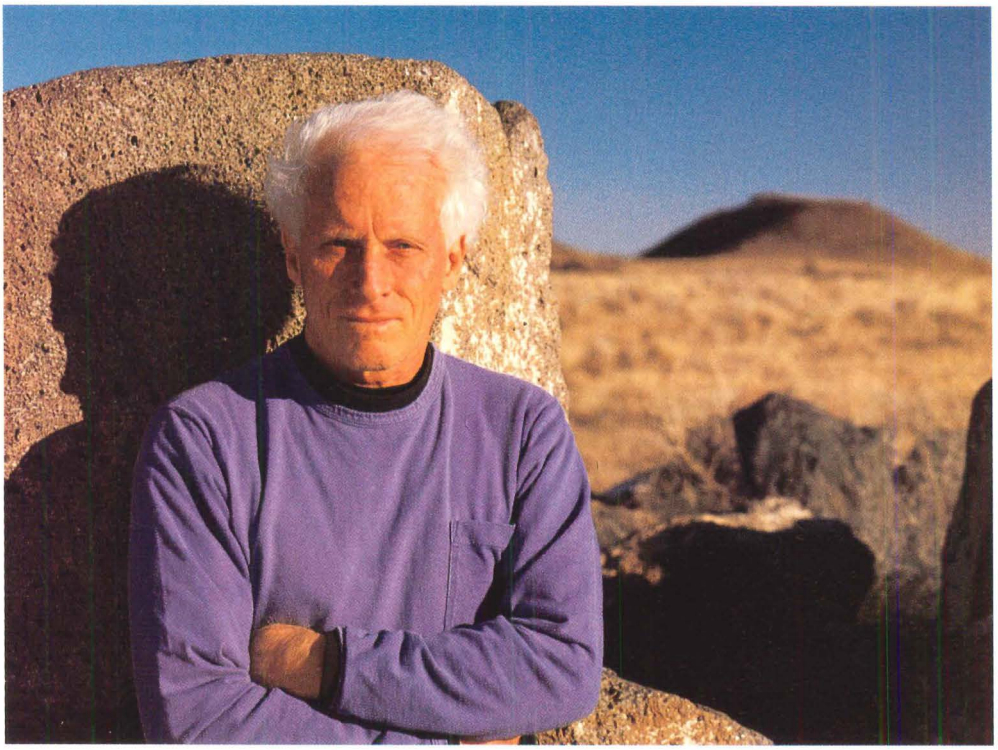


ROBERT RECK

Antoine Predock

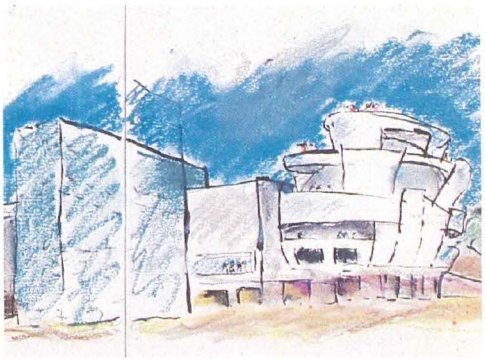
American Visionary

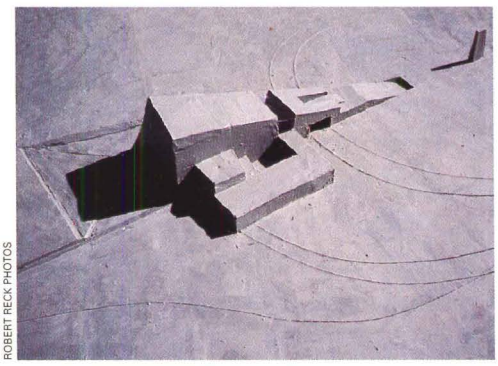
Competitors complain that Antoine Predock can walk his dog around a site and get the job. The dog is apocryphal—Predock doesn't have one—but walking off with big jobs has become routine for the 58-year-old New Mexico architect. In the last decade, he has gone from being a respected regionalist—a hip John Gaw Meem—to an international celebrity with major commissions in Los Angeles, Las Vegas, Dallas, Tucson, Tampa, almost everywhere but in his hometown of Albuquerque. *Vanity Fair* has profiled him admiringly; Rizzoli published a monograph on his work last December to be followed this fall by a book of drawings; and as an architect in the film "Intersection," Richard Gere loses a big commission to him. "That's OK," Gere tells his wife, played by Sharon Stone. "Predock's good. He'll do a fine job."

Talented, intense, demanding—all describe Antoine Predock. Yet serious critical attention has been slow in coming, deflected partly by a cloud of self-generated hype about UFOs, pyramid power, and "cosmic" Modernism. Even when floated in a humorous and self-mocking way, such ideas have encouraged skeptics to dismiss him as an eccentric desert shaman.

And yet no contemporary American architect has done more to extend architecture's spiritual and symbolic range. Predock listens to the land and detects deep

BELOW: Tampa's Museum of Science and Industry, to be completed in July, is organized around a spherical theater.
CENTER: Competition model for Hotel Atlantis in Las Vegas is a shimmering mountain of glass planes surrounding waterfalls and palm trees.
BOTTOM: Predock adapted the glazing of Hotel Atlantis in the lobby of his Spencer Theater for the Performing Arts in Riudoso, New Mexico, now in design development.





ROBERT RECK PHOTOS

murmurings that his more cloistered academic contemporaries miss. And while his architecture remains consistently spare, planar, and primal, it is richly inflected by ideas and images from freeways, folklore, and cyberspace—the full panoply of contemporary culture. Predock is a classic polymath who fits Charles Moore's description of the "vulnerable architect, open to all kinds of things," and who is capable of adjusting his position to accommodate them.

Predock's architecture is quintessentially American in its attachment to land and place, part of a long tradition that stretches back through Wright and Whitman to Jefferson and the Anasazi architects of Chaco Canyon. Some of his buildings mimic land forms—the volcanic American Heritage Center in Laramie, Wyoming, for instance (ARCHITECTURE, December 1993, pages 48-61)—while others abstract and internalize them, like the new Social Sciences and Humanities Building on the University of California's Davis campus (pages 74-83). Here, the ecosystems that created California's Central Valley are expressed as layers of structure, rising from the agricultural plain to linear blocks of faculty offices that span the complex like mountain ridges. The building is about rootedness and aspiration simultaneously: an intricate architectural microcosm.

Predock worked out the plan for the Ventana Vista Elementary School in Tucson (pages 58-67) by walking off every foot of the site and then marking each section of the building on a contour model he had hauled along. "The desert was our textbook for what ought to occur on the site," he explained. "Everything was so clear and diagrammatic that in occupying it, we knew we had to reaffirm its special qualities."

Predock's Americanism comes through also in his fascination with cultural marginalia, from strip centers to tourist trinkets to B movies. Such culture bites often provide his starting point and context; in the 1960s, he rode motorcycles with landscape historian J.B. Jackson and gradually absorbed Jackson's inclusive view of landscape as a cultural artifact instead of as a collection of views.

Consequently, Predock sites buildings like an archaeologist, going deeper and deeper until he strikes cultural bedrock. The first step in the investigation is usually a collage, created by Predock and his team with photographs, postcards, rocks, animal skeletons—anything that helps to assemble a mosaic of ideas about a place. This unique tool enables them to discover the rhythms and the tempo of a site. After the collage comes the small clay model, a type of three-dimensional drawing that Predock uses to express generalized shapes and spaces. Tactile and malleable, models allow him to record quick, impulsive gestures that translate into the dramatic body language of his buildings.

Predock is accustomed to stretching tight budgets by using simple materials and forms local craftspeople can work with. Ventana Vista Elementary School, for example, is built of stucco and concrete block at $85 per square foot and flaunts a fabric roof that is expected to save $15,000 in cooling costs.

To this frontier pragmatism, Predock adds the profound faith that architecture can affirm and heal. "There are exemplary realms that architecture can yield glimpses into, realms that are optimistic," he writes in the introduction to his new book. "Conversely, there is nihilism—making a thing of the chaos, making a thing of the mediation of our world—literal extrapolations. But to say casually, as some individuals do, 'I am going to be chaotic because of chaos theory,' or 'I'm going to be a Deconstructivist architect because French Post-Structuralist literary critics talk about Deconstruction,' is highly suspect. . . .The choices made need to come from the spirit and from an understanding of the actual world around us, both in terms of the present and the past."

Predock's world for the last 41 years has been Albuquerque, a vigorous, tacky, and low-rider city that, by virtue of its remote-

No contemporary American architect has done more to extend architecture's spiritual and symbolic range. Antoine Predock listens to the land and detects deep murmurings that his more cloistered academic contemporaries miss.

ness from the centers of fashion, frees an architect to pursue a personal vision. "My grounding in New Mexico has sensitized me to looking at sites at a lot of levels, not just their immediate face value," confides Predock. "There's still a freshness about the ephemeral layer here as well as something poignantly sad. Yet the sweep of the land and the light and air even out some of those interventions and give you a sense of freedom. New Mexico has prepared me for working anywhere."

Home and office cohabit a 1907 house near the downtown that Predock has enlarged and reconfigured numerous times to accommodate his growing staff. Like his best work, it celebrates mystery and surprise over obvious unity, with courtyards, hidden recesses, and backstairs rising to loft studios.

Right now, "Antoine Predock Architect" employs 15 people, down from 40 a few years ago when four major competition projects were going at once: The Nelson Arts Center at Arizona State University (1985); the American Heritage Center and Art Museum in Laramie (1986); the Las Vegas Library and Children's Museum (1986); and the California Polytechnic State Laboratory and Administration Building (1987). Competitions catapulted the firm into the national spotlight in the late 1980s and, although its batting average has dropped recently, Predock still pursues invited competitions because "they give me an opportunity to explore different sites that I wouldn't normally be able to engage. The newness of these encounters is very important to me."

Predock says that the ideas generated by competitions go into a "spiritual savings account" that can be drawn on later: The daring glass skin intended for the Hotel Atlantis in Las Vegas appears in the crystalline entrance and lobby of the Spencer Theater for the Performing Arts in Ruidoso, New Mexico. Likewise, the dramatic wedge of the Las Vegas Library and Children's Museum return in more intimate—and more resolved—form in the Mesa Public Library (pages 68-73) in Los Alamos, New Mexico.

Predock's work was once limited to adobe houses in the Sandia foothills, but competitions have increased the scale and complexity of his projects dramatically: The Museum of Science and Industry in Tampa covers 110,000 square feet and has a budget of $19 million, and the Thousand Oaks Civic Arts Plaza is, at $53.5 million and 226,000 square feet, his largest project ever (pages 84-93). "I was concerned about what might happen when my buildings got larger," Predock remembers. "And the answer is that there is no difference at all. The way of thinking about the building is the same. There's the site, its timeless emanations, the specifics of place, all of which work their way through my process independent of scale."

Yet it's clear that the expanded scale and context of Predock's recent work have produced a more intricate layering of forms and ideas; the nonarchitectural soundings go deeper and wider. "The investigative potential is so much richer, no doubt about it," Predock admits. "I'm all over the place soaking up things, trying to develop a culture of the building before any overt moves are made. The program is the easiest part. Any competent architect can work that out. It's the intangible content that matters most."

The site remains the great first event for Predock, and he remains one of its great intuitive readers. He doesn't see mere pattern; he sees a cultural matrix. Urban designer William Morrish, who drew up the program for the Las Vegas library, says that Predock got the job "because he talked about the qualities of southern Nevada and what it was like to live there. He didn't take the easy way out by talking only about the strip."

Predock still sets the design and establishes the dialogue for all his projects. Clients praise him for not stopping there, however, but for carrying ideas through to completion. He labored six years on the Mesa Public Library trying to accommodate the demands of a divided selection committee and made numerous trips to Ventana Vista to work out ideas with the staff. "I haven't been enamored of star architects," says Catalina Foothills School Superintendent Terry Downey, "but Antoine was different. He helped us imagine things that we couldn't have imagined for ourselves and then stayed with us. He made us feel that there wasn't a more important project than ours."

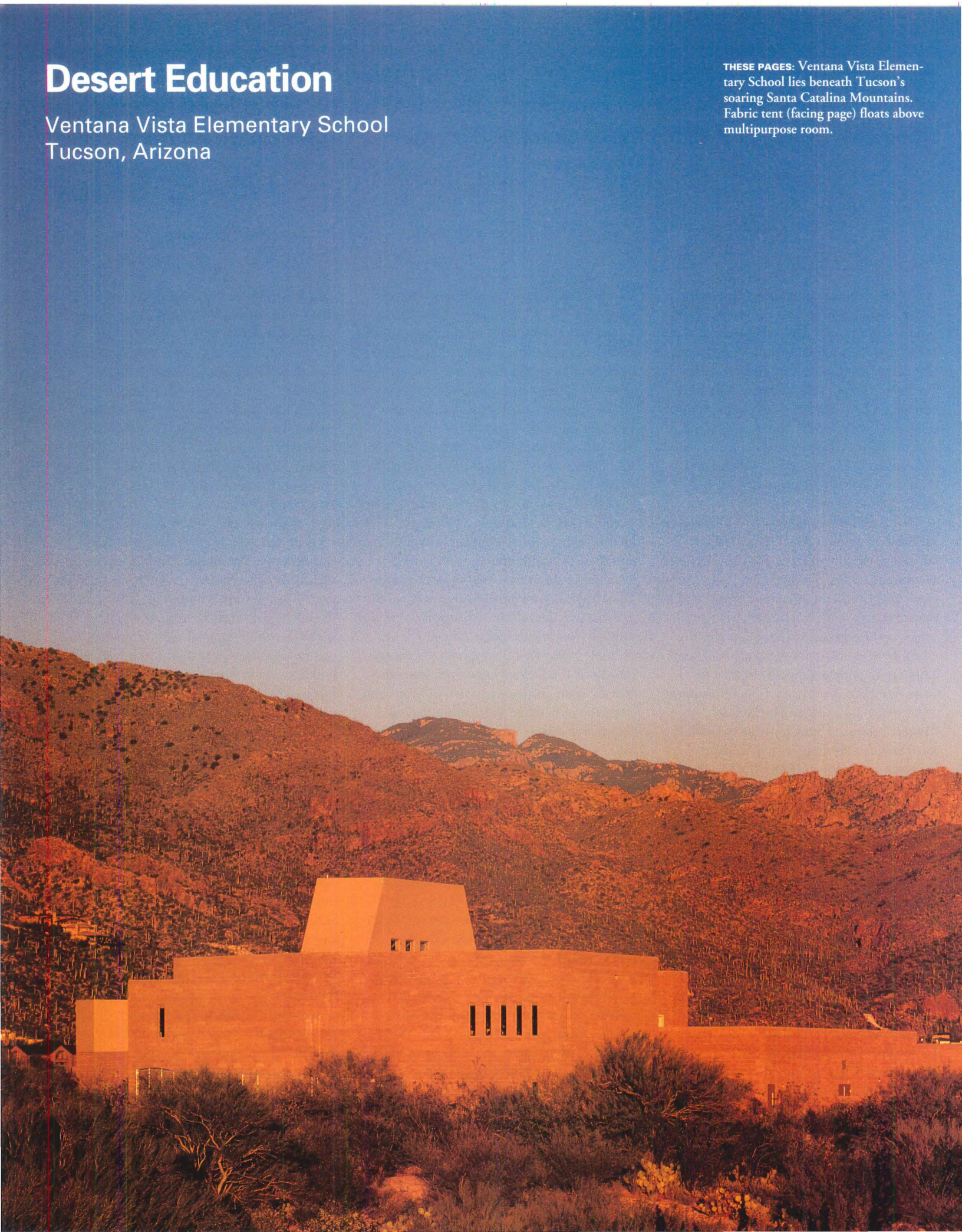
Predock's success has not made him a favorite of the East and West Coast architectural establishment. "We will have to see what he makes of his dislocation to Los Angeles, to a cosmopolitan urban center," sniped Peter Eisenman a few years ago. "It is the difference between playing hardball in the big leagues and the summer league out in the desert." Predock has since proved that his site-sounding approach travels well. His buildings at the University of California, Davis, and California State Polytechnic University, Pomona, the Mandell Weiss Forum in San Diego, and the Venice beach house rank among his best without resembling work he's done in New Mexico or Florida.

Neither Predock nor his work can be pigeonholed. Not only does he live almost midway between the architectural axes of Los Angeles and New York, he's managed to navigate safely between the Scylla and Charybdis of Postmodernism and Deconstructionism as well as most of the other fashionable "isms." As architectural practice grows more narrowly focused on niche markets and stylistic trends, as some architects openly despair of designing significant work, Predock holds out the possibility of timeless architecture, unaffected by transient theories. He continues to draw inspiration from sources beyond architecture, theory, and history and find ways to include it in his buildings. His walls and roofs vaunt their materiality even as they aspire to higher concepts. Site remains primary, and for Predock, it starts at the center of the earth and reaches out to the cosmos.—*David Dillon*

Desert Education

Ventana Vista Elementary School
Tucson, Arizona

THESE PAGES: Ventana Vista Elementary School lies beneath Tucson's soaring Santa Catalina Mountains. Fabric tent (facing page) floats above multipurpose room.



Blocky, muscular, and austere, the sculptural cluster of buildings of Ventana Vista Elementary School is an architectural analog to the spectacular Catalina Mountains heaving up behind it. Its design by Antoine Predock does not exude the comfortable familiarity expected from an elementary school, and a cursory inspection might leave one suspicious or discomfited. But then the same could be said of the rugged Sonoran desert of which this building is now a part.

It is exactly that difficult confrontation with an inhospitable environment that Predock regularly addresses in his desert buildings. What makes the issue so challenging here in Tucson is the choice of a primary school as the vehicle of exploration.

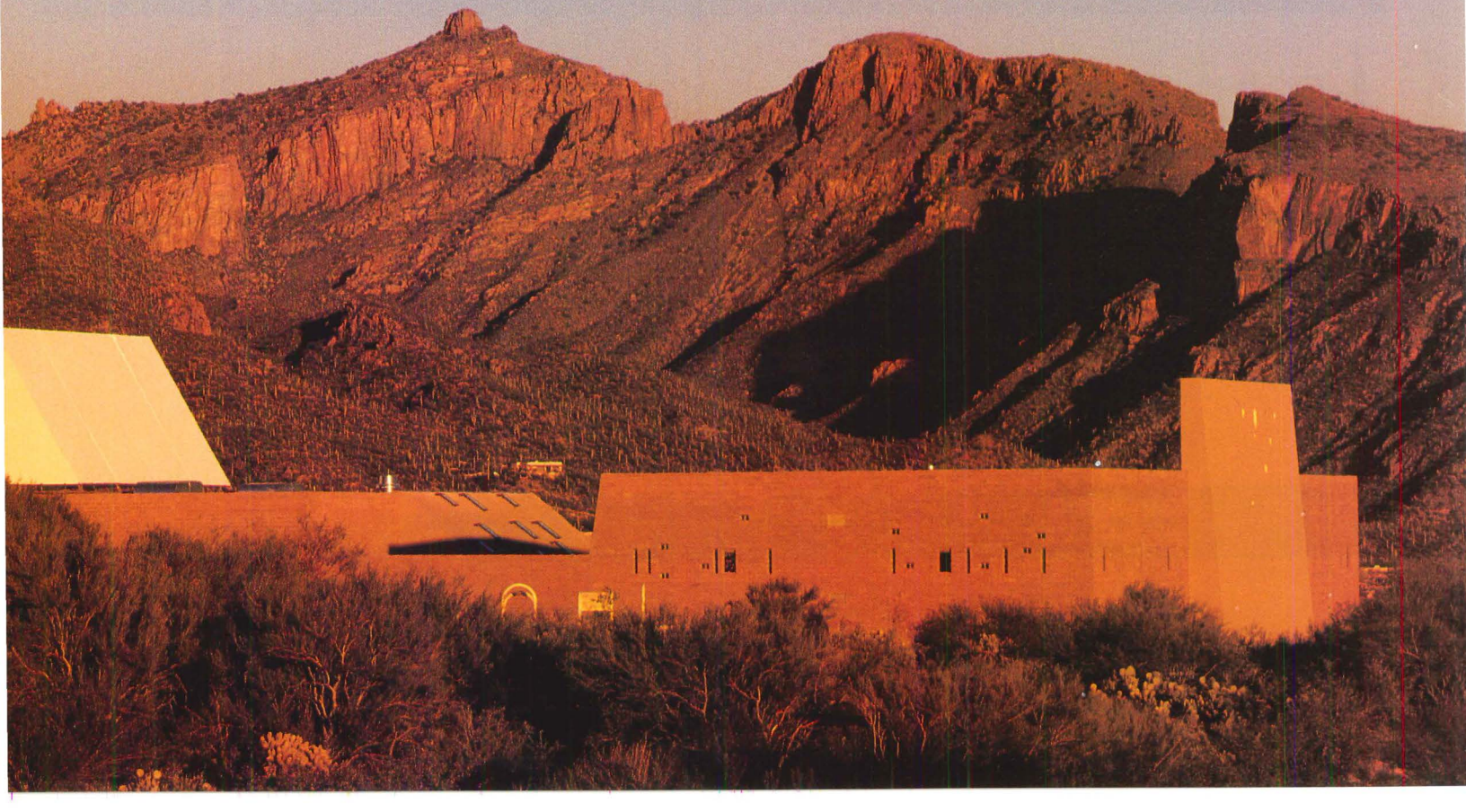
Like many of Predock's buildings, such as the Nelson Fine Arts Center at Arizona State University, Ventana Vista incorporates precedents drawn from across history. The school is arranged like a medieval Italian hilltown, carving out a series of courts and passages that pinwheel around a centralized, two-story library. A white tent floats above the prominent multipurpose room that combines dining, assembly, and gymnasium. It shades skylights below it and reminds visitors of nomadic desert encampments. If Predock has his way, the tail of a B-52 bomber will rise from one of the courtyards—an obsidian glyph reminding us of a common frightening heritage and the nearby Davis Monthan Air Force base.

These are not simple or obvious references and certainly stretch the associative capacities of seven-year-olds. But if the didactic content of Predock's gestures is not immediately apparent to the youngsters, education can make it so. Predock and associate architect Burns/Wald-Hopkins utilize these devices to leaven architectural and urbanistic meanings into the school as well.

"I thought of the school as a city for children—particularly its scale and the variability of that scale relative to children's bodies," says Predock. This "city" is organized as a group of different "neighborhoods": administration and kindergarten; first grade; second and third grade; and fourth and fifth grade—and a "town square" lies between the library and the multipurpose space. And like neighborhoods in any town, each of the school's quadrants has distinctive architectural characteristics and cultural artifacts with which the students can identify.

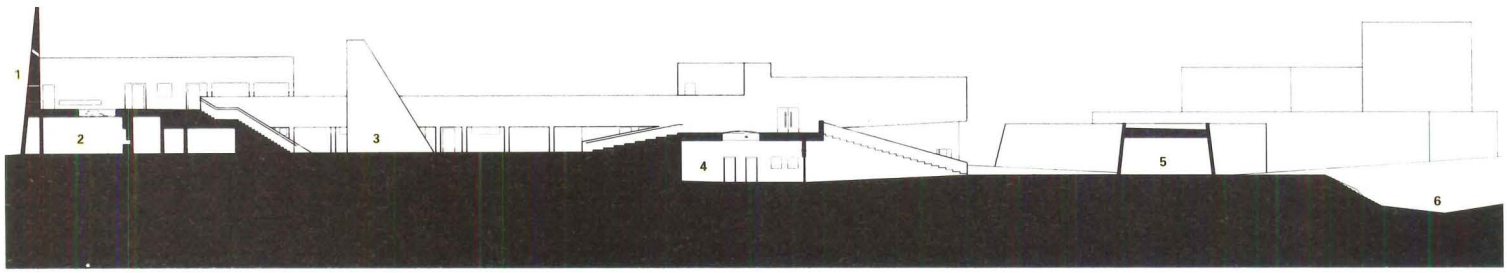
Consequently, the first-grade court is smaller and denser than the others and its burghers are provided with spy holes and at-grade windows. The second and third graders host an ingenious "solstice wall": through its strategically placed holes, the sun illuminates plaques on the ground honoring significant days or events—on Cinco de Mayo, for example, the sun falls on a gold coin dedicated to the Mexican holiday.

The message from Predock's impressive variety of architectural interventions is that the discovery process of education should

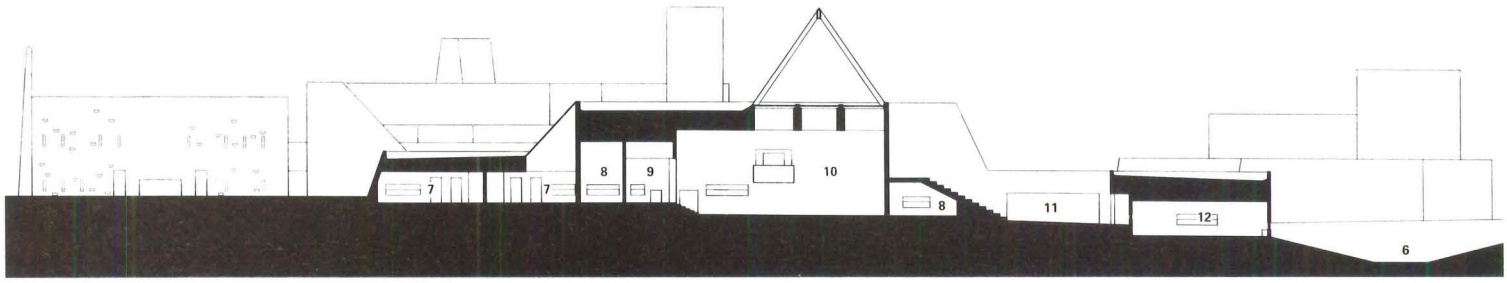


This is a city for children that engages the site as a museum and laboratory. It shifts in scale so that each age group is reflected in the architecture. —Antoine Predock

BELOW: School's entrance is tucked to the right of tilted landscape wall.
SECTIONS: North-south sections reveal central courtyard (top) and multipurpose room (bottom) beneath tent.
FACING PAGE, TOP: Massive mechanical duct is meant to draw air across wires and produce musical tones.
FACING PAGE BOTTOM: Sun shines through solstice wall's carefully modulated apertures, spotlighting story disks on special days of the year.



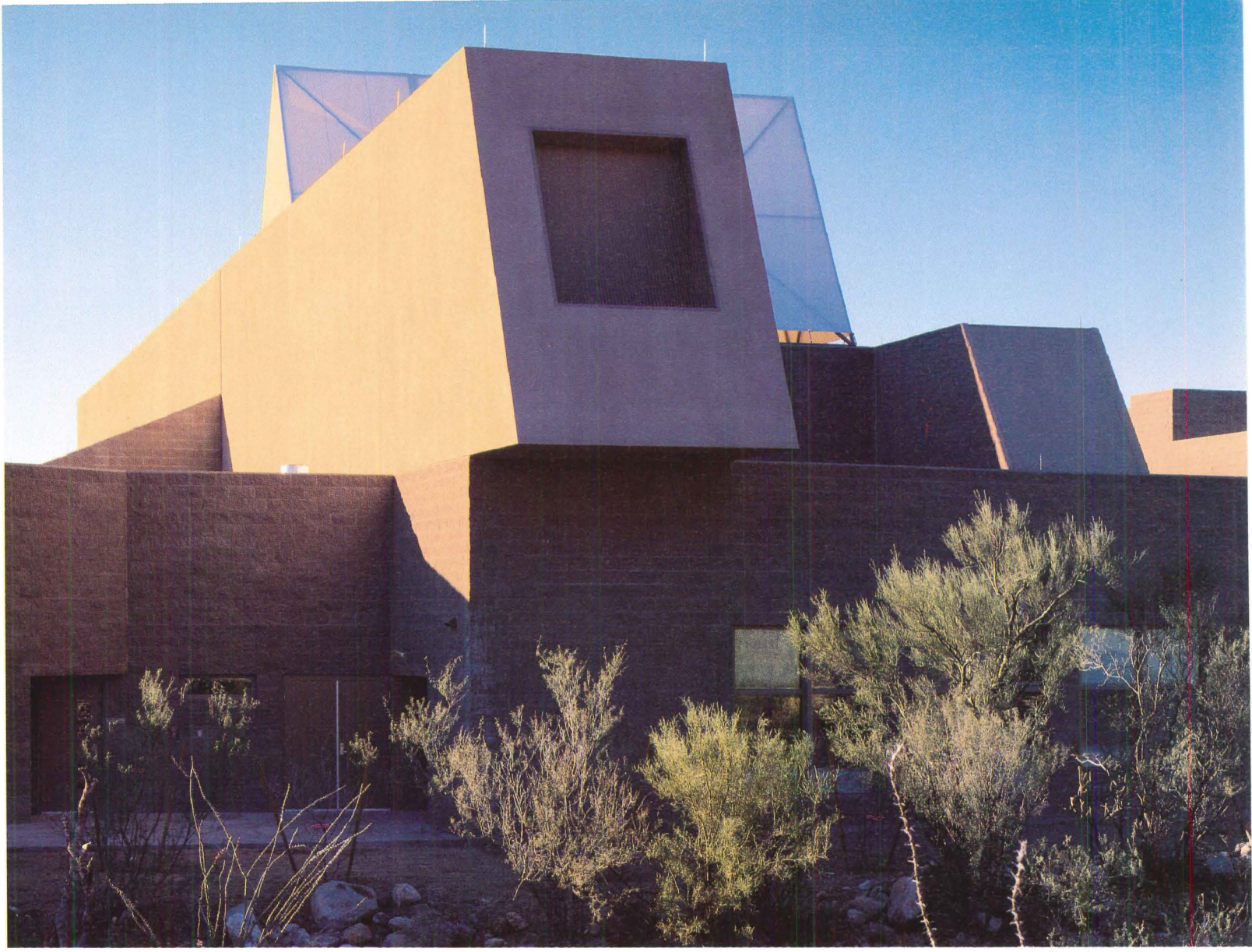
NORTH-SOUTH SECTION

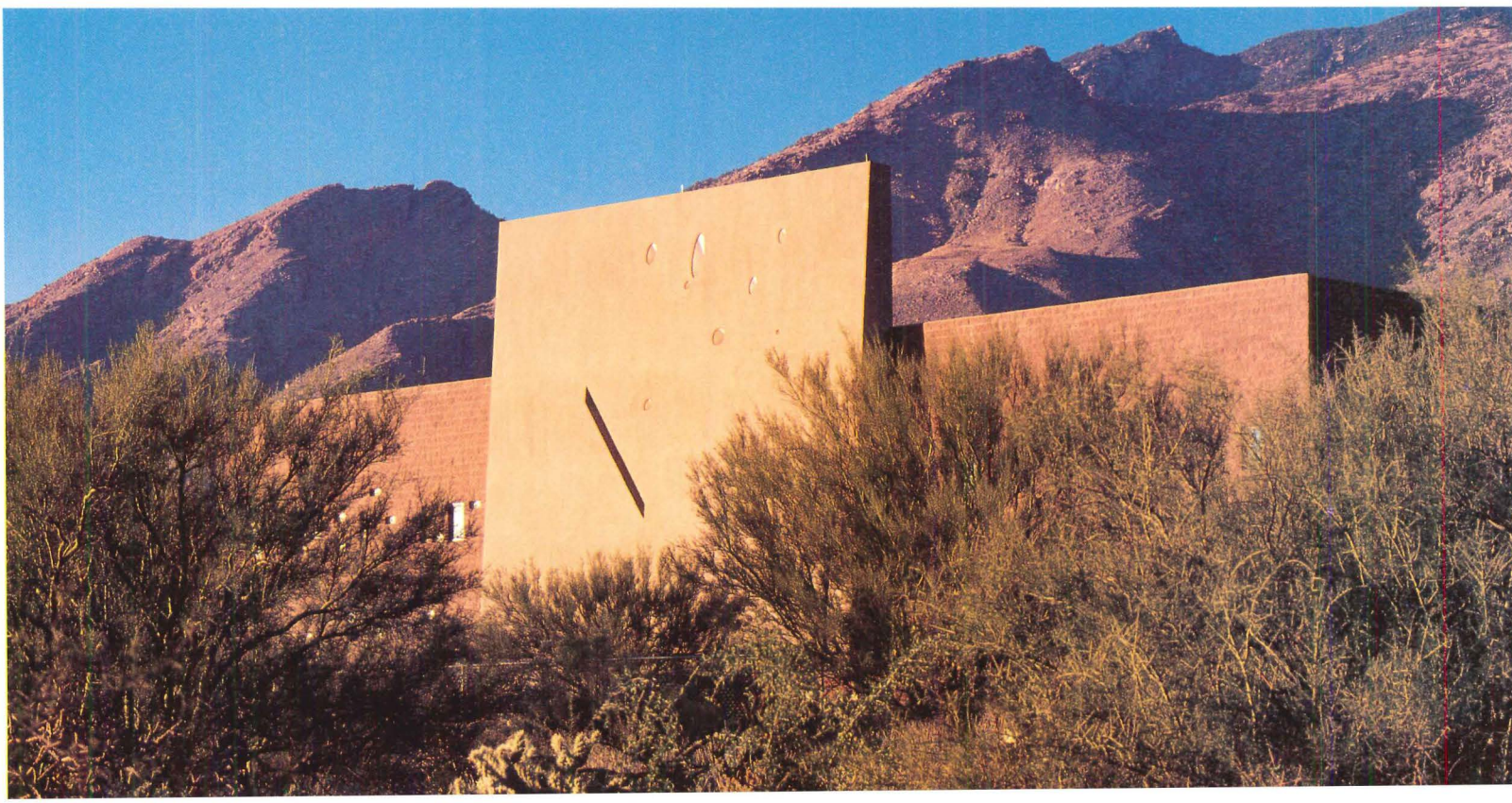


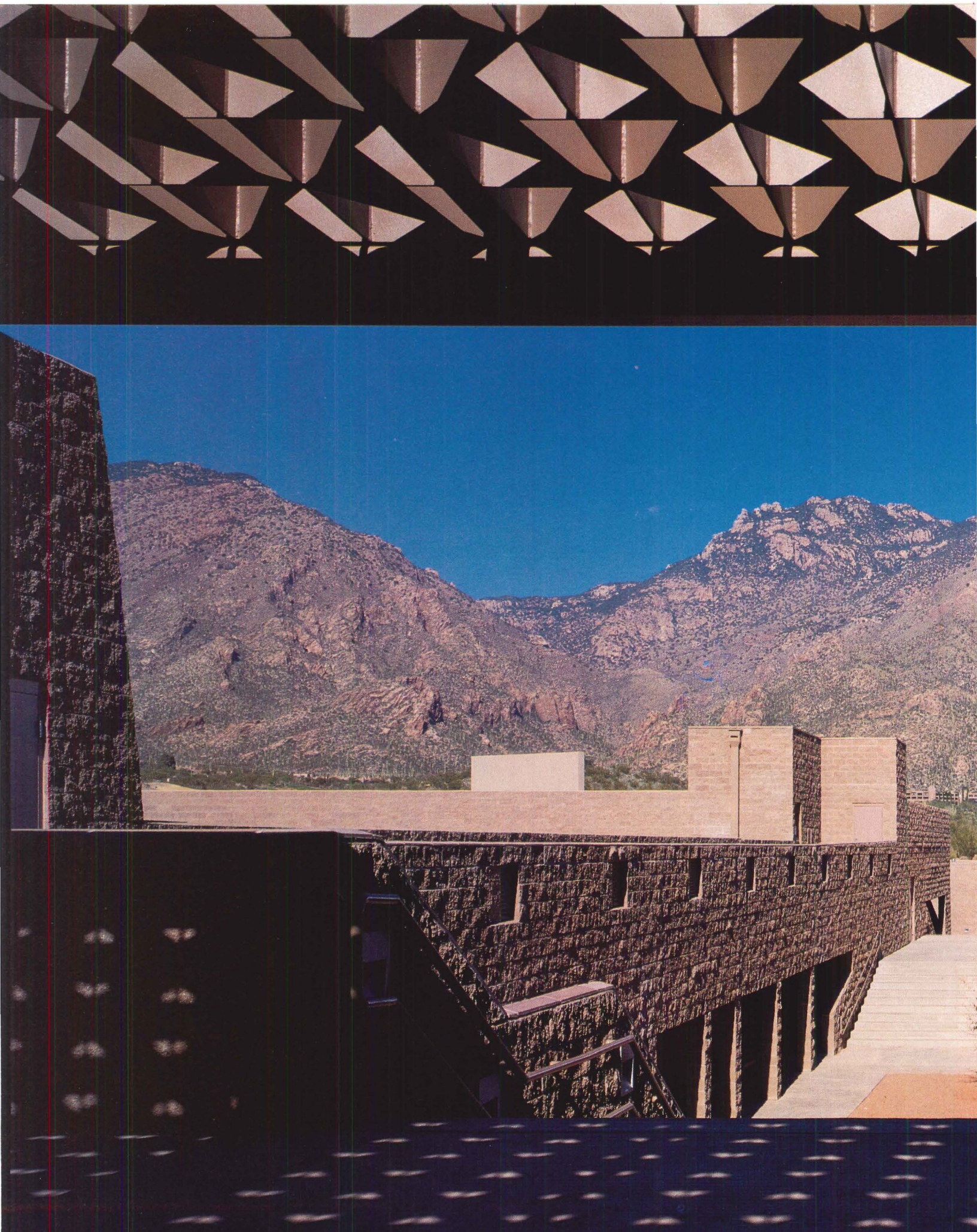
NORTH-SOUTH SECTION

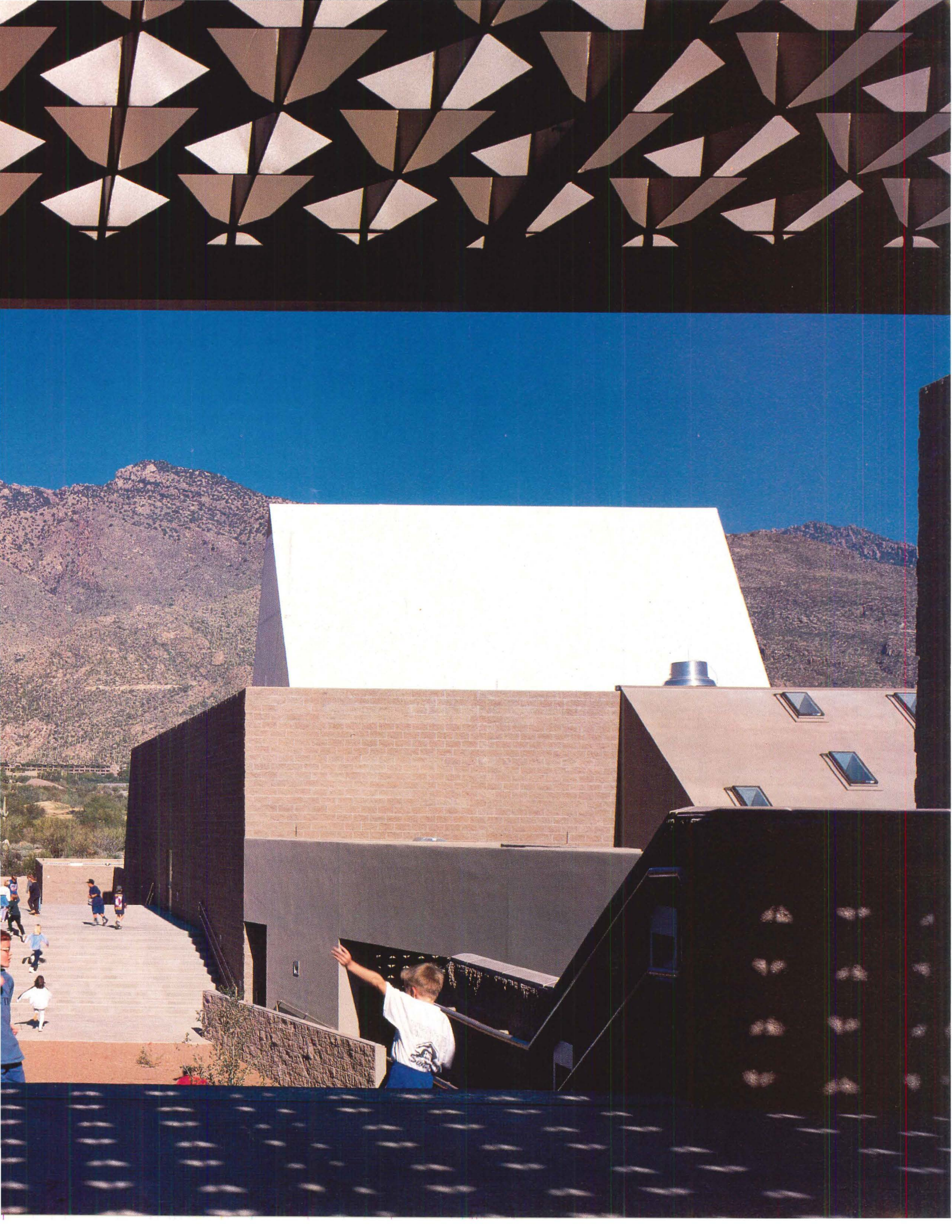
20 /6m

1 SOLSTICE WALL
2 COMMON ROOM
3 B-52 TAIL FIN
4 READING SUCCESS CLASSROOM
5 KINDERGARTEN
6 ARROYO
7 MUSIC CLASSROOM
8 STORAGE
9 STAGE
10 MULTIPURPOSE ROOM
11 PERFORMANCE COURTYARD
12 DAY CARE

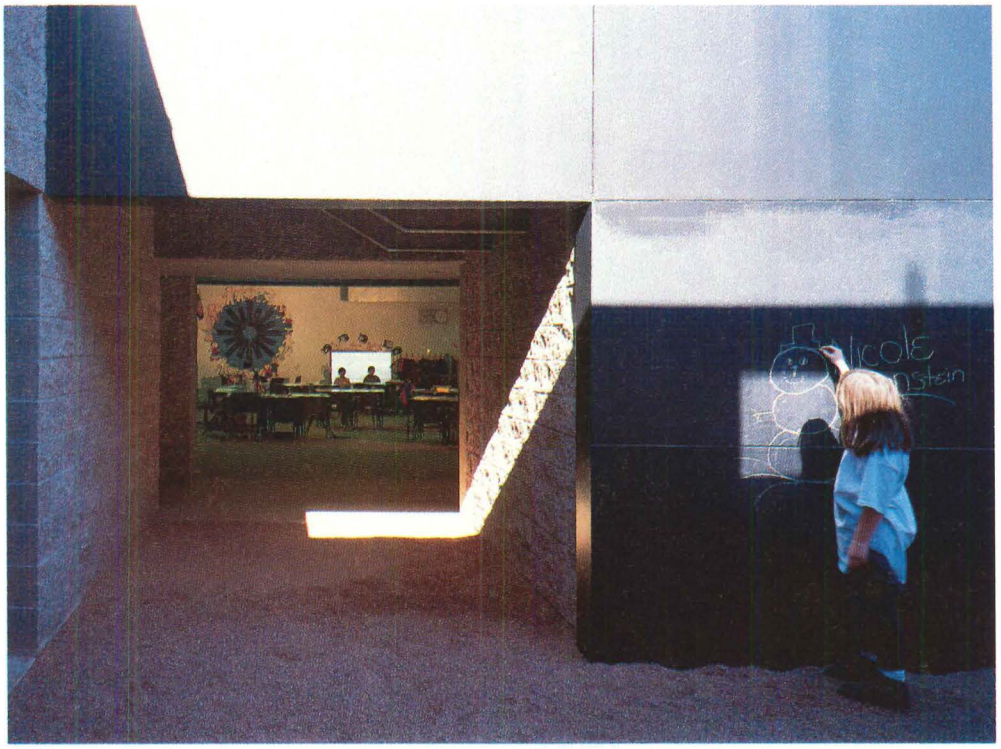








PREVIOUS PAGE: Central courtyard is shaded by metal screens (top).
BELOW: Fourth- and fifth-grade court features chalkboard/graffiti wall.
PLAN: Multipurpose room, music and performance areas, administration, and kindergarten and first-grade classrooms (left) face library, common room, and upper grades (right).
FACING PAGE TOP: Truncated pyramids house first grade and kindergarten.
FACING PAGE BOTTOM: Block wall frames central staircase from B-52 courtyard.



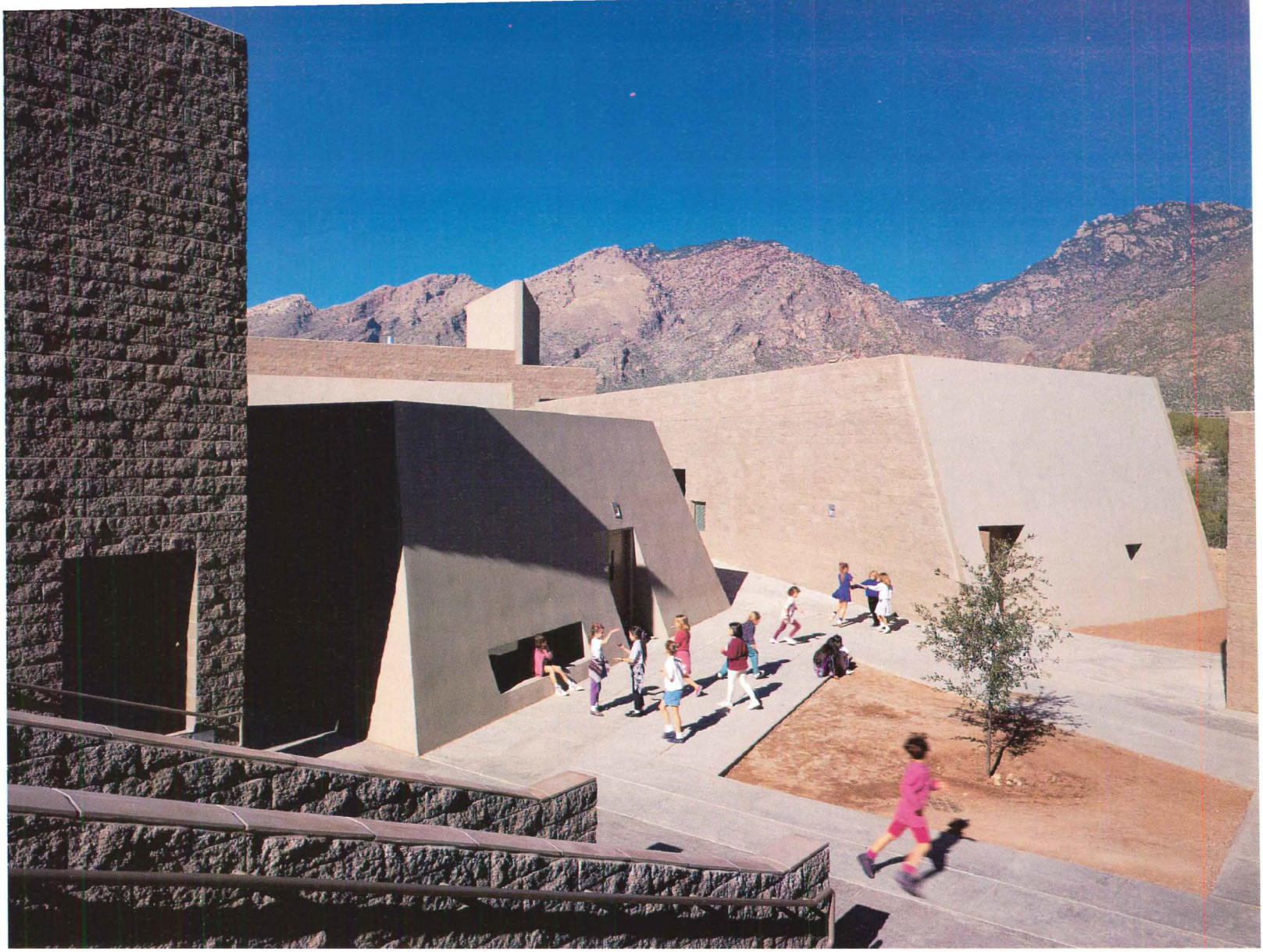
FIRST FLOOR PLAN

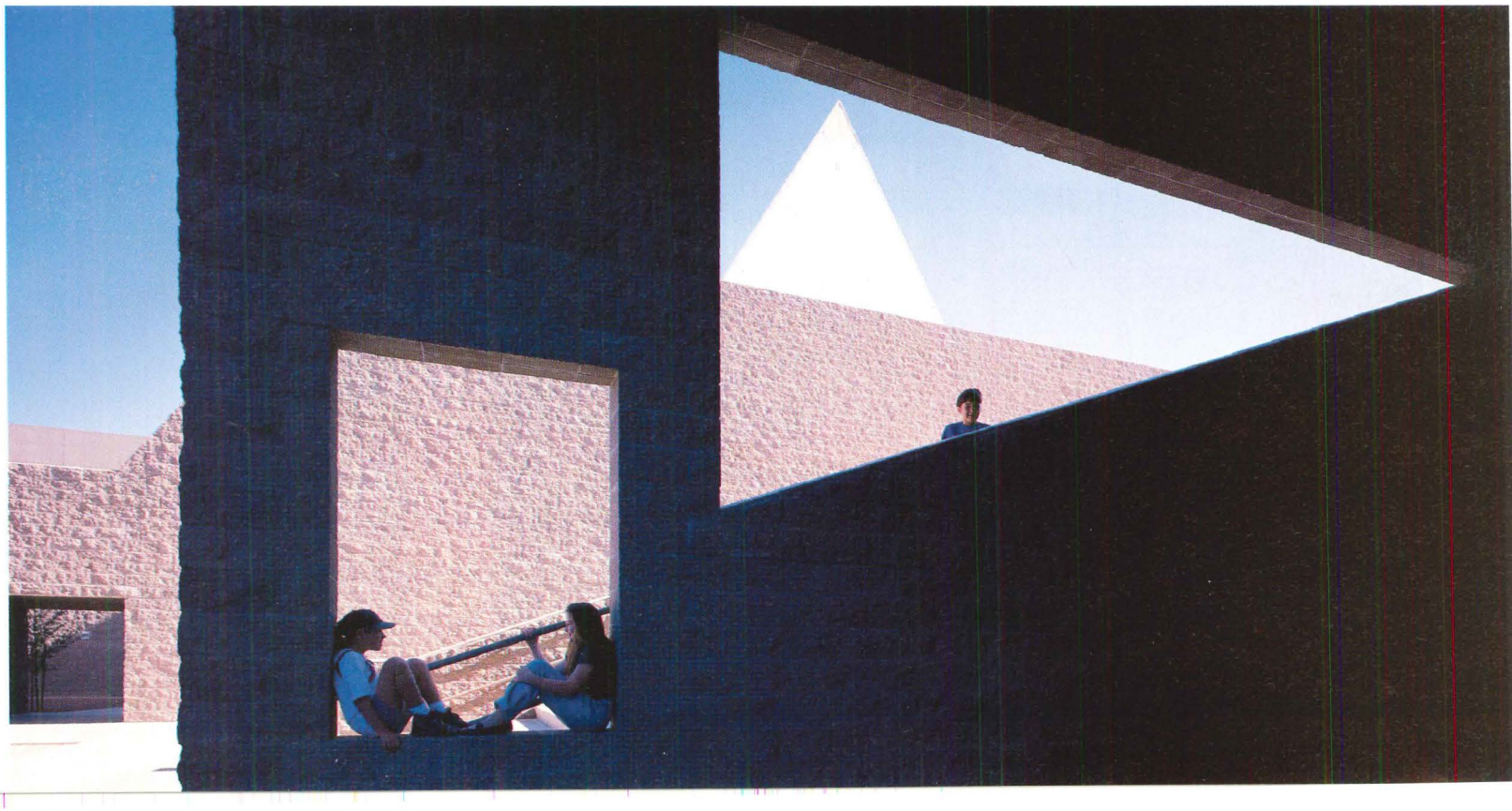
include the physical environment where it takes place—from recess courtyards to the impressions of the desert itself. At Ventana Vista, some of that process is didactic (the B-52), some is elliptical (the solstice wall). Unlike more traditional school planning, Ventana Vista's pinwheeling courtyard scheme is not transparent; one must come to know this children's city through experience and discovery. Initially, this process can be difficult: The entrance to the school is obscure. Furthermore, the building's uniform color and materials are indistinct and a bit overwhelming, particularly in light of the minimal internal landscaping. However, Predock is comfortable with the school's stark quality. "The desert is about power and loneliness," he believes. "The desert is not cute. Kids are smart; they understand this." And where they don't understand, Ventana Vista will teach them.—*Reed Kroloff*

Reed Kroloff is an assistant professor of architecture at Arizona State University.

VENTANA VISTA ELEMENTARY SCHOOL
TUCSON, ARIZONA

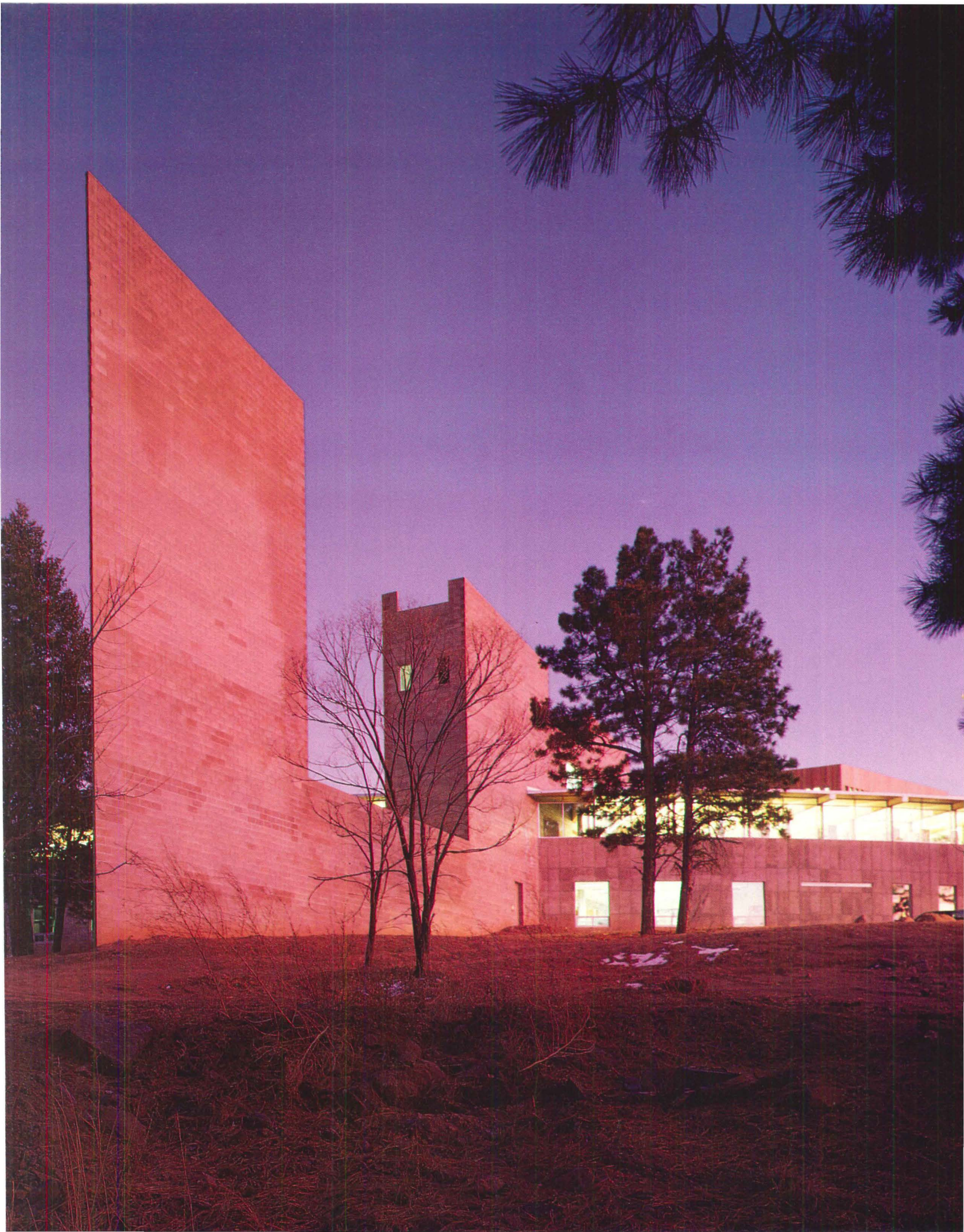
DESIGN ARCHITECT: Antoine Predock Architect—Antoine Predock (principal-in-charge); Derek Payne (associate-in-charge); Sunil Bald, Katharine Howe, Geoffrey Beebe, Lawrence Mead, Geoffrey Adams, Mischa Farrell (project team)
ARCHITECT OF RECORD: Burns and Wald-Hopkins Architects—Dave Burns, David Wald-Hopkins (project principals); Robin Shambach (project architect/construction administrator); Kim Wolfarth, Annie Nequette, Richard Huerta, Arthur Stables, Patty Marquez (project team)
LANDSCAPE ARCHITECT: Acuna-Coffeen
ENGINEERS: Turner Structural Engineering (structural); Adams & Associates (mechanical); Monrad Engineering (electrical); McGovern, MacVittie, Lodge & Associates (civil)
CONSULTANTS: Progressive Food Service (food service); Interior Technology Associates (furnishings)
CONSTRUCTION MANAGER: Landeco
GENERAL CONTRACTOR: Diversified Design and Construction
COST: $7.7 million; $85 per square foot
PHOTOGRAPHER: Timothy Hursley

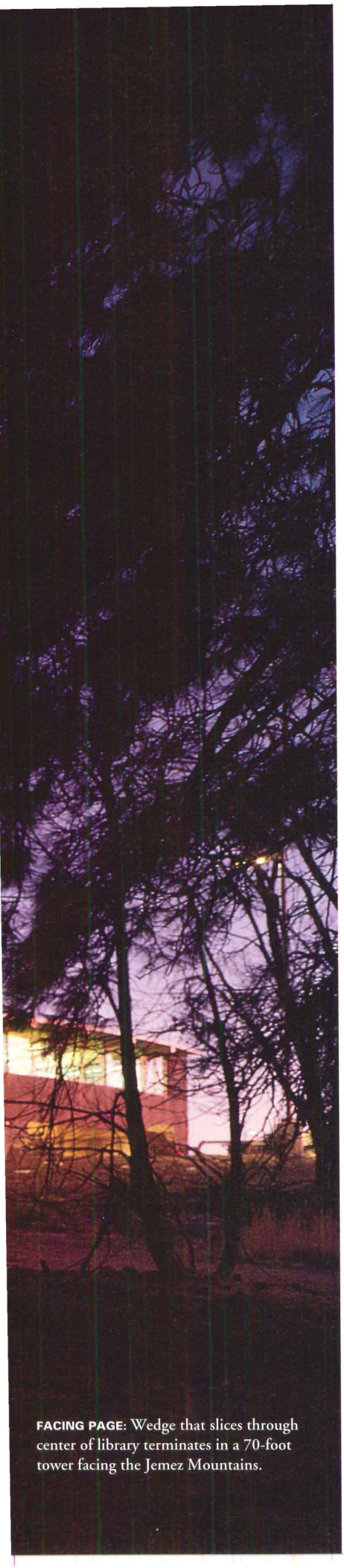




BELOW: Two-level library is a generous, dynamic space with a grand stair and walls of glass that look toward the Catalina mountains.
BOTTOM: Multipurpose facility located beneath "nomadic tent" is completely daylit and serves as a gym, cafeteria, and performance venue.
FACING PAGE: Classrooms are finished in exposed acoustideck ceilings, gypsum walls, and carpeted or concrete floors.


We Are Working Together
BIRTHDAY BUNCH
Speed Kachine





FACING PAGE: Wedge that slices through center of library terminates in a 70-foot tower facing the Jemez Mountains.

Reading Circle

Mesa Public Library
Los Alamos, New Mexico

Antoine Predock is one of America's architects most in tune with place, and that sensitivity is dramatically expressed in the new Mesa Public Library in Los Alamos, New Mexico. The building occupies the city's highest point and looks out onto the Jemez Mountains and red sandstone cliffs, honeycombed with Anasazi dwellings. Originally planned to be merely part of a larger cultural center that was to include a history museum and science center, it now stands in splendid isolation atop one of northern New Mexico's most spectacular plateaus.

Predock's design was driven by a desire to capture this powerful landscape and pull it inside. The library's main reading room forms a sweeping glass arc that frames the mountains like a pair of sunglasses. Slicing through the arc is a wedge—containing lobby, bookstore, and community meeting rooms—that terminates in a 70-foot tower with a knife edge, an element that the architect also incorporated into his Las Vegas Library and his Laboratory and Administration Building at California State Polytechnic University in Pomona. More totemic and compositional than functional, the wedge nevertheless marks the landscape in a memorable way. "It's the prow and an absolutely necessary element," Predock insists. "Public buildings of this stature should have an iconic presence."

The $6.6-million Mesa Public Library is surprisingly poetic for a community founded on particle physics and the Manhattan Project. Indeed, some Los Alamos residents were initially uncomfortable with the design. "There are a lot of analytical types up here who are mainly concerned about efficiency, flexibility, and energy conservation," explains Library Director Mary Pat Kraemer. "It was as though because a book is rectangular, a library had to be rectangular, too."

After years of heated discussion, Predock won over skeptics with a design that, while filled with surprises, satisfies the building committee's demands—principally that tripling the size of the old library (48,000 square feet versus 16,000 square feet) would not also triple the size of the library staff. The architect solved that problem by creating a fluid interior filled with windows, overlooks, light wells, and view corridors. One librarian can monitor an entire wing, including study carrels and seminar rooms, from a single vantage point. The openness also transformed movement through the building into a kind of theater, with many different sets, entrances, and exits.

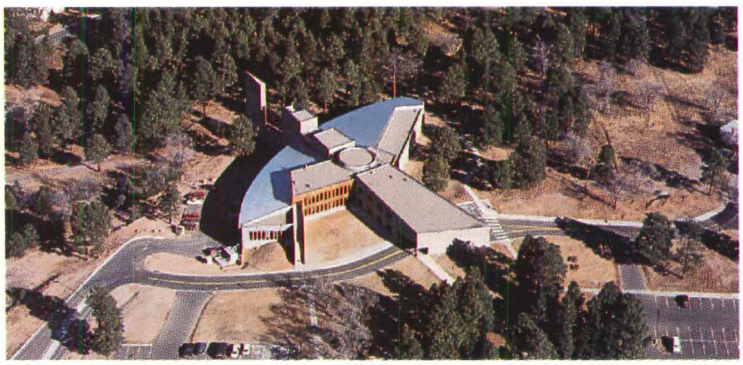
The library's basic plan, on the other hand, is clarity itself. Circulation, reference, and adult stacks occupy upper or ground floors, with staff offices, small reading areas, and a gallery displaying the work of local artists above and children and young adult areas below. A large drum evoking an Indian *kiva* forms the center of the building with an internal spiraling staircase. But efficiency was hardly Predock's only concern; like all good architects, he is aware that buildings have emotional and theatrical agendas as well. The tower belongs to those other dimensions, as do the mysterious spaces and views sprinkled throughout the building.

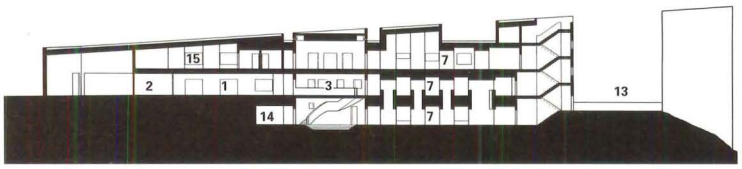
Inside the front door, visitors encounter a series of rectangular-framed openings, from seven to three-and-one-half feet high, that telescope as they recede toward the wedge like a row of Josef Albers paintings. The sides are formed by columns that carry some of the building's heating and cooling equipment while also creating small, hidden study spaces. The columns push through to the upper floor, where they become a forest of flat surfaces for hanging paintings, photographs, and other artwork. The ground level is an architectural labyrinth—a favorite Predock device—in which straight plays against curved, round against square, solid against void, and intrigue rules. The floor of the central drum is a carpeted amphitheater for children's plays, readings, and wrestling.

Having elaborated on the library's basic geometry, Predock chose to underplay the finishes. The exterior is cast concrete and

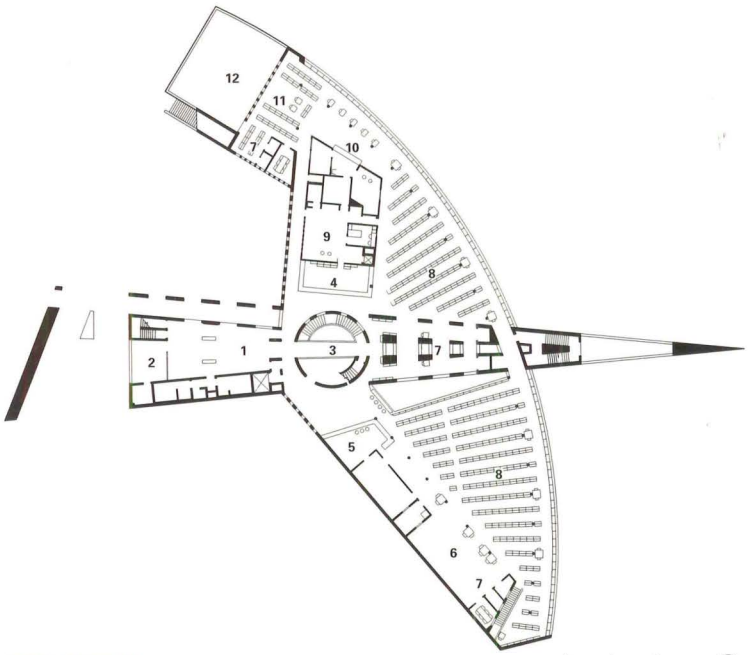
The library diagrams the sweep of the panorama and alludes to the volcanic promontories nearby.—Antoine Predock

BELOW LEFT: From the air, plan of library evokes bird in flight.
SECTION: Library consists of offices (top), reference and circulation (center), and children's areas (below).
PLAN: Stacks and offices radiate from central rotunda. Lobby, bookstore, and meeting rooms occupy wedge.
FACING PAGE, TOP: View from south shows public entrance and wing of offices.
FACING PAGE, BOTTOM: Entrance colonnade is located to west of wedge.





NORTH-SOUTH SECTION



FIRST FLOOR PLAN

1 LOBBY
2 BOOKSTORE
3 ROTUNDA
4 CIRCULATION DESK
5 REFERENCE DESK
6 REFERENCE SERVICES
7 STUDY CARRELS
8 ADULT COLLECTION STACKS
9 WORKROOM
10 SPECIAL SERVICES
11 PERIODICALS
12 READING GARDEN
13 CHILDREN'S TERRACE
14 YOUNG ADULT READING
15 MEETING ROOM

rough masonry block, with a few sections of redwood siding to recall the building's Southwestern mountain setting.

The interiors are primarily made of concrete, painted sheetrock with maple veneer on tables and bookcases. The reading room ceiling is covered in Douglas fir, supported by laminated fir trusses that impart a subdued rustic feeling reminiscent of the adjacent Fuller Lodge, which was part of the Manhattan Project. The most puzzling element is a steep ceremonial staircase rising from the parking lot to the second level: Instead of the main entrance it is an emergency stair, originally intended to form one wall of an outdoor reading garden. The idea has since been scrapped, leaving yet another enigmatic architectural fragment. "I've created quite a few of those," Predock laughs.

Now that the Mesa Public Library has been open a few months, public uneasiness about its unorthodox design has subsided. The community recognizes that the building offers both new intellectual resources and an unforgettable landmark. From above, the library resembles a bird in flight while from the ground level, it displays some of the intricate cellular quality of an Indian pueblo, beckoning people in from the windy mesa. By joining natural, cultural, and technological associations, Predock has thoroughly rooted the library in its place.—*David Dillon*

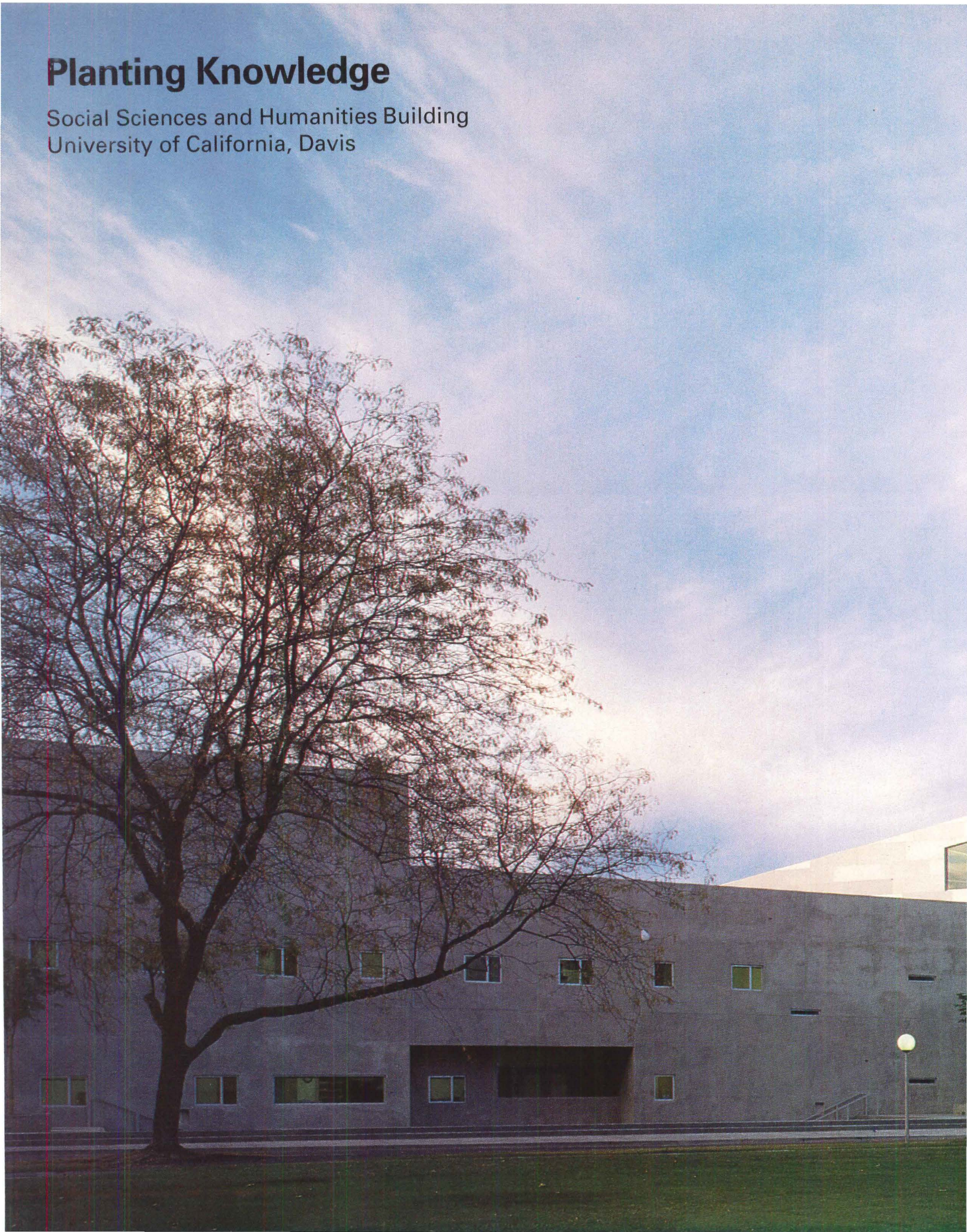
MESA PUBLIC LIBRARY
LOS ALAMOS, NEW MEXICO

ARCHITECT: Antoine Predock Architect—Antoine Predock (principal-in-charge); Geoffrey Beebe (associate-in-charge); Paul Gonzales, Brett Oaks (project managers); Rebecca Ingram, George Newlands, Deborah Waldrip, Linda Christenson, John Brittingham, Cameron Erdmann, Geoffrey Adams, Mark Donahue (project team)
ENGINEERS: Randy Holt & Associates (structural); P2RS Group (mechanical); Telcon Engineering (electrical); County of Los Alamos (civil)
GENERAL CONTRACTOR: Bradbury & Stamm
COST: $5.2 million; $98 per square foot
PHOTOGRAPHER: Timothy Hursley

BELOW: View of light well between wedge (left) and reading room (right) reveals intersecting geometries. Douglas fir trusses in main reading room recall building's mountainous setting.
FACING PAGE, TOP: Rotunda, with bridge and stairway, forms core of building.
FACING PAGE, BOTTOM: Base of rotunda is an amphitheater for children to read, watch performances, and play.

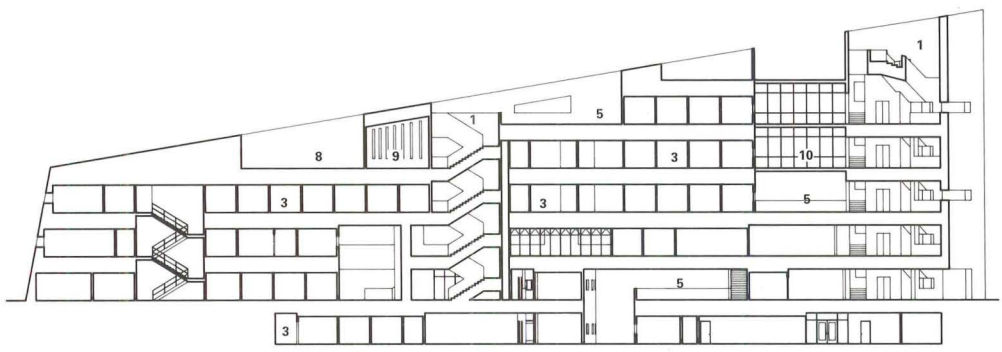
Planting Knowledge

Social Sciences and Humanities Building
University of California, Davis



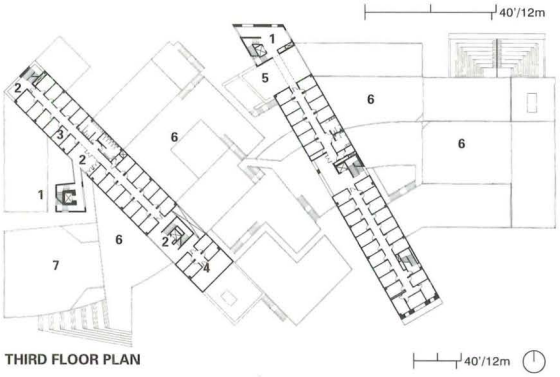
THESE PAGES: Social Sciences and Humanities Building forms gateway to UC Davis campus, offering a low-rise, villagelike complex punctuated by stair tower of history building.

BELOW: Aerial view of the multilevel Social Sciences and Humanities Building shows outdoor courtyards and office blocks slicing through site.
SECTION: History department block includes offices, library, and stair tower.
PLAN: Complex interweaves 14 separate departments and programs.
FACING PAGE: Stair tower extends from agricultural economics building. Glass bridge linking campanile to history department is visible in background.



NORTH-SOUTH SECTION

1 STAIR TOWER
2 BALCONY
3 TYPICAL OFFICE
4 COMPUTER LAB
5 TERRACE
6 COURTYARD BELOW
7 LECTURE HALL BELOW
8 MECHANICAL
9 LIBRARY
10 GLASS BRIDGE



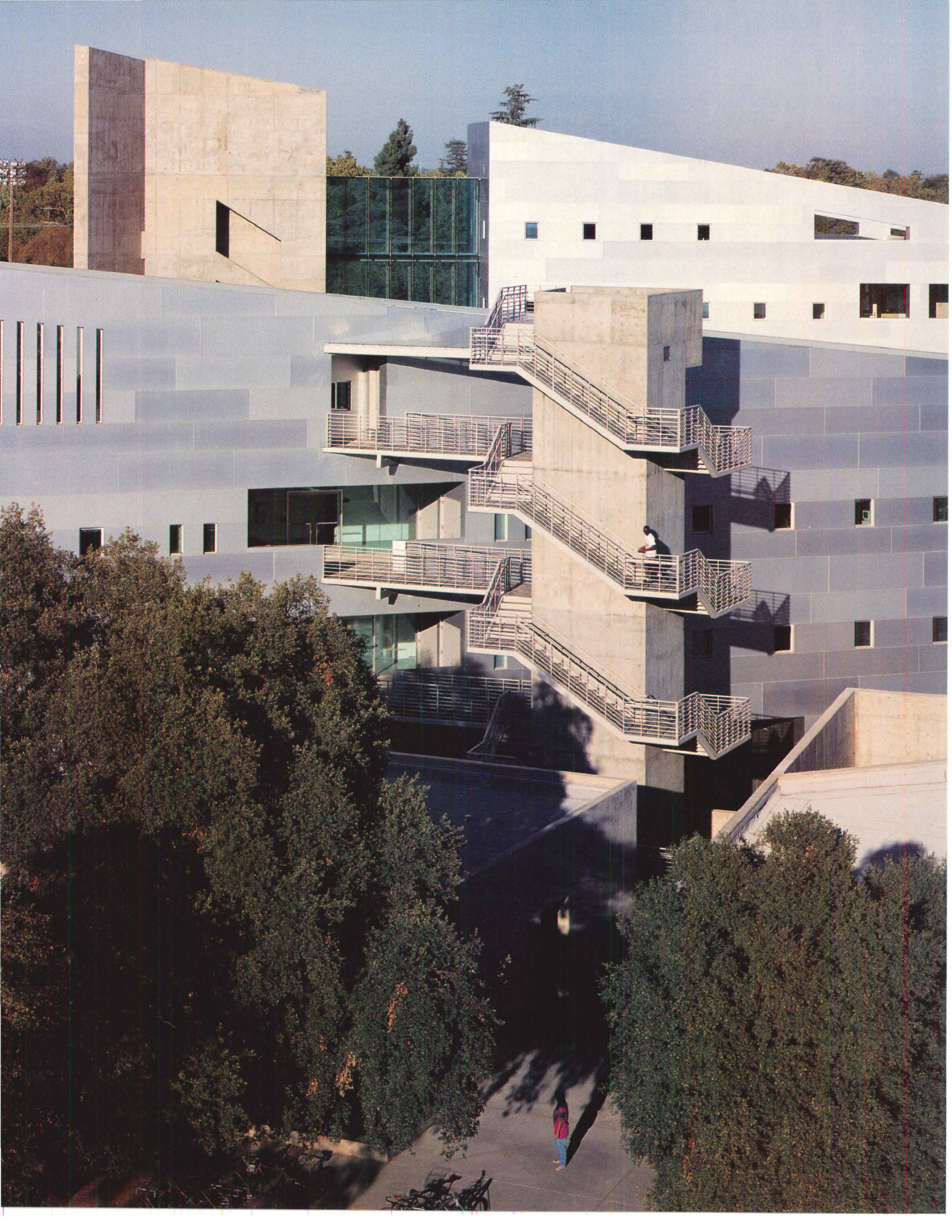
THIRD FLOOR PLAN

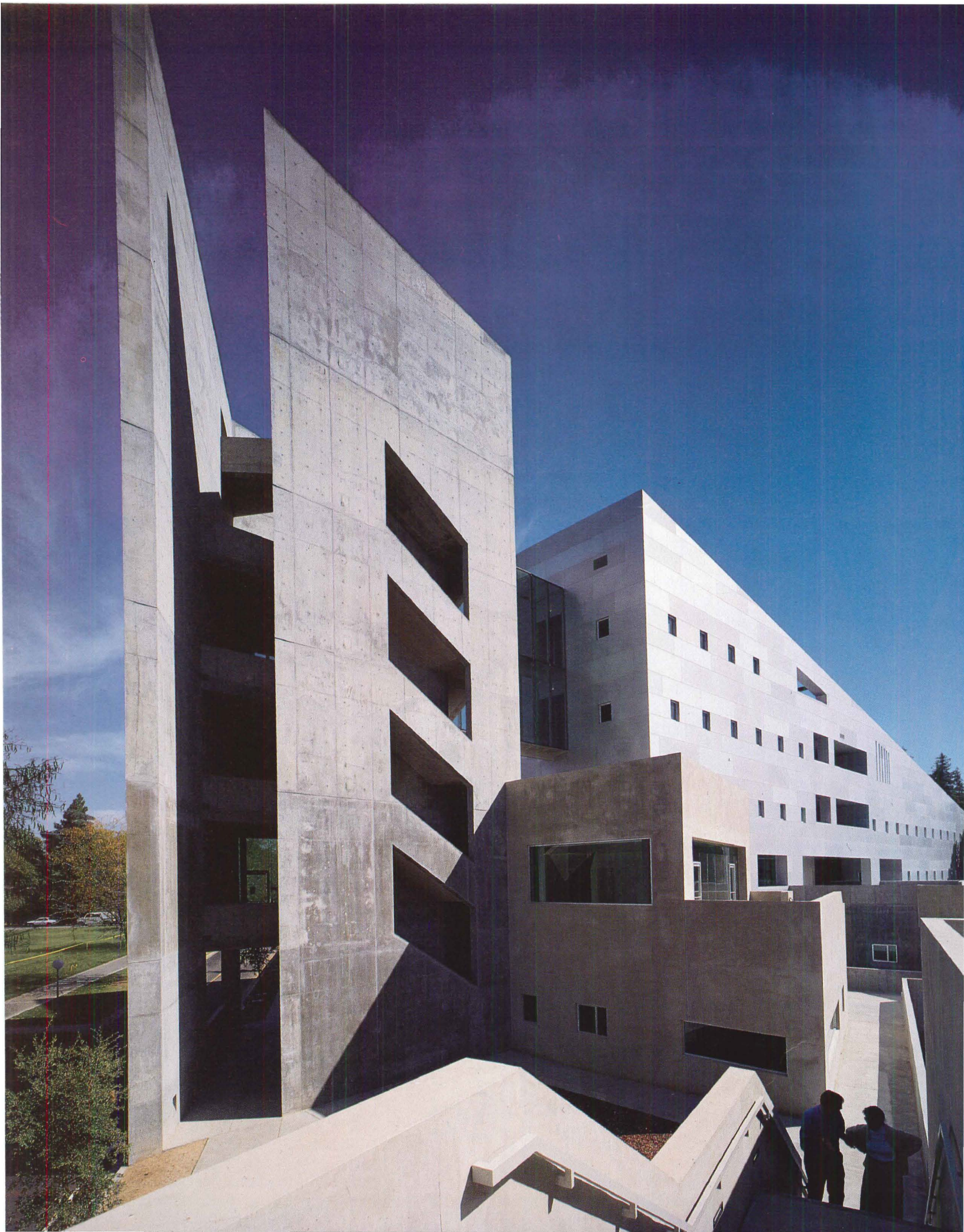
Like the mythic figure Antaeus, buildings by Antoine Predock draw their strength from the earth; Predock's University of Wyoming Museum, for example, is aligned with nearby mountain peaks. When his sites are flat and divorced from the landscape, the New Mexico architect reinvents the ground to give his structure meaning. Frequently, he constructs the site with the building, planting a structure in the ground so it becomes an instrument for examining the earth, landscape, and sky. "I instinctively connect a site to the larger context of the natural realm," says Predock. Rooted and aspiring, his buildings—even prosaic office structures—often achieve mythopoetic stature.

The latest in a string of campus buildings by Predock, the Social Sciences and Humanities Building at the University of California, Davis (UCD), is a multilevel complex of departmental buildings loosely organized around irregularly shaped courtyards. Two long office slabs with angled rooflines housing the two largest departments—agricultural economics and history—slice through the villagelike complex jutting upward, like runways to the sky. Although the building resembles the ancient observatory at Jaipur, its program is in fact much more down to earth, accommodating offices for eight departments.

According to Senior Architect Clayton Halliday from the university's Office of Architects and Engineers, UCD wanted a courtyard building and diagonal circulation connecting a prominent campus entrance to the quad; each department was to have its own identity and entry.

It was on journeys across California's Central Valley that Predock observed that the valley was basically a bread basket framed by the Coastal and Sierra ranges. Inspired more by this greater picture than by the direct architectural context, the architect decided to integrate the campus into its historical basis of agriculture. "When I started looking at patterns on the surface of the valley, I saw the all-pervasive agricultural grid intersected





This scheme takes its cues largely from the agricultural plains and mountain ranges, rather than from the immediate context of the campus. —Antoine Predock

FACING PAGE: Main entrance into Social Science and Humanities complex leads to a lower plaza straddled by rising block of history department (left).
BELOW: Northern face of agricultural economics department's long block (right) is sheathed in panels made of anodized aluminum.
BOTTOM: Lower courtyard leads to low block of dean's office (right) and history department stair tower (center).

by the Sacramento River," Predock explains. He started the design by drawing a meandering S across the site, a former parking lot. The figure diagonalized the site and gave Predock a fundamentally organic ordering principle that disrupted the campus' dominating orthogonality. "Initially, I saw the mark as a water channel, with eddies along it," he remarks. "The eddies became multileveled courtyards that always referred to the lowest level, one story below grade." To distinguish the separate academic departments from one another, Predock created a group of structures in an interesting array of geometries departing radically from the normative, double-loaded building based on a stacked cellular organization. "The design takes apart that kind of building and reconstitutes it in a way that has to do with the site, desire lines, and the meandering alignment," says Predock.

Former UCD Chancellor Ted Hullar encouraged the architect both to create an image singular to this campus and develop the site three-dimensionally. "The chancellor and I had discussions about how one could go into the earth," recalls Predock. "Going into the ground achieves a thermal stability. Besides, I like descents into grade and the intimacy of being in the earth but open to sky."

Predock built the lower structures in concrete and stucco; the solidity of the concrete and the cubic mass of the forms make the lower elements seem quarried. Curved concrete walls, some with curvilinear gardens, recall the S in his original sketch.

Across this landscape, the two office blocks sheathed in panels of anodized aluminum soar to peaks overlooking expansive views. The history block climaxes in a partially autonomous stair and elevator tower that gives the otherwise mesalike complex a vertical profile. High walls of one roof terrace square off a wide view of the sky while those of another break to reveal geographical alignments across the Central Valley. It is here in this campanile that Predock reassociates the campus with the larger landscape.

BELOW: Center for Cooperatives and Agricultural Issues (center) is located between buildings of history (left) and agricultural economics (right).
BOTTOM: Curved garden swath recalls original inspiration of waterways crossing the landscape.
FACING PAGE: Exposed staircase leads from grade to upper floors of agricultural economics department.

The raw concrete, natural stucco, and anodized aluminum lie within the same light color palette, but the metal, which reflects sunlight and dissolves visually in the valley's frequent fogs, has a liveliness that contrasts with the more inert materials serving the earth-bound forms. Predock detailed the walls for solidity, eliminating extraneous elements that diminish the power of its primary shapes. Frequent bridges and underpasses give this otherwise volumetric ensemble great porosity, framed views, and spatial richness.

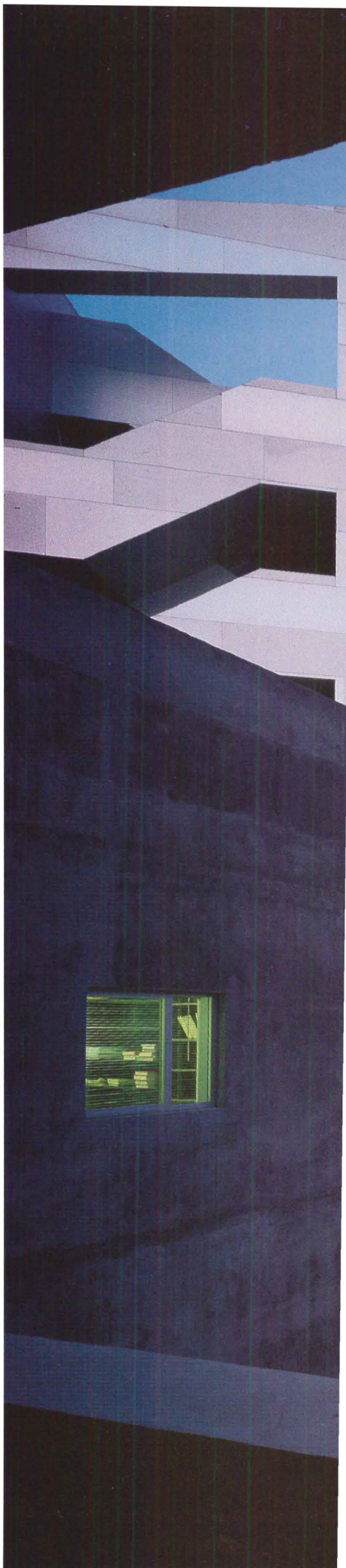
The design defines a world within itself, rich enough to be a kind of architectural exploratorium. Students ride mountain bikes across its topography, couples discover the lookout in the stair tower, and teachers profess to one another on bridges overlooking terraces.

If, as Le Corbusier stated, architecture is the magnificent play of forms in light, this building is a mature work. But the design is not simply deft formalism. The UC Davis building works like an optical instrument on its site, and anyone who sees with this building is delivered to a larger geographical and cultural context.—*Joseph Giovannini*

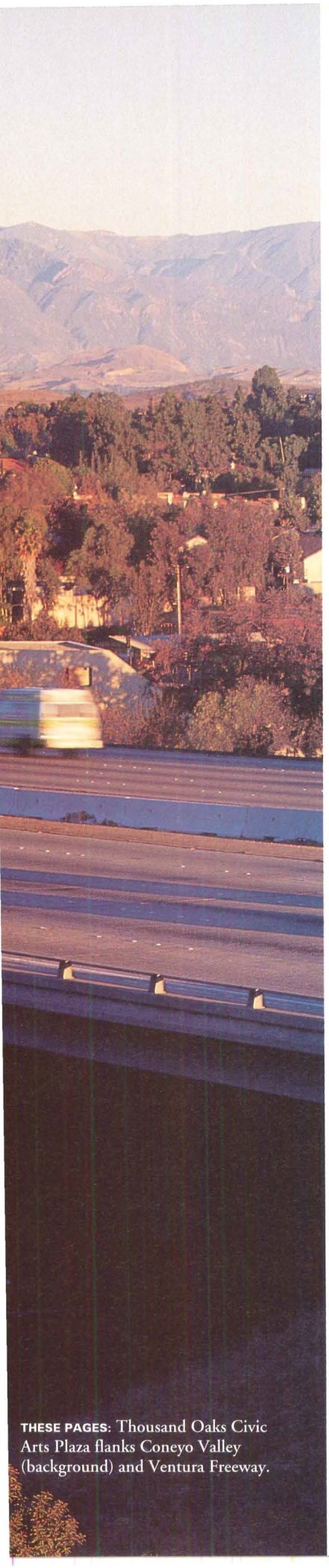
SOCIAL SCIENCES AND HUMANITIES BUILDING
UNIVERSITY OF CALIFORNIA, DAVIS
DAVIS, CALIFORNIA

ARCHITECT: Antoine Predock Architect—Antoine Predock (principal-in-charge); W. Anthony Evanko (associate-in-charge); Geoffrey Adams, Curtis Scharfenaker (project managers); Jon Anderson, Geoffrey Beebe, Joseph Andrade, Sunil Bald, Jorge Burbano, Phyllis Cece, Michael Chin, Devendra Contractor, Mark Donahue, Mischa Farrell, Cameron Erdmann, Paul Gonzales, Lorraine Guthrie, Katharine Howe, Rebecca Ingram, Aron Idoine, Steven Maurice, David Mishler, George Newlands, Timothy Nichols, Brett Oaks, Chris Romero, David Somosa, Deborah Waldrip, Michael Wewerka (project team)
LANDSCAPE ARCHITECT: Tsuboi/Mamuyac & Associates
ENGINEERS: Robin E. Parke Associates (structural); JBA Consulting Engineers (mechanical/electrical); Chavez-Grieves Consulting Engineers (civil); Wardin-Cockriel & Associates (acoustics)
GENERAL CONTRACTOR: Perini Building Company
COST: $22 million; $160 per square foot
PHOTOGRAPHER: Timothy Hursley

BELOW: Courtyard borders glass-walled classrooms that follow curve of site.
BOTTOM: Lecture hall in wing to west of agricultural economics seats 369.
FACING PAGE: Northeastern facade of history department is designed with square windows for offices; long strip windows serve libraries, conference rooms, and computer labs.




NORTH
Fillmore
RIGHT 2 LANES



THESE PAGES: Thousand Oaks Civic Arts Plaza flanks Coneyo Valley (background) and Ventura Freeway.

Freeway Acropolis

Civic Arts Plaza, City of Thousand Oaks
Thousand Oaks, California

Bambi meets Godzilla" is how Antoine Predock describes the site of the Thousand Oaks Civic Arts Plaza, a virgin meadow beside the Ventura Freeway less than an hour's drive north from Los Angeles. Judging from the encroaching development of strip malls and office buildings, the site's tall grasses and live oaks didn't stand a chance, until the City of Thousand Oaks commissioned Predock to design its new civic center and infuse the place with a sense of urbanity.

The 180,000-square-foot complex is the architect's largest institutional project to date. It encompasses government offices for the city, a 380-seat council chamber and community theater, an 1,800-seat auditorium, a 7-acre community park, and an 850-car parking garage. The architect housed this disparate program in forms that are characteristically earthbound and austere, but the sum of the building's parts seems confused: it shouldn't be so difficult, for example, to find the entrance to City Hall.

The project's massing was complicated by the primary challenges of the site: an abrupt, 90-foot change of grade from the freeway to the existing meadow, and the freeway's noise. Predock chose to exploit the contrast between nature and the manmade with a facade that squarely addresses the freeway and an outdoor plaza that opens like a belvedere onto the broad panorama of the valley. He piled the largest chunks of program—auditorium and parking garage—at the freeway's edge to form the greatest possible sound barrier, stepped down the city hall and its government offices toward the town's main boulevard to the north, and skirted the building's base with a meandering public park.

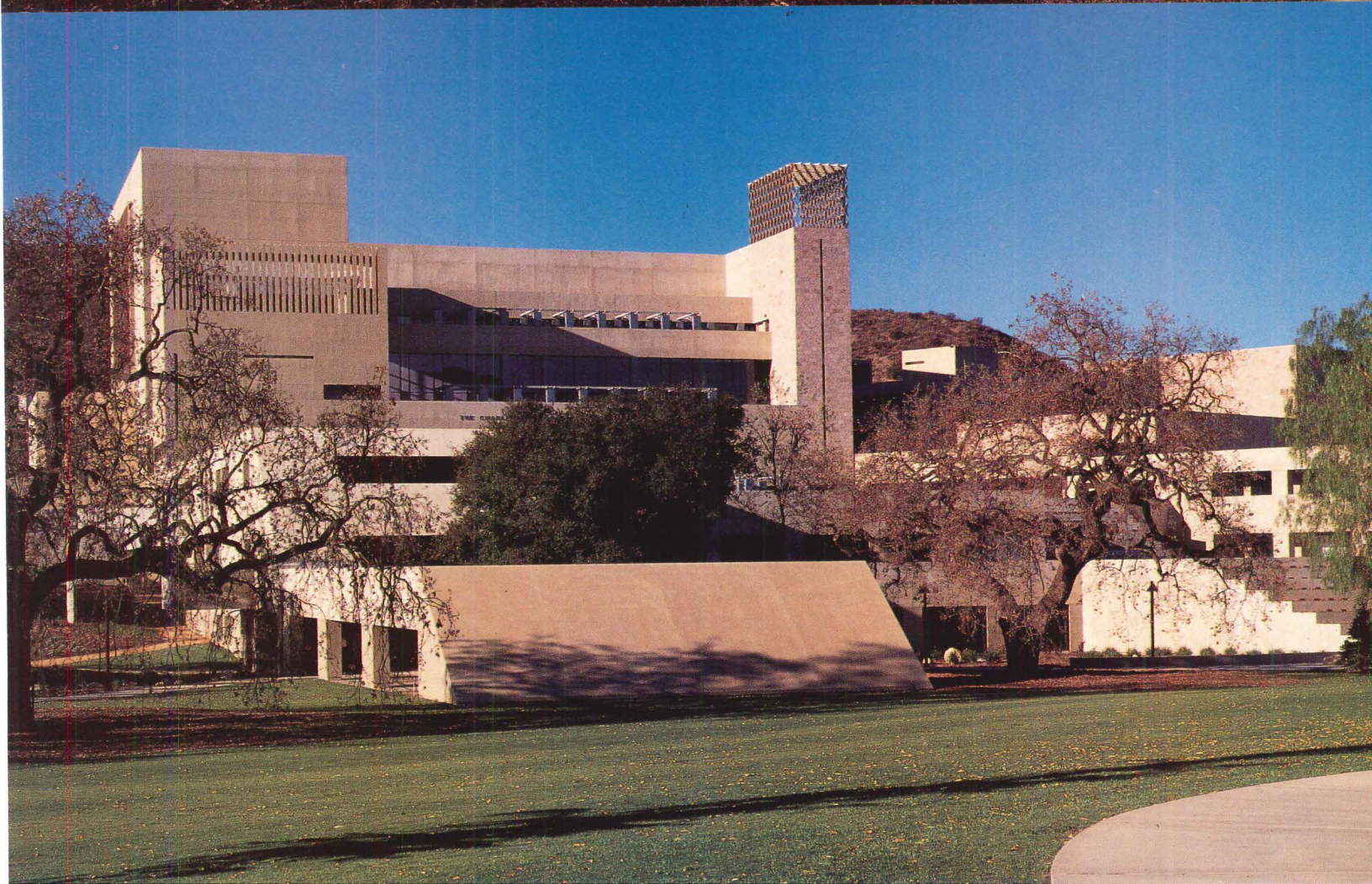
The monumental scale and head-on orientation of the auditorium to the freeway make the Civic Arts Plaza impossible to miss at 70 miles per hour: The rear of the auditorium's fly tower faces east toward oncoming traffic like a giant billboard. Its planar surface, sheathed in a tapestry of thin copper panels, symbolizes the stage behind it. Sharp and geometric, the fly tower's facade establishes a complementary threshold to the Coneyo Valley, which unfolds in expansive undulations beyond.

From the freeway, the Civic Arts Plaza conveys the authority of an acropolis—a welcome metaphor in the arid physical and cultural landscape of Thousand Oaks. The impression of the complex from the town's main boulevard, however, is not of a group of important buildings hierarchically organized on top of a hill. From the north, the entire composition extends in a rambling, upward sweep from the edge of the boulevard toward the crest of the hill on the opposite side of the freeway. This cascading mass reestablishes the gentle slope that was presumed to exist before the freeway's 90-foot-high berm plundered the valley. And its volumes, troweled with tawny-colored stucco, match the region's dry grasses.

But this stepped configuration reduces two floors of government offices to what in effect is the auditorium's basement: The theater and its monastic outdoor plaza span the roof of City Hall.

In Predock's scheme, therefore, the arts are deemed more important than government. The project's sectional hierarchy may represent Southern California's entertainment-focused economy, but civic buildings, especially city halls, should be charged symbols of community and democracy—where admission is free.

The Thousand Oaks civic center's plaza is accessible to all, but City Hall's visitors are likely to miss it unless they're buying theater tickets. You can't see the plaza from the boulevard or the freeway, and it is reached only by circuitous, orchestrated paths: up the elevator or stairs from the city hall's lobby, which is announced by a mean, west-facing crevice at the base of the building; over a concrete ramp that winds up from the building's east side; or, most preferably, through an asphalt-paved forecourt at the top of the hill in the southwestern corner.

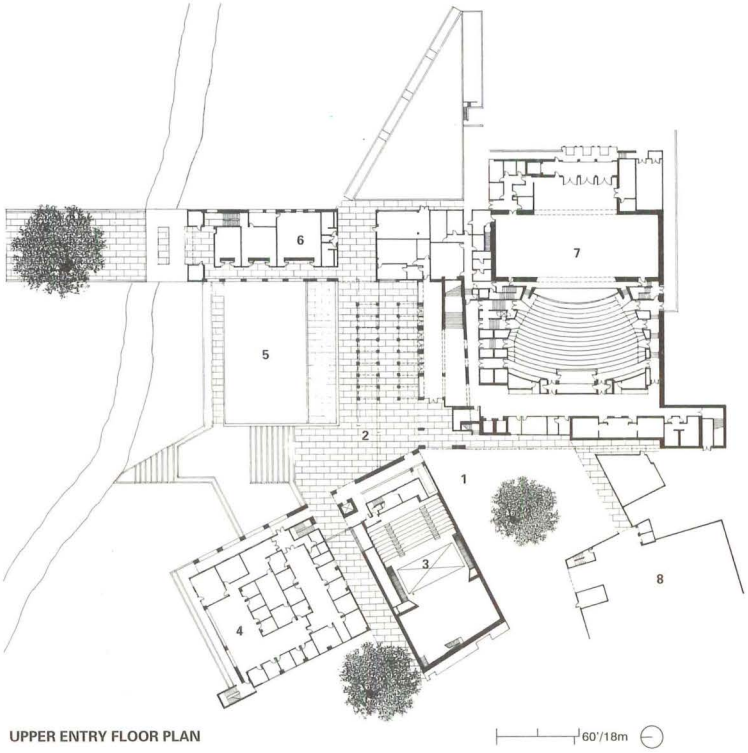


FACING PAGE, TOP: Park surrounds north-facing government offices.
FACING PAGE, BOTTOM: Predock stepped mass of Civic Arts Plaza down to boulevard, with auditorium's fly tower (upper left) and stair tower (center) on plinth formed by government offices.
BELOW: Civic Arts Plaza presides over undeveloped Southern California valley of tall grasses and live oaks.
PLAN: Theater forecourt (bottom right) leads to plaza. Council chamber (bottom center) and meeting rooms (top left) flank entrance to auditorium.

The forecourt is defined to the north by the Council Chamber, windowless and unadorned, and to the south by the parking garage. To the east stands the auditorium's stair tower and "Pictograph Wall"—Predock's homage to ancient local petroglyphs, seductively represented with acrylic tubes embedded into the facade.

In the spirit of Predock's earlier work, the plaza and its reflecting pool establish our primal relationship with earth, water, and sky. From here one enters the theater as if it were a grotto; inside, the auditorium's modeled plaster walls suggest the depths of a cave.

It's clever how the plaza's pool prevents us from approaching the outer edge of the terrace, blocking the view of the street two stories below. Predock thereby ensures that no matter how many awful buildings sprout from the surrounding fields, none will obstruct our view of Nature, naked and enthroned on the horizon.—*M. Lindsay Bierman*



1 FORECOURT
2 CIVIC PLAZA
3 THEATER
4 CITY OFFICES
5 REFLECTING POOL
6 MEETING ROOM
7 CIVIC AUDITORIUM
8 PARKING GARAGE

UPPER ENTRY FLOOR PLAN

60'/18m

CIVIC ARTS PLAZA
CITY OF THOUSAND OAKS
THOUSAND OAKS, CALIFORNIA

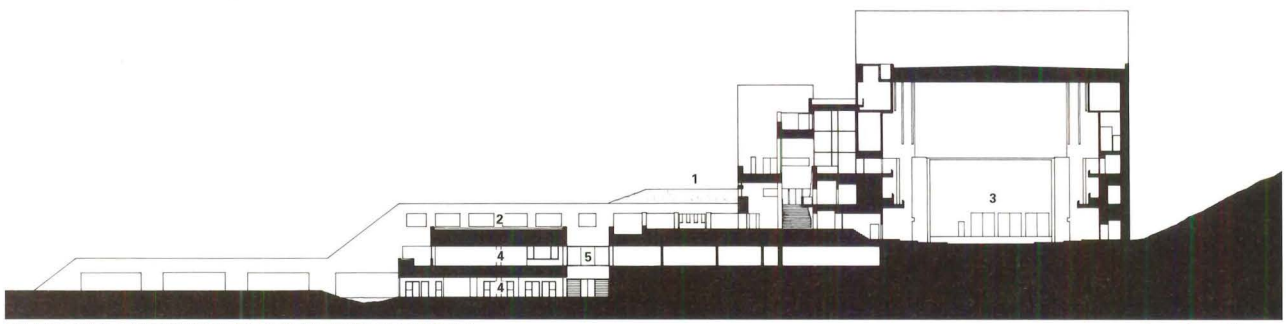
DESIGN ARCHITECT: Antoine Predock Architect—Antoine Predock (principal); Geoffrey Beebe (associate-in-charge); Douglas Friend (project architect); Chris Calott, Haji Uesato, Paul Gonzales, Deborah Waldrip, Sam Sterling, Chris Romero, David Mishler, Michael Wewerka, Joseph Andrade (project team)
ARCHITECT OF RECORD: Dworsky Associates—Daniel Dworsky (principal-in-charge); Robert Rosenberg, Robert Newsom (project directors); Kenneth Stein (design coordinator); Kenneth Rossi (project architect); Watana Charoenrath (field architect); Paz Costelo, Ira Mann, Oscar Castelo (job captains); Janet Suen, James Noh, Celso Velarde, Virgilio Merina, Hue Tong, Fred Antonio (technical staff)
LANDSCAPE ARCHITECT: EDAW
ENGINEERS: John A. Martin & Associates (structural); Nack Engineering (mechanical); Frederick Russell Brown & Associates (electrical); RBA Partners (civil)
CONSULTANTS: McKay Conant Brook (acoustics); Knudson & Benson (theater); Adamson Associates (cost estimator); Specifications West (specifications); Robert M. Morris (audio/visual); Interior Architects (space planners); Lighting Design Alliance
CONSTRUCTION MANAGER: Lehrer McGovern Bovis
COST: $53.5 million; $237 per square foot
PHOTOGRAPHER: Timothy Hursley

This building confronts the fantastic duality of Southern California—the manmade realm and the landscape.

—Antoine Predock

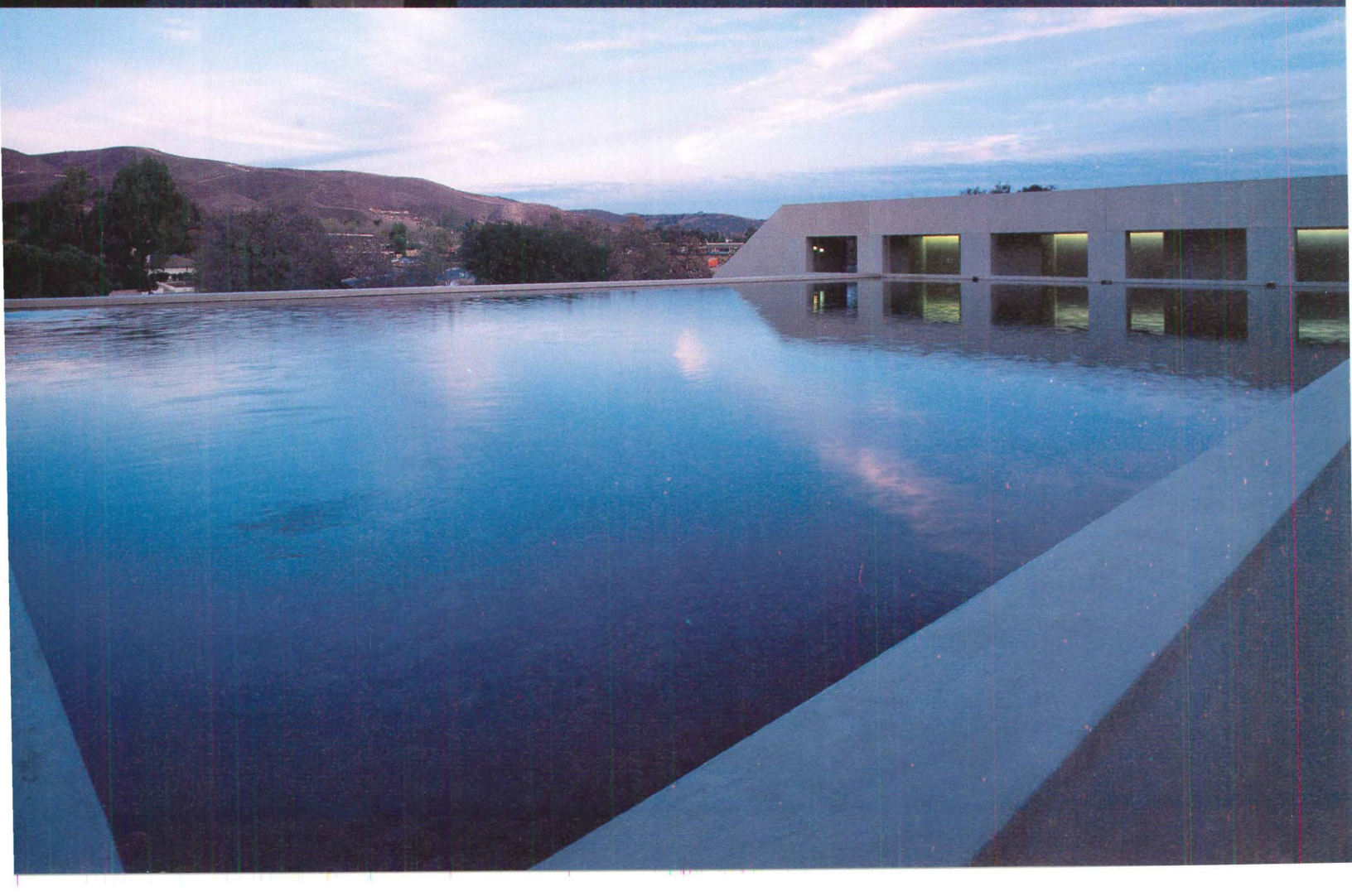
BELOW: Daylight penetrates City Hall's rooms and offices through light court. **SECTION:** Auditorium lobby (right), plaza, and reflecting pool (left) span roof of Thousand Oaks' City Hall. **FACING PAGE, TOP:** Reflecting pool creates thermal barrier to government offices below. Zinc-clad pergolas (left) flank entrance to auditorium and upper-level terraces. **FACING PAGE, BOTTOM:** Plaza faces north across pool toward Coneyo Valley.

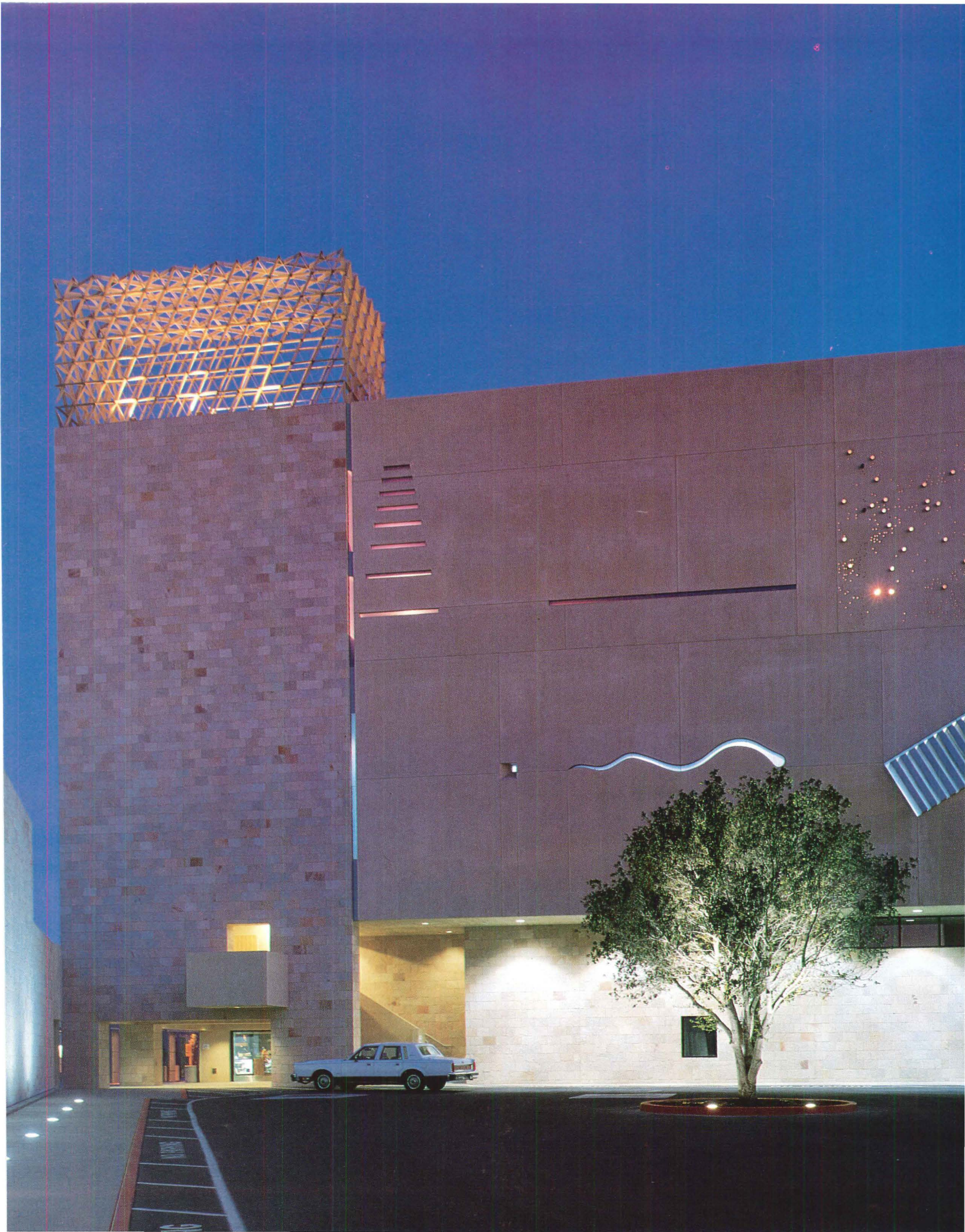
1 CIVIC PLAZA
2 REFLECTING POOL
3 CIVIC AUDITORIUM
4 CITY OFFICE
5 LIGHT COURT

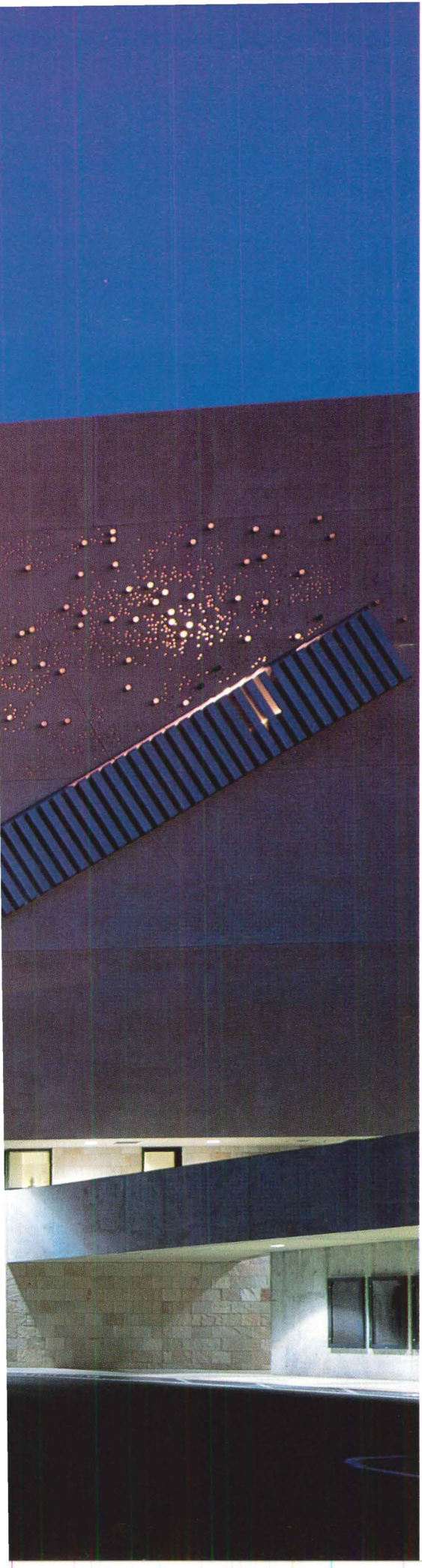


NORTH-SOUTH SECTION THROUGH CIVIC AUDITORIUM AND PLAZA

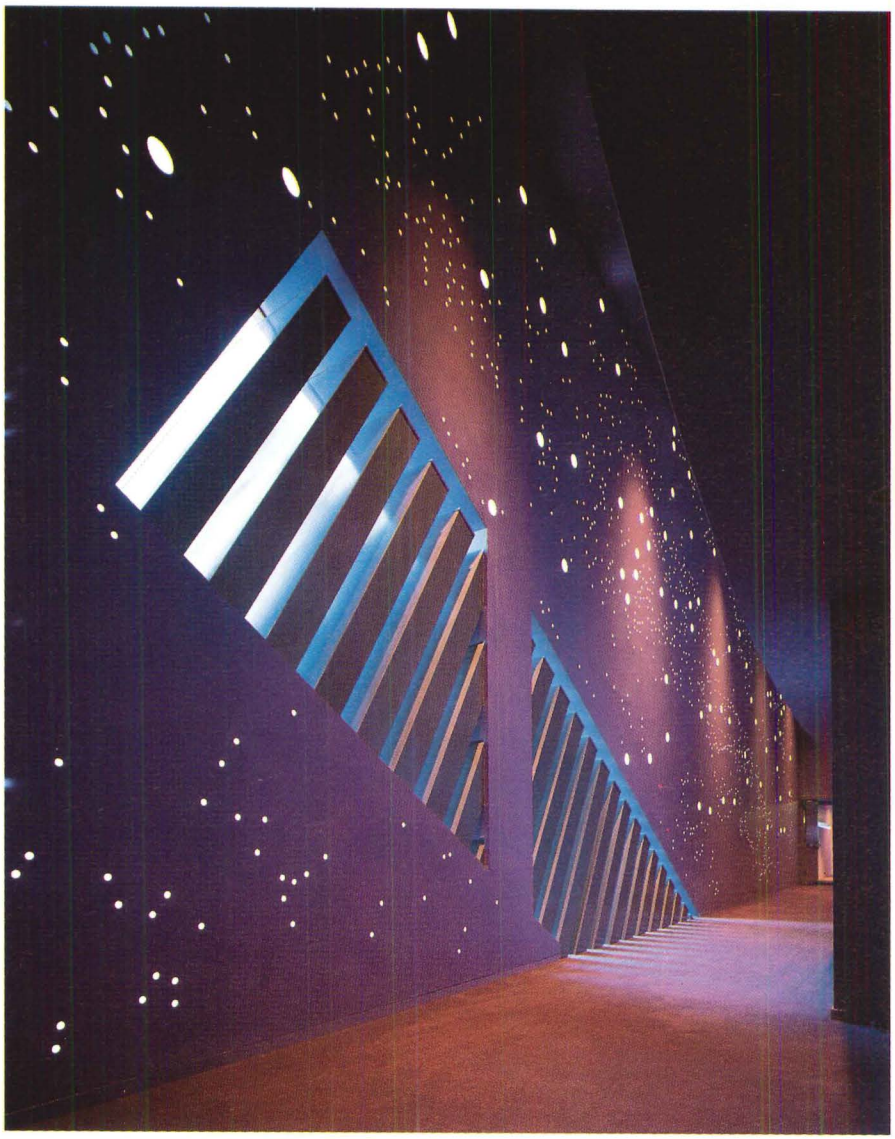
40'/12m





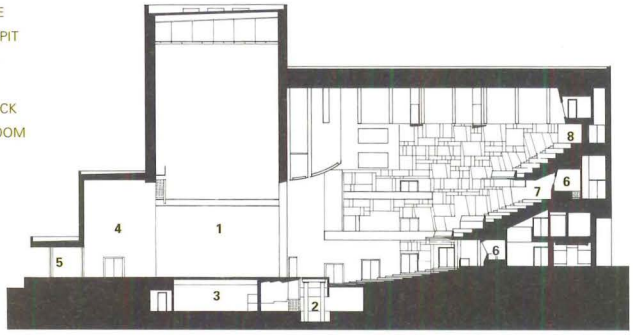


THESE PAGES: Indian sandstone sheathes steel-capped stair tower of auditorium at corner of forecourt. Pattern on auditorium's Pictograph Wall recalls local Indian petroglyphs.
BELOW: Acrylic tubes set into wall form constellation in vestibule to theater.

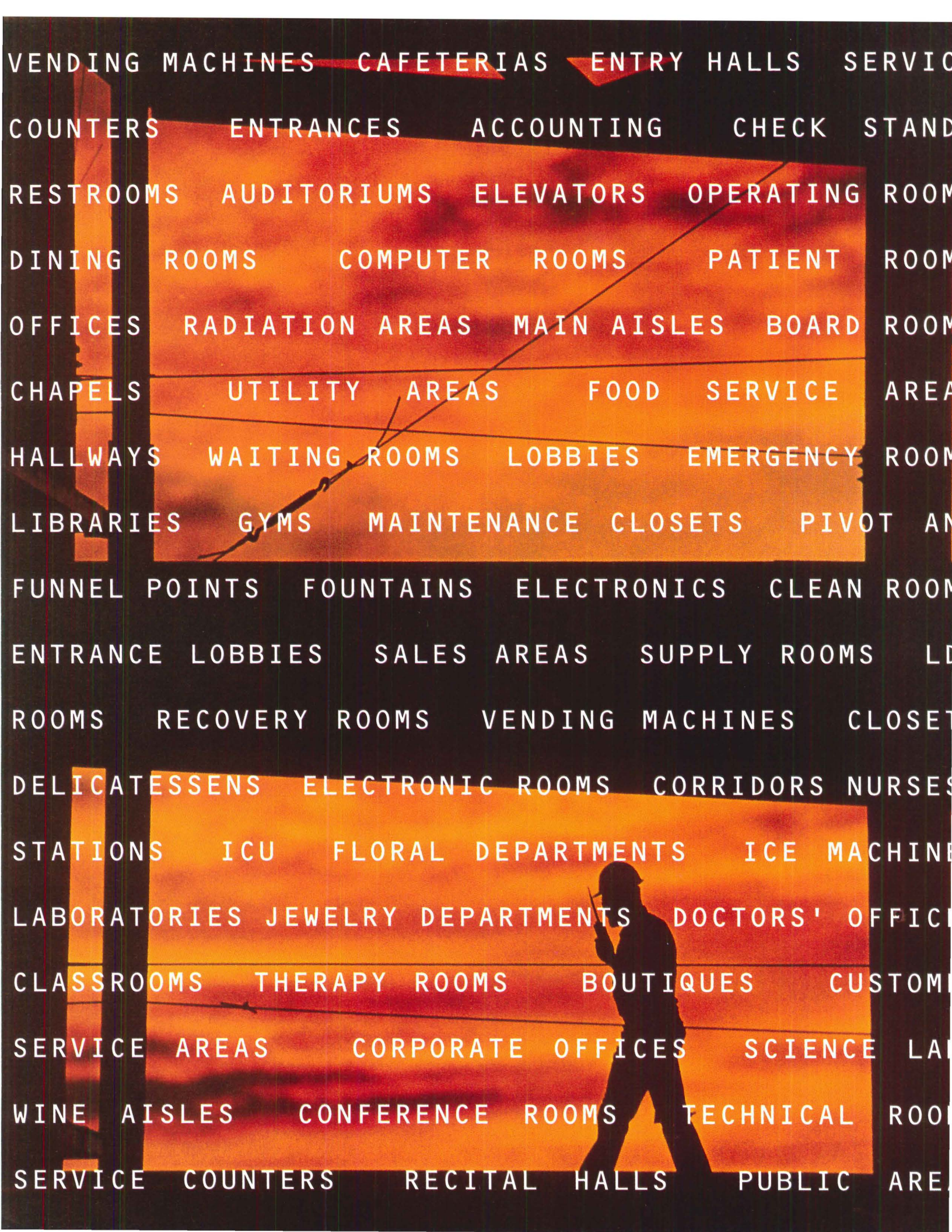


BELOW: Oak panels clad staircase in granite-floored auditorium lobby.
BELOW RIGHT: Window at eastern end of lobby overlooks freeway.
SECTION AND FACING PAGE: Plastered-sheetrock walls of civic center auditorium evoke talus of a cliff.

1 STAGEHOUSE
2 ORCHESTRA PIT
3 TRAP ROOM
4 BACK STAGE
5 LOADING DOCK
6 CONTROL ROOM
7 MEZZANINE
8 BALCONY



EAST-WEST SECTION THROUGH AUDITORIUM


VENDING MACHINES CAFETERIAS ENTRY HALLS SERVIC
COUNTERS ENTRANCES ACCOUNTING CHECK STAND
RESTROOMS AUDITORIUMS ELEVATORS OPERATING ROOM
DINING ROOMS COMPUTER ROOMS PATIENT ROOM
OFFICES RADIATION AREAS MAIN AISLES BOARD ROOM
CHAPELS UTILITY AREAS FOOD SERVICE AREA
HALLWAYS WAITING ROOMS LOBBIES EMERGENCY ROOM
LIBRARIES GYMS MAINTENANCE CLOSETS PIVOT AN
FUNNEL POINTS FOUNTAINS ELECTRONICS CLEAN ROOM
ENTRANCE LOBBIES SALES AREAS SUPPLY ROOMS LO
ROOMS RECOVERY ROOMS VENDING MACHINES CLOSET
DELICATESSENS ELECTRONIC ROOMS CORRIDORS NURSES
STATIONS ICU FLORAL DEPARTMENTS ICE MACHINE
LABORATORIES JEWELRY DEPARTMENTS DOCTORS' OFFICE
CLASSROOMS THERAPY ROOMS BOUTIQUES CUSTOM
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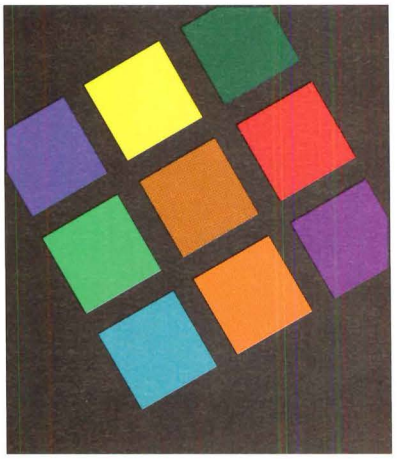

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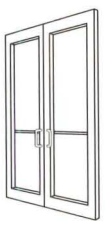

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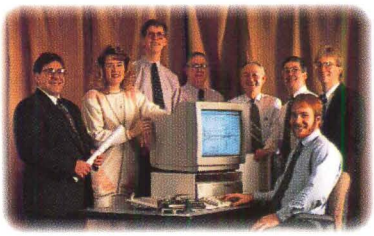

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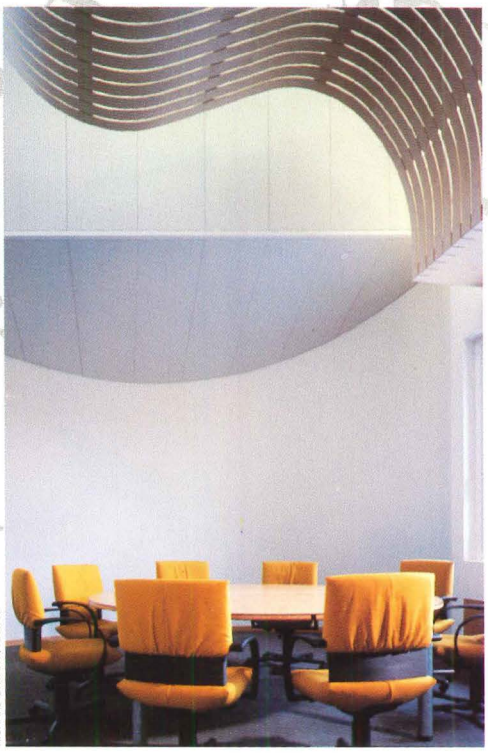
Technology & Practice



RICHARD BRYANT / ARCAID

Like the proverbial blinking light bulb that signifies a bright new idea, our focus on lighting in this month's Technology & Practice section illuminates imaginative, energy-efficient fixtures. We examine site-specific designs such as Frank Gehry's undulating baffle in Vitra's corporate headquarters (above), which diffuses light with sculptural vigor. Evaluating such architectural lighting strategies, from schematic design to post-occupancy, is now possible with new tools developed by three university-based research programs, as a second article points out.

New types of project delivery are meeting clients' demands for quicker building occupancy; our practice feature shows how architects can tame the complexities of fast track, which requires careful scheduling to slash construction times by half. Differences in the way architects and clients use CAD files may have hidden legal pitfalls; our computer article offers advice on how practitioners can guard themselves against such legal dangers.

This month's residential feature continues our focus on architect Antoine Predock with a house he designed outside Los Angeles. The building's adjustable, tinted-glass screens modulate light, privacy, and ocean views, demonstrating how technical innovation can inform smart design.

WHO SAYS VANDAL RESISTANT LIGHTING CAN'T BE INNOVATIVE...

design: richard klapper

quay

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Architect-Designed Lighting

Customized forms generate site-specific illumination.

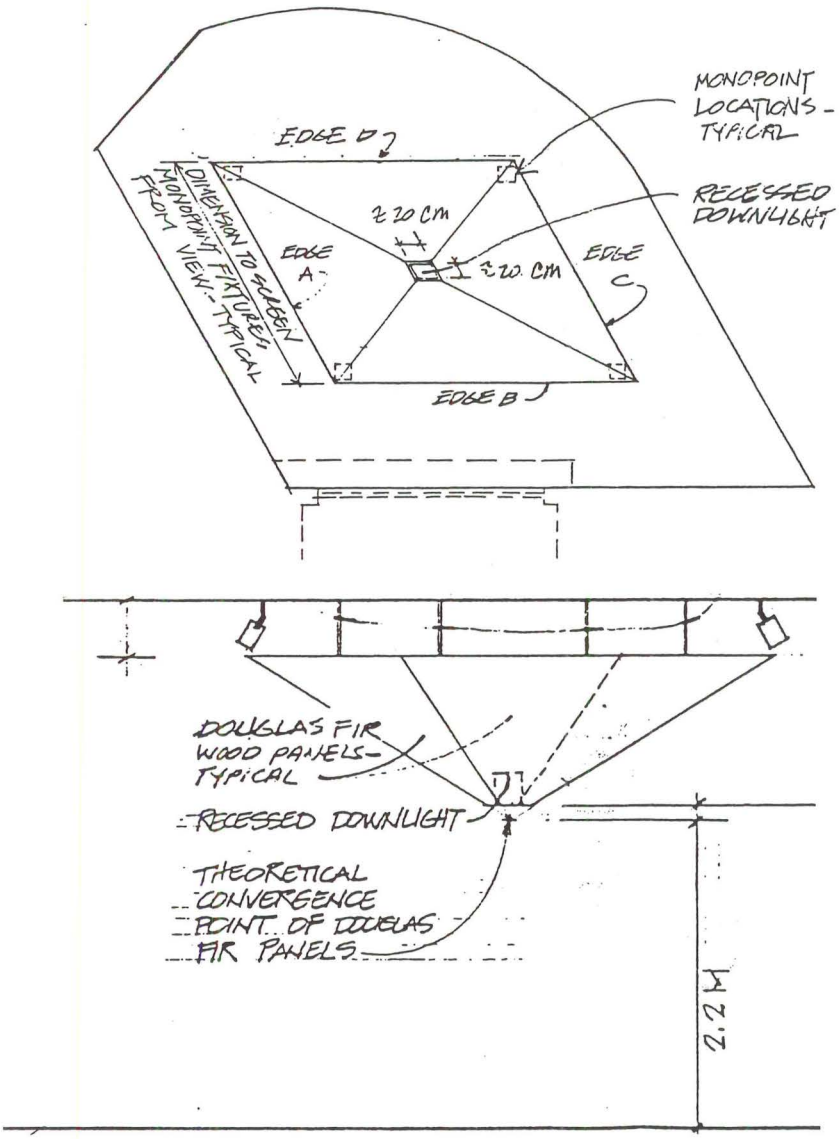
TIMOTHY HURSLEY

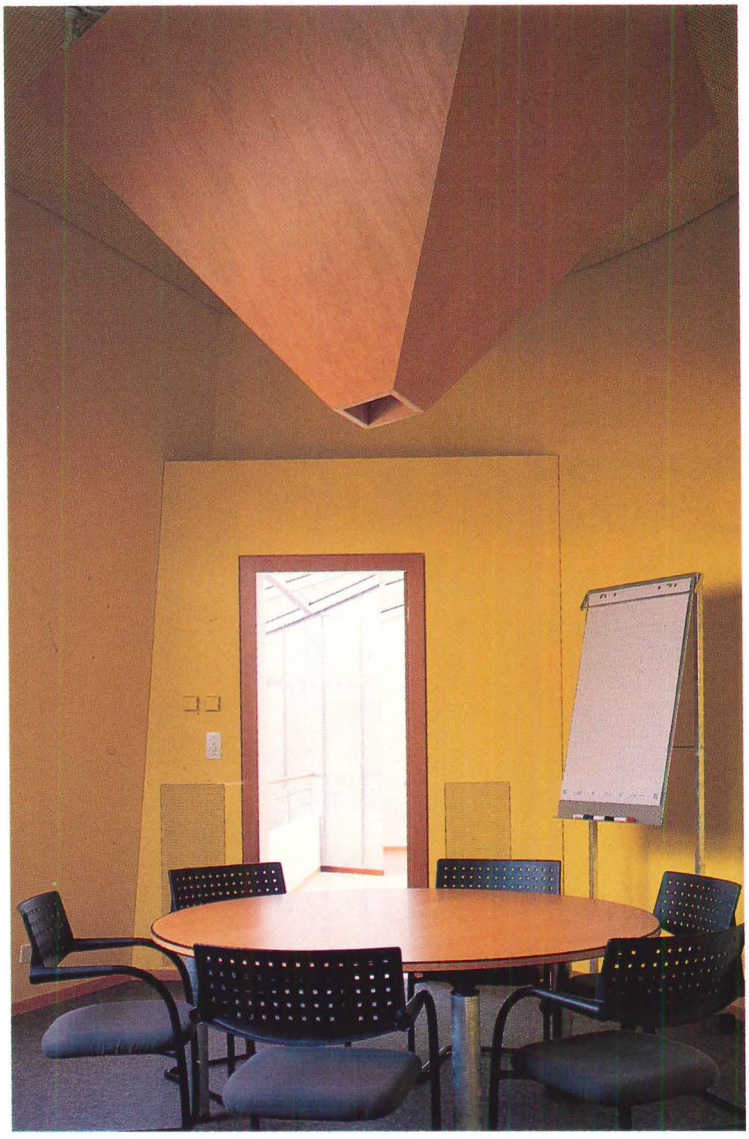
ABOVE RIGHT: Designed by John Portman, the lobby of Atlanta's One Peachtree Center integrates granite-clad wall fixtures with 67-watt incandescent lamps enclosed by glass rods.

When architects take the time to design light fixtures as integral parts of a building, such fixtures can become sculptural components that lend scale to a room, communicate a corporate identity, or even create an urban landmark. While customized lighting was more common in the big-budget commissions of the 1980s, architects are still making custom details affordable realities in projects ranging from shoe stores to corporate offices.

One new trend is toward "customized standards," whereby architects adapt off-the-shelf components in their own designs. Boston architect Schwartz/Silver, for example, designed sculptural retail fixtures that incorporate standard track lights within a customized steel superstructure.

Aside from esthetics, architects must recognize the technical imperatives of providing appropriate illumination levels for particular tasks, allowing easy maintenance, and incorporating energy efficiency. They should also look to incorporate new products, including glass fiber-optic lamps and new sulfur bulbs that can produce four times the light of conventional incandescent lamps at one-third of the cost. As principal Jules Horton of New York City's Horton Lees Lighting Design points out, "If the only thing a light does is look great then it's really just a decoration."—*Raul A. Barreneche*





RICHARD BRYANT / ARCAID PHOTOS

Conference room light
Vitra corporate headquarters
Birsfelden, Switzerland
Frank O. Gehry
& Associates, Architect
with Tomas Osinski Design

Since leaving Frank Gehry's firm eight years ago to establish his own practice, Los Angeles-based architect and fabricator Tomas Osinski has collaborated with Gehry in developing and fabricating custom lighting fixtures. Osinski's work includes pieces at the Chiat/Day offices in Venice, California, a Chrysler Building–shaped light fixture for the New York Bagel Company in West Los Angeles, and now a series of eight customized light fixtures for the new corporate headquarters of furniture manufacturing giant Vitra in Birsfelden, Switzerland. "These oversized lights have a tremendous presence within the architecture," maintains Osinski.

Gehry provided Osinski with small concept sketches, which the fabricator detailed and then had constructed. The pieces include sculptural, ceiling-mounted fixtures that recall the shapes of a snake, a wave, and a fish, as well as a free-standing plywood floor lamp. "Everything was an unknown," confides Osinski, "because we were making up much of the technical design and doing a lot of problem solving as we went along."

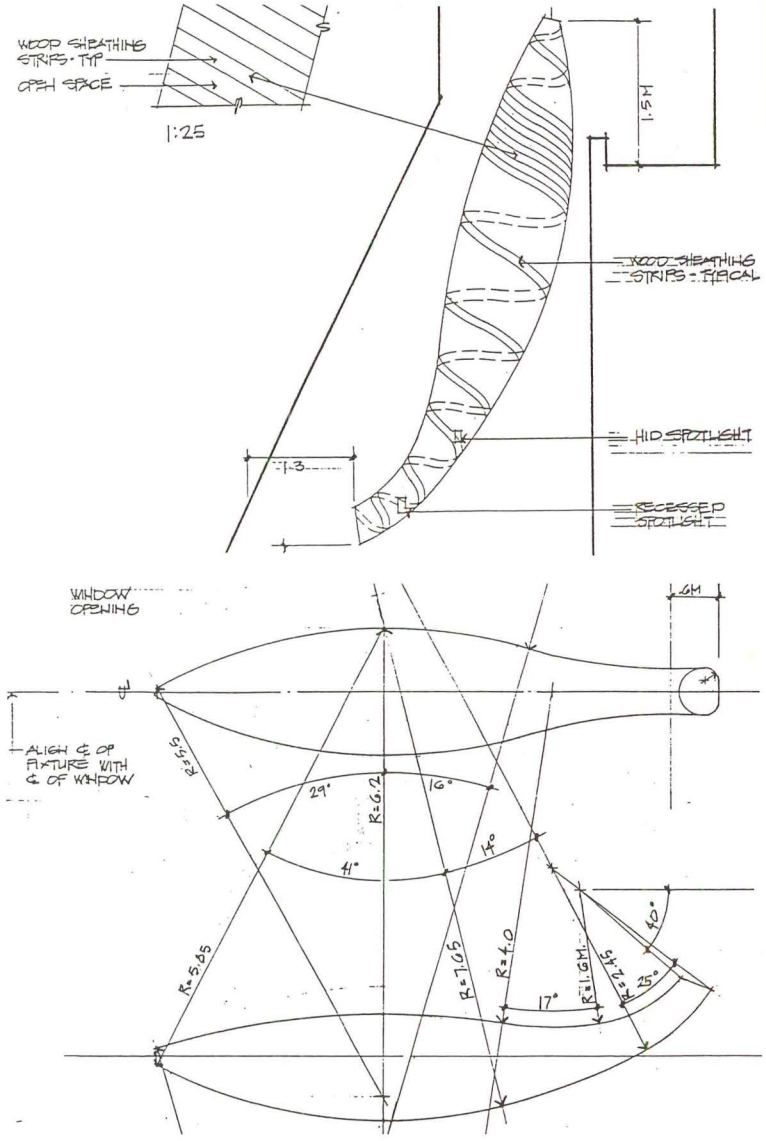
Also, Osinski's time table was tight with only three months to complete the technical drawings and fabricate all eight fixtures. The designer manufactured all the pieces in Los Angeles and then shipped them to Switzerland. Some fixtures were assembled for the first time in the building; others were assembled entirely in Osinski's shop and then disassembled for transport.

One of these fixtures, which tops a second-floor conference room in Vitra's headquarters, resembles an inverted pyramid or an oversized lamp shade. The rhombus-shaped fixture is suspended above a conference table with four steel bolts.

The light fixture itself contains a custom 150-watt incandescent floodlight mounted just above a 20-centimeter square opening. Four adjustable 60-watt halogen lamps with remote transformers are mounted to the ceiling—concealed behind the plywood pyramid—to illuminate adjoining walls.

The pyramidal enclosure is composed of four Douglas fir–veneered plywood panels. The panels were crafted in Osinski's shop and disassembled before being shipped to the Vitra campus in Switzerland.

ABOVE: Truncated, inverted pyramid illuminates conference table.
DETAILS: Douglas fir–veneered rhombus conceals recessed incandescent downlight above opening.



Fish light
Vitra corporate headquarters
Birsfelden, Switzerland
Frank O. Gehry
& Associates, Architect
with Tomas Osinski Design

A second conference room at Vitra's headquarters building is illuminated by a sculpted plywood fish, a favorite Gehry motif. The 24-foot-long frame is suspended above a conference table in a 9-meter-high, angular space by ceiling-mounted stainless steel cables. Its geometry is defined by coiled 10-centimeter-wide plywood strips that suggest the silhouette of a fish.

The fixture was initially designed to be installed with the fish's head pointed toward the ceiling, with two spotlights mounted to plywood strips inside the frame. But Gehry and Osinski opted to mount the frame head-down and install a single 150-watt spotlight inside the fish. Two 500-watt halogen fixtures mounted to soffits in the conference room illuminate the plywood frame from the sides. "These lights cast more interesting shadows on the walls," says Osinski, "and really make the object function as both a sculpture and a light fixture."

Limitations in the size of the plywood available made fabricating the piece difficult. The longest available strips were only 8 feet and the overall fixture measured a length of 24 feet. To achieve this dimension Osinski decided to join the ends of the plywood ribbons and fasten them with large brass screws.

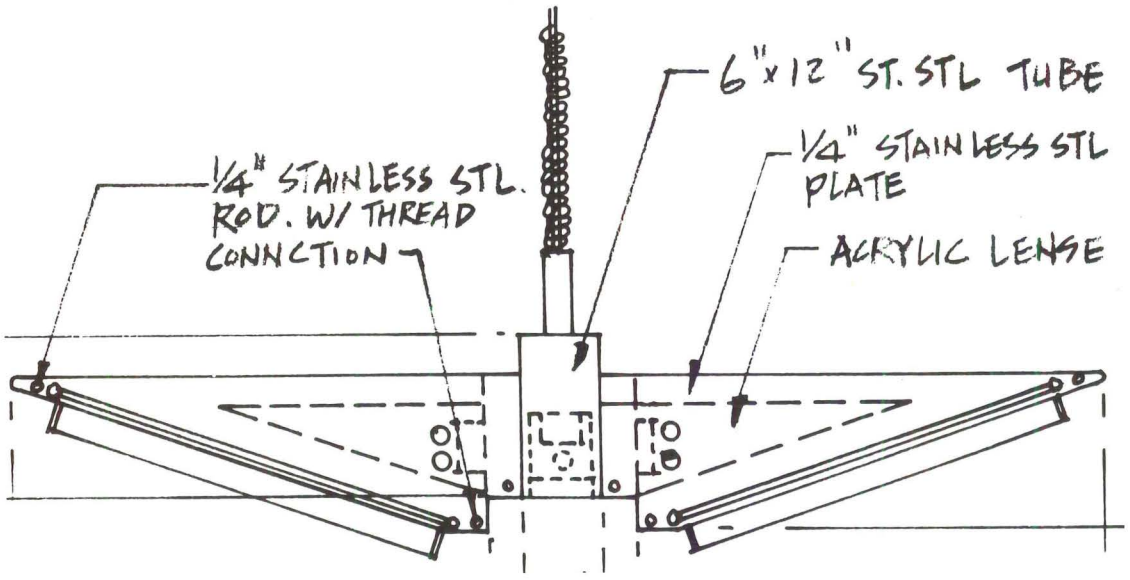
Osinski also found that the plywood strips comprising the main body of the fish had a tendency to splay outward in tension; meanwhile, four additional wood strips placed perpendicular to the plywood ribbons to connect them tended to sag under gravity. Yet, once built, the two forces balanced each other perfectly. "Together, the strips make the frame work like a dream," Osinski asserts.

The four connecting strips are fastened to the coiled wood ribbons with brass screws. One of these strips curves to neatly tie together the joined ends of the 8-foot plywood sections comprising the frame.

In general, Gehry finds several of the Vitra fixtures "more diagrammatic and less refined" than he would have liked, but they demonstrate the sculptural potential of such forms. The architect cites the severe time constraint as a major factor, noting that it takes not three months but closer to a year to properly develop the forms, detail them, and install the appropriate lights.

TOP LEFT: Plywood fish above conference table incorporates 150-watt spotlight mounted inside wood strips. **DETAILS**: Coiled plywood strips are joined at ends with large brass screws.

JEAN M. SMITH PHOTOS



Conference room pendant
Philadelphia College of Textiles & Science
Philadelphia, Pennsylvania
Shepley Bulfinch Richardson and Abbott, Architect

The ceiling-mounted pendant designed by Boston architect Shepley Bulfinch Richardson and Abbott (SBRA) for the Philadelphia College of Textiles & Science's board room reflects the institution's identity. "We wanted to incorporate fabric in the fixture to somehow represent the textile industry," explains project architect Albert Huang, who detailed the fixture with high-tech hardware components illustrative of textile machinery.

Huang began the design by collaborating with one of SBRA's in-house electrical engineers and enlisting Massachusetts-based lighting consultant Robert Reynolds, with whom SBRA has collaborated on numerous custom fixtures. Working from Huang's sketches and drawings, Reynolds refined the technical aspects of the design and calculated appropriate wattage and illumination levels for a conference room. Reynolds recommended only 40-watt bulbs in the pendant, for example, given that incandescent downlights are placed in a vaulted ceiling above the conference table and at either end of the space.

The team then built a scaled mockup and tested the light transmission afforded by a variety of different fabrics. After finalizing the design, Huang drew up a formal set of construction documents to facilitate the bid process.

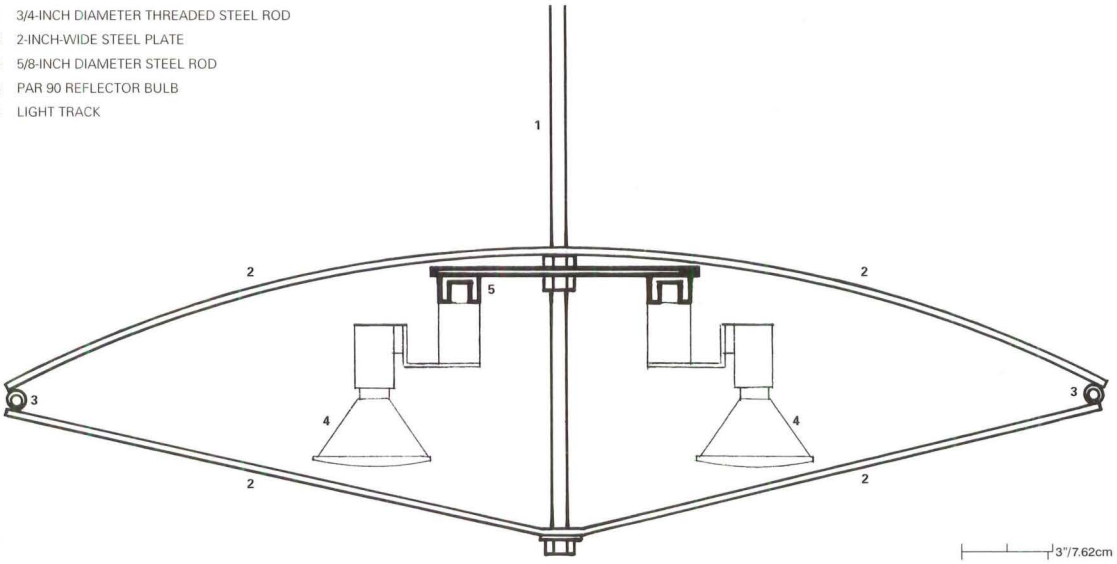
The 7-foot-wide fixture comprises eight wedge-shaped steel sections fastened to a central spine, itself composed of a 6-by-12-inch stainless steel tube, and the entire assembly is fastened to the conference room ceiling by aluminum brackets that extend from the tube. Each of the 4-foot-long wedge sections contains an individual ballast—the only standard elements in the fixture—that house energy-efficient 40-watt fluorescent tubes. Acrylic lenses mounted to the ballasts help diffuse light evenly over the conference room table and conceal the tubes.

Pockets in the stiff cotton panels enclosing each of the wedge-shaped sections conceal steel rods which screw into the steel sections. The fabric had to curve gently but not sag so as to maintain the desired shape. Last but not least, a design requirement was that the fixture be simple to clean. "In this case," notes Huang, "it's easy. You take down the fabric and wash it."

TOP LEFT: Wing-shaped steel plates frame conference room fixture.
TOP RIGHT: Fabric diffuses light.
DETAIL: Fixture incorporates standard ballast with custom fittings.

RICHARD MANDELKORN

1 3/4-INCH DIAMETER THREADED STEEL ROD
2 2-INCH-WIDE STEEL PLATE
3 5/8-INCH DIAMETER STEEL ROD
4 PAR 90 REFLECTOR BULB
5 LIGHT TRACK



Retail track lighting
Domain furniture store
Burlington, Massachusetts
Schwartz/Silver Architects

To light a chaotic furniture store interior, Boston-based Schwartz/Silver Architects designed a ceiling-mounted fixture that incorporates both standard and custom elements. The system "needed to be big and assertive as well as inexpensive and easy to maintain," explains Principal Warren Schwartz. Furthermore, the number of materials had to be kept to a minimum so the fixture would not compete with continuously changing furniture displays.

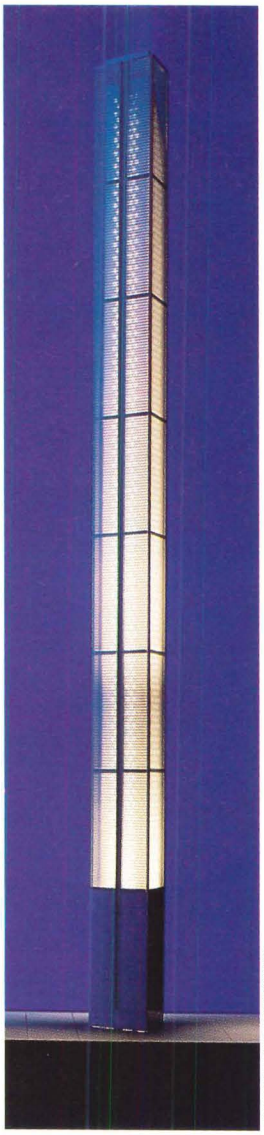
The 120-foot-long assembly is composed of pairs of standard 90-watt PAR bulbs in regular tracks. These track-mounted lamps can be adjusted to illuminate individual objects and furniture below; additional low-voltage, high-intensity pendants illuminate smaller objects in the store. The wide light spread from the fixture also establishes an illuminated pathway that directs pedestrian traffic. According to Schwartz, PAR bulbs provide cost-effective illumination and are easy to replace. Notes Schwartz, "They were the best choice in terms of brightness, running costs, and bulb life." Improved lighting technology promises the same brightness from even longer-lasting PAR lamps, at only a slightly higher cost than those currently available.

The central track is framed by 36 bow-shaped sections composed of 1/8-inch-thick, 2-inch-wide steel plates that are spaced 3 feet apart; bolted to the ceiling structure and welded to stainless steel rods, these plates support the entire fixture. At the perimeter, stainless steel cables brace the bow sections and extend the fixture's full length. The pipes and all the fittings are standard to keep costs down and allow the project's contractor, Herbert Boghosian of Simsbury, Connecticut, to fabricate the assembly.

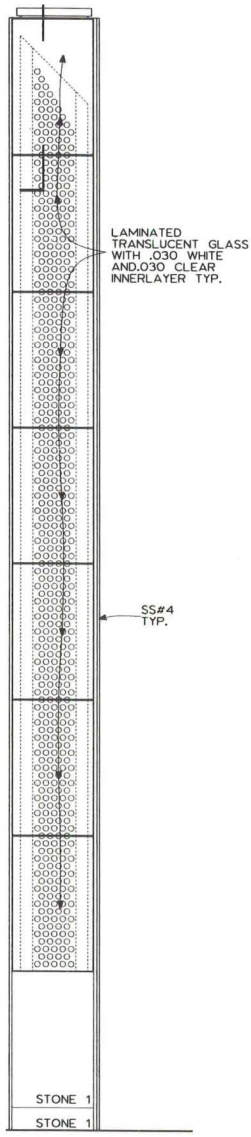
In addition to designing similar fixtures at over a dozen Domain stores, Schwartz/Silver has devised "customized standards" for a chain of New York City shoe stores that incorporate standard fluorescent lamps. The fluorescent light is diffused through a customized assembly comprising translucent colored-glass panels supported by a series of wooden brackets.

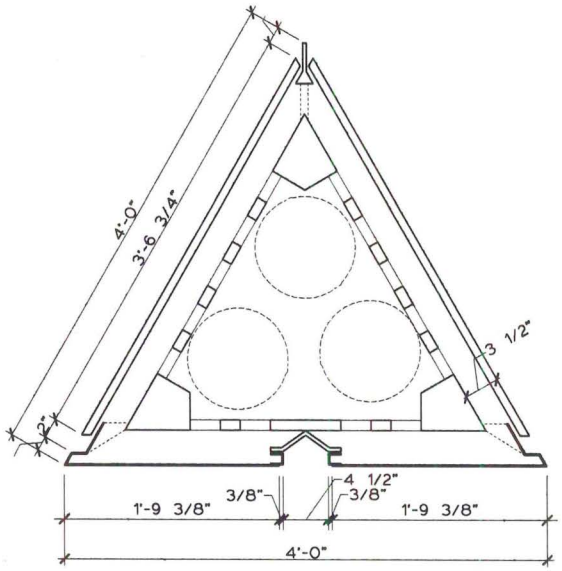
Recently, the firm developed yet another custom lighting project: a series of table-mounted fixtures with standard incandescent bulbs for a school library in New Hampshire, crafted by California-based fabricator Frank Neidhardt.

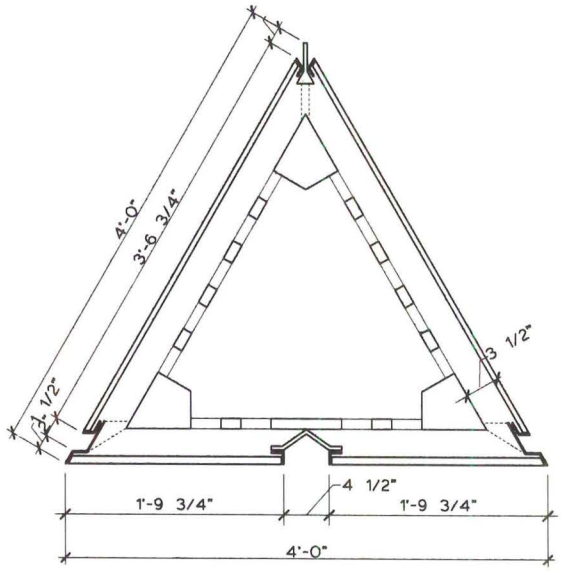
TOP: Ceiling-mounted "bow-and-arrow" fixture defines circulation path.
DETAIL: Standard PAR lamps in light track adjust to illuminate displays.



AKER / ZVON KOVIC PHOTOGRAPHY







Light tower
Houston Industries Building
Houston, Texas
Keating Mann Jernigan Rottet, Architect

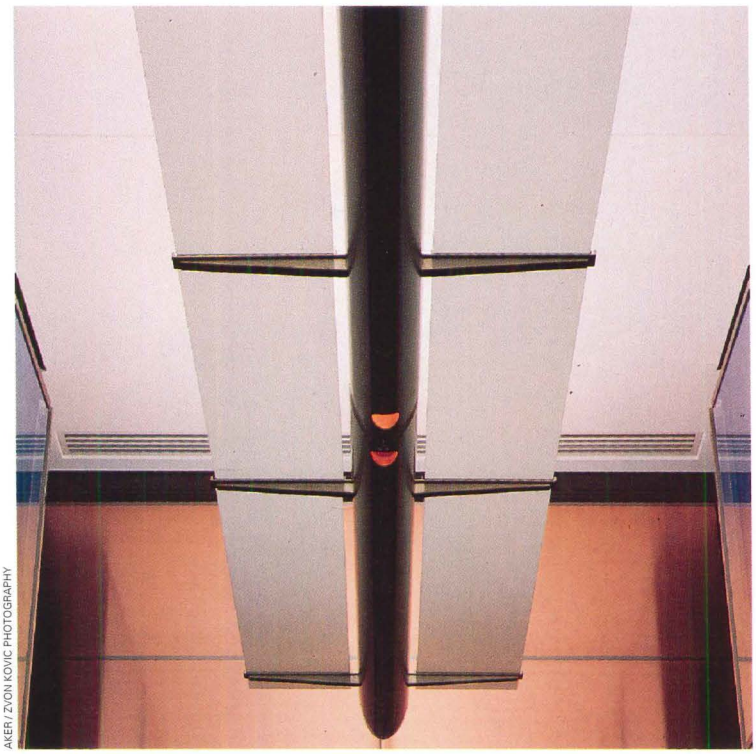
As part of the renovation of a downtown Houston office tower, Los Angeles architect Keating Mann Jernigan Rottet and New York City-based lighting designer Fisher Marantz Renfro Stone designed a 50-foot-tall exterior light tower to serve as a beacon for the building. The client Houston Industries (parent company of Houston Lighting & Power) wanted to promote its corporate identity through lighting elements instead of a traditional sign affixed to the building. "The tower is not only an obvious symbol of light," explains Principal Rick Keating, "but also lends scale at the urban level." In addition to the street-level exterior tower a flat canopy will crown the building. A large circular opening within the canopy will be ringed by energy-efficient metal halide lights.

An initial scheme for the light tower called for directing a high-powered beam into the sky. But such a column of light would have required complex hardware to house the searchlight and raised the cost of the fixture dramatically. The final version comprises a triangular base that accommodates the 9-inch diameter of the proposed spotlights.

The primary lighting strategy, according to Fisher Marantz Renfro Stone associate Alicia Kapheim, was to "pack as much light as possible into the tower." The base of the triangular light tower houses three high-powered, 1,000-watt metal halide spotlights that reflect light against a mirrored top. Two sides of the base structure are clad in stone; a pair of stainless steel panels enclose the third side of the triangle to allow access to the lamps.

The tower's inner structure is composed of roughly 2-foot-wide steel panels perforated by a grid of circular openings to transmit light; to increase reflection within the tower the inner surfaces of the panels are painted white. A $3^1/_2$-inch-wide cavity separates the inner panel structure from the exterior skin of 4-by-6-foot translucent, laminated glass panels framed in stainless steel. The interlayer between the sheets of glass is tinted white to diffuse the light more effectively. "Initially," explains Keating, "we wanted to use frosted glass. But we eventually decided on the tinted layer because it helped the tower glow."

TOP LEFT: Mockup shows light tower that will rise 50 feet above street level.
ELEVATION: Perforated steel screens lie behind laminated glass panels with tinted interlayer.
PLANS: Steel panels in tower base allow easy bulb maintenance.



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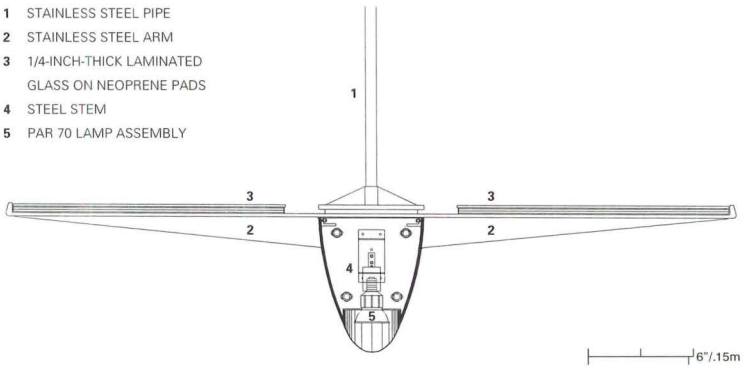

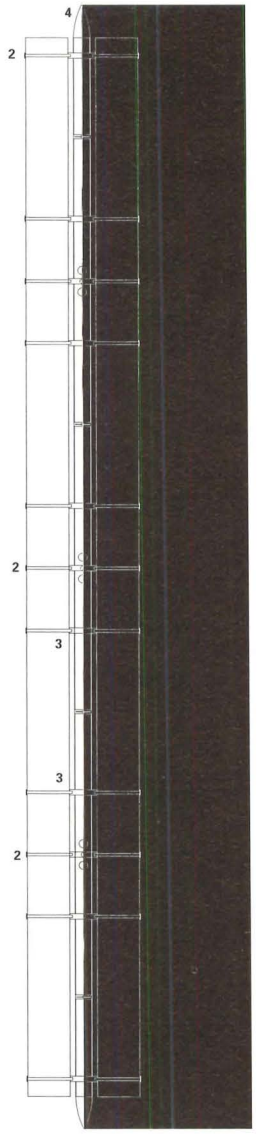

Lobby pendant
BMI Software
Houston, Texas
Keating Mann Jernigan Rottet, Architect

Los Angeles-based architect Keating Mann Jernigan Rottet recently collaborated again with Fisher Marantz Renfro Stone to create a custom fluorescent light fixture for the elevator lobby of a software company headquarters. According to Principal Rick Keating the overall form of the fixture was inspired by the crisp lines of a scull. The projecting glass wings of the pendant create a false ceiling that diminishes the scale of the nearly 20-foot-tall lobby, and the intensity of light provided by the lamps helps mediate between the ambient light of the lobby and the spotlights housed in the elevators.

Keating's fixture is composed of a stainless steel central stem that houses a pair of 40-watt compact fluorescent uplights and 75-watt incandescent PAR downlights. The fluorescent units reflect light against the lobby ceiling, softly illuminating the overall space while imparting a glow to the laminated glass wings. The wings are fastened to neoprene pads atop stainless steel brackets, which are bolted to the main stem.

According to associate Alicia Kapheim of Fisher Marantz Renfro Stone, "We needed incandescent bulbs to illuminate the lobby because the metal finishes there needed a sparkle that fluorescent fixtures can't provide." Incandescents are also more energy efficient and have a longer life than fluorescents, which minimizes the labor-intensive replacement of bulbs in the 20-foot-high lobby. Keating, meanwhile, finds the fluorescent lamps too bright for the space.

In addition to combining fluorescent uplights and incandescent downlights, the pendant fixture houses the smoke detectors and sprinkler heads mandated by code requirements. "Putting both the lights and the sprinkler components in a single fixture also allowed us to maintain a clean, uninterrupted ceiling plane," notes Keating.

Keating and his lighting team initially sought a lighting fabricator to manufacture the custom piece but discovered that such specialty fabrication would be prohibitively expensive. They decided instead to call on Berger Ironworks, a local metal fabricator. "By conceiving of the steel housing as an architectural item into which we plugged lighting components, we were able to keep the cost of the piece down," explains lighting designer Kapheim.

TOP LEFT: Fixture lowers scale of lobby. **DETAIL:** Steel tube contains fluorescent uplight and incandescent downlight. **PLAN:** Glass wings supported by steel brackets extend from main body.


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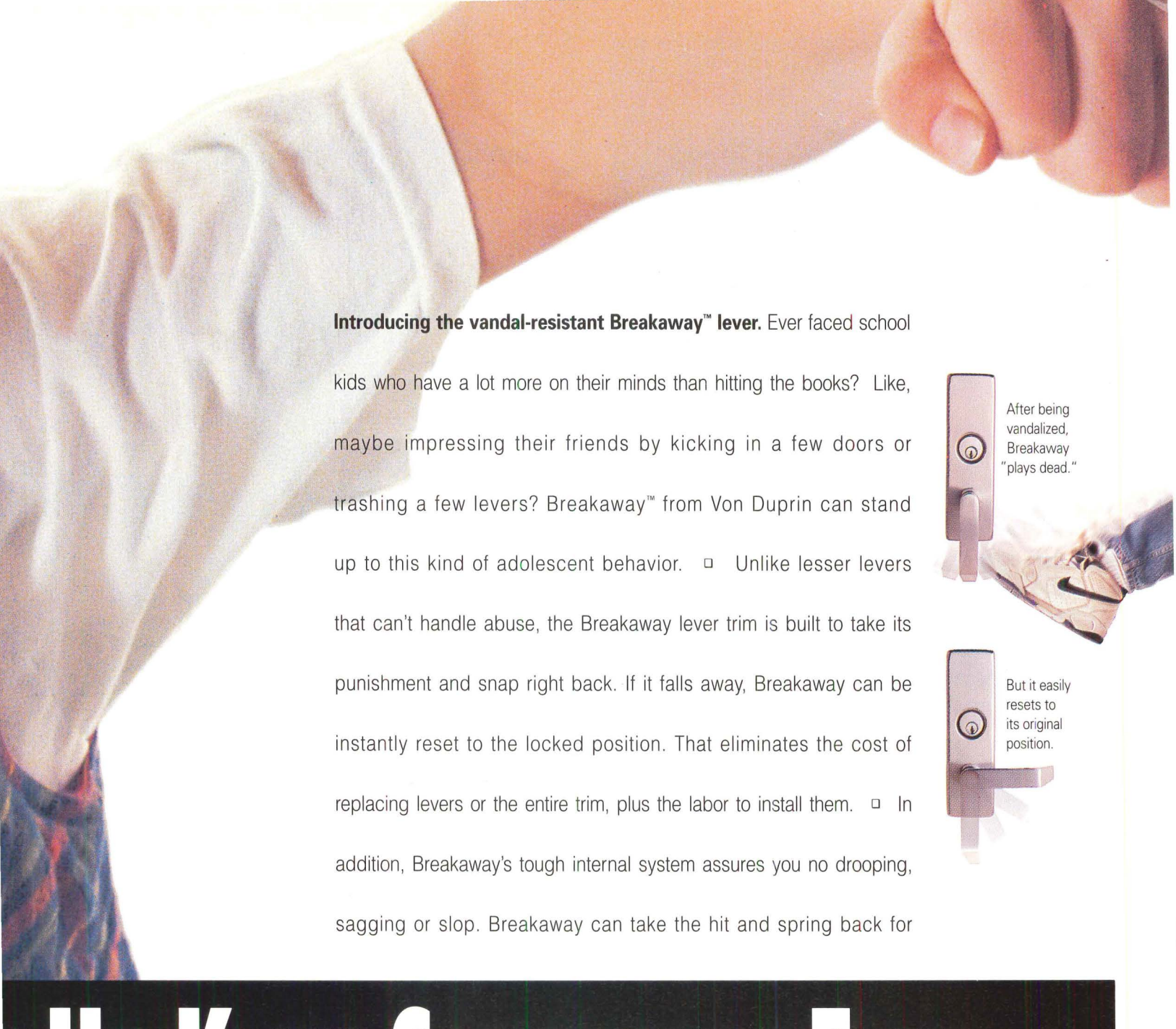

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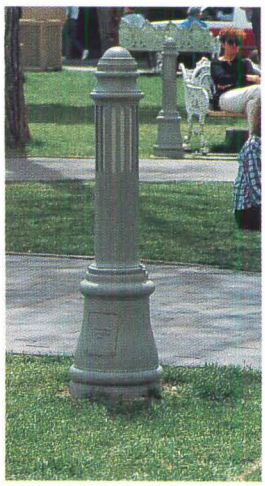

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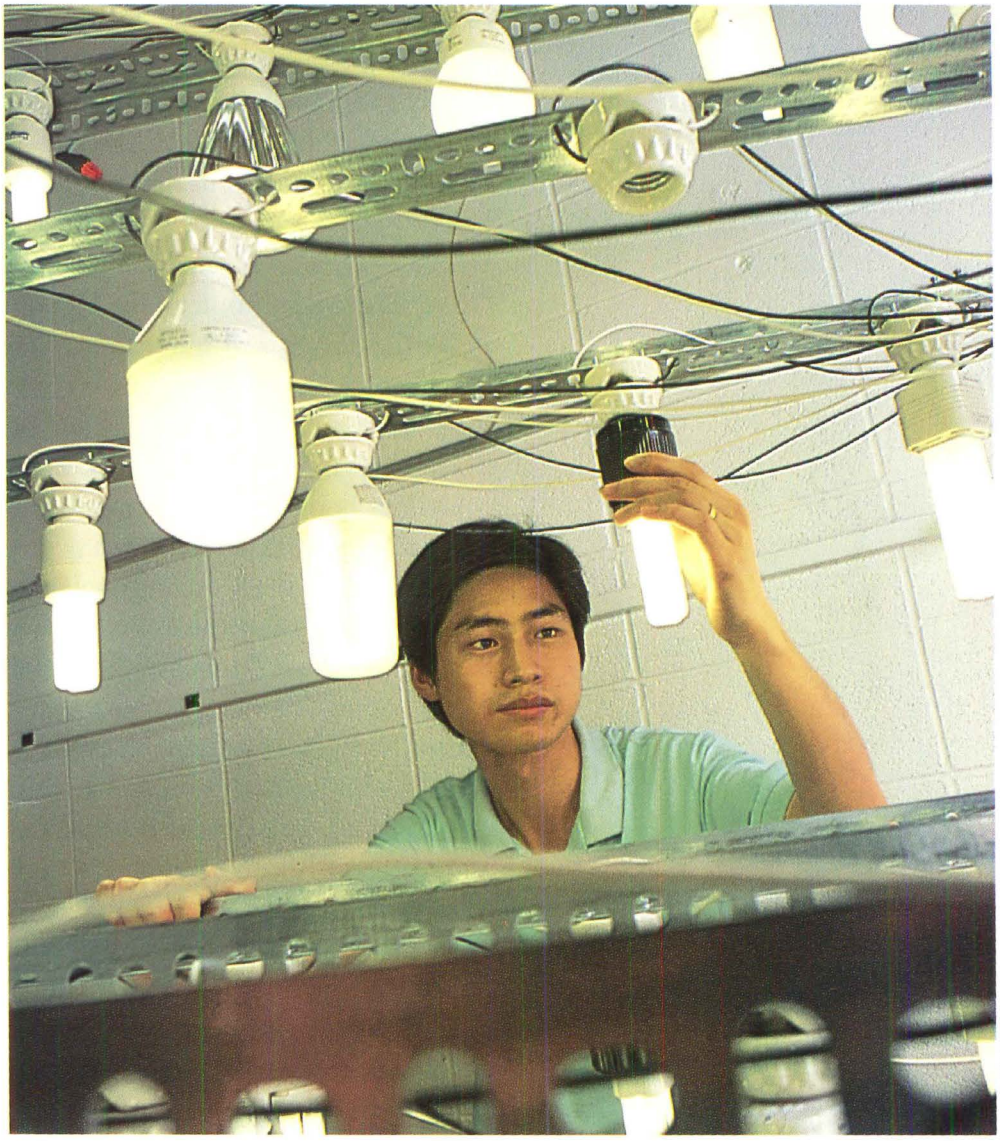
Universities Research Lighting

Three academic programs offer practical tools to improve lighting and energy efficiency.



DONNA ABBOTT VLAHOS

RIGHT: Researcher at Rensselaer Polytechnic Institute's Lighting Research Center tests performance of compact fluorescent lamps.

Most architects today are conversant with daylighting and the appropriate use of artificial illumination, but they do not always understand the importance of integrating an efficient lighting plan into a building design at the conceptual level. To further educate professionals in this area—and to make research tools more readily available—architecture schools around the country have founded laboratories and centers dedicated to lighting research. Among these, the Rensselaer Polytechnic Institute, the University of Michigan, and the recently formed Cascadia Alliance, which pulls together the architecture schools of the universities of British Columbia, Oregon, and Washington, represent the most innovative of all university-sponsored lighting programs. Each of these programs offers a different approach to improving architectural lighting.

Faculty members at the School of Architecture at Rensselaer Polytechnic Institute (RPI) in Troy, New York, founded the Lighting Research Center (LRC) in 1988 in response to a need for a university-based lighting lab. Associate Director Russell Leslie and his colleagues set up the lab within RPI's School of Architecture not only to conduct energy-related research but also to study the interaction of people with buildings. As Leslie puts it: "Our mission is to change architecture for human needs and energy efficiency."

To this end, the LRC has developed a two-year Master's of Science program in lighting—the first such degree program in the country. The center has also initiated a number of research projects, including the Demonstration and Evaluation of Lighting Technologies and Applications (DELTA) program. Led by lighting designer Naomi Miller, DELTA produces post-occupancy studies of buildings incorporating successful lighting strategies.

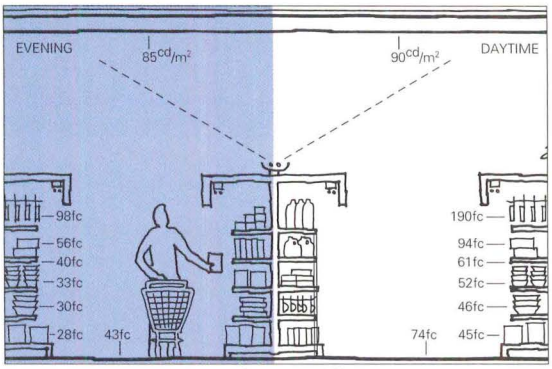
The University of Michigan at Ann Arbor's College of Architecture and Urban Planning is home to the Lighting Simulation Laboratory, currently under the direction of Mojtaba Navvab, recipient of several awards. Navvab's lab is known for its state-of-the-art Sky Simulator, a complicated apparatus he designed that replicates virtually any sky condition. Light levels on architectural models inserted into the spherical simulator can be measured and analyzed via computer. For architects seeking to know the quality and quantity of daylight that will enter their building at any given time of year, this is an invaluable tool.

The Northwestern architectural community has begun to create a regional identity through the formation of the Cascadia Alliance under the leadership of Paul Shell, former dean of the School of Architecture at the University of Washington. An offshoot of this alliance is the Cascadia Alliance Lighting Group, financed by a grant from the Nuckolls Fund, a lighting education research fund established in memory of lighting designer James Nuckolls. The alliance—uniting faculty members in the fields of architecture and lighting design from the universities of British Columbia, Oregon, and Washington—promotes lighting education through the creation of a summer institute, a student and faculty exchange program, and an archive of teaching resources.

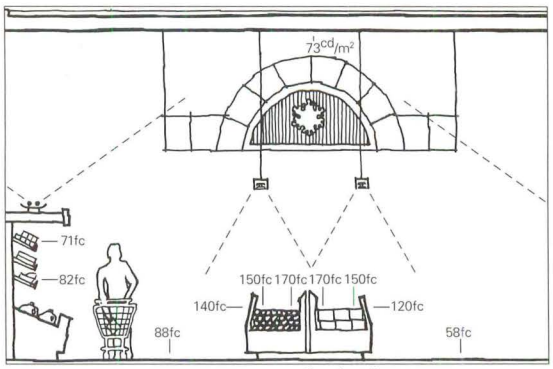
Fundamentally, these programs are driven by the need to increase energy efficiency. Navvab's own research is primarily about the "effect of spectral radiation on pupil size," he says. By analyzing the eye's response to different types of light, the goal is to develop lighting systems that will "let you see more than is really there. With the demand for energy efficiency, this research is useful in terms of planning." Once it has generated portfolios on a wide range of building types, the DELTA program will provide architects with specific information about lighting plans that meet user needs while increasing energy efficiency. Additional DELTA projects are diverse: they include a Linens 'N Things retail store as well as the Connecticut Science Center and the Amsterdam Carpet Mill-Reuse Project. In the Northwest, Cascadia Lighting Group's Joel Loveland is driven by his perception of a lack of communication between architects and lighting designers, resulting in the "chronic misuse of technology." Loveland's goal is to create a group of lighting professionals who understand that energy-efficient lighting is an integral part of architecture.

These lighting research programs offer architects access to research laboratories and testing facilities that might otherwise be unattainable; also, they considerably enhance the quality and efficiency of architectural lighting—through earlier and more extensive illumination testing during the design process, post-occupancy evaluations, and the interchange of ideas among academics, architects, and lighting designers.—*Justin Henderson*

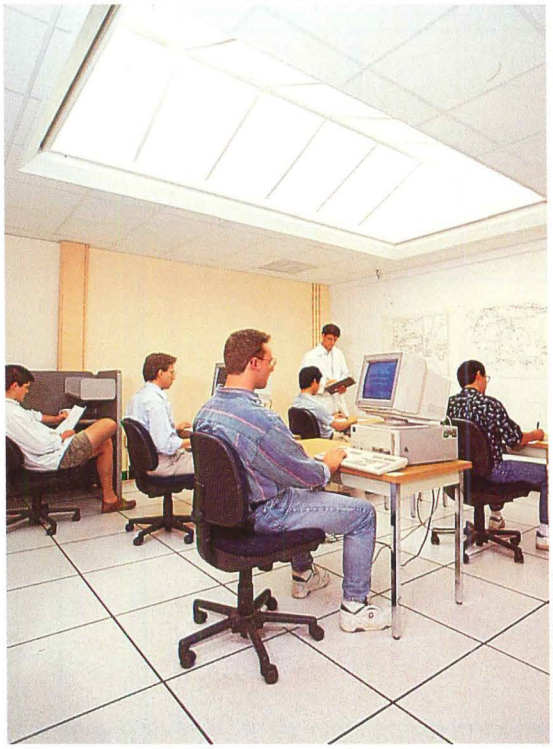
Justin Henderson is a freelance writer based in Seattle, Washington.



SUPERMARKET CASE STUDY: Grocery aisle.



SUPERMARKET CASE STUDY: Frozen food aisle.



DONNA ABBOTT VLAHOS PHOTOS

DELTA Program
Lighting Research Center
Rensselaer Polytechnic Institute

As part of the Lighting Research Center at Rensselaer Polytechnic Institute, the Demonstration and Evaluation of Lighting Technologies and Applications (DELTA) program produces 12-page case study analyses of buildings with successful lighting designs. The publishing program is intended to educate its audience of architects, engineers, and other DELTA specifiers on "what works and what doesn't," according to director Naomi Miller.

In addition to staff researchers, Miller employs students part-time to write, draw, and learn to use the technical tools of lighting design and analysis. DELTA portfolios are available from the program's power company sponsors.

The first case study—in 1994—focused on an A&P supermarket in Connecticut. The supermarket was designed by architects from A&P's Corporate Planning and Design Group in collaboration with Connecticut Power and Light (CP&L) to incorporate energy-efficient T8 fluorescent lamps and electronic ballasts. CP&L funded this lighting evaluation and subsequent publication of the procedure.

DELTA's process began with on-site visits and examination of design documentation. Two weeks later, a team of six staff researchers and students led by faculty member Peter Boyce spent 24 hours at the supermarket collecting data. This information ranged from the scientific, such as photometric measurements of horizontal illuminance levels, to the subjective—interviews with employees and managers and even surveys of store customers in an effort to ferret out chronic complaints about lighting-related problems. The team found that A&P's energy-efficient, high color-rendering lamps improved the appearance of people and merchandise. Electronic ballasts reduced noise and flicker. An energy management system lowers light levels at dusk, lowers them further for restocking, and switches lights located near windows on and off in response to daylighting shifts.

By presenting this information in an accessible publication, Miller's DELTA program provides a useful service to architects. DELTA portfolios are available for $12 each by calling the LRC at (518) 276-8716.

TOP LEFT AND RIGHT: Drawings by the DELTA team show light sources and measurements of artificial and daylight levels in supermarket aisles.
ABOVE LEFT: Researchers test beam spreads of reflector lamps to predict their energy efficiency.
ABOVE RIGHT: Performance of night workers is tested under an artificial skylight that simulates daylight.

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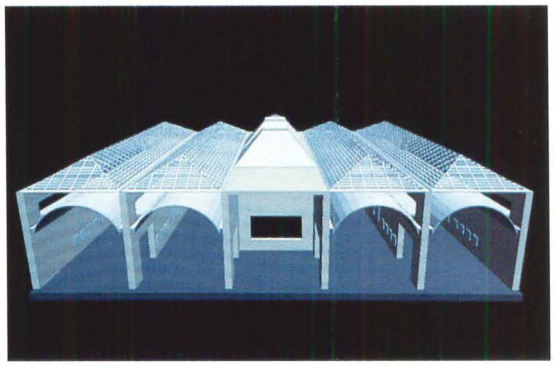
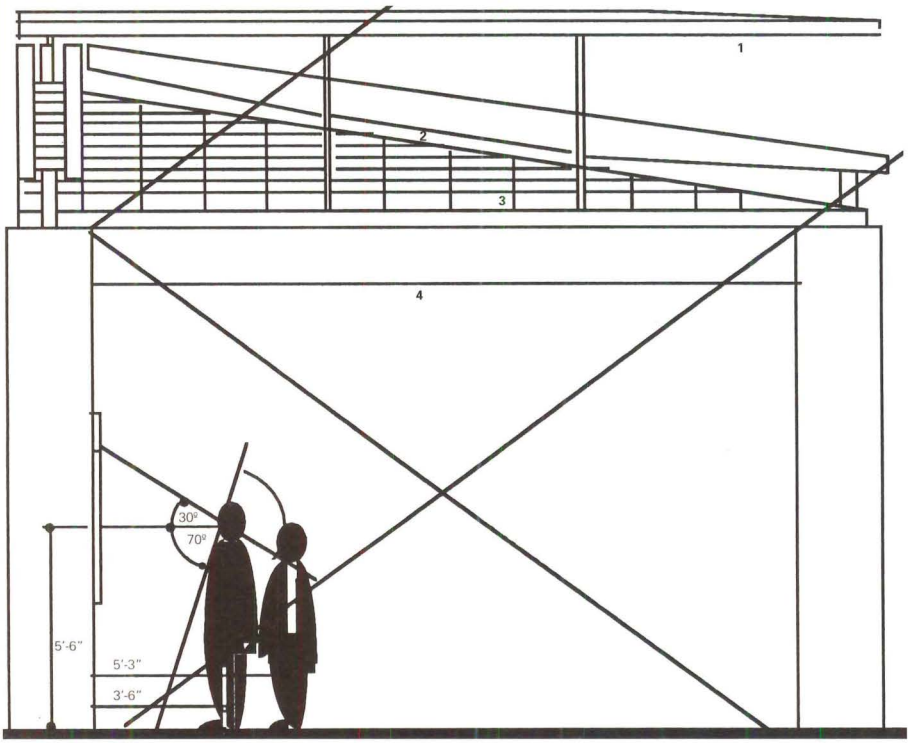
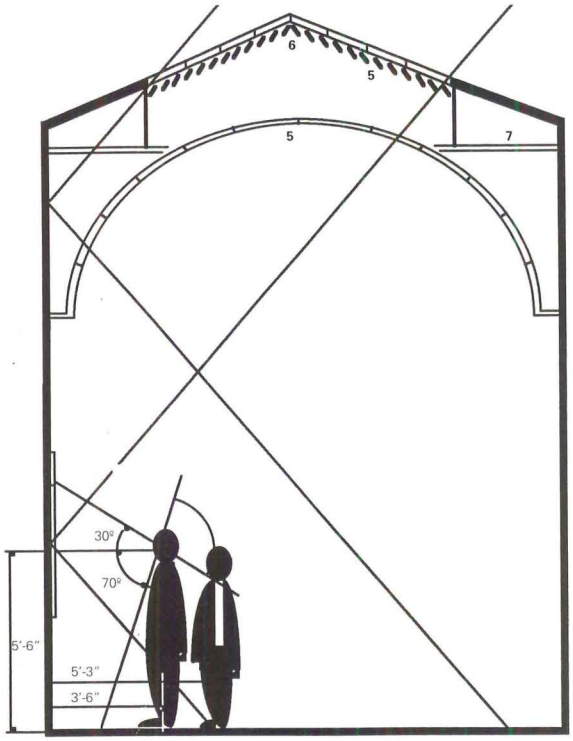




MENIL COLLECTION'S PERIMETER VIEWING ZONE



CHICAGO MUSEUM'S PERIMETER VIEWING ZONE

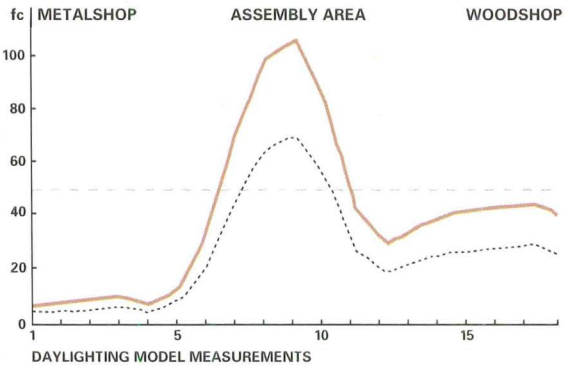
Sky Simulation Laboratory
College of Art and Architecture
University of Michigan

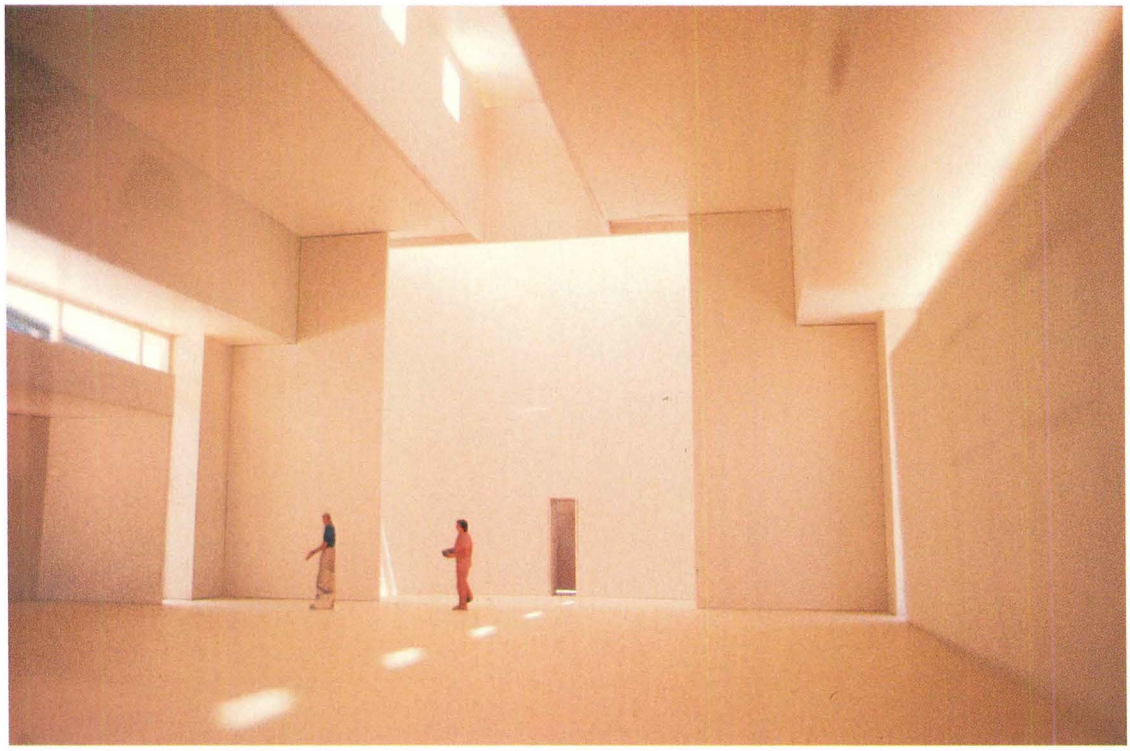
The University of Michigan's Sky Simulator offers architects the chance to test the daylighting efficiency of their projects. Funded by a grant from the National Science Foundation, the Sky Simulator was developed by Mojtaba Navvab as a tool for testing daylighting under controlled conditions; any testing done outdoors, Navvab notes, is subject to variability caused by the movement of sun and clouds.

Navvab developed this simulator after creating a comparable one at the University of California, Berkeley, and his earlier experience has led to a number of improvements in design. This new machine incorporates indirect, reflected light beamed up from ground level, allowing for videotaping inside the simulator; an interior surface curved to ground level for more accurate horizon readings; a revolving platform for models to better simulate time of day; a sun simulator in the form of a parabolic dish containing a 1,000-watt lamp on a tracking system; and 20 computer-monitored light sensors. The new simulator can hold a condition for any length of time or create dozens of different conditions in minutes, allowing its users to quickly determine how various design options will function under a multitude of lighting conditions.

The Sky Simulator and the other elements in the lighting lab are utilized both by resident researchers and professionals—including architects—who pay the university a fee to test the effects of daylighting on their own models. The Renzo Piano Building Workshop, for example, recently utilized the Sky Simulator in planning an addition to the Menil Collection in Houston, Texas, which is being engineered and built by Ove Arup & Partners. Arup is also responsible for the engineering and construction of Chicago's new Museum of Contemporary Art, that was designed by German architect Josef Paul Kleihues. For both these museum projects, the engineers recommended the Sky Simulator to determine how to maximize daylight in the galleries while minimizing exposure of artifacts to damaging ultraviolet rays.

TOP LEFT: Computer model of Renzo Piano's new gallery at the Menil Collection simulates lighting conditions.
TOP RIGHT: Model of galleries at Chicago Museum of Contemporary Art, designed by Josef Paul Kleihues.
ABOVE LEFT: Menil Collection roof filters daylight through layers of fabric and glass to eliminate harmful rays.
ABOVE RIGHT: In a gallery at the new Chicago Museum of Contemporary Art, daylight is controlled through motorized louver system.





Cascadia Alliance Lighting Group
Universities of British Columbia, Oregon, and Washington

One of the major issues facing Northwestern architects is how to maximize the amount of daylight brought into buildings given the region's rainy, gray weather. An offshoot of the Cascadia Alliance is the Lighting Group, which consists of teachers from all three universities who meet three to four times a year to allocate resources, discuss student exchanges, and plan intercampus lectures and other forms of exchange designed to enhance architectural lighting education.

According to Joel Loveland, architect and lighting design professor at the University of Washington (UW), each campus offers something different. The University of British Columbia (UBC) boasts Ray Kohl, a lighting design professor and important voice in the field of sustainable design. A member of the National Green Buildings Council, Kohl believes that energy-efficient lighting is a critical element of sustainable design. UW, which also boasts a number of prominent architects on its faculty, offers its students access to Seattle's Lighting Design Laboratory. Sponsored by the university and local public utilities, the lighting design lab is a public facility devoted to hands-on research and experimentation in lighting. The University of Oregon (UO) has developed a more research-oriented program. One of the most significant current projects at UO is Charles Brown's "Energy Scheming"—a software package for the energy analysis of a building.

With limited funds available in individual architecture departments to develop lighting design curriculums, the Cascadia Alliance provides a stronger base by combining resources. The group offers opportunities for students to study at any of the three universities and to work with practicing architects who offer internships. The Lighting Group has launched its Summer Institute, a three-week program that allows undergraduate and graduate students to spend a week at each school, working and studying with local architects. The alliance itself has no mailing address but is formally recognized at all three universities.

TOP LEFT: Lighting study model of an art studio at Evergreen State College in Olympia, Washington, designed in collaboration with Seattle-based Carlson/Ferrin Architects, incorporates roof design that maximizes daylight. **TOP RIGHT:** Chart diagrams changes in light levels in the three rooms of Evergreen State College studio addition. **ABOVE:** Clerestories in model of Olson Sundberg Architects' Overlake Park Presbyterian Church in Bellevue, Washington, maximize daylighting.

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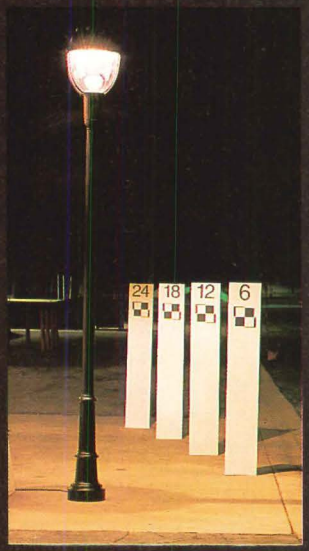

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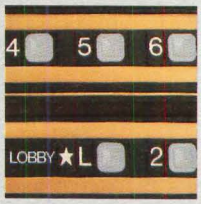

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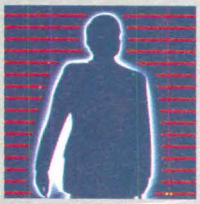

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[1] Call us for a full copy of the report by Value Engineering Associates of Spokane, Washington.
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the Legalities of CAD

The technological promise of computer-aided design (CAD) for architectural firms is finally being fulfilled. For those who fail to understand the legal ramifications of its use, however, CAD may hold some ugly surprises. What happens when documents from an architect's office are released to a client on CAD? The potential liabilities posed by the computerized transfer of documents can manifest a threat to the design professional.

"Sometimes we lose sight of CAD's original purpose," claims CAD software specialist Michael Ingardia. "It is a productivity tool, but clients and others are using it as a medium of exchange and archiving." Documents delivered on CAD, for example, might be requested by the client's facility management department or leasing agent; contractors and suppliers may want to use the architect's CAD layers for their preparation of shop

CAD may have hidden legal problems for those who fail to recognize or understand the legal ramifications of its use.

drawings; and architects may be required to submit documents on CAD to building departments. Though some clients, according to Ingardia, are requesting CAD documents with the architect's seal, architects are reluctant to deliver, since the documents can be changed on screen without their knowledge. Also, Ingardia warns, "The personal computer is the most efficient copier ever invented," making it difficult for the design professional to maintain control of original documents once they leave the office.

Chicago architect Richard Cook illustrates a further complication. "Clients are giving architects the basic layouts of their leased spaces on CAD files," Cook states. "They can usually match the architect's software, but there can still be incompatibilities between systems—we often find errors in the data."

Furthermore, incompatibilities between the architect's and the client's software may crop up due to latent bugs or unforeseen limitations in the software, or the software may be of different manufacture. Who is responsible for the potentially costly and time-consuming translation from the architect's software to the client's in-house software?

Another problem, Ingardia points out, is that "Software has a finite life. Clients who want CAD documents for archival purposes seldom consider the rapid changes that are taking place in the software industry." Data on computer disks can start degenerating in as little as six months. Also, software is continuously evolving; current software may not even be intelligible years from now.

Considering these problems during negotiation of the owner-architect agreement can prevent misunderstanding and liability. Because a request for transference of CAD files to the client usually occurs after the owner-architect relationship is established, discussion of transference should take place at initial contact between owner and architect.

AIA Documents B141, Standard Form of Agreement Between Owner and Architect, contains a provision in Article 6 broad enough to cover the architect's ownership of CAD files. Yet technologies are changing so rapidly that it may be worthwhile to add an amendment about the architect's specific CAD system that spells out the version of CAD software to be used. Because B141 does not deal directly with CAD exchanges, AIA developed AIA Document B511, "Guide to Amendments for AIA Document B141," which provides model language for nonstandard situations, such as when an architect's CAD files are transferred to the owner. That particular model provision contains a broad disclaimer against the transaction being a "sale" of goods, assuming that the architect will be primarily providing services.

If, however, the client receives CAD files, the owner's counsel could assert that the transaction is a sale of goods. It is in the architect's interest to insert in the initial agreement that the exchange is not a sale and not subject to U.S. Uniform Custom Code warranties. Rather, the architect should state he or she is providing a service. Furthermore, because software has a limited life, it may be beneficial for the architect to add provisions to the contract that place a time limit on his or her responsibility to correct defects discovered by the owner.

Briefing the client about the limitations of your office's CAD system is crucial. Most clients want architects to use CAD for client convenience; some, unfortunately, insist that architects follow client specifications for layering and other conventions. This can become expensive and lengthy, ultimately defeating any potential gains in productivity from CAD. Clients have even attempted to impose their detailed specifications by signing an owner-architect agreement that innocuously requires the architect to comply with the owner's "CAD standards."

Needless to say, it is important during negotiations to confirm that the expectations of the parties involved are mutual. Misunderstandings about the purposes for CAD can lead to significant problems, especially when the client wants to use CAD for facility management in addition to construction. The architect may propose developing—for an additional charge—separate CAD files to meet the owner's other purposes.

CAD can be easily manipulated. Once the files leave the office, it will be difficult to prove who did what. Thus, either in the owner-architect agreement or by separate letter, one might indicate that the true, correct version of the CAD documents is in a dated, signed, and printed hard copy retained for safekeeping by the architect.

In the near future, contracts will be refined to address CAD and related issues; professional liability insurers will include or exclude CAD coverages; and architects' registration boards may prohibit electronic reproduction of seals. By anticipating these changes and understanding CAD's legal complexities, architects stand to profit.—*Dale R. Ellickson*

Dale R. Ellickson is an architect and attorney with the American Institute of Architects.

solutions

PROBLEM: CLIENT REQUESTS TRANSFERENCE OF CAD DOCUMENTS FROM ARCHITECT.

SOLUTION: STATE THE TRANSACTION IS NOT A SALE OF A PRODUCT BUT RATHER A SERVICE AND DISCLAIM ANY POSSIBLE WARRANTIES CONNECTED WITH A SALE.

PROBLEM: CONTRACTOR OR SUPPLIER REQUESTS TRANSFERENCE OF CAD DOCUMENTS FROM ARCHITECT.

SOLUTION: REFUSE REQUEST UNLESS SUCH A TRANSACTION IS PROVIDED FOR IN THE OWNER-ARCHITECT AGREEMENT.

PROBLEM: ARCHITECT RECEIVES INCORRECT CAD DOCUMENTS FROM OWNER.

SOLUTION: REMIND THE CLIENT THAT THE OWNER-ARCHITECT AGREEMENT (B141) PERMITS THE ARCHITECT TO RELY ON ACCURACY OF OWNER-FURNISHED INFORMATION.

PROBLEM: ELECTRONIC DATA IS CHANGED WITHOUT ARCHITECT'S KNOWLEDGE.

SOLUTION: MAINTAIN HARD COPY AS EVIDENCE AND DO NOT PERMIT SCANNING OF ARCHITECT'S SEAL AND SIGNATURE.

PROBLEM: ELECTRONIC DATA IS LOST OR CORRUPTED OVER A VERY SHORT TIME.

SOLUTION: WARN THE RECIPIENT THAT YOUR RESPONSIBILITY FOR LOST DATA IS ONLY TO REPLACE THE COMPUTER DISK WITHIN A LIMITED TIME AFTER TRANSFERENCE.

PROBLEM: CAD INFORMATION, WHEN TRANSFERRED, IS USED FOR AN UNINTENDED AND INCOMPATIBLE PURPOSE.

SOLUTION: IN TRANSFERRING DOCUMENTATION, CLARIFY ORIGINAL PURPOSE AND DISCLAIM APPLICABILITY TO OTHER TASKS.

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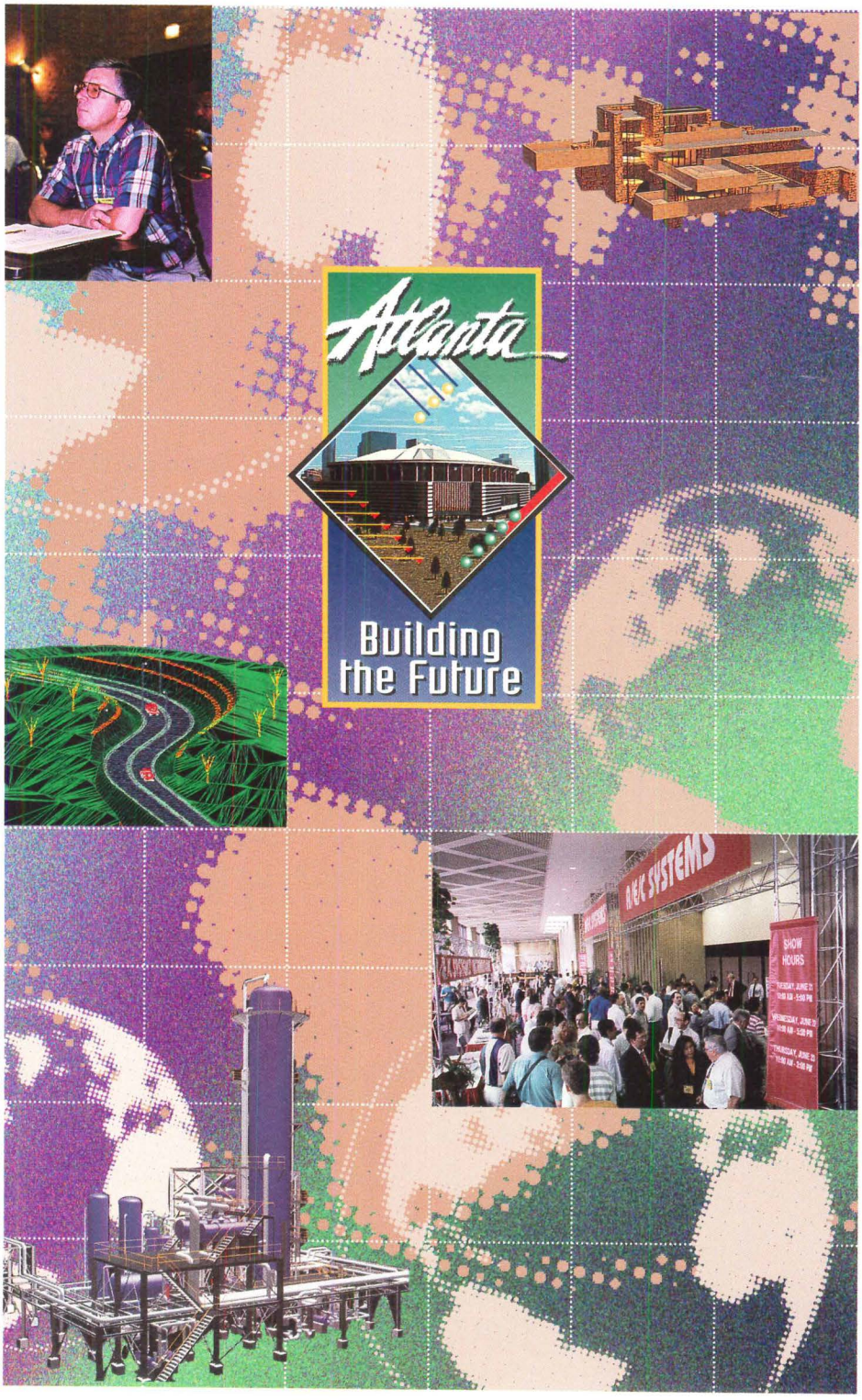

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Through the Looking Glass

Cantilevered glazing opens a Predock-designed house to daylight and ocean views.

At first sight, the three-story Rosenthal house on a suburban street in Manhattan Beach, California, looks almost too simple. Set among a jumble of 1950s and 1960s bungalows of no particular distinction, the bold geometries of this stuccoed Modernist cube recall a child's cardboard cutout.

The toylike simplicity of the house is deliberate. Designed by Antoine Predock for a noted freelance toy designer as a place to live and work, its clean and uncluttered lines provide a backdrop for the client's active imagination. "I've got so much fantasy inside my head, I wanted every surface to be a kind of blank to project my own images upon," owner Susannah Rosenthal explains.

Situated on an awkward, west-facing triangular lot with a frontage close to 200 feet long, the 3,200-square-foot house is square in plan at the ground floor entry level and L-shaped on the two stories above. The ground floor comprises an open-plan living-dining-kitchen space, a guest bedroom and bath, and a small workroom equipped with the computerized systems with which Rosenthal creates video games. The living room opens through sliding glass doors onto an enclosed garden with a kidney-shaped pool.

On the second level, a gallery displays Rosenthal's designs and is used to make presentations to clients. As throughout the house, the walls of this floor are plain white and the details are stark. Metal-framed windows of varying shapes have no internal sills other than the drywall surface. The L-shaped gallery faces a limestone-paved terrace set on the roof of the floor below, and the enclosing side walls incorporate eccentrically shaped apertures that frame vistas to the coastline.

Two open metal stairs with limestone treads lead from the second to the third level—to a catwalk that runs along two sides of the top floor. The top level is a self-contained living-bedroom-studio unit oriented toward the ocean—"My aerie," notes Rosenthal fondly. The walls facing the Pacific view are glazed floor to ceiling; to shade the interior, Predock has provided an inner layer of cloudy, green-tinted glass screens.

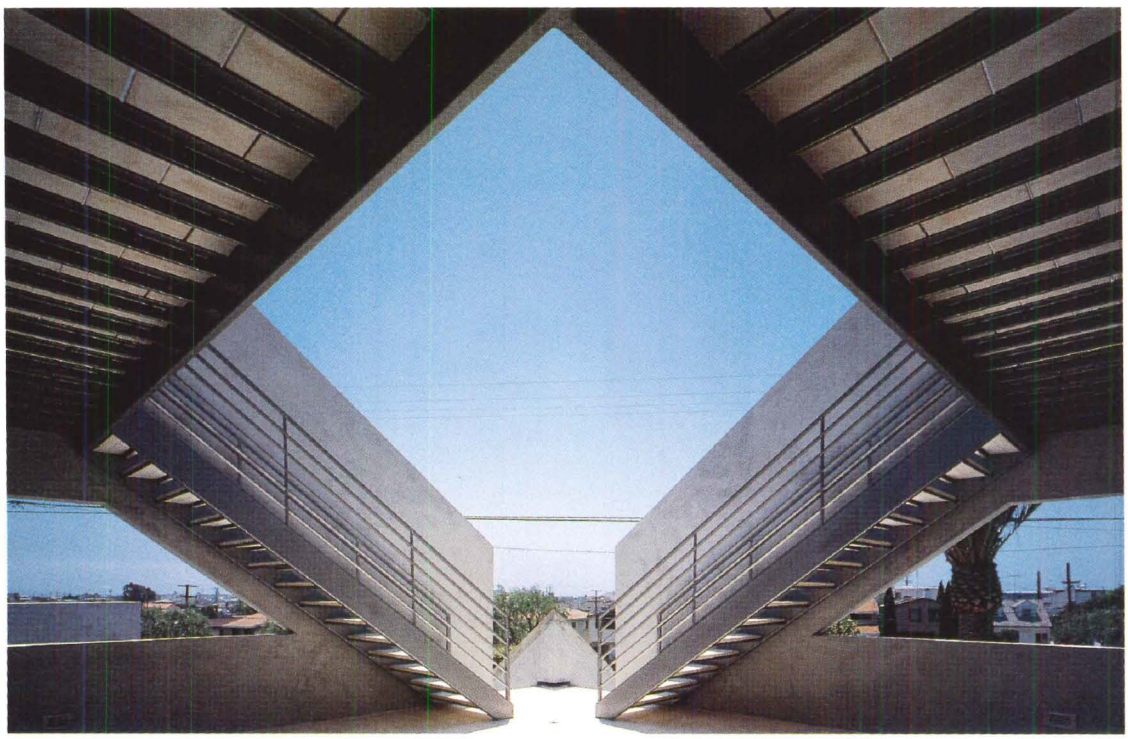
The exterior glazing in the top window walls is cantilevered six inches from the face of the wall below to create the feeling of a giant glass lantern at night when the top-floor rooms are lit. Sliding screens of laminated glass, placed four to six inches from the glazing, are made with two 3/16-inch sheets bonded to a central membrane of white polyvinyl butelene. They run on wheels in lower and upper tracks that were machined from a solid block of Teflonlike material to reduce friction.

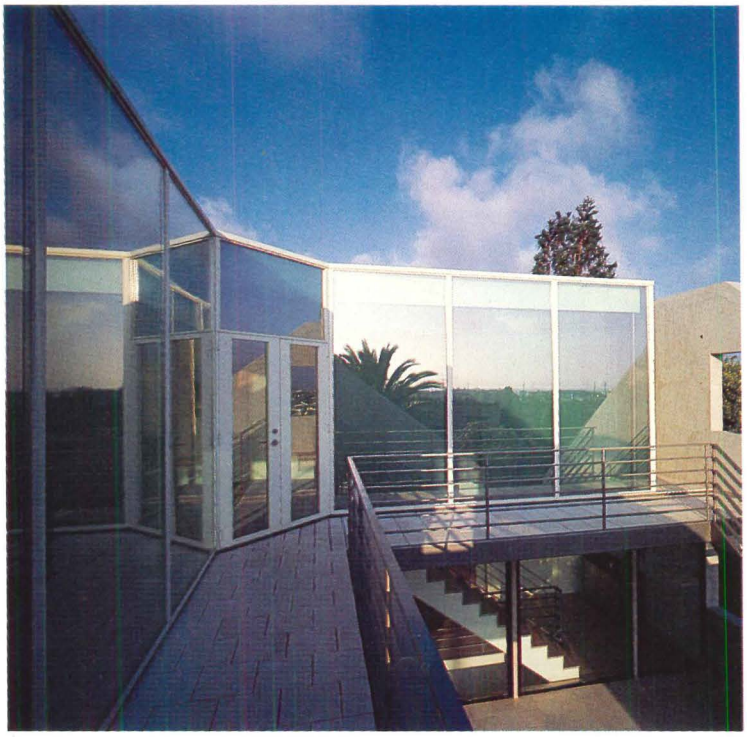
Daylight can be modulated by stacking the screens two or three deep, providing a variety of shading in the interior—they can be closed at night for privacy or adjusted to filter the light during the day. "With such a powerful outlook, the views can be overwhelming," Predock explains his unique mechanism. "These glass screens allow the client to modulate the vistas to suit her mood more profoundly than drapes or blinds."

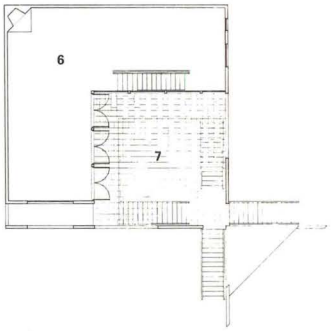
For Predock, custom houses provide a laboratory for ideas and experiments. "For instance, I was able to try out the sliding screen concept on a small scale here before applying it in a more ambitious context," he said. "It was easy to develop an atmosphere of trust with my client, who was willing to take risks."—*Leon Whiteson*

RIGHT: Predock cut away corner of cubic volume to reveal glazed walls behind stuccoed walls.

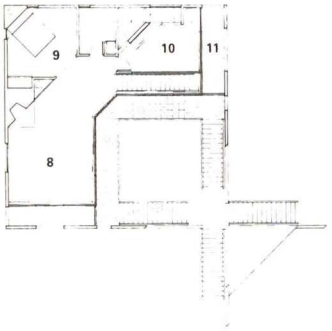
ABOVE: Twin open-tread stairs lead from second-floor terrace to catwalk bordering glass-walled top level.
RIGHT: Catwalk and stairs frame client's expansive view of Pacific Ocean.
FACING PAGE, TOP: On ground floor, glass partition (right) divides entry court from guest bedroom patio.
FACING PAGE, BOTTOM: Living room's glass wall and flanking catwalk are cantilevered from wall below.
PLANS: Open corner of cubic, four-square plan frames view of ocean from second-floor gallery (top left) and third-floor bedroom (top right).



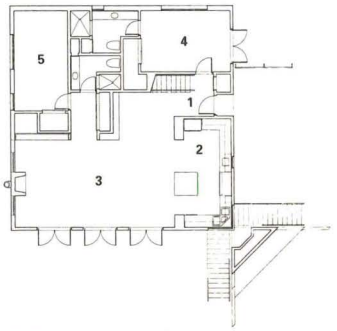




SECOND FLOOR PLAN



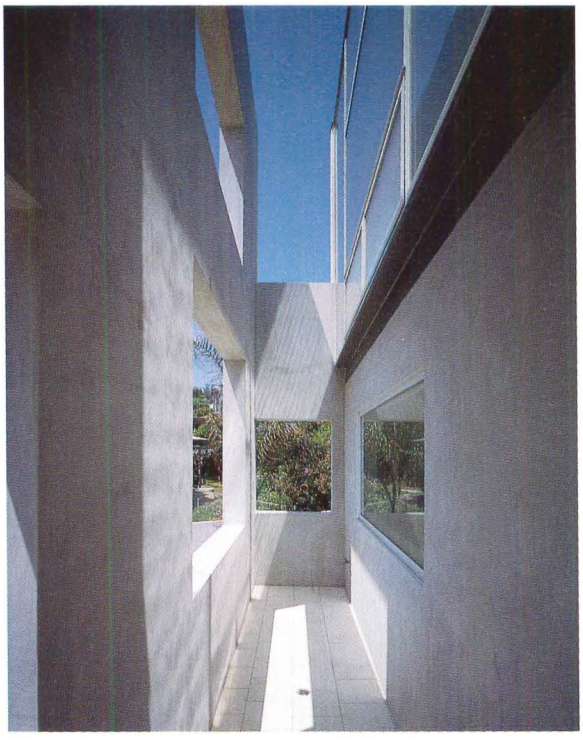
THIRD FLOOR PLAN

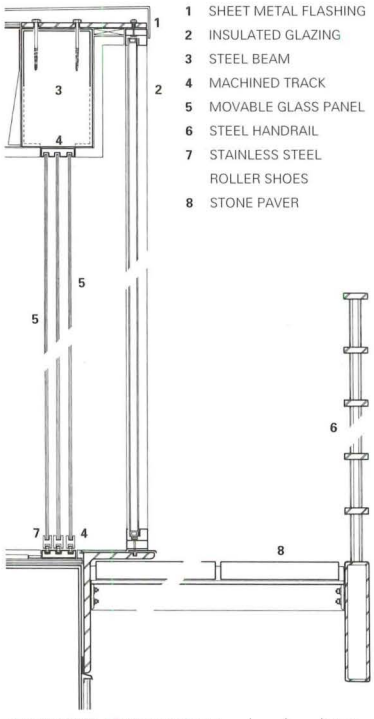


FIRST FLOOR PLAN 20'/6m

1 ENTRY
2 KITCHEN
3 LIVING ROOM
4 BEDROOM
5 WORKROOM
6 GALLERY
7 TERRACE
8 STUDY
9 MASTER BEDROOM
10 MASTER BATHROOM
11 DECK

ABOVE: Fixed glass panels flank maple-floored staircase from second-floor gallery (right) to third-floor study.
RIGHT: Exterior wall of fixed glazed panels (right) modulates daylight on top floor; bathroom to left of staircase is enclosed in frosted glass.
FACING PAGE, TOP: Living room's glazed south wall is screened by movable laminated glass panels that can be opened or closed for views or privacy.
FACING PAGE, DETAIL: Exterior glazing (right) in study rises past parapet to create sense of floating ceiling above interior sliding panels (left).
FACING PAGE, LEFT: Cantilevered, floor-to-ceiling window in third-floor study is set back four feet from exterior.





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UPPER LEVEL GLAZING DETAIL 4"/0.1m

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MANHATTAN BEACH, CALIFORNIA

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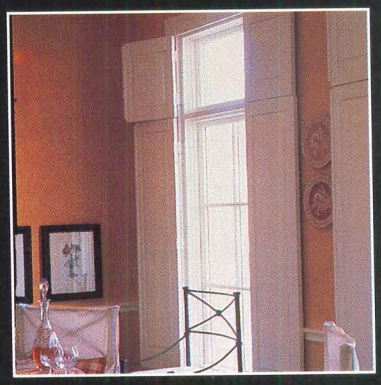
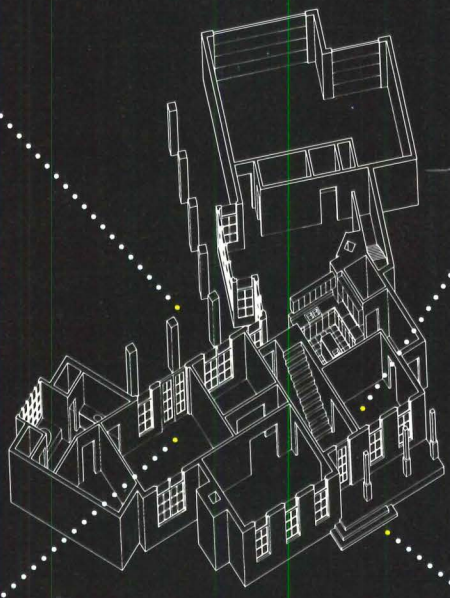
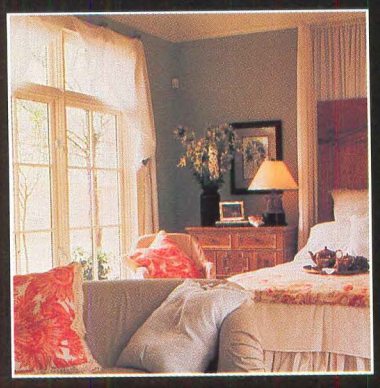
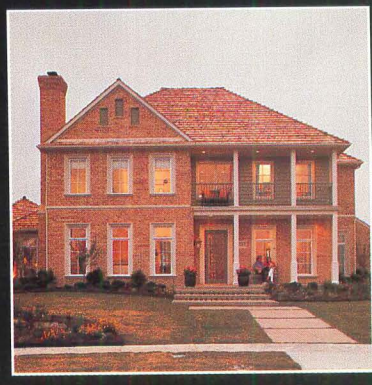
ENGINEERS: Parker-Resnick Structural Engineers (structural); South Bay Energy Consultants (mechanical)
GENERAL CONTRACTOR: John Lee
COST: Withheld at owner's request
PHOTOGRAPHER: Timothy Hursley









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the tricks to Fast track

Fast track—cutting project delivery time in half—is in high demand among corporate clients in urgent need of specialized facilities. At premium fees, fast track can be a lucrative service for architects to offer. But it can also be a crushing and morale-withering experience: Architects bet their fees against variables well beyond their control, such as approvals by local regulatory agencies, long lead times for materials, and the availability of labor.

Fast track allows the client to occupy the building sooner than does conventional delivery, but the architect may actually spend more hours designing the project within that shorter period. "Fast-track design is a slower design process, and possibly a slower construction process," contends Thomas Cornelius, principal of Graeber, Simmons & Cowan Architects (GS&C) of Austin, Texas. The inefficiency of often redundant documentation in addition to the coordination of multiple contracts extends the time each phase takes—particularly design development, because the process "casts the design solution in stone," Cornelius remarks. "Design changes later on will be far more costly if they involve portions of the project that have been released for construction."

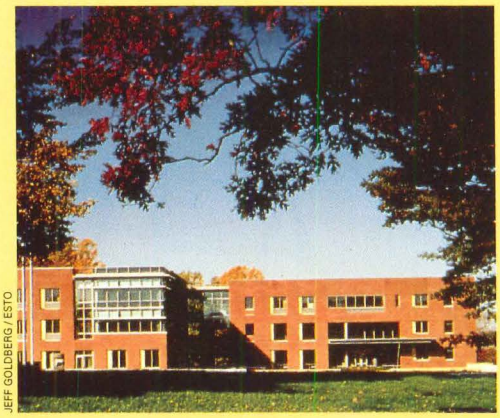
While design may take longer overall, fast track compresses the design phase itself by as much as 75 percent and construction time by nearly half. Logistical strategies for fast track not only double up distinct stages, such as the completion of foundation and structure, but also may individually rearrange each stage—such as permitting, procurement, and bid packaging—so they take only half as much time as traditional methods.

The tricks to fast track are as various as the projects themselves. Chiefly, architects must prepare clients for the hurtling pace of the process, carefully plan for the maze of permitting procedures, order major building parts early, and develop safeguards for design quality. Together, these actions should culminate

American Home Products Corporation Headquarters
Madison, New Jersey
The Hillier Group/Sordoni Skanska Construction Company

For its one-million-square-foot headquarters in Madison, New Jersey (right), American Home Products Corporation asked the Hillier Group to finish the $100 million job in 20 months. The architects sketched an initial schedule—later refined by the construction manager—when hired in November 1991. Design development took 10 months. Sitework and steel packages were bid in March 1992. Ground broke in May. Work could not begin on one million square feet of interiors until the building was enclosed; thus, the structure was clad with approximately one million bricks by a single masonry contractor, who put 100 masons on the job.

Other major bid packages were split among several trade contractors. For example, Hillier and its construction manager, the Sordoni Skanska Construction Company, hired three drywall contractors, who divided the building according to its tripartite plan. Three concrete contractors each assumed one-third of the footings and foundation work. The construction manager informed the contractors that whoever did the quickest and most careful work would win the job of building the parking garage. "It was like a big carrot," project architect Philippe Dordai observes. "Through that internal competition we really got those guys to perform." The project was completed and the client occupied its new headquarters in October 1993.



JEFF GOLDBERG / ESTO

Boston Chicken Headquarters
Golden, Colorado
Gensler and Associates Architects
The Neenan Company

Design and construction of restaurant chain Boston Chicken's new 64,000-square-foot headquarters near Golden, Colorado, took Gensler and Associates about nine months from award of the contract to occupancy. The actual construction of the $10 million facility (facing page) took 137 days.

Design began in November 1993. Because the client did not select its site for the first two months of design, Gensler developed parallel schemes for two sites. In January 1994, the client finally moved into the new building in an industrial park in the West Denver foothills.

The architects refined the initial rough schedule upon choosing a precast structural system.The design team detailed the structure simultaneously with design development so that the precast contractor could produce shop drawings. Gensler kept all support rooms for the facility at the building's center, confining the main mechanical systems to its core. This allowed the team to order heavy equipment early yet afforded extra time to design offices in peripheral open spaces wrapped around the core.

Interior finishes were stock rather than custom to speed up approval by the client. The architects informed the client that once elements of the design were set, the fast-track process would not tolerate major deviations from the schedule. Then Gensler senior associate Roger Kish recalls: "We never considered extending the time frame of the project."

in one seamless project delivery: "The key to fast track," Cornelius asserts, "is overlap."

Clients often misinterpret fast track as "design-and-build-fast," Cornelius observes, as a method that merely accelerates the linear process of conventional project delivery. Fast track, rather, breaks that linear process into segments and stacks them so that ordinarily sequential stages of design and construction occur simultaneously: While construction documents are still in progress, erection of the structure may begin; and before the structure is completed, the building envelope may be assembled. "Normal methods of interference-checking don't work" with fast track, says Cornelius. "Conflicts will only be apparent after the composite package comes together closer to completion."

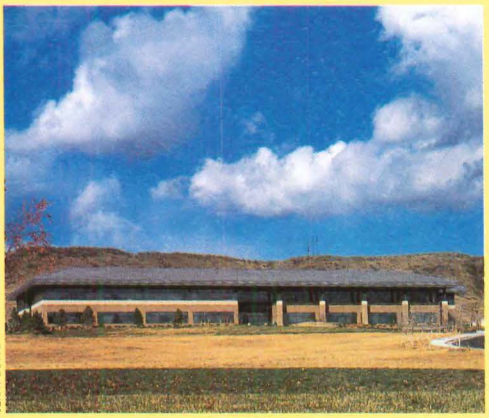
Prepare clients

Thus, before the project even begins, the architect needs to help the client understand the quick, complex decisions, the hedging and the guesswork required by fast track, which eliminates the customary checks and balances in design and construction. The Hillier Group of Princeton, New Jersey, tells prospective fast-track clients they must be willing to streamline decisionmaking within their organizations to complete the process properly. For example, for the fast-track delivery of American Home Products Corporation's (AHP) new headquarters in Madison, New Jersey, managers at each level within Hillier had a designated counterpart in the client's firm. This enabled quick and clear decisions day to day.

Expedite regulatory approvals

The architect minimizes fast-track conflicts by intensive, early project planning, particularly where regulatory approvals are concerned. The specification, purchasing, delivery, and installation of various building components must be timed precisely around the required fire, safety, and other permitting protocols. Both client and architect must scope the legal territory in advance, because the project proceeds at the mercy of the given jurisdiction—and some localities cooperate better than others.

Austin, Texas, for example, expedites the review process for new manufacturing plants, especially those built on a fast track. In collaboration with the Faulkner Construction Company, GS&C recently completed two of



JERRY BUTTS

Applied Materials Incorporated
Austin, Texas
Graeber, Simmons & Cowan Architects
The Faulkner Construction Company

Applied Materials Incorporated opted for fast-track design and construction for its new Austin, Texas plant (right) because the company competes in the volatile semiconductor market and needed to occupy new manufacturing space quickly. The master plan by design/build team Graeber/Faulkner for Applied's 916,000-square-foot campus is being completed in several phases. Phase I, at 184,000 square feet, took 17 months to program, design, and construct; phase II added 168,000 square feet and took 15 months.

Graeber/Faulkner views the project in terms of a "living" program whereby each stage of design is an attempt to anticipate the following stages. CAD capabilities facilitate this process: Computer files were layered to distinguish the building's structure, exterior cladding, interiors, long-lead mechanical items, furniture, and even graphics; all layers could be viewed as a composite to troubleshoot the final package.

Fast-track jobs can consist of as few as two major bid packages or as many as 40. This project required five: sitework and foundation; structure and shell; mechanical and electrical; interiors; and furniture and equipment. The primary goal is to release the first bid package so that grading of the site may begin. However, as Graeber/Faulkner discovered, the first bid package can be issued too early if the second package is sent out too late to keep crews working on schedule.

PAUL BARDAGJY

several fast-track phases for a 536,000-square-foot fabrication plant in Austin for electronics manufacturer Applied Materials Incorporated. Before embarking on the job, the design/build team met with city and county officials to establish a systematic permitting process, incorporating prearranged reviews into the project schedule. In a single meeting, officials helped the fast track by securing reviews from the mechanical, fire, and electrical inspectors all at once.

Where no formally expedited process exists, the client must usually establish its good will within the community, especially for large projects. In preparing its new headquarters, AHP's legal team combed through all pertinent laws among various city and county planning authorities. "The attorneys for the project did all their homework up front," recalls Hillier project principal Gordon Griffin. "We had to make sure we could appear before the planning board for approvals in time." Meanwhile, AHP leaders made many community contacts from the mayor on down, Griffin adds. "Madison really wanted American Home to locate there."

Environmental reviews, however, may disrupt the fast-track process. Consequently, GS&C usually adopts a "no-variance" approach, meaning the architect doesn't design anything that would prompt a public hearing. For example, rather than request a variance on prohibited grade cuts or fills of more than four feet, the team structurally contained any cut exceeding the limit.

Allow long lead times

Most of the fast-track process is geared toward presenting fewer—rather than more—alternatives for equipment and finishes because the schedule hinges largely on purchasing building components early. Particularly risky are items requiring long lead times to order. For instance, in planning the 137-day construction of the 64,000-square-foot Boston Chicken headquarters building near Golden, Colorado, Gensler and Associates eyed the long wait for equipment as early as the interview for the job. Distributors quoted a 20-week lead time for low-emissivity glass and a similar wait for rooftop HVAC units. The variety of finishes was minimal, and all materials and systems were selected for their availability nationally and specified according to manufacturers' standards to speed approval by the client.

Ensure design quality

For the AHP project as well, Hillier's architects streamlined materials selection, which doubled as a strategy to uphold design quality—a major consideration when designing an entire building within weeks. "We had to make fairly simple, direct design decisions and limit the possibilities," recounts project architect Philippe Dordai, because the team worked on an extremely limited schedule.

Indeed, Hillier built in several methods for ensuring design quality. The architects simplified specification for multiple bid packages split among several trade contractors by requiring identical fixtures and equipment—ensuring an esthetic consistency as well as cutting the number of spare parts needed for building maintenance. Hillier further enforced design quality by sending the lead architects of specific parts of the building out to the field when construction on their respective portions began. The architect most familiar with the steel package would go on site when contractors started building the structure, Dordai recalls. "That way, they didn't have to train someone else to learn about it, because with fast track, you don't have the time."—*Bradford McKee*

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Products

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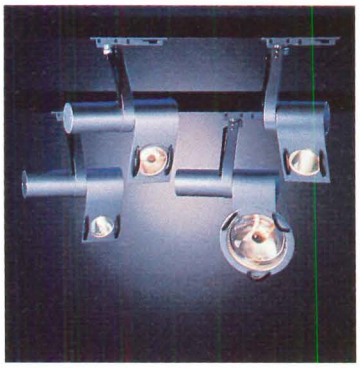
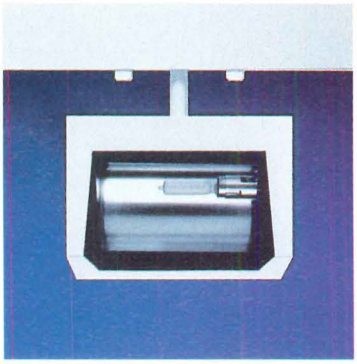
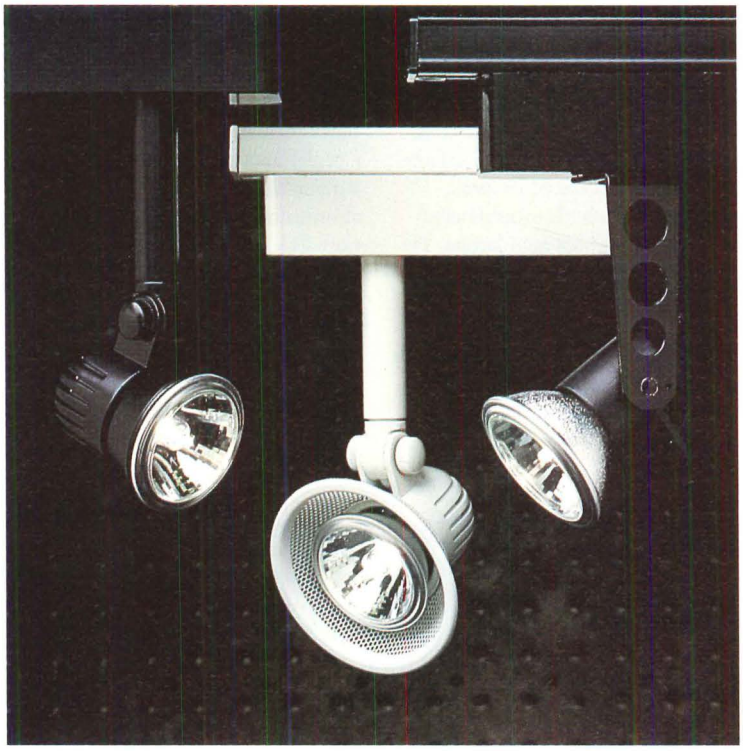






TOP: For projects that involve complex lighting conditions, the Spacebird series from Lighting Services enables architects to mix and match low-voltage and in-line standard voltage fixtures while retaining a consistent style. Two new series have been added to the Spacebird line of extruded aluminum fixtures: SB70 (upper left), designed for Osram/Sylvania's AR70 lamp; and the SB20 Series Spotlight (upper right), designed for a 120-volt PAR20 lamp. The SB16 (lower left) and SB36 (lower right) are the Stony Point, New York-based company's first integral transformer, low-voltage units.
Circle 401 on information card.

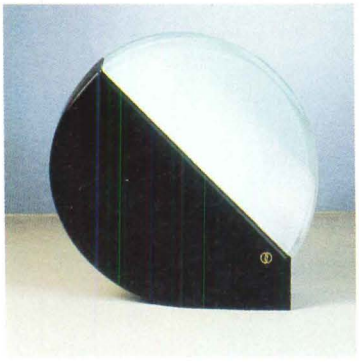
ABOVE AND CENTER: After two years of research, Lightolier introduces ProSpec: a new, adjustable, recessed downlighting system. Its flexible design enables control of the shape, direction, and intensity of light and offers easy installation and lamp replacement. A modular metal housing allows the fixtures to be adjusted up to 45 degrees. It accommodates 12 interchangeable lamps as well as multiple accessories such as louvers, hoods, screens, lenses, and filters.
Circle 402 on information card.

TOP: The Saturna Series from Conservation Technology combines the energy efficiency and long life of compact halogen lamps with the flexibility of gimbal ring construction, allowing the ceiling-mounted lamp to incline in any direction. The fixture's open-housing design offers cooler lamp operation and simplifies bulb replacement; no tools or disassembly are required. The company's model sizes are fitted for PAR16, PAR20, PAR30, and PAR38 halogen lamps.
Circle 403 on information card.

ABOVE: Twist & Lock track lighting fixtures from Halo Lighting accommodate General Electric's new line of halogen lamps, designed to simplify installation. Rather than require the two-pronged plug-in method standard for halogen lamps, Twist & Lock lamps can be screwed in like regular lightbulbs. Three new fixtures feature this design: universal, perforated metal shade, and roundback (left to right). Compatible with the company's Power-Trac system, these fixtures are intended to be used with 50-watt MR16 halogen lamps, which average a 3,500-hour lamp life. Halo Lighting has also developed a line of Twist & Lock recessed downlighting.
Circle 404 on information card.

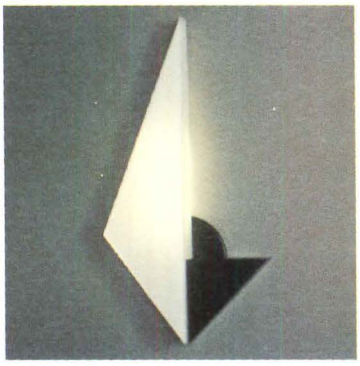
TOP: Edison Price Lighting's quartz halogen wallwasher Stacklite 150 features a pivoting reflector contained within the fixture's housing. This internal reflector enables architects to focus each lamp individually without disturbing the alignment of multiple units on a single track. Designed for use with the company's SightLine track system, compact Stacklite is available with a glass filter to block ultraviolet rays and a prismatic lens to disperse light throughout a wider field.
Circle 405 on information card.

Colorful globes
Brightly colored molded glass and chrome trim distinguish wall and ceiling fixtures designed by Ernesto Gismondi for Artemide. The company's Tilos line (above) of surface-mounted and recessed fixtures accommodates both incandescent and low-voltage halogen lamps. Tilos is available in 6- or 8-inch diameter sizes, in white, dark blue, light blue, peach, green, or plum. UL-rated for damp locations, the fixtures are suited for kitchens and baths.
Circle 406 on information card.



Landscape luminaire
Inspired by the silhouette of the moon, the black and white Selene fixture from Reggiani USA illuminates patios and walkways. Semicircular and circular (above) surface-mounted fixtures are of cast aluminum; a single or double lamppost style is also available. Lamp sources include compact fluorescent tubes and incandescent bulbs. Part of the company's Notturno series of landscape lighting products, Selene is UL-listed for wet locations.
Circle 407 on information card.

Ceiling pendant
Doghessa fixtures from Italiana Luce USA are available in three models: ceiling suspension (above), wall-mounted, and floor lamp. A Murano glass shade open at top and bottom allows light to flow in both directions. Eight inches in depth and $17\frac{3}{4}$ inches in diameter, the suspended style extends up to 79 inches. Designed by Barbaglia/Colombo for the Stratford, Connecticut-based company, Doghessa lamps use incandescent bulbs.
Circle 408 on information card.



Geometric sconce
New York architect Julian Weiss designed the Aten (above) for Baldinger's ADA Collection. Measuring 17 inches high and 9 inches wide and projecting $2\frac{1}{2}$ inches, the wall sconce complies with guidelines developed under the Americans with Disabilities Act. The angular diffuser is constructed of frosted white acrylic. A portion of the proceeds from the sale of the ADA Collection will be donated to the Design Industry Foundation Fighting AIDS.
Circle 409 on information card.

Track fixtures
Zumtobel Staff Lighting of Highland, New York, introduces eight new track fixtures incorporating low voltage, metal halide, and compact fluorescent lamps for retail and commercial applications. Intended for use with a 70-watt PAR 38 metal halide lamp, the compact 8820 track fixture (above) is available in both black and white cast aluminum. The new series may be used in conjunction with the company's curved track system.
Circle 410 on information card.

Outdoor lighting
Evoking historic acorn-shaped lamps, Architectural Area Lighting introduces the Promenade Series of post-top and arm-mounted lamps. The series' reflector system purportedly reduces glare by directing light below the lamps' horizontal planes. The PRM2 arm-mounted lamp (above) is made of cast aluminum; its tempered glass lens is sealed with a silicone gasket. Custom colors supplement the La Marida, California-based company's 16 standard shades.
Circle 411 on information card.

Economical signs
Measuring only 1/4 inch thick, AstraLite's 5000 Exit Sign series mounts unobtrusively to walls or ceilings. Its refractive light-emitting diode (LED) construction purportedly consumes 96 percent less energy than most incandescent signs and 88 percent less than most compact fluorescent units. With no fragile filaments or operating components, LEDs will distribute light evenly, eliminating hot spots and lumen depreciation for up to 100 years.
Circle 412 on information card.

Lighting retrofit
The Westin La Paloma resort in Arizona replaced 250 incandescent bulbs with energy-saving, 15-watt Osram Sylvania Dulux EL lamps, garnering a six-month return on their investment. The compact fluorescent reflector lamps purportedly generate up to 80 percent less heat than the incandescent bulbs they replaced. An opaque enameled finish allows the lamp to operate alone or in conjunction with standard track and downlighting fixtures.
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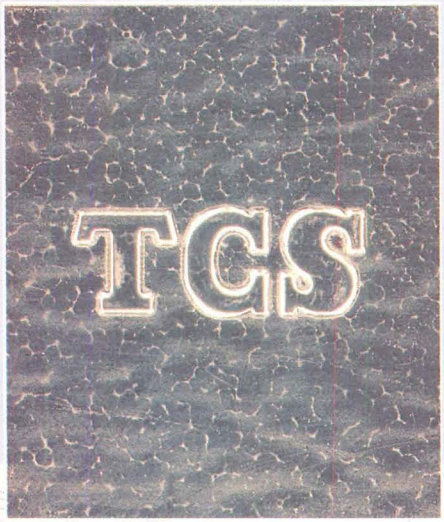

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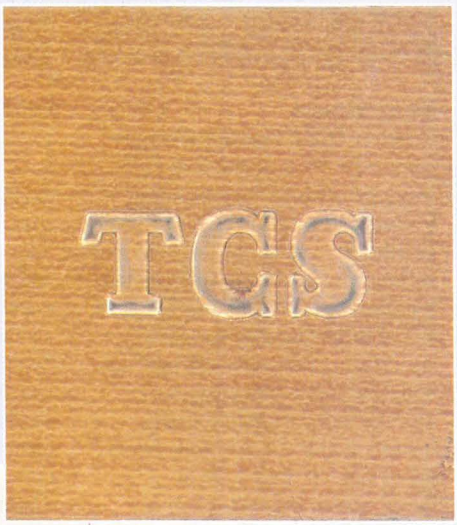

Hinsdale High School, Hinsdale, Illinois
Architects: Cone & Dornbusch

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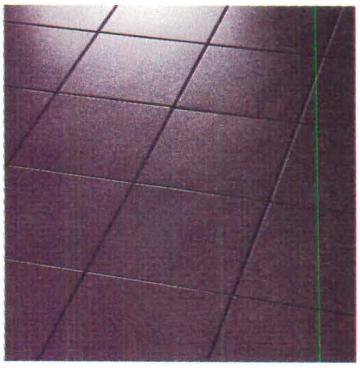
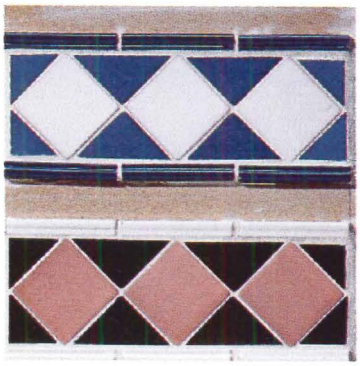
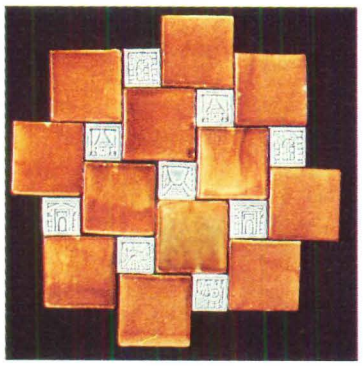


Porcelain tile
Cross-Plus porcelain tile (above) features a slip-resistant, low-maintenance finish for residential, retail, and commercial installations. Crossville Ceramics manufactures the durable floor tile in 8- and 12-square-inch sections, available in 33 colors. Cross-Plus tile is purportedly 30 percent harder than granite—the result of high temperatures during the firing process.
Circle 416 on information card.



Terra cotta tile
Rustic terra cotta comprises the Provence series of hand crafted wall tiles from Tisca America (above). Field tiles are available in 17 colors and 3 square sizes: 2 3/4-inch, 4-inch, and 6-inch. Borders and decorative relief liners in 17 colors and patterns and in linear or ropelike shapes distinguish the new line recommended for use in kitchens and baths.
Circle 414 on information card.

Floor tiles
Six colors comprise the Canyon collection of floor tiles from Cooperativa Ceramica d'Imola (above). Available in 12- or 16-inch squares, Canyon offers matching skirting and step tiles. A floral pattern distinguishes Azulejos Safont's Texas floor tile (below), available in sizes up to 20 square inches. *For information on Canyon, circle 417 on information card; for Texas, circle 418.*



Handmade tiles
Trikeenan Tileworks of Hancock, New Hampshire, specializes in handmade and handpainted ceramic tile (above). The company's reliefs can be combined with standard field tiles for custom installations and mosaic panels. Field tiles measure 4 square inches; Architectural Paraphernalia relief tiles measure 2 square inches.
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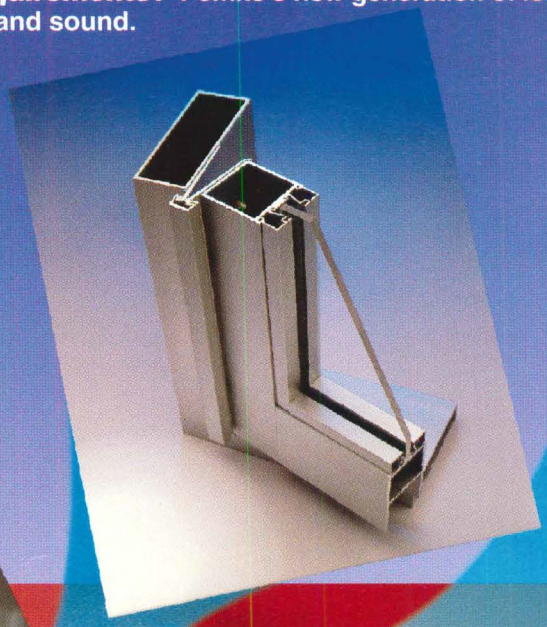

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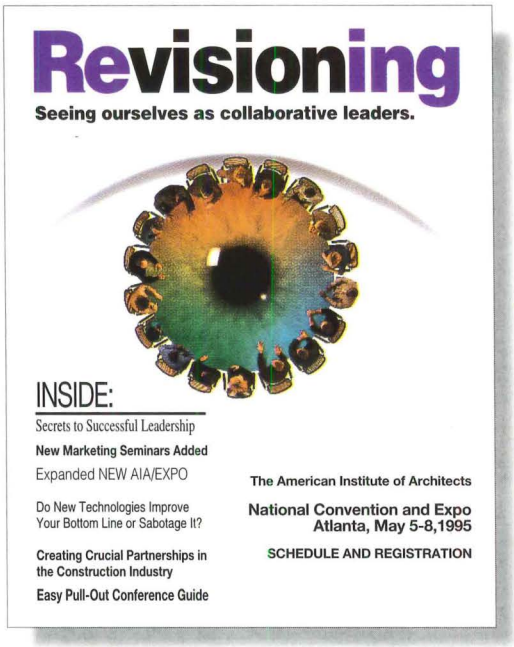

Our industry has changed drastically. And in order to succeed, we need to look at ourselves differently.

We need to work to build stronger new partnerships in the construction industry.

That's why this year's AIA Convention and Expo is so very important. It's all about Revisioning. And seeing ourselves as part of a collaborative leadership team.

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AIA

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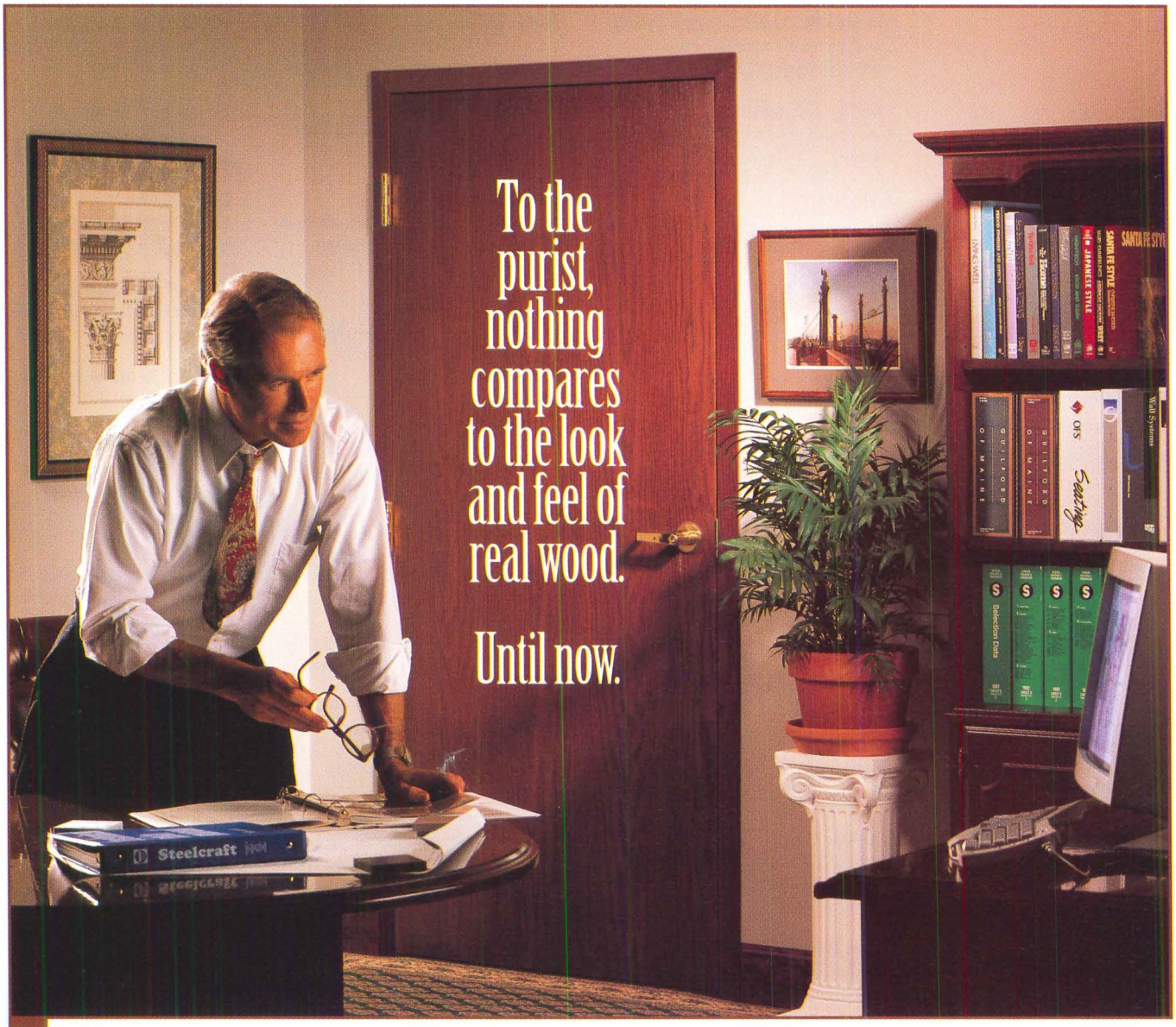

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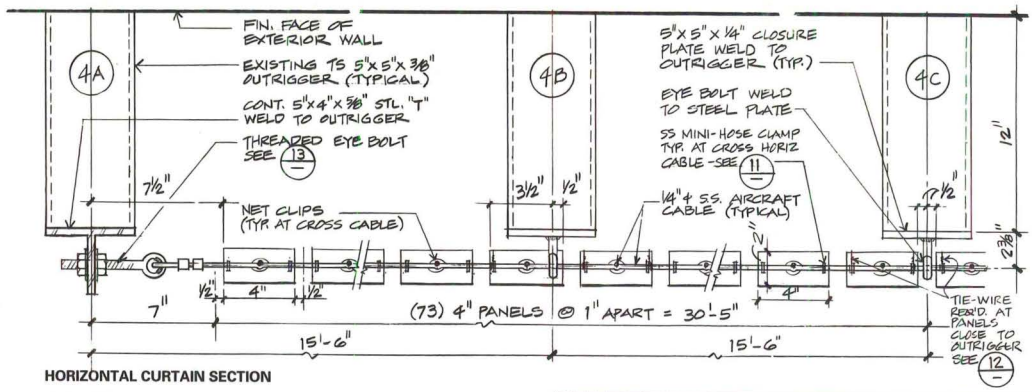
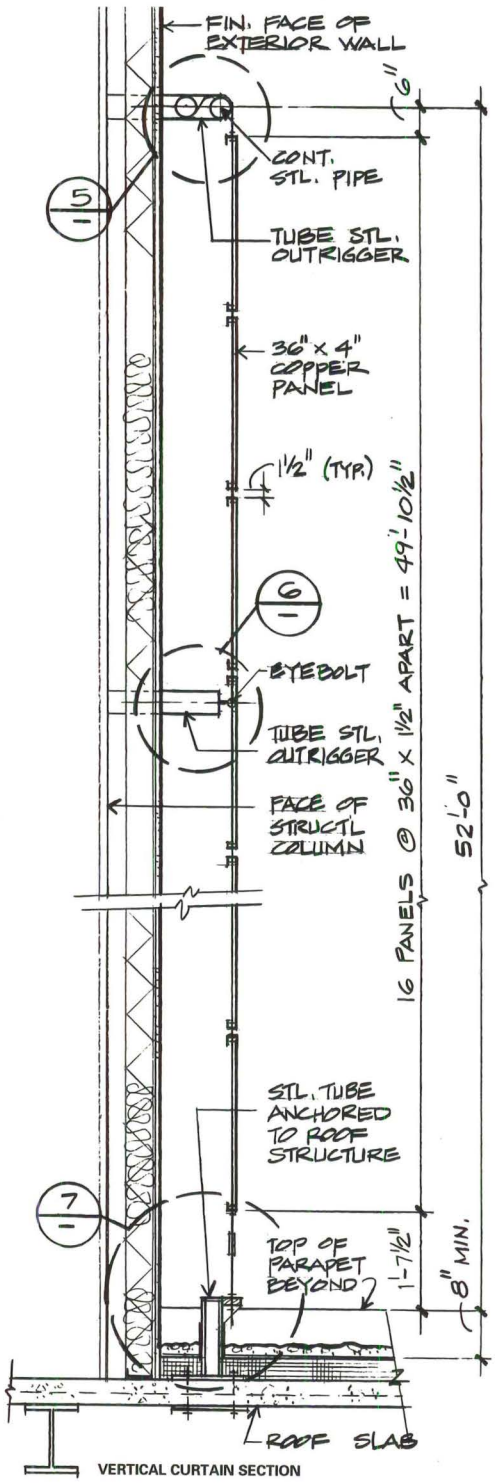
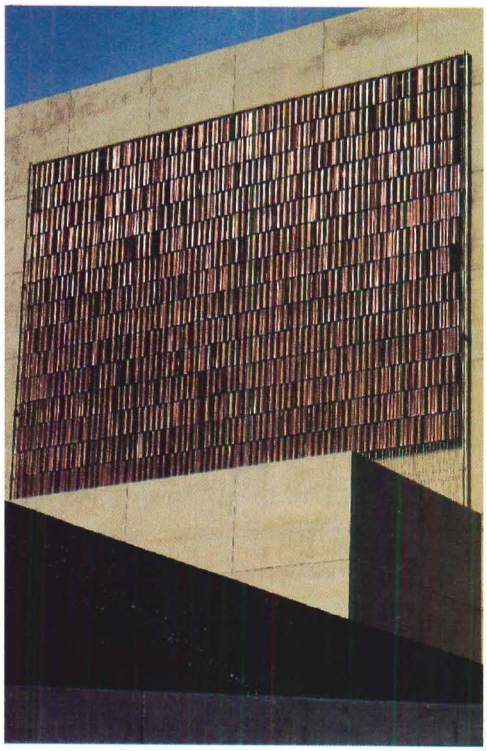


HORIZONTAL CURTAIN SECTION



VERTICAL CURTAIN SECTION



TIMOTHY HURSLEY

Civic Arts Plaza, City of Thousand Oaks
Thousand Oaks, California
Antoine Predock Architect
with Dworsky Associates

To identify the theater of a new civic and arts complex in Thousand Oaks, California (pages 84-93), architect Antoine Predock erected a 30-by-50-foot "curtain" composed of nearly 1,200 copper panels. Each of the 36-inch-high-by-4-inch-wide panels can move freely in the breeze.

Tubular steel outriggers mounted on the fly tower support a tensioned grid of 1/4-inch-thick stainless steel cables. At the top, a pair of steel pipes stretching the width of the curtain provides a strapping surface for the 73 vertical cables that support the copper panels.

The vertical cables are inserted through copper retaining clips fastened to the top of each panel. The cables are secured with stainless steel wire bolts and bushings to hold the panels in place.—*R.A.B.*