

ARCHITECTURE

DECEMBER 1996

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Old War, New Battles

Engineers are again making a concerted push into the province of architects.

Engineers are on the march—into architects' territory. They are claiming the right to design buildings for human habitation, a task that has historically distinguished the work of architects from that of engineers. In recent months, engineers' advocates at the national, state, and local levels have been working to blur that crucial line, if not wipe it out altogether, to gain a bigger share of the design market.

Spearheading this effort is the National Society of Professional Engineers (NSPE), based in Alexandria, Virginia. In 1995, the NSPE tried unsuccessfully to persuade the U.S. Department of Justice to pursue a restraint-of-trade case against architects for allegedly shutting engineers out of the building design market. Failing in that attempt, the NSPE is now arguing that engineers' design of buildings should be legally sanctioned in all states, and is lobbying to rewrite states' registration laws. The NSPE wants every state to be like Nevada, which now allows engineers to engage in architecture as if the two disciplines were the same.

This dispute between the professions goes back at least 40 years, but it's escalating anew in a number of states and localities. In Keene, New Hampshire, two years ago, an engineer brought suit against a local official who had denied him a permit to design a public building—and won. In May of this year, the NSPE wrote to the New Hampshire engineering board to contend that licensed engineers may not only design buildings, but may serve as the prime professional on building projects. The engineering board then turned to the state attorney general's office, which declared last month that building design is best left to architects.

The most heated feud is currently brewing in Florida, where nearly once a week local building officials—most recently in Daytona Beach, Ormond Beach, and Fort Lauderdale—are turning away building plans prepared by engineers seeking permit approval. Like 24 other states, Florida allows

engineers to design buildings for people when the service is "purely incidental" to their engineering practice, such as designing a small office in a grain elevator or a toll booth on a bridge. But the NSPE is currently pushing hard to widen Florida's "incidental" practice provision into architectural carte blanche for its members.

In 1994, Florida's engineering society attempted to initiate a rule change by the Department of Professional Regulations and was told to hold public hearings. After one hearing, at which the Florida AIA defended its ground, the engineers moved instead to have state legislators—at least three of whom are registered engineers—revise the engineering statute in their favor. When the state AIA announced that it had amassed a war chest of \$75,000 to fight this battle, the engineers raised an equal amount. To avoid a costly skirmish, each side has now agreed to form a joint committee to work out a compromise.

It remains to be seen whether Florida's law turns out like Nevada's, or whether the outcome will be more like last year's settlement in Arkansas. In a similar case in that state, engineers agreed not to practice architecture, and architects conceded to them the design of structures that are mainly utilitarian. This compromise affirms the definition suggested by the National Council of Architectural Registration Boards, which maintains that architects alone design "buildings intended for human occupation and habitation."

Unlike engineers, architects are educated, trained, and tested to protect the life-safety of building occupants. The NSPE is kidding itself to argue that its members' skills are identical, when engineers are tested only on general engineering principles and the particulars of their subdiscipline, rather than the full range of building design duties. Architects have more than turf to defend in these disputes.

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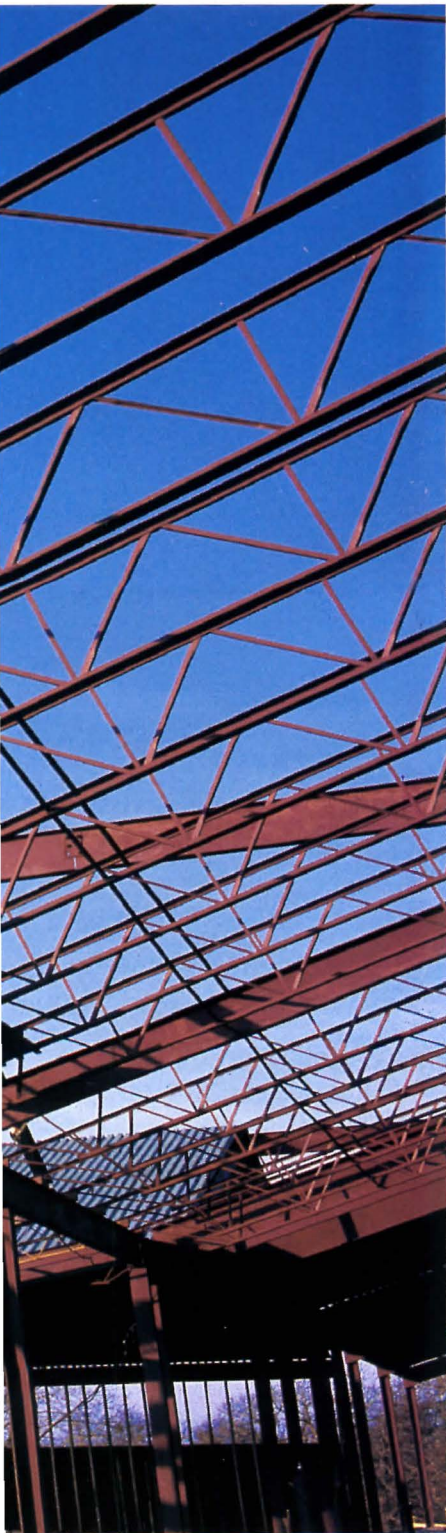
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Letters

Library as void

Anyone who found the article on San Francisco Main Library (ARCHITECTURE, July 1996, pages 80-91) incomprehensible, incomplete, incompetent, infuriating, or just plain confusing will be glad to know that those characteristics accurately reflect its subject.

San Franciscans made it clear that they wanted space for books in multiple languages, ages, sizes, and editions, on every possible subject. They didn't get it. Instead, they found an empty atrium on opening day.

To leave space in the center for the play of light, the new library has less shelf space than the old library—thus negating the very reason for which it was built. And the city did not even bother to store, sell, or give away the books it could not accommodate—it just trucked them to the dump. And what do we get in return? A central, sunlit void, with dust motes shimmering in its emptiness, where we could have had hundreds of thousands of books.

*Pat Lamken
San Francisco, California*

Insensitive in Cincinnati

In your September issue, several new designs at the University of Cincinnati (page 55) were presented as "remedying insensitive 1960s and 1970s development." However, the building for offices dislocated by campus construction, which you attribute to Skidmore, Owings & Merrill (SOM), was largely designed by Glaser Associates prior to a shotgun marriage with SOM. The resulting building with the SOM overlay is one of the least sensitive pieces of architecture on campus. The sealed building is quite inhospitable and makes a strong statement—perhaps that the university is an inhumane bureaucracy.

*Robert W. Dorsey, AIA
Professor of Construction Science
University of Cincinnati
Cincinnati, Ohio*

Although Frank Gehry's new molecular sciences building for the University of Cincinnati is shown in a developmental phase, its design seems to rest on the mistaken idea that all one needs to do today is use bulbous, curvilinear forms and creative architecture will result. It appears to be the result of some low-grade internal explosion. Its irrationality is an inappropriate expression of the rational science functions it would contain.

I admire other examples of Gehry's work—the Disney Concert Hall in Los Angeles, for example—whose fantasy forms are totally in tune with its program.

Architecture should express the character of its time. However, in such difficult times, creating moments of harmony and order may be a more valuable contribution to the society we serve.

*James Ream, FAIA
San Francisco, California*

Security or paranoia?

I am dismayed to see ARCHITECTURE championing that most destructive stereotype of the architect as control freak. In his article, "Halt: Who Goes There?" (ARCHITECTURE, September 1996, pages 71-75), Thomas Vonier crosses the line between rational concern for the citizen's welfare and overreaching governmental intrusion.

A government (or profession) that says it can only fight terrorism and crime through the surrender of essential liberty or public control of private behavior is an institution that has itself surrendered the moral high ground, becoming indistinguishable from those who would enslave us with terror.

*J. Gregory Wharton, Assoc. AIA
Seattle, Washington*

Olympic oversight

The Corporation for Olympic Development in Atlanta (CODA) humbly accepts the silver medal

awarded by your news report (ARCHITECTURE, September 1996, pages 40-41) for the "progressive outlook" of our efforts. However, although many minor errors can be overlooked, one is large enough to require correction. Bradford McKee wondered why CODA would spend money on a small downtown plaza when poor neighborhoods like Summerhill (adjacent to the Olympic Stadium) went begging.

While the plaza cost \$250,000, \$12.8 million was invested in Summerhill in the four years before the Olympics, including the construction of 81 new affordable housing units. Since much of this success can be attributed to the efforts of the neighborhood itself, it would be a serious disservice to the people of Summerhill not to make this correction. And since the error was used as a basis to impugn CODA's agenda, the correction is more important.

McKee is correct in stating that CODA fell short of realizing its ambitious plans, however. Of the 67 public space and art projects proposed by CODA in late 1993, only 60 had been implemented in time for the Olympics. CODA plans to continue its program of public spaces and neighborhood redevelopment. If this happens, it may well be the real legacy of the 1996 Games.

*H. Randal Roark, AIA, AICP
Director of Planning & Design
Corporation for Olympic
Development in Atlanta
Atlanta, Georgia*

Hollow victory

I don't think architects should go out and celebrate Ellerbe Becket's alleged victory in *Paralyzed Veterans of America v. Ellerbe Becket* (ARCHITECTURE, September 1996, page 15). It is clear that if the owner or developer is found to be negligent, their lawyers will claim only the architect has the knowledge and capacity to implement ADA provisions. So hold onto your party hats be-

cause this ride's not over yet.
*David Porter, AIA
Palm Beach Gardens, Florida*

Editor's note: Indeed, the ride is just beginning. As reported last month, Ellerbe Becket has been sued by the U.S. Department of Justice for designing sports complexes with poor sightlines for wheelchair users in Boston; Portland, Oregon; Philadelphia; Cleveland; Buffalo; and Washington, D.C.

Learning from Las Vegas

It seems Eric Anderson was misinformed about the design of the School of Architecture at the University of Nevada, Las Vegas (ARCHITECTURE, October 1996, page 33). Barton Myers Associates worked with local firm Swisher & Hall—not JMA/Lucchesi-Galati as Anderson stated. Swisher & Hall were responsible for meeting the budget and hired local cost consultants to monitor the project. To say that "Barton Myers's scheme was not responsive to the budget" is inaccurate and misleading. Anderson states that "the details relied on trade skills and specialties not readily available in the Las Vegas market," although there was nothing exotic about either the construction materials or methods, certainly nothing beyond the capabilities of the Las Vegas building industry. I regret that the project was not completed as originally conceived, but there were conditions and complications that went well beyond the control of the design team.

*Barton Myers, FAIA
Barton Myers Associates Architects
Beverly Hills, California*

Corrections

The photographs on pages 97, 100, 101, and 103 of Yoshio Taniguchi's work in our October 1996 issue were taken by Toshiharu Kitajima. The photograph on page 105 is by Shigeru Ban.

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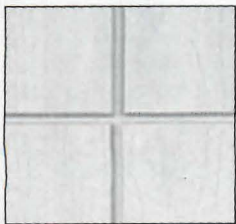
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Events

Conferences

CHARLESTON. "Facility Management in Historic Properties," March 6-8, 1997, sponsored by the AIA. Contact: (202) 626-7482.

DENVER. "The Client Connection," March 6-8, 1997, sponsored by the AIA. Contact: (202) 626-7482.

HOUSTON. "The Builder's Show," January 24-27, 1997, sponsored by the National Association of Home Builders. Contact: (202) 861-2191.

ORLANDO. Home automation show, February 8-10, 1997, sponsored by the Home Automation Association. Contact: (203) 840-5658.

Exhibitions

LOS ANGELES. "Paradise Cage: Kiki Smith and Coop Himmelblau," through February 2, 1997, at the Museum of Contemporary Art. Contact: (213) 626-6222.

MIAMI. "Art and Design in the Modern Age: Selections from the Wolfsonian Collection," through June 30, 1997, at the Wolfsonian Museum. Contact: (305) 531-6287.

MINNEAPOLIS. "Wild Design: Designs for the Wild," through January 5, 1997, at the Walker Art Center. Contact: (612) 375-7600.

NEW YORK. "A House for an Art Lover: Charles Rennie Mackintosh's Masterpiece," through February 8, 1997, at the New York School of Interior Design. Contact: (212) 472-1500.

SANTA BARBARA. "The Furniture of R.M. Schindler," through February 2, 1997, at the University Art Museum, University of California, Santa Barbara. Contact: (805) 893-2951.

SAN FRANCISCO. "Souvenirs of Savings: Miniature Bank Buildings from the Collection of Ace Architects," December 12-February 25, 1997, at the San Francisco Museum of Modern Art. Contact: (415) 357-4000.

WASHINGTON, DC. "An American Embassy in Berlin," through February 23, 1997, at the National Building Museum. Contact: (202) 272-2448.

"The Guastavino Company and the Technology of the Catalan Vault, 1885-1962," through January 5, 1997, at the Octagon. Contact: (202) 638-3221

Competitions

Design awards sponsored by the Society for Environmental Graphic Design. **Entries due January 17, 1997. Student grant entries due December 31.** Contact: (202) 638-0891.

Rotch Traveling Scholarship. **Application requests due January 3, 1997,** in writing to 52 Broad Street, Boston, Massachusetts, 02109.

Design competition for a public square in Vail, Colorado. **Submissions due January 6, 1997.** Contact: (970) 479-2344.

James Beard Foundation Awards for restaurant design and graphics. **Deadline: January 31, 1997.** Contact: (212) 627-2090.

Wall Street cultural exchange competition, sponsored by the Van Alen Institute. **Entries due January 31, 1997.** Contact: (212) 924-7000.

"Vision, Medium, Culture," young architect's forum for architects 10 years or less out of school, sponsored by the Architectural League. **Deadline: February 7, 1997.** Contact: (212) 753-1722.

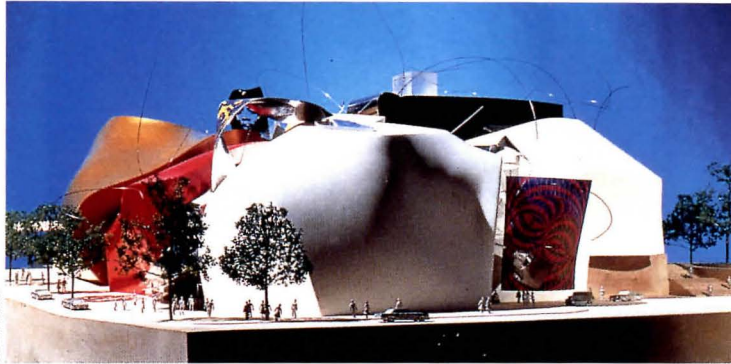


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EXPERIENCE MUSIC PROJECT: Evokes curves, finishes, and strings of Hendrix's guitars.

Gehry to Rock Seattle With New Music Museum

Imagine a three-dimensional, fragmented guitar as envisioned by Picasso, painted electric colors, and blown up to the size of a block-long, multistory building. Such is the proposed design for the "Experience Music Project" in Seattle. Formerly known as the Jimi Hendrix Museum, the project is being designed by Frank O. Gehry & Associates with local architects Loschky Marquardt and Nesholm.

The new museum will sit on the eastern edge of Seattle Center, a cultural campus on downtown's north side, the site of the 1962 World's Fair. The 110,000-square-foot building which will narrate the evolution of modern music, will comprise exhibition halls, an educational center, and a restaurant/nightclub with live music. Support spaces will be buried below grade. The project's mastermind is Paul Allen, who cofounded Microsoft and is funding the museum's \$60 million price tag.

Although the life of Seattle-born Hendrix provided the initial inspiration, the project has expanded to highlight the connections between jazz, blues, rock-and-roll, hard rock, and today's "alternative" music. The interior will include rooms designed like garages with roll-down doors, a

reference to the fact that many of Seattle's internationally known bands such as Soundgarden, Nirvana, and Pearl Jam started out by practicing in garages and warehouses. Still, an image of Hendrix's face will be placed on the roof top looking down on the scene below.

Gehry's formal reference to a deconstructed guitar is particularly appropriate, as one of Hendrix's signature traits was to violently smash his instrument on stage. The building's mass is composed of fractured, but sinuous shapes reminiscent of guitar bodies. They will be clad in exotic finishes such as sparkling terrazzo, ruby-colored stainless steel, and glass shingles possibly to be designed by glass artist Dale Chihuly. A ganglia of twisted fiber-optic cables representing Hendrix's broken guitar strings will sprout from the top of the building.

Gehry incorporates the existing World's Fair monorail, a fondly treasured relic of futuristic transportation. The twin tracks plunge right through the building, whose bulbous shapes part to accommodate the curving trajectory of the tubular metal train. Clearly, this is a museum that knows how to have fun with its subject.—Mark L. Hinshaw

Mark Hinshaw writes on architecture for The Seattle Times.

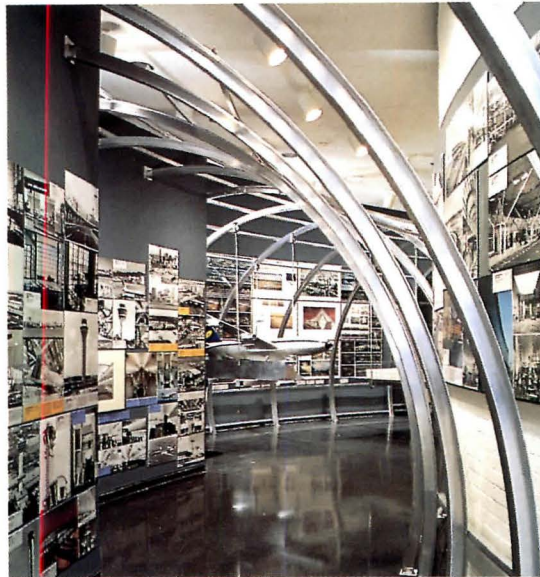
AIA Board Member Named Editor of Record

Last fall, *Architectural Record* was chosen over ARCHITECTURE to become the official AIA magazine. The deal, which is effective next month, is part of a "strategic alliance" between the Institute and *Record's* publisher, McGraw-Hill. Now, the AIA has succeeded in placing one of its own board members as editor of the magazine. After a search that queried British editors Peter Davey of *Architectural Review* and John Welsh of *RIBA Journal*, as well as *Dallas Morning News* architecture critic David Dillon, *Record* Publisher Elaine Shusterman announced in November that AIA Director Robert A. Ivy Jr. would succeed former editor Stephen A. Kliment, who resigned in August.

Ivy, 49, resigned from the AIA board on the date of the announcement. He had also been on the Institute's payroll since January, serving as the AIA's liaison to *Record*.

Ivy's career has straddled architecture and journalism. He formerly headed Dean Dale Dean and Ivy Architects in Jackson and Columbus, Mississippi, and ran his own firm in Columbus. Ivy has written for a variety of design publications, including ARCHITECTURE as a contributing editor; coproduced documentary films on architecture; and written a book on the architect Fay Jones (AIA Press, 1992).

Ivy will lead *Record* through its reincarnation as an AIA organ. Plans call for a redesign by New York design firm Carbone Smolan Associates, as well as content changes to reflect the magazine's new member-driven mission. "Respected writers will appear alongside guest contributors, who will be broadened to include the entire readership," Ivy maintains. "The magazine, which benefits from a seasoned staff, will retain autonomy in all editorial matters."—B.A.M.



AIR TRAVEL: Installation by Helmut Jahn.



ALUMINUM RIBS: Support airplane models.



TEAGUE NOW: Whale design for All Nippon Airlines (1993).



TEAGUE THEN: Boeing interior (1949).

Aviation Design Exhibited at Chicago's Art Institute

"Building for Air Travel: Architecture and Design for Commercial Aviation," now on view at Chicago's Art Institute, is the first major exhibition of aviation architecture and design by an art museum. It explores four aspects of air travel design—airports, airplane factories, airline interiors, and corporate imagery.

Much of the show consists of photomontages rendering each project in the same small photo, drawing, and text format. This approach implies a disconcerting equivalence between Eero Saarinen's classic TWA Terminal at New York's Kennedy Airport and Siegel Diamond's desultory air traffic control tower in Los Angeles (ARCHITECTURE, July 1996, pages 96-101).

Chicago architect Helmut Jahn's

installation encircles the visitor with arched aluminum ribs, creating a sleek, Modernist pergola from which three-dimensional objects are suspended and through which two-dimensional pieces are viewed.

Unfortunately, the overscaled presentations of the many new airports currently under construction around the world overstate their importance. Their architecture seems less likely to inspire than many earlier examples in the exhibition.

The show's airline interiors and corporate imagery offer its greatest revelations. Who remembers that noted industrial designer Walter Dorwin Teague designed Boeing aircraft interiors as early as the 1940s, and that his firm continues this work today? Or that architect Edward Larrabee Barnes designed Pan Am's classic globe icon as part of a corporate identity package im-

plemented during the mid-1950s?

By limiting the exhibition to commercial air travel, curator John Zukowsky has curiously omitted the first two decades of aviation. In that seminal period, Le Corbusier and others appropriated the engineered forms that made powered flight possible into their polemical vision of Modern architecture. While the exhibit addresses the influence of 19th- and early 20th-century railroads on early air travel structures, the obvious debt owed to aviation buildings by almost every other building type remains unexplored.

The strong affinities between the work displayed here and concurrent Modern design remains a pregnant topic for future exhibitions. The show remains on display through January 5, 1997, in the Art Institute's Kisho Kurokawa gallery of architecture.—Edward Keegan



FRIEDLANDER: "The Terrace, 'Biltmore,' the George W. Vanderbilt Estate, Asheville, North Carolina."



BURLEY: "View in the Country Park, Franklin Park, Boston, Massachusetts."



JAMES: "The Long Meadow, Prospect Park, Brooklyn, New York."

Olmsted Captured by Three Photographers

Over a century has passed since Frederic Law Olmsted designed the parks for which he became famous. Much has eroded in the interim, including the collective will to believe, as Olmsted did, that parks were a guarantee of health, happiness, and togetherness. What do we make of Olmsted's achievement now, in the twilight of the 20th century?

Phyllis Lambert, director of the Canadian Centre for Architecture (CCA) in Montreal, chose to pose that question with pictures. She invited three photographers—Robert Burley, Lee Friedlander, and Geoffrey James—to shoot not only the parks but also a selection of subdivisions, private estates, and cemeteries designed by the prolific Olmsted.

The three artists worked for seven

years, visiting the 74 sites as often as they wished. The resulting archive totals nearly 1,000 images, 160 of which are included in "Viewing Olmsted," an exhibition on view at the CCA through February 2, 1997. It occupies the third spot in the CCA's ongoing, five-part series, "The American Century."

Marking a departure for the CCA, the show is mounted without a single related drawing, plan, or explanatory text. The photographs hang on moss green walls, grouped according to project, not photographer, with only Central Park and Brooklyn's Prospect Park allotted rooms to themselves.

Friedlander's Olmsted is the picture of abundance and in-your-face voluptuousness. Sensed as weight, heft, and erotic energy, trees fill Friedlander's excited foregrounds, which play surrealistic tricks with

scale and proportion. A branch in Central Park looks to have twice the reach of any upstart skyscraper on its periphery. Without Olmsted, Friedlander might be saying, we'd be condemned to architecture.

Where Friedlander sees plentitude, Geoffrey James sees emptiness—haunted, weather-beaten stages possessed of immense dignity, to be commended for their endurance. That gentlemanly vision is abetted by James's use of the panoramic camera, which lends itself to austere, deadpan description. When he switches to an 8-by-10 to photograph Prospect Park, James puts himself into the picture, flattering Olmsted by responding to the pull of his pathways, the lure of his vistas.

"Viewing Olmsted" would be heavy conceptual going without Burley, a Canadian, who shoots in color with a keen eye for pattern,

seasonal change, and Olmsted's complex interweavings of bridges, fountains, and embankments with grass, mounds, and bark. Burley is also up for social comment. He depicts people in groups, at play, or alone with their thoughts, cupped in Olmsted's embrace.

Though the content of the images is familiar, it is nearly impossible for "Viewing Olmsted" to be grasped whole. Even Central Park, Olmsted's most famous and identifiable creation, unfolds as a multiplicity of bits defying assembly. That's both intentional and inevitable. Unlike buildings, landscapes will not permit iconic images, or as Friedlander points out: "I don't think anyone is capable of doing the definitive Central Park." It might be equally true to say that an exhibit of 160 photographs cannot begin to define Olmsted.—Adele Freedman

Smith Group, Perkins & Will Acquire Firms

Merger mania continues to sweep the architectural community this fall, as large national firms strategically expand by snapping up choice regional practices.

In October, the Detroit-based A/E conglomerate Smith Group announced plans to merge the Washington, D.C., office of its subsidiary Smith, Hinchman & Grylls with Keyes Condon Florance Architects, one of D.C.'s premier design firms. The merger, structured as a stock transaction, takes effect January 1, 1997. The combined firm, KCF/SH&G, will employ 90 people, 55 of them architects. SH&G Vice President Ted Sutherland will serve as regional office director, with KCF Senior Partner Colden Florance presiding as managing director and chair of a firmwide design committee. The goal, Florance maintains, is to meld KCF's design talent with SH&G's capabilities in project delivery. SH&G approached KCF as part

of a planned expansion. "We want to excel in design," remarks Smith Group President Arnold Mikon. The division projects 1997 revenues of \$10 million to \$12 million.

Also in October, architect Perkins & Will of Chicago acquired the 50-person Wheeler Group, a Minneapolis-based architecture and interiors firm. The Wheeler purchase marks Perkins & Will's fifth expansion in the past year, having acquired Nix, Mann & Associates of Atlanta last year, and opening new offices in Miami and Los Angeles. In the fiscal year ending September 30, Perkins & Will earned fees of \$16 million for interiors, to which Wheeler adds \$3 million annually. Wheeler, who was 1995 president of the American Society of Interior Designers, will oversee the interiors practice for all of Perkins & Will's offices. "It's going to be a good adventure," maintains Wheeler, "but it's going to be really different going from being an employer for 20 years to being an employee."—*B.A.M.*

EIFS Debacle Continues, Contractors Uninsured

Residential contractors insured by the Maryland Commercial Insurance Group are no longer covered for damage to houses clad in exterior insulation and finish systems (EIFS). The Baltimore-based company decided to exclude coverage of EIFS-related work on new liability policies issued to residential general contractors after November 1 and on policies renewed after November 15 following reports of water infiltration in EIFS-clad houses in New Hanover County, North Carolina (ARCHITECTURE, May 1996, pages 251-253). EIFS manufacturers contend water damage is the result of poor detailing and installation. However, critics believe the cladding systems are inherently flawed because they typically do not incorporate drainage provisions. "We're not trying to eliminate the use of EIFS," explains Maryland Casualty spokesperson Sarah Adams. "We're just trying to protect our builders."—*A.C.S.*

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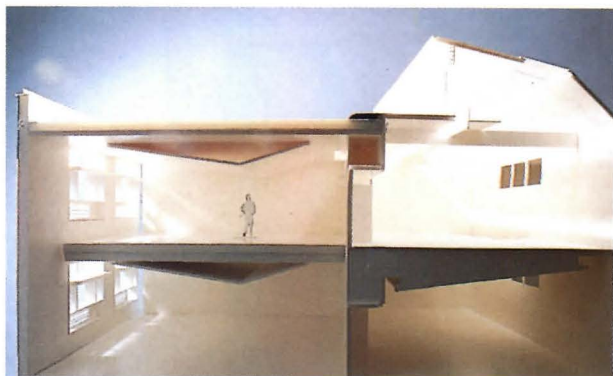
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Four Projects to Show Energy Savings

For the last 15 years, the Rocky Mountain Institute, a Snowmass, Colorado-based nonprofit organization, has furthered the cause of environmental responsibility. Now the green think tank is trying to promote energy efficient buildings by demonstrating that a greater investment in design will reduce long-

term operating costs. The institute is proving this point by providing free technical support for energy efficient design to the architects of four model projects. Participants will receive \$20,000 worth of energy performance calculations by San Francisco-based Eley Associates, an architecture firm that specializes in energy modeling. Although clients must pay higher design fees for projects such as these, the institute

points out that operating costs will be lower over the life of the building.

Three projects have already been chosen by the institute through a call for proposals: A 1.6 million-square-foot office tower in New York City designed by Fox & Fowle Architects (ARCHITECTURE, August 1996, page 50); a 275,000-square-foot state office building in Austin, Texas, by local firm Page Sutherland Page; and a 243,000-

square-foot high school in Portland, Oregon, by BOORA Architects.

In addition, the Rocky Mountain Institute and the U.S. General Services Administration may team up to develop a new courthouse. Rocky Mountain Institute Project Leader Gunnar Hubbard explains that the initiative "will put us in partnership with a range of clients, from the federal, state, and local arenas, as well as the private sector."—N.C.



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**Koolhaas Designs
New York Gallery**

Dutch architect Rem Koolhaas entered the U.S. architectural scene this year with a vengeance. Following the hyperactive promotion of his 1,300-page book, *S,M,L,XL*, Koolhaas won the coveted commission to master plan entertainment giant MCA's 415-acre Universal Studios complex in Los Angeles. *Vanity Fair* included the architect in its 1996 Hall of Fame, alongside such luminaries as Christopher Reeve, Muhammad Ali, and the cast of "Rent." And in October, the architect completed his first project in this country, the Lehmann Maupin Gallery in New York City's SoHo district, undertaken with local firm Kapell and Kostow Architects.

It figures that the 52-year-old architect's first completed stateside work would be in Manhattan; Koolhaas first received recognition in this country for his 1978 paean to the Big Apple, *Delirious New York*. Although the new 3,500-



LEHMANN MAUPIN GALLERY: Koolhaas's renovation of SoHo warehouse.

square-foot storefront gallery merits the addition of an "XS" category in the architect's monograph, Koolhaas was not daunted by its limited square footage and budget. "We are interested in architecture at all scales. It was interesting for me to do something really small," the ar-

chitect maintains, adding that the Lehmann Maupin Gallery is a work in progress and he will be consulted on each new gallery installation.

Indeed, showcasing the austere gallery's progressive exhibitions, including works by artists such as Jeff Koons and David Salle, seemed



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foremost in the architect's mind. It is questionable, however, whether budget or esthetics motivated Koolhaas's architectural reticence. The gallery's most notable feature is a pair of 16-foot-high walls, supported on rollers, which can be moved across the width of the gallery to divide it

into two smaller spaces. Plywood floor and ceiling panels are removable. These features make the gallery, according to cofounder David Maupin, "extremely adaptable to a variety of needs." For instance, in "Moving Structures," the first show at the gallery, a floor panel has been

removed for the temporary installation of a sculpture by artist Tony Oursler. An oversized apple rests on an exposed joist; eerie voices and red light emanate from the opening in the floor.

What appears to be the gallery's most interesting architectural ges-

ture, a mock elevator accompanied by ascending and descending voices, is actually just another temporary installation by artist Richard Artschwager. In creating a simple, flexible container for art, Koolhaas allows the art to literally upstage the architecture.—*Ned Cramer*

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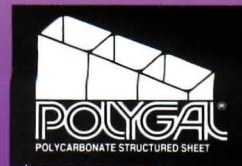
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Chicago Conference Targets HUD Reforms

Less than two years after the U.S. Department of Housing and Urban Development (HUD) seized control of the Chicago Housing Authority, a group of 17 national and local ex-

perts on public housing gathered in Chicago for a day-long conference titled "Sheltered By Design." The October 22 conference marked the opening of an eponymous exhibit cosponsored by the Chicago Architecture Foundation. Both the symposium and exhibition were based

on a 1995 series of articles by *Chicago Tribune* architecture critic Blair Kamin that examined the state of public housing in the city.

Keynote speaker Marc Weiss, special assistant to HUD Secretary Henry G. Cisneros, discussed numerous recent examples of HUD

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public housing that demonstrate the agency's recently adopted New Urbanist affiliation. Weiss argued for a "Where's Waldo?" paradigm, blending public housing seamlessly into the surrounding city fabric. But curiously, many of the examples he cited, including Detroit's Victoria Park, Cleveland's Central Commons, and the South Bronx's Charlotte Gardens, all suffer from an odd discontinuity of scale, substituting the loose spatial patterns of suburbia for the tightly defined streets indigenous to urban quarters.

Oakland-based architect Michael Pyatok delivered a sharply worded diatribe lamenting the priority of federal investment in sticks and bricks over jobs and education. Pyatok noted that the quest for mixed-income development in today's public housing constitutes a double standard. Since homogenous affluent suburbs are considered generally successful communities, why is economic diversity considered so necessary in urban locales?

Gayle Epp, a Boston-based plan-

ning consultant for public housing, emphasized that residents must be included as "informed decision makers." Meanwhile, Martha Marshall, a Chicago public-housing activist, assailed the panel's organizers for not including a single resident of public housing on the dais. Architect Chris Lee, of Johnson & Lee, who is planning the redevelopment of Chicago's Henry Horner Homes and Cabrini-Green projects, noted of the 175 person audience, "I counted 11 black faces in here."

The conference sent the clear message that the work of transforming the face of public housing in the United States is just beginning. "Architecture is not the silver bullet," Kamin maintains. "But while architecture cannot solve social problems by itself, it surely can be part of the solution." The exhibition, which will move to Washington's National Building Museum next year, remains on view at the Chicago Architecture Foundation's Santa Fe Building gallery through February 7, 1997.—Edward Keegan

Chirac Announces Plans for New Museum in Paris

Seventeen months into his administration, French President Jacques Chirac has announced plans for his first major architectural *grand projet*. Just as Georges Pompidou created the Pompidou Center, Valéry Giscard d'Estaing the Orsay Museum, and François Mitterrand the Louvre pyramids, Chirac is commissioning the Museum of Civilizations and Early Art. This institution will occupy a prestigious central site in Paris, directly across the Seine from the Eiffel Tower, in the Passy wing of the soon-to-be-renovated Palais de Chaillot. This quasi-Fascistic, double-winged building was erected for the 1937 Paris Exposition.

A 12-member presidential commission will develop the architectural program and expects to announce an international design competition toward the end of 1997. The 31,000-square-meter museum will likely include spaces for permanent collections, temporary exhibits,

a video archive, library, auditorium, and research laboratories for anthropology, prehistory, and ethnology. It will unite the collections of the Museum of African and Oceanic Arts with the ethnology section of the Museum of Man.

The proposed museum will finally give "early art its just place in the museums of France," says Chirac, who has long opposed the near exclusion of non-Western art at the Louvre, which shows only European work through 1840 and Greek and Egyptian antiquities. Heralding the museum's projected opening in 2001, Chirac has ordered a large-scale installation in the Louvre's Salle des Sessions to preview 150 to 200 of the civilization museum's most impressive pieces.

Opponents of Chirac's plan have criticized the breakup of the Museum of Man into disjointed parts and have raised arguments about the value of art versus cultural artifacts. Nevertheless, the project is proceeding, its architectural impact yet unknown.—Sarah Amelar

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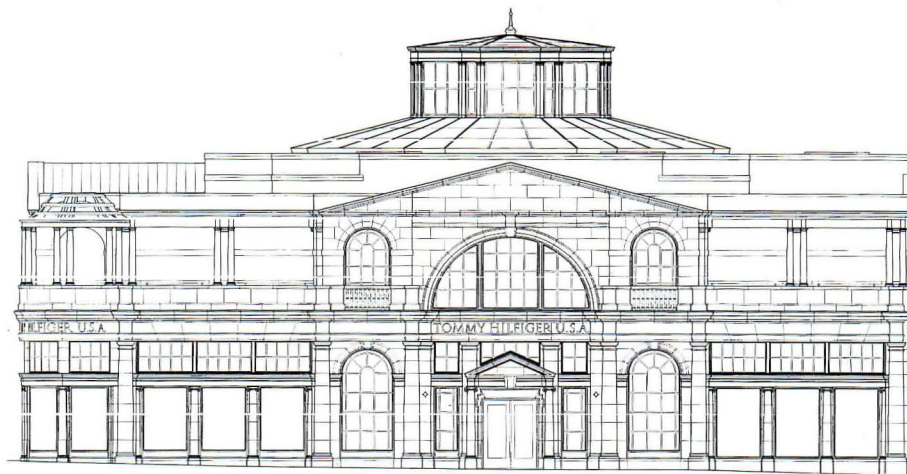


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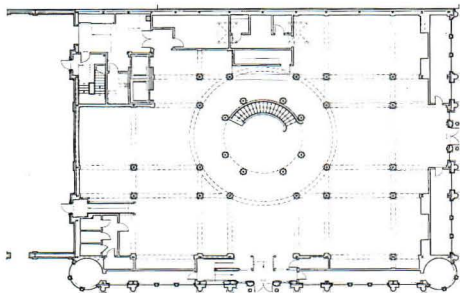
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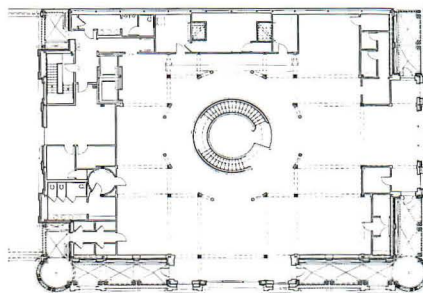
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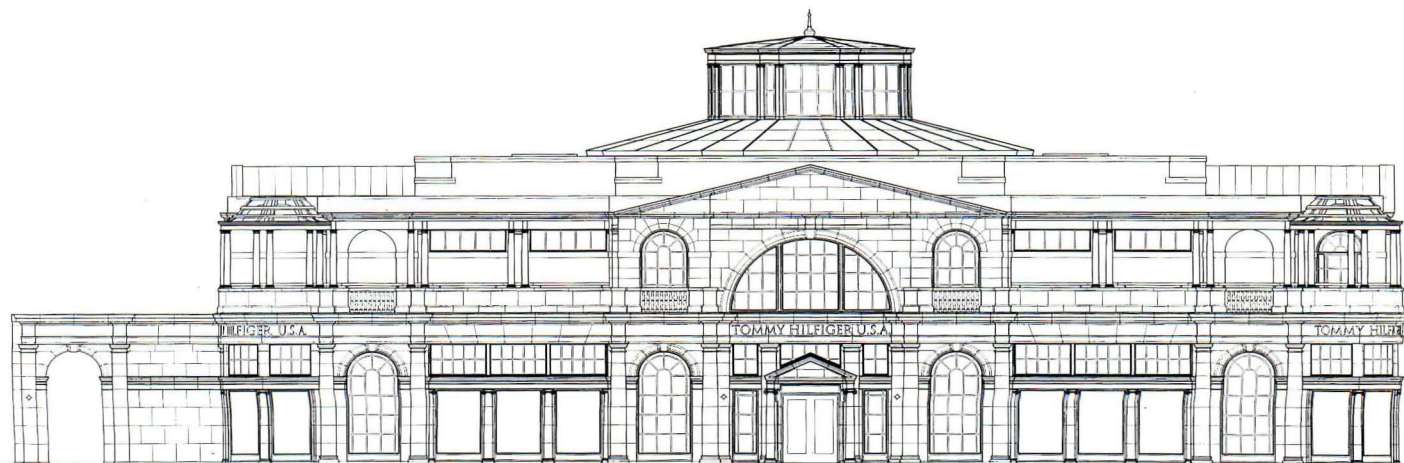
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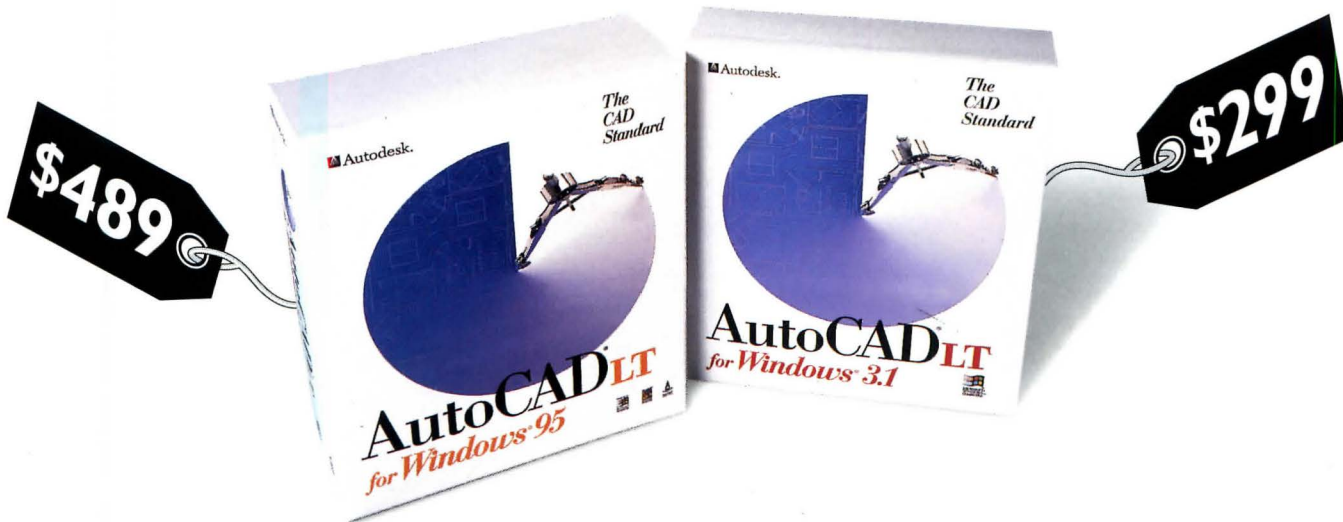
NORTH ELEVATION

Tommy Hilfiger Store
Los Angeles, California
Allan Greenberg, Architect

Tommy Hilfiger, the fashion designer famous for preppy clothing, is opening a new store on Rodeo Drive in Beverly Hills. In keeping with his conservative chic, Hilfiger commissioned architect Allan Greenberg to design the 24,000-square-foot building on a site west of Richard Meier's Museum of Television and Radio (ARCHITECTURE, November 1996, pages 100-107).

Like Meier's museum, Greenberg's store will be clad in light-colored masonry and organized around a rotunda. But the similarities end there. Greenberg punctuates his two-story, Doric facades with pediments and arched windows. On the second floor, terraces will be shaded by bougainvillea-planted pergolas.

While inspired by 19th-century shopping arcades and greenhouses, Greenberg rendered the facades in a thoroughly contemporary material: fiber-reinforced concrete. The store's interior is organized on a nine-square plan with a domed stairwell at its center.—N.C.



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Pariser Platz 3
Berlin, Germany
Frank O. Gehry & Associates

A new building by Frank Gehry breaks ground this month on the Pariser Platz in Berlin, on a site to the east of the Brandenburg Gate, and adjacent to Moore Ruble Yudell's United States Embassy (ARCHITECTURE, April 1996, pages 131-137). Gehry's 215,000-square-

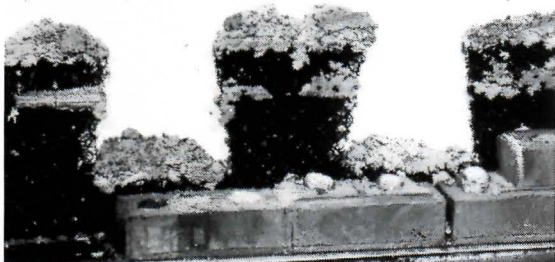
foot building incorporates apartments and the Berlin headquarters of the DG Bank.

Local design codes, intended to preserve Berlin's prewar character, dictate the architect's conservative limestone Pariser Platz and Behrenstrasse facades with their regular window openings. These regulations, however, do not extend to the bank interior, where Gehry inserted a sculptural, steel-clad conference

room within a 200-by-80-square-foot atrium with an undulating glass ceiling and floor. A steel-and-glass rooftop lounge curves around the southern end of the atrium.

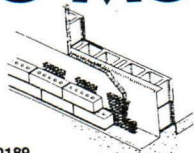
The building rises from five stories on the square to 10 on its opposite, southern face. Forty residential units are stacked at the south end of the building and are separated from the office block by a toplit gallery with a reflecting pool.—N.C.

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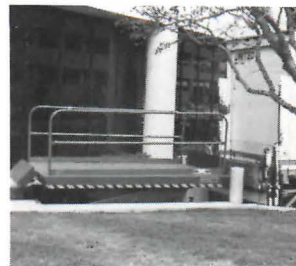
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ARENA'S TWO FACES: Arena's Broad Street facade (top) rivals south facade (bottom) for sheer banality.

An ungainly arena replaces an historic stadium, and architectural integrity is lost.

Ellerbe Becket Replays Sports Formula in Philly

Ellerbe Becket's new CoreStates Center in Philadelphia looks as if it was lifted off the drawing board of an overeager first-year architecture student and beamed down into a parking lot next to Interstate 95. The center has all the latest, trendiest moves—a sweeping curve here, a vault there, and a glass parallelogram—poorly amalgamated into a clumsy alien mothership of a building. Its brick-clad corners appear tacked onto the edges, as if someone drove in from Independence Mall at the last minute shouting: "This is Philadelphia! We gotta have brick!" These elements are common among many of Ellerbe's new arenas (ARCHITECTURE, February 1995, page 47), and we can expect to see more of them in cities from Buffalo to

Bangkok through the year 2000.

Located next to CoreStates Spectrum arena (1967), and across Pattison Avenue from Veterans football stadium (1972), the new arena for ice hockey and basketball is the latest link in a 100-acre sports complex on Philadelphia's south side. An ambitious master plan called for linking the new arena to the Spectrum with a massive entertainment complex—the nation's first sports mall. But the mall awaits funding, most likely forever.

CoreStates Center caters to the fans, but not the city. The arena is the first with interactive video screens along the concourses, where fans call up great moments in local sports history just by touching a screen. Its 21,000 seats—only 3,000 more than the teams' former home in the Spectrum—are the type that count: 14 club boxes, two super-

boxes, and 126 luxury suites will help pay the premium salaries of the players and line the owners' pockets.

The new arena tries—but fails—to fill the shoes of a legend. Grand JFK Stadium, originally Philadelphia Municipal Stadium, opened on this site in 1926. The horseshoe-shaped open-air complex hosted the annual Army-Navy football game from 1936 to 1979, and numerous outdoor concerts, including LiveAID (1985), the fund-raiser to aid Ethiopian famine victims.

The elegantly proportioned, 100,000-seat complex proved the futility of designing lasting buildings for sports; it was summarily destroyed to make room for Ellerbe Becket's ugly behemoth in 1992. Fifty or 70 years hence, CoreStates Center may suffer a similar obsolescence. Philadelphians should be so lucky.—Heidi Landecker

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Expand Architects' Leadership

The profession must shed narrow, discipline-bound thinking to influence public policy.

How can architects assume more influential roles in society? Although leadership has been explored in nearly 5,000 trade books and untold popular writings, the process of wielding influence is still hazy and paradoxical. After all, Mahatma Gandhi and Martin Luther King were charismatic, persuasive leaders, but so were Benito Mussolini and Adolf Hitler. Effective uses of authority can harm as well as benefit society.

More ambiguities arise when you factor in the domain of leaders' influence. Consider Jane Jacobs and Peter Eisenman, leaders within the fields of city planning and architecture. Jacobs' 1961 book, *The Death and Life of Great American Cities*, affected citizens and policymakers as well as city planners and designers, while Eisenman's influence rests primarily with architects. Can Jacobs and Eisenman be considered equally valid leaders, or does leadership imply a broad constituency? I maintain that the highest forms of leadership also engage a wide following. But architects are particularly disadvantaged in attracting such an audience because concerns about the designed environment are almost entirely absent from popular discourse.

For example, although about half of all U.S. senators are attorneys, not one is an architect. The public recognizes that laws make our collective life possible but is apparently unaware of the role of the designed environment in our quality of life, and even our survival, as a nation. How might architects expand the sphere of their influence and focus the public's attention on the designed environment? Understanding what leadership is—and is not—is a crucial first step.

The concept of leadership was most clearly articulated in 1869 by an English scientist, Sir Francis Galton, who proposed that leaders inherit a personality and appearance that commands respect. So accepted was this "great man" theory that it was not until the 1930s that people began to conceive more democratic relationships between leaders and their followers. In his acclaimed 1978 book,

Leadership, James MacGregor Burns, who has written extensively about U.S. political figures, differentiates intellectual leadership from that which relies on having an important role or title. Intellectual leadership—which can be provided by popular songwriters or storytellers as well as by academics and politicians—is the ability to bring about personal and political change through the clarity of one's thinking.

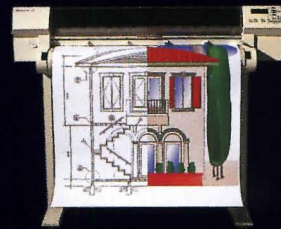
The architect's role in society has changed over time. Before the Enlightenment, artisans were obliged to realize the visions of monarchs and priests. This servile relationship was disrupted when authority was democratized and artisans began to position themselves as "geniuses" with inherent talents. Unfortunately, the concept of inherited specialness resulted in an avant-garde that was adversarial to mainstream values. Walter Gropius led this role transformation by challenging historicism and government authority while emphasizing the designer's autonomy. Gropius's Bauhaus sanctified the talented (and typically white male) designer by framing stylistic preferences as "objective" criteria for good design, and then berating the public's inability to recognize these esoteric principles.

The chasm opened at the Bauhaus between architects and the public remains today. Practitioners frequently talk about the need for "educating" clients, and academics often complain that university administrators do not "understand" design. This holier-than-thou attitude precludes the possibility for leadership, since leaders and followers must be linked by mutual purpose. Even though many architects use more collaborative forms of management among themselves, a self-imposed gap between architects and the public limits the domain of our influence. This separation is further aggravated since the actual users of buildings are typically not involved in the design process.

A few architects, like Harvey Gantt, who served as mayor of Charlotte, North Carolina, and former U.S. Representative Dick

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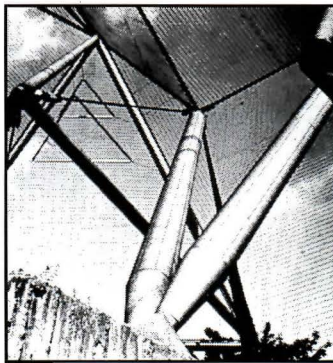
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Swett (D-N.H.), have achieved political prominence through the breadth of their concerns. (Gantt and Swett both ran unsuccessfully for U.S. Senate this year.) However, for the most part, practitioners are unable to apply their craft to such urgent socioecological concerns as homelessness and inadequate housing, environmental degradation, and the safety of our city streets. Many architects serve the interests of real estate investors, their practices reflecting a contractual model of commerce rather than the principled loyalty of guardianship.

Architectural educators suffer from the same deficit, as pointed out by the Carnegie Foundation's 1996 report on architecture education. Authors Ernest Boyer and Lee Mitgang recommend that student design problems should "routinely include such matters as safer streets, promoting mass transit instead of cars, and creating inviting gathering places that foster community instead of social isolation." In my memory, such problems—often characterized as idealistic—have long been on students' drawing boards. For instance, students have presented countless proposals that preserve the character of small towns to the applause of local officials in my community, while these same officials continue to approve developments that will destroy the area's cohesiveness. Perhaps project-related discussions are ineffective because they focus on problem-solving, not a fundamentally changed socioecological outlook.

I propose that intellectual leadership—leadership that transforms values and behaviors—is necessary to bridge that gap between architects and the public while inserting environmental concerns into popular discourse. Intellectual leadership involves "why-to" thought processes that are socially critical, holistic, and multidimensional, rather than the "how-to" problem-solving that dominates architectural practice and education.

Like everyone else, architects often mistake any exceptional performance for intellectual leadership. As I have defined it,



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Opinion

intellectual leadership focuses on uplifting the mindset of a substantial constituency, not on being a central figure among a small group of special private interests. In architects' case, intellectual leadership would facilitate citizens' understanding of—and struggle against—the inequalities embedded in the making of places, such as locating the biggest corporations with the best jobs in areas where there is no public transportation, which effectively excludes people who don't own private cars.

While designing and constructing buildings necessarily involves architects in commerce, an intellectually expansive profession would assume guardianship of the higher ideals of placemaking, which includes enabling and facilitating the public—not just a particular client—in building healthy, safe communities. David Orr, an ecologist who has written books on environmental responsibility, puts it this way: "The process of design and construction is an opportunity for a community to deliberate over the ideas and ideals it wishes to express and how these are rendered into architectural form."

Since practice and academia are entrenched in discipline-bound thinking, an alternative forum may be needed to question the social and ecological values expressed through architectural form—a venue that would bring together creative thinkers from a variety of professional and nonprofessional arenas, such as ecologists, economists, home-makers, teachers, and social workers, to name a few. These thinkers would relinquish the paralyzing self-interests and language of their particular disciplines or constituencies to unravel the particular social dilemmas related to place—to reconceive the designed environment as a collective, rather than private, property in this era of increasingly scarce resources. A sustained multidisciplinary dialogue on the designed environment would need to be intergenerational, because youth are often idealistic and less constrained by social norms. And it should be democratic in



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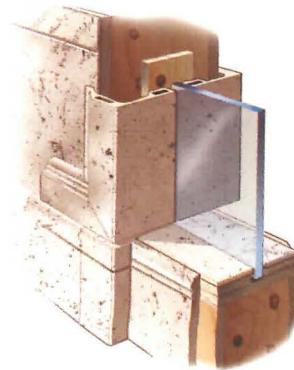
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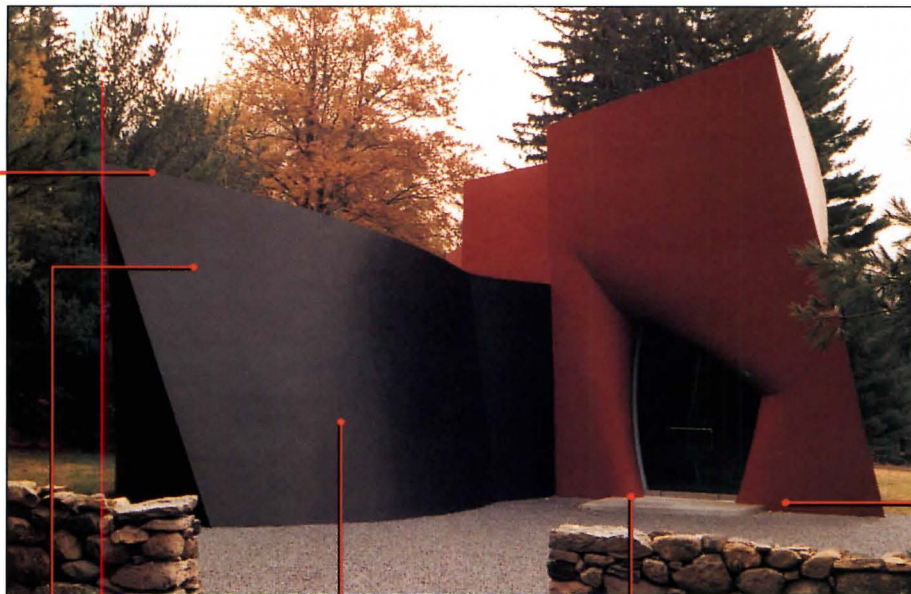
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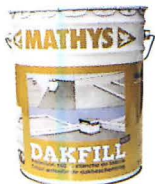


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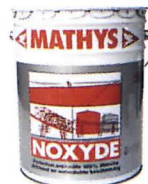
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its own organizational procedures, reflecting the best practices of socially uplifting influence. Such a group, for instance, might begin as an informal conversation on the Internet. Depending on how efforts were framed, a more formalized group might be sponsored by a foundation offering support in such areas as leadership, environment, or community participation and citizenship.

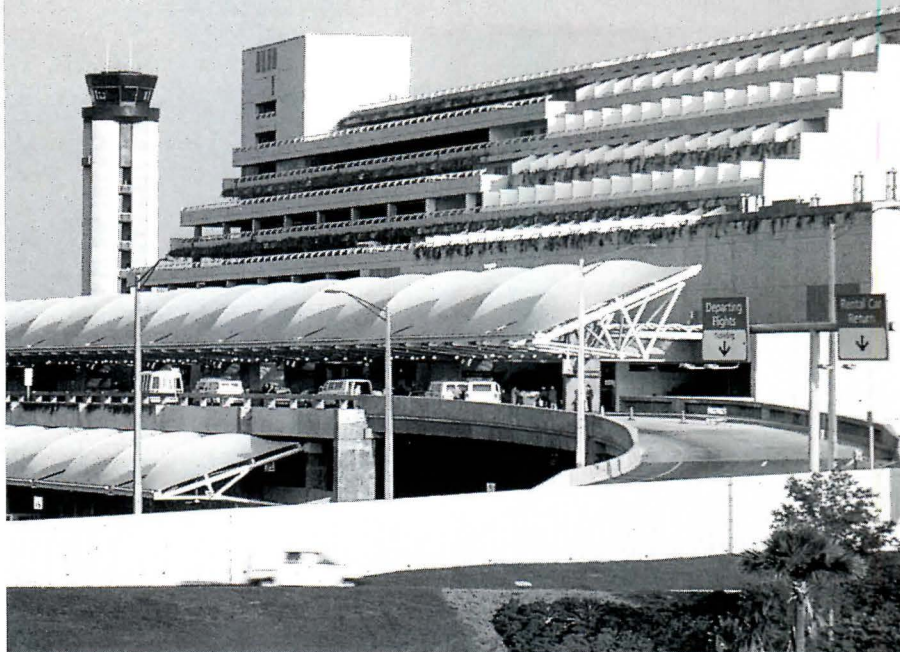
I can't think of a better time for architects to step forward and engage the public in a dialogue on socioecological issues. Most people are reminded daily of unmet human needs in the face of capital shortages, population spiral, environmental degradation, and heightened violence and greed. Public life is increasingly compromised by the need for all sorts of high- and low-tech security devices owing to the lack of civility among disaffected persons. And our mobility may soon be restricted by this increasing control and the rising cost of energy.

Since the designed environment—the intentional patterning of human activity on Earth—is at the heart of these issues, architects are in a vital position to spearhead intellectual leadership. To paraphrase David O'Fallon, director of the Minnesota Center for the Arts in Minneapolis, whose love for the arts equals his passion for nature: We now live almost totally in the designed environment, changing over several generations from spots of civilization surrounded by wilderness to spots of wilderness engulfed by civilization.

As stewards of the environment, architects are urgently needed as intellectual leaders who might help formulate new visions of place, and clarify the actions that will preserve the nation's quality of life for generations to come.—*Sharon E. Sutton*

Sharon E. Sutton, FAIA, is a professor of architecture and urban planning at the University of Michigan. She studied leadership while participating in the W.K. Kellogg National Fellowship Program.

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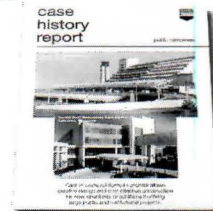


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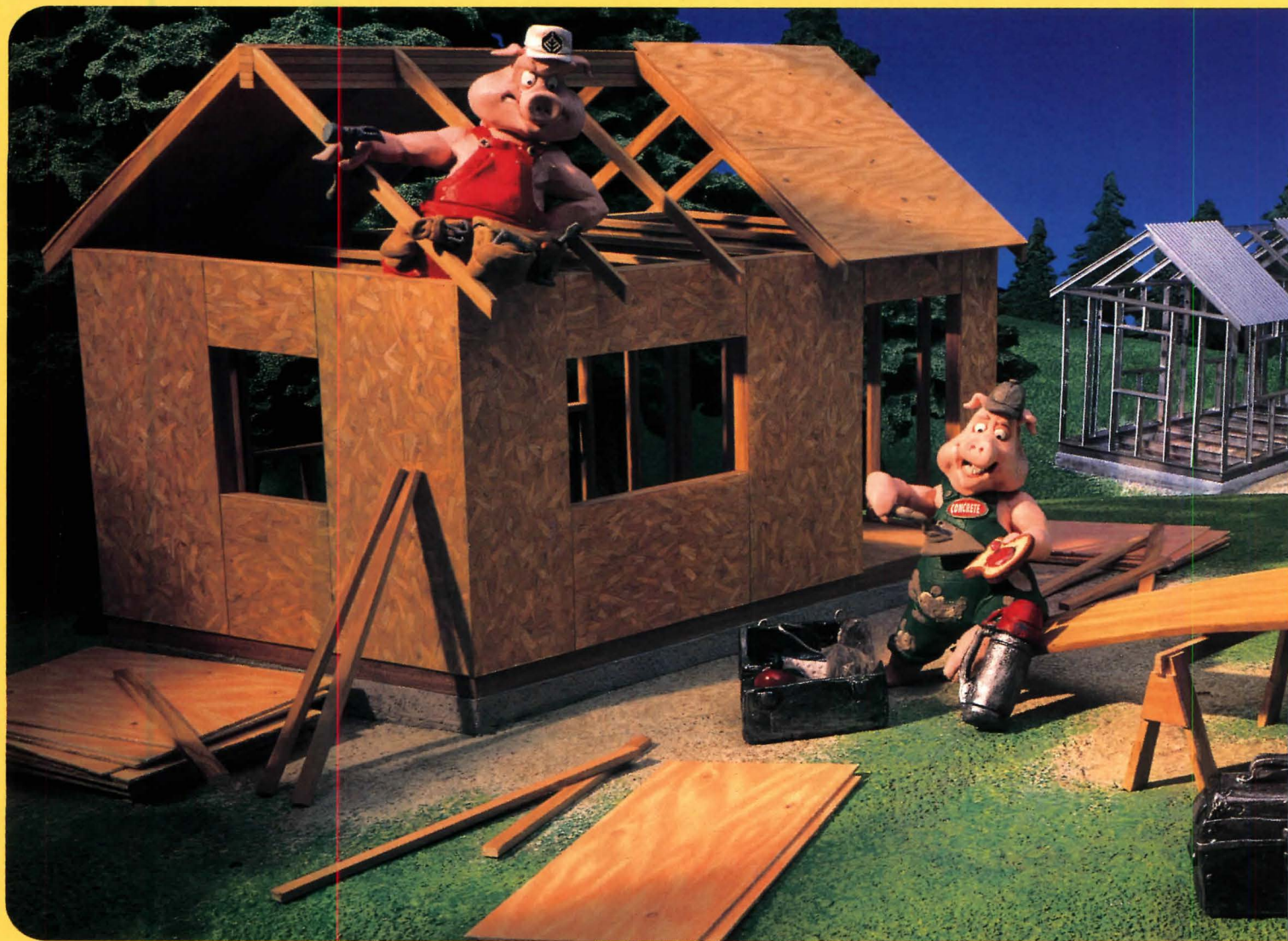


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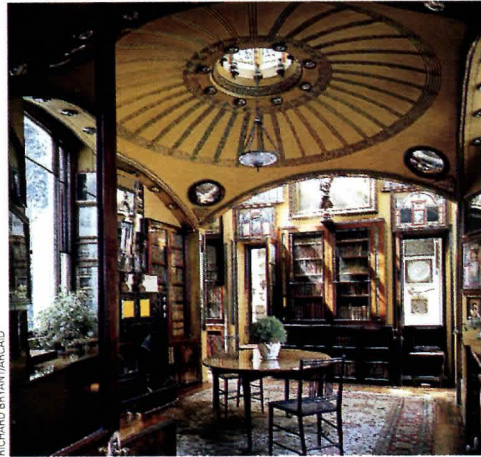
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Which building material would



Once upon a time there were three little pigs. (Great-grandchildren of the ones you used to know.) Each trotted off into the world to build his home and fortune. The first two pigs thought only of themselves and little of our planet and chose to build with steel and concrete. They didn't care that it took nine times more energy to make a steel stud than a wood stud. Or that concrete production leaves five times more solid waste than wood.

Meanwhile, the third and wisest pig chose to build with a renewable building material—wood. Just knowing wood was replenished made him feel good.



RICHARD BRYANT/ARCAD

For an architect, the task of designing one's own house is so fraught with expectation and risk that many architects simply occupy an existing structure for which they take neither design credit nor blame. The house built by an architect from the ground up represents a particular design challenge and opportunity, but when finished, offers no place to hide. The freestanding house is more difficult than a tattoo to erase from one's reputation. It had better be good.

Architectural history is marked with houses designed by architects for themselves—John Soane's London townhouse (1808-1837, pictured above),

Architects' Own Houses

Victor Horta's house and studio in Brussels (1898), and Konstantin Melnikov's house of interpenetrating cylinders in Moscow (1929). But it was really the new architectural frontier of the American suburb, opened by the streetcar, that expanded the phenomenon. Frank Lloyd Wright's studio and house in Oak Park, Illinois (1889), now restored as a Wright shrine, and Charles Greene's two-story shingled bungalow (1902), set among live oaks and overlooking the Arroyo Seco in Pasadena, are the most notable architects' houses in the new suburbs. Previously, architects' houses—like everyone else's on a traditional city street—were usually confined to such common building types as the townhouse and rowhouse, and, with the exception of projects like Soane's house, did not lend themselves to radical innovation.

The suburbs liberated architects from party and street walls, and designers found themselves pioneering freestanding buildings in a new environment that was neither city nor country but something in between: There was no place like

BELOW: Wright's Oak Park house and studio presaged Taliesin compounds.
CENTER: Schindler's Los Angeles house witnessed social experiment within tilt-up concrete walls.
RIGHT: Eameses' kit of parts inspired British High-Tech movement.



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home to push the envelope and develop a signature.

Particularly after World War I, as a Modernist era intent on invention rather than convention gained steam, architects gradually turned their houses into laboratories. Unlike most commissions with client briefs that tethered architects on a short leash, the house built by the architect for himself could be shaped as a total design from landscaping to structure, materials, decoration, down to the towel rack. It could also entail risk. The architect could tackle the larger issues of the profession and even aim for history.

Wright went on from Oak Park to build Taliesins East and West, houses that were, and remain, talismanic stations of the cross along his unusual and brilliant career. His compounds (which also functioned as schools) are among the nation's cultural treasures, but there are other treasures far less monumental than his Olympian retreats, some built on a wish and a nail.

The brave experiment of R.M. Schindler's Kings Road House in Los Angeles (1922) was no less significant than Wright's Taliesins, even with its modest scale. Trained in the spatial concepts of both Wright and Adolf Loos, Schindler wove an intricate framework from simple wood members nested among cheap, tilt-up concrete walls pinwheeling into roomlike yards. One kitchen served two families. Each husband and each wife lived in separate but equal studios that gave spatial parity to man and woman (though the women still did the cooking).

Designed for a progressive lifestyle, the house remains a road map of the social history of the time, as the outdoors became an integral part of the floor plan, reflecting a changed attitude toward nature and socializing. The couple would simply set up planks on a pair of sawhorses outside by the fireplace for informal soirées still famous for the intersection of radical politics and art. The new architecture and the new lifestyle designed into its plans perfectly framed and encouraged these evenings. Now a designated local and national landmark, the Schindler house is open to the public.

Schindler was never mercenary about using his house as the instrument of his career, but savvy architects practicing in Los Angeles

soon realized that a distinctive thesis house could double as a calling card. In 1933, in the Silverlake district, Schindler's former colleague Richard Neutra built his own hill-climbing house. A machine in the garden, this "health house" was used to promote Neutra's architectural attitudes as well as professional wares: He not only practiced what he preached but also advertised it, using his own home to exemplify his philosophy of living organically with nature through the house. Neutra simply combined Wright's organic architecture and Modernism's machine esthetic and called it his own.

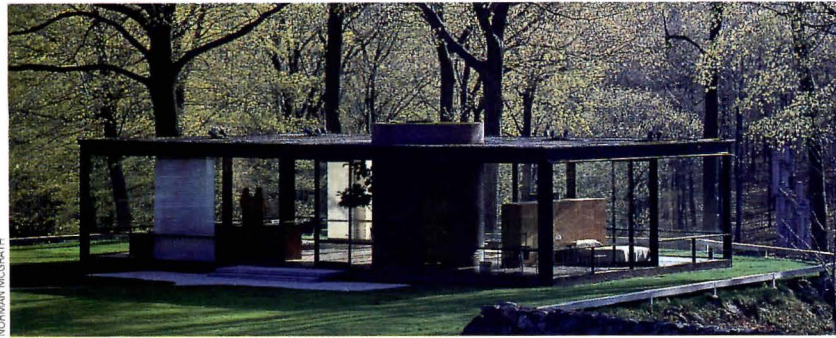
Besides jump-starting careers, houses designed by architects level the playing field. A single-family house, whether equipped with a marble-clad elevator or built on telephone poles, is still a house: Any struggling architect with a piece of land and a loan can build a house that might be compared to one designed by an established architect who normally does high-rises. Holding one house up to another, apple to apple rather than apple to skyscraper, has been a way of comparing talent and ideas without allowing relative status and scale to cloud the comparison. Like open competitions, the architect-designed house has been a democratizing force within the profession, giving such unknown or underexposed architects as Eric Owen Moss and Pierre Koenig greater visibility at an early stage in their careers.

The most experimental of architects' houses not only establish reputations but also advance the field. In 1938, Walter Gropius's crisply tooled house in Lincoln, Massachusetts, set on local boulders, conveyed the message that the Bauhaus was transplanted to America and could be regionally adapted. With their 1949 house in Pacific Palisades, California, Charles and Ray Eames galvanized thinking about buildings constructed of standardized parts, inspiring no less than British architects Norman Foster and Richard Rogers, who visited the house while still students at Yale.

Several miles away and several decades later in 1979, Frank Gehry made an antithetical point when he created a one-off house as a collage of art installations grafted onto an existing bungalow. The house proved a litmus test of the marketability of Gehry's abstract designs: The architect could escort prospective clients through to show what

BELOW: Johnson's iconic Glass House inaugurated additions to his New Canaan estate.

RIGHT: Gehry's remodeled bungalow in Santa Monica is a work in progress.



they could anticipate in a Gehry creation. Recently, Gehry remodeled his own remodel—his wife Berta was fed up with the asphalt kitchen floor, loose undercounter cabinets, and bare light bulbs—and demonstrated that the house always remains a work in progress. He is now planning a vacation-retirement retreat in Boulder, Colorado.

While most of the conspicuous action was in the suburbs, a few architects in the city managed to push the envelope and transform the given urban typology of existing structures. In New York City, Paul Rudolph exploded the top of a rowhouse with a terraced expansion, breaking the building's highly confined typology in a shock of complexity that spills over the walls like a garden of glass and steel. The spatial transparency tricked at least one guest into resting a wine glass on what he thought was a clear acrylic shelf only to see it drop three stories through a transparent forest of cantilevered parts.

Of course, the complex that best chronicles a life in architecture belongs to Philip Johnson, who famously launched his career in 1949 with the Glass House, which proved to be the public relations bonanza of all architectural time. (The architect amuses himself by ranking critics on how well they have written about the house.) Because he cleverly built pavilions rather than one big house, Johnson could and did periodically add to the estate, which as a repository of that restless, easily bored imagination now rivals Baskin Robbins for flavors. His Zaha Hadid-inspired gatehouse (ARCHITECTURE, November 1995, pages 74-79) is the newest taste sensation.

Charles Moore's imagination was as restless as Johnson's, but much more original and peripatetic, and he molted houses whenever his imagination and commitment to a place outgrew them. A half-dozen houses in California, Connecticut, and Texas record his progress with an intimacy that makes them a kind of diary. In 1962, the simplicities of Modernism already turn vernacular in his wood pavilion in Orinda, California, and by the time Moore makes his last move, to Austin, Texas, in the mid-1980s, he reveals himself in a daring plan (with an oval scooping out the built site) and wry details to be both a master of the bold gesture and a miniaturist. The interiors, much like those of Soane's house, are a cabinet of wonders, filled

with toys and folk art collected during his extensive travels.

Moore infected his associates with the house-building bug. Buzz Yudell of Moore Ruble Yudell and his wife, Tina Beebe, remodeled a scant 500-square-foot house in Santa Monica in the early 1980s and carved a sweeping curve through a living room reached by overscaled steps. Several years ago, the couple built a rambling villa on the slopes of Malibu. In the first project, they made a small house grand, and in the second, a grand house intimate. Even the well-publicized Moore was surprised at the surfeit of coverage the formally understated Malibu house attracted. "Something about that house," he once muttered through his mutton chops. Highly photogenic, the house, whose masses step up the hillside, is also very livable and settles serenely and gently into the landscape.

Still, the architect's house sometimes falls short. There is always the cautionary tale of the house too ambitious for the young architect's reach, crammed beyond bearing capacity with ideas and forms. Architects should at least wait until the time is right and they have something to say. And not incidentally, spouses should be consulted: perhaps Thom Mayne should have warned his wife, Blythe Alison-Mayne, that there would be no door on the only bathroom in their Santa Monica house before she looked at the blueprints. The building process is notoriously stressful for clients, so kid gloves must be used with one's own major squeeze. (But don't worry: the spouse seldom wants the architect's house in a divorce settlement.) Once the dust has settled, children will grow up thinking it's normal for perfect strangers to ring the doorbell for a tour.

And then there is the design that is so adventurous—like Gehry's—that the house has very limited buyer appeal. For those architects who design themselves right out of the esthetic range of the conventional market, comfort can be taken in the fact that they possess the soul of an artist, and *dared*. In a field where enthusiasm is too frequently dampened by bankers, clients, neighbors, codes, and other constraints coming from every direction, these distinctive and sometimes cantankerous, off-by-themselves houses often turn out to be the designs that truly matter.—Joseph Giovannini

Norten House
Mexico City, Mexico
TEN Architects



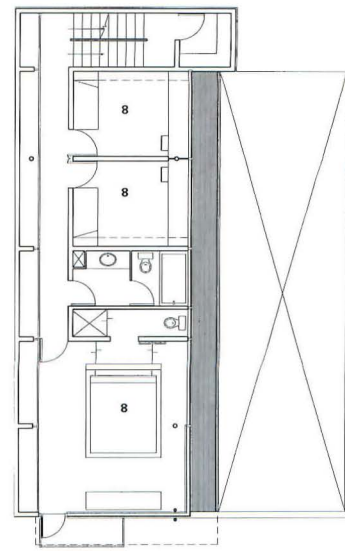
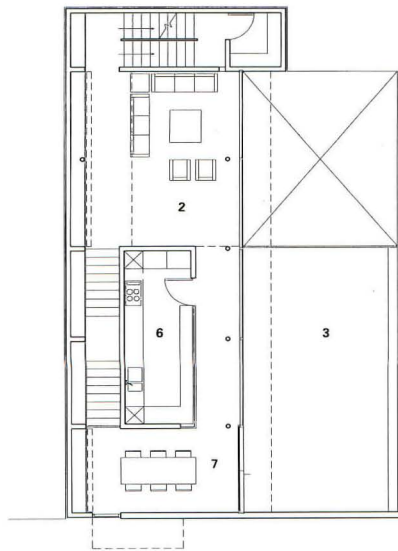
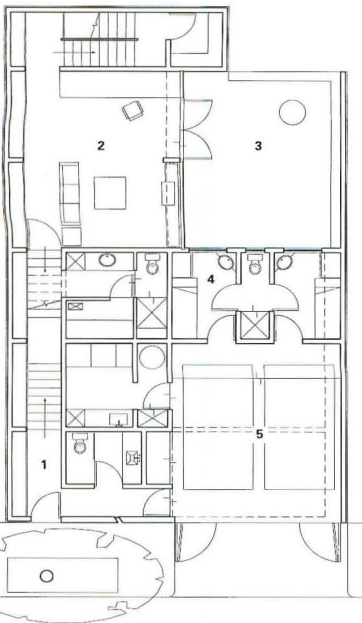
THESE PAGES: View from second-floor terrace of Norten house shows kitchen (left) and living room (right).
FACING PAGE: Poured-concrete street facade incorporates two-car garage and balcony off master bedroom.

Mexican Modern



For more than a decade, new Mexican architecture has been polarized between those designers owing a debt to Luis Barragán—architecture predicated on the wall—and a more abstract Modernism of great formal exuberance best summed up by the late Los Angeles architect John Lautner when he said: “Mexican architects aren’t afraid of architecture.”

Enrique Norten is one of the primary exponents of the second camp, forging a design approach based on the proliferation of highly differentiated tectonic components within the same building. Most notable is Norten’s Televisa headquarters (ARCHITECTURE, December 1995, pages 76-83) in Mexico City—a freely assembled composite of disparate forms, which respond to the specifics of program and site conditions. The 42-year-old architect’s figural Modernism also escapes regionalist overtones by embracing industrial technologies, such as variable-section steel beams, glass canopies, and zinc wall panels,



- 1 ENTRANCE HALL
- 2 LIVING AREA
- 3 PATIO
- 4 SERVICE AREA
- 5 GARAGE
- 6 KITCHEN
- 7 DINING AREA
- 8 BEDROOM

GROUND-FLOOR PLAN 1/6.7/2m

SECOND-FLOOR PLAN

THIRD-FLOOR PLAN

which imply that Mexico is not restricted to local craft but is part of a world economy.

Norten recently completed his own house in Mexico City, and the design at first appears out of character: the 300-square-meter building is simple and even sober. Built in concrete on an orderly grid and fitted with plate glass simply framed in metal, the house shows none of the spatially rich, materially diverse sculptural qualities of his other work. It is not the extrovert that reveals itself from the street, but a Modern house whose high, private facade shelters its introverted nature.

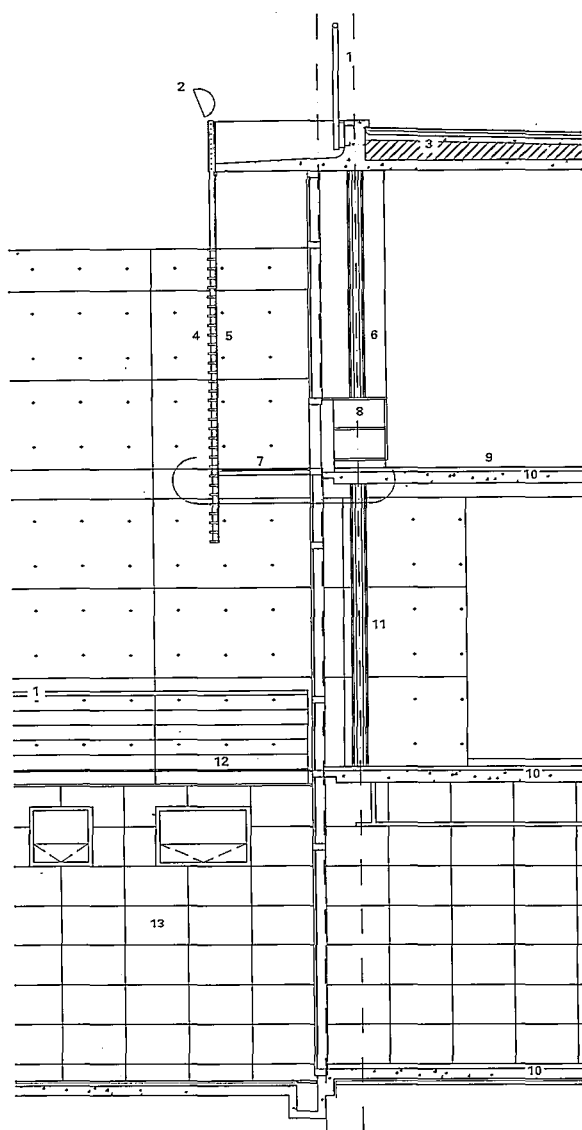
When Nortén and his wife, Letitia, bought an unsalvageable house on a street in a turn-of-the-century section of town, they were voting for the old urbanity of Mexico City rather than the suburbanity of its newer, more fashionable, car-bound quarters. "We wanted a real city life," Nortén explains, "and also the intimacy of this street."

Norten's large buildings are usually complex composites of simple forms built in straightforward geometries. In his own house, locked into a tight party-wall site shaped like a shoebox, the architect decided to work within the constraints and make the most of the simple envelope. With a record as one of Mexico's leading designers, he approached the design calmly, simply as a scheme to house his young family. "The condition of this lot and the nature of our needs did not call for a tremendous esthetic statement," he says.

Norten acted on his first impulse, which was to seclude the house in a traditional manner behind a high facade: "Our culture is introspective," he explains. "With such a tight site, I had to figure out how not to be seen by anybody while creating an interior environment open to outdoor space and the sun."

Norten decided to roughly halve the property lengthwise and load the site asymmetrically, composing the main part of the house as a long, thin, three-story block, with rooms arranged in a straight shot front to back along a corridor. Its long north face forms a windowless party wall built in concrete, while the south wall is all window, with cedar sun louvers and glazed sliding doors opening to a terraced court on the southern half of the site.

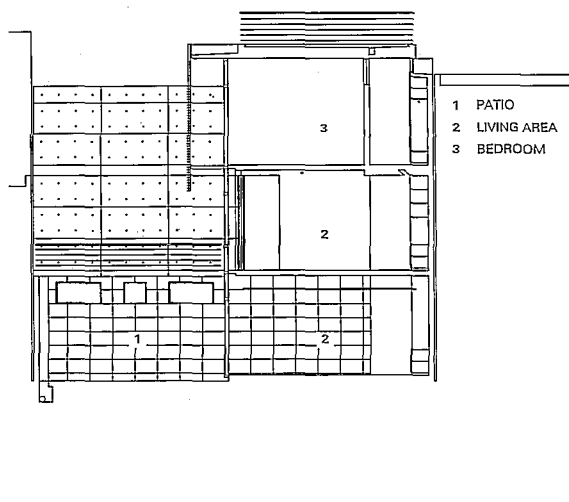
While the body of the house is only one room wide on its three floors, the interiors relate laterally to the adjacent terraces. A rear family room on the first level opens to a lower court, while the kitchen and dining room on the second floor gives onto a generous terrace built over a two-car garage. On the third floor, the master bedroom enjoys a



- 1 STAINLESS STEEL HANDRAIL
- 2 LIGHTING FIXTURE
- 3 1' BRICK SUPPORTING WATERPROOF MEMBRANE
- 4 RED CEDAR LOUVERS
- 5 ALUMINUM ANGLES
- 6 CARBON STEEL COLUMN
- 7 FLOOR GRATE
- 8 PLYWOOD CABINET
- 9 RED OAK FLOORING
- 10 CONCRETE FLOOR SLAB
- 11 ALUMINUM-FRAMED WINDOW
- 12 STONE FLOORING
- 13 LIMESTONE BLOCK

WALL SECTION

2.17/6.3m

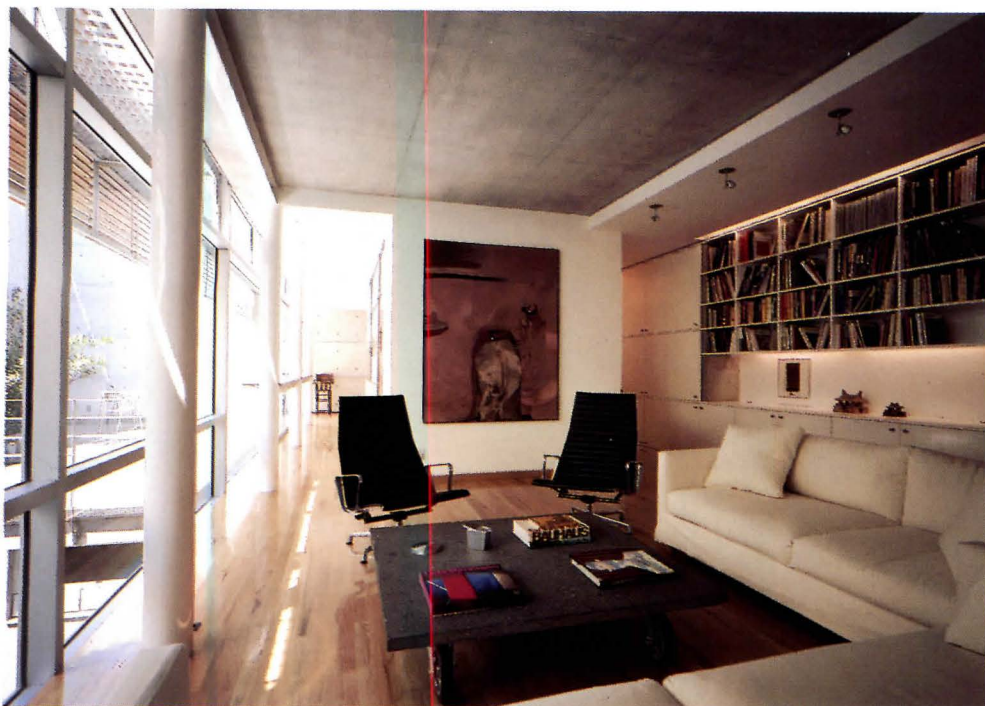


NORTH-SOUTH SECTION

6.5/1.8m

FACING PAGE, TOP: Third-floor terrace is enclosed by cedar louvers to protect glazed wall of bedroom.

FACING PAGE, PLANS: Floor plans of three-story house show main structure on north side, with garage, lower courtyard, and patio on south. Service areas, family room, and courtyard are on ground floor; kitchen, patio, and living and dining areas on second floor; bedrooms and patio on third. SECTIONS: Wall section (above) and section through terrace (left) show glazed assembly and sunscreen between courtyard and house.



ABOVE: Living room faces south and overlooks ground-floor court and second-floor terrace.

LEFT: Stairway from street entrance leads directly to living room, with north wall (left) lined with storage compartments.

FACING PAGE: Glazed corridor leads from living room toward dining room (right of chair). Kitchen is beyond translucent glass-paneled wall (right); terrace (left) is located above garage.

NORTEN HOUSE
MEXICO CITY, MEXICO

ARCHITECT: Taller de Enrique Norten (TEN) Architects, Mexico City—Enrique Norten, Bernardo Gomez-Pimienta (design); Carlos Ordoñez, Gustavo Espitia (project team); Jaime Cabezas, Gustavo Espitia (model)

ENGINEERS: Colinas y de Buen Ingenieros (structural); Tecnoproyectos (mechanical)

GENERAL CONTRACTOR: Grupo Baia
COST: Withheld at owners' request

PHOTOGRAPHER: Timothy Hursley



terrace overlooking the street and an outside corridor behind a brise-soleil that is wide enough for a lounge chair.

The glass facade of each room facing the walled court expands the interiors so the tall concrete party wall on the court's far south side works as a final visual boundary. Mexico's benign weather allows the interiors a flowing relationship with outside spaces, which nearly double the living area of the house. The opaque north wall is completely lined with closets on all levels, floor to ceiling, creating not only convenient storage but also a buffer zone for the coldest wall. Protected on the north from the cold and on the south by banks of wood louvers, the house requires no mechanical heating or cooling.

With concrete floor slabs supported on concrete columns and perimeter walls, construction is as simple as Le Corbusier's Domino House. Using the Modernist vocabulary of point, line, and plane, Norten composes an open floor plan of flowing space in the second-floor family rooms and a front facade poised under a floating roof plane. "I didn't want to work with an object, as in my other projects, which are the statements of public buildings," he says. "Sometimes in architecture you are asked to do a landmark, and sometimes, to fill in the texture of the city. In this case, I was more concerned with the texture of the street. My home is not a sculptural object."

Norten has always been occupied by the structural rationale of buildings. Working in a simplified vocabulary with basic materials, he develops his esthetic from such tectonic conditions as pour lines, formwork, and mullion patterns. "Within such a preestablished order, there are enormous possibilities of expression, not only in materials and detailing, but also in the relationship of spaces, and the movement of lines and planes within that grid, the flux within the house." Without sentimentalizing craft, Norten simply applies Mexico City's inexpensive labor in the use of poured concrete, hand-crafted cedar louvers, cabinets, and stainless steel fittings.

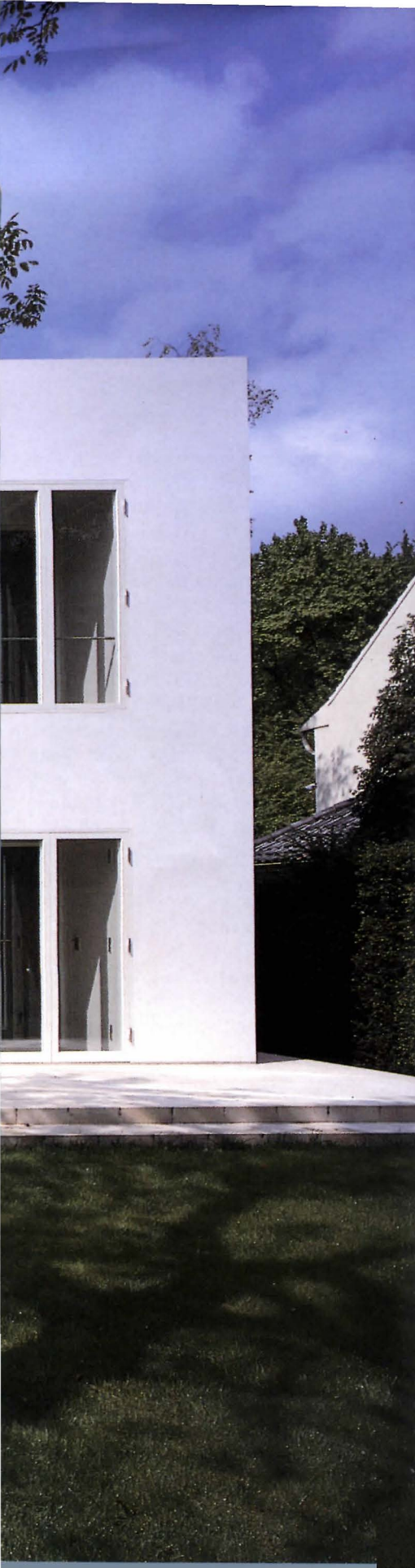
Understated and restrained, the Norten house is that rare building that is simple to the point of being diagrammatic while remaining experientially rich. Though constructed with a discipline that borders on sobriety, the house's formal calm allows the days and seasons to project their changes on its surfaces and in its spaces. Behind the house's blank front facade, the family swims freely, inside and outside, in its own pool of spatial privacy.—*Joseph Giovannini*



Ungers House
Cologne, Germany
O.M. Ungers, Architect



THESE PAGES: East facade addresses private garden. Plinth is paved in Vermont limestone; walls are stuccoed.
FACING PAGE: West facade peeks across yew hedge to reveal upper floor's elegantly proportioned windows and taut skin.



Rational Experiment



It's a pure experiment," is how Oswald Mathias Ungers describes his latest house, a gleaming white box in Müngersdorf, a suburb of Cologne. With their family raised, Ungers and his wife, Liselotte, moved from the home and studio he built in the 1950s (an Expressionistic corner house, with an introverted library designed three decades later) to a nearby lot facing west toward a dense forest. "We now live in a totally different way," he says, contrasting his requirements to ordinary notions of home. The Ungers's new house is both a geometric exercise and setting for an elegant lifestyle with only a few possessions. To achieve a contemplative atmosphere, Ungers set himself to the task of taking a house and stripping it of all decoration.

The resulting house is a stark two-story volume whose upper floor looks out across a 3.5-meter-high yew hedge. The neighborhood has many plastered villas, albeit



with pitched roofs and busy flower pots. None, however, has such finely proportioned windows and such a taut skin. The Ungers's tailored hedge provides a somewhat surreal impenetrable element, screening the ground floor and small enclosed garden from the sidewalk. Only elements such as the entry gates, thin trellis, and carport—all painted green—suggest possible points of access, or indeed, of practicality.

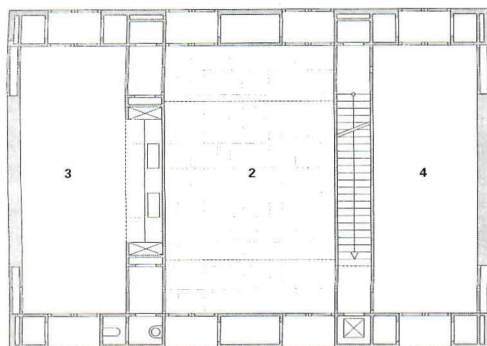
The house plan has Classical origins in the villa partis of Andrea Palladio, Karl Friedrich Schinkel and Ludwig Mies van der Rohe. A double-height central hall is flanked by twin subsidiary rooms. On the ground floor are the dining and (with-)drawing rooms with private quarters for husband and wife above. Across the splendid void of the hall, twin exposed bridges link the bedrooms; the connecting staircase to this intimate area is concealed within an internal wall.

Ungers's clever manipulation of wall as *poché* allows the interior to be unencumbered with the paraphernalia of domesticity. Into these mute zones are inserted stairs, bathrooms, closets, kitchen equipment, garden furniture, and a small elevator. The remainder of the house is experienced as pure volume. Both sides of all structural openings are fitted with tall glazed doors giving equivalent axial views. Their oak frames are lacquered white and fitted flush so that external and internal elevations read as contiguous surfaces.

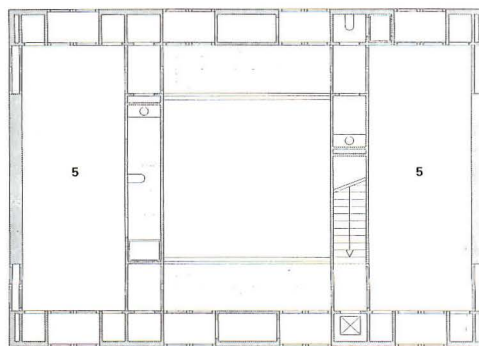
The entire house is coordinated about a 45-by-45-centimeter module, which Ungers claims is less "stiff" than the 50-centimeter unit he has previously used. The single-volume rooms measure 3.6 meters high; each double-door opening extends 1.8 meters across, and all pieces of furniture are volumetric distillations of the module. Even the grand basement with its swimming pool, gym, and sauna follows the elemental guiding principles of the pavilion above. (One minute idiosyncrasy: a circular hole in the cellar stairwell admits the family cat.)

There are few mementos in the house. There are no chandeliers, curtains (shutters disappear into soffits), or clocks. This is a study in minimal distraction where the architect and his wife focus on essential aspects of living. As Ungers says, it is a kind of laboratory for two precise individuals, a home "without metaphor or analogy...at the end of the 20th century."—Raymund Ryan

Raymund Ryan is a practicing architect who teaches at University College in Dublin.



GROUND-FLOOR PLAN



FIRST-FLOOR PLAN



WEST-EAST SECTION

FACING PAGE, TOP: Ungers-designed furniture includes bed with corner-mounted light fixtures, desk, and low bookshelves.

FACING PAGE, CENTER: Every piece of furniture is on casters, allowing layout flexibility. In the kitchen, side tables can be used as leaves for dining table.

FACING PAGE, BOTTOM: Central hall has limestone floor extending from outdoor terrace.

ABOVE: Lacquered timber sofa is upholstered in leather. Rectangular light fixtures have frosted glass shades. Central units contain audiovisual equipment. Floor is polished clay.

PLANS AND SECTION: Poché of services divides central hall from rooms to east and west.

**UNGERS HOUSE
COLOGNE, GERMANY**

ARCHITECT: O.M. Ungers, Cologne, Germany

CONSULTANTS: Friedrich Wassermann (shell construction), Bernhard Korte, Ullrich Wantikow (landscape)

COST: Withheld at owner's request

PHOTOGRAPHER: Stefan Müller

- 1 POOL/SAUNA
- 2 HALL
- 3 KITCHEN/DINING ROOM
- 4 LIVING ROOM
- 5 STUDIO/BEDROOM

Waldman House
Charlottesville, Virginia
Peter Waldman, Architect



THESE PAGES: Peter Waldman's house commands hillside in Charlottesville, Virginia. Galvanized sheet-metal pylon accommodates exhaust fan, telephone conduit, and hose bib beside east-facing door to "outhouse."

FACING PAGE: Waldman limited size and number of openings in 108-foot-long south facade to reduce heat gain.

New Dominion



A manhole cover punctures the concrete floor of architect Peter Waldman's living room, revealing a newly installed aqueduct that to ordinary clients would convey all the poetry of a sewer. For Waldman, however, the audible flow of rainwater beneath the floor emphasizes the connection of his new house to the landscape, in this case, the arcadian fields and forests near Charlottesville, Virginia, and Thomas Jefferson's Monticello.

The road to Waldman's house skirts a green valley of farms and estates and ends just beyond the architect's 3.8-acre site, which ascends sharply to the north from a strand of ancient poplars. Waldman bought the property in 1991, after deciding to leave Rice University in Houston to teach at the University of Virginia's School of Architecture, where he now serves as the department's chair. "I'm jealous of Jefferson's expansive gardens," the architect admits. "I'll be building terraces and parterres for the rest of my life."



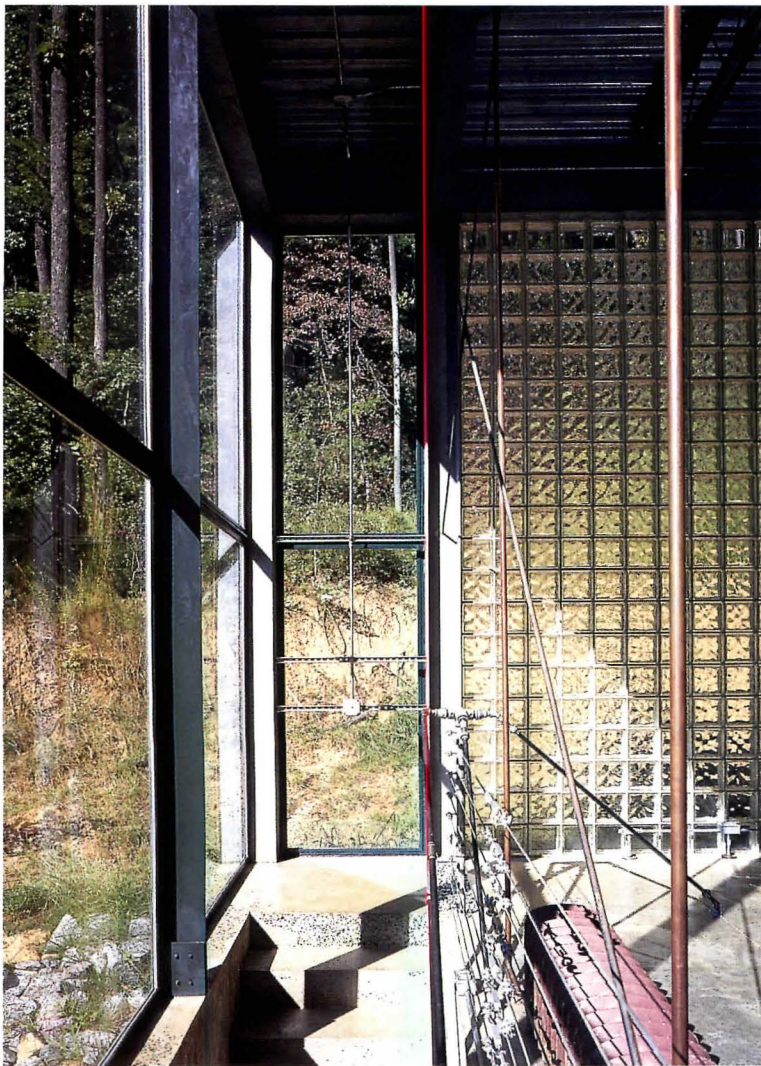
ABOVE: Reveal at northeast corner of concrete retaining wall captures sunrise on summer solstice.

RIGHT: Detail of south facade shows copper scupper above wood-framed window of "outhouse."

FACING PAGE: Eight-inch-thick, 14-foot-high concrete retaining wall encloses bedroom courtyard at east end.





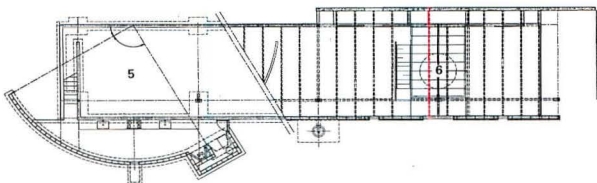


Building on the hill, Waldman extended a 104-foot-long concrete slab like a parterre across the hillside, establishing the platform for a house to accommodate himself, his wife Nancy Davila Carpio, and their two college-age daughters. Visitors might initially mistake the bulk of the house for a construction trailer or farm outbuilding, until a closer view brings into focus Waldman's struggle to relate the house to its site. Vertical seams march across the copper facade in harmony with the linear pattern of trees, forming a modest protective shield to prevent heat gain in the long Virginia summer. More elemental are the pair of idiosyncratic, sculptural volumes described by Waldman as the "outhouse" and the "volcano," which protrude from opposite ends of the building's otherwise orthogonal mass to engage the earth and sky.

The outhouse, which contains the kitchen, is the only room on the ground floor where the site slopes below the main level of the house. Waldman cast the chimney like an anchor into the hillside, enclosing the kitchen and its hearth with an apsidal, concrete-block wall to the south; an exposed foundation wall to the north; and a roof terrace off the main floor above. Roughly finished with a low, beadboard-clad ceiling, the kitchen's utilitarian steel shelving, masonry enclosures, and fireplace evoke the subterranean dependencies of Monticello.

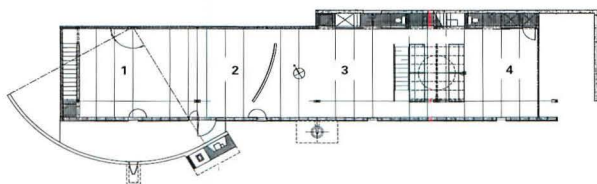
The volcano, a nuclear-reactor-shaped monitor measuring 8 feet in diameter at its base and extending 10 feet from the roof, leans to the south and culminates in a clear oculus. Its translucent fiberglass sheathing and sculptural form wholly contrast with the outhouse's earthbound qualities. "It's the start of an architectural landscape to reclaim the horizon—like Le Corbusier's roof gardens," Waldman observes. In this horizontal house, the outhouse and volcano activate the building section; and, like the aqueduct—designed to funnel site drainage under the main floor—these forms ennoble a crude industrial shell by exploiting the site's geological and celestial realities.

The house is entered from a concrete staircase that leads from the kitchen to the main level. Upstairs, the interior resembles a commercial warehouse, replete with concrete floors, exposed steel bar joists and metal roof decking, and an unceremonious display of plumbing and conduit. The space appears to be one vast room, with loosely defined living and dining areas, two sleeping areas, and a pair of bathrooms, all furnished



- 1 DINING AREA
- 2 LIVING AREA
- 3 LIBRARY
- 4 BEDROOM
- 5 KITCHEN
- 6 STUDY/SLEEPING LOFT

BASEMENT-ATTIC PLAN



MAIN FLOOR PLAN



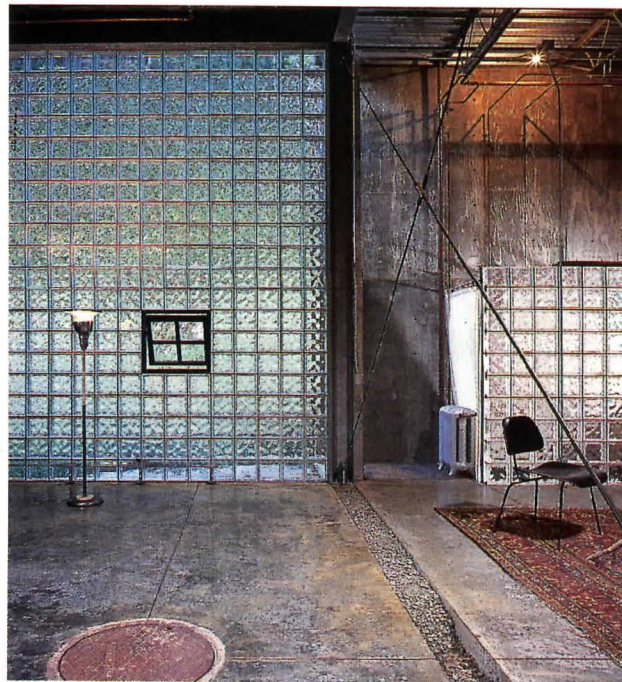


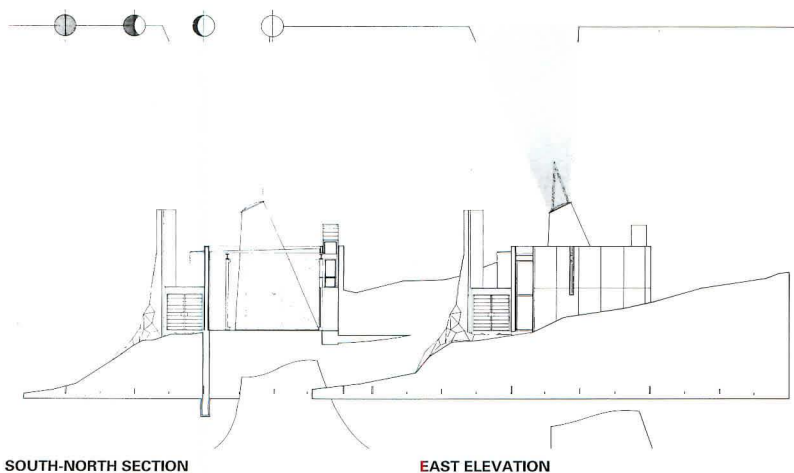
FACING PAGE, TOP: Light switch centered on north-facing window terminates staircase from kitchen.

FACING PAGE, PLANS: Kitchen is housed under dining area in room with arch-shaped wall; ceiling grid tightens over mezzanine study. Steel structural columns spaced 26 feet on center mark circulation zone between south facade and living areas on main floor.

ABOVE: Bar joists spaced 4 feet on center span exposed steel frame at west end of house. Antique radiators provide heat throughout; copper-shuttered, clear-glass operable window in glass-block wall allows ventilation.

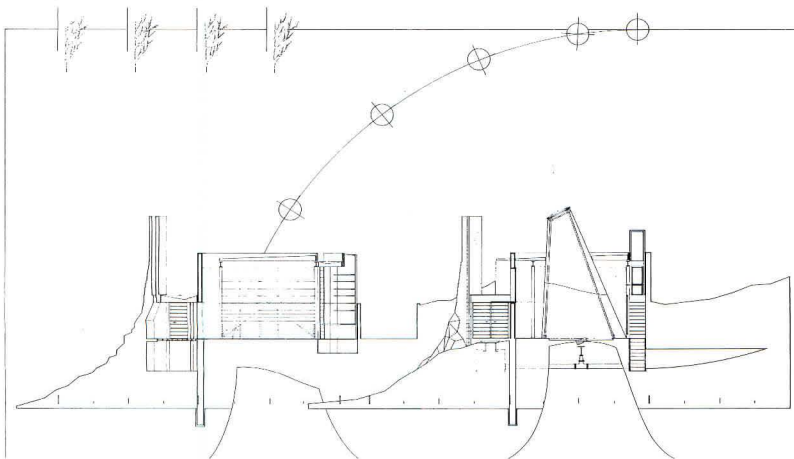
RIGHT: Lateral bracing separates living area (left) from future library at center of house. Glass-block partition (right) screens bath. Gravel-covered reveal in floor separates slab on fill (left) from slab on grade.





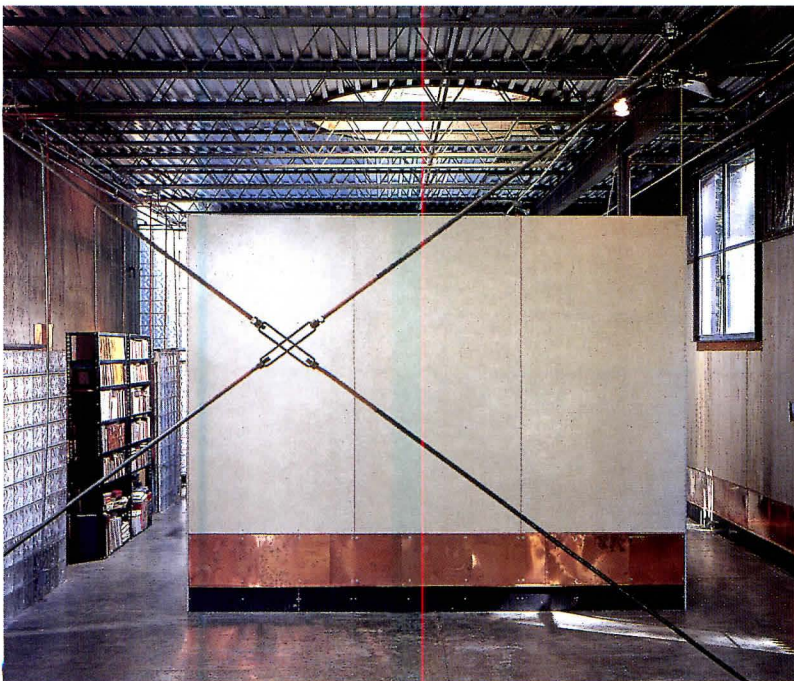
SOUTH-NORTH SECTION

EAST ELEVATION



SOUTH-NORTH SECTION WITH SETTING SUN

SOUTH-NORTH SECTION THROUGH VOLCANO



with eclectic objects that the architect describes as “props to make a theater.” Waldman clearly distinguishes between each of the room’s four exposures: the solidity of the south wall offers protection against the sun and a flat surface to display artwork; the living area’s north-facing wall of glass block filters reflected light off the hillside like a prism; and glass end walls orient the house to the cycle of sunrise and sunset.

Beneath the conical skylight stands a 10-foot-high wood structure that looks like a giant packing crate, which houses closets behind slide-mounted enclosures. Its bulk divides the living area at the west end from a bedroom and courtyard at the east end; a staircase attached to the crate’s side leads to an atticlike study and sleeping loft with an oculus pointed at the sky and an 8-foot-square window facing south onto the valley.

Like many architects building their own houses, Waldman claims he hasn’t fully resolved the design. The lack of a clearly marked entrance will be solved, he explains, by a foyer atop the kitchen’s flat roof, where he imagines an outdoor staircase leading up from the driveway to an enclosure of steel-supported glass shards, resembling “the nest of a giant insect.” A 10-foot-high, pivoting copper panel will replace an existing glass-block insertion in the facade, adjoining the nestlike foyer to the loftlike living area. Eventually, he plans to connect the kitchen roof to a steel catwalk across the south facade.

In his house, Waldman cultivates an ad hoc method of construction that departs as much from his earlier work as it does from the compulsive detailing that characterizes the work of many of his contemporaries. His addition to the Fein House in Princeton (*ARCHITECTURE*, February 1992, pages 43-48), for example, employs the iconography of a cryptic narrative to transcend the banality of its suburban context, but its taut assemblage of metaphorical appliqué seems forced, if not arcane. In contrast, the parts that comprise the architect’s Virginia house amount to a more visceral manipulation of light, space, and form. Like *Monticello* in Jefferson’s lifetime, the building remains an ongoing construction project, subject to improvements like changes to a full-scale model. “My house will never be finished,” Waldman asserts. “It’s a sign of my growth—the project is much simpler and less frantic than anything else I’ve built.”—*M. Lindsay Bierman*

M. Lindsay Bierman is a senior editor at Interior Design magazine.



FACING PAGE, SECTIONS: Waldman's original design shows how house is oriented to sun and moon.

FACING PAGE, BOTTOM: Boxy enclosure contains closets below study and sleeping loft.

ABOVE AND LEFT: Monitor rises 10 feet above 8-foot-diameter opening.

**WALDMAN HOUSE
CHARLOTTESVILLE, VIRGINIA**

ARCHITECT: Peter D. Waldman, Charlottesville, Virginia—Peter D. Waldman (principal); Dave Ackerman, Joseph Atkins, Sallah Baloch, Philip Baumann, Craig Borum, Caryn Brause, Robert Corser, Christopher Fultz, Alexander Kitchin, Celia Liu, Tom Polansky, Todd Ray, Evelyn Tickle (project team)

ENGINEERS: Dennis Moler and Associates (structural); Associated Steel (civil); Safeway Electric (electrical); Jim Beck and Associates (HVAC)

GENERAL CONTRACTOR: Ace Construction
COST: \$225,000

PHOTOGRAPHER: Maxwell MacKenzie

Alofsin House
Austin, Texas
Anthony Alofsin, Designer

THESE PAGES: Alofsin house is faced in Texas limestone; garage (right) is concrete block. Standing seam roof has ridge detail reminiscent of Chinese clay tile roofs.

FACING PAGE: Gated entrance at center of Classically inspired street facade leads directly to courtyard.



Building on Wright



Anthony Alofsin, a professor of architecture at the University of Texas at Austin, is a leading Frank Lloyd Wright scholar. He is the author of *Frank Lloyd Wright: The Lost Years, 1910-1922* (University of Chicago Press, 1993) and wrote the introduction to *Frank Lloyd Wright's Fifty Views of Japan: The 1905 Photograph Album*, published last month by Archetype Press. Little wonder then that Alofsin turned to the subject of his research as a point of departure for his new house in west Austin.

For many architects, Wright has proven an enigmatic source of inspiration, purposely obscured by his vague and contradictory language. Alofsin, however, has a scholar's intimate understanding of his subject's sophisticated design methodology, and avoided the *pitfalls that have beset others who have traveled Wright's path*.

He abjures most references to Wrightian form and massing, and instead draws on Tus-



ABOVE: Courtyard is finished in stucco with sliding shoji screens. Pond recalls Roman atriums and Japanese gardens. Fountain is made from limestone quarry scraps.

PLAN: All major rooms except library (bottom left) open onto sandstone flagstone courtyard.

SITE PLAN: Site is steeply graded to the east, offering clear views of Austin from living room.

FACING PAGE: Mahogany strapping details and pitched living room ceilings recall Wright. Master bedroom can be closed with sliding pocket doors.

**ALOFSIN HOUSE
AUSTIN, TEXAS**

DESIGNER: Anthony Alofsin

ARCHITECT: Steve Temple

LANDSCAPE ARCHITECT: Engelmann Gardens (courtyard); Botanica Landscapes (exterior)

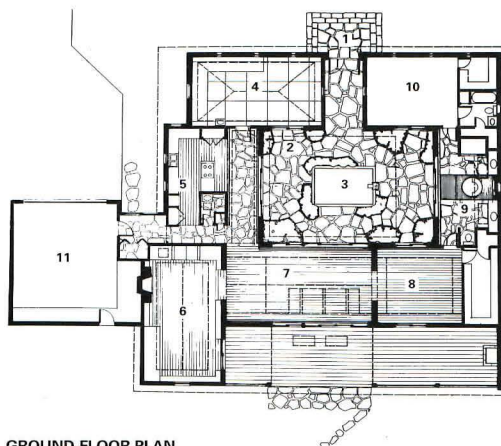
ENGINEERS: Jeffrey L. Smith (consulting engineer); R.J. Electric (electrical); Stan's Heating & Air (HVAC)

CONSULTANTS: Michael Larvey Lighting Design, American Light (lighting)

GENERAL CONTRACTOR: T.J. Wendel

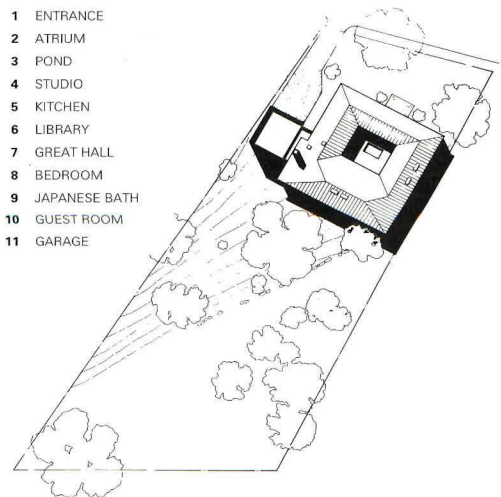
COST: Withheld at owner's request

PHOTOGRAPHER: Paul Bardagjy



GROUND-FLOOR PLAN

- 1 ENTRANCE
- 2 ATRIUM
- 3 POND
- 4 STUDIO
- 5 KITCHEN
- 6 LIBRARY
- 7 GREAT HALL
- 8 BEDROOM
- 9 JAPANESE BATH
- 10 GUEST ROOM
- 11 GARAGE



SITE PLAN

48'/14m

can and Texan regional precedents that have inspired the contemporary Hill Country vernacular developed by architects such as Lake/Flato, Lawrence Speck, and Sinclair Black. Alofsin's house is arranged as a Roman courtyard wrapped in a limestone and concrete-block facade and topped with a standing-seam metal roof. The blind arcade and gated portal of the front facade give the house an urban quality that seems at odds with its suburban location, yet also endows the structure with a street presence that belies its modest 2,900-square-foot program.

Although the house looks more Roman than Wrightian, the latter's influence is nevertheless present. Alofsin began designing by overlaying his site with a 1-foot-square grid and placing the house within it. But the siting was not simply a response to rationalist subdivision. Alofsin used the small grid to control subtle axial relationships within the house and between the building and its picturesque views of central Austin.

For instance, the entrance marks an axis of centrality that appears to divide the street facade and the house plan into symmetrical halves, and leads to the courtyard around which the building is arranged. But the court is shifted slightly off this axis, as is the living room beyond, to accommodate a distant view of the University of Texas Main Building tower. The plan is rich with subtle shifts and alignments, an homage to Wright's mastery of symmetry and asymmetry.

Alofsin is also indebted to Wright in section, defining height and volume with familiar pitched and hipped forms. The mahogany strapping along the living room ceiling, baseboards, and door frames also owes a clear debt to Wright's articulation of section by leading the eye from floor to wall to ceiling in one continuous motion.

Like his predecessor, Alofsin is also enamored of Asian architecture. There is a Japanese restraint and simplicity to detailing throughout the house. Custom-crafted shoji screens mark privacy without interrupting spatial continuity. The orthogonal plan recalls the patterns of Japanese tatami mats.

Alofsin also layers views in the manner of traditional Chinese painting. From the front door, one looks through the house toward downtown Austin, across the entrance hall, courtyard, living room, back porch, and yard.

Rome, Asia, and the American heartland are all at play in this house. It is in the seemingly effortless amalgamation of the three that Alofsin comes closest to Wright's distinctive and inclusive spirit.—Reed Kroloff



Tsao-McKown Apartment
New York City
Tsao & McKown Architects



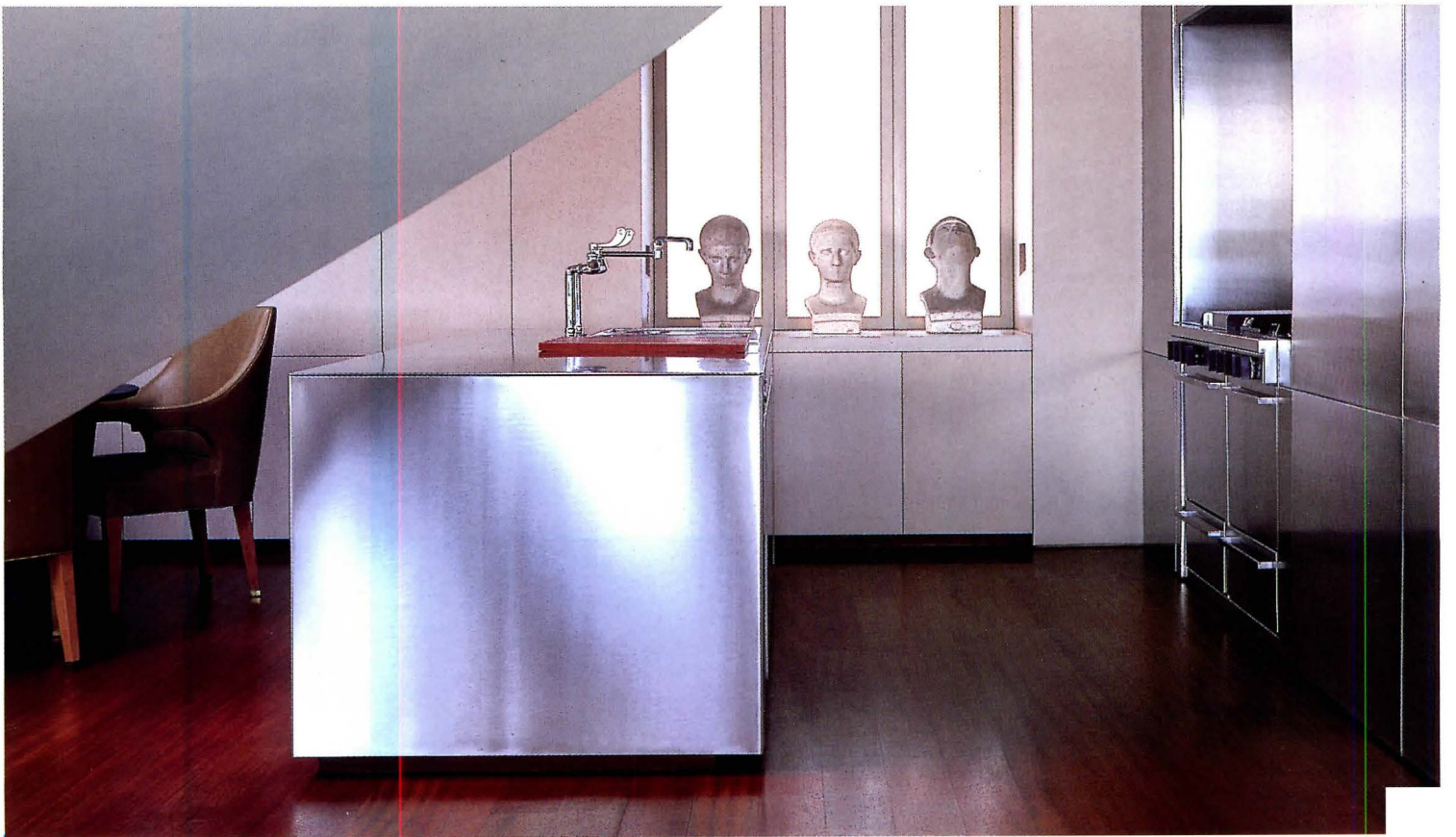
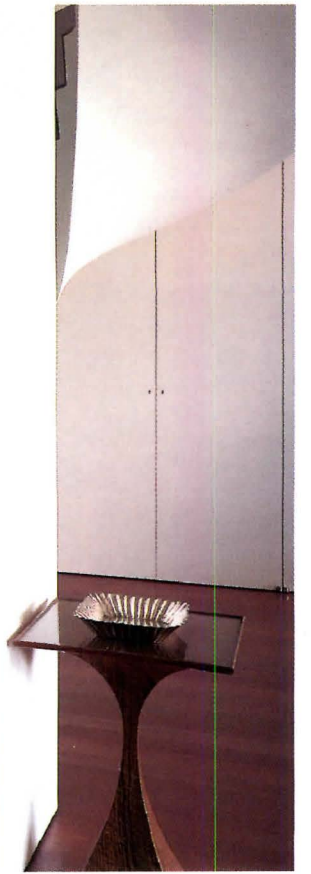
THESE PAGES: Staircase provides visual drama in reposed setting. Marble and gilded wood cross is from Sicily.
FACING PAGE: Tsao & McKown-designed furniture includes high-back sofa and mahogany dining table, with island for at-table cooking. Torchère is from Venetian gondolier's tradition.

Subtle Distinctions



Calvin Tsao and Zack McKown's apartment on the Upper West Side of New York City offers elegant confirmation of the architects' disciplined yet inclusive approach to design. The work of 12-year-old Tsao & McKown Architects ranges from apartments in New York City to high-rises in Asia. But no matter the scale, an abiding interest in surface, texture, and light informs each project. "We're always investigating the most reductive way of doing things, but we never think of architecture as a purely analytical exercise," Tsao explains. This subtle distinction leads the architects to enrich their work in fashions Modernists would probably reject.

Nowhere is this approach more evident than in the staircase that anchors Tsao and McKown's own 3,500-square-foot duplex. Rendered in stark white plaster with Brazilian cherry risers and treads, the stair swirls voluptuously between the floors. No industrial hob-tread, no tottering cantilever for





FACING PAGE, TOP: Staircase separates kitchen (left) from living area.
FACING PAGE, BOTTOM: Stainless steel counters and wall panels distinguish kitchen. Trio of plaster busts is salvaged from École des Beaux-Arts in Paris.
THIS PAGE: Plaster staircase welds steel treads and risers to composite beam and continuous steel plate sides, and is finished in Brazilian cherry. Slot in column houses light fixture.



these architects. This staircase transforms vertical movement into Modern sculpture, its minimal detailing and dramatic form statements of pure sensuality.

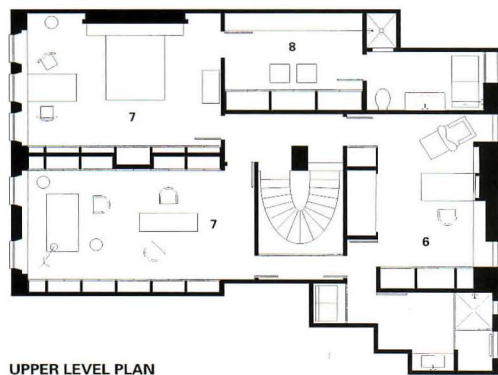
The stair recalls early Le Corbusier, and the reference is not singular. McKown notes that a stainless steel bathtub with a chaise lounge-like interior in the apartment's upstairs bathroom also is a "memory of Villa Savoye." And like Le Corbusier, the architects embrace the free plan in the apartment's downstairs public areas, creating spaces defined by surface changes and furniture rather than plastic form; walls remain perpendicular to level floors and ceilings. Upstairs, Tsao and McKown divide the floor into separate private rooms.

Throughout the apartment, walls alternate among six shades of white paint, combined with lacquer finishes, stainless steel, and palladium paneling. Cabinetry is raised above the floor to read as floating solids within a continuous spatial volume. Walls appear to float as well, pulled away from the floor and ceiling by narrow reveals.

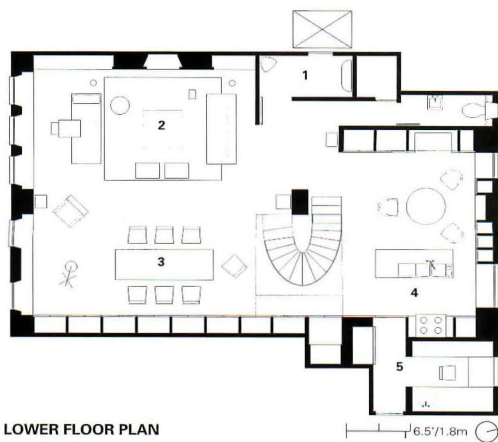
The composition may be Modern, but the strategies employed to achieve it are Classicist. "We see Modernism as something unencumbered by history, but not necessarily something that rejects it," Tsao explains. For example, the architects achieve their minimalism by embracing such Classical devices as *poché*. Throughout the residence, walls are thickened to become vital spatial containers, faced in banks of flush-mounted panel doors that hide closets, storage areas, even small rooms. These interstitial zones conceal the clutter of contemporary life while liberating the central spaces to display the owners' extensive collection of furniture, folk art, and religious artifacts.

History announces itself in other ways as well. "We've always been fascinated with early industrial design," notes McKown, "because one can still see the hand involved." Thus, mirror lights in two bathrooms are recycled from old New York City subway cars. Other fixtures were salvaged from railroad cars from the fabled 20th Century Limited line.

The comfortable coexistence of humanly crafted and machine-made, Classical and Modern, old and new, neatly summarizes Tsao & McKown's accomplishment in this refined residential renovation. (The apartment was previously a warren of small, unrelated spaces.) The architects have seamlessly integrated a diverse collection of architectural objects and traditions into a serene and beautiful composition.—*Reed Kroloff*



UPPER LEVEL PLAN



LOWER FLOOR PLAN

- 1 FOYER
- 2 LIVING AREA
- 3 DINING AREA
- 4 KITCHEN
- 5 UTILITY ROOM
- 6 STUDY
- 7 BEDROOM
- 8 DRESSING ROOM

FACING PAGE, TOP: Panel doors along bedroom walls conceal storage.

FACING PAGE, BOTTOM LEFT: Downstairs bathroom is draped in industrial felt; prison-grade toilet is stainless steel.

FACING PAGE, BOTTOM RIGHT: Master bath is finished in limestone and stainless steel. Tub has chaise lounge bottom reminiscent of Villa Savoye.

ABOVE: Bed alcove is lined in holly. PLANS: Apartment is organized as open entertainment space on lower level. Upstairs, bedrooms are arranged around stair hall.

**TSAO-MCKOWN APARTMENT
NEW YORK CITY**

ARCHITECT: Tsao & McKown Architects, New York City—Calvin Tsao, Zack McKown (partners-in-charge); Ted Krueger (project architect); Werner Franz, Linda Kohlman, Gary Morgenroth, Trish McKinney, Adam Rolston, Ross Wimer (project team)

ENGINEERS: Michael Guilfoyle, Stanley Goldstein (structural)

CONSULTANTS: William Armstrong Lighting Design (lighting); Michael Curtin, Advanced Electric Design (audiovisual)

GENERAL CONTRACTOR: David Giovannitti

COST: Withheld at owners' request

PHOTOGRAPHER: Richard Bryant/Arcaid

Kappe-Tamuri House
Topanga, California
Kappe + Tamuri Architects

THESE PAGES: East-facing elevation of Kappe-Tamuri house is assembled from off-the-shelf materials, including sand-blasted concrete block, galvanized steel, and glass.

FACING PAGE: South elevation is almost a structural diagram, showing the contrast of steel framing (left) to masonry shear wall (right).



Hillside Hideaway



Architects of the Gothic Revival liked to imagine their buildings as beautiful ruins in some indefinite future. While the Kappe-Tamuri House in the Topanga Canyon area of Los Angeles County hardly looks ruinous, the architects, Finn Kappe and Maureen Tamuri, like to think of their new hillside home as a noble ruin in the making.

Specifically, Kappe says he hopes that the five concrete-block walls, which frame the house and serve as shear walls, will be the last surviving remnants of the house in the distant future. The comment is not a death wish for the home currently occupied by the architects and their nine-year-old daughter. The vision of ruins, rather, is a hint of a design approach that sets up a hierarchy of materials from most to least permanent. And it also reflects the architects' respect for, and sense of kinship with, the landscape.

Like many houses designed by architects for themselves—Kappe and Tamuri are mar-

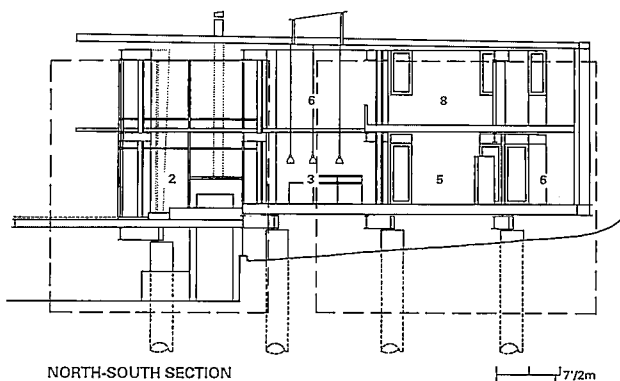
SECTION: Living room and kitchen (left) are two-story spaces, while single-level master bedroom (top right) is located above sitting area.

PLANS: V-shape separates first-floor living spaces from studio.

SITE PLAN: Footprint occupies 1,500 square feet on 1.5-acre hillside site.

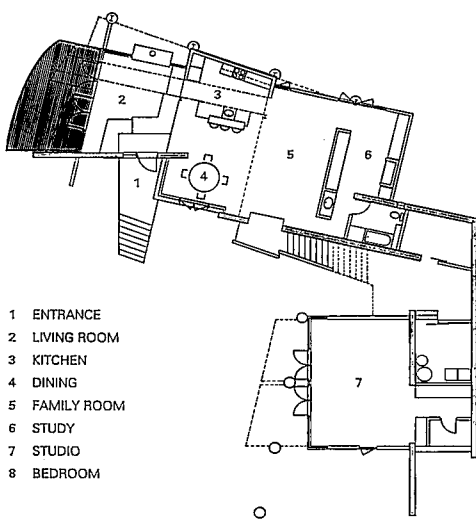
FACING PAGE, TOP: Glazed entrance (center) is framed by a two-story concrete-block wall (left) fronting living room and galvanized steel paneling (right) that conceals dining room.

FACING PAGE, BOTTOM: West elevation faces steep ravine. Galvanized wall fronts kitchen; windows (left) bring late afternoon daylight into family room and study.



NORTH-SOUTH SECTION

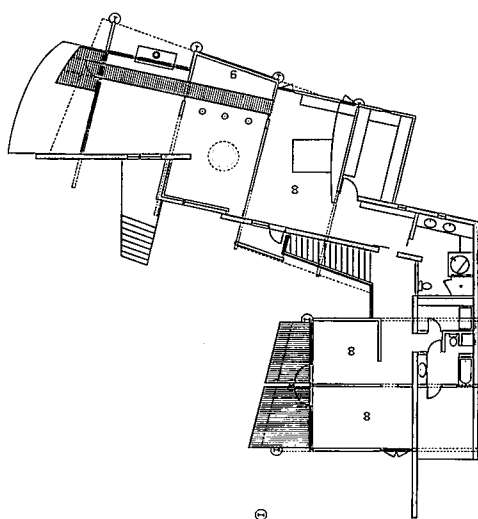
7/2m



- 1 ENTRANCE
- 2 LIVING ROOM
- 3 KITCHEN
- 4 DINING
- 5 FAMILY ROOM
- 6 STUDIO
- 7 STUDIO
- 8 BEDROOM

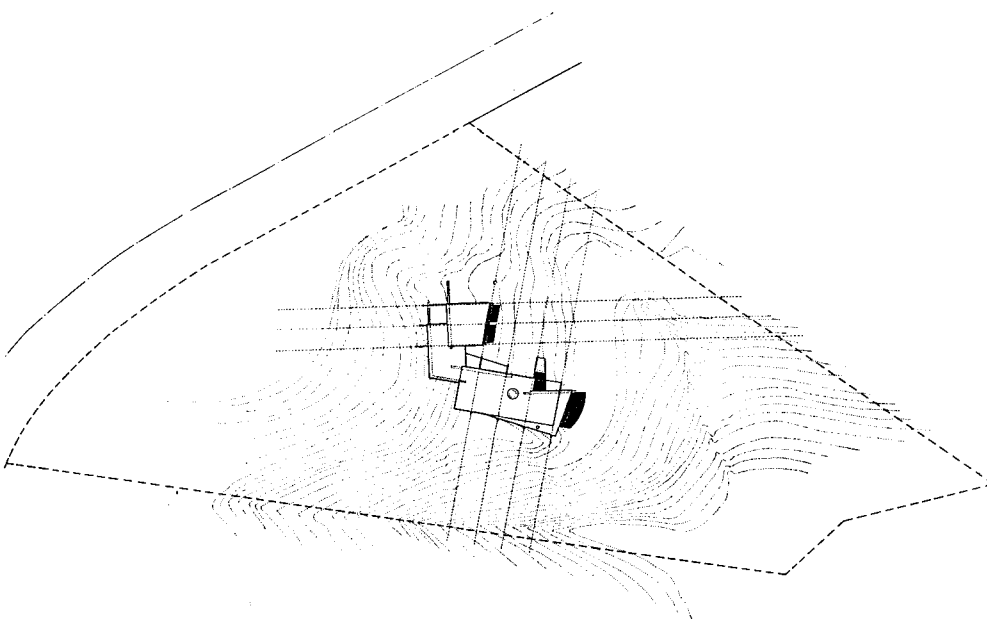
FIRST-FLOOR PLAN

13/3.5m



SECOND-FLOOR PLAN

⊙



SITE PLAN

30/8.5m ⊙

ried but practice separately—the Kappe-Tamuri House is both a strong personal statement of the architects' design philosophy and a kind of laboratory for experimentation with forms and materials too adventurous for some of their clients. The house dramatizes the issues, and perhaps the conflicts, that occupy the designers: serious versus playful, urban versus rural, Modernist versus romantic, rational versus irrational.

At first glance, the house is a strong, assertive mass projecting from the hillside, rising to a 36-foot height. It is divided into two portions, the larger of which contains the two-story living room, kitchen, dining area, and a master bedroom upstairs, while the smaller portion of the house—the shorter leg of the asymmetrical, V-shaped plan—contains a studio and a child's bedroom.

Although the plan is informal, or even anti-formal—Kappe playfully likens it to a "truck and a trailer about to jackknife"—the scheme seems reasonable when examined in relation to the existing topography. The two main portions of the house are located on existing knolls in the hillside, minimizing the need for excavation.

The house is a reflection of the town-and-country contradictions of Topanga Canyon. A busy road cuts through the otherwise bucolic canyon, linking Malibu on the coast to the San Fernando Valley 15 miles inland. The urbanity of the house is expressed in the tough, raw materials that Kappe and Tamuri have chosen for their semi-rural hideaway—concrete block, steel beams, galvanized steel, and glass—which seem more in keeping with the big-city style of the so-called Santa Monica School than a wooded hillside.

For Tamuri, the house is an exploration of "the catalog of pre-fab and off-the-shelf materials, whatever is cheap and fast." The architects have taken pleasure in exposing steel throughout the interior and exterior of the house. If the elevations have a "theme," it is dialogue, sometimes discordant, between steel and masonry. Masonry, to Kappe, is a "gravity-based material, close to the earth." Steel, on the other hand, is "gravity-resistant" and can float above the ground.

The steel columns on the west elevation seem to vie for primacy with the block wall on the east. In places, steel beams push through the block wall, while on the interior, beams protrude into the tall living room. Kappe believes that the block walls will withstand the symbolic challenge; steel is a material that can burn and twist in fires, not unheard of in these canyons. The block, on





ABOVE: View from living room toward kitchen shows explicit use of steel throughout. Second-story catwalk from master bedroom to private deck passes over kitchen.

LEFT: Steel-framed catwalk comprises redwood deck, steel handrails, and perforated aluminum panels.

FACING PAGE: South-facing living area provides canyon views. Concrete-block wall (left) and concrete floors serve as solar collectors.

KAPPE-TAMURI HOUSE
TOPANGA, CALIFORNIA

ARCHITECT: Kappe + Tamuri Architects, Topanga, California—Finn Kappe, Maureen Tamuri (partners-in-charge)

ENGINEERS: Reiss, Brown, Ekmekji; Woods Engineering (structural); Richard Reiss (civil); Greg Davis, Finn Kappe (solar)

CONSULTANTS: Chris Harvey (lighting)

GENERAL CONTRACTOR: Finn Kappe
COST: \$342,000

PHOTOGRAPHER: David Hewitt/Anne Garrison Architectural Photography

the other hand, “will always be there.”

The rural nature of the house, beyond its location, can be found in its siting. Unlike surrounding houses, which have harmed the landscape through cut-and-fill construction on ridge tops, the Kappe-Tamuri House is located downslope, preserving the natural contour of the hillside. Located in an area zoned for agriculture, the house is an “analogy of a hay barn, both shelter and pavilion,” according to Kappe.

And if the house is imposing in its bulk, the architects have been very careful in how the house touches the ground: structurally, the house is a set of seven moment frames perched atop concrete piles. “The idea is to make the construction as compact as possible,” says Tamuri, who points out that the footprint of the 3,800-square-foot house occupies only 1,500 square feet of the substantial 1.5-acre hillside site. Kappe also takes pride that the rear block wall of the house also serves as a retaining wall, eliminating the need for an unsightly, freestanding wall on the upslope of the house.

The interior of the house, floored in concrete, is notable for the restless dynamism of the section: ceiling heights seem to change throughout the house, while the living room steps down into a 1950s-style pit in front of the fireplace. Plentiful glazing on the picturesque south and east elevations transform the south-facing living room and decks into viewing platforms for vistas of largely unspoiled canyon lands.

Unfortunately, the interior sections that give the house much of its pleasure are not expressed with equal clarity on the elevations. The continuous horizontality of the cornice gives the house an almost monumental quality. The elevations could have benefited from being broken into volumes of different heights that would have expressed interior spaces more clearly, and made the elevations appear less imposing.

The Kappe-Tamuri house does not seek to be a study in design rigor. Habitability and the quality of the spaces, instead, are the primary goals of the architects. Kappe himself calls the house “romantic,” and hopes the house captures something of the combination of tectonic directness and personable quality of the famed Eames House just down the Pacific Coast Highway in Pacific Palisades. And Kappe also hopes that the house expresses something of what he calls a “mythic” quality: He hopes his own residence will someday be “as interesting as a ruin as it is now a house.” —*Morris Newman*





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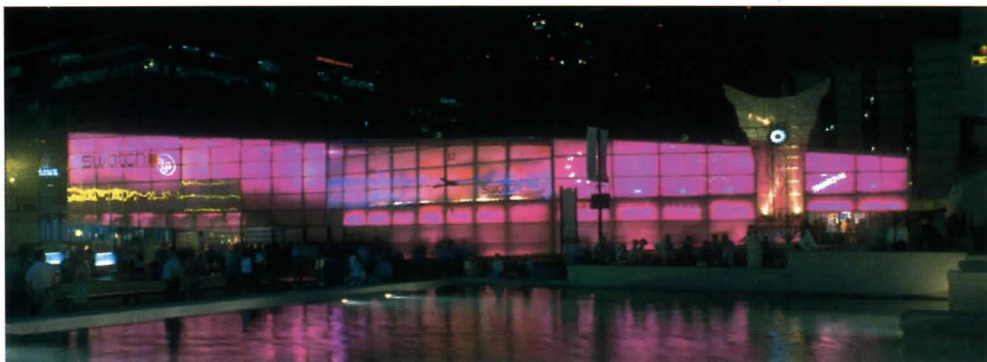
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Inventive Collaborations

Architects chart new design terrain through related disciplines and computers.

Elevating prosaic building elements into the art of architecture requires inventive collaboration, as this month's Technology & Practice section shows. When it comes to such commissions, few designers can match the success of glass sculptor James Carpenter of New York City, whose work is featured on the following pages. Carpenter is currently collaborating with architects such as Skidmore, Owings & Merrill and Kohn Pedersen Fox, as well as with engineers, to create curtain walls, sun shades, and skylights that serve as crystalline conduits of light and transparency. Carpenter's recent work combines his mastery of craft in glass with a clear sense of structure, suggesting poetic new possibilities in commercial and public buildings.



Architects are increasingly exploring the art of computer animation and offering these digital design skills as a service to clients. Our computer feature tracks this trend with profiles of several young firms bearing names such as Eyecandy and Funhouse, whose architects apply their three-dimensional design training to the electronic conception of photorealistic spatial environments. Their clients, ranging from the entertainment industry to building product manufacturers, demand convincing, thrilling computer models achieved only through high-end digital visualization tools.

While new opportunities for architects keep cropping up, some perennial problems never seem to disappear from the screen, as our practice feature on architects' overtime policies attests. Many firms pay hourly staff overtime in strict compliance with federal wage-and-hour laws, but others don't properly distinguish between those employees who are salaried and those compensated hourly, which can lead to legal trouble. By following a few basic criteria from the U.S. Department of Labor, however, firms can safely comply with the law and avoid costly liabilities down the road.



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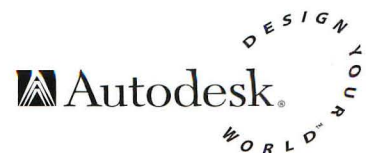


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Designer James Carpenter has often been tagged a “glass artist,” and indeed, the 47-year-old sculptor has focused on exploring the properties of transparency and light in his work. However, Carpenter is as adept at crafting curtain walls, cable-stayed bridges, and stairs as he is at fabricating furniture and sculptures.

“It’s always been my goal to create pieces that are fully integral with a building, whether I’m designing an exterior envelope, structure,

for a mixed-use tower in New York City (page 112, this issue); a structural- and refractive-glass cladding system for the lobby of a bank tower in Honolulu (page 110, this issue); and sculptural light reflectors beneath the skylights of both the Hong Kong Land building and San Francisco’s new international airport terminal (page 114, this issue).

To develop the technical aspects of these projects, Carpenter relies on his in-house team of five full-time architects, as well as

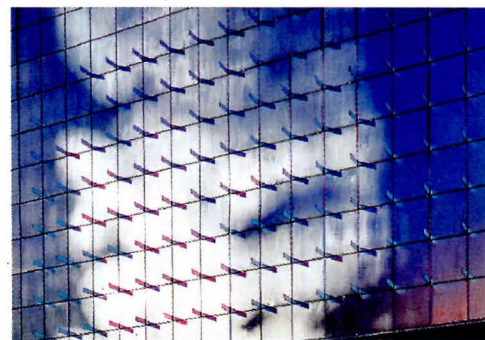
Building in Glass

James Carpenter collaborates with architects and engineers to turn building envelopes and infrastructure into art.

or sunshades,” he explains. But Carpenter hasn’t had many opportunities to realize such architectonic elements in buildings until recently. “It’s very hard, because you must have a trusting, close relationship with the architects,” he maintains.

Carpenter has enjoyed some success in collaborating with architects to design building envelopes. For example, in 1987, Carpenter completed an exterior window wall at the Christian Theological Seminary in Indianapolis, designed by Edward Larrabee Barnes, that refracts light to create colorful geometric patterns on the walls. Carpenter also completed unbuilt designs for curtain walls for two Los Angeles office towers, with Richard Keating of Skidmore, Owings & Merrill’s L.A. office in 1991, and with architect Johnson, Fain, and Pereira in 1993.

Building on his experience in designing sculptural enclosures, Carpenter’s portfolio has grown to include more cladding installations: a snap-on dichroic glass curtain wall



DAVID SUNDBERG

collaborations with leading engineers such as Robert Silman Associates, Ove Arup & Partners, and FTL/Happold. Carpenter himself is versed in structural design, having completed two years of architecture school at the Rhode Island School of Design before transferring to sculpture. In fact, he has been teaching structures courses as a visiting professor at the University of Pennsylvania since 1993. The artist also worked as a consultant with Corning Glass Works from 1972 to 1982, developing new materials and studying glass ceramics and photo-responsive glass—an experience that clearly helps him detail his glazed assemblies.

While Carpenter has plans to collaborate further with architects, as he has done for almost two decades, he is also pursuing more work as the lead designer on teams of engineers. Whatever his involvement, this design innovator will continue to blur the distinction between art and architecture with his ephemeral structures.—*Raul A. Barreneche*

Tension net stair
Penthouse apartment
Chicago, Illinois

In a downtown Chicago duplex overlooking Lake Michigan, James Carpenter has completed a striking glass and metal stair that vies with the apartment's sweeping views as its focal point. Carpenter had to suspend the stair within the space, since the apartment's concrete floor slabs could not support additional loads. Given this structural limitation, Carpenter looked to the tensile technology developed by Robert Le Ricolais, a structural engineer who taught at the University of Pennsylvania during Louis Kahn's tenure from the 1950s through the 1970s. Carpenter and project manager Luke Lowings modeled the stair on Le Ricolais's conical stainless steel armature, called a "tension net."

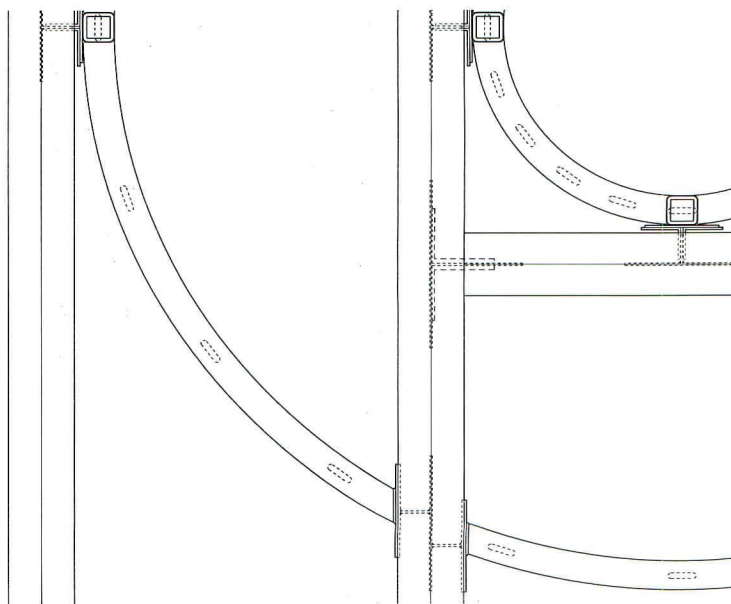
This metal structural frame comprises a series of diminishing stainless steel compression rings, measuring up to 10 feet in diameter, held together within a spidery mesh of stainless steel tension rods. The net creates a rigid support for Carpenter's glass stair treads. "The cone shape is stiffer than a cylinder, because it takes advantage of tensile forces more efficiently," explains Carpenter. The dead load of the laminated glass treads also helps stiffen the wiry structure.

The 1 $\frac{1}{4}$ -inch-thick stair treads are composed of three layers of annealed float glass, laminated together with PVB inner layers. The glass is sandblasted and washed with hydrochloric acid to polish the treads and increase their luminosity. This finish process gives the glass a rough surface, creating sufficient friction for safe walking, and prevents the glass from cracking.

The treads are supported on 1 $\frac{1}{2}$ -inch-wide anodized aluminum blades extending from the tension net structure to the outside handrail stanchions. Capped by a pear wood handrail, the stair is completed by stainless steel tension cables and rails that carry the dead load of the glass treads.



BRIAN GULICK



STRUCTURAL PLAN

TOP: Conical tension net is anchored to substructure beneath floor.

PLAN: Steel I-beams and rings comprise substructure in ceiling.

FACING PAGE: Cables of handrail stanchions are suspended from ceiling structure; glass stair treads are cantilevered from conical mesh.



BRIAN GULLICK

Refractive glass wall
First Hawaiian Bank
Honolulu, Hawaii

Carpenter's most recently completed project is decidedly his most architectonic to date: a curtain wall enclosing the lobby of a downtown Honolulu bank tower designed by Kohn Pedersen Fox Associates (KPF), which opened in late October.

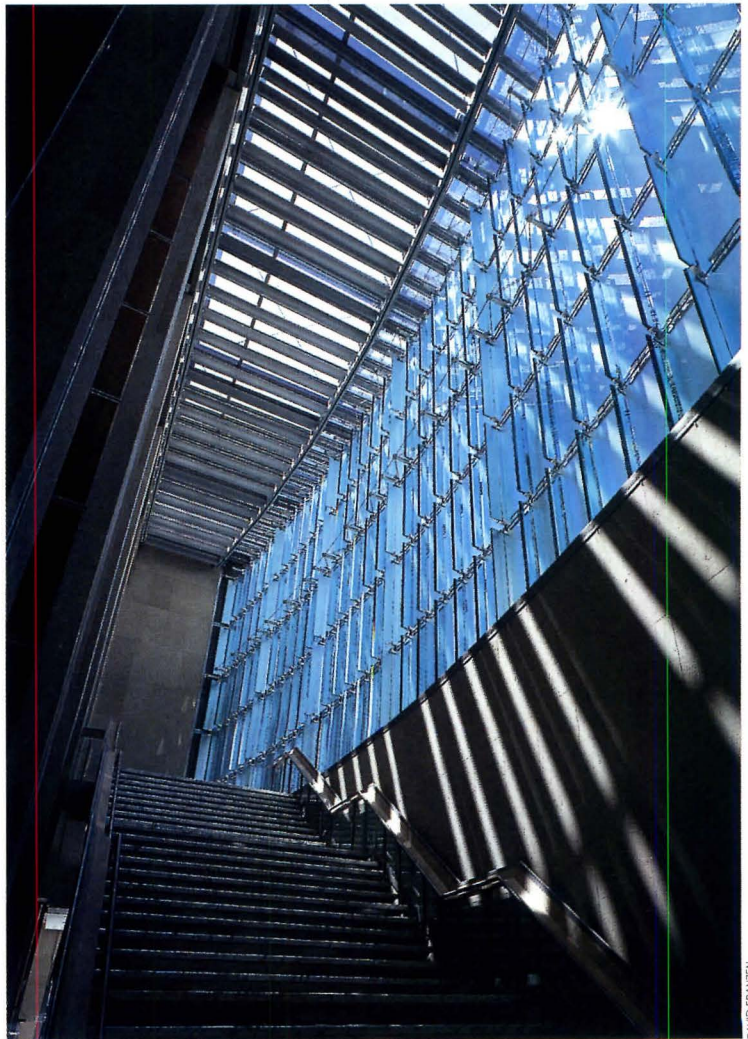
Carpenter and project managers Rebecca Uss and Ali Tayar specified transparent, low-E glass for the outer skin of the 48-foot-high-by-100-foot-long exterior wall. Extruded aluminum mullions and exterior fins placed at 15-foot intervals help shade the glass. Separated from this exterior cladding by 20-inch-long aluminum outriggers, a second inner layer of 6 $\frac{1}{2}$ -foot-high-by-28-inch-wide diffused glass panels is supported by a stainless steel and aluminum armature. These sandblasted, acid-polished, $\frac{5}{16}$ -inch-thick glazed panels are held in place by aluminum clips, which are fastened to horizontal struts extending the length of the facade.

Inside, the glazed assembly is supported by pairs of $\frac{3}{4}$ -inch-thick beveled glass prisms that refract sunlight entering the lobby. These 18-inch-wide blades of clear glass, measuring 10 feet in height, are stacked five high and spaced at 2 $\frac{1}{2}$ -foot intervals along the length of the curtain wall. Aluminum clips at the top and bottom of each blade are inserted into the aluminum outriggers to anchor the interior screen to the outside cladding; vertical stainless steel rods connecting the top and bottom clips add stability to the interior glass structure.

Light hitting the beveled edges of the vertical blades creates sharp highlights that are projected onto the panels of diffused glass. In elevation, the translucent panels glow with a cool wash of shadows and diffused daylight; seen from an angle, the prismatic edges of the structural glass blades appear as monolithic cobalt lines, with occasional flares of orange and red.

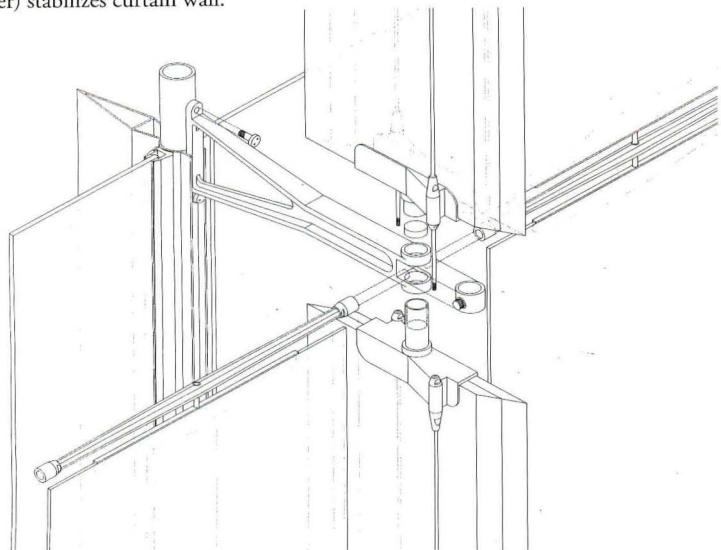


DAVID FRANZEN

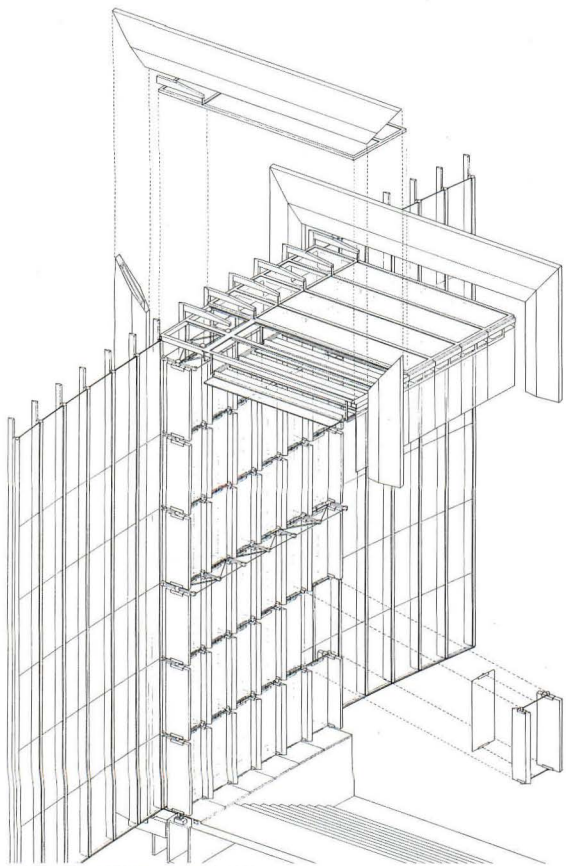


DAVID FRANZEN

FACING PAGE, TOP: Double-layered glass curtain wall employs solar control.
FACING PAGE, BOTTOM: Inside lobby, translucent glass panels act as screen.
DETAIL, BELOW AND RIGHT: Aluminum clips support prismatic glass blades.
AXONOMETRIC, BOTTOM: Steel-framed skylight is shaded by rectilinear fins.
BOTTOM RIGHT: Stainless steel truss (center) stabilizes curtain wall.



DETAIL OF BLADE ASSEMBLY



AXONOMETRIC OF SOUTH WALL



DAVID FRANZEN



DAVID FRANZEN

Dichroic light field
Millennium Building
New York City

When it was completed in 1994, New York City's Millennium Building, housing movie theaters and a health club, boasted a bleak, 70-foot-high brick wall extending an entire city block along Columbus Avenue. After its completion, the project's developer, Millennium Partners, "realized the building needed a public gesture," explains Carpenter.

The developer held an invited international competition in 1994 for a design to alleviate the building's huge, monotonous brick facade, and chose Carpenter's proposal for a sculptural glass curtain wall. Carpenter and New York-based cladding experts R.A. Heintges Architects began by applying a standard curtain wall over the building's concrete block substructure. A steel armature is bolted directly to the concrete block wall; prefabricated, 4-foot-square aluminum frames are then clipped directly onto the underlying steel armature.

The aluminum frames support $\frac{5}{8}$ -inch-thick laminated, annealed glass panels, which are tempered to absorb thermal stresses caused by heat buildup between the glass and the concrete substructure behind. Carpenter and Lowings applied a dichroic, or interference, coating between the glass layers. The coating—which the designer has used often in past projects—is a film that both transmits and reflects light, creating a luminous, transparent effect.

To create another layer of color and pattern on the facade, Carpenter inserted 216 blades of polished dichroic glass through the aluminum frame, perpendicular to the surface of the glazed curtain wall. These 6-inch-deep, $\frac{5}{8}$ -inch-thick blades extend 2 feet beyond the surface of the exterior wall and 5 inches behind to the concrete block infill wall. The blades are held in aluminum channels with structural silicone sealant; the fittings are then anchored to the substructure.

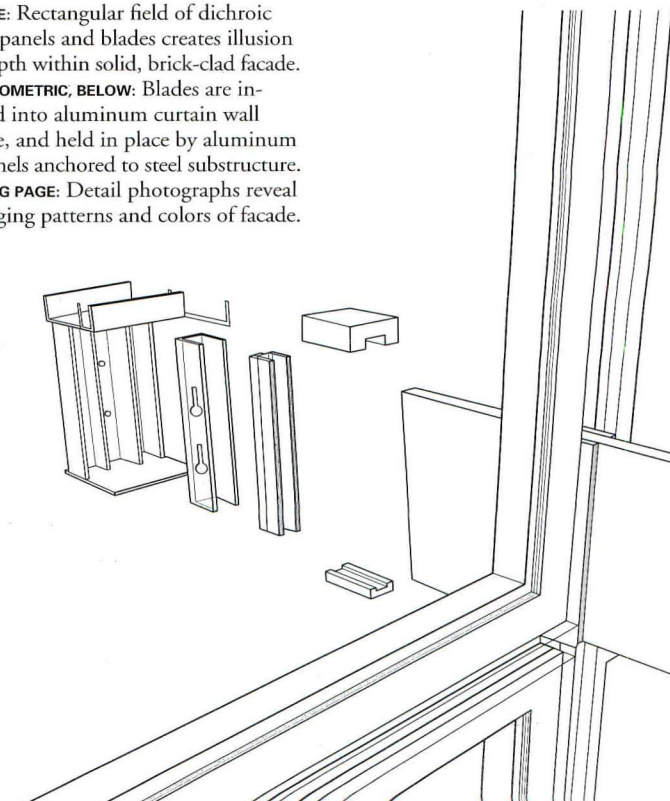


DAVID SUNDBERG

ABOVE: Rectangular field of dichroic glass panels and blades creates illusion of depth within solid, brick-clad facade.

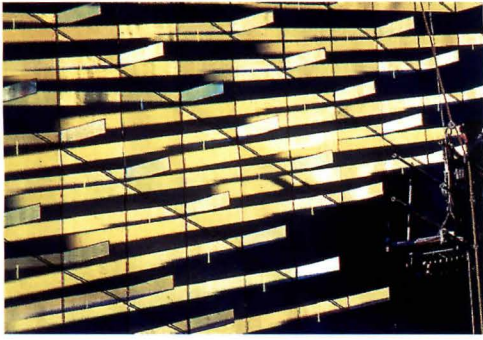
AXONOMETRIC, BELOW: Blades are inserted into aluminum curtain wall frame, and held in place by aluminum channels anchored to steel substructure.

FACING PAGE: Detail photographs reveal changing patterns and colors of facade.

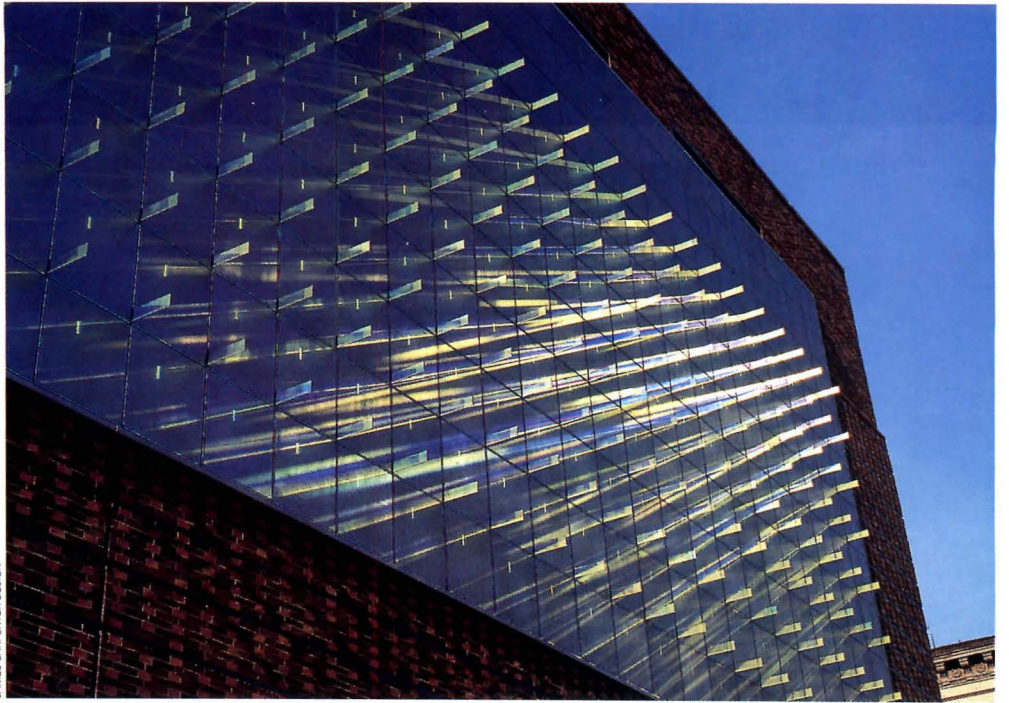


EXPLODED AXONOMETRIC OF DICHRIC BLADE ASSEMBLY

JAMES CARPENTER DESIGN



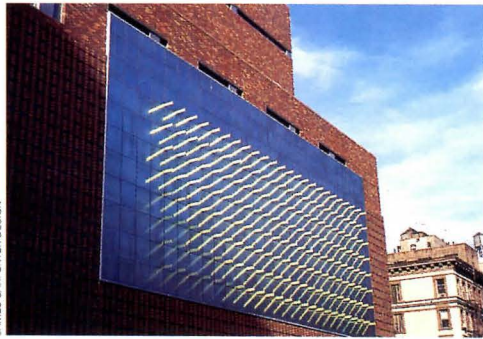
JAMES CARPENTER DESIGN



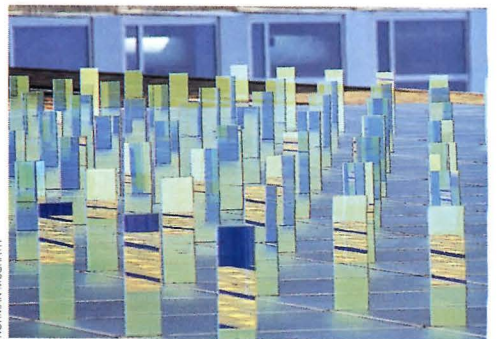
NORMAN MCCRATH



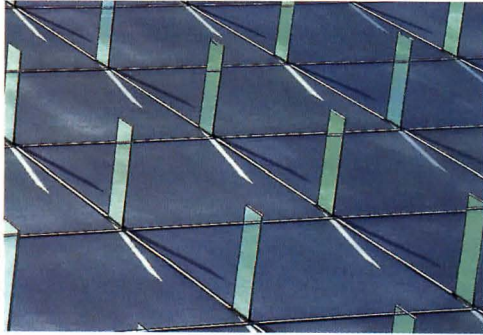
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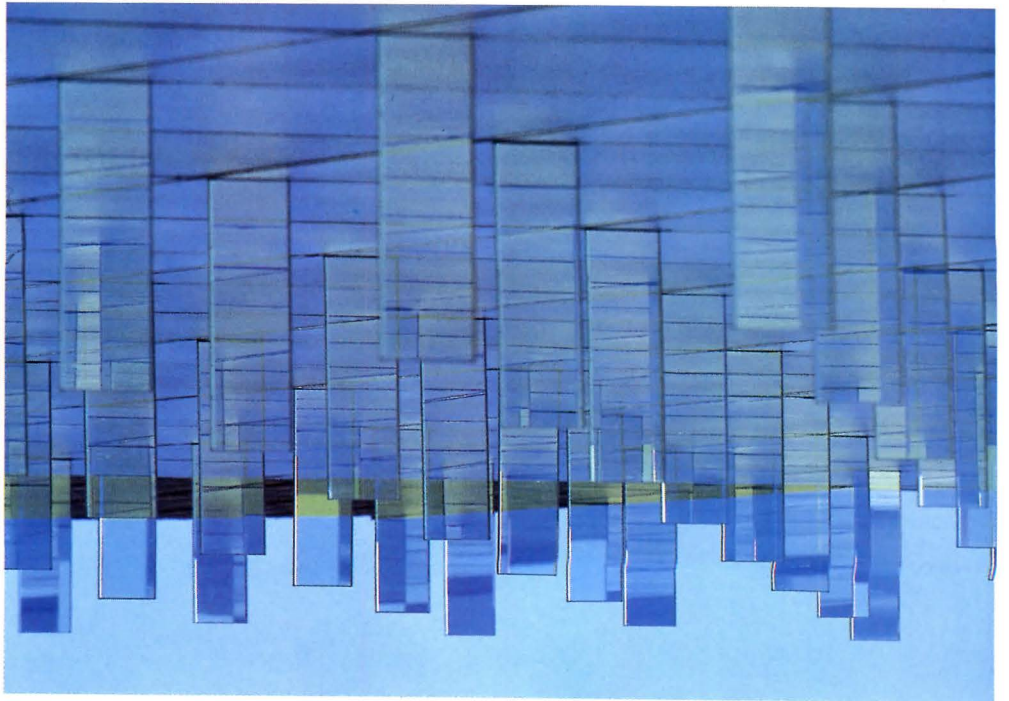
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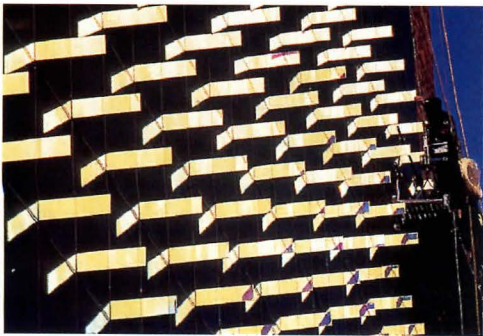
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NORMAN MCCRATH



JAMES CARPENTER DESIGN



Sculptural light reflectors
San Francisco Airport
International Terminal

In the late 1980s and early 1990s, Carpenter designed two projects with the Los Angeles office of Skidmore, Owings & Merrill (SOM), both of which remain unbuilt: a glass tension net sculpture and a glass curtain wall. SOM's experience with Carpenter led the firm to invite him to join the competition team for the new international terminal at San Francisco's airport—which SOM San Francisco is currently constructing.

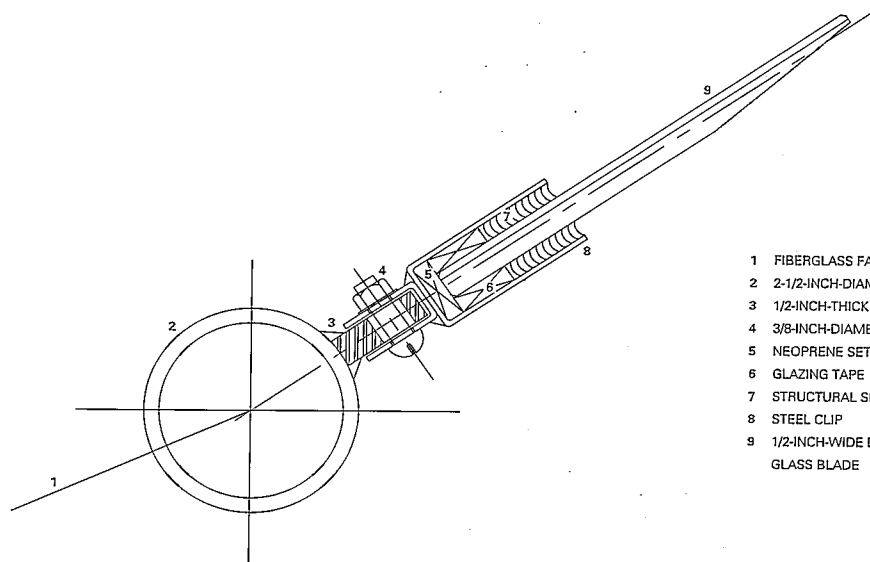
Carpenter's contribution, a series of four fabric and glass scrimms mounted beneath large, elliptical skylights, is considered part of the one percent-for-art program of the San Francisco Airport Authority. "SOM wanted do something in a major public space that would be part of the architecture and also add significantly to people's experience of the space," Carpenter explains.

Carpenter and project manager Janet Fink originally planned to shade the four huge skylights above the ticket hall of the new terminal with translucent scoops constructed of rigid fiberglass panels with glazed inserts. But the fiberglass construction proved too expensive. So Carpenter consulted with New York engineer and tensile fabric experts FTL/Happold to develop the cocoonlike forms from fabric.

Each light reflector measures 160 feet long and up to 25 feet wide. The reflectors are composed of double-curved fiberglass fabric tensioned within a tubular steel frame. The fabric assemblies will be suspended from shallow, arc-shaped steel trusses by 1/4-inch-diameter stainless steel rods. Blades of beveled spectral polycarbonate coated glass with a dichroic film extend around the perimeter of each reflector.

Sunlight and indirect indoor illumination striking the edge of the glass blades will create patterns of color on the fabric. At night, the scoops will be uplit intensely, to fill their curved surfaces with light.

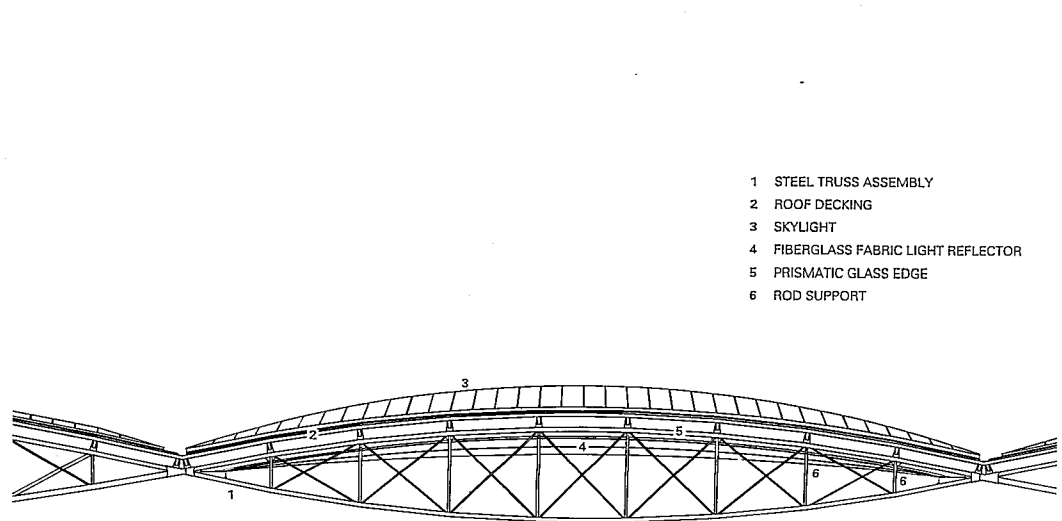
DETAIL, BELOW: Laminated dichroic glass blade of light reflector is held in place by steel clip fastened to steel pipe.
 SECTION: Tensile fabric light reflector follows shallow curve of skylights above. Fabric shell is supported from trusses by stainless steel rods.
 FACING PAGE, TOP: Fiberglass fabric shell is tensioned within tubular steel frames, suspended below elliptical skylight.
 FACING PAGE, SECTION: Light reflectors are mounted within triangulated roof trusses above ticketing hall.



DETAIL OF GLASS BLADE CONNECTION

- 1 FIBERGLASS FABRIC
- 2 2-1/2-INCH-DIAMETER STEEL PIPE
- 3 1/2-INCH-THICK STEEL TAB
- 4 3/8-INCH-DIAMETER BOLT
- 5 NEOPRENE SETTING BLOCK
- 6 GLAZING TAPE
- 7 STRUCTURAL SILICONE SEALANT
- 8 STEEL CLIP
- 9 1/2-INCH-WIDE DICHROIC GLASS BLADE

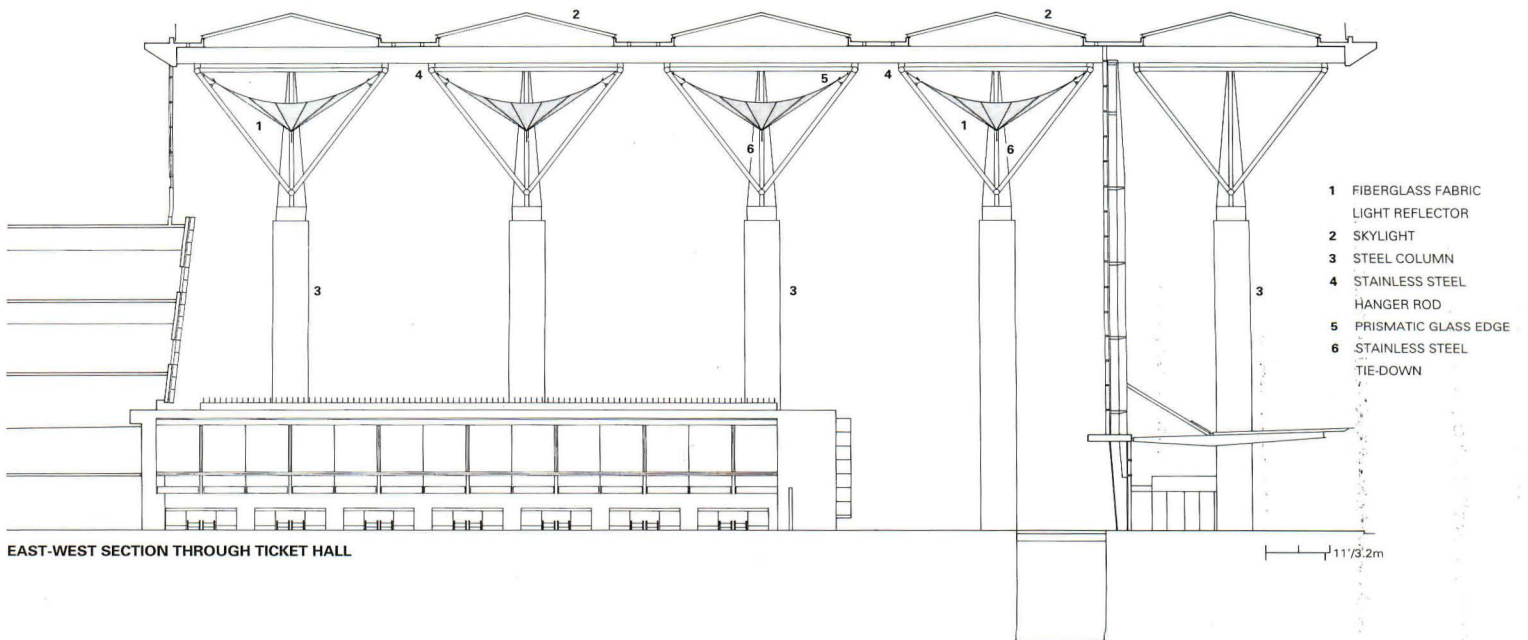
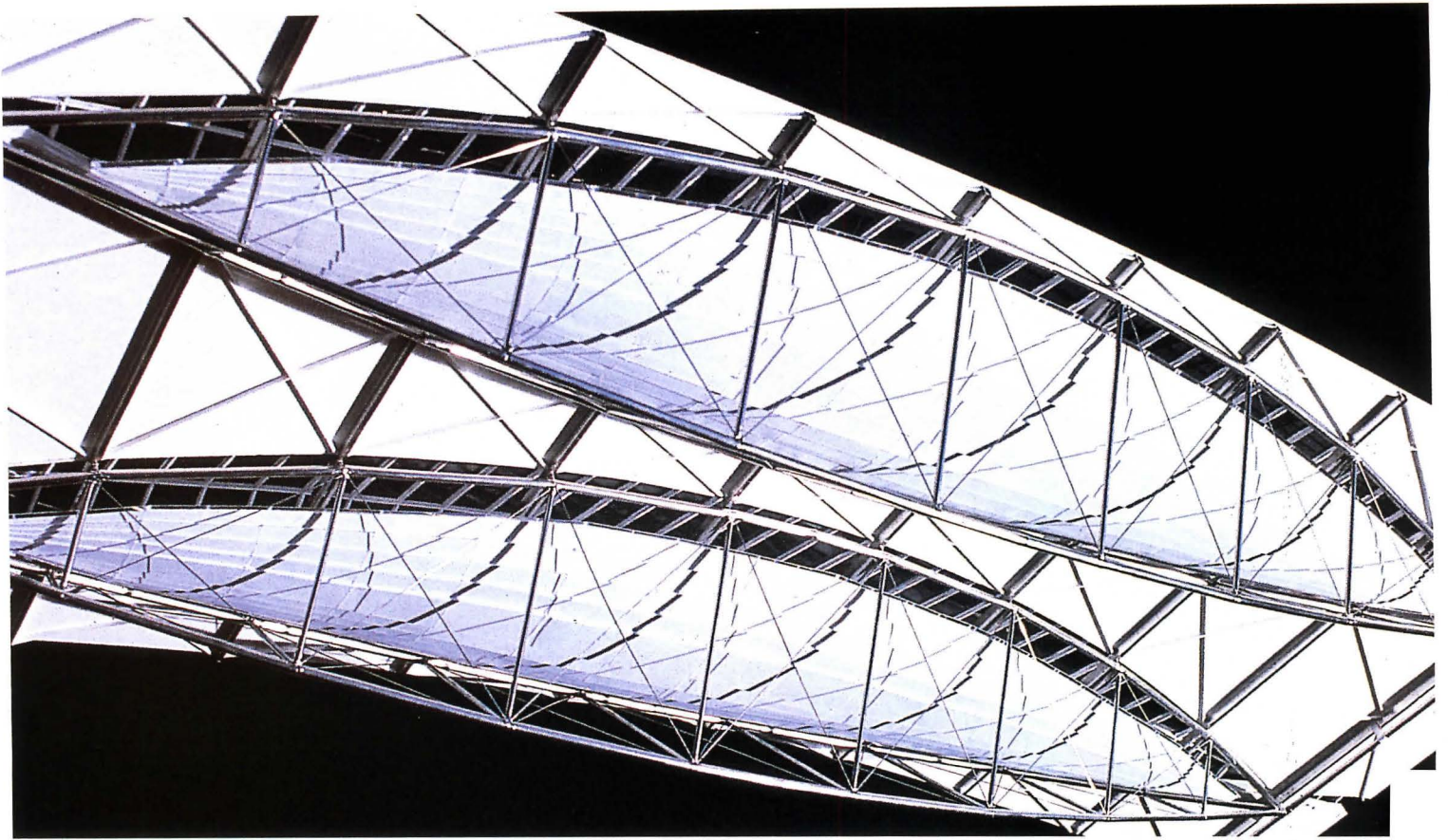
1 1/2.5cm



SKYLIGHT SECTION

- 1 STEEL TRUSS ASSEMBLY
- 2 ROOF DECKING
- 3 SKYLIGHT
- 4 FIBERGLASS FABRIC LIGHT REFLECTOR
- 5 PRISMATIC GLASS EDGE
- 6 ROD SUPPORT

15 1/4.4m





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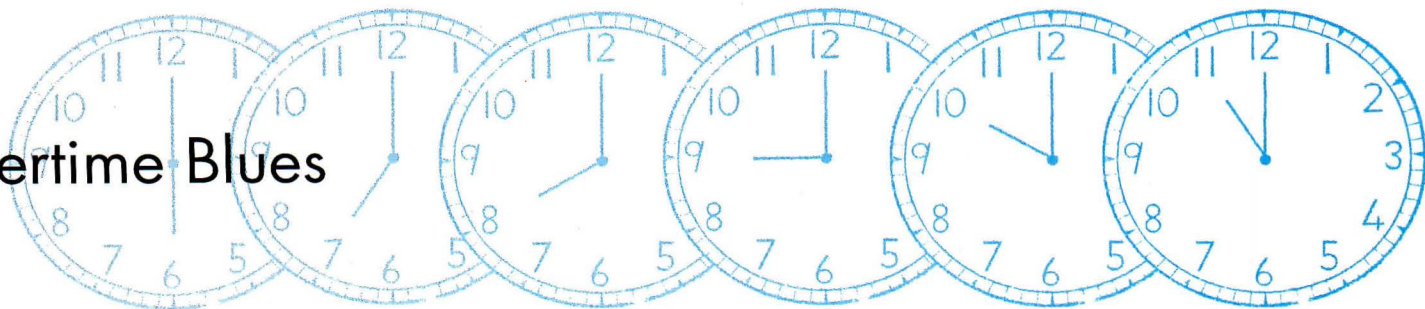
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Circle 83 on information card

Architecture is built on long hours. Nearly 90 percent of firm principals say that 40-hour work weeks aren't enough to stay profitable. Almost a third want salaried staff to work more than 50 hours weekly, and most principals work long days themselves, according to a recent survey by management consultants Zweig White & Associates of Natick, Massachusetts. But a startling number of principals don't have a clue about how to compensate correctly for

working fewer than 40 hours, but are not paid overtime for working more. And many hourly employees—interns and entry-level architects especially—aren't getting the full time-and-a-half rate to which they're entitled under the FLSA. "In my experience, wage-and-hour compliance is a widespread problem among architects," observes Marjanne Pearson, an Oakland-based human resource consultant to design firms. "The problem is that architects like to pay people by the hour."

Overtime Blues



Blurring distinctions between hourly and salaried employees has become routine. Many firms are genuinely confused; others are skirting the law.

those extra hours. Many, in fact, court liability when it comes to paying overtime.

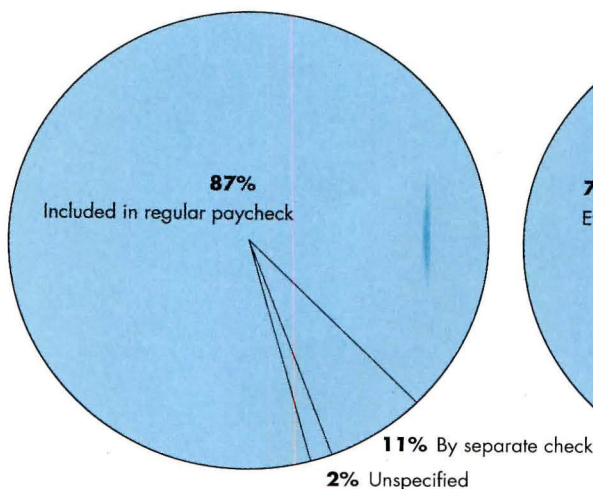
Confusion arises, genuinely or not, over which employees should be salaried and which should be hourly. In some cases, "salaried" employees are professionals paid an hourly wage times 40 hours per week. Zweig White's most recent overtime survey shows that 42 percent of architecture and engineering firms pay "salaried" employees overtime, although 68 percent of those who do so pay a flat hourly rate rather than time-and-a-half. One project manager at a large Chicago A/E firm, for example, makes \$26 an hour, and she earns the same rate for any hours more than 40 that she works during a week. Given the supervisory nature of her position, this employee would be salaried in most architectural offices. But even as an hourly wage earner, she should be earning \$39 an hour when she works overtime, according to the federal Fair Labor Standards Act (FLSA).

In other firms, salaried staff is docked for

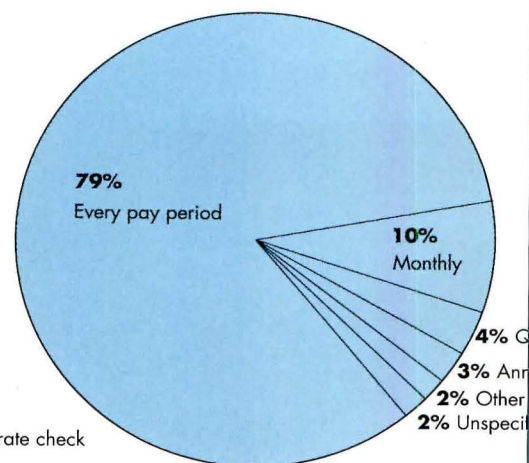
It is a problem that invites a visit from U.S. Department of Labor investigators, whose enforcement zeal varies from region to region. "We're mostly concerned with abuses in low-wage industries," admits enforcement specialist Libby Hendrix of the Labor Department's Wage and Hour Division in Washington, D.C. But the department does respond to employee complaints. Moreover, employees can proceed to court against an employer on their own. In 1995, out of 44,000 enforcement actions the department pursued, 4,485 were in construction-related industries. In a 1991 crackdown that sent shudders throughout the construction industry, Labor Department officials sued engineer Malcolm Pirnie Inc. of White Plains, New York. Malcolm Pirnie docked 24 salaried employees for \$3,300 in fractional missed workdays and, among other practices, used time sheets to record salaried staff's hours, which the Labor Department considered as evidence that the employees were ac-

Overtime Policies

How is overtime paid?



How frequently is overtime paid?



tually hourly. An appeals court forced Malcolm Pirnie to pay \$875,000 in back overtime wages to nearly 400 professional employees the department reclassified as hourly.

Since the Malcolm Pirnie ruling, "most firms have been trying to get their house in order to comply with wage and hour laws," remarks Robert A. Strasser, chief financial officer of Swanke Hayden Connell Architects in New York and chairman of the AIA's Large Firm CFO Roundtable. According to Strasser, trouble arises especially over how to pay workers at the bottom of the studio structure. Should interns be considered hourly if they have a degree but aren't registered to practice? The issue for interns, and for all employees, boils down to whether they are exempt from the minimum-wage and overtime requirements of the FLSA. That exemption hinges on their duties and responsibilities, and they must make a minimum weekly salary of \$250 set by the Labor Department. The fact that an employee earns a salary does not automatically create an exemption; similarly, an individual's professional title has no bearing on exemption.

The duties test for exempt status hinges on whether the employee exercises discretion and independent judgment in the course of his or her work. Employees are exempt if they are executives who manage an office department, direct the work of others, and can hire and fire employees. Likewise, administrative employees who carry out management-related work under only general

supervision are also exempt. Manual, routine, and repetitive jobs are generally considered nonexempt and hourly.

"You really need to do the test on a person-by-person basis," advises labor attorney Kathleen Pontone of the law firm Miles and Stockbridge in Baltimore. "People get in trouble when they make assumptions about what the employee is doing. It's the work that governs, not the title, so you have to ascertain what a given employee's work is." In its wage-and-hour field handbook, the Department of Labor addresses drafting as exempt when performed by a professional employee in connection with "his own" design project in the firm, however routine it may be. But routine drafting work "done in connection with the professional work of someone else" is nonexempt. "It's a big question when you've got a lot of young architects working very long hours," Pontone contends. Firms should generally consider low-rung architects hourly and pay them time-and-a-half overtime if they are only performing, for instance, inking and hatching of projects over which they have no real authority.

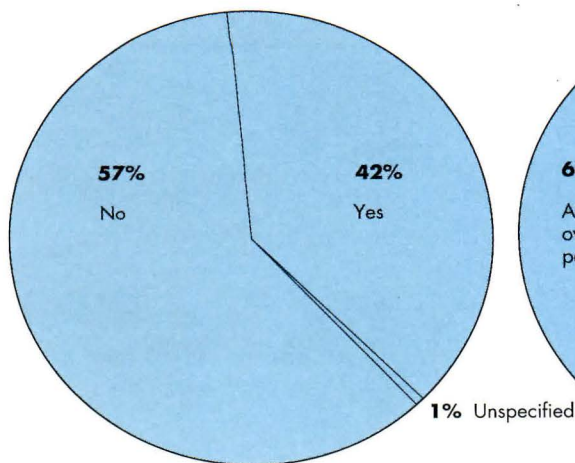
At RTKL International, which employs 500 architects, those just out of school with a professional degree are exempt and receive a salary, explains Human Resource Director Linda Nealy. But architects in the very lowest salary brackets receive time-and-a-half overtime, at least until a certain pay floor has been attained. "Salaries are not always high enough where you would feel comfortable

having employees work overtime without compensation," Nealy maintains. The case is the same at 160-person Thompson, Ventulett, Stainback & Associates in Atlanta, says a human resource officer at the firm. Swanke Hayden Connell considers post-intern architects with less than a year's experience as intern trainees, and they receive overtime, Strasser says.

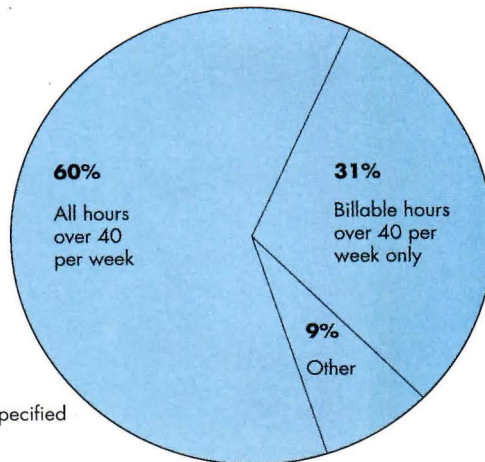
Yet in other offices, registration may serve as the defining point for becoming salaried, explains accountant Patricia Vanderkamp of 10-person Team Four Architects in St. Louis, who has worked in several local architecture firms. Some firms, she points out, have enough registered architects on staff to let unregistered designers work at high levels for a salary. "The definition slides among firms." If Team Four employees are not really managing and are working under a higher level professional, then they're hourly. But if they make management decisions on a project team, they're exempt.

But a red flag goes up over those firms paying the regular hourly wage for overtime work to exempt employees. It signals to regulatory officials that those employees might be hourly. Consultant Frederick D. White explains that many firms have trouble escaping this practice because they work under cost-plus contracts with public agencies. When such firms bill the client agency for hours worked beyond 40, they have to prove the employee actually worked and was paid for them in the event of a contract audit. But if

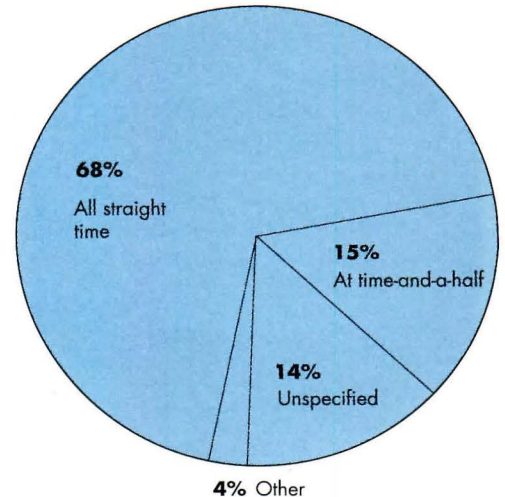
Does your firm pay overtime to exempt employees?



If so, on what basis is overtime calculated?



How is overtime calculated?



SOURCE: ZWEIG WHITE & ASSOCIATES

the overtime is paid at the flat hourly rate, that may also provide evidence for a labor audit that "salaried" staff are actually treated hourly. Therefore, White suggests, firms that pay overtime to salaried staff are safest when they issue a separate check for it in the form of a bonus, rather than lump it in with the regular paychecks.

About half of architecture firms offer compensatory, or "comp," time to exempt employees in lieu of overtime. One common but dangerous practice is to bank comp time and apply it toward work weeks when the salaried employee works less than 40 hours. Labor auditors argue that this practice amounts to docking pay—a cardinal violation of the FLSA. Docking salaried employees in any fashion suggests to regulators that they are in fact hourly. As the regulations read, "if an employee is compensated at a fixed salary for a fixed work week and this salary is reduced by the amount of the average hourly earnings for each hour lost in a short work week, the employee is, for all practical purposes, employed at an hourly rate of pay." If salaried employees are docked, enforcement officials may look back to the date pay-docking first occurred and order back pay for all overtime accrued in that period.

Many employers, particularly in service-related professions, are looking for flexibility in handling their employee schedules and wages. The issue came up in Congress this year when retiring Senate Labor Committee Chairman Nancy Kassebaum (R-Kansas)

held hearings on a bill she cosponsored with Senator John Ashcroft (R-Missouri) that would allow employers, upon agreement with their employees, to implement overtime policies based on 160-hour months rather than 40-hour weeks. And it would allow employees to opt for comp time and a half in lieu of overtime pay. The bill did not come up for a vote this session but is expected to be reintroduced next year.

The Clinton administration proposes a slightly different approach to flexible scheduling and overtime that would give employees the prerogative to schedule 160 hours of work at will over a four-week period, as long as they give the employer two weeks' notice. But neither of these proposals will satisfy employers who want to dock exempt staff for partial days—and still refrain from paying them overtime. "The central question," explains Milton F. Lunch, an A/E liability consultant in Chevy Chase, Maryland, "is how one can justify the reduction of pay of professional employees for occasional part-day absences, and at the same time continue the present exemption for overtime pay for those employees." Some A/E principals, Lunch suggests, would like to do that very thing. But the wage-and-hour provisions are the bedrock of federal labor law and are unlikely to be modified quickly, or radically.

Among architects, ethical debate is currently swirling around the exploitation of interns and entry-level architects. Many young architects report having worked in firms that

ran well afoul of federal labor law.

A 27-year-old veteran of three architecture firms in Washington, D.C., recalls working as an hourly paid intern where 50-hour weeks were routine and straight-time pay was the rule. Isn't that illegal? "Well, yes," she replies, "but it's so much better than where I was before, where everyone was on salary even if they were nonprofessional. I ended up working dozens and dozens of extra hours and not getting compensated."

This problem of bending or skirting overtime laws has become entrenched practice among some of the best known architecture offices in the country. Large firms tend to be better about complying than smaller offices, consultants say, particularly when their human-resource managers are imported from other industries. Nonetheless, a large West Coast firm encountered a Department of Labor audit two years ago that ended only when the auditor's assignment was switched. The investigation could have posed major trouble for the firm because it reportedly paid all of its employees, professionals included, strictly by the hour.—Bradford McKee

For more information on overtime regulations, contact your regional office of the U.S. Department of Labor and ask for the Wage and Hour Division. The department offers numerous handbooks on the Fair Labor Standards Act, including "Overtime Compensation under the Fair Labor Standards Act." On the Internet, contact www.dol.gov.

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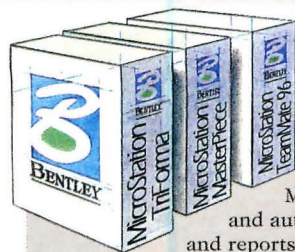


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Circle 85 on information card

Hollywood movie sets are being replaced by digital recreations of period architecture. Catalogs are being shelved for virtual showrooms that let browsers explore products of different styles and sizes. CD-ROM games play out in a digital environment like Alcatraz Island or the lost city of Atlantis. Who better to design and model these virtual constructions than an architect?

Architects, rigorously schooled in three-dimensional design, have an advantage over computer illustrators in creating realistic spatial environments,

tion services through a sister company, RWZ Incorporated. Similarly, CORE in Washington, D.C., began generating animations of in-house design projects and found its expertise easy to market to clients. But CORE is cautious about joining the ranks of digital marketers. "We want to make sure that there is a strong design component to all of our commissions," explains Partner Dale Stewart. "We don't want to become a multimedia production house for other architects' designs."

High-tech computer savvy requires considerable

Multimedia Markets

Architects' spatial skills and digital design expertise are increasingly being tapped for projects outside conventional practice.

and are quickly moving into multimedia markets. Attracted by the allure of television, film, and entertainment clients, many recent architecture graduates, including James Gettinger and Haji Uesato of Funhouse and David Williams of David Williams 3dMedia in New York City, are choosing digital work over traditional practice. "A person with a fine arts background approaches computer animation very differently than someone with three-dimensional training," Williams points out. "Architecture is a great discipline to bring to this medium." Young designers are not the only converts: Veterans Mieczyslaw Boryslawski and France Israel founded the San Francisco-based multimedia design firm View By View in 1990 after a combined 25 years of work in architectural and construction management firms.

Some architecture firms find that digital design services are a natural spin-off of their conventional practices. Philadelphia-based Mike Rosen & Associates began experimenting with virtual reality three years ago. Today, the firm markets visualiza-



investment in hardware, software, and training, and a career spent keeping up with the competition's tools. That kind of commitment is daunting to newcomer Eyecandy of San Francisco. The firm's cofounders, Robert Shepherd and David Yama, decided to focus on both pure architectural design and digital services to alleviate some of the pressure to maintain state-of-the-art technology.

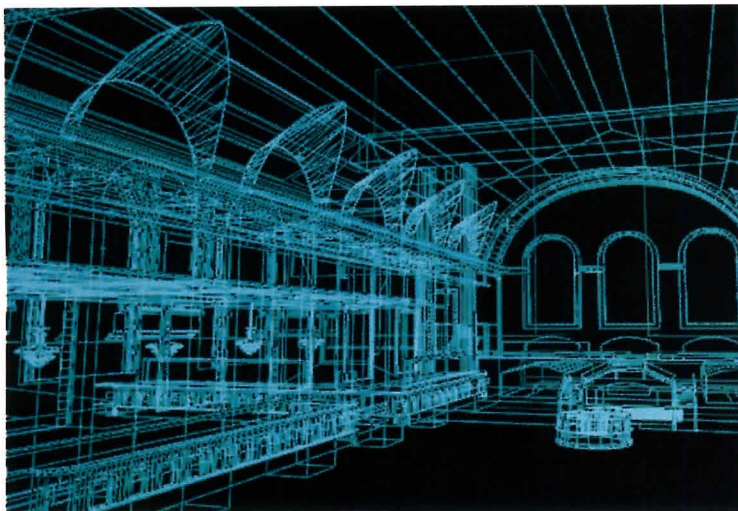
Architects interested in exploring virtual design can learn from these pioneers. But before hanging out a digital shingle, consider the time and money that must be invested: Mike Rosen & Associates undertakes projects that may require eight software applications to execute, while CORE sticks with only one, Graphisoft's ArchiCAD. Exposure is critical: A high-profile pro bono demonstration of the plan for Yerba Buena Gardens in San Francisco gave View By View an early boost. With the proliferation of computer-dependent communication and the blurring lines between architecture and entertainment, there's plenty of multimedia work for the adventurous.—Ann C. Sullivan

Funhouse cofounders James Gettinger and Haji Uesato first collaborated in 1995 on a design competition for the Atlanta Olympics and discovered a shared affinity for virtual design. Among the benefits of digital architecture that appeal to 31-year-old Gettinger, who worked for Eisenman Architects in New York until 1994, and 32-year-old Uesato, a former Antoine Predock Architect employee, are control of a project from start to finish and freedom from the constraints of the physical world—as evidenced in Funhouse’s speculative alien lounge (center).

After the Atlanta competition, the two began slowly building a business with their business partner, 33-year-old Grace Lim. Focused on three-dimensional computer design for entertainment clients, they invested in Silicon Graphics workstations and Macintosh computers. A big push to incorporate in time for the annual Siggraph computer graphics exhibition in August paid off: Gettinger posted their credentials at the show and received calls from five production houses, including the one started by late Muppeteer Jim Henson. Funhouse produced a virtual design of a house inspired by the writings of Dr. Seuss, which landed Gettinger a consulting role with Jim Henson Productions. Portions of his work aired on the cable television network Nickelodeon in the October premiere of Henson’s “The Wubbulous World of Dr. Seuss” series, which combines puppets and computer-modeled sets (top).

“We’re at the right age to break into digital design,” insists Gettinger, “when our peers in the architecture, graphics, and music industries are starting to come into their own and can bring business to our door.” This fall, for example, Funhouse rendered a private gallery (bottom) designed by one of Gettinger’s former coworkers.





With a bachelor's degree in architecture from Washington University in St. Louis and a master's degree in architecture from Columbia University, 27-year old David Williams could have embarked on a traditional professional career aimed at passing the registration exam; instead, he founded the computer design firm David Williams 3dMedia.

Williams' shift to digital design was gradual. Before completing his master's degree, he worked for Eric Owen Moss, Obayashi Corporation in Tokyo, and his father's New York City firm, Frank Williams & Associates. Because his undergraduate studies predated the now-ram-pant infiltration of CAD in academia, it wasn't until his second year at Columbia that Williams caught the digital bug. He doesn't regret his early training, however. "I was forced to draw and build models," he recalls. "I couldn't work with computer models as effectively without that background."

Since 1995, 3dMedia has modeled and animated several projects, including a park in the Tuscany region of Italy designed by landscape architect Shepard Craig (top). Expanding beyond this architectural client base, Williams recently recreated New York's Grand Central Station (center and bottom) as a site for a proposed computer game.

Williams runs Softimage, the animation package used in *Jurassic Park*, and Lightscape, a photorealistic rendering application, on a Silicon Graphics workstation; and he operates 3DStudio and Photoshop on the Macintosh platform.

The designer relies on freelance employees and a long-term collaboration with local Funhouse partners James Gettinger and Haji Uesato. The two firms pool resources for large projects. 3dMedia focuses primarily on the architectural community while Funhouse targets television and film clients.

Virtual reality has opened new doors for Mike Rosen & Associates (MRA) since the Philadelphia-based architecture firm invested in the technology three years ago. Rosen, president of the 30-person residential design firm, discovered that virtual reality is an effective communication tool, not just to walk through a schematic design with an architectural client, but also to sell products, tour real estate, and teach seminars.

In response to a growing demand, 37-year-old Rosen launched a sister company called RWZ Incorporated in 1995 to market MRA's computer visualization expertise to architects, builders, and manufacturers. RWZ pursues projects that complement architecture and avoids competing with professional Hollywood studios for entertainment commissions.

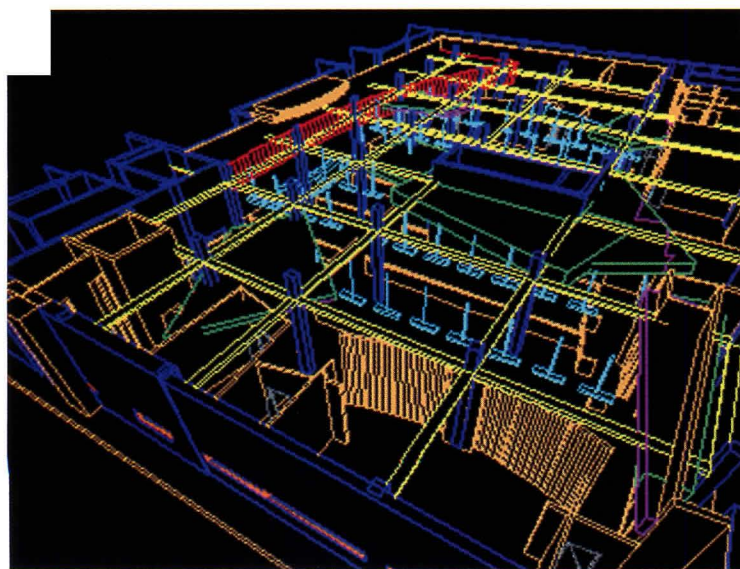
Peirce-Phelps, a Philadelphia-based building products distributor, hired RWZ to develop a series of digital models for its product line inside a condominium (top), beauty salon, and restaurant. Rosen is also working with food service supplier Aramark to model its designs for a cafeteria proposed for Goldman Sachs (center and bottom).

Rosen works on several platforms, from high-performance Silicon Graphics machines, to Macintosh and Pentium-powered personal computers. The firm's software palette includes AutoCAD and 3DStudio modeling applications, and virtual reality development software called WorldUp from Sense 8.

Right now, the expense of hardware, software, and training make virtual reality walk-throughs prohibitively expensive for the majority of Rosen's residential clients, and the architect finds digital design most cost-effective as a marketing device. "My vision for the future is that client and architect will conceive, visualize, and design while completely immersed in an environment," predicts Rosen.



CORE
Washington, D.C.



To boost ticket sales, Jack Kent Cooke, the owner of the Washington Redskins, hired CORE to model and animate the team's new football stadium, designed by Hellmuth, Obata & Kassabaum and now under construction outside Washington, D.C. (top and center). CORE's walk-through was broadcast on the local news, and the publicity generated by the virtual commission has brought CORE's partners, 40-year-old Peter Hapstak and 39-year-old Dale Stewart, to a crossroads—not the first in the firm's five-year existence.

Requests are rolling in for the 15-person architecture firm to offer digital design services. Hapstak and Stewart have been receptive to new markets since founding CORE with former partner Robert Fox in 1990, but digital design requires a substantial investment in technology and training.

Today, CORE relies on Graphisoft's ArchiCAD for conceptual design studies, construction documents, and multimedia presentations. The software's QuickTime VR feature allows the architects to generate walk-throughs and flybys of their designs, which include an office renovation for National Electronics Warranty Companies in Great Falls, Montana (bottom).

When the firm modeled the Redskins stadium, the project required hiring professional video editors to convert the animation to a format appropriate for broadcast. "If we start getting serious about multimedia production, we'll need substantially more powerful software and computers," explains Project Architect Randy Seitz. "Deciding where to draw the line is difficult."

CORE is not interested in becoming a production studio for other architects' designs. "If we move into digital work, we'll tackle it as designers," maintains Stewart. "As opportunities come up, we evaluate them on a case-by-case basis."

Eyecandy
San Francisco, California

The original objective of Eyecandy founders Robert Shepherd and David Yama was to create a “digital atelier,” recalls Shepherd. “But we keep getting drawn back into architecture.” Staying flexible and keeping abreast of new hardware and software developments is a constant priority.

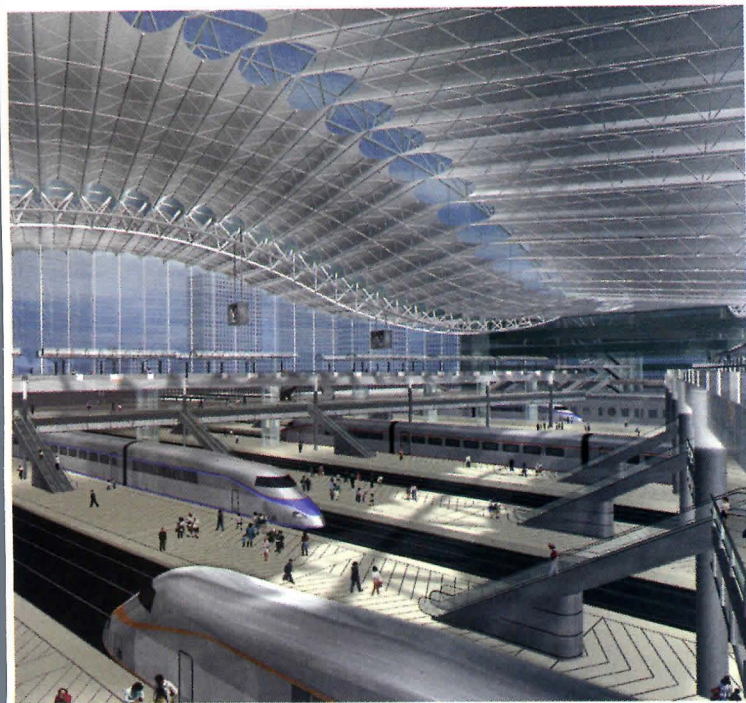
Shepherd, a 30-year-old architect who worked for architects Peter Pfau and Wes Jones, teaches computer design classes at the California College of Arts and Crafts. Thirty-year-old Yama worked for Skidmore, Owings & Merrill and spent a year teaching and practicing in Tokyo, his birthplace. The two joined forces in 1995 to pursue projects that explored technology and the physical environment.

Working with Pentium-powered personal computers, Eyecandy started out creating computer models, renderings, and animations for architects who don't have computer resources of their own. A commission to model prototype furniture introduced them to a local print house, Digital Pond, which then hired the firm to design its new space. “We understood what a T-1 line is and how to set up a local area network,” explains Shepherd. “We spoke the same language, which is quite helpful these days.”

With Pfau Architecture and exhibit designer Eight Incorporated, Eyecandy designed the Swatch Pavilion at the 1996 Olympics in Atlanta (right). The temporary structure's polycarbonate sheathing functioned as a giant projection screen, displaying changing colors and images. Reconciling building technologies with computer systems epitomizes Eyecandy's dual personality.

“We are heavy into digital design, but we're also quite new at it,” Shepherd admits. “It's not as simple as plugging a couple of computers into your office and calling yourself digital. We're still investigating the best approach.”





Seven-year-old View By View is a veteran of digital design. Cofounders Mieczyslaw Boryslawski and France Israel have amassed an extensive portfolio of renderings, animations, and photomontages since incorporating in February 1990, without the benefits of youth and in-school training.

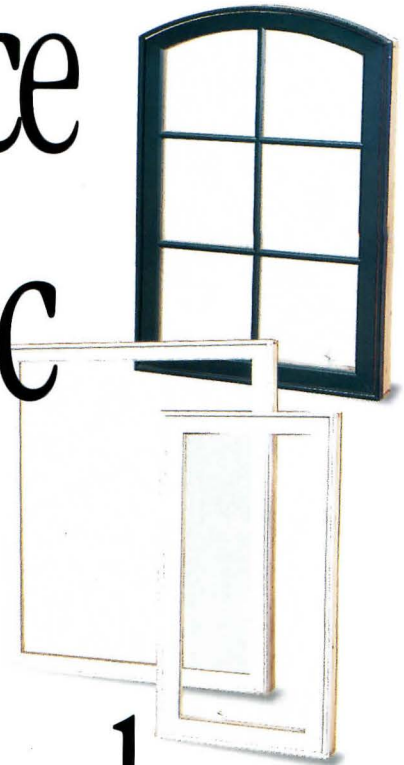
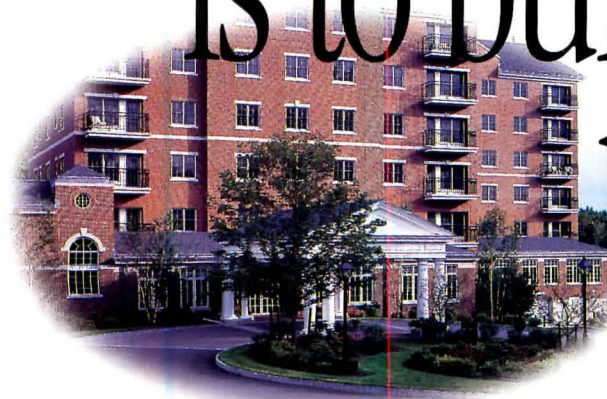
Boryslawski first laid eyes on a personal computer in 1987. He had just returned to the United States after 12 years practicing architecture abroad, and didn't even know how to turn on the unfamiliar device. "I had a choice," recalls the 51-year-old Polish emigrant, "I could walk away, or admit I knew nothing and start reeducating myself from ground zero." Thirty-seven-year-old Israel was familiar with computers after nine years of construction management work in South Africa, but not with architectural visualization.

Boryslawski and Israel embraced the new technology. This summer, View By View modeled a competition entry designed with architect John Tatom and engineer Ove Arup & Partners for the Kansai-Kan National Diet Library (top). For The Ratcliff Architects, View By View modeled the Emeryville, California, firm's entry in an international competition for a high-speed train station in Pusan, Korea (center).

In August, Time Warner Electronic Publishing released *Qin: Tomb of the Middle Kingdom*, a CD-ROM game produced by Learn Technologies Interactive. Set in the ancient burial ground of China's first emperor, Qin Shi Huangdi, the game incorporates more than 1,200 photorealistically rendered images created by View By View (bottom).

Boryslawski and Israel teach computer visualization classes at the California College of Arts and Crafts. *Encouraging professionals to experiment with computers is important to them. "You don't have to be a genius; you just have to be enthusiastic,"* advises Boryslawski.

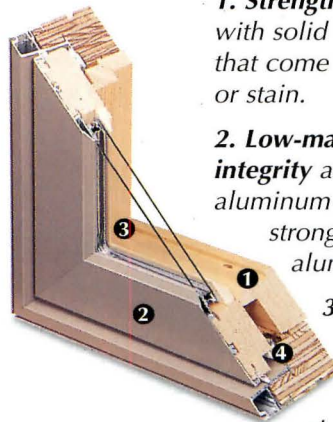
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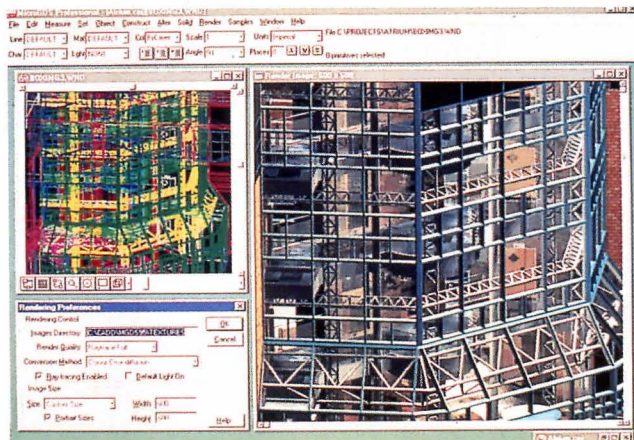
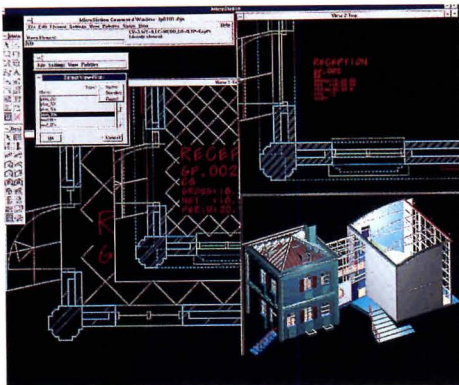


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Circle 87 on information card

New add-ons to CAD programs expand graphics possibilities.



TOP LEFT: Speedikon from AECs Solutions combines two-dimensional drafting and three-dimensional modeling, from schematic design through construction documentation. The program operates on Windows NT, Windows 95, and UNIX platforms. Two versions, Speedikon M and Speedikon A, are compatible with MicroStation and AutoCAD interfaces respectively, so that information can be exchanged between different platforms.
Circle 401 on information card.

TOP RIGHT: Bentley Systems has released a new version of MicroStation MasterPiece, a rendering add-on designed to complement MicroStation. New features such as

radiosity, photomatching, and solid texturing enhance the program's rendering accuracy and realism. In addition, MicroStation MasterPiece allows the superimposition of video footage into an animation. MicroStation MasterPiece can be operated on DOS, Windows, Windows 95, Windows NT, Power Macintosh, and SGI platforms.

Circle 402 on information card.

ABOVE LEFT: An upgraded line of MicroGDS CAD software from Graphic Data Systems is now available for Windows, Windows NT, and Windows 95 platforms. It is available in four programs: MicroGDS Drafter, an introductory, single-user package in two and three dimensions;

MicroGDS Professional, a three-dimensional rendering program; the new MicroGDS Plus, a scaled-down version of MicroGDS Professional without rendering capabilities; and MicroGDS Review, a program for viewing .WND, .MAN, .DXF, and AIF/BIF files.

Circle 403 on information card.

ABOVE RIGHT: Several new add-ons are now available for MicroGDS. Cate-naFM is a facilities management application. Piranesi (pictured), converts rendered three-dimensional images into paintings. Building Services Detailer allows users to add pipe, duct, and electrical graphics to CAD drawings.

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Products

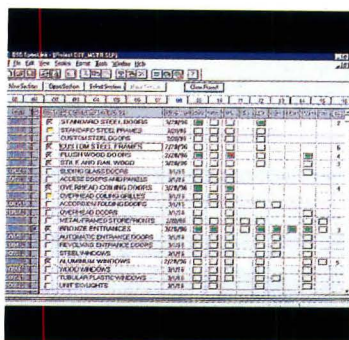


New workstations, plotters and printers produce high-resolution renderings.

Windows workstations

New computer workstations from Intergraph Computer Systems facilitate faster, smoother, real-time graphic applications. The TDZ series for Windows NT platforms incorporates RealZm 3D, a graphics system that can process 1.2 million lit, Z-buffered, Gouraud-shaded, 50-pixel three dimensional triangles per second. The TDZ series is available in three models, with rendering capabilities ranging from 1 million to 2.5 million pixels.

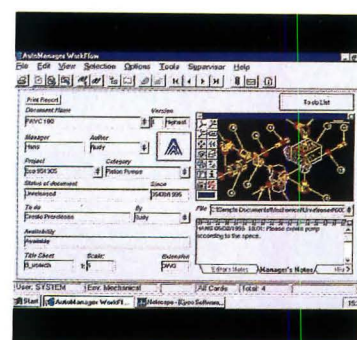
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Management software

In October, Cyco Software released a new, 32-bit version of its CAD document management software package, AutoManager WorkFlow, will now operate on Windows 95 and Windows NT platforms. Improved features include direct links with Microstation 95; a faster AutoCAD viewer; secure Internet and e-mail compatibility; Softdesk CAD Overlay and GTX RasterCAD file support; and an upgraded, more user-friendly interface.

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Specifications software

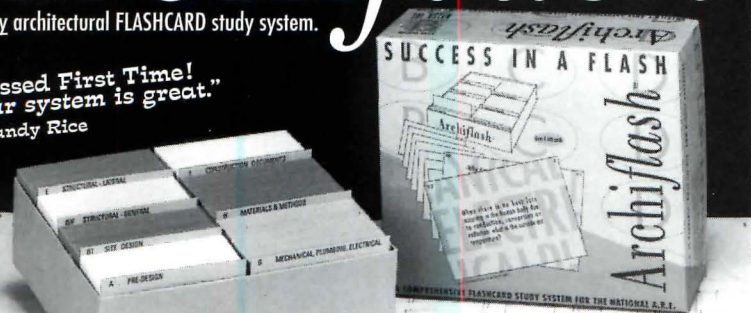
Building Systems Design has created a new Windows-based management system for construction specifications, BSD SpecLink. The program incorporates the organization of electronic spreadsheets, relational databases, and word processing systems. BSD SpecLink is compatible with Windows, Windows 95, and Windows NT platforms, and is distributed on CD-ROM format through annual subscription, with quarterly updates.

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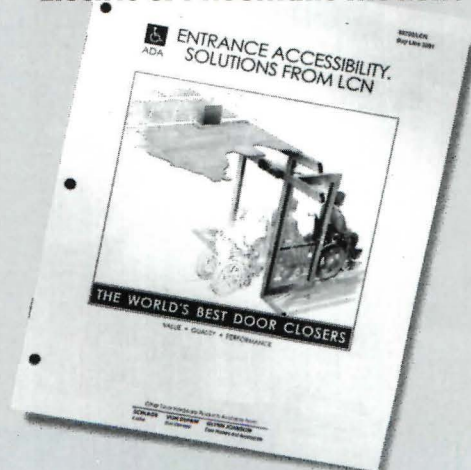
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Large-format printers

Hewlett-Packard (HP) has introduced two new DesignJet printers: 750C Plus color printer and 700 monochrome printer. Like the scaling feature on a photocopier, Hewlett-Packard's newly developed ZoomSmart scaling technology enables the printers to enlarge a Windows-based document up to 25 feet by percentage or paper size. Both printers produce color and monochromatic images at a resolution of 600 dots per inch.

Circle 408 on information card.



High-resolution plotters

TechJET Designer ink-jet plotters from CalComp now include two new models, 720c D-size and E-size. Both models plot monochrome images at 720 dots per inch and color images at 360 dots per inch on either cut sheets or roll-fed paper. The plotters operate in four speeds. The D-size prints on paper 8 1/2 to 24 inches wide; the E-size prints on paper 8 1/2 to 36 inches wide. Floor stands and baskets are also available.

Circle 409 on information card.



Color printer

Xerox's line of ink-jet printers now includes a wide-format, full-process color model, the 2240ij. Each color prints separately; this "four-pass process" purportedly provides richer color. The 2240ij prints monochrome drawings at 300- and 600-dots-per-inch resolutions; color drawings are produced at 300 dots per inch. The printer produces A- to E-size prints on sheet or roll-fed bond, vellum, polyester firm, and other media.

Circle 410 on information card.



Four-color printer

NovaJet 4 printers from Encad produce wide-format, four-color, and monochromatic images on a broad range of media. The printer can produce both 24-inch-wide and 36-inch-wide color images at a resolution of 300 dots per inch, and monochromatic images at 600 dots per inch. NovaJet 4's 4-megabyte buffer can be upgraded to as large as 68 megabytes. The printer is compatible with both Macintosh and Windows platforms.

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