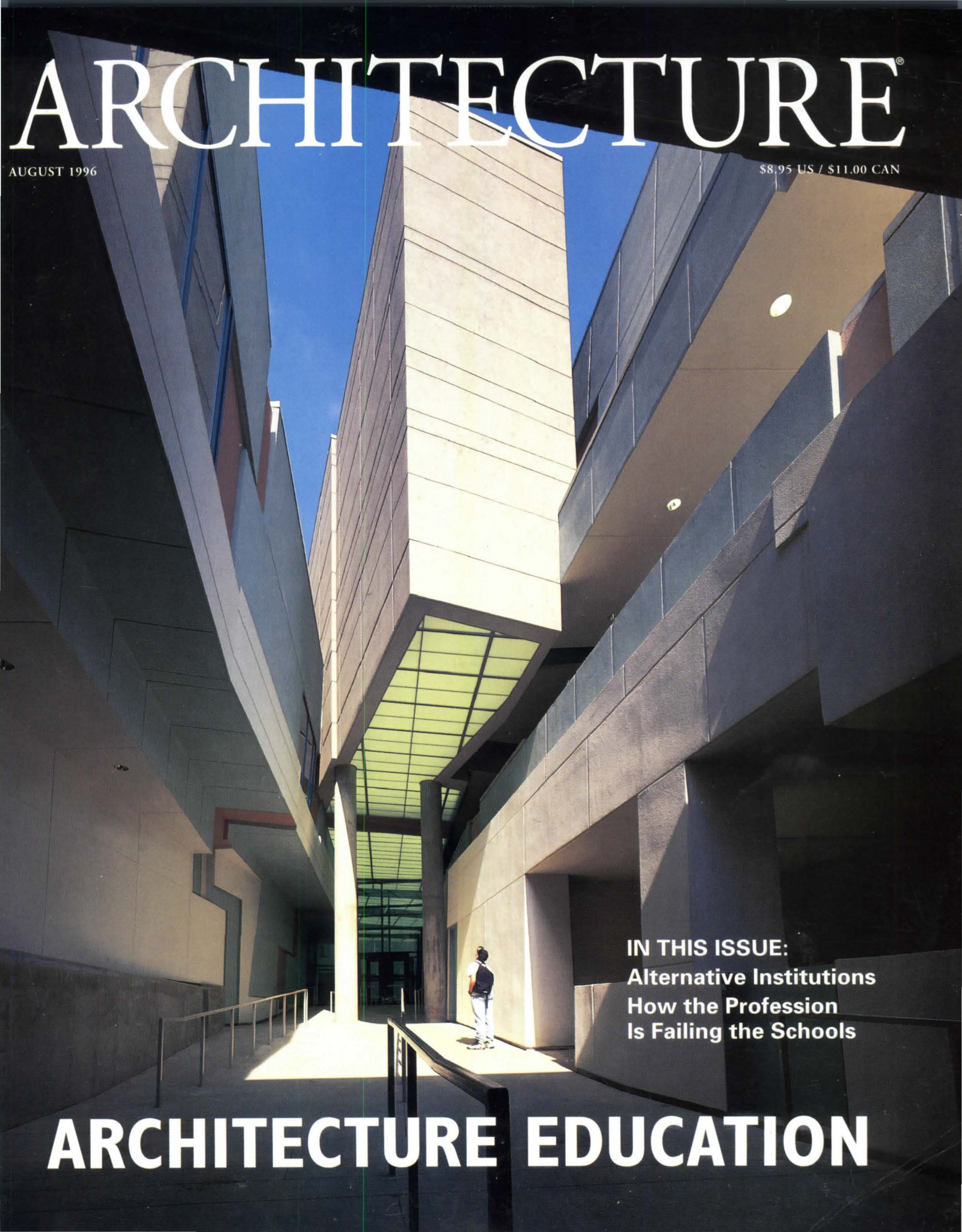
ARCHITECTURE®

AUGUST 1996

$8.95 US / $11.00 CAN



IN THIS ISSUE:
Alternative Institutions
How the Profession
Is Failing the Schools

ARCHITECTURE EDUCATION

New Hi-LR™ Ultima™ RH90® Ceilings...

Save up to 18% on indirect lighting costs!

PERFORMANCE THAT OUTSHINES OTHE

Build a Better Internship

Academics and practitioners must collaborate in new ways to improve the training of future architects.

Prompted by the Carnegie Foundation's recent study of architecture education (ARCHITECTURE, June 1996, page 15), this issue of ARCHITECTURE scales the ivory tower to offer constructive criticism for strengthening the bonds between the profession and the schools. We agree with the Carnegie study on the need to bridge academia and practice through the architectural internship. But, as the report points out, the present system of internship is broken, and no one seems prepared to fix it.

Internship is intended to teach the practical side of the profession to architecture school graduates through a three-year stint in a firm (or firms) that prepares them to pass the licensing exam. Unfortunately, the high failure rate of first-time examinees suggests the educational objectives of internship aren't being met. For example, more than 60 percent of would-be architects who were tested in June 1995 failed the exam's design problem, even after three years of office experience. If medical interns failed at the same rate, it would cause an uproar.

Further, internship is far too often an exercise in professional exploitation. Many interns are grossly underpaid—and sometimes not paid at all. Indignant and frustrated, interns and students are fighting back through the American Institute of Architecture Students and the Association of Collegiate Schools of Architecture (ACSA). These organizations recently adopted policies to curb the abuses by not inviting principals who do not pay their interns to speak at national and regional conferences, attend juries, receive awards, or hold an ACSA office.

The AIA purports to adhere to the same policy, but it could take stronger action by revoking the membership of architects found guilty of such exploitation and encouraging states to revoke their licenses.

Policing the profession won't solve the internship problem alone. While some firms pay low wages—or no wages—to boost principals' paychecks, many well-meaning practitioners simply can't afford to train recent graduates given today's diminished fees. Architects clearly need help in defraying the costs of internship to improve the mentoring process.

University-based teaching offices sponsored jointly by the schools and the profession would be one way to share the burden. Such work-study arrangements could be funded by tuition and project fees, and staffed by professionals who would secure real projects with real clients for the program.

Alternatively, the National Council of Architectural Registration Boards (NCARB), AIA, and ACSA could certify specific firms as internship offices with accreditation processes similar to those that the National Architectural Accrediting Board administers for the schools. Such accredited offices would receive a stipend from professional organizations such as the AIA, NCARB, and others to help compensate for their increased operational expenses.

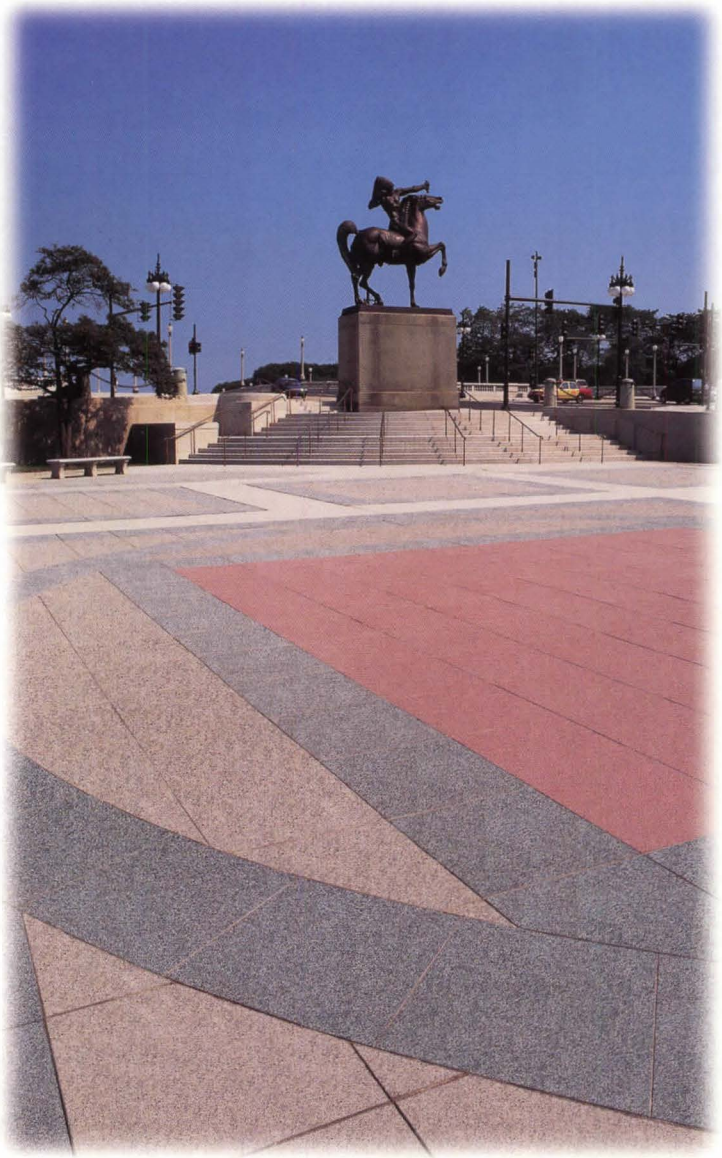
Last year, an AIA-appointed task force issued a report on the Intern Development Program (IDP), established by the AIA and NCARB to guide interns and their employers on training. The study recognizes that the current IDP system is too bureaucratic, inflexible, and costly. The task force urges the AIA and NCARB to create a simpler program that would place less emphasis on clocking interns' hours and focus instead on their performance within a three-year minimum of office training. If the best and brightest students are to become architects, internship should be examined as closely as the Carnegie Foundation studied the schools. The profession must find new ways to nurture its young.

Deborah K. Dietsch

Open Spaces Come Alive With Terra-Pavers

Turn those ho-hum roof and plaza decks into more usable contemporary spaces.

Precast concrete pavers from Wausau Tile can transform those outdoor areas and provide protection for roof and deck structures, too. Use Terra-Pavers for new construction or easy renovation of failing roof decks. Pavers install on-grade or with the patented Terra-System One® elevated system for sloped and level surfaces.



Choose pavers from a variety of styles, colors, and surfaces. Then add the finishing touches with matching precast accessories: treads, risers, planters, benches, or your own custom design.

Find out more about the industry's finest complete paving and roofing systems. Contact customer service for samples, specifications, literature, and technical assistance. We'll help you make those open spaces come alive.

WAUSAU TILE

Terra Paving Division
PO Box 1520 Wausau, WI 54402-1520
(800) 388-8728 (715) 359-3121 (715) 359-7456 FAX

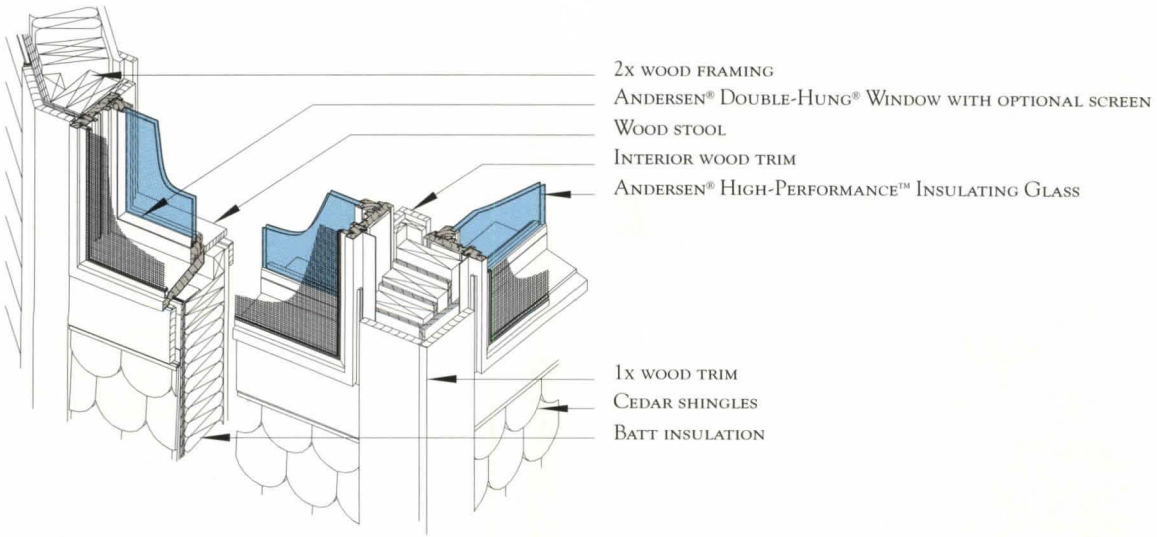
Circle 61 on information card

To Help Retirement Community Residents Feel Right At Home, Right Away, This Architect Looked To Andersen.

On a gentle rise on the outskirts of Manchester, surrounded by hardwood forests, lies Hillcrest Terrace. "The concept of a retirement community was new here. So to get people from the lovely Victorian neighborhoods in the area, we had to make Hillcrest special," said Project Architect Roger Dignard. The features of Andersen® Windows proved to be especially inviting. "The Narroline® double-hung

windows and angle bays were very familiar to our residents," said Dignard. "They felt right at home, right away. Each independent-living unit has the feel of a private home. Of course, with an aging population, the easy operation of Andersen Windows was also important."

The construction schedule of Hillcrest Terrace, just ten months from site preparation to completion, brought yet another feature to light. "Being able to order almost 2,000 windows from standard and custom sizes was critical," Dignard added, "and Andersen delivered."



ANDERSEN COMMERCIAL GROUP™

Andersen AW Windows Patio Doors

For an Andersen representative, call 1-800-426-7691, ext. 1625.

Circle 1 on information card

Letters

New Urbanist exposure

Really enjoyed your profile on the "new" urbanists (ARCHITECTURE, April 1996, pages 68-77). It's about time someone exposed those dudes for what they are. Thanks.

Steve Badanes
Adjunct Professor, School of Architecture, University of Washington
Seattle, Washington

SOM's example

The selection of Skidmore, Owings & Merrill (SOM) as the recipient of this year's AIA "firm of the year" award was, to put it diplomatically, ironic. While I would be among the first to praise SOM's excellent work, how is it that the AIA chooses to honor a firm that, over the past seven years, has seen its revenue reduced by 26 percent, its staff cut by more than two-thirds, its office in America's largest city closed, and former partners suing it to the tune of $44 million? Is this the best example of professional practice that we have to offer our colleagues, much less our clients?

Scott Simpson, AIA
The Stubbins Associates
Cambridge, Massachusetts

Academic rot

"Reporting on Education—Again" (ARCHITECTURE, June 1996, page 15) brought to mind a lesson I learned after architecture school—the first rule of the bureaucracy is to maintain that bureaucracy!

The real world has taught me that the most important issues affecting the profession are not and will not be taught in schools, whose "business mission" continues to be only a superficial orientation and sensitivity toward customized buildings.

As long as academics remain isolated from the real issues of economic reality, the same old limited thinking will result in the same old criticisms of young graduates and valueless designers. Perhaps architecture schools should "merge" with business and engineering schools, so those with an abundance of quantitative thinking can expand their horizons with those who have an abundance of qualitative thinking, and vice versa.

Carl Sherrill, AIA
Lakewood, Colorado

The frustration expressed in your June editorial on the Carnegie Foundation study is shared by many. The rot is deep. Recent attempts at restructuring are hopeless in the hands of bureaucrats unable to understand the process of transformation that underpins architectural thinking.

Change does not happen by assertion, nor does it occur when faculty search committees are charged with finding "famous" people to come in and add luster. As with building itself, the process is arduous and requires constant monitoring. Not so easy for those academics who have long since given up on practice and have become quite comfortable doing as little as possible—at the expense of naïve students.

Richard Tremaglio
Cambridge, Massachusetts

EIFS' shortcomings

Your gentle slap on the wrist directed at EIFS (ARCHITECTURE, May 1996, pages 251-253) in the wake of the lawsuits in North Carolina falls short of the mark. You seem as concerned with the systems' market penetration statistics as with their water penetration fiascos.

EIFS has had a history of failures that architects and owners would not tolerate in any other building material. But the construction community continues to ignore EIFS' alarming shortcomings, largely because of its low initial cost. Any exterior material which must rely on near perfect detailing and field installation is bound to have serious performance problems, as EIFS has repeatedly exhibited.

Faced with budget constraints and a need for design flexibility, architects would better serve their clients by examining the advantages of cladding materials such as architectural precast concrete and glass-fiber-reinforced concrete panels, which are every bit as flexible as EIFS and a great deal more reliable.
Thomas B. Battles, AIA
President, Precast/Prestressed Concrete Institute
Chicago, Illinois

Egocentric design
The house by Angélil/Graham (ARCHITECTURE, June 1996, pages 143-147) might be conceptually interesting, but it relates to Topanga Canyon with the sensitivity of a manufactured home plopped in a beautiful setting by the truck driver. The elevations reveal a structure which is strictly egocentric and responds only to the occupants within taking advantage of the glorious setting—it ignores everything else in the canyon trying to enjoy the same.
Thomas R. Mistretta, AIA
San Diego, California

Change of heart
When I began receiving ARCHITECTURE in lieu of *Progressive Architecture,* I wrote to complain of what I perceived as an overemphasis on star male architects and projects. However, I must thank you for the June issue. I loved your coverage of husband-and-wife teams—not only for the architects themselves but for your sensitive, personable interviews. Please accept my change of heart.
Wendy Lochner
Senior Editor, Architecture and Design Professional Book Group
McGraw-Hill
New York City

Hetero exclusivity
Your June issue is so off base as to be at once laughable and frightening. Was your intention to do a cover story that was gender- and relationship-based and purposefully exclusive? And was "Male Space" (ARCHITECTURE, June 1996) intended as some kind of a sop to your gay readership—slathering the cover with heteros and burying a vaguely queer article on page 77? Is this your idea of editorial balance?
If this were 1966, your June issue might be considered regrettable. Today, it is outrageous.
Daniel Gundrum, AIA
New York City

Male laughter
After I stopped laughing at "Male Space" (ARCHITECTURE, June 1996, pages 77-81), it suddenly dawned on my non-politically-correct mind that Joel Sanders is actually serious. I have seen architects assume the accolades for any number of things for which they had little or no responsibility, but to claim that architecture "participates in the manufacturing of male as well as female identities" is positively ethereal, the final step from the sublime to the asinine.
One example: that Le Corbusier's "Law of Ripolon," which refers to whitewash over Modern buildings' exteriors, indicates masculine traits of "logic, hygiene, and truth." So if you don't do this, you automatically become a promulgator of "illogic, sloth, and overt sneakiness"? The arrogance, not to mention the patronizing attitude, of this writer readily explains why architects are assumed to be only a legal requirement instead of an integral part of design.
Gary K. Moore
Hayes Large Architects
Harrisburg, Pennsylvania

Correction
Photographs of former CRSS principals Thomas Robson and James R. Whitley were mistakenly identified as Cecil Denny Highton partners John Denny and Michael Highton and vice versa (ARCHITECTURE, June 1996, page 152).

Painted molding with the look of a CRISP WHITE SHIRT enhances the unique translation.

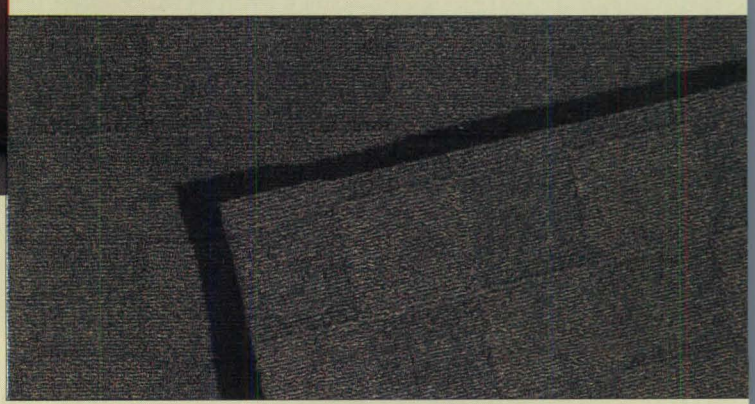
And lands First Place in one of the TOP design competitions in the nation.

Crisp and Californian

MONSANTO PRESENTS ITS COVETED DOC AWARD TO BARBARA BARRY INCORPORATED, LOS ANGELES, CA, IN ASSOCIATION WITH GENSLER, SANTA MONICA, FOR THE TAILORED RESIDENTIAL TONE THE TEAM CREATED FOR LOS ANGELES HEADQUARTERS OF HOMEBUILDERS KAUFMAN & BROAD.

The WINNING designers used wood flooring inset with Bentley Mills, Inc.'s CUSTOM carpet with Monsanto Ultron® VIP nylon to suggest the WARMTH of AREA RUGS in an archetypal California home.

Choose Ultron® VIP nylon for your next project. And you could take HOME the Doc, too.



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

Circle 121 on information card

Monsanto Contract Fibers

Winning design team shown above (L to R): Armando Iarussi, Debbi Baron and Barbara Barry (seated).

Events

Exhibitions

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

DENVER. "Borek Sipek: Auratic Architecture and Design" and "The Industrial Revolution," through January 1997 at the Denver Art Museum. Contact: (303) 640-2295.

MONTREAL. "Frank Lloyd Wright: Designs for an American Landscape," through September 22 at the Canadian Center for Architecture. Contact: (514) 939-7000.

WASHINGTON, D.C. "Frank Lloyd Wright: American Spirit Alive in Japan," through January 19, 1997, at the National Building Museum. Contact (202) 272-2448.

Conferences

AUSTIN. Construction Project Improvement, September 29-October 1, sponsored by the Construction Industry Institute.
Contact: (512) 471-6494.

BUDAPEST. International Union of Women Architects conference, September 2-8.
Contact: 36-1-212-2239.

CHICAGO. Autodesk University conference and exhibition, September 15-19. Contact: (415) 771-5775.

Metalcon conference, October 1-3.
Contact: (617) 965-0055.

ESTES PARK, COLORADO. "Partnering for a Sustainable Future," September 26-29. Contact: (970) 491-2721.

PHILADELPHIA. Organization of Black Designers meeting, October 31-November 2. Contact: (202) 659-3918.

SALT LAKE CITY. World Workplace conference, October 6-8.
Contact: (713) 623-4362.

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

WASHINGTON, D.C. Professional design/build conference, October 10-11, sponsored by the Design-Build Institute of America.
Contact: (202) 682-0110.

Competitions

Stadium design competition for Sapporo, Japan. **Registration due August 20; designs due January 14, 1997.** Contact: 81-11-222-3076.

"Furthermore..." publication grants, sponsored by the J.M. Kaplan Fund. **Deadline September 1.**
Contact: (518) 828-8900.

Progressive ARCHITECTURE Awards for unbuilt architecture and urban design. Deadline for submissions September 6. See entry form on pages 59-60 for guidelines. Contact: (202) 828-0993.

NOVA Award for construction innovation, sponsored by the Construction Innovation Forum. **Deadline September 15.**
Contact: (313) 995-1855.

The Canadian Center for Architecture's Visiting Scholars Program fellowships. **Applications due October 1.** Contact: (514) 939-7000.

Greenport, New York, waterfront park design competition. **Registration due October 19.**
Contact: (516) 477-3000.

National Lighting Awards Program, sponsored by the National Lighting Bureau. **Entries due October 13.**
Contact: (301) 587-9572.

SUPRA-SLATE®

Sensational Look. Sensible Choice.

The "Direct from the Quarry" finish of Supra-Slate shingles gives your roof a stunningly authentic slate look at a significantly lower cost.

Choose from a wide range of natural solid colors or our prepackaged ColorBlends.™ Every Supra-Slate shingle is non-combustible, freeze/thaw proof, and backed by 50 years of experience.

For information on any GAF MC fiber-cement roofing or siding product, call 1-800-223-1948 or fax 1-201-628-3865.

GAF®
GAF MATERIALS CORPORATION

1361 Alps Road, Wayne, NJ 07470

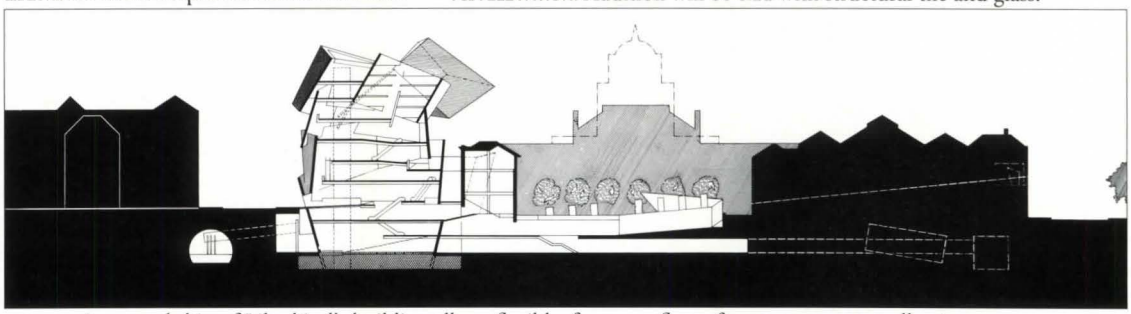
Circle 67 on information card

News

MARG BAILEY PHOTOS

LIBESKIND ADDITION: Squeezed into boilerhouse.

V&A ELEVATION: Addition will be clad with structural tile and glass.



SECTION: Structural skin of Libeskind's building allows flexible, free-span floors for contemporary collections.

Libeskind Wins London Museum Expansion

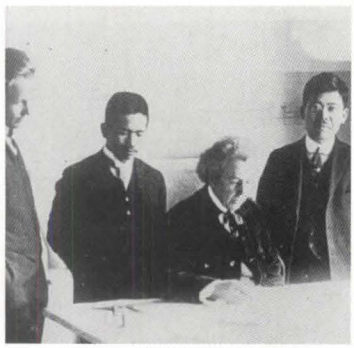
London's Victoria and Albert Museum (V&A) is better known for its Arts and Crafts collections than its architecture. That may soon change if Daniel Libeskind has his way. In May, Libeskind bested Zaha Hadid, Norman Foster, and Nicholas Grimshaw in the competition to add 10,000 square meters to the V&A.

Libeskind's proposal radically departs from the V&A's clunky Classicism: tumbling, blocky forms inserted into a courtyard that was formerly the boilerhouse. There is no attempt to acknowledge precedent or context, and the British press is in an uproar. The $64 million, high-tech information center and exhibition space will be completed in 2001—if protests don't thwart the project.—*Reed Kroloff*

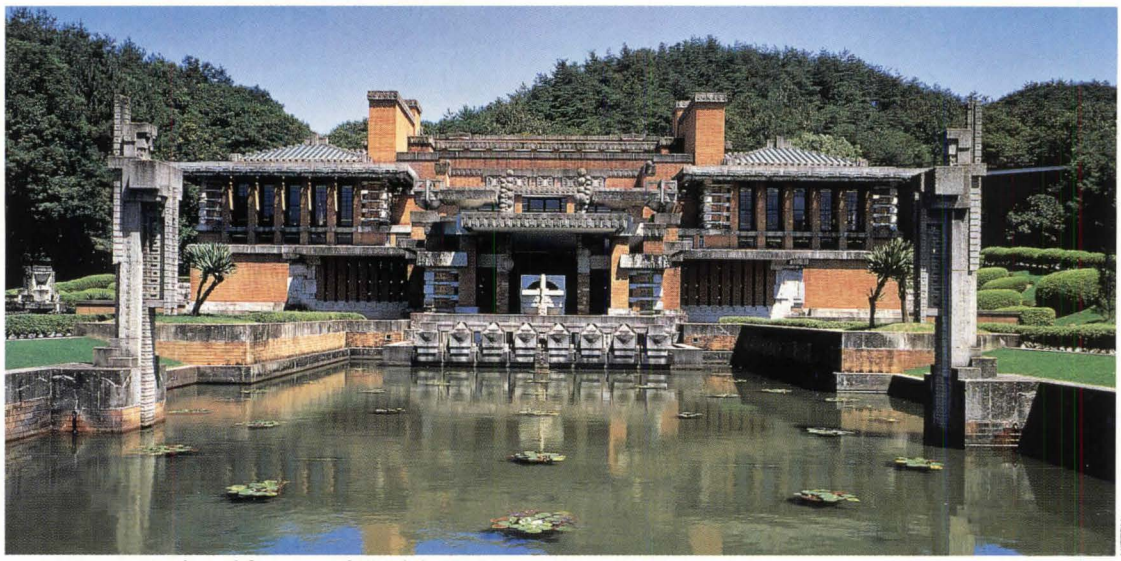
Ellerbe Sued Over ADA

Architects may now breathe a sigh of relief about their liability under the Americans with Disabilities Act (ADA). In July, a federal judge in Washington, D.C., released Ellerbe Becket from a lawsuit brought by the Paralyzed Veterans of America (PVA) against the Minneapolis firm. PVA alleged that Ellerbe's design of the new MCI Center arena in Washington violates the ADA's public-accommodations provisions. The veteran's group filed suit in June against Ellerbe and the arena's developer, contending that the MCI Center's seating plan relegates 70 to 80 percent of wheelchairs to areas where sight lines would be blocked by standing crowds. PVA sought an injunction to halt arena construction until the seating plan was changed. While Ellerbe was freed from the suit, the case against the developer is pending a trial date later this year.

"This is a decision of major impact," maintains AIA Vice President Stuart Binstock. "It is the first court decision that speaks directly to an architect's liability under the ADA." The AIA filed a friend-of-court brief on behalf of Ellerbe, arguing that the statute holds owners, operators, and lessors responsible for ADA compliance but expressly exempts architects from direct liability. The Civil Rights Division of the U.S. Department of Justice filed its own brief supporting PVA's position, asserting that failure to "design and construct" accessible public facilities amounts to discrimination under the law, and that architects are liable because they design. While the July decision shields architects from direct liability, Binstock adds, they may still be contractually liable to clients.—*Bradford McKee*

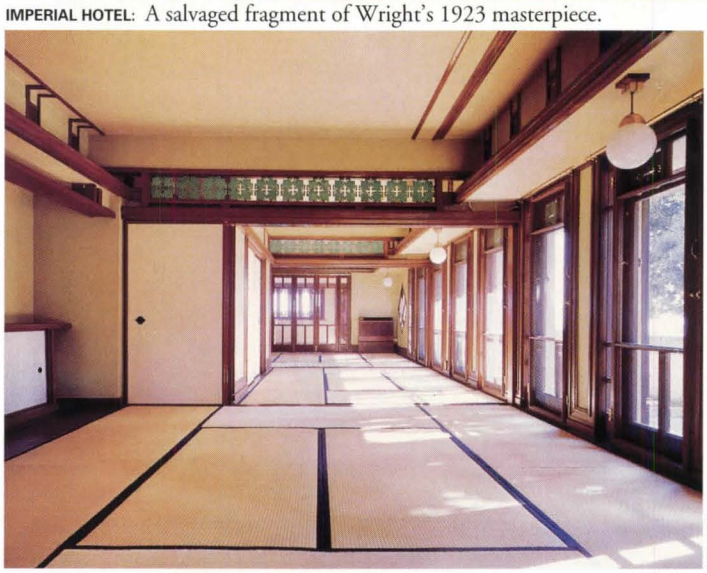


WRIGHT: With Japanese assistants.



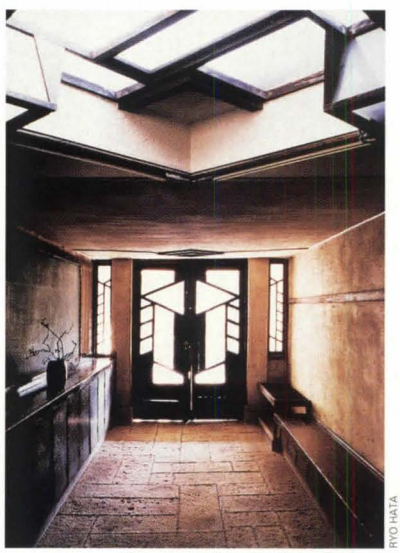
NITTEN

IMPERIAL HOTEL: A salvaged fragment of Wright's 1923 masterpiece.



RYO HATA

YAMAMURA HOUSE: Tatami mat interior of 1924 building.



RYO HATA

JIYU GAKUEN: Threatened with demolition.

Wright's Japan Projects On View in Washington

Except for the fabled Imperial Hotel in Tokyo, Frank Lloyd Wright's 12 Japanese commissions are little known in the master's oeuvre. Now an exhibition at the National Building Museum in Washington, D.C., "Three Buildings by Frank Lloyd Wright: American Spirit Alive in Japan," elucidates the history of the three (more or less) remaining projects—the Imperial Hotel (1923), the Yamamura House (1924), and the Jiyu Gakuen School (1926).

The exhibition of photographs, models, building fragments, and objects is organized spatially and thematically into four parts. An introduction that cursorily explains Wright's social and cultural connections with Japan is followed by presentations on the three projects. Tracking these three survivors of the wrecker's ball from their commissioning to the present, the exhibition acquaints Americans with two heretofore unknown projects but underemphasizes the esthetic ties between Wright and Japan.

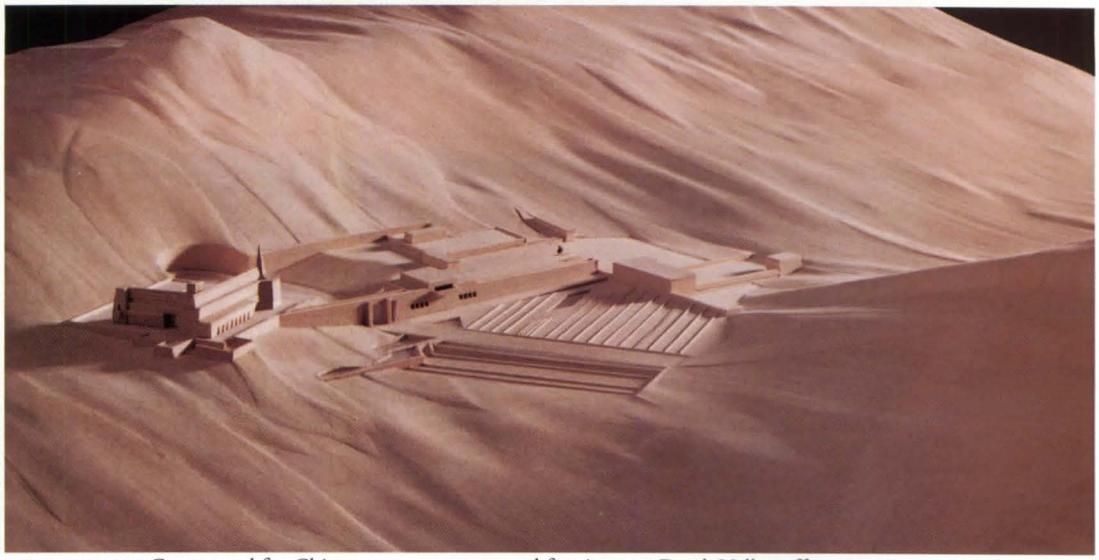
The Imperial Hotel's survival of the Great Kanto earthquake, which leveled most of Tokyo on the day of the hotel's opening in 1923, is a familiar part of Wrightian lore. Typically immodest, the architect took full credit for the hotel's seismic resilience, devoting an entire chapter of his autobiography to the event. While natural forces did not demolish the hotel, the skyrocketing Tokyo real estate market forced the increasingly inefficient low-density building into obsolescence. In late 1967, the hotel was demolished except for the entrance pavilion, which was salvaged and moved to a park.

The magnitude of the Imperial Hotel's almost total loss is untenable, given that its design is among the most masterful of Wright's career. By contrast, the architect's designs for the Yamamura House and Jiyu Gakuen School are not nearly significant enough to merit equal billing with the hotel. Nor does the mere fact of their physical survival elevate them.

The lack of attention to Wright's additional six unbuilt and three demolished Japanese projects obviates the show's value as a survey of his Asian commissions. The influence of Japanese esthetics on Wright's projects and his influence on his Japanese followers are also underemphasized. However, by highlighting preservationists' efforts, "American Spirit Alive in Japan" may help prevent further losses of Wright's work.—*Ned Cramer*

FRANK LLOYD WRIGHT FOUNDATION

TAHOE COLONY: Prototypical cabin.

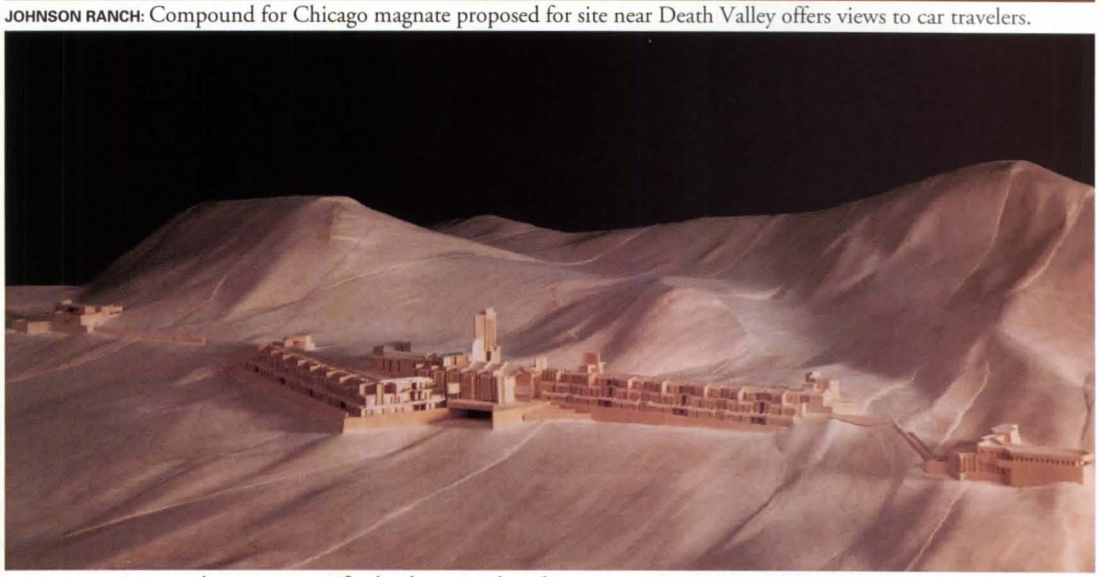


CANADIAN CENTER FOR ARCHITECTURE

JOHNSON RANCH: Compound for Chicago magnate proposed for site near Death Valley offers views to car travelers.

FRANK LLOYD WRIGHT FOUNDATION

MOUNTAIN SPIRAL: Guggenheim forerunner.



CANADIAN CENTER FOR ARCHITECTURE

SAN MARCOS: Arizona desert resort unifies landscape with architecture.

Wright's Car Landscapes Exhibited in Montreal

When Frank Lloyd Wright returned in 1922 from Tokyo, where he lived during construction of the Imperial Hotel, he hoped for large corporate commissions but found only a handful of private clients. Over the next decade he embarked upon a series of speculative projects designed to interest wealthy landowners. None of these were ever built, but drawings of five such projects, collected in the provocative exhibition "Frank Lloyd Wright: Designs for an American Landscape, 1922-1932," at the Canadian Center for Architecture in Montreal through September 22, reveal Wright's explorations for a new American territory: suburbia.

Through 150 drawings, curator David De Long examines Wright's experimentation with new technologies, new geometries, and the relationship of structures to roadways in schemes expressing Americans' newfound mobility. In some cases, Wright made no site plans; De Long actually walked the sites to determine where Wright positioned the buildings in his sketches. De Long then directed Yale Professor George Ranalli to produce five three-dimensional balsawood models; animated computer models prepared by the University of Toronto's Center for Landscape Research create a digital "drive-through" of three sites.

For the Doheny Ranch Development in Beverly Hills, California, Wright conceived a hilly suburb as one structure, with a ramped roadway and bridges formed by retaining walls that serve also as walls of houses. Roof terraces, roads, and houses are clustered to accentuate and complement the rolling terrain.

While hoping for a response from Doheny (it never came), Wright designed houseboats for the proposed Lake Tahoe Summer Colony. An inn at the edge of an island was to be connected to shore by a bridge on floating pontoons; cabins and houseboats—not all seaworthy according to computer analyses—were to accommodate guests. Wright's aquatic scheme sunk when it failed to attract investors, and in 1924 the architect turned his attention to the desert.

A Death Valley compound for Chicago life insurance magnate A.M. Johnson comprised a 1,000-foot-long wall enclosing a roadway, existing buildings, fountain, main house, and chapel. In his San Marcos resort in Arizona, cars would approach under the building, following the edge of a ravine.

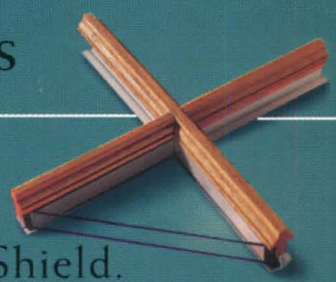
In the summer of 1924, Gordon Strong commissioned Wright to design an "automobile objective" atop Sugarloaf Mountain near Washington, D.C. However, Strong found Wright's helical spiral too audacious, and Ranalli's model shows why: the scale was enormous. In 1929, Wright requested his original drawings back—he wanted to apply the spiral form to a museum.

Wright's schemes for a society just beginning to embrace the automobile should be particularly interesting to architects who deem cars damaging to American communities. Ever the visionary, Frank Lloyd Wright knew that the automobile was here to stay. What a pity that few present-day designers have seen fit to celebrate the car as Wright did.

The Wright exhibition will travel to Washington, D.C., where it will open at the Madison Building of the Library of Congress on November 14.—*Heidi Landecker*

Why I decided

"Custom windows require custom answers, and that's what I get from Weather Shield.



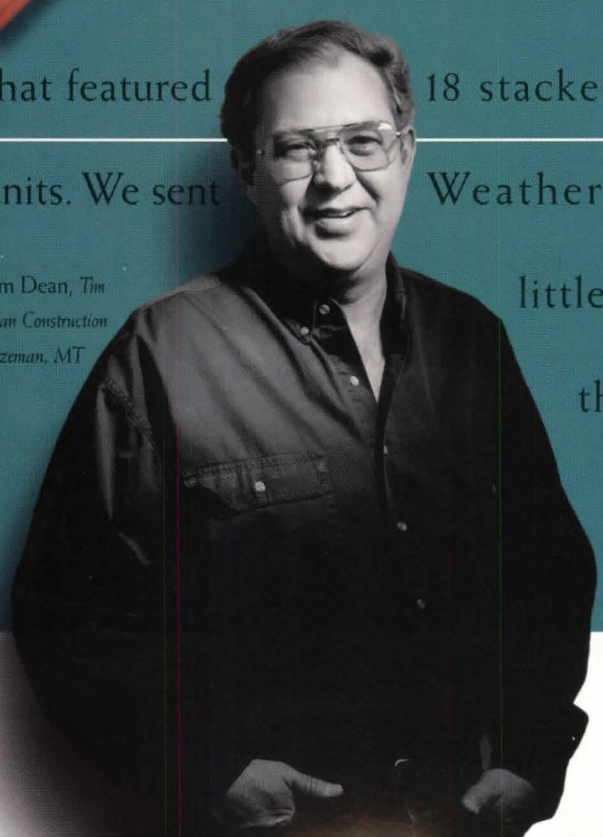
An innovative spacer bar design allows 7/8-inch TDL with insulated glass.

My firm builds upscale, one-of-a-kind homes. We're also located in Big Sky country – so clients demand unique, custom windows to take advantage of the views.

Only Weather Shield offers you The Hardwood Series: True Oak,™ Maple and Cherrywood™ interiors.

Once, we built a soaring entryway with a custom door and window combination that featured 18 stacked window units. We sent Weather Shield a little sketch, and they created a fully-engineered

Value R10 has three panes of glass, two Low E surfaces, plus Argon and Krypton gas in both airspaces. (Not available in TDL.)



Tim Dean, *Tim Dean Construction Bozeman, MT*

drawing. Installation was a breeze. The project turned out so well, we put the photo on the cover of our company brochure. When it comes to details, we even design and build our own moldings, casings and chair rails. We find that same attention to detail through Weather Shield's full line: their 7/8" True Divided Lite, *Hardwood Series*, the Low E and Value R10 triple-pane glazing options. When it comes to service, if we have any questions, they're right there, boom, just like that. For quality and service, Weather Shield is a custom fit."

For the name of the dealer nearest you call 1-800-477-6808 ext.1046 Or log on at www.WeatherShield.com.

Circle 73 on information card

Windows & Doors

All Weather Protection - Always!

WEATHER SHIELD MFG. INC. MEDFORD, WIS.

ake the switch to Weather Shield.

Record Editor Resigns

After tying the knot with the AIA last fall, *Architectural Record* is now looking for a new editor. Stephen A. Kliment, *Record*'s editor since 1990, resigned July 1. Kliment, 66, explains that he left his post to focus on "exciting new opportunities" in writing and teaching.

Meanwhile, Elaine Shusterman, *Record*'s new publisher, has installed an interim editor, Malcolm Abrams, but would not specify his credentials in architecture or publishing other than to say he is "a consultant who has worked with the magazine for several months in a number of ways," adding that "he is not a candidate for editor." McGraw-Hill spokeswoman Eileen Gabriele confirms that while *Record* staff were invited to apply for the job of editor, an "active search" is under way outside the organization for a permanent replacement. "They are looking to fill the post quickly," Gabriele maintains. Abrams and staff editors refused comment.

Speculation about the future direction of *Record* and its staff began last September, when McGraw-Hill and the AIA announced that the 105-year-old magazine would become the Institute's official publication in January 1997, edging out bids by BPI Communications, publisher of ARCHITECTURE; Penton Publishing, which at the time owned *Progressive Architecture;* and the New York Times Company.—*B.A.M.*

P/A Staff Goes On-Line

Former staff members of *Progressive Architecture* are collaborating on ArchitectREACH, a new on-line information service for architects. The service is being developed by *P/A* Executive Committee veterans Gloria Adams, John Morris Dixon, Thomas Fisher, and Philip H. Hubbard, Jr.; operations are based in the former *P/A* editorial office in Stamford, Connecticut. Princeton Architectural Press chief Kevin Lippert's graphics studio, Design Systems, is designing the service. The majority owner of ArchitectREACH is Reach Networks, a privately held, New York City-based on-line information provider.

ArchitectREACH is a proprietary service requiring special operating software, and will be available for a $15 to $20 monthly subscription fee. The service is expected to debut November 1 with news articles, a products database, and on-line discussion forums. While Fisher maintains that ArchitectREACH will keep the editorial spirit of *P/A* alive, he insists the on-line service "is not intended as a direct competitor to the print publications. ArchitectREACH will be a very different animal."

Since only half the country's firms have access to the Internet, ArchitectREACH may be hard pressed to generate an audience. But the staff members have already held focus groups to address architects' unfamiliarity with the Internet. Adams remains optimistic: "If we make the information compelling enough, people will seek us out."—*N.C.*

Architecture Schools Appoint New Deans

During the past two years, more than 40 architecture schools have hired new deans or directors, and others are in the process of searching. Earlier this summer, the College of Architecture and Landscape Architecture at the University of Minnesota named former *P/A* editorial director Thomas Fisher as dean. Fisher was chosen over Daphne Spain, former associate dean at the University of Virginia School of Architecture; Minnesota landscape architect Peter Olin; and Steven Fong, a professor at the University of Toronto School of Architecture and Landscape Architecure.

This July, at the University of Pennsylvania, Gary Hack, former Massachusetts Institute of Technology professor of urban design, began his tenure as dean of the Graduate School of Fine Arts, replacing Malcolm Campbell. At Tulane, Donna Robertson has vacated her position as dean of the School of Architecture to take the helm as dean of the Illinois Institute of Technology College of Architecture. At the Catholic University of America, former Virginia Polytechnic Institute professor Gregory Hunt takes the reins from Stanley Hallet as dean of the School of Architecture and Planning. On October 1, Kathleen Conlin, former head of the theater department at Ohio State University, takes charge of the College of Fine and Applied Arts at the University of Illinois at Champaign-Urbana.

Several schools are still searching for deans: the College of Environmental Design at California State Polytechnic University, Pomona; the College of Architecture at the University of Arizona; and the College of Design at Louisiana State University. The Department of Architecture and Building Construction Technology at Hampton University is looking for a new department chair. And Georgia Institute of Technology is conducting a search for a director of its architecture programs.—*N.C.*

Conference Examines New Urbanism

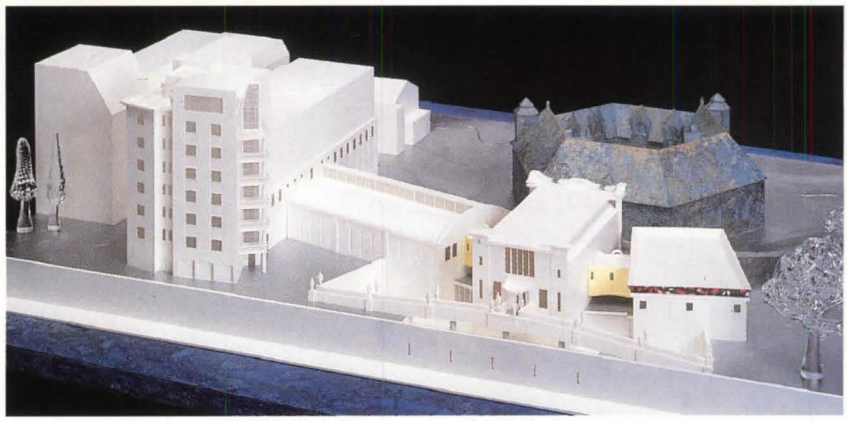
Architects held sway over developers at "Designing Master-Planned Communities: In Search of New Visions," a conference held June 24-25 in Reston, Virginia. The conference, sponsored by the Urban Land Institute, a Washington, D.C.-based nonprofit organization, pitted New Urbanists against planners of conventional suburbs in sessions on design guidelines, financing, retail, and transportation.

A full day of presentations on New Urbanism, including provocative rhetoric by architect Andres Duany, Congress for the New Urbanism Executive Director Peter Katz, and architect Philip Erickson of Calthorpe Associates, was countered by Denver land planner David Jensen. Jensen, who backs curved streets, challenged New Urban grids, calling them militaristic and unresponsive to terrain. Afterwards, Duany led the 255 attendees, about 80 percent of them developers, on a tour of Kentlands, Maryland, one of the oldest New Urban subdivisions.

KENTLANDS: Duany shows off model.

While "New Visions" proved developers are intrigued by the concept, no presenter offered convincing evidence of a market for New Urbanism. Santa Margarita, a very successful 5,000-acre California project, was introduced at the conference as a conventional suburb/New Urban hybrid. But the New Urbanists are not interested in any visions for America, no matter how successful, that differ from their own.—*H.L.*

SIPEK: Czech-born designer.



BUILDING: Proposed art museum for 's Hertogenbosch, Netherlands.

Borek Sipek Debuts In Denver

Forty-seven-year-old Borek Sipek, a Czech-born, Amsterdam-based architect and designer, receives his stateside introduction in "Borek Sipek: Auratic Architecture and Design," a single-gallery exhibition of tableware, furniture, architectural models, and graphics on view at the Denver Art Museum through January 1997. Highly regarded in Europe, Sipek is well versed in many design forms, primarily furniture, glassware, silver, and porcelain.

Curator Craig Miller calls Sipek the successor of Ettore Sottsass, proof of the continued vitality of European Postmodernism. The curator also lauds Sipek as "the first major European designer to emerge from the fall of the Eastern Bloc." The architect's irreverent, excessive, and sensual strain of Postmodernism, which expands conventional definitions of taste, is a far cry from the polite American style.

Sipek's work is fraught with cultural references, albeit in unexpected, mannered juxtaposition. For example, tableware designed for luxury manufacturers Sevres, Driade, Ajeto, and Swarovski juxtaposes Chinese lacquerware with Bohemian crystal and Delft porcelain

WILLIAM O'CONNER PHOTOS

FURNITURE: Wood, metal, and wicker designs.

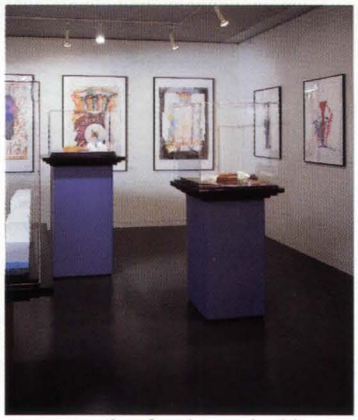


EXHIBIT: Studies for objects, buildings.

DECORATIVE ARTS: Viewed through openings in pavilion.

with sterling silver. The designer's work clearly comprises objects *de luxe:* a single place setting of Sipek-designed china costs thousands of dollars. But it's precisely this expense that enables him to employ the highest standards of craft.

Sipek also employs witty forms: a tumbler is supported on an unstable base; a glass flower vase incorporates smaller, lily-shaped glass flutes. Forty such examples of the designer's craft are visible only through the narrow, gilded slits of a pumpkin-colored pavilion designed by Sipek.

Furniture is displayed on a stepped platform to one side of the exhibition gallery; here too, Sipek's irreverent sensibility shines through. A recamier is an assemblage of discordant parts; its sensuously upholstered back meets a homely, carved wood front. Chrome feet emerge from flared "pants" legs that support a side table. A folding chair lacks hinges, rendering it inoperable.

Only recently has Sipek begun to build in earnest. But rather than show photographs of completed architecture, the exhibition includes models and drawings of a new building being designed by Sipek for the Museum of Contemporary Art in the Netherlands. Regarded as objects, the architectural models and drawings sustain the exhibition's thoughtful curatorial consistency, exuding the same luxurious sensibility as Sipek's tableware and furniture. Gilding abounds; walls are detailed in patterned prints; trees are wrought from spun glass.

What the exhibition fails to convey is the architect's ability to construct buildings. It remains to be seen whether Sipek can successfully translate his sensual esthetic in scale from object to architecture.—*N.C.*

Times Square Tower Breaks Ground

Another development is taking the stage in the revival of New York's Times Square. A 47-story office tower designed by Fox & Fowle Architects for the Durst Corporation breaks ground this month at the northeast corner of Broadway and 42nd Street. The 1.6 million-square-foot tower is the first office building to be shepherded through the 42nd Street Development Corporation. Condé Nast Publications has agreed to lease one-third of the building, which is designed with many "green" features: energy-efficient climate control, recycling systems, sustainable building products, and possible alternative energy systems.

The tower's facades are split between an eclectic metal-and-glass curtain wall on the north and west, and a more sober masonry finish on the south and east. This Janus-like composition reconciles the building's context—Times Square on the western side and Bryant Park and Midtown office blocks on the east.

BRYANT PARK FACADE: Masonry cladding.

TIMES SQ. FACADE: P.V.-powered signage.

The tower's base accords with architect Robert Stern's hyperactive streetscape criteria for the district. A collage of video monitors and illuminated signs, which may be powered by photovoltaics and wind, will enliven the Times Square facade. This variety of facade treatments implies the layering of building over time. The address, Four Times Square, will be heralded by four 60-foot signs at the peak of the tower, which is capped by a 120-foot-tall communications mast.—*N.C.*

Future of Cities Debated in Barcelona

The words "mutation," "habitation," "flow," "container," and "*terrain vague,*" might seem more related to biology than architecture, but at the Congress of the International Union of Architects (UIA) held in Barcelona from July 3 to 6, these ideas formed the five different platforms for discussion. With almost 10,000 professionals and students from all over the world in attendance, the conference, entitled "Present and Futures: Architecture in Cities," questioned the logic of present-day urban planning and architecture in preparing for the future of the city.

Despite its ambitions, the event was disappointing. Poorly organized and overcrowded activities, canceled presentations, and illegible slide projections gave rise to protests by architects who blocked traffic and blasted—megaphones raised—the negligence of the organizing committee. The protestors demanded that the main debates be moved to the Palau Sant Jordi Olympic Stadium (capacity 14,000). Unfortunately, the Palau Sant Jordi is flooded with natural light, so even though protestors won, slide viewing was almost impossible.

The many other events offered throughout the week ranged from discussions of "containers" between noted architects such as Rafael Moneo and Ken Yeang to regional presentations such as "Architecture for a Latitude" by Costa Rican architect Bruno Stagno. However, the Congress never seemed to focus on a single message.

The architect's responsibility to confront urban issues and remedy problems was highly debated, with examples such as Berlin architect Hans Kolhoff's conservative preservationism versus more progressive interventions by Spanish architects Iñaki Abalos and Juan Herreros and New Yorker Steven Holl. The latter were less concerned with preserving a city's look, focusing instead on the ability of the new to change the old.

The sessions on "mutations" and "flow" presented changes in the world's largest cities. Through new buildings, communication networks, and transportation terminals—such as those in Curitiba, Brazil; Bilbao, Spain; and London—the conference showed how new urban objects are creating a web of global interconnection never before possible.

Presentations devoted to the theme of habitation discussed live/work spaces and houses in relation to the highways of communication. Swiss architect Roger Diener suggested that we will begin to see a new type of modern cottage industry based on increasing employee mobility.

The most expansive theme of the conference addressed the French expression *terrain vague*, the residual zones that rapid urban growth has left empty—the reverse side of the metropolis. These leftover spaces offer the possibility of reinvention and rejuvenation, as pointed out by presentations on new public beachfronts in Barcelona, international museums and opera houses in Bilbao, and public parks and shopping areas in Valparaiso, Chile.

Many of the UIA discussions showed how even the visions of just 10 years ago are obsolete for the city of today. The desire to rehumanize our urban environment remains, yet the gap between the pedestrian and the developing urban infrastructure widens with each tap of the mouse and each high-speed train. "Present and Futures: Architecture in Cities," through all of its muddled and stymied activity, alluded to the navigation of this tenuous line, yet never elucidated any potential solutions.

Los Angeles architect Eric Owen Moss summarized it best when he said, "[We must] sense that the city is; ratify that the city is as it is; and demand that the city be other than it is."—*Matthew D. Berman*

Matthew Berman attends Columbia University's Graduate School of Architecture, Planning, and Preservation.

PHOTOS COURTESY OF MUSEUM OF MODERN ART, NY

MARCEL WANDER: "Knotted Chair," built of epoxies, carbon, and aramid fibers.

Dutch Design at MoMA

"Thresholds: Contemporary Design from the Netherlands," on view at the Museum of Modern Art (MoMA) through November 5, is such a modest show that three museum guards weren't sure where to find it. But once found (at the tail end of the permanent design and furniture installation), this 36-object exhibition offers several pieces well worth the search. Associate Curator Paola Antonelli presents a vase made from a household sponge, a chandelier with 85 clustered lightbulbs and sockets suspended from a "ponytail" of wires, and objects as diverse as faucets, a walking stick, a mailbox, and a shoehorn—all under the rubric of contemporary Dutch minimalism.

Antonelli's exhibition essay asserts that such design—"less indulgent and flashy than that of the 1980s, more experimental in its use of materials"—has cropped up in many countries in the 1990s, but these Dutch designers "represent the expressionistic and extremist wave of a

more general global trend." Their modesty, she suggests, is "emblematic of what political correctness in design should be." Juxtaposed with the museum's own 20th-century collection (most pre-1980s), however, the uniqueness of this Dutch "wave" seems arguable. Certainly, as Antonelli points out, the Northern European inclination toward understatement has historically permeated Netherlandish design.

Minimalism in the Netherlands is rooted in the interdisciplinary movements of De Stijl in the 1920s and *Nieuwe Abstractie* in the 1960s and 1970s. A more recent strain of inventive simplicity in Dutch product design led to the formation of Amsterdam-based Droog (Dry) Design, a loose collaboration of independent industrial and furniture designers. Originating in an exhibition at the 1993 Milan Furniture Fair, Droog Design now offers an internationally marketed collection that figures predominantly in the MoMA show.

Finely crafted with clean, elegant lines and an emphasis on usefulness, all the objects displayed here (Droog and non-Droog) share a like sensibility rather than the esthetic code of a unified movement. Within such vague minimalist parameters, variation and quirkiness abound. For example, Richard Hutten's De Stijl-influenced "Crossing Italy I" sofa conceals its inner works within polyurethane-coated foam cushions, while Rody Graumans's "85 Lamps" chandelier brazenly (and gracefully) exposes its bare industrial parts.

The stripped-down, analytical approach to function and materials characterizes the show's most eloquent objects: in particular, Dick van Hoff's "Stop" faucet and Arnout Visser's "Archimedes" letter scale. In van Hoff's faucet, two arching copper pipes, hot and cold water conduits, are logically—and wittily—joined like Siamese twins at the tip. And the ingenious scale, a visually exquisite physics lesson, articulates Archimedes's principle of liquid displacement (with telescoping laboratory cylinders containing colored fluid) to measure weight.

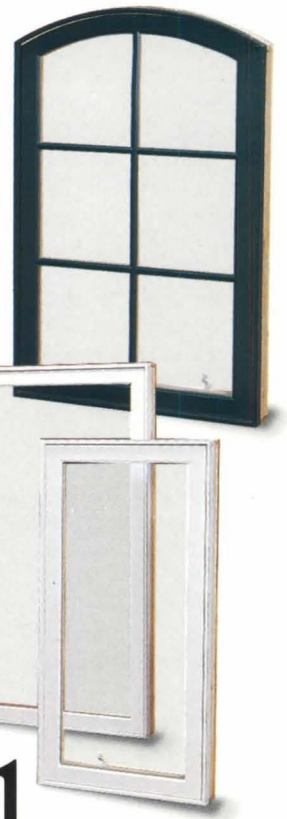
Though recycled and industrial materials are not the rule, many whimsical as well as straight-faced applications of these substances figure in the show—most notably in Tejo Remy's "Milkbottle Lamp" of steel plates and recycled milk jugs. Materials throughout the exhibition playfully defy expectation: Classically shaped polyurethane vases are surprisingly flexible, while foam cushions with the hard contours of cast materials are unexpectedly soft.

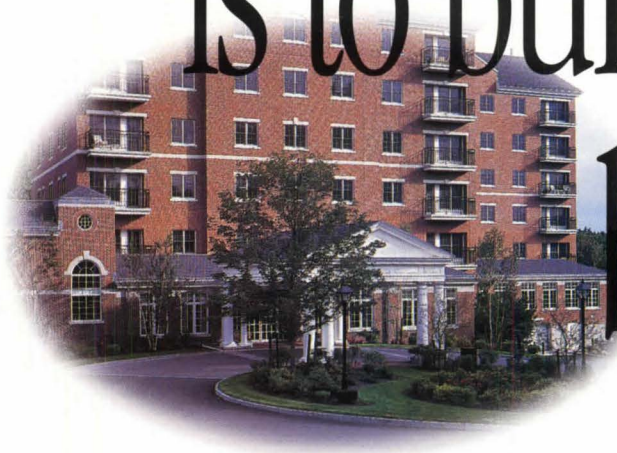
The exhibition's most stylized selections may impart a sense of déjà vu—as in the oversized, cushioned coat hooks, reminiscent of 1960s soft-sculptural scale play—but even here, a thoughtful reexamination of function is often implicit. (The visitor can experience the functional integrity of contemporary Dutch design firsthand in MoMA's refurbished café.) Although some of the work may be derivative, this modest show merits the journey, if only to see Visser's delicately transparent letter scale and Graumans's shimmery chandelier.—*Sarah Amelar*

VINCENT DE RIJK: "Kom BV" vases.

JOS VAN DER MEULEN: Recycled billboards.

Our best chance to earn your spec is to build the best window.

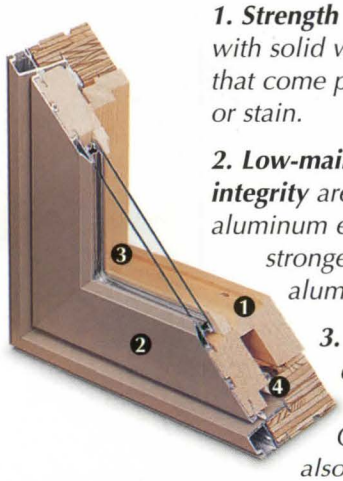




Your standards are high. So we set ours even higher. Our goal is to build the best possible window for you and your customers. And we've reached it with a window that offers the ultimate in structural integrity, beauty and performance.

With their modular design, EAGLE® windows give you the flexibility to create striking, coordinated window systems for any design concept. And EAGLE offers a comprehensive array of window styles and options – from Designer Colors™ to Modern Divided Lights® to Decorelle™ glass – to set every project you design apart from all the rest.

EAGLE. The best choice.



***1. Strength and energy efficiency** are ensured with solid wood construction, with interiors that come prefinished or ready to paint or stain.*

***2. Low-maintenance beauty and structural integrity** are preserved with patented extruded aluminum exteriors that are several times stronger than thinner, roll-formed aluminum styles.*

***3. Year-round energy savings and a clear, untinted view** are provided with Low-E Maximizer Plus™ glass. Optional custom glazing is also available.*

***4. Air and water infiltration are virtually eliminated** with high-performance weatherstripping.*

***Years of trouble-free performance and effortless operation** are ensured with high-quality hardware.*

EAGLE® WINDOWS · DOORS

P.O. Box 1072 • 375 East 9th St. • Dubuque, IA 52004-1072

1-800-453-3633

Circle 75 on information card

OKLAHOMA CITY: Elliott's prairie tower.

That's Entertainment

Move west, young architect! The entertainment industry in Los Angeles continues to be a source of lucrative commissions for the profession. E! Entertainment Television, for example, has tapped Santa Monica-based **Hodgetts + Fung Design Associates** to design a television production facility in Orlando, Florida. The firm is also designing a 1.5 million-square-foot office and retail center for the film community in Glendale, California, in collaboration with **Maguire Thomas Partners, Mack Architects,** and landscape architect **Laurie Olin.** San Francisco-based **Gensler** has been commissioned to design a 50,000-square-foot entertainment facility, Shanghai Space City, incorporating a roller coaster on four floors of the Oriental Pearl TV Tower in Shanghai. **Tetra Design** of Los Angeles has been commissioned by the city of Burbank, California, to design the facade of an electrical substation powering Disney Studios.

On the East Coast, the famous 1936 Orchard Beach bathing facility in the Bronx, brainchild of New York City Parks Commissioner Robert Moses, is undergoing restoration by architect **Katrin Adam,** landscape architect **Judith Heintz,** and **Gandhi Engineering.** Chicago will soon boast three new theaters designed by the local firm **VOA Associates:** the Arie Crown Theater at McCormick Place and 1,000- and 550-seat theaters at the Navy Pier designed by VOA. **Sasaki Associates** is designing a master plan for a 940-acre resort complex outside Seoul, South Korea.

Educational and Commercial Buildings

East Coast educational institutions are also a steady source of significant commissions. **Tai Soo Kim Partners** of Hartford is designing a $4 million addition to Edward Larrabee Barnes's arts and sciences building at Miss Porter's School in Farmington, Connecticut. **Shawmut Design and Construction** and **Ondras Associates Architects** are renovating the 1920 Senior House dormitory at MIT. New Haven-based **Svigals Associates** and Ann Arbor, Michigan-based **Johnson Johnson & Roy** are developing a master plan for the University of Connecticut's $962 million campus renewal program. Chicago-based **Peter J. Exley Architect** is designing the children's learning facility at Louisville Science Center.

On the commercial front, long-depressed Oklahoma City is showing signs of renewed economic vitality with its first major office building in 10 years. **Elliott + Associates** is designing an 82,000-square-foot, six-story office building for Aegis Corporation in the suburb of Edmond. The firm is also developing the 10,000-square-foot Pioneer Woman Museum in Ponca City, Oklahoma. Los Angeles-based **Altoon + Porter Architects** has been commissioned to design a $125 million expansion of Warringah Mall in Sidney, Australia.

New Sports Arenas

Will the sports arena boom never end? The Kansas City office of **HNTB** has been named lead architect for the $90 million, 19,200-seat Oakland Arena in Oakland, California, future home of the NBA Golden State Warriors. **Ellerbe Becket** is designing a multipurpose arena in Sunrise, Florida, near Fort Lauderdale for the NHL Florida Panthers. The $172 million facility replaces the 8-year-old current home of the Panthers in Miami. Seattle-based **Loschky Marquardt & Nesholm** has been selected to design the $49 million Grand Forks Events Center, with a 15,000-seat football arena, in Grand Forks, Washington.

Siedle Video -
New Concept - New Price

For secured visitor and entry control.
The new Siedle-Video includes:

- 3"black & white /monochrome monitor
- exclusive full active matrix backlit 4"LCD color monitor

The applications include:

- single family residences
- multi-tenant housing
- industrial, commercial & professional installations
- multiple doors and gates

The innovative video door station cameras and the new monitors with clear and brillant video pictures, including convenient remote adjustable cameras, offered at an outstanding quality price performance.

Exclusive color & monochrome cameras with full 360° swivel range including +/- 20 degrees

Vandal resistant

Optional caller picture memory (16 pictures)

Send this Coupon to:
Siedle Communication Systems
of America, Inc.
750 Parkway,
Broomall, PA 19008
800 874 3353
Fax: 610 353 9716
Please send me further information
on Siedle communication systems

Name

Address

State/Zip code

Phone

Circle 77 on information card

SSS SIEDLE

Finance Dominates Form At U.N. Conference

The last major United Nations (U.N.) conference of this century took place from May 29 to June 14 in Istanbul, Turkey. Conference Secretary General Wally N'Dow defined the mission of Habitat II in his keynote address: "This is not just a conference; it is about the human spirit, healing the urban soul, and human solidarity."

In all, 171 of the 185 nations of the U.N., as well as 1,500 non-governmental organizations, were represented. In an event dubbed the World Business Forum, Habitat II included the international business community for the first time at a U.N. conference. More than 320 corporate decision-makers discussed the role of enterprise and commerce in achieving sustainable development. A visit to a new satellite city for 60,000, currently under construction 30 miles outside Istanbul, raised concerns that these exclusive high-rises merely created enclaves for the wealthy, exacerbating existing urban problems. Keynote speaker William McDonough, dean of the University of Virginia School of Architecture, called for a "design revolution" that favors biodegradable and sustainable materials.

Unfortunately for that revolution, architects and planners—and their representative professional organizations—were noticeably absent at Habitat II. The contrast to the last Habitat conference, in 1976, was striking: architects such as Buckminster Fuller and Moshe Safdie held the floor at the Vancouver event. At Habitat II, developers and bankers took the leading role; one member of the audience at a forum for architects and planners announced he was a "recovering" architect to a round of applause. Nat Nuno-Amarteifio, a Pratt-trained architect who is now mayor of Accra, Ghana, criticized the profession's urbanist role: "Architects have a false sense of importance from their schooling. They have no sense of the connective tissue of communities. They are not important in shaping cities."—*Noushin Ehsan and Steven Hall*

it's sweeping

fluid

MALLEABLE.

Surprise. There's a side to Corian® that isn't flat and rigid. It's curved. Bendable. Thermoforms easily into twists and turns. So you can make it into a spiral staircase in a lobby, a curved top on a reception desk, or a decidedly dramatic column. Illuminate it, design with it, 51 extraordinary colors give you endless possibilities. A worldwide network of certified fabricators even makes installation easy. It's beautiful, it's flexible, it's durable. It's Corian®. For more information, call 1-800-4-CORIAN (1-800-426-7426).

Circle 79 on information card

Teda International Club, China

in other words, it's CORIAN® SURFACES Created For Life.™

DUPONT®

Deadline for Submissions: September 6, 1996

Progressive ARCHITECTURE 44th Annual Awards

Jury

Sarah Graham
Angélil/Graham Architecture
Los Angeles

Laurie Hawkinson
Smith-Miller + Hawkinson Architects
New York City

Enrique Norten
TEN Architects
Mexico City

Antoine Predock
Antoine Predock Architect
Albuquerque

William Rawn
William Rawn Associates
Boston

ARCHITECTURE announces the continuation of the annual **P/A Awards.** The purpose of this awards competition is to encourage outstanding work in architecture and urban design before it has been executed. Awards and citations will be designated by a jury of distinguished, independent professionals, who will base their decisions on overall design excellence and innovative ideas. The jury will also consider response to program and context, management of the design and construction process, technical solutions and details, and social and economic contributions. Potential entrants are urged to interpret the call for "outstanding work" as broadly as possible. Entries, however, are limited to specific unbuilt projects that have been commissioned by real clients for execution.

Judging will take place in September 1996, and winners will be notified in late September. The winning entries will be featured in the January 1997 issue of ARCHITECTURE.

Eligibility

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

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

3 Architectural Design Entries
Entries in Architectural Design may include only works of architecture scheduled to be completed after January 1, 1997. Indicate the anticipated completion date on Project Facts page (see item 7 on next page). Prototypical designs are acceptable if commissioned by a client.

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

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

(Submission requirements and entry form on the following page)

Entry Form: P/A Annual Awards

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

ENTRANT:
ADDRESS:

CREDIT(S) FOR PUBLICATION (attach additional sheet if necessary):

ENTRANT PHONE NUMBER:
ENTRANT FAX NUMBER:
PROJECT:
LOCATION:
CLIENT:
CLIENT PHONE NUMBER:
CATEGORY:

ENTRANT:
ADDRESS:

PROJECT:

I certify that the submitted project was executed by the parties credited and meets all eligibility requirements (1-5). I understand that any entry that fails to meet submission requirements (6-18) may be disqualified. Signer must be authorized to represent those credited.

SIGNATURE:
NAME (typed or printed):

FEES: SUBSCRIBER $90 NONSUBSCRIBER $125 ENTRY PLUS ONE-YEAR SUBSCRIPTION $125

AWARDS EDITOR/ARCHITECTURE
1130 Connecticut Avenue, N.W., Suite 625, Washington, D.C. 20036
PROJECT:
Your submission has been received and assigned number _____
(ARCHITECTURE will fill in this number and return this receipt.
Please retain it for reference.)

ENTRANT:
ADDRESS:

(RECEIPT)

AWARDS EDITOR/ARCHITECTURE
1130 Connecticut Avenue, N.W., Suite 625, Washington, D.C. 20036

ENTRANT:
ADDRESS:

(RETURN LABEL)

Submission Requirements

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

7 Project Facts Page
To ensure clear communication to the jury, the first page in the entry binder must list Project Facts under the following explicit headings: Location, Site Characteristics, Surroundings, Zoning Constraints, Type of Client, Program, Construction Systems, Funding, and Schedule. Supply hard data (square footages, costs, specific materials) where possible. All project facts should fit on one page. Paragraphs amplifying this data, covering design philosophy, etc., should be on subsequent pages.

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

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

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

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

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

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

14 Copies of Key Pages
To provide the ARCHITECTURE jury with basic information about the entry, please include five photocopied sets of key pages of the submission (including Project Facts page). These sets should be stapled separately and slipped inside the back cover of the binder.

15 Entry Fees
An entry fee must accompany each submission. The fee is $90 for ARCHITECTURE subscribers; $125 for nonsubscribers. (Nonsubscribers can choose to subscribe at a special rate of $35 per year and pay the $90 entry fee; see entry form.) Make check or money order payable to ARCHITECTURE. Canadian and Mexican offices must send drafts in U.S. dollars. Fee must be inserted in unsealed envelope with entry form (see 12, above).

16 Entry Receipts
ARCHITECTURE will send a receipt by October 1 indicating an entry number to save for the entrant's reference.

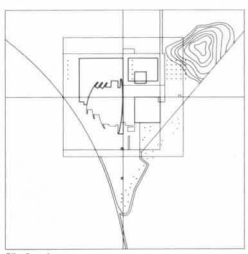
17 Return of Entries
ARCHITECTURE intends to return all entries by U.S. mail. ARCHITECTURE assumes no liability for loss or damage.

18 Entry Deadline
Deadline for sending entries is September 6, 1996. All entries must show a postage date as evidence of being in the carrier's hands by September 6. Hand-delivered entries must arrive at ARCHITECTURE's editorial office (address below) by 5 p.m., September 6. To ensure timely receipt, ARCHITECTURE recommends using a carrier that guarantees delivery within a few days.

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

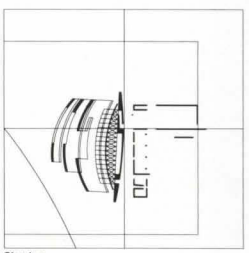
DEADLINE: September 6
Strictly Enforced

JOCK POTTLE/ESTO PHOTOS

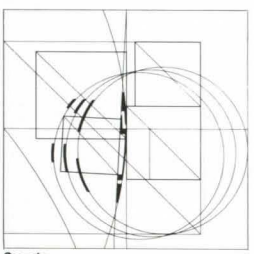


Site/Landscape

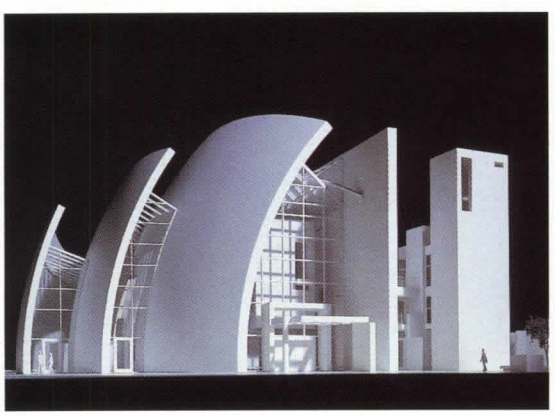
Figure/Ground

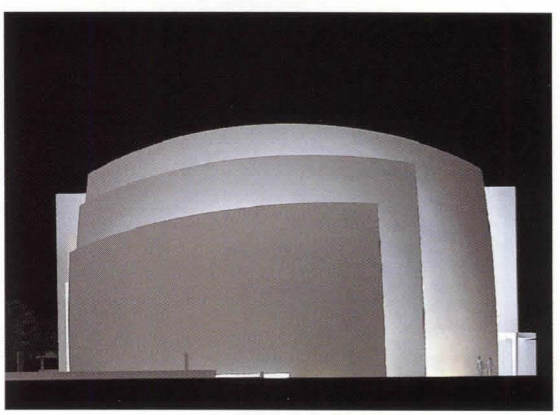


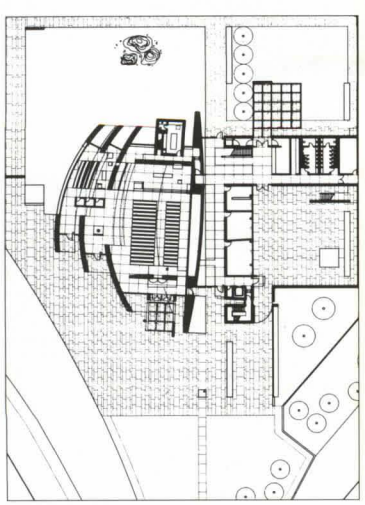
Structure



Geometry







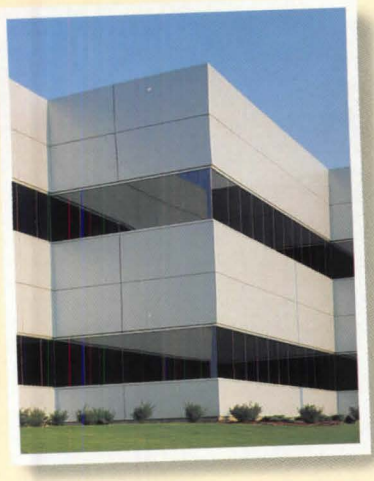
GROUND-LEVEL PLAN

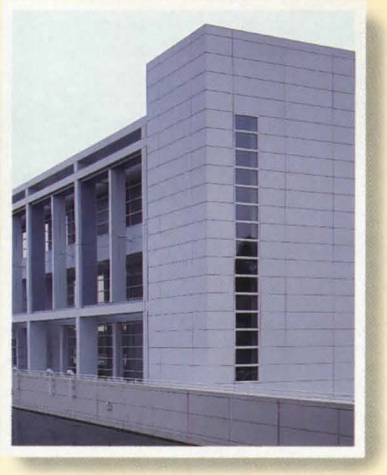
Church of the Year 2000
Rome, Italy
Richard Meier & Partners

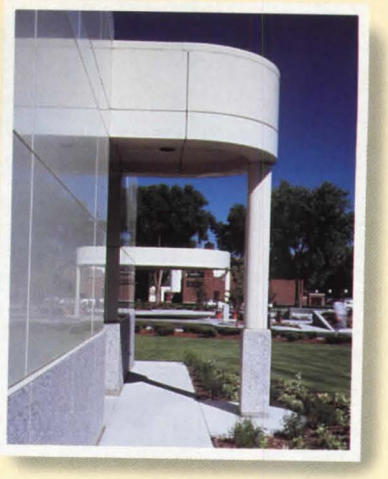
Richard Meier has won the design competition for the Roman Catholic "Church of the Year 2000" competition over shortlisted architects Tadao Ando, Günther Behnisch, Santiago Calatrava, Peter Eisenman, and Frank Gehry. Meier's scheme will be built amidst modern apartment buildings on the eastern periphery of the Eternal City in the Tor Tre Teste district.

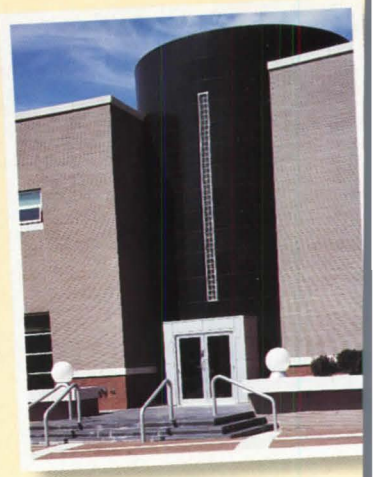
The 14,000-square-foot community center of the church is typical Meier—an elegant L-shaped building embracing a rectilinear courtyard—but the 8,000-square-foot sculptural sanctuary marks a surprising departure for the New York architect. Curving concrete shells define the northern and southern boundaries of the church; skylights and windows span the interstices between forms. On the south, the concentric, plaster-coated walls enclose a chapel, confessionals, and a baptistry. Cubic volumes at opposite ends of the nave house an organ loft and sacristy.

Meier's church is the design highlight of an extensive parish church construction campaign in Rome. The building is scheduled for completion in time for the Roman Catholic Jubilee in the year 2000.—*N.C.*

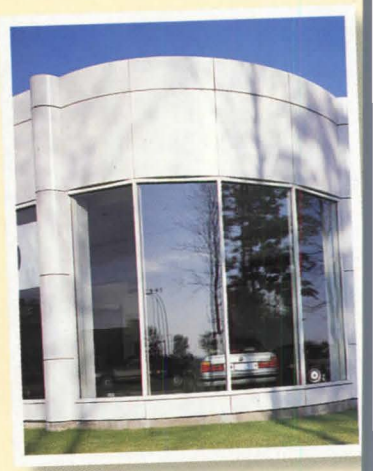


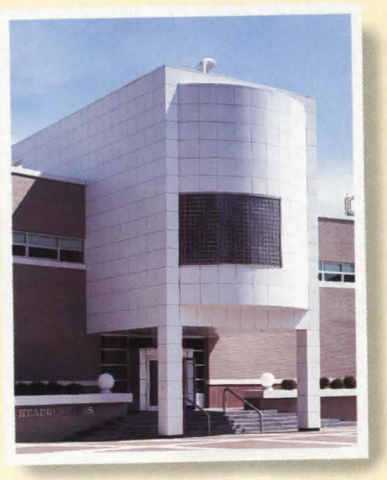


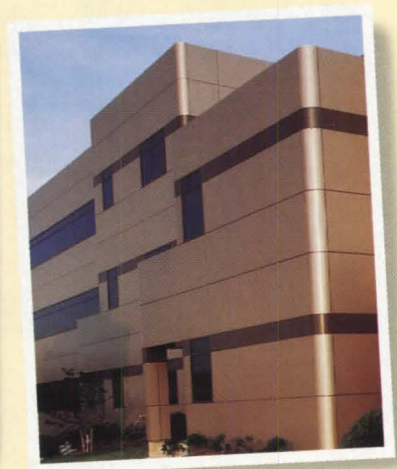


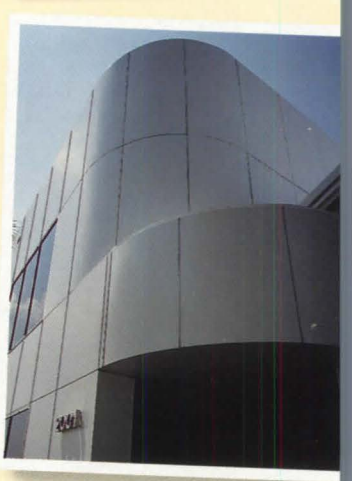



CREDIT UNION

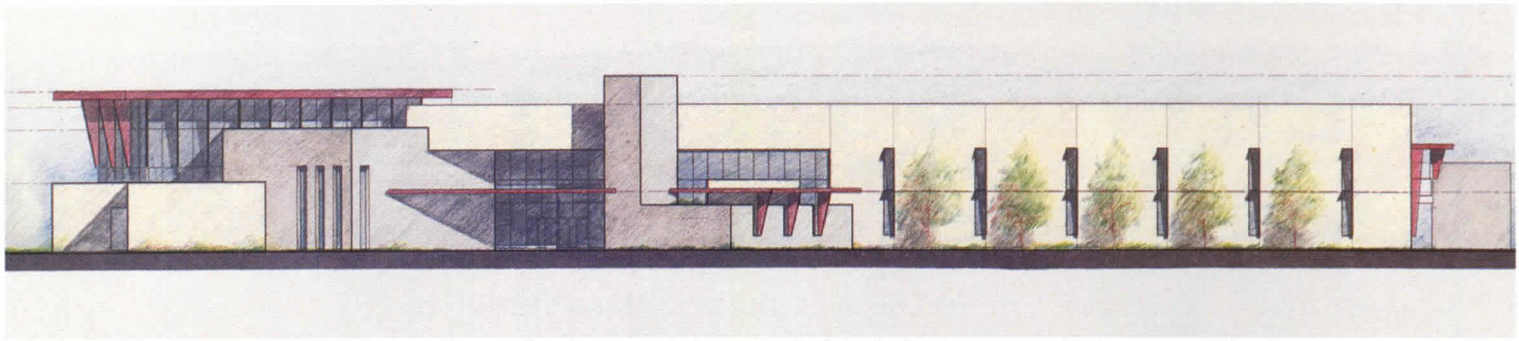






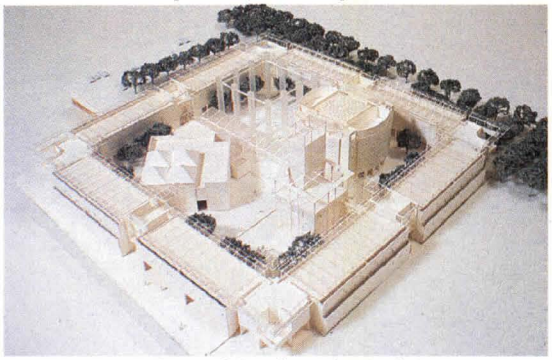


Protest

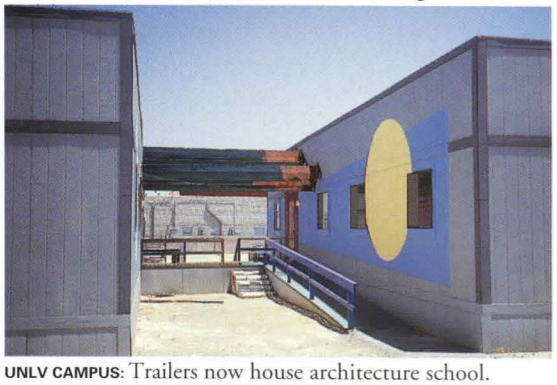


LATEST SCHEME: Swisher & Hall's pedestrian warehouse will replace Myers's design for the School of Architecture at the University of Nevada at Las Vegas.

The competition for a new architecture school goes sour.



WINNING SCHEME: Barton Myers's academic cloister.



UNLV CAMPUS: Trailers now house architecture school.

A Bad Lesson from the University of Nevada

Since 1990, the University of Nevada at Las Vegas (UNLV) School of Architecture has called a caravan of construction trailers home. The National Architecture Accrediting Board, unimpressed by this motley assembly, informed the upstart school that accreditation depended on securing better facilities by 1997. Fast-growing UNLV responded to the threat by announcing a design competition for a new architecture building in the fall of 1991.

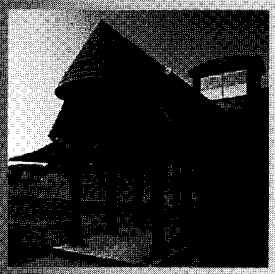
Local partnership JMA/Lucchesi-Galati won the competition over second-place Swisher & Hall (with Barton Myers as design consultant) in a controversial jury decision that followed heated discussion, several voting sessions, and the departure of one jury member. The troubled jury should have been an omen. From that point onward, the process devolved into a melodrama of charges, countercharges, ethics investigations, and court battles that consumed three years, tens of thousands of dollars, and the professional reputations of the players involved.

The short version of the story locked JMA/Lucchesi-Galati and Swisher & Hall/Barton Myers in a legal battle over whether it was appropriate for architects on UNLV's faculty to enter the competition, and who should be awarded the contract for the project. Ultimately, Swisher & Hall/Barton Myers prevailed.

By the time the project went out to bid in April 1995, however, the 63,000-square-foot school came in 25 per cent over its $8 million budget. Substantial revisions yielded little in the way of savings. Facing a complete redesign without additional fees, executive architects Swisher & Hall terminated their increasingly strained relationship with Barton Myers, and submitted a new scheme that substitutes efficiency for architectural character.

"Flexibility and a timely construction schedule drove the redesign, which is now out to bid," explains Michael Alcorn, assistant dean of UNLV's architecture school. Construction is set to begin this summer: "We may even get to add some square footage to the building," enthuses Eric Raecke, manager of the Nevada Public Works Board.

Unfortunately, more of Swisher & Hall's pedestrian warehouse will not improve its lackluster design. Nor will it compensate for the loss of the elegant cloister Myers envisioned, which wrapped studios and laboratories around an arcaded courtyard containing a library pavilion and an administration building. The compromised UNLV architecture school is testimony to a design process gone terribly awry and a mediocre model of design for the school's 300 students.—*Reed Kroloff*



Harbor Vacation Complex
James Varney Righter Architects
Honor Award Winner 1993

1996 Wood Design Award Program

Entries Invited

96

The American Wood Council invites entries in its sixteenth annual Wood Design Award Program honoring design excellence with wood.

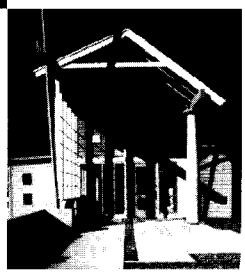
This prestigious program recognizes a wide range of traditional, engineered, and innovative wood product applications. Residential and nonresidential structures, either new or remodeled, are eligible if completed since 1993. Awards will be granted to excellent designs demonstrating an understanding of the special properties of wood, including strength, durability, versatility, environmental benefits, and its unique inherent natural beauty.

▲ **Teviot Springs,**
William Turnbull Associates
Honor Award Winner 1994

Award-winning projects will be publicized in local and national media, and featured in the 1996 Wood Design Award Program summary book. Award certificates will be provided for architects, owners, structural engineers and general contractors.

For more specific program requirements and entry materials, contact Ron Ingram at the American Wood Council. Telephone 202-463-2769, FAX 202-463-2791, or E-Mail Ronald_Ingram@afandpa.ccmail.compuserve.com.

There is no program entry fee. Materials must be submitted by October 11, 1996 and judging will take place in November.



◀ **The Winchester–Thurston School,**
Bohlin Cywinski Jackson
Honor Award Winner 1993

For a copy of the 1995 Wood Design Award Program summary book, send five dollars to the American Wood Council 1111 19th Street, NW, Suite 800 Washington, DC 20036.

Foothill Student Housing,
William Turnbull Associates
Honor Award Winner 1993

American Wood Council • American Forest & Paper Association • 1111 19th Street, NW, Suite 800 • Washington, DC 20036

Circle 89 on information card

Reform the Design Studio

One architecture student argues for a more collaborative, interdisciplinary education.

The design studio has the potential to develop a thoughtful, competent, responsible architect who is well integrated into society. It is also the place where a young mind can become insecure, egotistical, self-absorbed, easily intimidated, and eternally frustrated. From my experience after the first four years of an architectural education and two years of visiting more than 60 schools during my term as president of the American Institute of Architecture Students (AIAS) and student representative to the National Architectural Accrediting Board (NAAB), I believe today's architecture studio is heading dangerously toward the latter.

To begin with, architectural education tends to breed excessive competition, ego inflation, poor physical and emotional maintenance, insecurity, and procrastination. These problems—present to some degree in all U.S. architecture schools—result from the nostalgic notion of "en charette," the perpetuation of the Lone Ranger master architect, and the destructive critique focused in negativity, all of which are rooted in tradition.

They are as relevant and useful to today's architecture student as fat, expensive fountain pens and bow ties, yet we seem to be unable to release ourselves from their grasps. Through these traditions, we come to judge each other, as well as ourselves, based on how many back-to-back all-nighters we can pull and the size of the crowd that gathers as we present our projects.

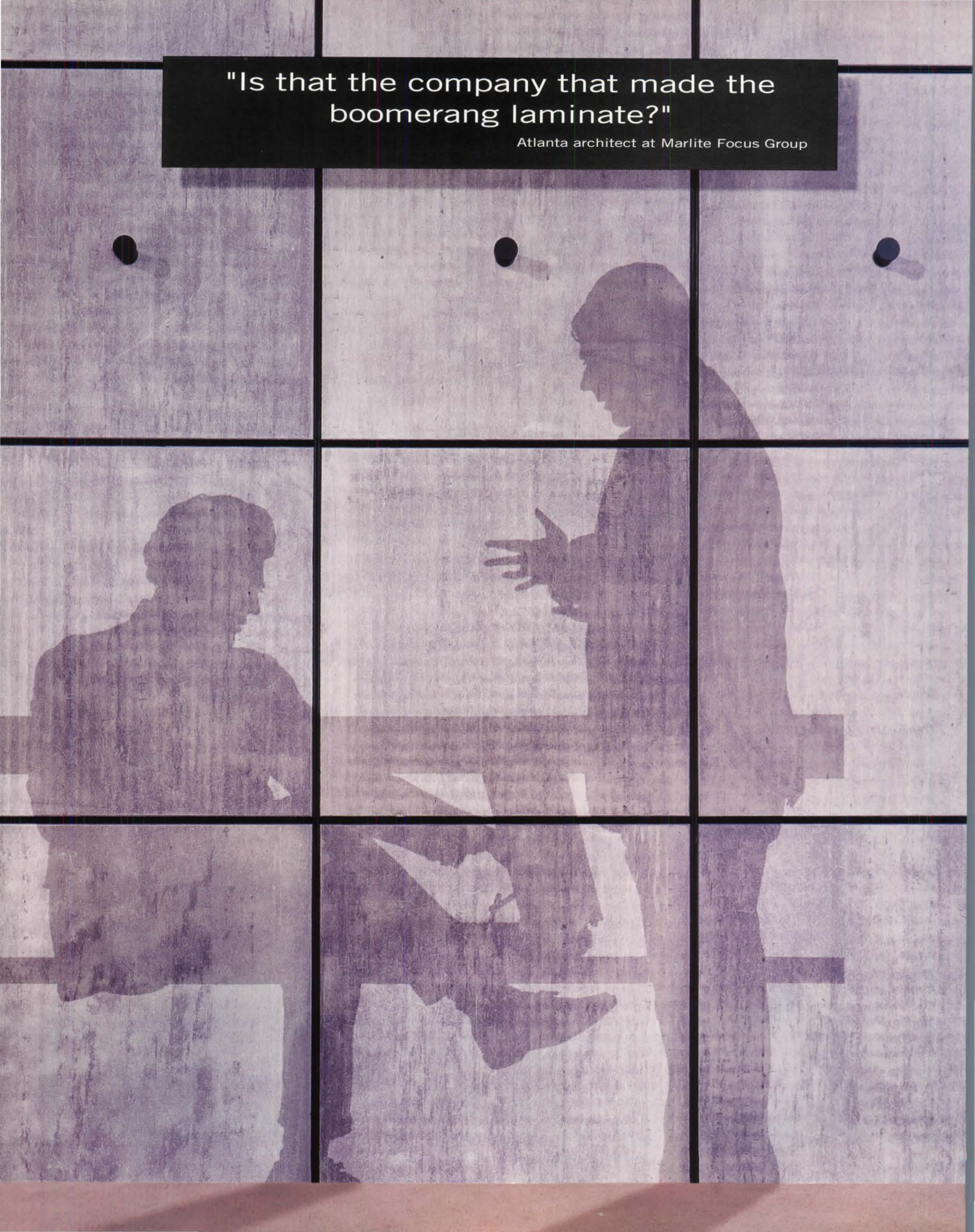
Many studios teach students that, to be truly creative, they must design in a vacuum. It seems the ideal design project lacks a client, site, and budget, and has a program that can be repeatedly redefined by the designer. Academia must acknowledge that the built environment lives within a certain set of constraints: gravity exists, buildings cost money, and the building's inhabitants have inherent needs. These are the foundations upon which architecture is built. To discount them throughout the educational process can jeopardize a student's ability to ever realize their ideas in built form. More importantly, it confuses and disheartens graduates, who expect that what is taught in school will resemble practice.

Similarly, a host of other subjects essential to the creation of architecture are routinely separated from the studio environment. Academics often claim that studio is the place where students synthesize what they have learned in other classes—history, structures, theory, and construction—into their design solutions, though the connection between these issues and what we design is seldom clear. The marginalization of nondesign subjects in architecture schools is the beginning of the devaluation of elements vital to the existence and realization of architecture.

All is not lost in the current state of the academic design studio, however. The studio fosters a social as well as a professional community, by allocating a dedicated workplace to each individual. The studio promotes feelings of ownership of space, unlike a traditional classroom setting. Students determine their own schedule and work without the presence of an authority figure, developing self-discipline and learning from each other.

The method of learning in the studio can also be its strength. The student is given a problem that has no finite set of solutions but instead calls for a series of thoughtful decisions, some more quantifiable than others, leading up to individual resolution. The path each student takes from the same problem to their proposal differs and each, if well considered, can be as valid as the next. Along the way, students try and fail, question and discover, ponder, decide, and learn, regardless of the subject of their investigation.

The ability to learn deeply about any subject while simultaneously developing a productive thought process is an achievement to be cherished. Unfortunately, there are factors in the studio that keep this from being as effective and broadly experienced as possible. While serving as a design teaching assistant at the City College of New York and


"Is that the company that made the boomerang laminate?"
Atlanta architect at Marlite Focus Group

Opinion

guest critic on review panels at over a dozen schools, I observed students so consumed with the competitiveness of presentations that they sometimes knew little about what they were designing.

How do we ensure a more effective design studio? Imagine a studio that teaches a student clearly to value the work of others, one taught by more than one person, possibly a practicing architect paired with a seasoned academic or even a team of specialists in structure, theory, and construction, setting an example of collaboration and illustrating the importance of multiple perspectives. Both within and outside of the studio, I have found that a solution generated by several people has greater strength than one developed by an individual.

Yet students in studio seldom work in teams, and are even less often team-taught. By encouraging collaboration, the design studio can also teach students how to participate effectively in decision-making processes. Understanding how to reach group decisions and articulate ideas effectively is a step toward strengthening the position of an architect as a key player in building construction, city planning, and society. There are also ample opportunities to ground the design studio in the realities of practice without compromising our ability to understand architecture as the documentation and expression of culture.

Some schools, such as Ball State University, the University of Oregon, and the University of Washington, have found value in integrating design/build projects into the studio. The Rural Studio at Auburn University is also a model to look toward. Under the guide of Auburn professor Samuel Mockbee, students design and build structures, re-adaptations, and renovations for clients identified by the state as in need of assistance. In this context, students are learning to understand budgets, structure, construction, and culture firsthand without at all compromising the quality or integrity of their designs.

Architects are charged with a profound set of responsibilities to better the human condition. Through broadening the content of the studio to embrace the realities of practice, while at the same time maintaining our investigations into the past, present, and future of humanity, we can create a more thoughtful, responsible architect.

Of course, improving the design studio is not a panacea for all of architecture education. A successful and effective professional education system is one that simultaneously maintains a critical distance from—yet responds to, understands, and holds true—the mission and ideals of the profession it serves. This approach is difficult when that educational system serves a field unable to define itself or even agree on the extent of its professionalism. And one might argue that architecture's higher purpose requires that architecture education teach students to serve humanity first and the profession of architecture second. Regardless, the practice and education of architecture are equally fragmented, contradictory, and confusing, and which mirrors the other remains unclear.

As we sift through the debate over architecture education, the design studio continues to surface as a place where we can easily begin to move toward collaborative learning. The traditional notion of design as something done by a masterful individual in a moment of brilliance may be romantic, but it is unrealistic and archaic.

Today's society is made up of individuals with vast cultural, social, and intellectual differences, each with something unique and important to bring to the table. We must take bold steps in challenging tradition and make changes to the design studio to truly realize its potential. Otherwise, education and practice will only remain in a state of decline, as the role of the architect continues to lose its relevance.—*Dee Christy Briggs*

Former AIAS president Dee Christy Briggs currently attends the City College of New York, from which she will graduate in 1997.

IF YOU'RE WONDERING
ARE THE ANSWER, REMI

The 65,000-seat multi-purpose Alamodome, San Antonio, Texas.

ROBERT GUTMAN

REDESIGNING ARCHITECTURE SCHOOLS

NICK MERRICK/HEDRICH BLESSING

Architecture education must be transformed to improve students' preparation for practice and the profession's status in society.

University schools of architecture are an American invention. In Europe, architecture schools were sponsored by architectural clubs, such as the Architectural Association in London, or were located in arts and crafts schools and academies of the fine arts, as was true of many architecture programs in Germany or the École des Beaux-Arts in France. In this country, formal architecture education began at the Massachusetts Institute of Technology, the University of Illinois, and Cornell University just after the Civil War.

A major purpose behind this American movement was to upgrade the social rank and intellectual eminence of architects. It was believed that university schools would advance knowledge of design and building science beyond the capability of architects who came from a background in the building trades, as well as gentlemen architects. The schools were also intended to democratize access to the profession for the rising middle classes. Perhaps most importantly, it was assumed that providing architects with a liberal education would enable architecture to acquire a status and compensation comparable with the most respected professions, law and medicine.

Broadly speaking, over the last 130 years, the university schools of architecture have accomplished the goals set for them. There are now almost 100 accredited university schools, plus a handful of independent but also accredited schools that are tied more loosely to colleges and universities. In the academic year 1994-1995, approximately 24,000 full-time and part-time students were enrolled in the accredited schools, and about 4,800 professional degrees were conferred.

Architects in this country enjoy very high prestige with the general public, as is demonstrated in surveys of the status rankings of different occupations. The architectural profession as a whole obviously exhibits a more comprehensive understanding of the full range of component skills required for building fabrication than any other group in the building industry. The schools also play a central role currently in generating new approaches to design. Since the end of World War II, innovative design ideas in American architecture have been overwhelmingly the product of architects who have university appointments, or teach part-time. But criticism of the schools has escalated almost in direct proportion to their achievement. What is responsible for this curious outcome?

Architectural practice remains a troubled and beleaguered endeavor, even though

some architects are now celebrities and even though there is more attention by a mass audience to architecture and design than in any previous period of American history. Some critics would argue that architecture focuses too much energy on winning commissions for monumental buildings and on esthetic or stylistic issues, while ignoring many environmental, housing, and urban design questions that are more closely related to the needs of the average user.

A more fundamental factor is that the architect's cultural importance does not translate into power in the economic and political realms. Architects are poorly paid compared to lawyers, physicians, surgeons, and even unionized teachers. Architects are not policy-makers. Their advice is not sought by politicians as much as architects would like, or perhaps as much as it should be, even on questions about which they have interest and expertise. This division between the cultural and political roles of architects has been true throughout most of the profession's history.

The current school curriculum actually conveys a smaller fraction of the total knowledge and skill required for practice than in any period during the 130 years since professional programs were established.

Many clients display a personal fascination with architecture, and some are transfixed by buildings which display the artistry of the architect. But when it comes to hiring architectural services, these same clients often think about buildings in different terms. They discover that it is possible to hire services at lower cost from interior designers, engineers, contractors, and now construction managers. To the degree that architects were able to acquire a certain modicum of political and economic power, they did so as the client's representative in the building process. Corporate, government, and institutional clients have concluded, however, that the building process often goes more smoothly by circumventing the architect and dealing directly with contractors and construction managers. Not surprisingly, sociologists sometimes refer to architecture as a "weak" profession.

Architecture schools have contributed astonishingly little to the relief of this divided fate, although they are the most robust constituency within an otherwise vulnerable profession. Architecture schools clearly are less buffeted by market forces and are much more secure than is the typical practice. Their enrollments, budgets, and faculty jobs have remained stable over the last 10 years, when the demand for architectural services in this country often has been depressed. In this profession, as in law and other fields, high enrollments have been sustained by the great increase in women students. Indeed, there is some reason to think that some of the schools actually fare better when there are fewer jobs for architects. During the recession of the early 1990s, for example, because of the availability of tuition loans, scholarships, and grants, many architects with first professional degrees discovered it was more advantageous to study for an advanced degree than to keep looking for jobs that didn't exist.

The schools are also resented because their curricula focus on training in design skills and on the fields of architectural history and architectural theory. In part, this trend has developed to secure the position of the architecture schools within the university system. It is to their advantage to concentrate on realms of learning that connect the schools more actively to the humanistic disciplines. Architecture schools generally are unable to garner the funds that support research in the science- and engineering-based subjects that practitioners often believe are more essential for the building task. Design and theory, by contrast, are fields that can be investigated with the modest resources provided by architecture school budgets.

As a result of the emphasis on design, students graduate with considerable mastery of this area, but often without much know-how in building technology and construction. The curriculum of many of the early university schools, for example, dealt with construction during the first two years and did not teach design until the last year (in the three-year program that was then standard), but the current situation is the reverse of this pattern. New graduates covet design roles in practice and assume that "designing" is what practice will enable them to do. In many ways, their preoccupation with design is laudable and surely has been a factor in the improved design quality of American buildings. But there is a growing complaint from practitioners about the technical incompetence of school graduates. More disturbing is that this concentration on design skill leads to immense frustration among young architects. There are just not that many opportunities to do design work in the average firm. Several studies have shown that only 10 percent of an architecture firm's time is spent on this function in the building process.

The schools carry tremendous prestige, and with this prestige, the expectation has developed that they constitute the principal source through which the knowledge necessary for practice will be transmitted to students. This certainly was not the supposition when the university schools were inaugurated.

On the contrary, it was generally assumed that formal education would elevate the position and enlarge the competence of the profession, but that a great deal of the learning would still require on-the-job training, as was also evident in the professions architecture was attempting to emulate. What was certain a century ago continues to be true today, even more so. And for several reasons.

With most architecture programs specializing in the teaching of design skills, and with all schools—some more than others—emphasizing the historical and theoretical underpinnings of design ideas, the current curriculum actually conveys a smaller fraction of the totality of knowledge and skill required for practice than in any period since professional programs were established. At the same time the schools are dealing with a reduced number of traditional subjects, the scope of architecture as a discipline is expanding. The number of fields in which practitioners must be informed grows constantly. Given the pressures to respond to the demands of the university system, it is often difficult for the schools to keep up-to-date with the changing requirements of practice.

Perhaps the most important fact about contemporary practice is that architectural firms are now major generators of architectural knowledge. The most dramatic examples of the innovative role of practice have been in the development of software and information technology, innovations often generated in the large firms before they are developed in the schools. In devising new structures for practice, in designing new building types, and in conceiving new combinations of professional roles, the firms' expertise is far ahead of the thinking in the schools.

Firms often have an advantage in developing ideas because they are compelled to serve clients and keep ahead of the competition. Architecture schools are shielded against the pressures of the marketplace, which has sometimes been beneficial, but in other respects, detrimental. Important research first emerges in firms also because firms—especially large, corporate ones—have more resources than do schools. Clients underwrite research as a project cost, and they expect a usable product to be delivered more quickly than if they were to finance research at a university.

The expansion in the scope of architectural services and the resourcefulness of successful practices should make us consider the possibility that the current system of architectural education is unsuitable to the requirements of architectural practice today. Young men and women aspiring to become architects probably could be educated and trained more appropriately if they spent fewer years enrolled in university schools of architecture, and instead received more of their formal education under the aegis of firms. Something more radical than the present arrangement—in which a period of three years of practical work after the professional degree is required in order to become licensed—may be required to redress the shortcomings of the schools, such as placing students in firms to work for sustained periods before they receive their degrees.

A few programs approach this arrangement now, but they are the exception in this country. A major obstacle to adopting such a system more widely is that firms lack the resources to really conduct the mentoring and training programs that aspiring architects want. Complaints lodged by interns suggest that educational requirements often take a back seat to the needs of firms for billable hours.

One solution to this problem is to introduce a modern version of the pupilage system that was available in 19th-century England and the United States, in which students will pay their tuition fees to offices rather than to the university schools. This arrangement will create difficulties for schools because their operations depend on tuition income. On the other hand, as the history of schools now operating co-op programs indicates, skillful administrative planning can deal with the budget problem. One of the benefits of this approach to education and training is that students who have had practical experience early seem to get more from their studios, courses, and seminars as a result.

Young men and women aspiring to become architects probably could be educated and trained more appropriately if they spent fewer years enrolled in university schools of architecture and instead received more of their formal education under the aegis of firms.

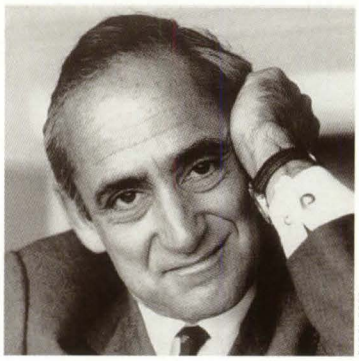
We are on the brink of a fundamental transformation of the basic structure of architectural education, as meaningful in its way as the inauguration of university schools of architecture 130 years ago. Nothing less will rescue the profession from its present vulnerability and allow architects to achieve a level of economic profitability and political influence that begins to match their cultural importance.

Robert Gutman is a lecturer in architecture at Princeton University and a consultant to architectural design firms on issues of growth and development. He is the author of Architectural Practice: A Critical View *(Princeton Architectural Press, 1988).*

PRACTITIONERS GRADE THE SCHOOLS

JULIE EIZENBERG
Koning Eizenberg Architecture

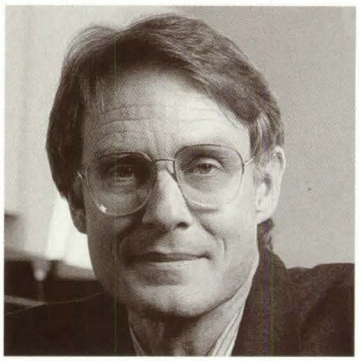
We're still teaching architecture as if all students are going to be design architects, and thereby frustrating more students than we help. Somewhat less than 50 percent of today's architecture students end up in the profession. Architecture programs need to be reframed more as an education than a vocation, with less preconception of how knowledge gained must be used.



CAROL FORD

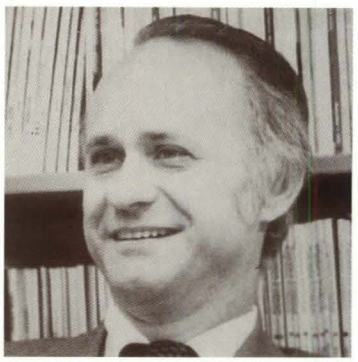
ROBERT A.M. STERN
Robert A.M. Stern Architects

A lot of architecture school talk is more of art chat and literary theory than architecture. In either case, students are deflected from the true nature of architecture: the elevation, through education, of pragmatics to the level of poetics. I love architecture schools, but I frequently hate what they do to students.



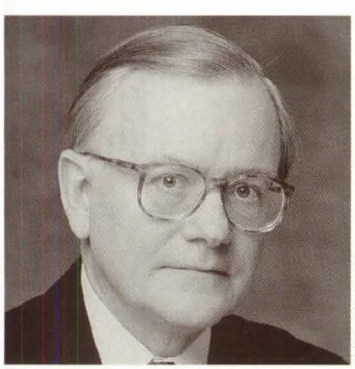
ROB WELLINGTON QUIGLEY
Rob Wellington Quigley, Architect

Education needs to distinguish between foreground and background architecture. Too often, students graduate without understanding the difference. Because the educational system does not value the skills required to design an artful background, the built environment has become an anarchic assemblage of ego-driven foreground structures against a background left to less-skilled architects.



BOONE POWELL
Ford, Powell & Carson

The gradual but persistent erosion of the field has left architects with limited knowledge of building systems. Most architecture schools don't have the resources to provide the labs and workshops that could teach these skills. One engineer recommends starting a unified school of "building," because our architecture and engineering schools don't relate to each other and are too narrow and inflexible.



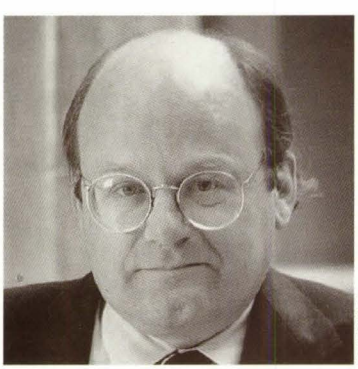
BRETON LITTLEHALES

HAROLD ADAMS
RTKL Associates

Architecture education is too detached from the world of practice, too focused on design. Students need a better understanding of what's really required to succeed as architects and be leaders in today's global economy. We need to include courses in business and finance, science and technology, and foreign languages. We need to bring architecture education, practice, and regulation into a single focus.

ANDREA LEERS
Leers Weinzapfel Associates

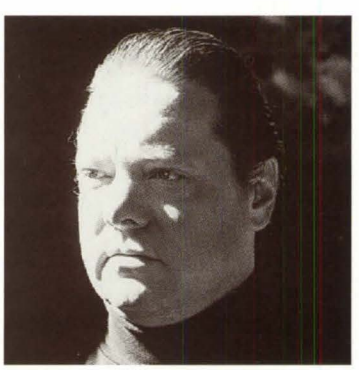
The emphasis in schools seems to be shifting from engaging the architectural endeavor—esthetic, technical, and human concerns—to a broader set of issues. Architecture school is beginning to parallel law school—a broad education structured to prepare people for a variety of careers. However, we must not abandon our core responsibility of educating people for physical design.



RON GORDON

TOM BEEBY
Hammond Beeby and Babka

The schools must once more restate the position of the architect as a generalist. In order to accomplish this, the curricula and facilities must reflect interest and mastery of new technological innovations, planning based on social evolution, and the nature of practice at this moment—all without losing sight of current critical and artistic developments.

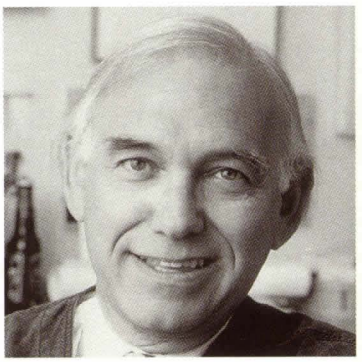


RAND ELLIOTT
Elliott + Associates

It's hard for students to believe that professionals haven't sold out, because students believe good work can't be done. Sadly, too many architects seem to think so too. To see that the message of good design gets across, professionals need to be more involved in the schools as lecturers, tutors, and counselors giving students a taste of the real world.

ELIZABETH PLATER-ZYBERK
Duany Plater-Zyberk Architects

If we truly believe we can educate anybody, not an elite, to be an architect, then we need to respond to demographics—the parallel rise in poorer and older students. The structure of an education is going to have to become more flexible. This may mean more night and weekend classes and accelerated course offerings through summer, like the business schools have been doing for some time.



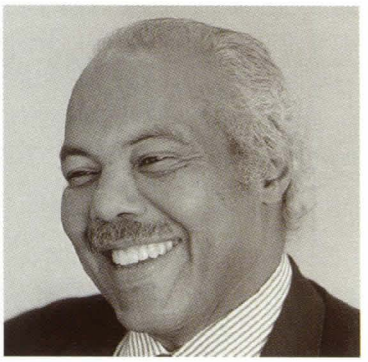
JAMES STEWART POLSHEK
Polshek and Partners

The greatest challenge facing architecture education is recognizing the increasing banality of practice. We need to develop educational strategies that will cultivate a passion for design and provide the tools for applying it effectively. The nascent practitioner must find socially and technologically useful ways to transcend that banality.

FOSTER & ASSOCIATES

MERRILL ELAM
Scogin Elam & Bray

In this age of bites, flashes, snippets, and techno-overload, the most important challenge for architecture education, as well as the discipline in general, is focus. We all need to focus on architecture as a powerful cultural force, an eminently difficult art form, and a never-satisfied intellectual search. Distraction is a constant flirtation, and time is elusive and dear.



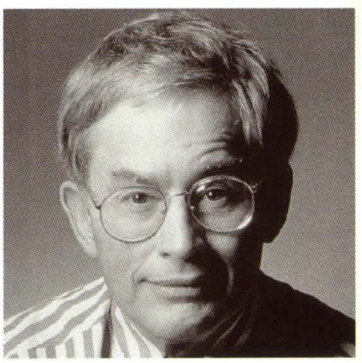
MAX BOND
Davis, Brody & Associates

We give students the sense that good architecture results when the architect completely controls the project, rather than working in a team. It's the myth of the star system, that the only way to be a good architect is to be a good formalist. The profession fails the schools by not promoting the range of things that architects actually do.

MARTINA KONIETZNY

MICHAEL E. WILLIS
Michael Willis and Associates

We should get the student to know what Palladio knew: all our esthetic and engineering training is in aid of solving practical problems. Architects should get themselves involved in the development of architecture school curricula. Mentor a series of students so that they can get the exposure you feel is lacking in the schools.



ROBERT FRASCA
Zimmer Gunsul Frasca Partnership

Disagreement between academics and the profession is healthy. The schools should focus on what makes architecture art and how this is accomplished in varying ways, times, and places. Students should learn how to think and gain sufficient verbal and graphic skills to explain this thinking to their clients. If more academics would build and more professionals would teach, everyone would benefit.

ADELE NAUDE SANTOS
Adele N. Santos and Associates

One of the Achilles' heels of architecture education continues to be the lack of integration of technical subjects with design studios, despite the fact that this fusion is essential to architectural thinking. Today we are building with a sophisticated palette of materials, yet this integration is beyond the scope of most curricula, in which traditional materials and methods are taught in abstracted ways.

STANLEY TIGERMAN
Tigerman McCurry

The academy and practice are discerned as increasingly distinct, with each diminishing the other by name calling. The people who make things look down on those who think—and, of course, those who think look down on those who make. While some land-grant colleges view practice as casework, generally the academy is antagonistic toward practice.

REED KROLOFF

HOW THE PROFESSION IS FAILING THE SCHOOLS

Almost since their founding, the nation's architecture schools have come under constant criticism for failing to produce graduates ideally suited to practice. From a 1932 study by the Association of Collegiate Schools of Architecture that fretted over design studios producing only paper architecture, to a thin, brittle screed from *Progressive Architecture* in 1995, the schools have been accused time and again of failing the profession. But the real culprit in this battle over the incorrect nurturing of our architectural young is the profession itself. No other group has failed so fundamentally in discharging its responsibilities toward the perpetuation of architecture as a culturally meaningful endeavor, a rewarding education, and a desirable way to earn a living.

Most of the arguments boil down to one issue: technical proficiency. New graduates may be design savvy and computer literate, but if they can't size a beam, whip through a complex set of working drawings, or spec the latest detail, many practitioners feel they are worthless—certainly not entitled to the $10 per hour they are are typically paid. (Those with a master's degree, that is; bachelor's candidates, subtract $1.25 per hour.)

The profession, it seems, has long been confused about the difference between education and training. When the decision was made almost 130 years ago to vest responsibility for architecture education with universities instead of technical and trade schools, the profession also tacitly accepted the mission of the universities as their own: to develop in young people the skills necessary to function effectively in society and the economy. Nowhere was there a clause demanding full, or even partial, technical proficiency from architecture graduates. In fact, the profession was wise enough to draw on its rich tradition of apprenticeship to set up one of the first and most innovative systems of internship: a three-year sojourn during which architects-in-training prepare for licensure by learning the many technical particularities in which the field is rooted. The system was codified in 1978 as the Intern Development Program.

Architects thus understood from the start that their education had at least two parts: college, followed by internship, each stage with its own character, responsibilities, and expected outcomes. School and internship were not intended to be redundant. For many years, particularly those in which the American economy moved at a slower pace and rewarded architects more richly, this system functioned relatively well. But with the advent of the information economy, all of that began to change. In an era of declining fees, rampant subspecialization, international competition, and technological revolution-without-end, practitioners became increasingly unwilling or unable to shoulder the burden of internship. And rather than invent a new paradigm, architects lashed out at the schools.

What an easy target. In the late 1980s and early 1990s, academia was chasing the holy grail of theory. Graduates of the leading schools became much more fluent in the literary theories of Jacques Derrida than in the perspective theories of Francis Ching. This elevation of the intellectual over the practical infuriated many practitioners, who wanted graduates prepared to draw and detail, something far too few students were able to do. At the same time, the tidal wave of early 1990s layoffs left pools of middle-level talent willing to take almost any job. For interns, that talent was direct, unbeatable competition. That's when the restrictions began to appear in the job ads: three years of experience necessary. That's when the internship system began to fall apart. That's when the profession failed the schools, again.

This cycle has occurred before. Notes Alan Chimacoff, Hillier Group principal and Princeton professor, "Every generation of architects has had it said about them: the kids coming out of school today are not of much use to the profession." Chimacoff's comments imply the critical difference between someone who is well educated and someone who is well trained. Well-trained people are immediately useful for specific, limited tasks. And when those tasks change—for instance, when offices shift from hand-drafting to CAD—that person's training becomes obsolete and they must begin again.

Someone who is well educated, by contrast, can adapt to new circumstances. Observes Peter Rowe, dean of Harvard's Graduate School of Design, "We're no longer building a fixed set of particular skills and then living off them the rest of our lives. In a period of rapid social, economic, and cultural change, professions need flexibility and adaptability—the ability to remake oneself." That means architecture education cannot be predicated on a specific set of task-oriented skills. It must instead concentrate on developing a rigorous intellectual foundation. The profession, for its part, must return to its earlier, broader view of architecture education and enlist the aid of its moribund professional organizations to develop a new internship system that will enhance the process.

Ultimately, architects fail the schools (and themselves) by forgetting that theirs is at heart a profession of lifelong learning. Even the AIA has recognized the revivifying effects of continuing education, mandating it for sustained membership—no matter that architects can achieve these education credits simply by reading a magazine or listening to a manufacturer's sales

talk. One may question the AIA's methodology, but the spirit of its decision is beyond reproach. Nearly every expert agrees that for all professions, and for architecture in particular, the schools are the beginning of an educational process—not the end.

Internship and the role of education are only parts of a larger problem, however. Over the last several decades, architecture has slipped from an authoritative, well-compensated profession to a highly competitive business that has lost the ability to command the respect and fees it once did. Undermined by economic forces beyond its control and seemingly unable to stem the slide, architecture is going through a profound identity crisis—a trauma not lost on those in school.

Taunting students about their future is a professional school tradition. In architecture, however, this mild hazing has taken an unhealthy turn. Students aren't warned about how difficult school is or how long it will take to make partner. Instead, they are admonished that architecture is no place to earn a living, that it is held in low esteem, and that they'd be better off in construction or even interiors. This demoralizing dirge is often reinforced by faculty who have experienced the vicissitudes of professional life firsthand. Add to this the plangent bleating of the profession, and it is no wonder graduates face the world expecting the worst from their careers, not the best. Without remedial action, student trepidation threatens to become a self-fulfilling prophecy.

Sadly, much of the wailing is simply untrue. For instance, architects routinely complain that the schools put out too many graduates for the field to absorb. But in fact, only about 4,500 architecture students graduate each year, according to the National Architectural Accrediting Board: approximately 4 percent of the profession's current population of 130,000. Further, most deans estimate that only one-half to two-thirds of those graduates will enter conventional practice—about the right balance to churn the profession once every 40 years or so.

Finally, government statistics show that after a severe contraction between 1988 and 1992, architectural employment has rebounded. According to the U.S. Bureau of Labor Statistics (BLS) Establishment Survey, architectural employment has gained steadily for the last four years, climbing from 112,600 in 1992 to 129,000 in 1995, and BLS projects continued moderate growth for the next decade. Further, most architects enjoy what they do. Instead of perpetuating the myth of the profession as a visit to a Dickensian Bleak House, architects need to demonstrate to students that their careers have meaning, are satisfying, and have a future.

As long as the profession exudes the sense that it is in decline, decline will prevail—in the schools and out. Robert Gutman notes (pages 87-89, this issue) that architecture is considered a "weak" profession because of its inability to project its power into the economic and political circles that make decisions about building. But this assessment is not uniformly true. Architect Peter Calthorpe is a close adviser on urban policy to HUD Secretary Henry Cisneros. Architect Harvey Gantt, the former mayor of Charlotte, North Carolina, is once again the Democratic candidate for the U.S. Senate in that state. Architect Edward Feiner heads the General Services Administration's Public Buildings Service, the agency responsible for oversight of the $10 billion-plus governmental building boom going on right now. As advocates and potential future clients, architecture graduates who go on to other careers are just as important as those who stay with the field: they take their architectural knowledge and sensitivity with them.

And as Gutman and others point out, the public is fascinated with architecture, revering its beauty and visual power. Even Hollywood has taken notice, casting stars ranging from Tom Hanks to Richard Gere as architects in recent films. In order to survive, the profession must learn how to elevate the level of its clout to that of its glamor. Rather than continue to wring their hands about the decline of the profession, architects must identify strategies for resuscitating it.

Architecture can no longer command the fees and respect it once did, and as a result is undergoing a profound identity crisis—a trauma not lost on those in school.

Ironically, some of the most intriguing ideas about how to do exactly that are coming out of the schools. University research into computer-aided design has led to the creation of such innovative market-ready software as form•Z (developed initially at Ohio State) and DesignWorkshop (begun at the University of Oregon). At Arizona State University, Professor Ryc Loope teaches classes that encourage students to think of architects as developers. And for the last five years, the University of Houston's Sasakawa International Center for Space Architecture has trained architects to design living spaces "to boldly go where no one has gone before." The profession must learn to recognize the creative strengths of the schools and draw on them to help redefine itself. If it can't, we'll again be blaming the schools for how they failed the profession, because they'll be the only ones left to blame.

Associate Editor Reed Kroloff is the former assistant dean of the College of Architecture and Environmental Design at Arizona State University.

DANA CUFF

CELEBRATE THE GAP BETWEEN EDUCATION AND PRACTICE

The existing practice [of education] is perplexing. No one knows on what principle we should proceed—should what is useful in life, or should excellence, or should higher knowledge be the aim of our training?" These words could have come from "Building Community: A New Future for Architectural Education and Practice," a report released recently by the Carnegie Foundation for the Advancement of Teaching. But instead, Aristotle wrote them in the 4th century, B.C., in *The Politics.* In the Carnegie report, authors Ernest Boyer and Lee Mitgang recommend a professional education that is inclusive, collaborative, unified, and enriched, in order to bridge the gap between schools and practice. I believe the proverbial rift between academia and the office, extant since Aristotle's era, should not be bridged, but defended.

A "useful" education has always been a bone of contention between academics and practitioners. It is difficult to argue with Boyer and Mitgang's call for partnership between practitioners and educators—an agenda that is valid if uninspiring. While I agree that the disjunction between practice and education is significant, I believe it serves a fundamental purpose we have overlooked. The University of Chicago's famous sociologist of work, Everett C. Hughes, said the chasm between expectation and realization was endemic to professions. This dichotomy between school and practice is structural to architecture, and even a valuable resource.

Over the past few years, some of my students have taken good jobs designing virtual environments. Even the most talented in computation, however, express disappointment in their remove from "architecture." They profess a willingness to sacrifice much in order to join mainstream architectural practice, but their most useful skills have been acquired in computer courses. Practitioners, on the other side, are always strained financially and need a cheap, skilled labor pool willing to work on necessary low-level tasks. They complain that firms are required to do too much of the training that schools have abdicated in favor of esoteric concerns.

As the market for traditional architectural work grows more competitive, jobs are flourishing at the profession's edges (for example, design/build and facilities management) and among architecturally informed occupations external to the profession (exhibition design and virtual environments). While such jobs are generally located outside architecture firms, I classify them as architects' work. Thus, at one level, architects are practicing in a broader arena than ever before.

At another level, architectural projects are growing increasingly complex. They are more fragmented in terms of the expertise needed. They require higher integrative capacities of all the requisite collaborators, and they rely heavily on digital representation and telecommunication. It is obvious that any single image of the architect will be crushed under such heavy multiple demands.

The students' plight, in light of current conditions of practice, leads me to question which image of the architect or which architectural work the school should serve. Even if it were so inclined, the academy could not model the multivalent impulses of practices facing future generations of architects. Moreover, when schools effectively teach skills like CAD or lighting, as utility advocates demand, they lead students away from architecture into more specialized occupations—not necessarily a bad outcome, but unexpected on the part of students. I contend that these conditions render the gap shapeless and thus impossible to bridge.

Although the general breach between the office and the academy cannot be spanned, neither can specific types of architectural work be emulated in the university. Since the very definition of the practice side of the dichotomy has to do with its realness, all attempts to emulate an office will not only fall short in some quantitative sense, but in a fundamental qualitative way.

If school projects will always be distinct from those in practice, the iconoclast might wonder if we need architecture schools at all. Rem Koolhaas, recollecting his own experiences as a student at the Architectural Association, writes, "If there is a plot in any school, it is an eternal one—simple Darwinian imperative, maybe—of each generation trying to incapacitate the next under the guise of educational process." Rather than eating our young, we could eliminate the academics, and novices could instead pay offices for their professional training. Architecture could follow a system akin to crafts-based industries (such as cabinetmaking) or occupations with varied training paths (for example, real estate development). Ultimately, such strategies would weaken architecture, since university-based training defines modern professions, legitimizing higher knowledge to serve sociopolitical and psychological ends. Sociologist Eliot Freidson, author of *Professional Powers: A Study of the Institutionalization of Formal Knowledge,* illuminates a paradox embedded here. To have power—that is, to be able to act in a way that will give them some influence over the world—professions must have as a base formal knowledge, which is in and of itself relatively useless. By transform-

ing that knowledge into useful material for action, practitioners and offices gain their power. The various forms of architectural practice, including firms, are the agents connecting formal knowledge to the political economy. The professional school's salvation is its circuitous but crucial link to practitioners' ability to effect change.

Just as practice is not one thing but an amorphous and multiple collection of phenomena, so too are the schools not internally homogeneous. Evident within the academy is the very same Aristotelian split between practice courses, studio, and theory seminars. This schism typically results in a curriculum of autonomous universes, prioritized with the studio and excellence at the fore, theory and higher knowledge thereafter, and practice and utility at the low end. Individual students, it is hoped, construct the missing connections between studios and courses. Alternatively, I believe the ideal curriculum establishes a creative tension between these differing perspectives in which the students find the discourse of architecture shaped and reshaped.

Would we achieve this ideal if we successfully reversed the priorities to place the "useful" above higher knowledge and excellence? The notion of raising our priorities about pragmatic matters seems a misguided objective. In the extreme, we produce a generation devoid of utopian thinking, unclear about quality, and without opportunities to develop aspirations to act upon. Even novices who had a chance to exercise these faculties without risk can be inundated by the exigencies of practice. Rather than shuffle priorities, the goal should be to provoke confrontation among typically separated orientations. In such a program, studio, theory, and practice learning would not be isolated into unrelated courses, but connected in a way that sparks would begin to fly. This thinking promotes creative tension rather than the resolution of a more practical education, and by such means, the gap becomes potent.

I was part of an experiment in architecture education reform along the lines enumerated above, at the University of California, San Diego (UCSD). With a few dozen graduate students, three fellow faculty members (William Curtis, Craig Hodgetts, and Susan Ubbelohde), and Dean Adele Santos, we struck off in what would have proved a promising new direction. Courses were integrated with studios around topics such as affordable housing and related issues (the Third World context, politics in the U.S., and building technology). We broke up the term so seminars would consist of two-week sessions that could be taught by visiting experts, leaving concentrated time for studios. Symposia took up the topics of the term at hand.

This model forced the confrontation of generally isolated domains, like construction, program, politics, history, and design. Novices were to investigate critically how the excellent, the erudite, and the useful might each feed the other. It held a potential both for the academy to respond to the context of practice (if not the needs), as well as for the profession to think about current issues in new ways. But a year after opening the gates, the school was "disestablished" according to the university's bureaucratic euphemism.

The closing of UCSD's School of Architecture is a complicated tale that might be summarized by the moral of this story: the gap in focus blinds us from seeing the chasm beyond. As we invented ingenious ways to grapple with contradictions within the profession, the sands had shifted beneath our feet. In a budget-cutting era within the university, architecture was a tiny new school with few allies. Other faculty saw that eliminating architecture might spare their own necks. Unlike philosophy or mathematics, architecture was not seen as fundamental to the education of the student body.

The goal of architecture education should be to provoke confrontation among typically separated orientations. In such a program, studio, theory, and practice learning would be connected, not isolated in unrelated courses.

Moreover, there was only the kernel of an architecture culture in the San Diego community when the school was initiated. The area had been recently blanketed by careless residential development that overshadowed its precious tradition from Irving Gill to Louis Kahn. The architects in the area considered themselves pioneers, and remarked that the region held few clients willing to take any kind of risk. Thus, as we rallied supporters in our defense, we had at our side many architects but few powerful players in either the public arena or in the university. It was not hard to break the limb that we were not even aware we were resting upon.

I have upheld the potency of what has been characterized previously as a debilitating discontinuity between education and practice, but I am also acutely aware of the limits of our professional power. If we can draw new intensity from our own internal conditions, then we—practitioner and educator—must simultaneously turn our attention to the gap between our profession and the public at large.

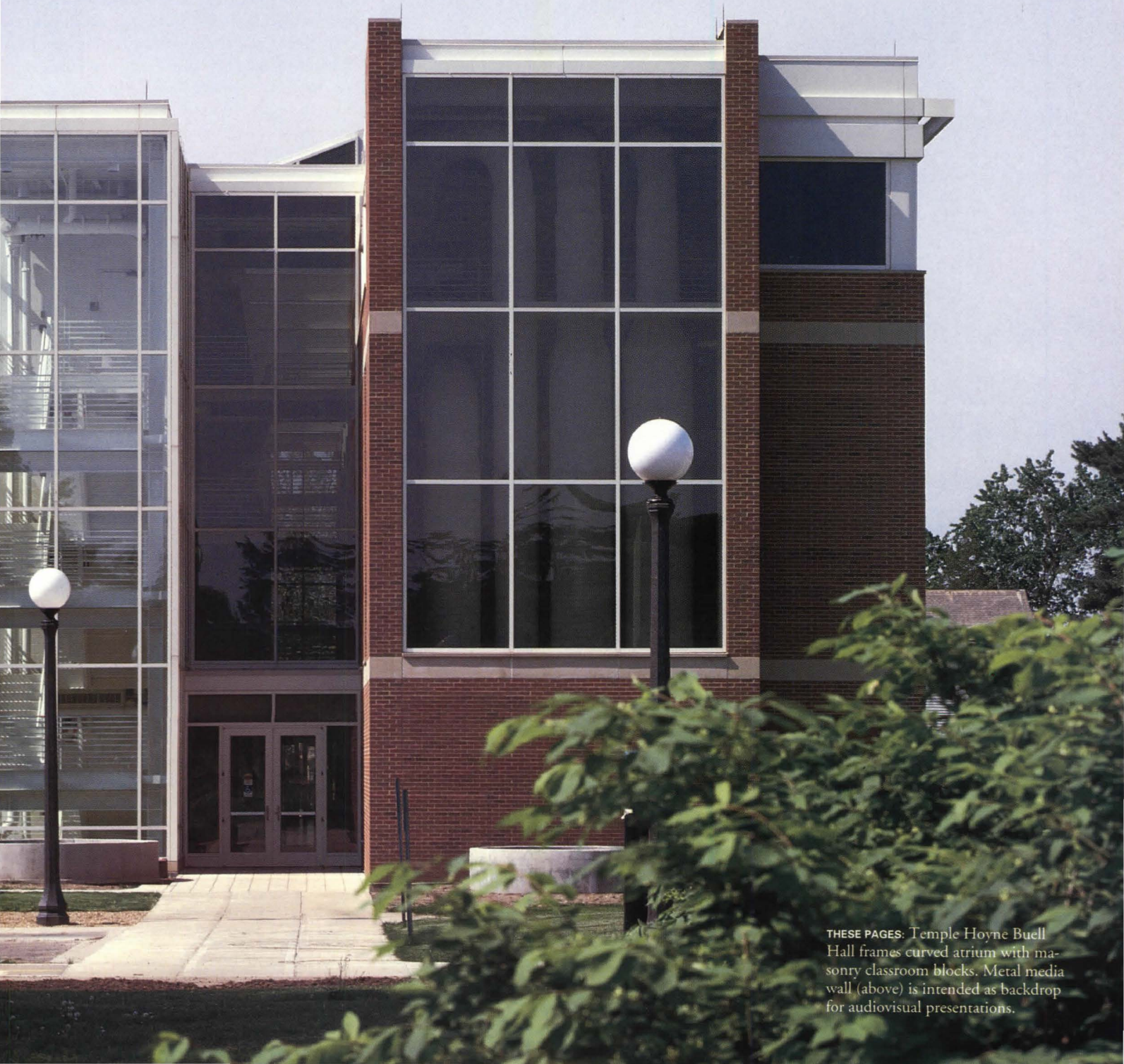
Dana Cuff is an associate professor of architecture and urban design at University of California, Los Angeles. She is the author of Architecture: The Story of Practice *(MIT Press, 1991).*

Temple Hoyne Buell Hall
University of Illinois at
Urbana-Champaign
Champaign, Illinois
Perkins & Will, Architect

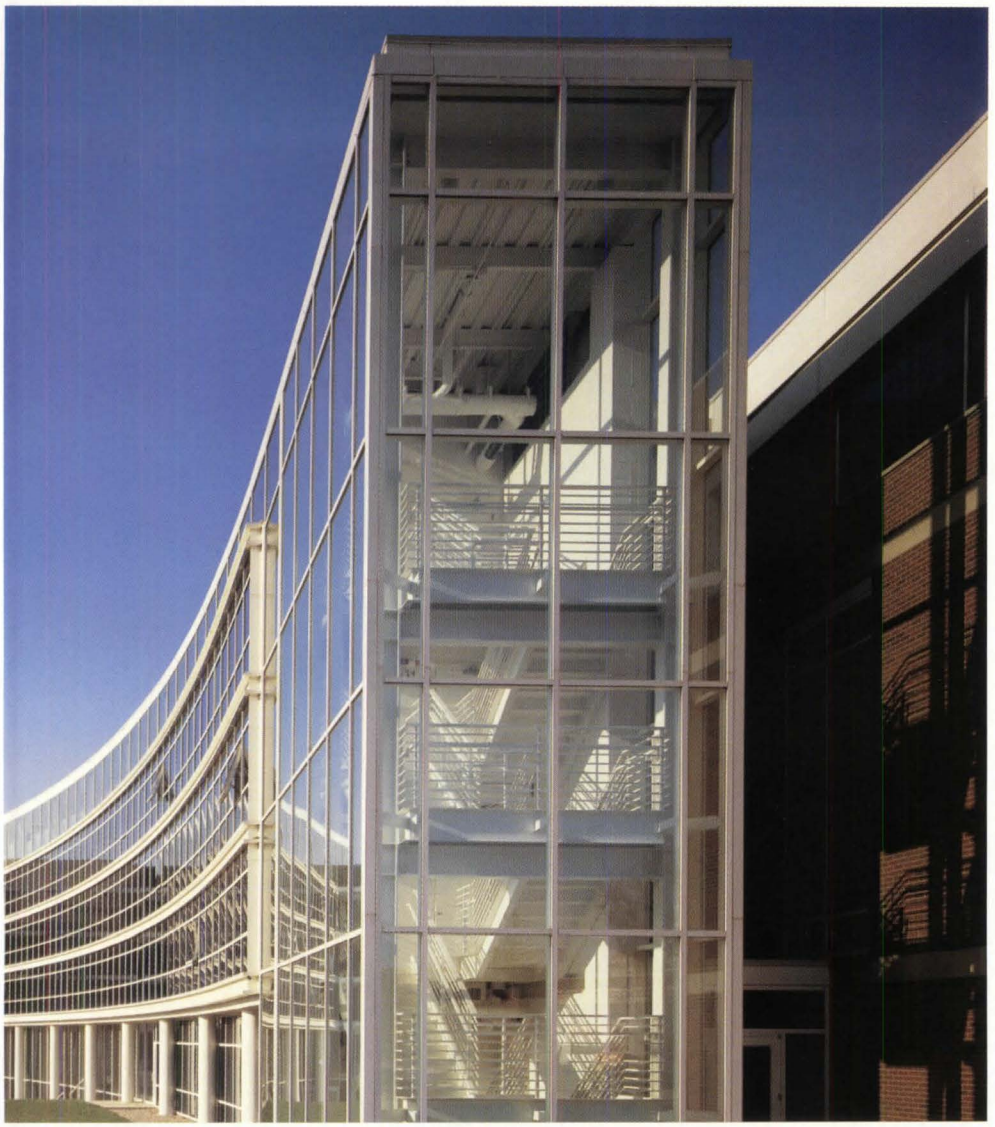
PRAIRIE COMPANION

Since 1936, architecture students at the University of Illinois at Urbana-Champaign have attended classes in an overgrown Classical bunker whose pedimented entry proclaims "Architecture and Kindred Spirits." While that inscription implies activities beyond the teaching of architecture, it was not until the opening of the new Temple Hoyne Buell Hall in 1995 that the various departments within the College of Fine and Applied Arts shared the same structure. "This project is an experiment in a multidisciplinary approach," explains Principal Ralph Johnson of Perkins & Will, the architect of the new building.

The University of Illinois' origins as a land grant college, founded in 1868, are obvious. Although surrounded by the suburban-scaled development of the dual college towns of Champaign and Urbana, it is still possible to imagine the early university buildings sitting amid the vast openness of



THESE PAGES: Temple Hoyne Buell Hall frames curved atrium with masonry classroom blocks. Metal media wall (above) is intended as backdrop for audiovisual presentations.



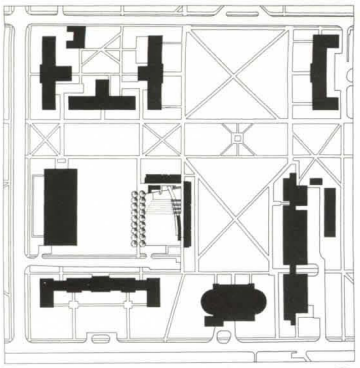
the Midwestern prairie. The central university campus is composed of an assortment of overscaled, overproportioned, Georgian-style academic and residential structures that generally sit just a bit too far apart to adequately define discrete spaces. Interim Dean of the School of Fine and Applied Arts Alan Forrester captures the original impression of these buildings when he explains, "They were like ocean liners on the prairie."

A broad north-south yard passes through the three main quadrangles and forms the primary axis of the campus. The Central Quad was completed with a collection of relatively distinguished buildings during the early decades of this century, while the North Quad, where the Beckman Institute for Advanced Science and Technology is located, has only recently been finished with a complex of Postmodern structures. Temple Hoyne Buell Hall completes the enclosure of the South Quad, which boasts an eclectic mixture of buildings, including Helmut Jahn's agricultural engineering building directly to the east. The building is sited near the intersection of the primary campus axis and the "military axis," a still rather undefined cross-axis first suggested by architect Charles Platt during the 1920s. The scale of the quadrangles varies, with the most modestly sized structures adjoining the new building.

Johnson developed his basic parti with four simple elements. Two four-story red brick blocks, sympathetic in material to the surrounding Georgian-style architecture, are deployed in the form of an L. These present a conservative face to both the South Quad and the military axis, while subtly shifting to a more Modern expression in detailing. The auditorium, main gallery, and departmental offices are accommodated on the lower levels of these blocks; the studio and critique rooms are located above.

Set within the L and completing the composition are what Johnson refers to as two "lyrical Modern buildings"—a curvilinear bar of glass, housing faculty offices, and a skewed metal media wall, placed against the north brick volume, that penetrates the glass bar. The media wall is a four-story steel cage structure supporting a plane of perforated metal panels onto which images can be projected. It is a self-conscious rhetorical device that begins to resolve the colliding geometries and languages within the disparate parts of the overall design.

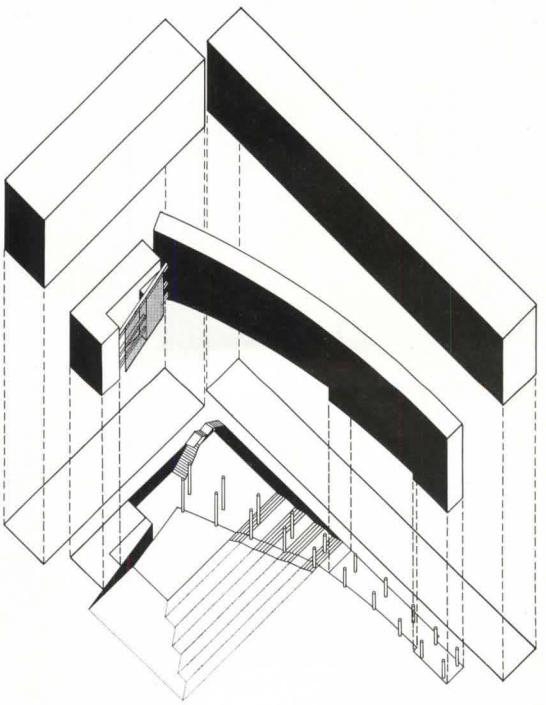
The space within the L reveals Johnson's more interesting investigations. Excavated to the level of the building's basement, it pro-



SITE PLAN OF SOUTH QUAD

FACING PAGE, TOP: Curving stair tower anchors south end of office block.
FACING PAGE, BOTTOM: Glass curtain wall defines sloped outdoor seating area.
PLAN: Temple Hoyne Buell Hall is located in South Quad.
BELOW: East elevation's restrained masonry harmonizes with university's traditional Georgian architecture (right).
BOTTOM LEFT: Intersection of two masonry volumes forms main entrance.
BOTTOM RIGHT: Skewed metal media wall floats above exterior court.

ABOVE: Atrium doubles as lounge and assembly area for special events.
AXONOMETRIC: East wing (top right), containing offices and studios, and north wing (top left), housing auditorium and studios, frame curved atrium.
FACING PAGE, TOP: Atrium's upper level is lit by skylight; bridges lead to faculty offices (left) and studios (right).
SECTION: Glazed office block interrupts media wall; skylit atrium spanned by bridges divides offices from studios.
PLAN: Architecture studios in east wing overlook South Quad and atrium; landscape studios in north wing align with military axis.



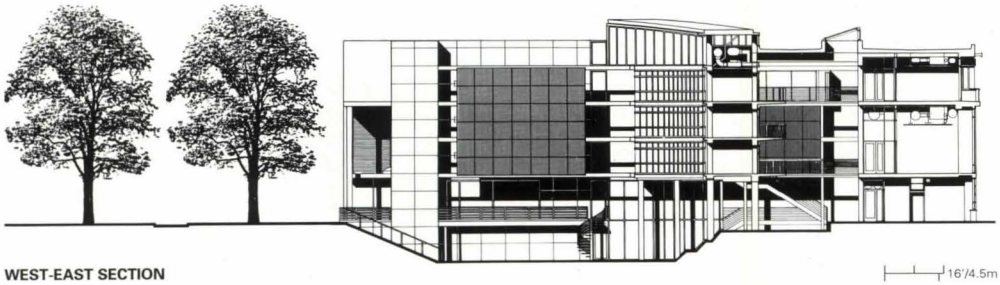
vides a raked seating area for the media wall both inside and outside the building. The curved bar of offices begins at the second floor and floats above the more open area of the lower levels. At the upper levels, the area between the curved bar and the orthogonal block of the studios is tight and confined; a glazed curtain wall with views to the exterior courtyard broadens and opens the atrium on the lower levels.

Johnson has crafted an intriguing complex of both interior and exterior areas that combines both traditional and Modernist space-making principles with landscaping elements. But the awkward pie-shaped atrium seems less than deliberate, more a leftover after the four building blocks were set in place.

In fact, the atrium was required in the building's program to "establish community and encourage both the chance and formal associations that need to occur," according to Hub White, acting director of the School of Architecture. As an alumnus of the school, Johnson quickly realized the potential for such an element. "There really are no interior spaces of note on campus," he says. According to White, there are many requests from other university groups to use the atrium: "It's provided us with a place for special events," he notes.

The heart of any architecture school is the studio. "We didn't fundamentally look at a new studio organization," says Forrester. "The smaller studios are the most popular in the old building—we used them as the model for the new." Critique rooms divide the studios from each other and help define the entrances to studios, which have glass walls on the interior and windows and balconies overlooking the South Quad. "There was a conscious decision to make the critique areas into public display spaces that would act as punctuation to other activities in the building," says Forrester. While these rooms have a crisp character and a clear relationship to the studios, they don't offer much in the way of pin-up space. They suggest that presentations are exceedingly formal, yet intimate.

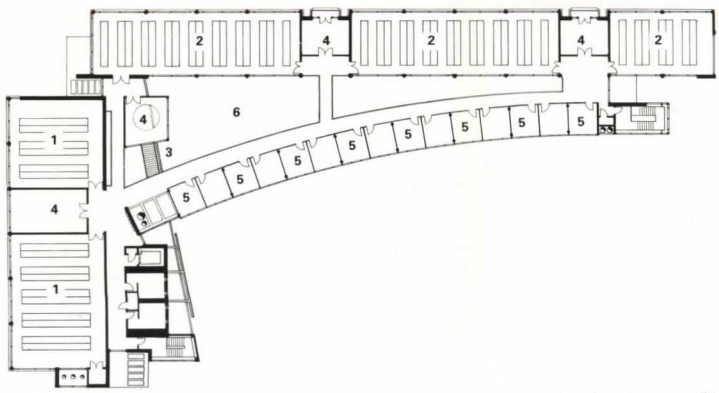
One crit area, cantilevering over the atrium and piercing the plane of the media wall, is different. Occupants of this top-floor room can be seen from four stories below, seeming to inhabit an aquarium in the sky. The glass-enclosed space is lit by a large, round skylight. It's easy to imagine that a particularly brilliant student might someday ascend directly from their presentation through the skylight and into the heavens, bypassing the



WEST-EAST SECTION

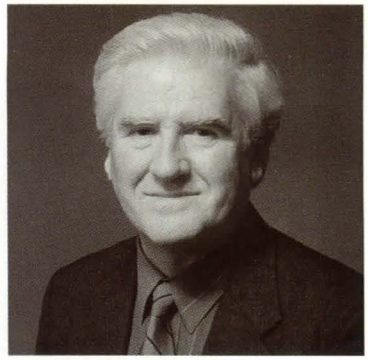
16'/4.5m

1 LANDSCAPE STUDIO
2 ARCHITECTURE STUDIO
3 MEDIA WALL
4 REVIEW ROOM
5 OFFICE
6 ATRIUM



THIRD-FLOOR PLAN

32'/9.5m



DEAN'S REPORT

Alan Forrester and Hub White make a convincing tag team at the University of Illinois at Urbana-Champaign. Forrester is presently the Interim Dean of the College of Fine and Applied Arts and White serves as the Acting Director of the School of Architecture.

The two administrators, who occupy a pleasant suite of offices immediately adjacent to Temple Hoyne Buell Hall's main entrance, collaborated on the building's program and were key players in the architect selection process. Their skilled lobbying helped produce almost half the building's budget from two primary benefactors. The deans also worked closely with Perkins & Will's Ralph Johnson during the five-year design and construction of the new building: "We've been very involved in this process, more so than at many schools," confirms Forrester.

The college comprises the School of Architecture, departments of landscape architecture and urban and regional planning, as well as art and music schools and theater and dance departments. With 710 students and 50 faculty members, the School of Architecture offers a four-year bachelor's of science in architectural studies and a master's of architecture. The school has also devised dual degree programs combining a master's in architecture with a master's in urban planning, civil engineering, business administration, computer science, or finance.

Temple Hoyne Buell Hall's design builds on familiar kit-of-parts compositional strategies and Dutch Modern-inspired esthetics that Johnson has exploited for the last decade. While the School of Architecture and Roland Kehe, the campus architect, supported Johnson's approach from the beginning, "the trustees wanted a Georgian building similar to other buildings on campus—sloped roofs, dormers, chimneys," Johnson recalls. "Our challenge was how to avoid a literal interpretation of the historical context without offending the trustees." Ultimately, Johnson's design prevailed by a thin margin of four to three.

ABOVE: Dramatically overscaled circular skylight lends monumentality to modest scale of presentation room.
FACING PAGE: Interior version of media wall dominates atrium. Perforated metal panels expose supporting structure and stairs beyond; glazed volume of skylit presentation room pierces wall at uppermost level.

profession entirely.

The school's faculty offices occupy the glazed curvilinear bar and form the principal exterior face of the building on the west elevation. Forrester describes them as a collection of cells "like La Tourette," the 1963 monastery by Le Corbusier. The offices are reached from a corridor open to the atrium that is also the students' principal path to their studios. It's an intriguing inversion of the monastic cloister that the faculty actually turn their backs on the shared community of the school to inhabit cells that look outward toward the larger world.

White and Forrester specified in the program that the new building "should express the craft of architecture through its technology and construction." Johnson responded by exploiting exposed construction wherever possible. Both the west and south elevations, for example, sport large expanses of glass that reveal ductwork ascending from the basement and servicing each floor. On the interior, electrical, plumbing, and fire protection elements are often in plain view. "The building offers things you can reflect on," explains White. "We expose ourselves to others."

Unfortunately, the building is still only a work in progress. The exterior courtyard, while promising, remains poorly defined. Its western edge is bounded by a parking lot that leaves the building in a state similar to the older structures on campus—an ocean liner steaming along in search of a port. An infill structure on this western edge is essential if the University of Illinois is to successfully unite architecture and its kindred disciplines. Although most architecture, planning, and landscape graduate students do inhabit Temple Hoyne Buell Hall, the College of Fine and Applied Arts remains divided among three buildings.—*Edward Keegan*

TEMPLE HOYNE BUELL HALL
UNIVERSITY OF ILLINOIS
CHAMPAIGN, ILLINOIS

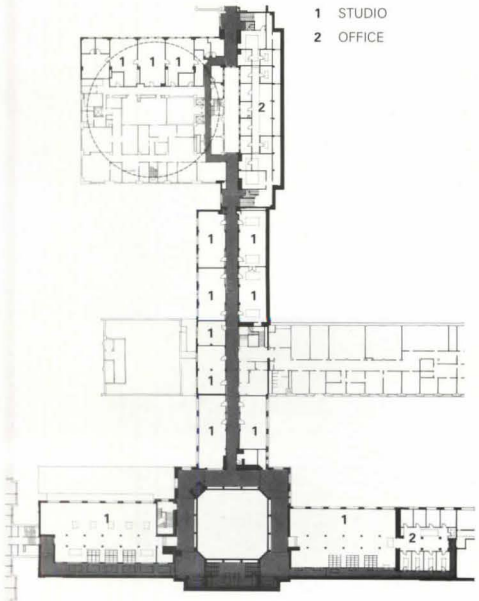
ARCHITECT: Perkins & Will, Chicago—John E. Nunemaker (managing principal); Ralph Johnson (design principal); Joseph Chronister (project manager); Robert Gross, Gary Jaeger, Mukhtar Khalil, Vojo Narancic, John O'Neil, Scott Reed, Steve Turckes, Tom Vecchio (project team)
ENGINEERS: Perkins & Will (structural, electrical, mechanical)—Luke Leung, Michael Michalski, Ron Parsley, Randy Takahashi, Bill Wong (project team); Terra Engineering (civil)
GENERAL CONTRACTOR: English Brothers Company
COST: $11.2 million
PHOTOGRAPHER: Nick Merrick/Hedrich-Blessing


ARTFUL

ıssachusetts Institute of Technology
hool of Architecture and Planning
ıster Plan and Renovation
ers Weinzapfel Associates, Architect

COHESION

THESE PAGES: Elliot K. Wolk Gallery is divided into conference room (left), exhibit area (center), and thesis review space (right).



FOURTH-FLOOR PLAN

For years, the School of Architecture and Planning at the Massachusetts Institute of Technology (MIT) resembled a gypsy camp, with offices and classrooms scattered among a dozen buildings and many studios located in a renovated warehouse blocks away. Instead of the rigor and clarity associated with engineering, the architecture school displayed the idiosyncratic spirit of an academic counterculture. "Our fragmented condition was a disaster," explains Dean William Mitchell, who arrived in 1992. "I wanted more cohesion among the departments, a real sense of belonging to a whole."

Cohesion became Mitchell's goal, and renovating the school's 1910 building became his principal means of attaining it. This monumental Beaux-Arts structure, designed by Welles Bosworth with a dramatic dome and entablature, is the symbolic heart of MIT. Rigorous in plan yet remarkably flexible in operation, it had been dismembered by decades of careless alterations that had created a warren of cramped, dark studios only accidentally connected to classrooms, review areas, and offices. The attic around the dome, once the hub of the school's design activity, had been virtually abandoned as faculty members created their own lofts, lounges, and other quirky spaces.

In 1993, Leers Weinzapfel Associates of Boston began transforming this hodgepodge back into a school with a coherent image and a clear message. They trekked back and forth across the Charles River innumerable times to hear the views of tenured and nontenured faculty, of virtually everyone with a stake in the outcome. Four phases of their $5.24 million renovation have been completed, and a fifth is in the planning stage.

The departments of architecture, planning, and building technology now occupy most of the third and fourth floors of the original building, together with a library, exhibition gallery, and conference room emblazoned with a Frank Stella mural. Studios and review spaces once again wrap the rotunda, supplemented by a café and a small auditorium. Offices have been consolidated and corridors moved to create large, bright studios, with roll-up glass doors replacing solid walls. Dozens of windows and skylights, many blocked since World War II, have been uncovered to flood the core of the building with natural light.

No fan of remote computer labs, Dean Mitchell insisted that the latest CAD technology be available in the studios alongside the more traditional tools of architecture. The 443 graduate and undergraduate students in these "studios of the future" have access to a visualization theater for presenting projects, advanced CAD/CAM facilities for fabricating models, and video conferencing for desk crits and juries involving visiting faculty.

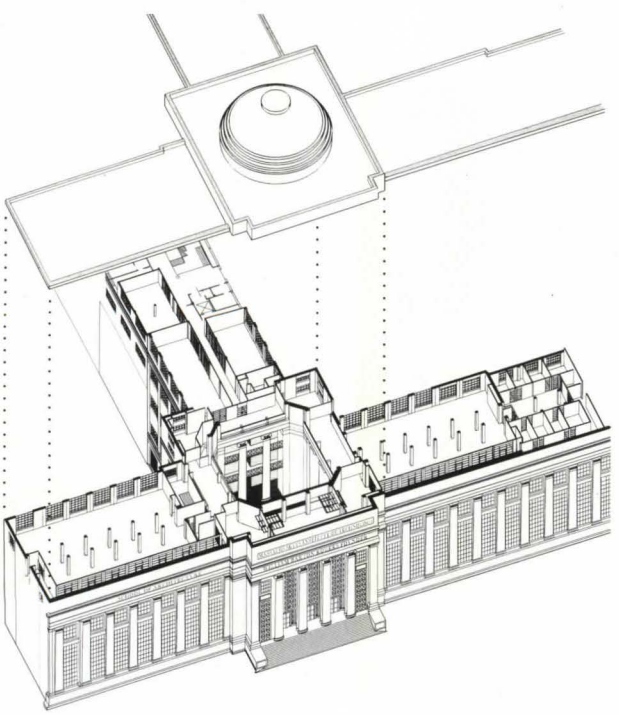
Leers Weinzapfel's renovation combines masonry with steel, glass, aluminum, and other modern industrial materials. Massive concrete columns and beams, exposed and expressed, play against light steel frames around doors and windows. This industrial feel, in turn, is softened by wood desks and chairs. Light penetrates the building through layers of clear and translucent glass that delineate public, private, and communal spaces. To recapture the spirit of the original building, the architects also preserved the original terrazzo floors and steel windows. This dialogue between past and present is central to Leers Weinzapfel's recent work, and precisely what the architecture school needed.

In 1995, Elliot K. Wolk, an MIT alumnus, donated the monumental Frank Stella mural called *Loohooloo,* which has become the centerpiece of the new conference room on the third floor. Ninety-seven linear feet of swirling acrylic on molded fiberglass, it makes a better party set than a backdrop for a seminar. Too much art, and too much voltage, in too small a space.

But that is one of the few slip-ups in this otherwise shrewd project. Leers Weinzapfel's renovation has reestablished architecture and planning at the center of the MIT campus. The spaces also provide a visual metaphor for the new openness that Dean Mitchell is trying to encourage. Without being polemical or trendy, Leers Weinzapfel's renovation has begun to change the culture of the school as well as its appearance.—*David Dillon*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
SCHOOL OF ARCHITECTURE AND PLANNING
MASTER PLAN AND RENOVATION
CAMBRIDGE, MASSACHUSETTS

ARCHITECT: Leers Weinzapfel Associates, Boston—Jane Weinzapfel (principal-in-charge); Andrea P. Leers (consulting principal); Karen Moore (associate); Mark Armstrong, Alex Adkins, Karen Swett (senior architects); Cathy Lassen, Mee Lee, Lauren Dunn Rockart (project team)
ENGINEERS: Lim Consultants (structural); TMP Consulting Engineers (mechanical); Lottero and Mason (electrical)
CONSULTANTS: Daedalus Projects (cost estimating); Jack DeBartolo & Tim Johnson (presentation)
GENERAL CONTRACTOR: Kennedy and Rossi
COST: $5.24 million (excluding final phase)
PHOTOGRAPHER: Chuck Choi



FACING PAGE, TOP: Roll-up glass doors replace solid walls in new studios.
FACING PAGE, CENTER: Acrylic-and-fiberglass mural by Frank Stella dominates conference room.
FACING PAGE, PLAN: Faculty offices have been consolidated into two wings (top and bottom right).
ABOVE: Typical faculty office on fourth-floor mezzanine is lit by uncovered skylight. Dome covers engineering library.
AXONOMETRIC: All renovations had to remain within shell of historic Beaux-Arts building designed by Welles Bosworth in 1910.

DEAN'S REPORT

William Mitchell faced two daunting challenges as the new dean of architecture and planning at MIT: pulling a dispersed, fragmented school together, and persuading a restive 65-member faculty to go along with his recommendations. "It was like an urban design project," he explains. "Every piece of turf was occupied by someone, so you couldn't just walk in and start changing things. You had to negotiate."

To succeed, Mitchell realized, he needed an architect who could sit through dozens of long, dull faculty meetings and then synthesize the divergent views into a compelling design. Patience was as important as talent. Having followed the work of Leers Weinzapfel Associates for a decade, he was convinced they were the right firm for the job. "They are architects who listen very carefully but also have a clear sense of themselves and their vision," Mitchell says. "We knew they wouldn't impose a design that in a few years would scream 'late 1990s.'"

"There was a lot of intense discussion because of who the client was," recalls Principal Jane Weinzapfel. "The faculty challenged us continually. Our job was to balance individual desires with what was best for the entire school."

Leers Weinzapfel's design turned out to be crisp, logical, and transparent—qualities the old School of Architecture and Planning lacked—with enough structural expression and industrial detailing to affirm its connection to the larger institute. Consolidating the more than a dozen graduate and undergraduate programs in architecture, planning, and related disciplines into one building has given the school new visibility and more political clout, manifested in everything from the popularity of its splashy conference room to the new propinquity of its dean and MIT's provost—both housed on the second floor, directly across the rotunda from one another. "An architecture faculty is the most difficult client imaginable," asserts Mitchell. "A foot-stomping, prima donna firm wouldn't have lasted five minutes."

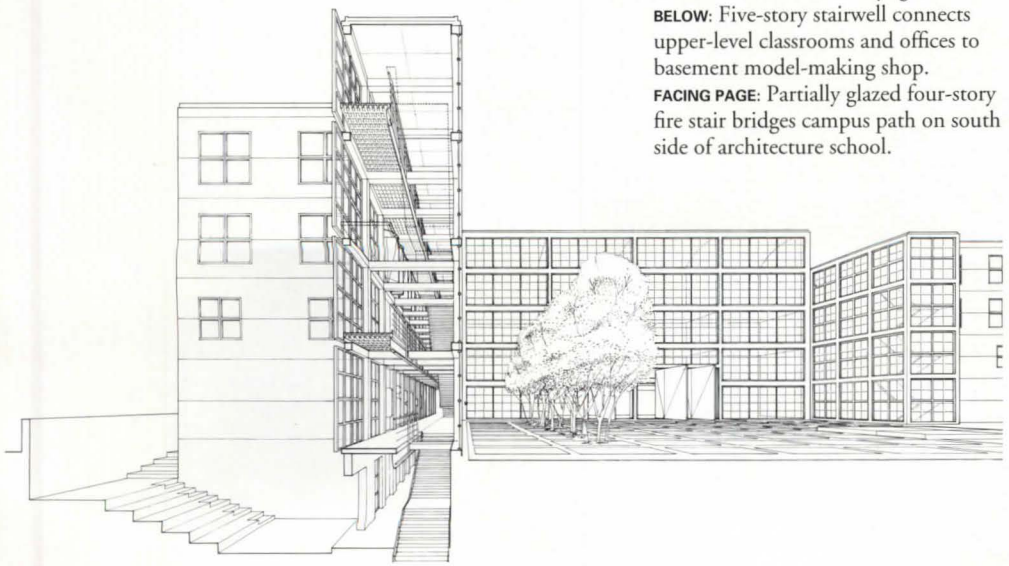
School of Architecture and Urban Planning
University of Wisconsin
Milwaukee, Wisconsin
Holabird & Root and
Eppstein-Uhen Architects

BIG CHILL

THESE PAGES: Glass-and-concrete circulation spine provides dramatic contrast to brick-clad classroom wing at University of Wisconsin's School of Architecture and Urban Planning.

Children at the Hartford Avenue Elementary School in Milwaukee should be forgiven for thinking that architecture might be a dull career choice. The University of Wisconsin-Milwaukee (UWM) School of Architecture and Urban Planning, located across the street from their playground, makes the profession look like no fun. The east facade is articulated with a dour grid of oversized, squarish windows cut in a stark four-story wall of brick.

Designed by Holabird & Root of Chicago with Eppstein Uhen Architects of Milwaukee, the building is an unnecessarily severe exercise in contextualism. Its materials, height, and setback are meant to continue the street wall established by a Neo-Tudor hospital down the block, but the result is chilly and standoffish. The school occupies a prominent campus corner—a sign of strong university commitment to architecture. But the building's design doesn't take advantage of the



ABOVE: Glassy central courtyard floods school's interiors with daylight.
BELOW: Five-story stairwell connects upper-level classrooms and offices to basement model-making shop.
FACING PAGE: Partially glazed four-story fire stair bridges campus path on south side of architecture school.

site to proclaim the institution's rising importance in the academic community or the city.

Inside, the design takes a much more stimulating turn. Modernist to the max, the 142,000-square-foot interior is a luminous exercise in exposed structure and functional details. Built on a tight budget for $89 per square foot, the school vividly tells the story of its own making. By design, it encourages students to consider how buildings are assembled from different parts and materials.

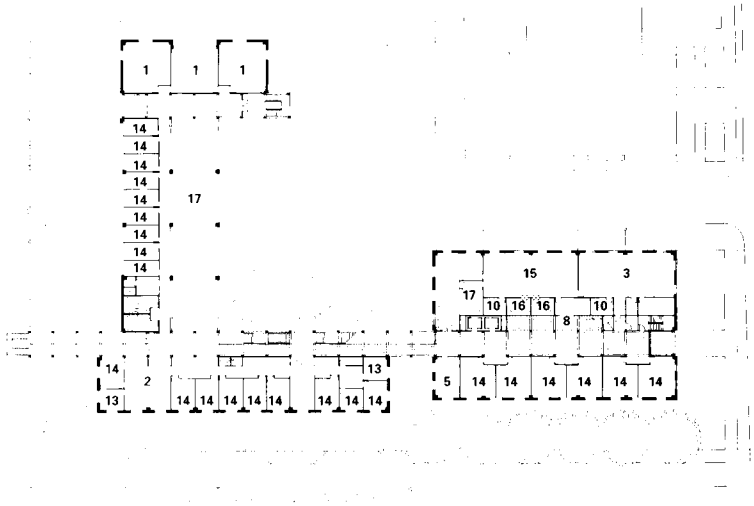
The L-shaped building frames an interior courtyard with four-story window walls set within a concrete structural grid. The crisp courtyard facades recall the early 20th-century warehouses and offices that originally made Chicago firms like Holabird & Root famous. The window walls also flood the school's interiors with natural light—a big plus in a northern climate where winter days can be short and cloudy.

The showpiece of the new building is a glassy circulation spine that slices through the structure on a north-south axis, with a bold, five-story stairwell open to the school's basement workshop areas. It's a statement in lean, clean industrial chic, with light fixtures, pipes, heating units, and open-riser stairwells set within the exposed concrete structural grid like elegant bits of sculpture. Eyecatching details include wire-and-turnbuckle railings and translucent floor tiles of glass block set in precast concrete. Every surface cries for attention, but the overall effect is surprisingly calm and orderly.

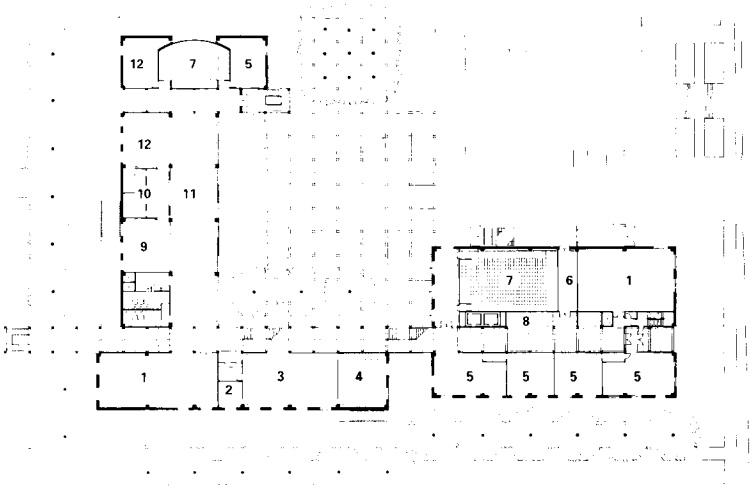
Design is a very public affair for the 750 students and 45 faculty members. Student drawings can be tacked to walls anywhere in the building, and jury spaces are located in large hallway alcoves—not inside classrooms. Dean Robert Greenstreet explains that the jury areas are meant to show students "that you're going to have to get used to presenting in a public forum. You can't stand there mumbling and pointing."

The layout of offices and classrooms is aimed at guaranteeing that students and faculty bump into one another constantly. The principal mixing area, located just off the circulation spine, is the two-story main space, where students can view exhibitions in the school's gallery or shop for books and supplies in the store. The main space also hosts Friday afternoon gatherings for tea and cookies, organized by Dean Greenstreet.

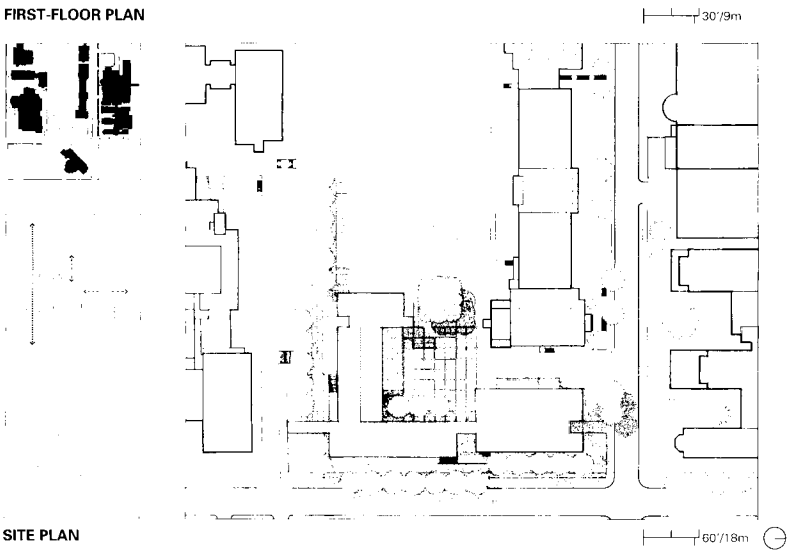
Faculty and students extol the building's functionality and flexibility. But the general effect isn't as stirring as it could have been. The dull elevation facing North Maryland



SECOND-FLOOR PLAN



FIRST-FLOOR PLAN



SITE PLAN

PLANS: L-shaped building wraps around central courtyard; circulation spine slices through longer wing.

FACING PAGE, TOP: Main corridor juxtaposes glass-block floor tiles with structural concrete.

FACING PAGE, BOTTOM: Two-story main space, facing north, encourages mingling of students and faculty.

1 STUDIO
2 ADMINISTRATIVE OFFICE
3 COMPUTER LAB
4 COMPUTER CLASSROOM
5 CLASSROOM
6 LOADING BAY
7 AUDITORIUM
8 EXHIBITION/JURY AREA
9 STUDENT SERVICES
10 STORAGE
11 EXHIBITION AREA
12 READING ROOM
13 CONFERENCE ROOM
14 FACULTY OFFICE
15 PHOTOGRAPHY STUDIO
16 DARKROOM
17 OPEN TO BELOW

Avenue, a major corridor that bisects the campus and connects the university to surrounding neighborhoods, bespeaks a profession sealed off from the world. The dramatic structural display and dazzling glasswork of the school's inward-looking core, on the other hand, are reserved for the enjoyment of a select professional community.

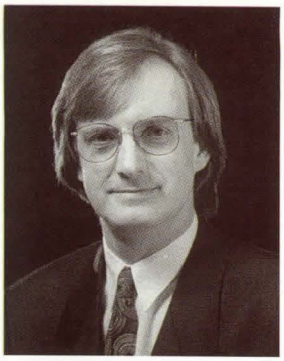
Moreover, the school's main urban gesture is a monumental, four-story, open fire escape and stairwell that bursts from the building's south facade and bridges an important campus walkway. The stairwell is a literal and symbolic extension of the school's interior circulation spine. It makes explicit the contrast between the openness of the interior and the closed-off look of the North Maryland Avenue facade. But as an attempt to engage the surrounding campus, it looks forced and hollow. Rather than bring the life of the school into the open, it simply serves as a bird roost and a cigarette-smoking zone.

Students say the school is a good place to work and wax rhapsodic about its appearance at night, when views around the glassy inner courtyard make the place look like a glowing hive of activity. But they also use words like "stark," "antiseptic," and "sterile" to describe how it feels. "You could walk in the front door and it could be any corporate center in the Midwest," maintains a 1994 graduate. The design of UWM's School of Architecture and Urban Planning is workable, coolly elegant, and above all, pragmatic. But it is not likely to inspire much affection.—*Steven Litt*

Cleveland-based Steven Litt is the architecture critic of The Plain Dealer.

SCHOOL OF ARCHITECTURE AND URBAN PLANNING
UNIVERSITY OF WISCONSIN
MILWAUKEE, WISCONSIN

ARCHITECT: Holabird & Root LLP, Chicago—Gerald Horn (partner-in-charge); James Baird (project designer); Joe Heinowski, John Coyne (project team)
ASSOCIATE ARCHITECT: Eppstein-Uhen Architects, Milwaukee—Arthur Chadek (project manager); David Dell'Agnese (project architect); R.G. Keller, Michael Torine, Barb Jones, Gregory Zastrow (project team)
LANDSCAPE ARCHITECT: The Sandborn Group
ENGINEERS: Graef Anhalt Schloemer and Associates (structural); PSJ Engineering (mechanical); Dolan and Dustin (electrical)
CONSULTANTS: CM Assoc. (cost estimating); Patrick Monahan and Assoc. (telecommunications); EWI Engineering Assoc. (subsurface testing)
GENERAL CONTRACTOR: J.H. Findorff & Son
COST: $12.6 million
PHOTOGRAPHERS: Edward J. Purcell



DEAN'S REPORT

Robert Greenstreet, dean of the School of Architecture and Urban Planning at the University of Wisconsin-Milwaukee, loves his school's new building—with a few caveats. "It's a little harsh on the street edge," he admits, referring to the main facade, which faces North Maryland Avenue, a major campus corridor. He even says the facade earned the school the nickname "Cabrini Greenstreet," a take-off on Cabrini Green, the notorious public housing complex in Chicago.

But as Greenstreet explains, "when you come in, your expectations are so low" that the school's light-filled and dramatically stripped-down interior comes as a pleasant shock. "It's an inward-looking building," he notes, "but it's fabulous when you're in it."

The building's exposed structure and utilities work hand in hand with the educational philosophy of the school, which offers bachelor's, master's, and doctoral degrees in architecture, a combined master's in architecture and urban planning, and a certificate in historic preservation. "We stress construction. We stress realism and materiality," the dean asserts, adding, "You see that if you put in a sprinkler system, it's got to be bolted to a concrete slab. All the expansion joints are visible."

The dean played a role on the campus committee that selected Holabird & Root from a shortlist that included Michael Graves, Sasaki & Associates, and Gwathmey Siegel & Associates. Greenstreet says the decisive factor in the school's selection of Holabird & Root was the high quality of the Chicago firm's recent buildings at other universities. Holabird & Root also drew praise for excellent consensus-building during the design process, in which faculty members assisted with programming.

Greenstreet maintains the functional *design of the building* ensures it will have a long and useful life. "We have no idea what architectural education will be like in 30 years, but this building will allow for renovation."

Aronoff Center of Design and Art
University of Cincinnati
Cincinnati, Ohio
Eisenman Architects and
Lorenz + Williams, Architects

CAMPUS COMPLEXITY

THESE PAGES: Eisenman and Lorenz + Williams added 146,000 square feet to existing 1950s and 1970s buildings of College of Design, Art, Architecture, and Planning. New wing is entered from walkway to east.

The mortality rate of Peter Eisenman's projects, like those of most high-risk careers, is high, but when they do get built, they are always daring—and in the case of the new Aronoff Center of Design and Art at the University of Cincinnati, even audacious. Not since Paul Rudolph's Art and Architecture Building at Yale and Le Corbusier's Carpenter Center at Harvard has there been such a brilliant piece of design at the service of a design and art school. Eisenman does not adopt the mask of neutrality, but pushes courageously into new territory especially suited to housing such a school: the building exemplifies and documents a method of exploratory thinking. Nothing is rote.

The Aronoff Center addition to the College of Design, Art, Architecture, and Planning also happens to be the architect's first project generated on the computer, a stunning debut that announces the feasibility of an architecture of complexity unimaginable a decade ago. Eisenman's intellectual intentions were ambitious to the point of overload. He confronted the curvilinear with the gridded. He addressed the basically Newtonian spatial concept of figure-ground by making form and space equal in a new figure-figure relationship. He set transformative operations to work and play on elementary forms, making them complex, and their shifting imprint on the building is a color-coded Braille that speaks to the body, challenging equilibrium. Waves of ideas register on walls, ceilings, and floors. The building records processes of its own metamorphosis, frozen in time.

Though such aspirations drove the design, what actually came first when Eisenman designed the building in 1989 was the parti. Like any other architect, he first set out to solve the problem, and the brilliant complexity of the Cincinnati design masks a basic organization: a waved line of studios, auditoriums, and offices curves around the back of three existing buildings, catching and containing them like a mitt. On the north side, the back of the glove settles unobtrusively into the contours of a wooded landscape.

The combined complex, old and new, centers on a public space activated by a new bookstore, cafeteria, library, gallery, and corridors used for design reviews that are open to passersby. The program of the 146,000-square-foot addition essentially called for turning a central atrium into a main street for the 130 faculty and 2,000 students.

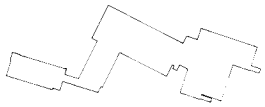
The purpose of the addition was to consolidate under a single roof a college with departments dispersed around the campus. The school's physical unification was informed by the pedagogical principle of mixing disciplines—a goal to be achieved by urbanizing the interior and juxtaposing studios from different departments. Hybridization breeds vigor.

After establishing the basic diagram, Eisenman elaborated it almost beyond recognition. The sinusoidal line—actually a long, narrow volume dimensioned for studio and offices stacked several times—is not a regular curve with a fixed radius but an asymptotic curve without a center. Composed of equal-size boxes, the resulting volume is cellular, but each cell is different from all others. Eisenman differentiates each box within the volume by torquing, phase-shifting, and stepping the volume; each tilt and gap is formally and dimensionally different from all others.

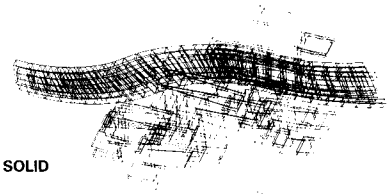
Eisenman also duplicated the curved volume and displaced one from the other; in the space between the two, he created an atrium with shifting stairs that step down the hillside in the company of walls and ceilings that seem to stutter into place. The volume nearer the school's original structures intersects outlines of those buildings, which themselves ratchet toward the atrium; the blurred edge of the existing building blurs into the already blurred edges of the new building.

TOP AND FACING PAGE, TOP: Structural systems of columns emerge in "buttresses" on north facade.
RIGHT: Northeast corner, with trapezoidal windows of studios, defines edge of campus.
FACING PAGE, BOTTOM: Low profile is achieved by holding roofline as landscape rises along building's north edge, in contrast to Crosley Tower (background).

SEGMENTED LINE

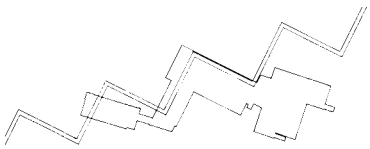


EXISTING BUILDING

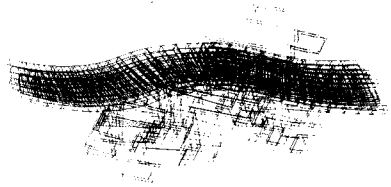


TORQUING SOLID

EXPONENTIAL OVERLAPS

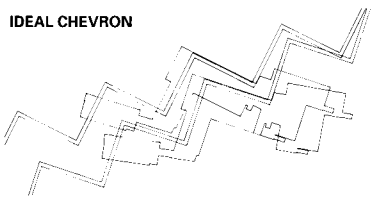


IDEAL CHEVRON

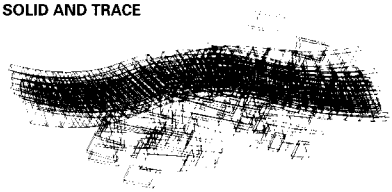


TORQUING SOLID AND TRACE

EXPONENTIAL TORQUE

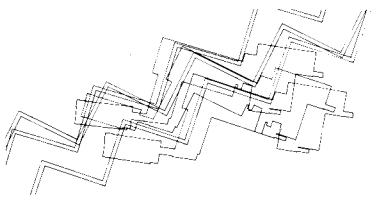


TRACE OF EXISTING BUILDING ALIGNED WITH WOLFSON

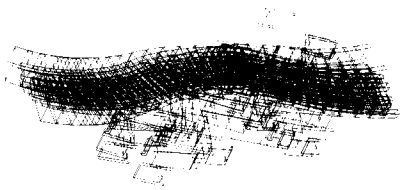


TORQUING SOLID AND TRACE; STEPPING SOLID

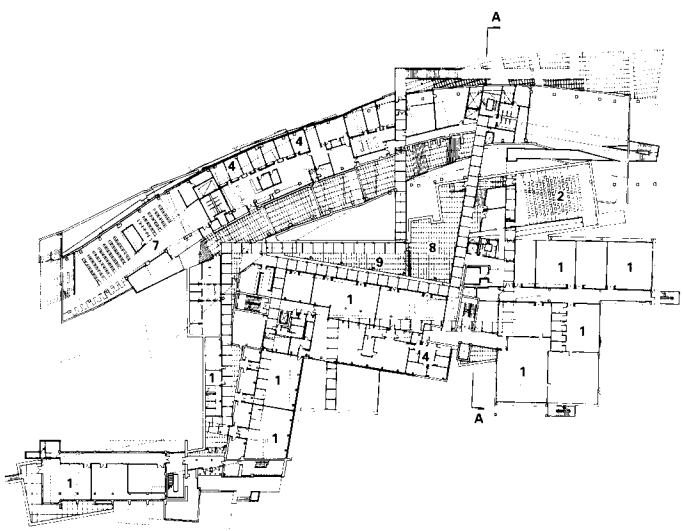
PHASE SHIFT



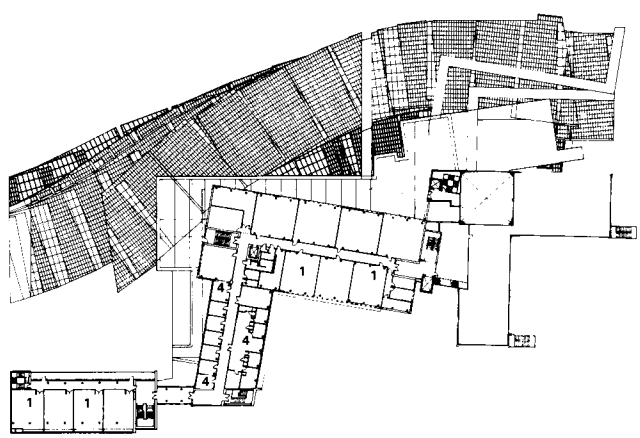
TRACE OF EXISTING BUILDING ALIGNED WITH ALMS



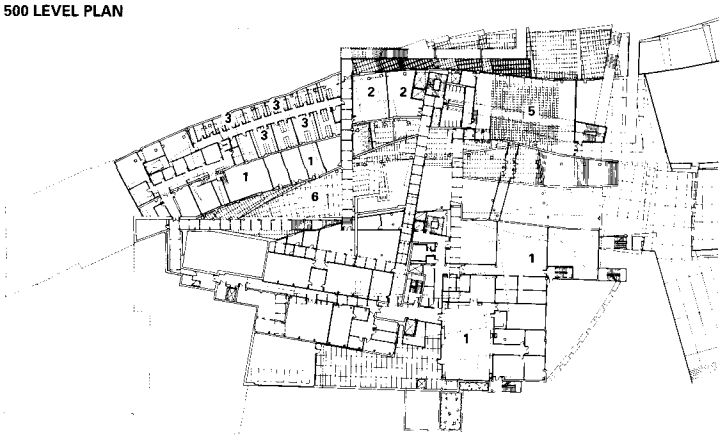
TORQUING SOLID AND TRACE; STEPPING SOLID AND TRACE



500 LEVEL PLAN

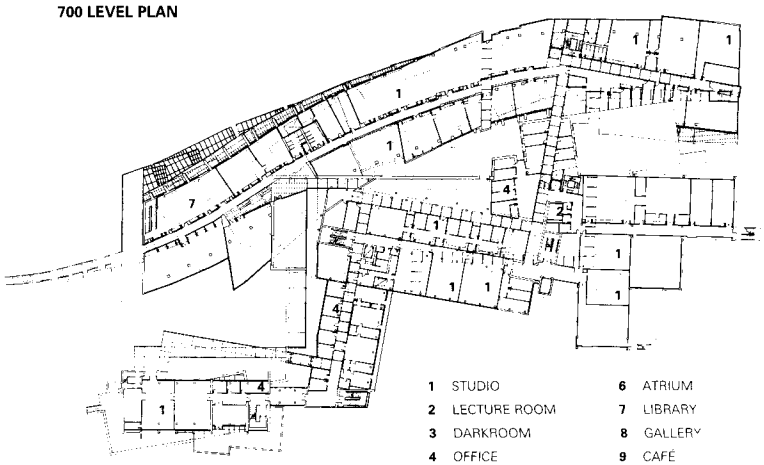


700 LEVEL PLAN



400 LEVEL PLAN

60'/18m



600 LEVEL PLAN

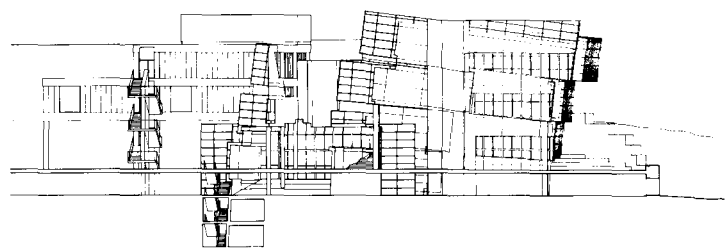
This wide interstitial space between old and new—a wilderness of columns, angling flights of stairs, and canting walls—is an in-between space that obscures distinctions between the existing building and the addition. Eisenman breaks down the apparent duality with figures and boxes that interfere with each other like waves passing through waves, creating patterns of virtual encounter. A circulation system in the form of a chevron, abstracted from the perimeter outline and corridors of the original structures, crosses from the old to the new structure, finally landing at doors opening to the surrounding campus. The processes generate deep spatial imprints that modulate the whole building's space and form, much like the irregular, uncontrolled crackling on Oriental ceramics—though in the case of Eisenman's building, the crackling replaces the vase itself and constitutes the very structuration of the building. Working drawings were not dimensioned: instead, 8,000 defining construction points were given x, y, and z coordinates, then located on site by an engineer using a laser transit (page 184, this issue).

Eisenman says that architects traditionally theorized form but not the void, that form contained space or occupied space. In Cincinnati, "the formal container is so fractured that the space is no longer contained by form—it's rattled loose," the architect asserts. Space here is the fortuitous fallout of active, transitive forms that seem to vibrate space to plasticity: the figure of the space starts to equal the figure of the form.

We have grown to expect complexity in Eisenman's buildings, but the complexity of the University of Cincinnati addition is much more three-dimensional than, say, his Wexner Center for the Arts at Ohio State. Spatial richness is sustained throughout the fabric of the building, not limited to the facades. The Aronoff Center of Design and Art's fuller spatiality occurs in large part because Eisenman did not simply extrude up from the plan: the computer did not take as the base of Eisenman's operations a line or a plan, but a curvilinear volume. All the operations, then, are volumetric, and volume as the generator three-dimensionalizes his design.

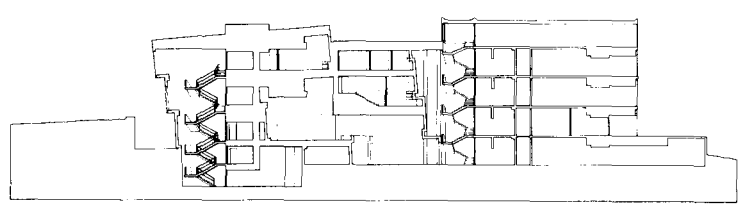
The structure is surprisingly regular—a poured-in-place concrete frame (15 feet, 6 inches slab to slab) with a top floor structured in steel: it is their linearity that makes this large building, which cost approximately $195 per square foot, buildable. Eisenman also pays for his delirious complexity by specifying conventional materials—sheet-

FACING PAGE, DIAGRAMS: Complex wire frames were generated on computer with solid modeling programs. Eisenman began with string of 40-by-70-foot studio and office modules (top left). Overlapping, twisting, and torquing bays yielded curved northern volume. Stair towers and bridges were derived from zigzag chevron pattern established by northern and western faces and corridors of existing buildings.
FACING PAGE, PLANS: Addition adjoins 1976 Wolfson Building at east entrance. Original facade of 1958 DAA building forms south face of interior atrium; 1952 Alms Building creates south boundary of exterior court on addition's west end.
ELEVATION: 1976 building and addition bracket main entrance.
SECTION: Original buildings and addition share central atrium.
SITE PLAN: Addition is located to west of Crosley Tower and parking garage and north of science buildings.



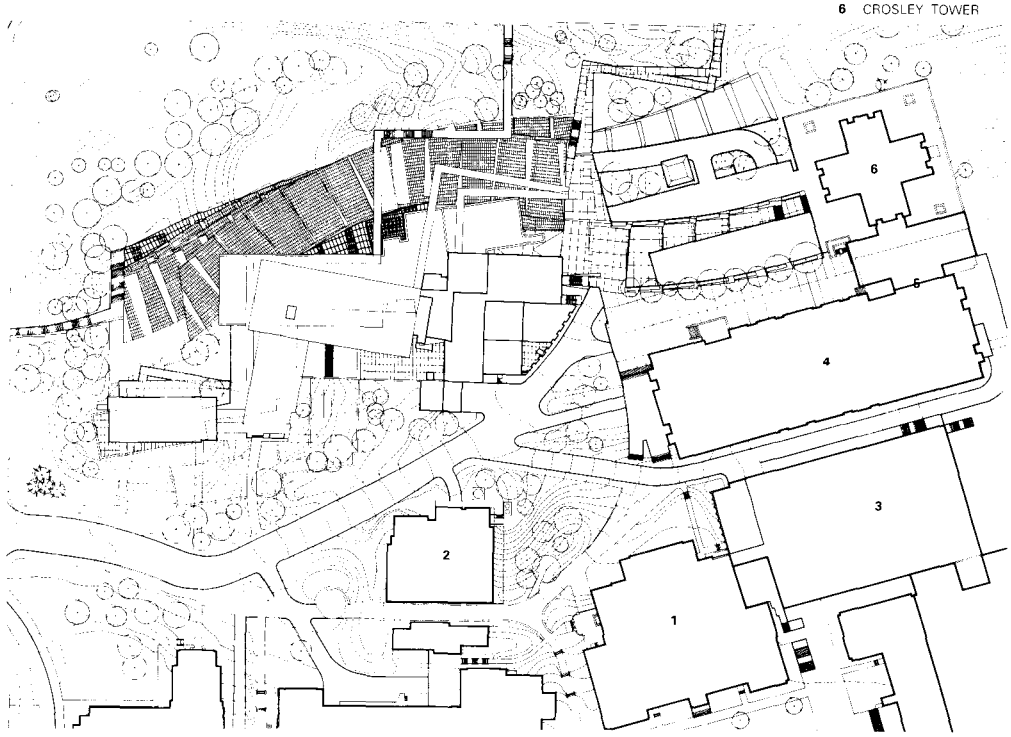
EAST ELEVATION

96'/29m



A-A SECTION

32'/9.5m



SITE PLAN

65'/19m

rock, simple fluorescent lighting, standard hardware, vinyl tile floors, hollow metal mullions, and suspended tile ceilings.

By any measure, Eisenman's building is extraordinary. Its unexpected success is its ability to act as a social condenser—to use a Russian Avant-Garde term. Eisenman feeds all floors and parts of the combined building into a stepped promenade that centers on an atrium lined with activities.

But the building itself will be company enough for a single motivated student with a curious eye and mind. The design offers an encyclopedia of everything from pattern to morphogenesis, as well as a clear, provocative, and valid architectural position. Eisenman believes that a building that houses an architecture school should explore and embody the discourse of the school itself, and take risks, pushing into the unknown: "To me it's an example of what students are supposed to be learning—to understand how a building challenges typologies and conventions."

Conceptually, Eisenman has shown that existing structures can be appropriated and positively transformed with an addition that makes the original active rather than passive. He further shows how to develop a simple parti beyond the diagram and, in this case, how a cellular organization can be transformed into a field of endless differences. No two spaces in this building are the same, and the building emerges as a field of discovery that transforms the *promenade architecturale* into a polyvalent space without center or dominant direction. The space neither submits to a viewer's controlling cone of vision nor behaves according to perspectival rules of order, but reconfigures itself anamorphically during promenades that constantly reframe building and viewer in a reflexive relationship. "We intended to create a Piranesian space. The viewing eye does not have holistic control of the space," explains Eisenman of this interpretive environment. "There is no preferred place for the viewer to understand."

The architect's operations trigger a great commotion of space and form. Whether the building registers through the mind, eyes, or body, it is surprisingly physical and experiential. The reflexive relationship between the user and building destructures the classical

TOP LEFT AND LEFT: Central staircase leads east-west through changing floor and ceiling topography. Interior landscape is programmed with café, library, bookstore, and pin-up areas for jurors.
FACING PAGE, TOP AND BOTTOM: At eastern entrance, elaborate color-coded Braille of architectural projections and recesses traces design process.


EXIT


EXIT

opposition between the two elements.

There are disappointments. By covering the existing buildings with the mitt, Eisenman has created a building mass too large for its perimeter: too few windows look directly to the outside, and too many (including the original windows on the long side of the three existing buildings) look into the atrium, a closed space. The building gives the impression of being hermetically sealed: in its concern for activity in the center, it neglects the perimeter and fails to develop an attitude to the outside. Only at the west end, where the original curvilinear line separates from the existing buildings, does the composite building gain breathing room in the form of an open court. Interiority, rather than exteriority, has been factored into the genesis of the design and—as in a hospital that has become overgrown with too many additions—the building loses intelligibility.

Because the forms are open rather than closed, it is easy to make the assumption that the design process as a system is open. But the operations in the end fall short of carrying this field of discovery to edges that open up the outside "other." Perhaps, to open the process of structuration, Eisenman might have operated on volume and outside void together rather than object and interior volume alone. At the level of the parti, he also could have simply separated the line from the existing structures, pulling one away from the other to mix outside and inside.

For all its supposed self-liberation from convention—"there are no rules," says Eisenman—the project stays strictly true to its self-imposed operations, which become a binding system. The exterior, though graphically complex and textual, feels much like a sealed office building in an office park.

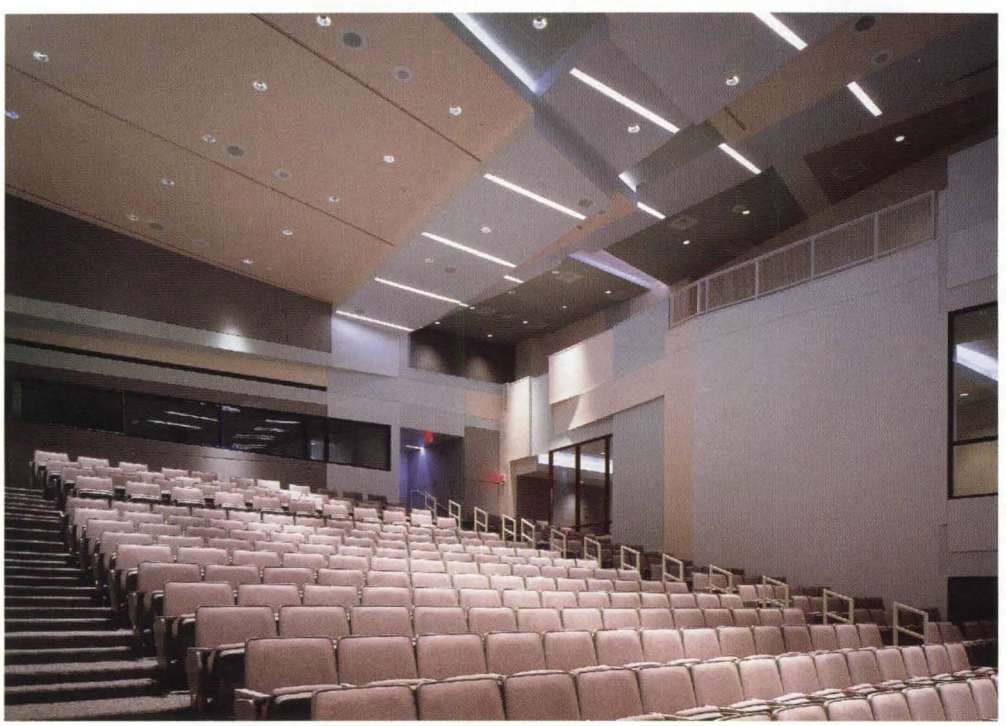
Asked if his books demanded too much of his readers, James Joyce replied that he only expected them to devote their lives to his work. Does Peter Eisenman perhaps expect too much of the people who open the door and step into his text? The University of Cincinnati's new Aronoff Center is not a building that looks back, but very far forward, while delivering everyday pleasures of the sensory present. Fortunate is the star-gazing student who finds himself alone in its company late at night during a charette. This is a rare vision made real.—*Joseph Giovannini*

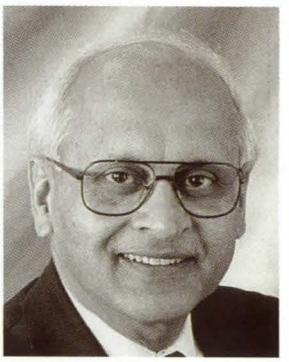
FACING PAGE: Atrium between old and new structures provides socializing area for college.
TOP RIGHT: Facade of existing building forms interior southern face of atrium outside gallery.
RIGHT: Gallery is entered through gridded opening.

ARONOFF CENTER OF DESIGN AND ART
UNIVERSITY OF CINCINNATI
CINCINNATI, OHIO

ARCHITECT: Eisenman Architects, New York City—Peter Eisenman (principal-in-charge); George Kewin, Richard Rosson (associate principals-in-charge); Donna Barry, Greg Lynn, Michael McInturf, Joseph Walter (project architects); Lawrence Blough, Kelly Hopkin, Greg Luran, Maureen Murphy-Ochsner, Edward Mitchell, Astrid Perlbinder, Jerome Scott, Brad Winkeljohn (project team)
ASSOCIATE ARCHITECT: Lorenz + Williams, Dayton—Richard Roediger (principal-in-charge); Jim Harrell, Jerome Flynn; Michael Downing, B.H. Jon, Joseph Mitlo, Shari Rotella, James Schriefer, Michael Schuyler, Les Picker (project team)
LANDSCAPE ARCHITECT: Hargreaves Associates
ENGINEERS: Progressive Engineering (structural/mechanical/electrical); United Consultants (civil)
CONSULTANTS: Dugan & Meyers (cost estimating); Jaffe Acoustics (acoustics); Fisher Marantz Renfro Stone (lighting); Boyce Nemec Designs (audiovisual); Donald Kaufman Color (color)
CONTRACTORS: Dugan & Meyers (construction manager); Cleveland Construction Co. (exterior enclosure and interior construction); Danis Building Construction Co. (structural); Ayer Electric (electrical); Cincy Mechanicals (plumbing); Dalmatian Fire Protection (fire protection); T.J. Dyer Co. (HVAC); Woolpert (surveying/field engineering)
COST: $28.5 million
PHOTOGRAPHER: Jeff Goldberg/Esto

LEFT: Corridor leading past studios and offices is articulated by ceiling shifts and recessed lighting.
BELOW: Studios are outfitted with standard fluorescent fixtures, dropped ceilings, and vinyl-tile floors.
FACING PAGE, TOP AND BOTTOM: Addition includes 350-seat auditorium with balcony and projection booth.





DEAN'S REPORT

"We definitely made a decision that we did not want a neutral building," explains Dr. Jay Chatterjee, dean of the College of Design, Architecture, Art, and Planning at the University of Cincinnati. "We wanted a building pointing to the future of architecture...a living example of what is possible. And for that you have to take a risk."

Almost a third of the college was located outside the main building, which comprises three interconnected volumes built in 1952, 1958, and 1976, when Chatterjee was appointed dean in 1982. The school, which offers a bachelor's in architecture, a master's of science in architecture, and a bachelor's of science in design, numbered 2,000 students and 130 faculty this year.

Among the internationally known architects who were approached by the dean, only Peter Eisenman was willing to develop a program for an independent RFP with Chatterjee, who convinced the university and state to hold an invited competition that would involve out-of-state architects teaming with local firms. Chatterjee invited Eisenman to be on the competition list, and Eisenman won in association with Lorenz + Williams of Dayton, Ohio.

"Walls had been built around disciplines," says Chatterjee. "We wanted Peter to create a living room for the college." About a dozen studios for different disciplines were interspersed among each other and the 40 offices; jury spaces were designed along open corridors. Common facilities were centralized to create a sense of community, and the library, gallery, auditorium, and café were deployed around the new atrium.

"From anywhere you look at the building, it answers your gaze with a question," says Associate Professor Daniel Friedman. "It's an intensely complicated building—demanding on the user, but demanding in a productive way."

School of Design
University of Quebec
at Montreal
Montreal, Quebec
Dan S. Hanganu, Architects

CANADIAN MODERN

The University of Quebec at Montreal, known as UQAM, was founded in 1969 as a state-supported university in response to the call for more democratic, relevant, and innovative higher education that swept across campuses in North America and Europe. Out of the philosophy that education should become more interdisciplinary and populist grew UQAM's three-year environmental design program in architecture, urban design, and industrial design.

Although not accredited for architecture, students leave the three-year baccalaureate program with a solid grounding in three-dimensional design principles. Graduates often continue toward a master's in architecture at schools in other Canadian provinces, the United States, and Europe, especially France.

THESE PAGES: School of Design is arranged as faculty office wing over café (facing page), courtyard (through opening), and offices and studios (below). Screen in front of glass facade is designed for video and slide projections.

ABOVE: Streetside café enlivens corner of Sanguinet and Ste. Catherine. Fourth-floor office balcony offers views to Old Montreal, Hanganu's City Hall, and Buckminster Fuller's dome.
RIGHT: "Canyon" down center of studio and office volume is animated by stairs and balcony.
FACING PAGE, SECTIONS: Flanking courtyard, main volume of design school is arranged as offices (left) and studios (right) staggered on south and north sides of open canyon. Monumental stair leads to main studio and office wing. Two basement levels incorporate tunnel to main campus and industrial design workshops.
FACING PAGE, PLAN: L-shaped building wraps courtyard; curve at northeast end accommodates first-year design studio. Four display cases mark main entrance with monumental stair.

In the 1970s, the new university operated out of historic buildings throughout the city, but a main campus gradually formed in the gritty heart of Montreal, where the prime commercial streets of St. Denis and Ste. Catherine intersect. Even though the environmental design program functioned in a warehouse with unheated studios, its faculty of dynamic Québecois design professionals attracted a following, and the department grew to nearly 300 students by the early 1990s. When a site that wrapped the corner of Sanguinet and Ste. Catherine was purchased, Dan Hanganu, a Romanian-born architect known for the Point á Callière archaeology museum in Old Montreal, was selected from among five Montreal architects invited to present their ideas for the building.

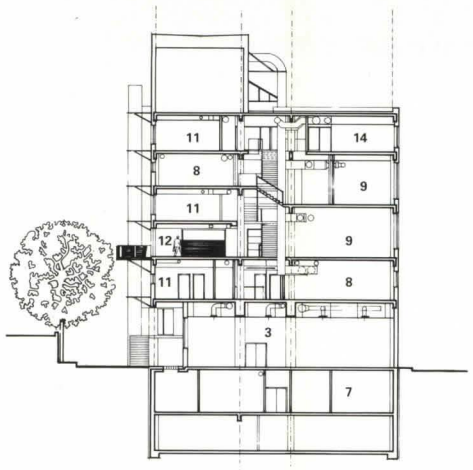
The tough, 55,000-square-foot building of concrete, steel, and glass houses the environmental and graphic design departments and the Center for Design, a publicly funded exhibition program. In plan, the L-shaped building embraces a still-unrealized courtyard, currently a gravel alley at the back of several shops. The skinny north-south base of the L houses a café at the corner of Sanguinet and Ste. Catherine, a lively spot that fills a tiny entrance plaza with outdoor tables; on three floors above it are faculty offices that look east toward UQAM's main campus or south to Buckminster Fuller's dome, recently revived as an ecological museum.

The entrance to the school lies north of the café and courtyard, in the wider, longer, east-west leg of the "L," on axis with the main campus plaza across Sanguinet. Students are greeted by a four-story-high daylit lobby that leads to the Center for Design's exhibition hall on the ground floor, flanked by a monumental stair to the design studios and offices on levels two through six. The steep concrete stair narrows at the top, a Hanganu trademark that recalls Paul Rudolph's massive stair for the art and architecture building at Yale.

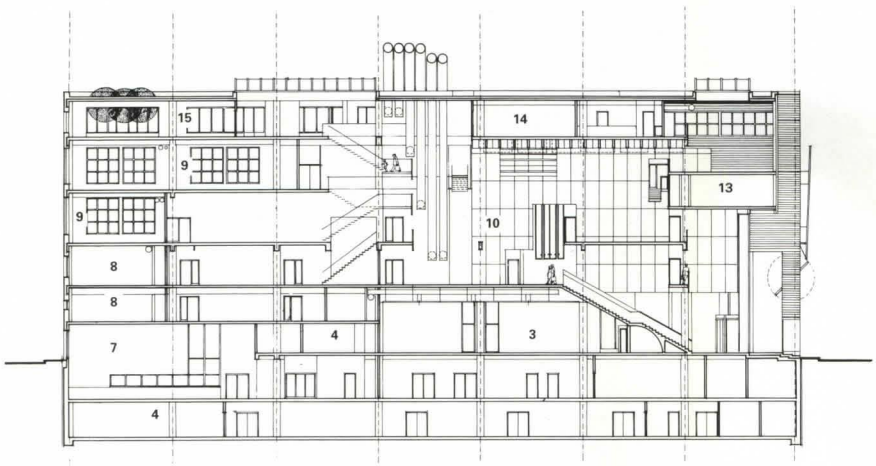
The school's rectangular volume is organized along corridors on two sides of an open "canyon," a device that brings sunlight from the east-facing glass facade and skylight into the depths of the building. The canyon is aligned to take in views of the steeple of the Church of St. Jacques, a poignant 19th-century remnant incorporated into UQAM's administration building in 1976. The canyon's southern side contains offices with windows on the courtyard; the north and west sides house large, flexible design studios.

The building's strengths are its durability, flexibility, and light, all of which contribute

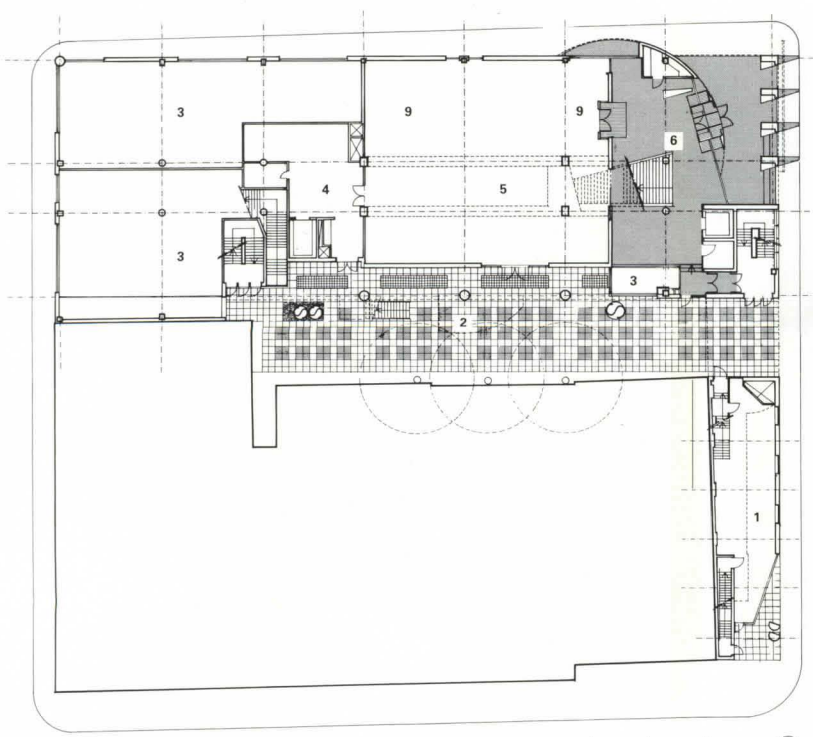
1 COMMERCIAL SPACE
2 COURTYARD
3 VOID
4 STORAGE
5 EXHIBITION SPACE
6 LOBBY
7 WORKSHOP
8 CLASSROOM
9 STUDIO
10 MAIN ATRIUM
11 FACULTY OFFICE
12 CAFETERIA
13 RESEARCH OFFICE
14 COMPUTER CLASSROOM
15 LIBRARY



CROSS-SECTION



LONGITUDINAL SECTION



GROUND-FLOOR PLAN

DIRECTOR'S REPORT

Director François Giraldeau and Professor Jean-Luis Robillard, founder of the program, concur that architect Dan Hanganu was selected because he is "the best architect in Montreal," and add that the design faculty overwhelmingly endorsed the selection.

The building houses 225 graphic design students, 275 to 300 environmental design students (60 percent of whom ultimately specialize in architecture in their third year), and the Center for Design, a state-funded program of public design exhibitions. The environmental design program is loosely modeled on the interdisciplinary approach to design education established at Parsons School of Design: students adopt the city, the university, and even their own building as the subject of their research.

The department eschews traditional academic hierarchy; there are no deans, but a rotating directorship. Giraldeau, who himself graduated from the program with a baccalaureate in environmental design (Robillard was his professor), went on to receive a master's degree in architecture at Columbia. He now directs 16 faculty members (10 architects, five industrial designers, and one urban designer) who teach the three-year program of environmental design, a populist alternative to the professional degree programs offered by McGill University and the University of Montreal. The school has a reputation for enticing more interesting faculty than the accredited schools in the province.

Giraldeau praises Hanganu's studio spaces, which have huge north-oriented windows and movable walls or garage doors that allow students to overflow into the public corridor. He also considers the building a perfect laboratory for student research. "This is a richly layered building, a study in big volumes versus small volumes, collective space versus the individual," relates Giraldeau. "Students see all those tensions taking place, and the building itself becomes a black box for their experimentation."

ABOVE: Third-floor cafeteria spills into corridor.
RIGHT: Perforated metal and wire-mesh railings provide overlooks.
FACING PAGE: School of Design reveals glazed fire stair (left), central corridor (center), and main entrance (right).

SCHOOL OF DESIGN
UNIVERSITY OF QUEBEC, MONTREAL
MONTREAL, QUEBEC, CANADA

ARCHITECT: Dan S. Hanganu, Architects, Montreal—Dan S. Hanganu (principal-in-charge); Gilles Prud'homme, Guillaume de Lorimier (project architects); Earl Murphy, Rose-Marie Tariant, François Poirier, Andrew Zygal (project team)
ENGINEERS: Boulva, Kadanoff, Saïa, Deslauriers (structural); Pellemon (mechanical and electrical)
CONSULTANTS: Hanscomb (cost estimating)
GENERAL CONTRACTOR: Pisapia Ltée
COST: $14 million (Canadian)
PHOTOGRAPHER: Michel Brunelle

to its success as a pedagogical tool. Hanganu arranges a no-nonsense collection of cheap materials—checkerboard galvanized aluminum, perforated steel, unfinished concrete, and chipboard—into spaces that promise to withstand hundreds of design students for years to come. Studios, the heart of any design program, can change their size: garage doors roll up and walls slide open to allow students to spill out into the canyon for well-attended crits by visiting scholars such as Kenneth Frampton. On floors three and four, pin-ups take place on the corkboard-clad canyon walls. And seven massive HVAC ducts drop down the canyon wall, a lesson in exposing a building's guts.

Hanganu has a special talent for puncturing a wall. For example, a design studio for first-year students overlooks a panorama of Montreal that is itself a lesson in urban design history: 1950s public housing, church steeples, tall offices, and Mount Royale, with a park designed by Frederick Law Olmsted, rising in the distance. A second-floor cafeteria, the school's prime collective area, reaches out over the courtyard with a wall of windows so that occupants are in the trees.

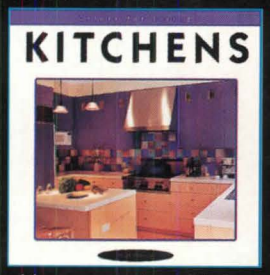
After only one academic year of occupancy, the school receives high marks from professors and the nearly 500 students who use the building. (Along with the 300 students in the environmental design program, 225 graphic designers occupy top-floor computer rooms.) However, the school's ability to draw visitors from the campus and the city may prove more challenging. Quebec province's 1 percent for art program subsidized an art piece above the entrance: the elaborate glass-and-steel screen was designed by artist Pierre Leclerc to display enticing video images—but now the province has no money to project the pictures.

If visitors do enter, they are likely to proceed no farther than the Center for Design's rotating exhibitions in the first-floor hallway; crits by out-of-town architects may be hard to find, as the second- and third-year students' studios are in the building's rear, western end, up a spiral stair. The school affords UQAM vigorous and lively environmental design offerings and is one of the largest North American buildings devoted to this interdisciplinary approach to design teaching, yet it doesn't advertise its presence graphically on the street. Admits François Giraldeau, director of the environmental design program, "How we inflect the building with a representation of what we are will be our biggest challenge."—*Heidi Landecker*

Books that appeal to the *senses.*

IMAGINATIVE USES OF COLOR AND LIGHT FROM THE AIA PRESS

Each of these books is written and designed to help both professionals and amateurs capture a specific look or mood. Together, they provide an innovative and affordable visual guide to creative use of space, color and light combinations.

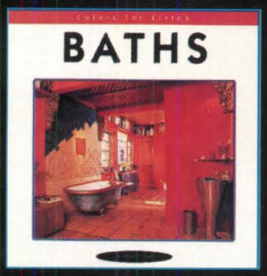


Colors for Living: Kitchens

by Jill Pilaroscia

This stunning book provides inspiration and instruction for easy and affordable ways to give a kitchen a new look. Vivid interior photographs of kitchens from around the world combined with color swatches help the professional and the amateur alike use color to achieve the specific look or mood they are trying to capture in the most-used room in the home.

128 pages • hardcover • $24.99/$17.50 AIA
Order #W139

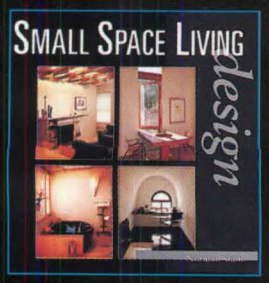


Colors For Living: Baths

By Jennie Pugh

The second book in the "Colors for Living" series provides the inspiration needed to give a bathroom a new look by offering an innovative, attractive, and affordable visual guide to creative color combinations. Pugh points out that the bathroom is redesigned more than any other room in the house. Includes color swatches for easy color matching.

128 pages • hardcover • $24.99/$17.50 AIA
Order #W140



Small Space Living Design

By Norman Smith, AIA

In over 200 full-color images, color drawings, and plans, this volume illustrates creative ways to make small spaces appear larger and demonstrates how to make the most of any small space. The examples in this book cover a wide variety of styles, budgets, and design philosophies.

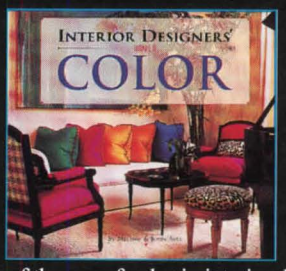
125 pages • hardcover • $34.95/$24.50 AIA
Order #W106

Interior Color by Design: Commercial

By Sandra Ragan

This book explores a variety of spaces including retail, hospitality, office, restaurant, and health-care projects demonstrating some of the best examples of leading-edge color design. This book provides more than 300 color samples to experiment with different combinations; features full-color images that illustrate key concepts like adjacent colors and overall design; and explores the interactive effects of color combinations.

160 pages • paperback • $29.99/$20.99 AIA
Order #W138

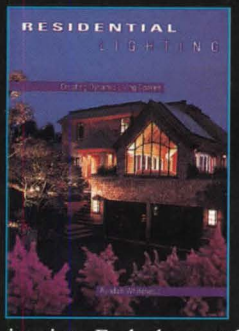


Interior Designers Showcase of Color

By Melanie & John Aves

A comprehensive and current view of the use of color in interior design. Contains more than 250 beautiful color photographs of professionally decorated rooms, tips from over 100 leading designers, and examples of special effects for ceilings, floors and hallways.

160 pages • paperback • $29.95/$20.95 AIA
Order #J242

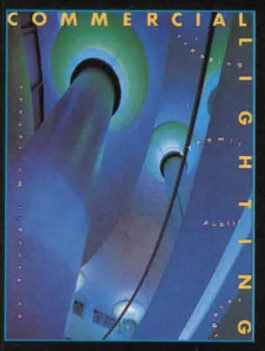


Residential Lighting: Creating Dynamic Living Spaces

By Randall Whitehead

This full-color book offers a lush visual presentation of creative lighting designs for residential interiors. Each chapter takes the reader on a wonderful tour of prominent houses in the United States where innovative lighting creates fantasy, intrigue, and drama.

192 pages • paperback • $29.95/$20.95 AIA
Order #J243P



Commercial Lighting: Creating Dynamic Work Spaces

By Randall Whitehead

This beautifully produced book presents a host of creative lighting designs for commercial spaces. Each section illustrates interesting and effective lighting designs for restaurants, offices, retail stores, and much more.

192 pages • hardcover • $39.99/$27.99 AIA
Order #W129

AIA Press

CALL 800-365-ARCH (2724)

or FAX to 802-864-7626

MAIL:
AIA Order Department, P. O. Box 60, Williston, VT 05495-0060

❑ Check enclosed, payable to AIA

❑ VISA ❑ MasterCard

ACCOUNT # EXP. DATE

SIGNATURE

NAME

AIA MEMBERSHIP NO.
(SEE MEMBERSHIP CARD)

ADDRESS

CITY STATE ZIP

PHONE

AIA members receive 30% off the cover price.

Quant.	Order No.	Title	Member Price	Non-member Price
	W139	*Colors: Kitchens*	$17.50	$24.99
	W140	*Colors: Baths*	$17.50	$24.99
	W106	*Small Space Living*	$24.50	$34.95
	W138	*Interior Color: Commercial*	$20.99	$29.99
	J242	*Showcase of Color*	$20.95	$29.95
	J243P	*Residential Lighting*	$20.95	$29.95
	W129	*Commercial Lighting*	$27.99	$39.99
		Subtotal	$	
		Shipping (Up to $75 = $6.00 Over $75 = $9.00)	$	
		Sales Tax (DC 5.75%; VT 5%)	$	
		TOTAL	$	

X263

Technology & Practice

ACADEMIC ALTERNATIVES

GLEN CALVIN MOON

ABOVE RIGHT: New freestanding computer lab at the University of Detroit Mercy, designed by Ronit Eisenbach and Monica Wyatt, symbolizes new prominence of electronic media in architecture schools.

Architecture education is enriched by unconventional teaching, as this month's Technology & Practice section reveals in our survey of four alternatives to traditional university-based programs, ranging from the well-known, 106-year-old Boston Architectural Center, which requires professional experience in a firm before graduation, to two-year-old Archeworks in Chicago, which emphasizes hands-on education through student-built community projects.

And traditional architecture schools are in turn embracing design/build projects as part of their curricula. Construction-based programs are flourishing at Yale, the universities of Washington and Kansas, and the Catholic University of America, where students are learning to adapt their designs to real-world budgetary restrictions, client demands, and site constraints.

Schools are also pushing the boundaries of the electronic world, as university researchers successfully develop sophisticated rendering and energy-analysis software. Our Computers feature details how four *innovative software* programs—form•Z, DesignWorkshop, Ener-Win, and Solar 5—evolved in schools to meet practical needs and are now being marketed to firms nationwide.

FOR DURABILITY & LASTING BEAUTY... THEY SHOULD HAVE USED AVONITE

Today you can specify AVONITE solid surface materials in 44 magnificent stone colors. Why not let us enhance your creativity?

For more information and FREE samples on Avonite solid surface materials, please call:

1-800-4-AVONITE

Circle 113 on information card

AVONITE

LEARNING FROM CONSTRUCTION

Practical hands-on programs teach students about sites, structures, and materials.

YALE BUILDING PROJECT ARCHIVES

ABOVE RIGHT: Graduate student Bryan Gumbs prepares models of Cassius Street House for 1995 Yale Building Project.

Practitioners hiring recent architecture school graduates commonly bemoan students' low exposure to construction principles and project delivery methods. As a result, a small handful of schools are focusing on integrating construction experience alongside studio training, and consensus is gradually mounting among architecture schools that students should learn to build.

So far, the movement is under way in only about a dozen accredited schools—from Yale, where former dean Charles Moore pioneered the concept in 1965, to the much smaller Southern College of Technology in Marietta, Georgia, accredited just last year. Such emphasis on construction "is still treated as an oddity," remarks William Carpenter, coordinator of Southern Tech's design/build program. "It's mainly renegades in the schools pushing the subject," he adds, citing the case of Samuel Mockbee at Auburn University. "There are some faculty who really don't want to do this."

Nonetheless, construction-focused programs are flourishing at Ball State University, Carnegie Mellon University, University of Arizona, University of Washington, University of Kansas, Catholic University of America, and University of Oregon. Carpenter, whose book on the topic will be published this year, predicts that within a decade, 30 to 40 design/build programs will be running within schools nationwide.

The term "design/build" is a slight misnomer for these courses, which are intended less as surveys of the popular alternative delivery method than as hands-on clinics to teach students about sites, structures, materials, and joinery. Academic design/build programs remove design projects from the studio vacuum and push students to reconcile their drawings with real structures they can build, weld, wire, and plumb. They encourage students to work as part of collaborative teams, resolving conflicts, managing finances, and communicating with clients.

Design/build courses, however, are not intended to confront all of the practical problems architects face. Practitioners expecting to hire graduates well versed in the politics of design/build will be disappointed, but educators remain unapologetic. In some instances, "students are engaged in 'design/permit' rather than design/build," jokes Steve Badanes, a designer/builder with the itinerant firm Jersey Devil, who directs a design/build studio at the University of Washington.

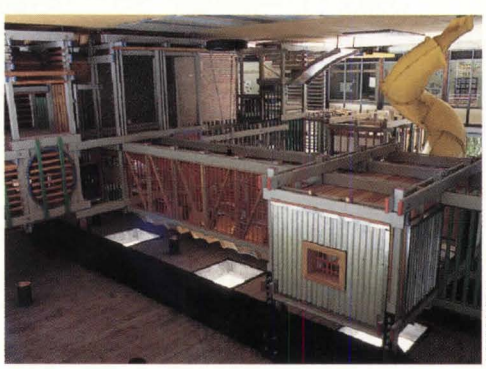
As the following case studies of four university design/build programs show, the scale of constructed projects is generally small, constrained by obvious limits on time and resources. Yet the range of inquiry is infinitely broad, allowing students to assess critically their roles as designers and builders firsthand. Contends University of Washington graduate student and teaching assistant Penelope West, "I wanted to relate how we design in the studio to the physical presence of a building." Along with the personal satisfaction students gain from such endeavors, the benefits to the profession are innumerable. Better architects are bound to result from students who learn to build earlier.—*Joseph Bilello*

Joseph Bilello is associate professor of architecture at Texas Tech University in Lubbock.

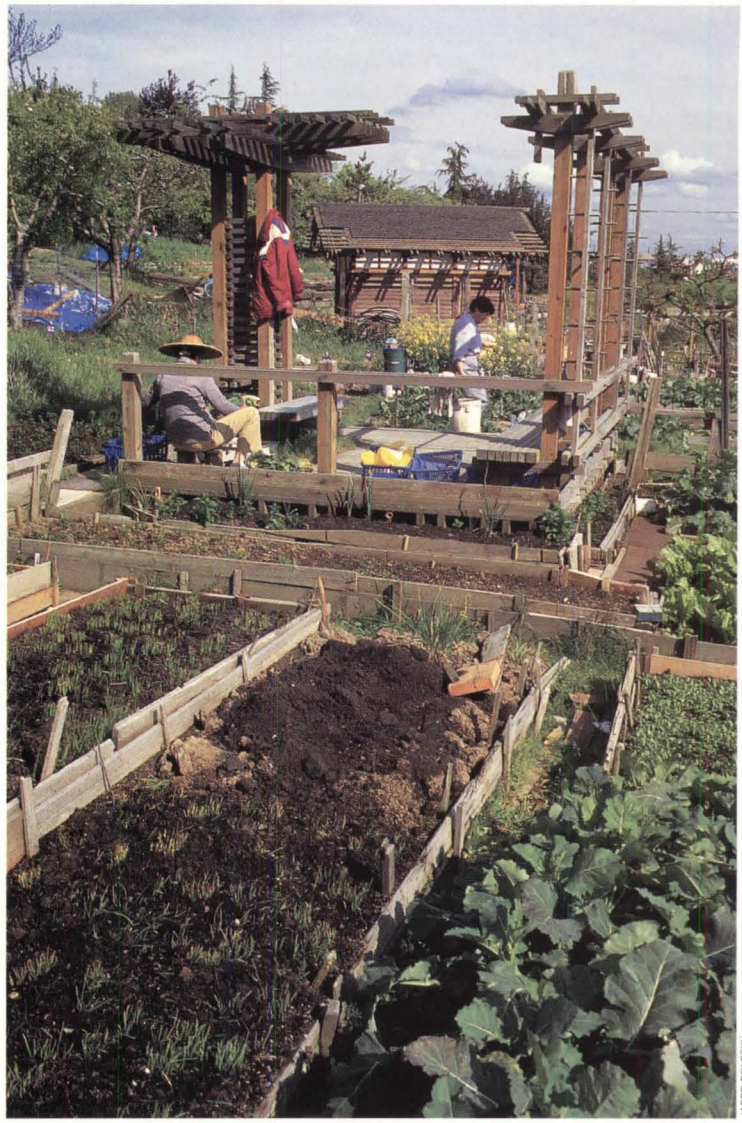
University of Washington
Seattle, Washington

RIGHT: Design/build studio began Danny Woo Gardens project in Seattle by constructing gateways, sheds, and garden follies.
BELOW: Five-year-long design/build project in San Lucas, Mexico, involves constructing community kiosks from spiral masonry columns supporting vaulted roof of thin tile.
BOTTOM: Working with physical and occupational therapists, students programmed and built play structure at UW's Experimental Education Unit.

STEVE BADANES



JARED POLESKY



JARED POLESKY

The Department of Architecture in the University of Washington (UW) School of Architecture and Urban Planning is integrating design/build education with community service by working for nonprofit organizations on tight budgets in Seattle and abroad. Adjunct Professor Steve Badanes and fellow faculty members Andrew Vanags, Barry Onouye, and Sergio Palleroni establish the programs for projects, obtaining funding from the Kellogg Foundation and the Howard Wright Foundation, and matching grants from the city of Seattle. "We take on small-scale projects that would not happen if we didn't do them," Badanes explains.

Near Cuernavaca, Mexico, for example, Badanes's and Palleroni's winter semester classes are designing and building a school, a clinic, and a community center over a five-year period for the village of San Lucas. The semester before traveling to Mexico, students are steeped not only in Mexican architecture, but archaeology, cultural studies, and the Spanish language. Once in Mexico, students work with local residents in squatter settlements, where title to land is acquired by occupying and working on it. "Our projects are directly linked to the culture, as they involve lots of manual labor, materials that are directly available, and responding to the local context," observes Penelope West, a second-year UW graduate student and teaching assistant.

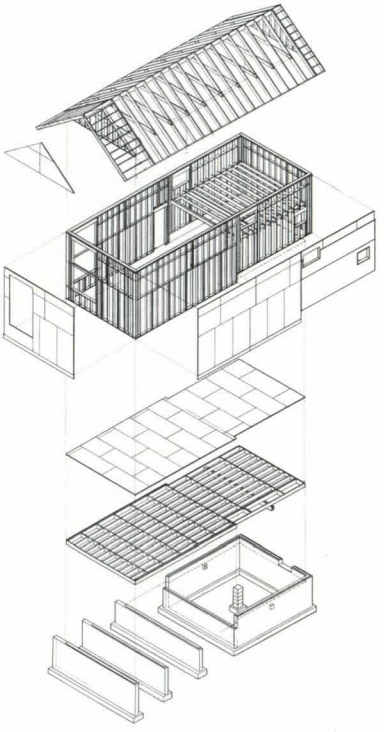
Students arriving in Mexico to work on the San Lucas project must engage in give-and-take with local residents, exploring existing community spaces and learning how residents obtain water and materials. Then they begin analyzing the site and sketching the structure. "In the beginning, some students were saying we should do a steel structure," recalls West. "After an intensive week or two, it was clear that we wanted to stay within local masonry traditions."

Projects undertaken in Seattle and on the UW campus prove only slightly more conventional. Last year, the design/build students completed a labyrinthine play structure for the Experimental Education Unit at UW's Health Sciences Center. In developing the design, the students worked closely with teaching staff as well as physical and occupational therapists. Scaling the project to a child's size proved the most difficult conceptual barrier, as the students were accustomed to designing for adults.

Typically, local projects involve designing and building park or garden fixtures, such as those for Seattle's Danny Woo Gardens, a 100-plot tract tended by elderly and low-income residents mostly from Asia and the Pacific. Since 1989, UW students have built a toolshed, an entry gateway, kiosks, and picnic areas in the garden. This year's project focuses on developing the upper portion of the sloping site for better access by elderly gardeners. "Most of us here agree," West asserts, "that it has to be good for an architect to understand building—and to reconnect it to cultural, political, and social ideas."

University of Kansas
Lawrence, Kansas

LEFT: KU design/build students install roof framing for artist's studio.
BELOW LEFT: Wall sections are erected by students after foundation is poured.
BELOW RIGHT: Extruded foundation takes advantage of sloping site.
AXONOMETRIC: Students prepared exploded axonometric drawings to explore studio's structural elements.



DAN ROCKHILL PHOTOS

Each year, Dan Rockhill, a dedicated designer/builder and associate professor at University of Kansas (known as KU), shows eight graduate students how design can be informed by construction savvy. Graduate students work with Rockhill on design/build projects twice—once in their first semester, and again in one of their final studios.

KU students execute small-scale design/build projects, such as houses, schools, outbuildings, details—arches, vaults, wall sections—and furniture. "We work at a scale that allows students to interact with the materials," Rockhill explains. Last year, for example, Rockhill's students designed and built a roof for the 125-year-old Barber Schoolhouse in rural Douglas County; previous classes had rebuilt the degraded stone walls. Students drew sketches and built small models, and then constructed full-scale, steel-and-wood mock-ups of specific roof connections.

After completing the relevant calculations for wind and snow loads, the students designed crow's-foot-shaped ridge connections for steel pipe truss members, and clad the roof with corrugated metal panels. At times, the students found themselves revising their designs backward to meet their level of construction knowledge. "Truthfully," graduate student Joseph Nocella recalls, "we could barely pour a trench foundation."

This year, Rockhill's students spent 35 to 60 hours per week building a 1,000-square-foot artist's studio for KU art professor Judith McRae on a $16,000 budget. In observing the budget, the students initially suggested nontraditional building methods such as rammed earth and straw-bale construction; soil from the site was even gathered to test prototype pressed bricks, but they involved too much extra labor.

Design continued from February through March; in April, the student building team moved to the remote rural site. The site presented several problems to resolve: a steep slope, proximity to a federal natural grass preserve, a low-water crossing to the site, stringent sewer and septic requirements, and building codes that stipulated installation of utilities in structures of more than 800 square feet. Once on site, students quickly realized the project's difficulty when they had to order and prepare the concrete truck, estimate the cost of lumber, and determine the flashing profile for the windows. "It is an uphill struggle," wrote one student in a project log. "Every day we learn something we took for granted the day before."

The students had to forgo specifying brand-new corner windows, which would cost $3,000, instead searching salvage heaps for four $30 casement windows and about $200 worth of glass. The team members also had to rebuild an entire wall once they confronted early errors that came back to haunt them. "If you don't double-check initially," Nocella warns, "1/32-inch errors accumulate. We have to be exacting. We've learned the hard way what it means to be level and square."

Yale University
New Haven, Connecticut

RIGHT: Cassius Street House, sporting raised porch, was constructed by students as part of Yale Building Project and completed in August 1995.
BELOW LEFT: Students prepared presentation drawings of Cassius Street House in New Haven, Connecticut, for the project's client, Habitat for Humanity.
BELOW RIGHT: Students erect formwork for foundation.

YALE BUILDING PROJECT ARCHIVE PHOTOS

All Yale University students seeking the three-year master of architecture degree are required to take the Yale Building Project the summer after their first year. Charles Moore, chairman of Yale's School of Architecture from 1965 to 1970, founded the program in 1965. Moore conceived it as a way for students to commit to productive social action by building for the disadvantaged. Early projects included housing, recreation centers, and meeting halls in Appalachia.

From 1990 to 1995, Yale students designed and built affordable single-family housing in New Haven with Habitat for Humanity under Paul Brouard, the Building Project's director since 1970. This year, however, Habitat's policy favors renovating existing housing stock rather than building new, so the school is collaborating with the nonprofit Neighborhood Housing Services.

Each 1,200- to 1,400-square-foot three-bedroom house costs $50,000 to $60,000 to construct—about 60 percent of market rate. Funds for the project are typically furnished by Yale and New Haven community groups. Starting in 1997, a three-year grant from the U.S. Department of Housing and Urban Development will fund the building project's construction of community centers.

About 40 students start the 14-week building program in spring with a five-week studio design competition involving presentations to faculty, building inspectors, project sponsors, and the prospective homeowners. Four teams of students complete construction documents. This year, construction began May 1, and Brouard expects it to end in mid-August. Six to 10 students spend their summer completing the house, working alongside the family who will occupy it.

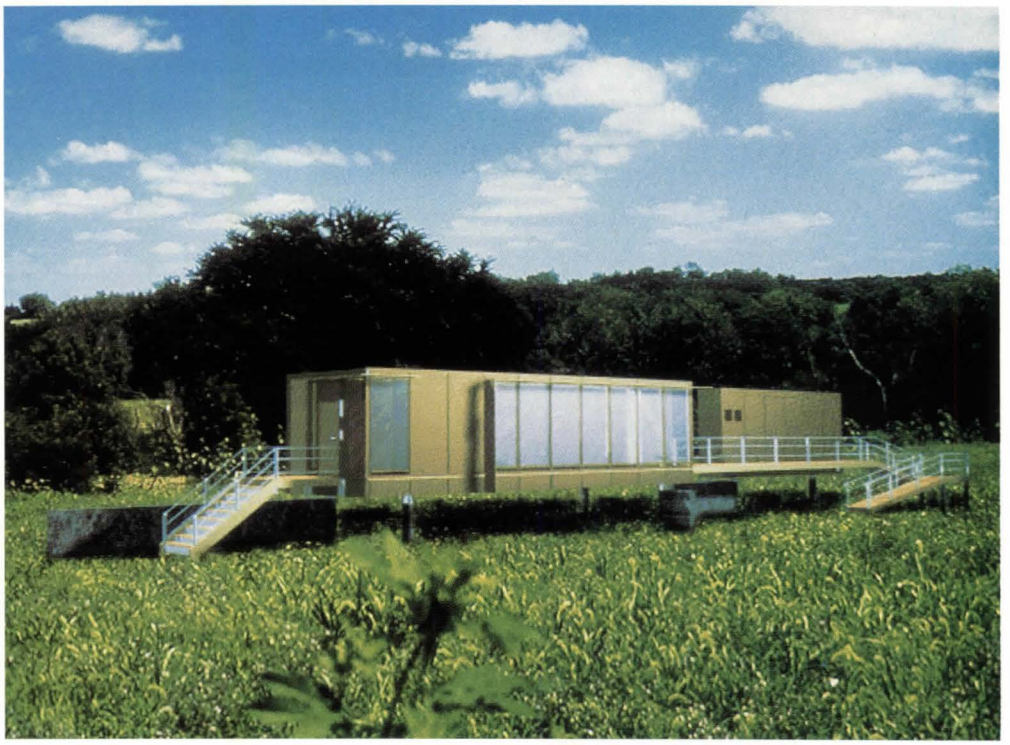
Five teaching assistants serving as project managers introduce the students to the client's programmatic goals and technical details of structure, budget, and schedule. Faculty members typically negotiate contracts and resolve differences between students and clients. In the past, disagreements arose between Habitat and students over the design response to the neighborhood context. In 1994, Brouard added thorough analyses of neighborhoods to the students' agenda to help troubleshoot contextual and community issues.

Once a design is selected, construction begins immediately. Students split into teams and assume roles such as technical manager or field team captain. They perform most of the fieldwork, including masonry and carpentry, except where licensing laws require trade contractors, and contribute about 360 worker-days in addition to the 280 worker-days for which they are paid. Final team presentations at the end of the course include working drawings and a detailed budget.

"I'm getting hands-on experience," remarks graduate student Mark Roehrle, who completed the Building Project this year. "It's always hard to tell if what you're going to create is what you will realize, because often the numbers on the drawings are wrong."

Catholic University of America
Washington, D.C.

CUA PHOTO



ARCHITECTURE

CUA PHOTO

ABOVE LEFT: Student design/build team specified low-e glass to increase energy efficiency of Nomadic Transit Module, to be completed next year.
ABOVE RIGHT: Students completed computer models of modular structure before construction began.
FAR LEFT: Steel house and adjacent Battery Barn are located outside CUA architecture school.
LEFT: Steel frame was lifted by crane and transported by truck.

The Catholic University of America's (CUA's) semester-long design/build studio for fourth-year undergraduates and third-year graduate students tries to bridge academic and professional life. "This is not the real world, and it's not trying to be," remarks Ann Cederna, codirector of CUA's five-year-old design/build studio. Like other instructors, Cederna places priority on the learning process rather than on the product: the chief goal is to develop a sense of design grounded in knowledge of how buildings are actually realized.

CUA's course is not required, and is in fact hard to enter because it's so popular. Under directors Cederna and Douglas Frederick and former director Vyt Gureckas, CUA's design/build studio has evolved from a focus on furniture to full-scale habitable projects. CUA's most recent endeavor, a portable, modular steel house—equipped with four pick points to allow lifting by crane—allowed students to work directly with outside consultants, a client, and an actual budget. The steel house also suffered real-life setbacks in funding and procuring materials: the project required two years to complete instead of the single term intended.

Each student begins the course by sketching out ideas, which are then reviewed by the entire group of students in the studio. The design evolves collectively by combining the compelling features of each scheme as students double up into teams of two, then four, eight, and so on. By the time the working scheme is completed after the first half of the semester, each student in the studio ideally gains a sense of propriety over the project.

In design development, students perform their own code searches and compliance checks for a full set of contract documents, moving from pen and paper to the computer as they complete working drawings and presentation materials in AutoCAD. "We did everything from structural and mechanical drawings to all the welding in the field," recounts graduate student Macke Bentley.

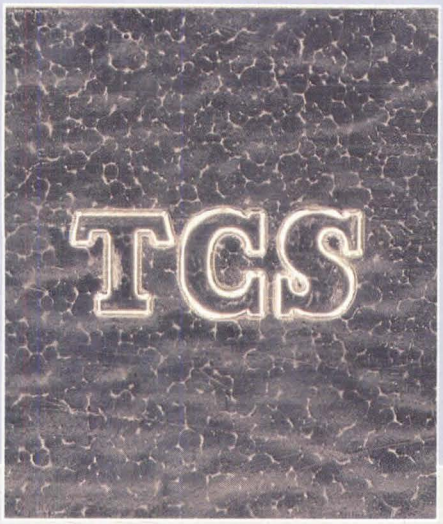
The most recent house, which required $300,000 worth of materials—raised in part by the students—plus deliveries and labor, was launched in 1995 with $10,000 in proceeds from auctioning the house built by previous students. The design concept for this steel-framed "Nomadic Transit Module" combines the spatial simplicity and harmony of a Japanese tea house with energy-efficient features such as solar panels, a wind generator, rainwater collectors, and insulated screens. A small auxiliary building, called the "Battery Barn," contains storage systems for wind- and solar-generated power, alongside a remote chiller and storage space.

The day the class selected the project they would build, however, the client lost his job, and the students lost funding. But the students and faculty were able to rustle the money together, and they themselves then became the clients for the house, which turned into a speculative venture.

FOLLANSBEE
ROOFING METALS

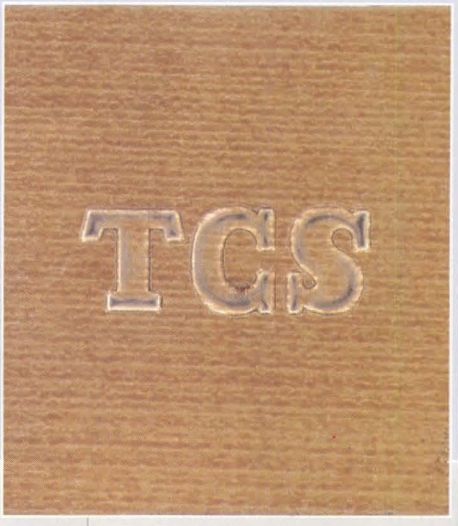
You can specify TCS® two ways...

MILL FINISH



either way, TCS (terne-coated stainless steel) will weather to an attractive, warm gray

PRE-WEATHERED



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

Pittsburgh International Airport
Architect: Tasso Katselas

Follansbee makes its terne-coated stainless available in two finishes—the standard mill finish and a pre-weathered finish. Both will weather to the attractive, gray finish characteristic of TCS.

MILL FINISH. TCS is a reflective silver color when the terne alloy is first applied (see sample). After exposure, it will gradually oxidize to a gray tone in 8 to 24 months.

PRE-WEATHERED FINISH. The pre-weathered TCS finish is a mill-applied wash coat used to limit initial reflectivity, changing from its brownish color (see sample) to a gray tone in approximately 3 months after exposure.

Once TCS has reached its warm, gray finish, weathering virtually stops and the architectural stainless base plate is protected for decades of service. TCS never requires painting and maintenance is minimal.

We will be happy to send you samples of the available TCS finishes. Call us toll-free, 1-800-624-6906.

MADE IN U.S.A. and available

in the UK and in Europe through FOLLANSBEE UK, Ltd. 44-81-367-6463 and BRODERICK STRUCTURES 44-483-750-207

in the Pacific Rim through SUMITOMO (03) 3237-4134

TERNE...the beauty of color
TCS®...beauty by mother nature

FOLLANSBEE®

FOLLANSBEE STEEL • FOLLANSBEE, WV 26037
Call us toll-free 1-800-624-6906

Circle 115 on information card

SOFTWARE FROM THE SCHOOLS

Leading modeling and energy-analysis programs now on the market started out on campus.

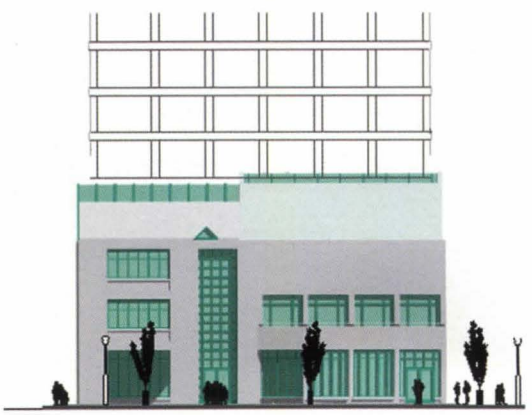
Many in the profession decry the dismal lack of architectural research at the university level and the poor transfer of information from the academic institutions to practice. In the burgeoning field of computer software, however, architecture schools lead the way in developing programs that target some of practice's problems. Frequently from necessity, faculty and students have developed sophisticated software to solve design challenges overlooked by commercial vendors. And a few of these have found their way into the marketplace.

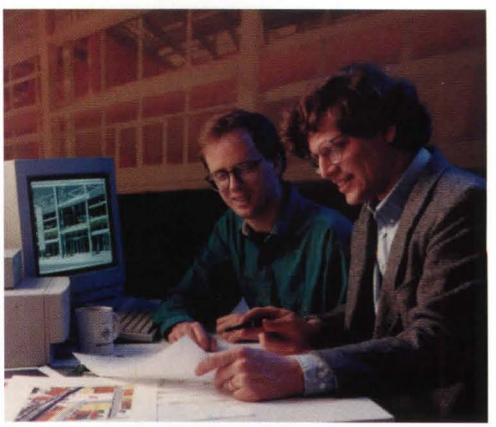
Two types of software have been particularly well nurtured within academia: three-dimensional modelers and energy-analysis tools. The former were motivated by the schools' own pedagogical needs: production-driven proprietary software could not provide students with the three-dimensional capability to advance design. The latter was encouraged by outside funding from the U.S. Department of Energy (DOE) and its predecessors to promote energy savings in the construction industry. But the true motivating forces behind all of these programs are dedicated faculty members willing to find the resources to improve the tools of the profession.

Schools of architecture offer a unique set of conditions for the initial development of new software for the profession. Faculty and students are keenly aware of the design process, and are therefore well positioned to identify innovative techniques appropriate to the specialized field. Unhampered by business deadlines or concerns about the bottom line, academic creators are free to explore original ideas at their own pace. Once a prototype has been developed, the student body represents a captive audience of beta testers, eager to criticize and cajole software developers into application refinements.

However, the schools are poorly equipped to bring a prototype to market. Faculty often cannot justify as research the additional time and money required to convert a demo model into a stable, bug-free package. And no funds or staffing are available to sell the product, let alone offer technical assistance to users. Faced with this dilemma, faculty members have taken different paths. Some, such as Murray Milne of the University of California, Los Angeles, and Larry Degelman of Texas A&M University, continue to improve their respective energy software bit by bit within the academic setting, relying on word of mouth to interest practitioners in their tools. Others, such as Kevin Matthews of the University of Oregon and Chris Yessios, formerly of Ohio State University, have formed separate companies to develop and market products quickly, independently of their universities.

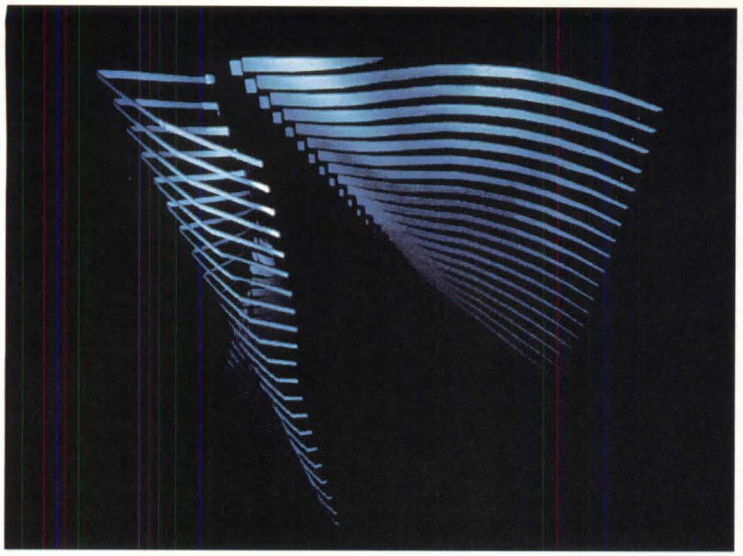
No matter which path is taken, these academicians are setting positive examples for further studies. Matthews, for example, became the first faculty member at the University of Oregon to receive university seed money for research, paving the way for others to obtain similar funding. "It created a new precedent," observes Matthews, "reinforcing the idea that research in architecture deserves some of the same support as that in the sciences." The architecture profession as a whole has much to gain from these promising steps.—*Nancy B. Solomon*

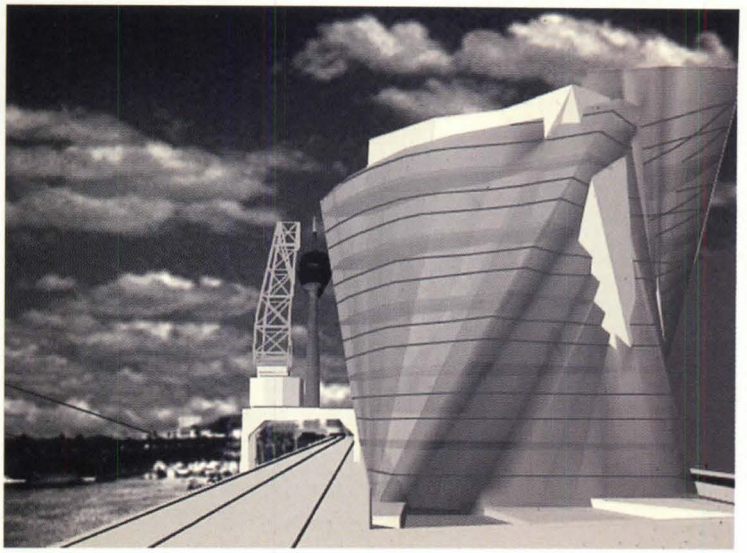


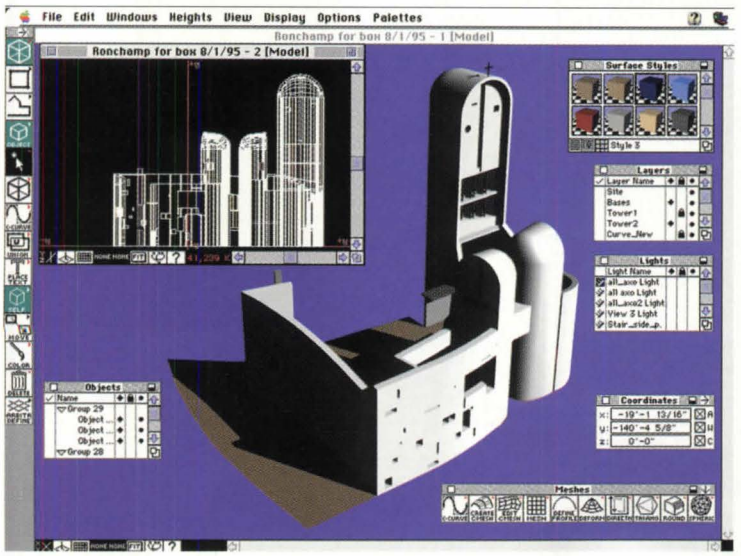


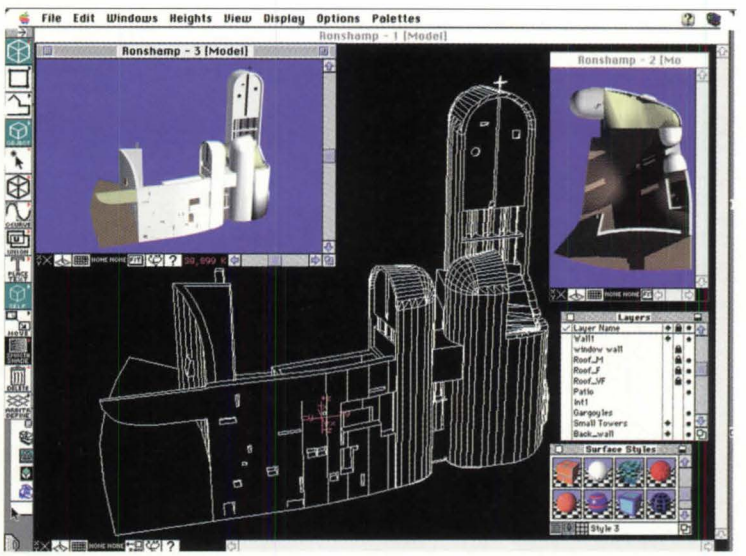
JIM SUNDBERG

RIGHT: Elevation was created by University of Oregon undergraduate Jesse Emory using three-dimensional modeling software DesignWorkshop.
FAR RIGHT: Kevin Matthews (right), DesignWorkshop developer at University of Oregon, critiques designs by undergraduate Larry Martin (left).









form•Z
Ohio State University

The proprietary three-dimensional modeling software from auto•des•sys in Columbus, Ohio, called form•Z, was first released in 1991, but its roots in academia reach back as far as the early 1970s. It was conceived by Chris Yessios, a registered architect with a Ph.D. in computer-aided design. In 1973, Yessios was hired by the Knowlton School of Architecture at Ohio State University in Columbus to teach design. He subsequently developed a special graduate program in computer-aided architectural design, which he directed until his retirement last year.

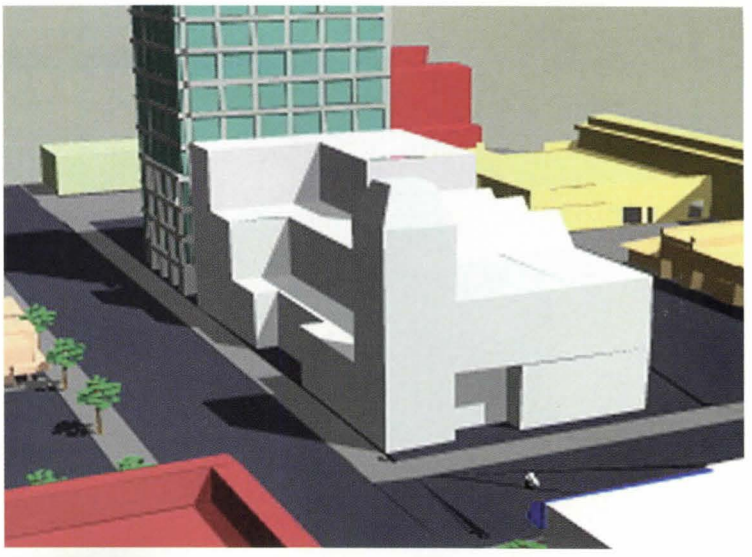
Yessios began teaching in the days when, if students were to get any computer experience, architecture schools had to build their own systems. The first commercially available CAD packages were very expensive, focused on two-dimensional drafting, and mostly addressed the needs of engineers. Yessios recognized that drafting was not central to the design process or to the needs of students, and began developing a tool for testing design alternatives in three dimensions.

IBM visited Ohio State in the early 1980s to identify innovative computer research. Impressed with the software development at the architecture school, the company offered Yessios's program $1 million in funding over eight years to create a design and drafting system. Gradually, a three-dimensional modeling program running on a mainframe computer emerged. IBM commended the team but never distributed the software, called Archimodos, because it was considered too advanced for the market.

The impetus for form•Z came in the late 1980s, when the school replaced its antiquated mainframe with new Macintosh computers. Unfortunately, Archimodos could not run on the upgraded hardware, and Yessios couldn't justify converting the software to a new platform as research. In any case, he felt the project would have to be undertaken as a commercial venture to be done properly.

The professor formed auto•des•sys in 1990 with former graduate student David Kropp to produce three-dimensional modeling software for the Macintosh. The company was financed privately by Yessios, and the code for the commercial application was written from scratch. That first year, Yessios and Kropp demonstrated a preliminary version of form•Z at the A/E/C Systems conference, and have since exhibited regularly at this and other trade shows. Later, they began to advertise in print media to reach not only architects but professionals in multimedia and product design. And in 1992, auto•des•sys began an annual joint study program in which the company provides software to universities at cost for inclusion in the curriculum. Version 2.8 of form•Z, now available for both the Macintosh and Windows environments, can be purchased for $1,495. For more information, call auto•des•sys at (614) 488-9777, or access its home page on the World Wide Web at *http://www.formz.com.*

TOP LEFT: New York-based Eisenman Architects uses form•Z to model physical phenomenon known as soliton wave for design inspiration.
TOP RIGHT: Analysis of waves led to twisted form of Eisenman's Haus Immendorff, proposed for Dusseldorf, Germany.
ABOVE LEFT: Form•Z's information boxes in rendering of Le Corbusier's church at Ronchamp indicate surface texture, light sources, and CAD layers.
ABOVE RIGHT: Different versions of model can be displayed in same screen.



DesignWorkshop
University of Oregon

DesignWorkshop, a three-dimensional modeling software, is the brainchild of Kevin Matthews, director of the University of Oregon's Design Integration Laboratory and president of Artifice, a local independent software company. Matthews has explored the possibilities of modeling for many years, first as an architecture student at the University of California, Berkeley, and later as the CAD system architect for the design team of the superconducting super collider once planned for Dallas.

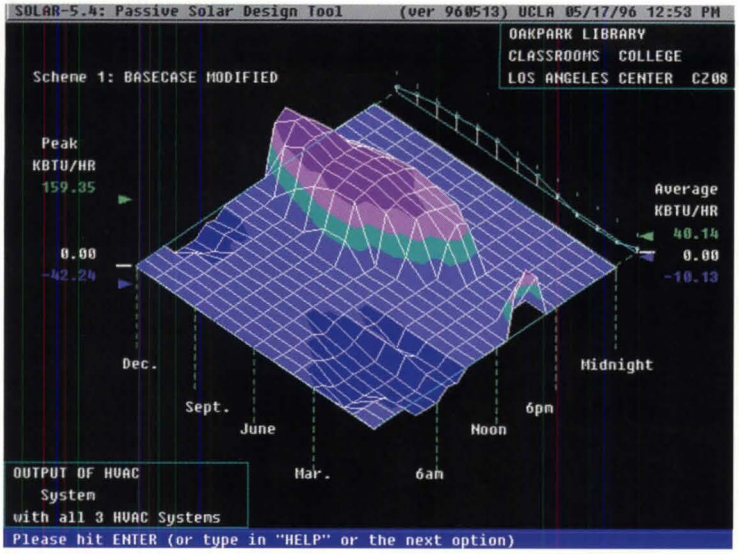
Matthews left the super-collider job for the University of Oregon in 1989, where he quickly sought funding and interested students to form the Design Integration Laboratory. A research team under his guidance developed a CAD user interface based on a three-dimensional crosshair technique, which allows architects to sketch freely on an electronic pad. The team also investigated the advantages of feature-based solid modeling, originally pioneered for mechanical engineering, in which parts of an object can be recognized as elements in themselves. For example, a window opening can be resized or relocated without disturbing the wall itself.

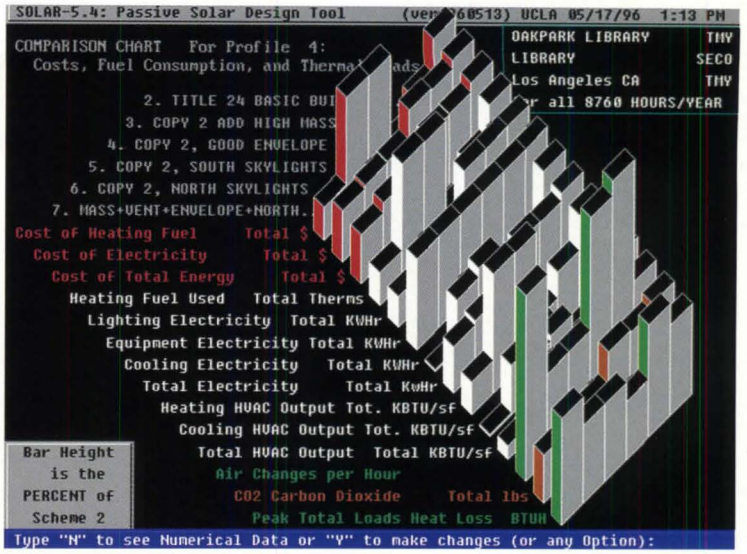
These two elements became the basis for a three-dimensional modeling prototype called Design-Oriented CAD (DOC), which Matthews introduced to his computer graphics class in 1992. To avoid conflicts with the university over ownership, in case the software developed into a profitable enterprise, Matthews secured all funding for DOC from external sources.

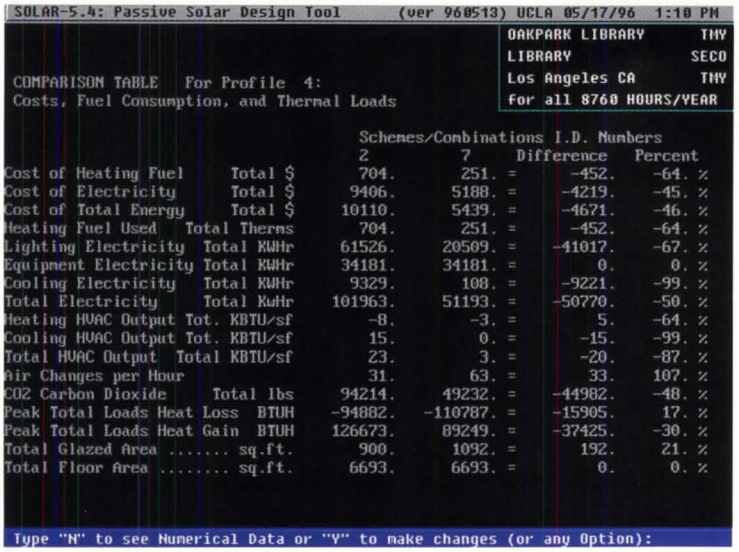
Once the prototype was developed, Matthews began negotiating with the university to transform the software into a viable commercial product. The university offered support for the project, but at a level of funding Matthews felt was inadequate. Instead, he recruited private investors and founded Artifice.

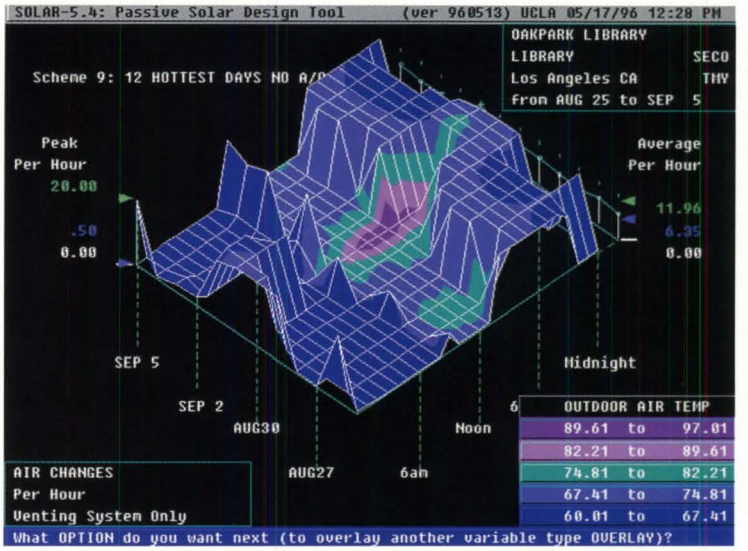
Eventually, the two organizations established a cooperative research-and-development agreement: Artifice would fund research for two years within the university setting, and the university would receive royalties on the commercialized software. The private company moved its research division into the campus lab, where professional and student researchers worked on the three-dimensional modeling software, which was renamed DesignWorkshop and first released in 1993. DesignWorkshop PPC for the Power Macintosh came out in 1994. Artifice consolidated its research department with its business operations off campus last year, and released DesignWorkshop 1.5 in 1996 for $595. For more information, call Artifice at (800) 203-8324, or look up the company's home page on the World Wide Web at *http://www.artifice.com.*

TOP LEFT: In DesignWorkshop's program analysis of art center by University of Oregon student Jesse Emory, basic functions such as retail, gallery, and cinema are color-coded. Application calculates floor area of individual spaces to assist in planning.
TOP RIGHT: Once size and location of program elements are determined, massing model is developed. Form can be adjusted in real time by clicking and dragging objects with software's crosshair tool.
ABOVE LEFT: Preliminary facades are sketched with pencil tool directly over massing model.
ABOVE RIGHT: Elevation ideas studied in two dimensions are drawn in three dimensions for further refinement; detailed model can be rotated to examine all sight lines and views.









Solar-5
University of California, Los Angeles

The development of Solar-5, a whole-building energy-analysis program tailored to practitioners, stemmed from a workshop of design professionals organized by the AIA for the Energy Research and Development Administration, a predecessor of the U.S. Department of Energy (DOE), in Santa Monica, California, in the mid-1970s. The group evaluated how much energy could be saved if selected buildings were redesigned using state-of-the-art technology.

William Mitchell, then a faculty member of the Department of Architecture and Urban Design at University of California, Los Angeles (UCLA), and now dean of the School of Architecture and Planning at the Massachusetts Institute of Technology (MIT), was invited to discuss the role of the computer in this enterprise. In preparation, Mitchell asked fellow faculty member Murray Milne to develop a rudimentary program illustrating energy performance in a graphic form easily comprehended by architects.

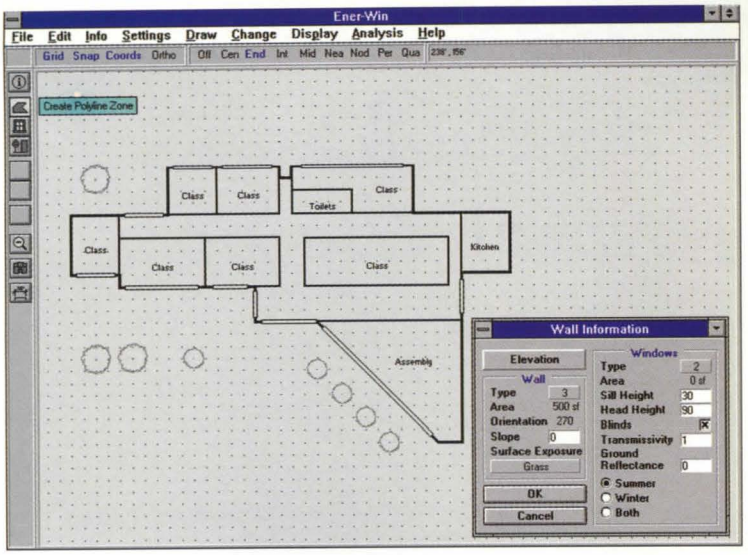
Milne, who was trained as both an architect and an engineer and had already developed a series of energy-related programs at UCLA, undertook the project with the help of graduate students Shin Yoshikawa and Jeff Hamer. The demo was well received at the meeting, and Yoshikawa continued the project as his thesis under Milne's direction. The program, which became known as Solar-5, ran on a mainframe computer.

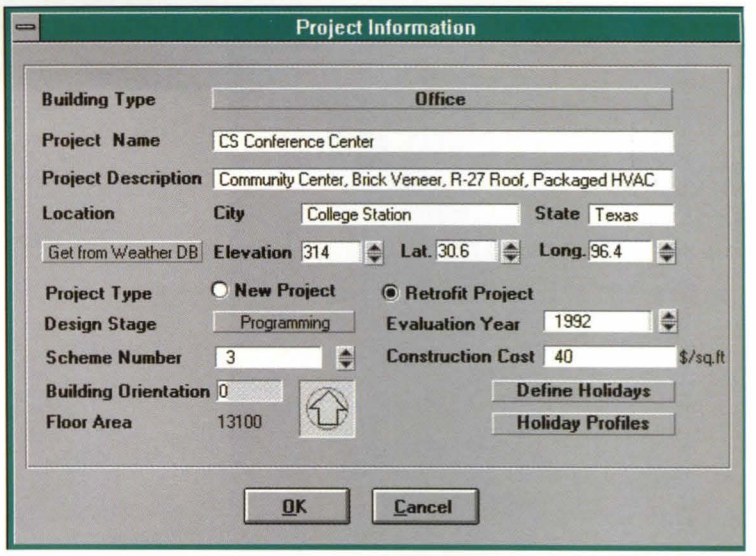
By 1984, with funding from DOE, Milne and his students had prepared the first public release of Solar-5. The research team mailed out dozens of magnetic tapes containing the program to interested universities. A few years later, new code for a microcomputer version was written, again with a grant from DOE. About 300 copies of this version were distributed at minimal cost through the Designers Software Exchange, a DOE-funded project at MIT. The third generation of Solar-5 was developed between 1989 and 1991 with a grant from what is now known as the University of California Energy Institute. It incorporated typical meteorological-year climate data and a detailed model for calculating electricity costs based on the more than 170 types of rates offered by California's eight major electric utilities.

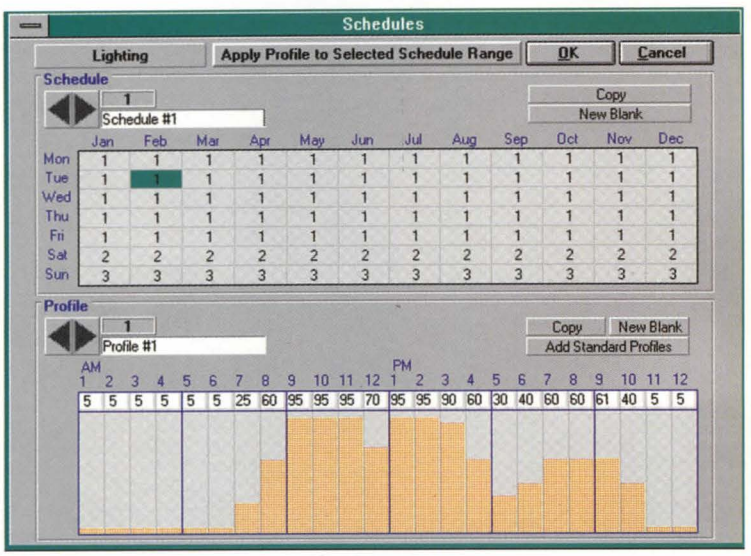
Last spring, recognizing the profession's increasing awareness of environmental issues, Milne and his students made available yet another version that takes into consideration the air pollutants associated with different design decisions. New graphic techniques for comparing the performance of building schemes have also been added. The Energy Institute funded this release as well.

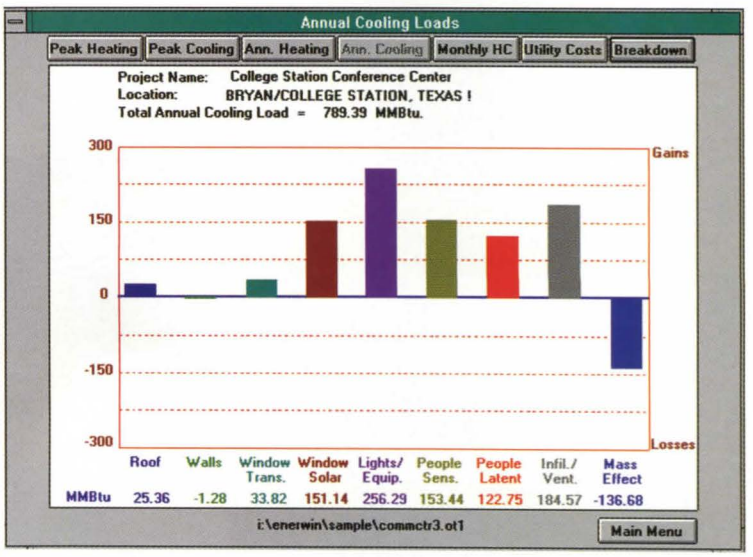
Solar-5 is designed to run on a microcomputer with DOS 3.1 or more advanced system. It is available at cost ($35). This, and seven other energy-related software packages from the architecture school, can be freely downloaded from the World Wide Web at *http://www.aud.ucla.edu/energy-design-tools*. For more information, contact Milne via e-mail: *milne@ucla.edu*.

TOP LEFT: Plot of HVAC output, indicative of energy-analysis tool Solar-5's colorful graphic output, shows how much air conditioning and furnace energy is consumed by inefficient building scheme.
TOP RIGHT: Bar chart compares schemes (gray) according to various criteria (red, white, green, and orange).
ABOVE LEFT: Numerical results of Solar-5's calculations are also depicted in tabular form.
ABOVE RIGHT: Twelve-day snapshot of air changes per hour includes August 31, hottest day of year.









Ener-Win
Texas A&M University

In 1979, six years after the Arab oil embargo, the Woodlands Development Corporation sought to minimize energy consumption by future commercial structures in a town north of Houston. After successfully applying to DOE for a grant to fund an energy optimization study, the development company turned to the College of Architecture at Texas A&M University in College Station, Texas, to undertake the analysis.

The developer had come to the right place: Texas A&M Professor Larry Degelman had been involved in energy analysis for years. Trained in architectural engineering at Pennsylvania State University, Degelman had already developed a weather simulation model under a National Science Foundation grant and written an energy software program as an assistant professor.

With his model in hand, Degelman was free to write his own program for Woodlands, which proved more efficient than using existing energy-simulation models. Degelman undertook the study as part of his research duties within the university. He and his student assistants used the new software, called Enercalc, to examine the energy implications of various design features of 220 prototypical buildings, recommending those that reduced consumption by 20 to 30 percent.

Degelman subsequently developed a graduate course on energy optimization, in which students analyzed their own studio projects with Enercalc. He transferred the program from a mainframe to a PC platform, and began teaching a software development course that allowed graduate students to write new and improved interfaces for the energy tool. In 1985, after developing a more user-friendly program, Degelman began running annual seminars to introduce the software to practitioners.

In 1994, Ph.D. research fellow Veronica Soebarto, supported by a William Wayne Caudill Research Fellowship, converted Enercalc from a DOS to a Windows environment. The program was then renamed Ener-Win. The latest version, available in September, includes a drawing interface by Ph.D. research fellow Scott Arvin. And, thanks to Soebarto, the upcoming release can also be calibrated to existing utility records for retrofit projects. Both of these improvements were made possible by funding from the Center of Energy and Mineral Resources, a campus institute that receives money from the state.

Ener-Win, which is copyrighted by the university, should soon get a big boost in name recognition. This summer, it has been distributed to every architecture department in North America as part of Vital Signs, a project managed by the University of California, Berkeley, and funded by the San Francisco-based Energy Foundation.

The current software runs in a Windows environment on a PC-386 or more advanced system, and costs $250. Ener-Win and other Texas A&M energy programs are described in detail on the World Wide Web at *http://archone.tamu.edu/~energy*. For more information, contact Degelman via e-mail: *larry@archone.tamu.edu*.

TOP LEFT: Projects can be sketched within Ener-Win, unlike in many whole-building energy-analysis tools.
TOP RIGHT: Project information screen prompts designer to enter basic data.
ABOVE LEFT: Architect can customize lighting use and other building schedules for every day of year.
ABOVE RIGHT: Ener-Win software produces series of colorful analytical graphs, including bar chart showing annual cooling load by building component.

Has air distribution taken the flow out of your design?

Let

FLOWBAR™

air diffusers put it back in

Now you can achieve both comfort and style while optimizing air distribution. FlowBar exceeds the consulting engineers' criteria for performance as well as the architects' and interior designers' requirements for aesthetics. For more information on the FlowBar series of architectural air diffusers, contact TITUS or your local representative.

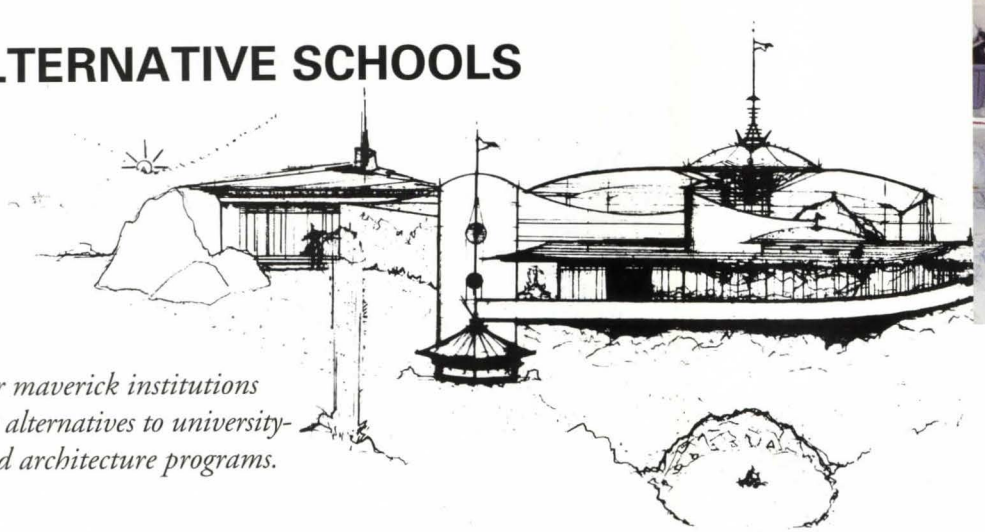
TITUS®

The world's largest *supplier of air* distribution solutions
Call for more information 214-699-1030 Fax 214-644-4953
Patents #5,001,967 and #5,215,284

Circle 119 on information card

ALTERNATIVE SCHOOLS

Four maverick institutions offer alternatives to university-based architecture programs.



ABOVE: Desert house designed by San Francisco Institute of Architecture (SFIA) student Charles Sholten reveals school's organic influences.
ABOVE RIGHT: Student Tim Scharff works in SFIA's worry-free environment.

University-based architecture programs at MIT and the University of Illinois served as "alternative" models of architectural education when they were established some 130 years ago. At that time, architectural training was provided through apprenticeship. Over the years, the relationship reversed as architecture education firmly embedded itself in the university system and apprenticeship all but vanished (surviving in spirit as today's post-university internship).

However, not all architecture education moved to the universities. A parallel but distinct cohort of institutions has always offered educational alternatives to the more mainstream programs. These have ranged from art schools like the Cranbrook Academy to the teaching office of the Frank Lloyd Wright School—which might more appropriately be viewed as a latter-day reformulation of the apprenticeship model.

More than once, these mavericks have pioneered new educational ventures. The Southern California Institute of Architecture (SCIARC) was founded only 25 years ago by noted architect Raymond Kappe and others when they became disenchanted with the institutional rigidity of university-based schools in the Los Angeles area. Today, SCIARC is routinely cited as one of the nation's leading centers of architectural thought.

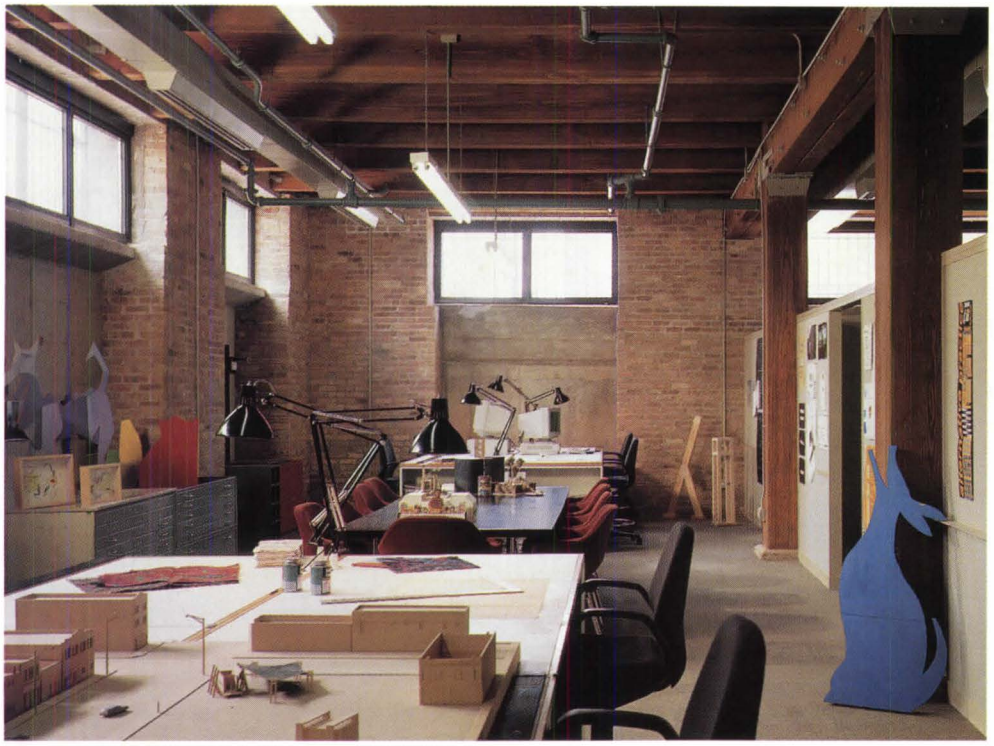
"Alternative" education is increasingly difficult to define. SCIARC, for instance, now ranks as a National Architectural Accrediting Board (NAAB)-accredited member of the Association of Collegiate Schools of Architecture (ACSA). On the other hand, Notre Dame's venerable School of Architecture, under the direction of Chairman Thomas Gordon Smith, has instituted a largely Classical curriculum—certainly an alternative to most every other school in this country. As architecture schools continue to grow more numerous and competitive, achieving an "alternative" identity will likely be an essential institutional strategy for attracting students and financial support.

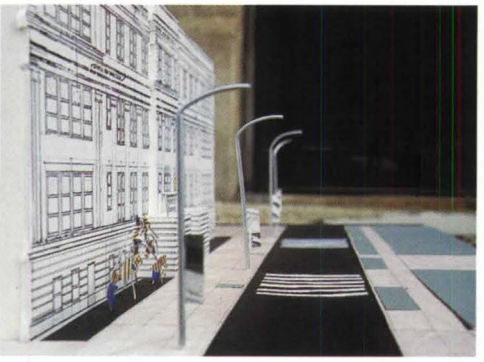
At present, there are two general characteristics of alternative programs: most are neither accredited by NAAB nor full members of ACSA. Some of the alternative schools are working toward those affiliations; others are not. Yestermorrow, reviewed in the following pages, is not. It offers a series of workshop-style courses that bring architects and others directly into the building process. The Boston Architectural Center, by contrast, has had NAAB accreditation and ACSA membership for 25 years. Its program differs widely from other schools, however, in that a significant amount of the student's education is completed through full-time employment in professional offices.

The San Francisco Institute of Architecture eschews many traditional notions of architecture education, including long hours with studio instructors and critical reviews, yet aspires to accreditation. Archeworks, which was founded in 1994 by Eva Maddox and Stanley Tigerman, embraces a crossdisciplinary approach that harkens back to the Bauhaus yet looks forward to a time when design is viewed in an integrative fashion. In today's climate of disciplinary chauvinism, this holistic approach offers a fresh alternative indeed.—*Reed Kroloff*

Archeworks
Chicago, Illinois

RIGHT: Plastic shopping cart designed by 1995 graduates Lawrence Kasimov and Rebecca Krengel was conceived for homeless population.
BELOW: Archeworks is housed in warehouse in Chicago's developing New Arts District.
BELOW RIGHT: Zebra Project draws inspiration from street crosswalk markings as safety zones in urban West Humboldt Park neighborhood.





This is not a jury; this is not an architecture school; this is not a school," says Stanley Tigerman as he begins the final presentations at the recent conclusion of Archeworks' second year of operation. Cofounders Tigerman and Eva Maddox freely admit that it is difficult to describe Archeworks in conventional terms. Andreason La Salle Brown, the institution's administrator, repeats "Archeworks is an alternative educational design laboratory" as his mantra. But even Brown acknowledges he's not always sure how to define the program he's running.

Although Archeworks' catalog implies a full-time educational experience, an average afternoon finds its studios empty. "This is a night school," admits Tigerman. With few exceptions, most interns work full-time while attending Archeworks, which costs $7,000 per year. Maddox thinks this sort of experience will become more common for all design professionals in the years ahead: "As our profession and how we work changes dramatically, we'll find that we are continuing to be students throughout our careers."

Founded in 1994, the school occupies the basement of a warehouse loft a dozen blocks south of Chicago's Loop. Its facilities include a presentation room, a lecture hall, three studios, a computer center, a wood and welding shop, and a bar. The bar and lecture hall open to the building's atrium, where Archeworks holds its public events. The ensemble is furnished like an upscale design office with gifts from corporate sponsors, Chicago architectural offices, and local builders.

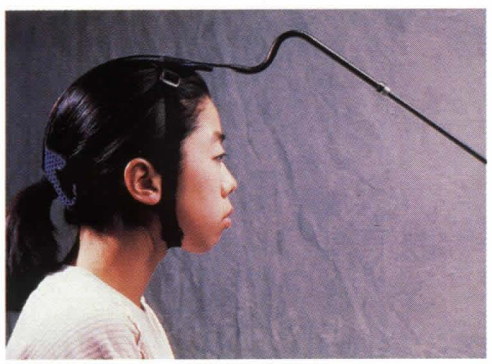
Archeworks' 1995-1996 enrollment was made up of 12 students: seven men and five women, ranging in age from 22 to 55 and hailing from five countries. Half the group entered the program with a traditional architecture education. The others came from established careers in diverse fields—nursing, industrial design, and government, to name a few. Students are referred to as "interns," and faculty describe themselves as "facilitators." This year's staff included Chicago architect Douglas Garofalo, theorists Robert Somol and Benjamin Nicholson, and Merritt Seymour, the director of product design and development at USG Interiors.

A certificate of residency is conferred upon successful completion of a year's coursework at Archeworks, and the time spent meets both National Council of Architectural Registration Boards and internship requirements legislated for architects and designers.

At first glance, Archeworks' projects would not be out of place among the socially conscious thesis projects commonly found at many universities today. But no project at Archeworks is the product of an individual designer, and most have real clients who participate in the process.

This past year's group of interns was divided into teams in September and organized according to three areas of investigation. Team One worked on an Archeworks-initiated project to develop strategies for dealing

RIGHT: Urban occupancy matrix of photographs, models, and conceptual designs for combatting homelessness.
BELOW AND BOTTOM: Archeworks students used carbon fiber, kevlar, aluminum tubing, and graphite composites to produce headpointer weighing half as much as previous prototypes; headpointer enables individuals with cerebral palsy to operate keyboard for speech synthesizing and data entry.



with homelessness in Chicago. Its final product was a proposed amendment to the Chicago building code to establish "The Urban Occupancy System," a legislative document that outlines strategies for rehabilitating abandoned structures into residences and businesses where homeless people might work and live. Supporting design drawings for three specific sites demonstrate the practical potential of the proposed legislation.

Team Two worked with West Humboldt Park community groups and a sixth-grade class at the local school to develop an identity for the predominantly African-American neighborhood. The Zebra Project, as it is called, incorporated a striped motif into a series of proposed streetscape improvements near a local school. Striped window placards and brightly painted plywood zebras in public spaces became neighborhood icons by the end of the year, and the stripe motif was applied across vacant urban lots to symbolize the need for neighborhood development.

Team Three, in conjunction with the Rehabilitation Institute of Chicago and private clients, focused on design solutions for the disabled. Its most successful project involved a new design for the headpointers used by cerebral palsy patients. Existing devices tend to be clumsy and uncomfortable—not unusual characteristics for a prosthetic device. The team tested various mock-ups before finalizing the design. By redefining the pointer as a piece of functional fashion, the interns produced an elegant new headpiece that considers the wearer's self-esteem as part of the solution. The headpointer will soon be mass-produced and marketed through a major medical equipment supplier.

Tigerman and Maddox's presence permeates everything at Archeworks, and it is their active solicitation of projects and clients that sets the tone for all the work that follows. "We need clients to provide a base of knowledge," says Maddox. "They provide us with the information to allow us to springboard to solutions via design." Once a project is begun, Maddox and Tigerman allow students to interact directly with the clients.

What the founders, facilitators, and interns have accomplished during Archeworks' two years of operation remains true to Maddox's credo that "Ideas are a product." Working with real clients on real problems "is crucial to Archeworks' approach," she claims. "Today, most design practices don't allow the research and development that create fresh, multidisciplinary solutions." The team members' varied backgrounds illustrate this multidisciplinary approach: the group working with the disabled included an architect, a graphic designer, a registered nurse, and an industrial designer.

Through this collaborative approach, in two short years Archeworks has improved the physical environment for at least a few of its clients. As intern Caryl Anselmini sums up her experience, "You're not in a classroom; you're out there doing it."—*Edward Keegan*

Steelstudbrickwallaphobia*

* (An affliction affecting building professionals manifested by abnormal anxiety about steel stud/brick veneer wall systems.)

The symptoms of the affliction are obvious. Irrational, fearful thinking that creates painful doubts. Doubts, for example, about the thermal efficiency of steel. Or about the system's resistance to moisture. Or its ability to prevent flexural cracking of the veneer.

It causes anxiety and confusion about the use of rigid foam insulation. About the adequacy of commercial brick ties to transfer lateral loads. About... well, whatever your fevered brain can imagine.

Curing the Confusion

Fortunately steelstudbrickwallaphobia is highly curable. First, it takes a dose of old-fashioned clear thinking as you calmly consider the many advantages a commercial steel stud sheathing system has to offer:

- The Durability of Brick
- The Structural Superiority of Steel
- Reduced Weight
- Better Uniformity and Dimensional Stability Than Lumber
- The Ability to Get to "The Dry" Quickly
- A Greater Variety of Aesthetic Options

Immediate, Lasting Relief

Now you're ready for the final remedy. It's in the form of a 12-page technical brochure from Owens Corning, makers of *FOAMULAR*® extruded polystyrene insulation.

TM & © 1996 UAP

It goes right to the root of your problem with ingredients that include:

- Improved System Specification
- Industry Research and Recommendations
- Technical Data and Drawings
- Maximizing Thermal Performance
- Bracing and Deflection Criteria
- Product and Application

No Prescription Needed

The brochure is **FREE**. Simply fax our coupon or circle the reader service number below. We think you'll find it's serious medicine for design professionals who want a remedy for steelwallbr... uh, studsteelwa... uh... who just want to get well.

Circle 129 on information card

OWENS CORNING We Make The Difference™

The color PINK is a trademark of Owens Corning.

❑ I'm ready for the cure... send me the Owens Corning *FOAMULAR*® Commercial Steel Stud System technical brochure today!

FAX THIS COUPON TO: 201-605-2231

Name_____

Company_____

Address_____

City/State/Zip_____

Phone_____ Fax_____

WATER-MANAGED EXTERIOR FINISH SYSTEMS: THE FUTURE OF STUCCO EXTERIORS.

The future of EIFS isn't about sealing out water. It's about letting it escape if it ever penetrates a system's exterior. Water-managed type EIF and DEF Systems are designed to do just that – making them more practical to install and more reliable in performance than regular "barrier" type EIFS.

Fact is, barrier EIF Systems were designed to seal water out. And they work. That is, until water seeps behind the system through and around windows, roof flashings and other penetration points. That's when the limitations of "barrier" EIFS become evident: they can also seal water in, causing permanent damage not visible from a home's exterior.

Without sacrificing the stucco-look appeal, or insulation benefits, Water-Managed Exterior Finish Systems perform like an EIF System with one crucial difference. They give water the means to escape if it should ever penetrate the system's exterior.

This "water in, water out" premise isn't new to the construction industry. It's the basic concept behind conventional exterior cladding such as aluminum and vinyl siding, and even the predecessor to barrier EIFS, portland cement stucco.

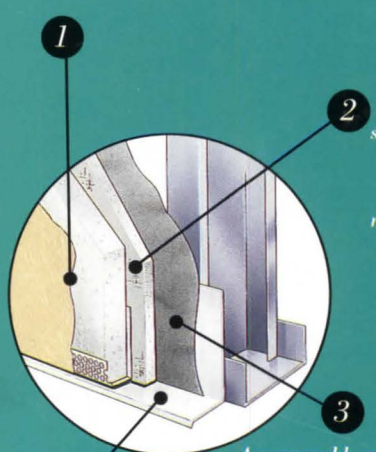
The fact is, windows are not waterproof. And independent tests reveal that even perfectly installed windows can eventually leak. Factor in ineffective sealants and poor detailing and it's only a matter of time before water gets in.

By incorporating water-durable substrates, vapor permeable components, flashing and drainage planes, Water-Managed EIF Systems make sure water gets out. Safely. Surely. And without damaging a home's water-sensitive framing and sheathing.

For complete details and specifications on Water-Managed Exterior Finish Systems, or a technical paper outlining the results of our exterior systems research, call 1-800-USG-4YOU, or visit http://www.usgcorp.com. It's the kind of information that can put your mind at ease.

Circle 131 on information card

Stucco-look exterior finish, with or without insulation, provides pleasing aesthetics and design versatility in a system that's practical to install and reliable in performance.



DUROCK™ cement panels are the most durable substrate in an exterior finish system. They won't trap water or vapor, delaminate, soften or deteriorate should water penetrate the system's exterior.

A permeable water barrier serves as an additional drainage plane for water that has entered the wall cavity.

Flashing provides the final component in managing water effectively. This water-exit device, central to Water-Managed EIF Systems, prevents damage to a home's water-sensitive framing and exterior sheathing.

United States Gypsum Company