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# Architect Bashing: Enough Already!

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*Charles D. Linn, RECORD LIGHTING*

PRINTED IN U.S.A.

Bashing architects has become a national pastime. Attend any construction-industry forum where two or three engineers, building-product managers, owners, or contractors are gathered together and you'll confront this litany of charges:

Architects are elitist. Architects are unable to "hold" a specification. Architects won't come up with an accurate project cost estimate. Product sales reps can't get to see the architect. Architects are afraid to take on risk. Architects refuse to tackle construction-contract administration. Architects can't keep a project on schedule.

Among the worst critics are architects themselves. They complain their authority is being whittled away by an array of consultants (including a new kid on the block known as the program manager, retained to manage an owner's construction programs). They wail over a litigious culture that forces them to eschew some traditional services. They lambast the marketing practices of their peers. They attack the schools of architecture for not providing an employable workforce. And they often criticize each other in public.

The media, knowing that bashing sells more papers than praise, pick up on these assaults and help perpetuate what is first and foremost a myth: because what is under attack is an architectural stereotype that is on its way to extinction. The media in fact does much better in defining the architect's role when it refers to a statesman as "an architect of detente;" to a corporate reformer as "architect of the new YZ Corporation;" or, in a recent *New York Times* obituary, to W. Graham Clayton as "architect of Amtrak growth." For a new stereotype is emerging, one no longer confined to designing buildings via private practice. This new architect is already providing the very services the critics fail to recognize—entrepreneurial positions in real-estate development; computer-software development; retainer agreements with clients in matters ranging from code, zoning, and ADA compliance to facilities management to fine-art selection; as managers of huge, tightly budgeted and scheduled construction programs such as prisons; in staff roles with corporations and public agencies; and through growing impact in consulting on infrastructure and other engineering-focused projects. As Phoenix architect Neal Jones told me not long ago: "My job is to see the big picture. It's to point out the pros and cons of materials, even if they cost less; to point out the environmental issues. My job isn't to take the dollars and run."

A business upturn will end the bashing, many claim. I don't believe this. The pattern won't go away until a new stereotype of architect is recognized, one not conceived narrowly as designer of buildings (although this will always be a core service), but one who serves across a far wider range in the building marketplace. The construction managers who encroach on the turf of the old stereotype must come to be seen as architects under this broader definition. So must the facilities managers, urban designers, and product developers. All who operate under the umbrella of building design are essentially performing functions of this broader-based architect. Perhaps the title itself must be changed, so that pride doesn't get in the way of reality.

Building an educational system and a professional association to accommodate this new, broader stereotype is a mammoth task, which many bright minds are already exploring. Meanwhile, the design and construction community should stop hunting for scapegoats and look instead on the rich opportunities, domestic and global, for those with vision, drive, and a cheerful outlook. *Stephen A. Kliment*

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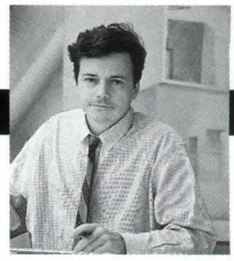
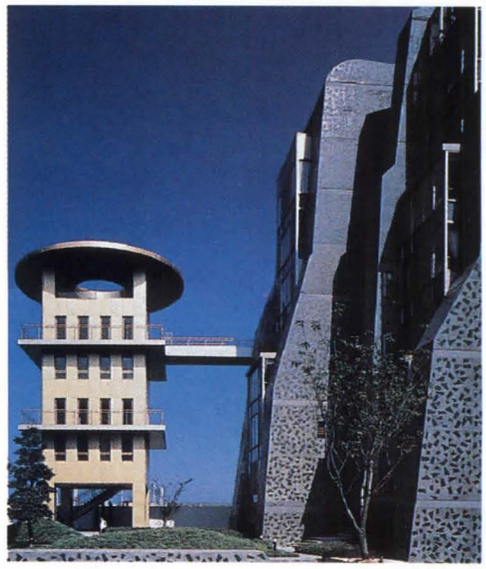


**Awards**

# Christian de Portzamparc Wins 1994 Pritzker Architecture Prize

The 1994 Pritzker Prize goes to Christian de Portzamparc, the first French architect to win the award. "I am happy and proud to be honored by such a prize; it is a great encouragement in my work," said the 50-year-old Portzamparc from his Paris studio. He also noted his country's patronage of young architects as critical to his success at a relatively young age. The formal citation of the jury—which this year included Giovanni Agnelli, J. Carter Brown, Charles Correa, Frank Gehry, Ada Louise Huxtable, Toshio Nakamura, and Lord Rothschild—says in part: "Every architect who aspires to greatness must in some sense reinvent architecture; conceive new solutions; develop a special design character; find a new esthetic vocabulary. Portzamparc's work exhibits all these characteristics. He has an unusually clear and consistent vision, devising highly original spaces that serve a variety of functions." The award, which includes a $100,000 grant and a bronze medallion, will be presented by Jay A. Pritzker, president of The Hyatt Foundation, at a June 14 ceremony in Columbus, Indiana. *K.D.S.*



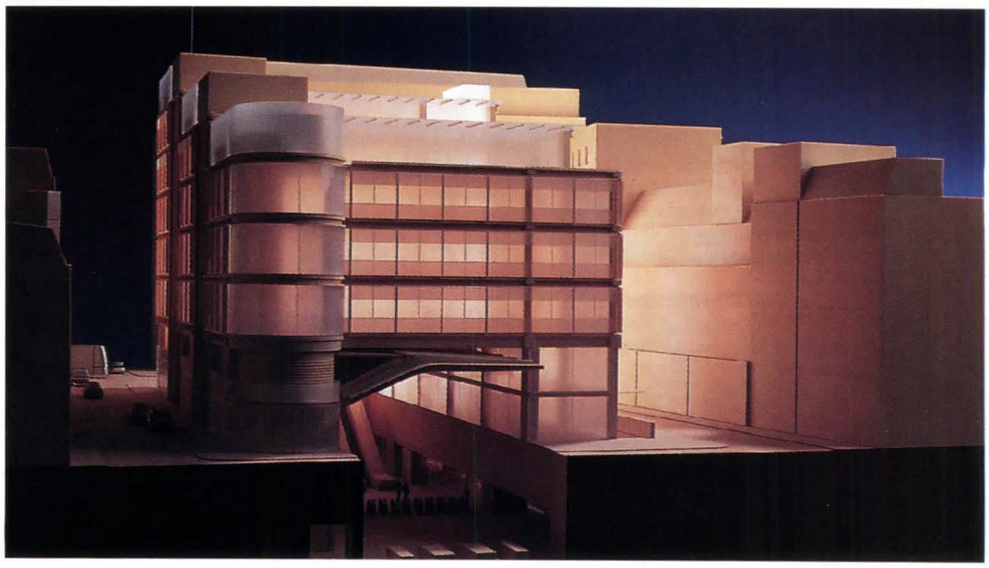
*Portzamparc's Cité de la Musique, Parc de la Villette, Paris, France (above); Apartment Building, Fukuoka, Japan (right).*

**England**

# It's 20 Feet Underground, But You Can't Miss It

Troughton McAslan uses transparency to integrate a planned underground rail station in central London with both the street and the office building that will rise above it. Plunging 20 feet below grade in order to leave street frontages free for retail and office uses, the Dean Street station will nonetheless be fully visible under a curved precast concrete canopy that runs the full length of the building just beneath the third floor, creating a ticket-hall volume 50-ft high. Glazed walls along the length of the building forecourt will provide a second up-down connector and, along with glazed pavement lights, added daylight. Roof-level mechanical areas hidden behind glazed panels will top the heavily glazed office building. The architect-led civic project calls for honey-colored limestone cladding both above and below ground.■

*Andrew Putler*





previously announced due to the [illegible] versy over leadership of the National Endowment for the Arts). Agencies for the three winners are, respectively, the National Park Service, the Army Corps of Engineers, and the Farmers Home Administration. Next awards will be given in fall 1995. *S.A.K.*

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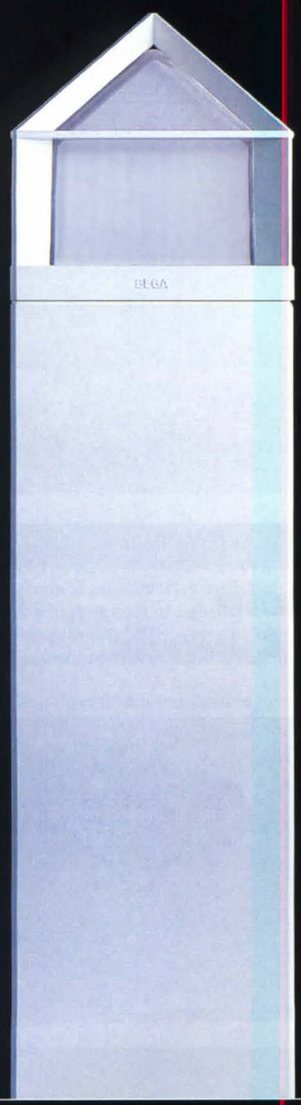


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Design

# Briefs

**Winners**

•The 1994 American Academy in Rome prizes winners include Garret Finney for architecture, Leslie A. Ryan for landscape architecture, Karen Bausman for design arts, and Thomas C. Roby and Catherine Sease for conservation and historic preservation.

•RECORD Managing Senior Editor Karen Stein has been awarded a 1994-95 Loeb Fellowship for independent study at Harvard's Graduate School of Design.

•The first U.S. Institute of Theater Technology awards for architecture have gone to Skidmore, Owings & Merrill for the Murray Theater renovation; Barton Myers Associates for the Cerritos Center for the Performing Arts [RECORD May 1989]; Prentice & Chan, Ohlhausen for the John Tishman Auditorium at the New School [RECORD LIGHTING, May 1993]; ELS/Elbasani & Logan for the Fairfield Center for Creative Arts; and van Dijk, Pace, Westlake with Beyer Blinder Belle for the Temple Hoyne Buell Theater at the Denver Arts Center. Merit awards went to Haigh Architects for Caroline's Comedy Theater Club, and BOOR/A with Barton Myers Associates and ELS for the Portland Center for the Performing Arts.

•The AIA has chosen Harry C. Hallenbeck for its Kemper Award, and Ki Suh Park for its Whitney M. Young Jr. citation.

**Global Links**

•International Design Exchange has been formed by Gensler and Associates, Telesis International, and Japanese interests. Headquartered in Minato-Ku, Tokyo, INDEX will provide building, office, hospitality, and retail design, and strategic facilities planning.

•The Hillier Group has been selected as the U.S. designer/architect for a $700-million Sydney [Australia] Harbor Casino Project.

**Moves**

•Roger Mandle, former deputy director of the National Gallery of Art in Washington, D.C., has become the 15th president of the Rhode Island School of Design.

•Charles E. Hamlin, public relations executive and former RECORD associate editor, has been named to the newly created AIA post of vice president of public affairs.

**Remembered**

•Architect Elissa Aalto, wife and co-worker of Alvar Aalto, died in April at 72.

•Lawrence Anderson, former MIT Architecture and Planning dean, died in April at 87.■

Paris

# Pompidou Combines Face-Lift with Site and Interior Reorganizations

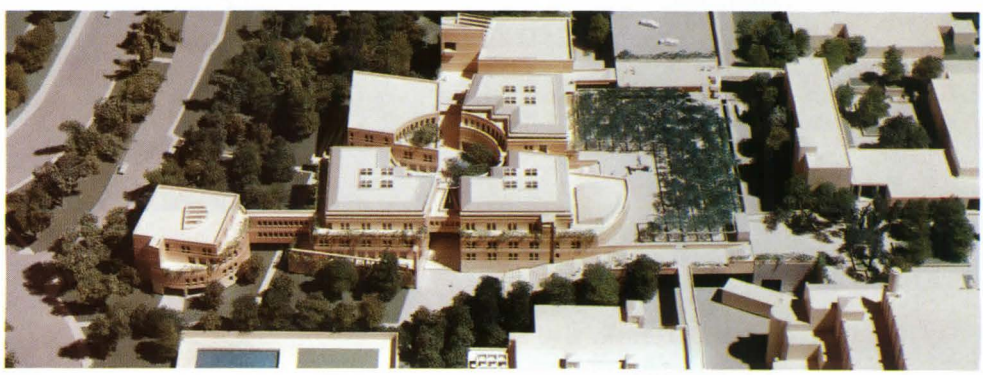
© Mica Michel

*The Pompidou's peeling paint and cracking walls (top) are under renovation. A street-level garden site will be added (above).*

Frayed and peeling at age 17, Richard Rogers' and Renzo Piano's high-tech Centre Georges Pompidou is undergoing a major renovation. Lighting tests to complement a full exterior repainting are underway, along with a reorganization that will close parking ramps, banish tour buses, and create a new northern entrance and a true front sidewalk. Piano's Paris office, in consultation with Rogers, is overseeing the work, including a new design and street-level garden site protruding from the main building for the previously underground Brancusi sculpture studio. The bulk of the $100 million job concerns the interior, where the flexible-building concept has given way to the practical needs of an established cultural institution serving 25,000 visitors a day. The museum will remain open from 1997 to 1999 as the interior is reprogrammed to gain extra space for the nation's modern art collection, improve circulation and maximize the open entry floor, used today as a campground by young tourists and the homeless. By 1999, visitors will be expected to pay to ride the plastic-enclosed escalators to upper floor exhibits. *Claire Downey*

Los Angeles

# Pei Cobb Freed's UCLA Management School Refers to Historic Campus Core



Under construction at UCLA is the 270,000-sq-ft Anderson Graduate School of Management by Pei Cobb Freed and Partners with Leidenfrost/Horowitz & Associates. The facility distributes several functions into a complex of buildings carved by outdoor spaces. Pedestrian routes respond to campus axes while accommodating steep grade changes. The complex maintains a modest scale and pays close attention to a diverse context, including the historical Italian-Romanesque campus core. *M. de V.*

# IT'S HARD ENOUGH TO GET ONE ROOM AT THIS HISTORIC HOTEL. IMAGINE WHAT IT

Since 1875, the Sheraton Palace Hotel has been one of San Francisco's most beloved institutions. So when its restoration was being planned in 1989, every effort was made to preserve the details of its original design. Among other things, that meant the replacement of nearly 600 windows. And because of their experience in such projects, Marvin Windows and Doors was chosen. First to receive attention from Marvin and their local distributor were the hotel's graceful curved glass windows, an area in which Marvin's expertise is particularly well known.

No less of a challenge were the hotel's 585 aging double-hungs. Each demanded the same craftsmanship and attention to detail in order to maintain sightlines and replicate the historical profiles of the originals. And to guarantee their durability and consistency, each would have to incorporate the same performance features, too.

So Marvin suggested Magnum Tilt-Pac replacement sash, known for their strength, energy efficiency and economic advantages. And went on to propose glazing them with a special laminated glass to further insulate the rooms from the noise of the busy streets below.

In all, close to 600 windows in over 30 different sizes were designed and built to exacting, historical

# Breaking Down the Walls: Eisenman on Display

*In a new book and an exhibit at the Canadian Centre for Architecture, Peter Eisenman forces us to look at architecture in indirect ways.*

**Cities of Artificial Excavation: The Work of Peter Eisenman, 1978-1988**, *edited by Jean-François Bédard. New York: Rizzoli, 1994, 236 pages, $60 (hard), $35 (paper).*
*Exhibition at the Canadian Centre for Architecture, Montreal, March 2-June 19, curated by Jean-François Bédard*

*Reviewed by Andrew Anker*

Pushing her arm through a small wall opening toward a gold model of Venice, the six-year-old girl exclaimed "Regardez les mini choses! Regardez les mini personnes!" ("Look at the little things! Look at the little people!") and understood at least one aspect of Peter Eisenman's "Cities of Excavation" exhibit at the Canadian Centre for Architecture. Rather than relying on drawings and models to explain the work on display, Eisenman and curator Jean-François Bédard use the architect's aggressive installation, an insertion into the existing gallery, to make us feel his architecture. The importance given to experiencing this exhibition is especially interesting given Eisenman's earlier search for a conceptual architecture, one that "sought a space for [itself] outside the traditional parameters of the sensual and the built," as Michael Hays explains in the exhibition's catalog.

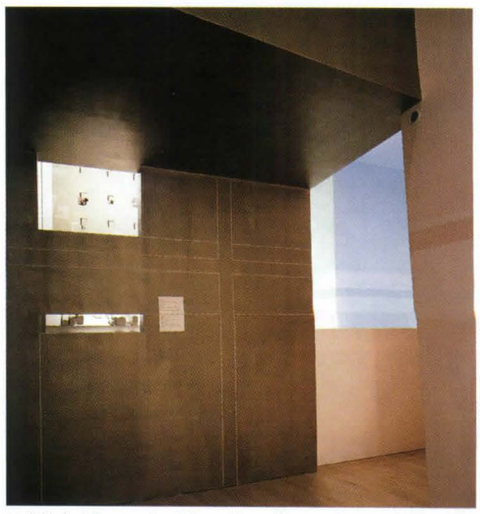
In the exhibit, it is the installation, not the work on display, that dominates. Eisenman does not allow us to view his cities of excavation without effort. As we move through the outer of two shifted and superimposed Greek crosses, he gives us only fragmented views through small wall openings. These windows, placed at different heights, sometimes require that we crouch, at other times that we peer in from awkward angles, to see parts of the models concealed behind the walls. By forcing us to interact physically with the space, Eisenman assures that the installation transforms our perception of his projects.

The exhibit and the book of the same title focus on four projects that Eisenman and Eisenman/Robertson Architects designed for cities in Europe and the U.S.: a housing and urban design for the Cannaregio section of Venice, a housing block on Friedrichstrasse in Berlin, an art museum at the California State University at Long Beach, and a garden at Parc de La Villette in Paris.

While his exhibit design highlights the installation over the displayed work, the accompanying catalog provides a thorough presentation of the four projects that form the heart (or cross) of the show. The projects are discussed in essays by Alan Balfour, Yve-Alain Bois, Jean-Louis Cohen, Kurt Forster, Michael Hays, Arata Isozaki, and Fredrick Jameson. The authors challenge Eisenman's interpretation of his work, but they often do not follow through with their critique. For instance, in discussing Eisenman's attempt to distance himself from the design process, Bois questions his seemingly incongruous use of free-hand sketches. But Bois does not offer an answer, nor does he speculate on the connection between these expressive sketches and Eisenman's recent attraction to computer-generated drawings. It is unfortunate, for here is one of Eisenman's apparent contradictions that tells us much about his architecture.

Differences between the exhibition and the catalog indicate another contradiction, one which signals a shift in Eisenman's work. The beautifully produced catalog presents the drawings and models with a straightforwardness that contrasts sharply with the installation's oblique walls and fractured views. In fact, the catalog does not document the exhibition at all, just the work exhibited. There are no photographs or drawings of Eisenman's installation, nor is it discussed in any of the essays.

The disjunction between exhibit and catalog, though, is appropriate since each documents a distinct phase of Eisenman's career. The "Cities of Artificial Excavation" projects, dating through 1988, represent a period in which Eisenman derived architectural form by "excavating" a site's fictional history. For example, in Venice he unearths Le Corbusier's unbuilt hospital project and uses it as the starting point for his design. More recently, he has begun reincorporating traditional architectural motifs, such as poché, which finds its way into the CCA exhibition as a raised platform for models located in the space between the two crosses. Indeed, Eisenman's use of a Greek cross, a form associated with Renaissance humanism, suggests that his long-term critique of architecture as a person-centered practice may be taking a new turn. As the catalog does not document the exhibition, we must wait for future publications to address these new issues in Eisenman's work.■

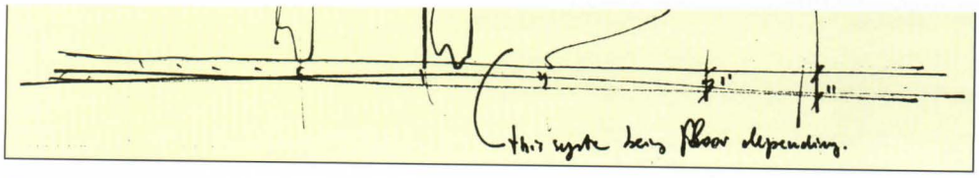


© Michel Legendre/Canadian Centre for Architecture

*The display of Eisenman's Venice project is in gold (top), while that of his university art museum in Long Beach, California is done in green (above).*

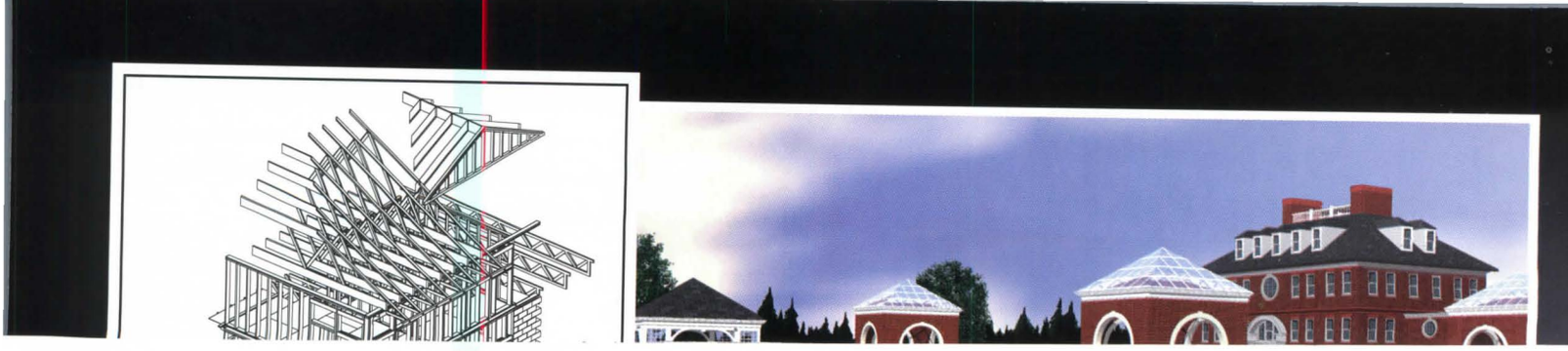
*Andrew Anker is the Fay Jones Professor of Architecture at the University of Arkansas.*





*Drawing by Renzo Piano of the Menil Collection Museum from* Why Architects Draw.

and with what media the drawings were executed—creating the impression (reinforced by the book's title) that you too can churn out just as good stuff simply by following the recipe provided. Since these drawings weren't done by computer, replicating their quality is not simply a matter of pushing the right keys. ■



**Calendar** *continued from page 2*

**June 13-July 22**
The Society for the Preservation of New England Antiquities (SPNEA) presents an intensive program of field trips, and lectures, in architectural history. Academic credit is offered through Tufts University. Write Myron O. Stachiw, Director, Research, Education, and Interpretation, SPNEA, 141 Cambridge Street, Boston, Mass. 02114, or call 617/227-3956.

**June 16**
"An Evening with Fumihiko Maki," part of the Japan Society's Distinguished Lecturer Series, 33 E. 47th St., New York City. Tickets $10; $8 for members, students senior citizens. Call 212/752-3015.

**June 16**
Pratt Center for Advanced Design Research, New York City, presents a seminar on "When The Going Gets Tough–Access to Transportation," with information on barrier-free design and the Americans with Disabilities Act. Call Lauren W. Friedman, 212/229-4589.

**June 16-19**
Canadian Centre for Architecture presents "Anyplace." How, for example does architecture affect Singapore or Bosnia or Inuit territories as emerging political entities? Call Brigitte St. Laurent Taddeo, 514/939-7000.

**June 16-September 5**
"Solutions: Reinventing Public Housing," an exhibit and symposium series focused on the synthesis of architecture and planning in Chicago's revolutionary Scattered Site Public Housing Program. Call D. Jeffries 312/938-1969. Press: Marilyn Katz, 312/9440-5706.

**June 19-September 4**
The Minneapolis Institute of Arts presents "Minnesota 1900: Art and Life on the Upper Mississippi 1890-1915. Contact Marketing and Communications, 612/870-8171.

**June 20-23**
AEC Systems '94 computer and management conference and exhibit for design and construction professionals, Washington Convention Center, Washington, D. C. Call 800/527-7943 or 203/665-0831.

**June 22**
Virtual/Design '94 held in conjunction with AEC Systems '94 presents "Virtual Reality in Design". Call Sharon Price, 800/342-5718 or fax 203/666-4782.

**June 21-23**
Facilities '94, the high-tech show for facility managers, held in conjunction with AEC Systems '94, presents conferences and tutorials sponsored by IFMA and the IBI. Call Sharon Price, 800/342-5718 or fax 203/666-4782.

**June 22-24**
The City of Manchester will host Global Forum '94. The theme will be "Cities and Sustainable Development" to be held in Manchester, United Kingdom at the Manchester Public Forum. Write: Global Forum '94, Eastgate, Castle Street, Castlefield, Manchester M3 4LZ, UK. Call 44-61/234-3741 or fax 44-61/234-3743.

**June 22-24**
Society for Computer Integrated Building Sciences (SCIBS) "Symposium on Interprofessional Communication and Project Coordination within the Building Industry." Write James Reidy, Booz-Allen & Hamilton, Inc., 1725 Jefferson Davis Highway, Suite 1100, Arlington, Va. 22202. Call 703/412-7648.

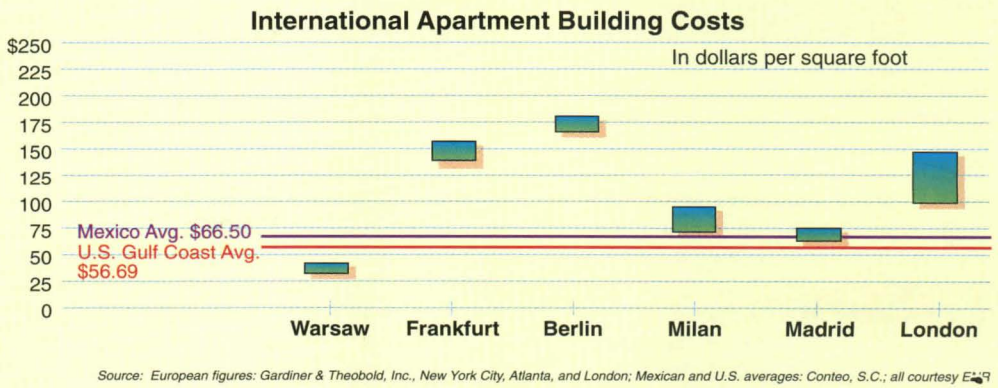
**June 22-25**
The International Tile & Stone Exposition will be held at the Anaheim Convention Center in Anaheim, Calif. Call 407/747-9400.

**September 5-9**
"Making Cities Livable" Conference, focusing on the design of new urban neighborhoods. An exhibit accompanies the conference in Freiburg-im-Breisgau, Germany. The city is developing an extensive new district at

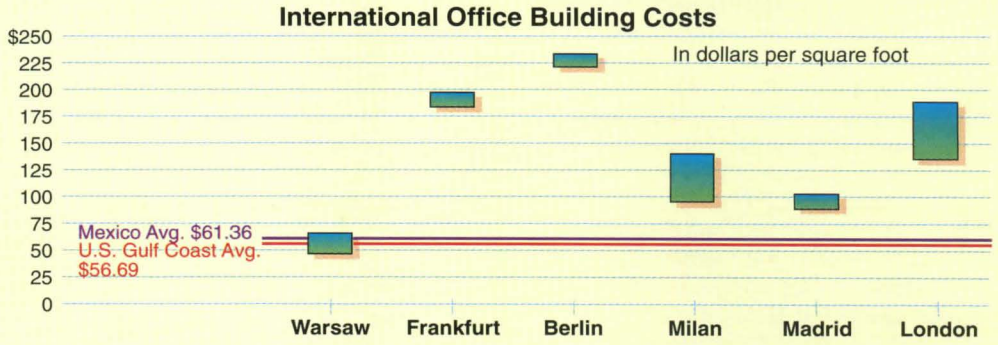
# Indicators

**Comparing U. S. and international costs**

Though clients tend to think it costs too much to build, American costs in fact look quite reasonable compared to many international markets. With much of Europe and Japan in the trough of an economic recession, though, some of these 1993 numbers may move downward. Another factor moderating European prices is the expected emergence of competitive Eastern European producers. Some chart caveats: The U. S. benchmarks may understate American costs for many markets. U. S. Gulf Coast construction costs are likely to be among the nation's lowest. The international office costs include raised floors (rarely specified in the U. S.), carpet, suspended ceilings, hvac, lighting and power, but not drywall. International apartment construction is "multi-story with elevators finished to a high standard," which may be better than what is typically built along the U. S. Gulf Coast. And the closeness of the Mexican numbers to American costs is a reflection of the much smaller size of the Mexican projects. If the size of projects was equivalent, Mexican costs should appear to be lower. ■

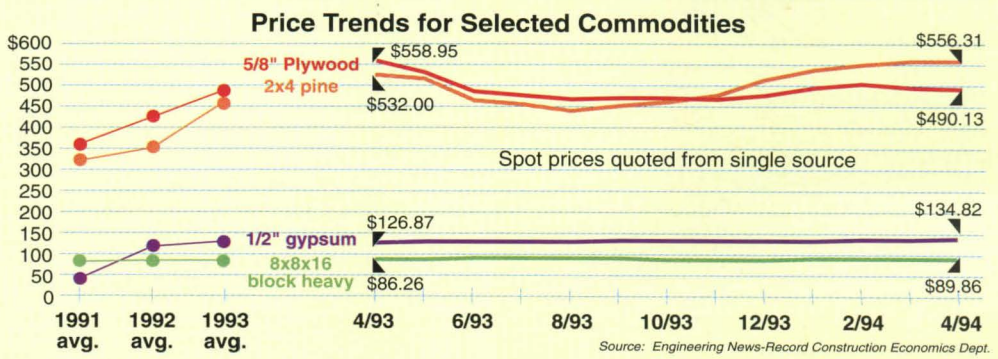



Source: European figures: Gardiner & Theobold, Inc., New York City, Atlanta, and London; Mexican and U.S. averages: Conteo, S.C.; all courtesy E[illegible]




**Lumber prices' rollercoaster ride**

With tightening supply and increased demand, skyrocketing timber-product prices have gotten a great deal of attention. Prices, however, have declined as well as risen; the highest prices occur in early spring when building-supply houses stock up. Surprisingly, plywood has tracked structural wood closely, even though it relies less on Northwest timber (which is in tightest supply). By comparison, most other commodities (concrete block and gypsum board are shown) have seen only minor price movement. ■




Source: Engineering News-Record Construction Economics Dept.

## The Profession This Month

**• Coping With Natural Catastrophes:** Though architects have long contributed to disaster relief and recovery, they have unique skills to apply in the enlarging field of disaster mitigation. The latest in our Agenda series. *Page 38*

**• The Computer As Presentation Tool:** In its first Computer Delineation Awards, RECORD challenged readers to "silence the skeptics" by showing their best electronic design presentations. We present the winners and an impressive range of entries. *Page 42*

**• Primavera Goes Graphical; Hayes New Superfast Modem:** Our computer reviews feature project-management software that has new flexibility and a communications device that's a real breakthrough. *Page 50*

**• Tile and Stone Mosaics:** Our Products pages feature ancient materials that now offer more design flexibility and lower cost through new technology. *Page 52*

# Closet Conundrum: How "Out" Can the Design Professions Be?

Several years ago, I was touring the office of a large midwestern architecture firm. The drafting tables were lined up in neat rows, each desk much the same as the next. Then we came to a section where humorous postcards, splashes of color, and flowers proliferated. It looked messy and comfortable. "This is the interiors department," my guide explained. "They're all, well, you know . . . ." He elaborated, waving a limp wrist.

Had I stumbled onto the architect's gay ghetto? Or is such stereotyping the exception? This question, among others, is asked more often as gays and lesbians examine how their increasing acceptance affects or is affected by their professional lives. As part of activities this month in New York City to mark the 25th anniversary of the Stonewall Rebellion—the touchstone of gay civil rights—a symposium on the roles of gays and lesbians in architecture, "Design Pride," will take place June 24th and 25th (information: 212/960-8773). Put together by the city's Organization for Lesbian and Gay Architects and Designers (OLGAD), it is paralleled by an exhibition at the Storefront for Art and Architecture. In August, the AIA will hold a symposium on diversity in the profession, with panels on gay issues.

### Discrimination: both overt and subtle

AIA Associate General Council Beth Davis says hundreds have lodged phone complaints alleging infringement of the AIA's new amendment to its code of ethics outlawing discrimination on the basis of sexual orientation. But, she says, none has been made formal. For men, being pigeonholed as "sensitive" or decorating-minded seems more prevalent than overt discrimination. "I was a project architect with several projects to my credit until I came out of the closet," claims Seattle-based architect Jeff Harris. "Then I found myself where all the other openly gay architects in the firm were, designing tile patterns for elevator lobbies."

Some, however, see architecture as a field attractive to gays and lesbians. Gary Rosard, a sole practitioner in New York says, "The profession draws people who might not have opportunities in a different kind of career. Gays bring a different sensibility and talent to the work." Design as a "gay profession" has a drawback, according to Steve Glassman, a Baltimore architect and gay-rights activist who helped write the code of ethics amendment. "I think it's a little like Hollywood," he speculates. "Exactly because creative people are so afraid to be identified as gay, they internalize their feelings and externalize the image of the macho male."

This image is especially difficult for lesbians, says Jane Greenwood, an associate at Kapell & Kostow Architects and the Chair of OLGAD. They have been "just about invisible," she says. "There is still an old boys' network" that she feels has denied all women their place in architectural history. "Women in general hit a glass ceiling. Being lesbian throws yet another wrench into the works." Though a number of prominent and mature practitioners are known to close colleagues and friends as gay or lesbian, only a few have publicly admitted their sexuality, and then only obliquely. Some see the resulting invisibility of gays and lesbians in the profession as pernicious. Says David Lesniak, a young architect in Philadelphia: "It's important to have role models." On the other hand, Chicago AIA chapter president John Nelson defends his right to his "they don't ask, I don't tell" policy: "My sexuality has never defined me as an architect."

*"The single best thing we can do is come out of the closet—in any profession."—Barney Frank, Congressman from Massachussetts.*

"The single best thing we can do is come out of the closet—in any profession," says openly gay Congressman Barney Frank of Massachusetts. "The more public we can be, the better," he continues. Architect Frank Israel responds, "this is still a 'gentleman's profession.' " Adds New York architect Ron Bentley, a partner in the firm of Bentley, LaRosa and Salasky, "There are social events, charities, and such that are based around dancing and dining, where a gay person would not be comfortable." This atmosphere of "it's just not done" seems to pervade larger firms, where there are few, if any, openly homosexual partners. "There is a feeling that you don't want to do anything that would alienate your client base," adds Glassman. "We never get the partners at our meetings of gay and lesbian architects," says Bob Hotes, head of such a group in Philadelphia. "We only get the younger designers."

### A gay design sensibility?

As the wider culture has become more accepting of homosexuality, gays and lesbians are looking at how sexuality influences design. An emerging militant wing of gay culture has attempted to define "queer space." This still-inchoate theory proposes that the experience of being homosexual contributes to a unique design sensibility and methodology. To such theorists as Judith Butler, author of *Bodies That Matter*, "queerness" is inherently critical, helping to destabilize accepted social (and, therefore, physical) structures in such a way that marginalized social groups may participate more readily. Cases in point: gays as activist pioneers in restoring rundown historic neighborhoods and in glamorizing loft living. The writer Richard Rodriguez offers another view in his *Days of Obligation*, pointing out that even the so-called gay decorating sensibility has contributed to American culture: "Homosexual survival lay in artifice, in plumage, in lampshades, sonnets, musical comedy, couture, syntax, religious ceremony, opera, lacquer, irony."

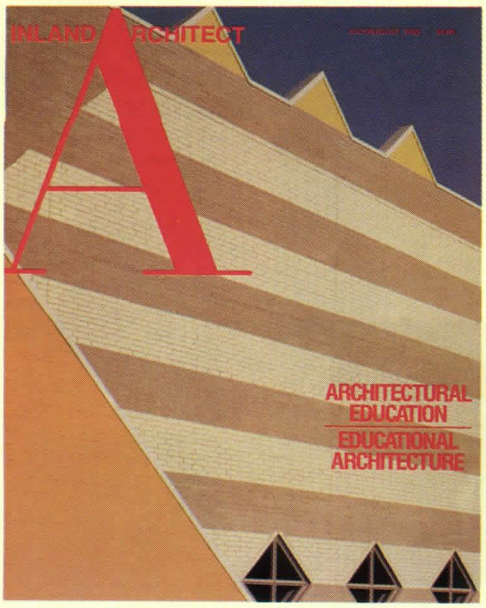
Groups like OLGAD have moved from social support to become a voice for political change (embarrassing the AIA for its empty "diversity" rhetoric in a controversy over Colorado's anti-gay Amendment 2) and a new form of job network. "If somebody asks for a referral," admits architect Mark Maxwell, "I go through a list of gay and lesbian friends." Congressman Frank calls this "an important part of building solidarity and independence." Still, for many gays and lesbians, the closet door must open wider. "This whole issue didn't exist when I was in school," says Greenwood. "If OLGAD helps one or two women understand what's out there, we will have accomplished our goal." *Aaron Betsky*

**Publications**

# *Inland's* Sorry Tale; End of AHF Books

Inland Architect, the venerable Midwest design journal (founded 1883), which had suspended publication for some months, may be back in business. For years it has been the only consistently published regional magazine, offering points of view—readers say—long ignored by national journals. Long-time supporter Harry Weese chose to discontinue underwriting it. The Real Estate News Corporation, of Chicago, a publisher of construction newspapers, agreed to purchase the magazine and assume its $150,000 debt. *Inland*'s future form, however, isn't settled. The January-February 1994 issue was delayed and at press time had only been mailed to some subscribers. The board, according to member Stan Allan (also chairman of Harry Weese Associates), has battled with the new owners over editorial content, rejecting the next issue. "This transition is very painful," Allan said.

Once titles in the works are completed, the Architectural History Foundation will no longer publish books. Founded by Victoria Newhouse in 1976, it won numerous scholarship awards, publishing titles that others found too expensive to produce. Some contracted manuscripts will be picked up by Cambridge University Press. *J. S. R.*




Inland Architect's *July-August 1993 issue—the last before publication was suspended.*

**Ethics of Collecting**

# Wright Artifact Selloff Raises New Questions

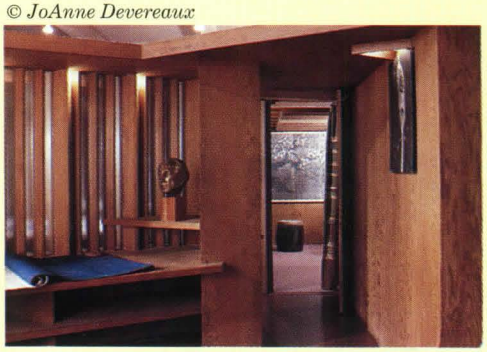
Interest in the work of Frank Lloyd Wright has reached a new peak, thanks to the Museum of Modern Art's blockbuster show in New York City and a related look at Wright's decorative arts mounted by the Metropolitan Museum of Art. Oddly, the shows coincide with the dispersal of one of the most controversial collections of Wright furnishings and decorative arts, the National Center for the Study of Frank Lloyd Wright, assembled by Domino's Pizza magnate Tom Monaghan in Ann Arbor, Mich. Monaghan, an aspiring architecture student before becoming a fast-food entrepreneur, tuned into the 1980s power-collecting ethos and brought high visibility and free-spending fervor to the arena of Wrightiana. His arrival not only spurred prices to record levels, it also, claim some Wright scholars, encouraged pilfering of artifacts from Wright houses. "That's the constant worry an owner of a Wright house has," says Eleanor Larrabee, who until recently owned the Emma Barton house in Buffalo, N. Y., a small house on the Darwin D. Martin estate that Martin built for his sister.

Then, just as suddenly, in 1990, Monaghan stopped buying, and decided to sell off his collection. He had left Domino's to devote more of his time to Catholic charities. (He didn't entirely abandon his patronage of architecture, underwriting a new cathedral in Managua, Nicaragua, to be featured in RECORD next month.) Business conditions have not been kind to Domino's, and Monaghan has returned to the company—but not to Wright. He closed the Center's exhibit space in Domino's prairie-style headquarters. He is said by one knowledgeable source to have lost money on just about everything he sold, in part because of the sheer number of high-priced items, and in part because art-market prices were falling across the board.

**What is Monaghan's legacy?**

Nancy McLelland of Christie's auction house says, "people have a skewed perception of the market made by Tom Monaghan." McLelland, who created and heads Christie's 20th-century decorative arts department and is seen as the reigning expert on the Wright market, says Monaghan "supported the market for a period of two years—1987 to '88." She says Monaghan "was not bidding on the highest-priced pieces." Though his interest certainly brought a lot of material onto the market, she disagrees with those who say there was an increase in theft or vandalism, and maintains that much of the material recently made available had long been removed from its original setting by Wright homeowners, usually when remodeling.

© *JoAnne Devereaux*



*Typical of Wright, his modest 20-by-40-foot San Francisco office, with its partitions of ribbed glass and redwood-faced plywood, is an integrated unity of space and objects.*

The removal of artifacts from Wright buildings is especially sensitive because of the architect's integral "organic" design method. Objects are "much more significant in place than detached," says Terence Riley, director of architecture and design at MOMA, who is curator for its show. "There's obviously value in having them, but that is nowhere as important as keeping these things together."

Have Wright buildings benefited from the selloff? Yes and no. Some art-glass windows were returned to the Darwin D. Martin house on favorable terms. And Monaghan sold the tiny second-floor San Francisco office Wright shared in his last decade with architect Aaron Green to The Carnegie Musuem of Art, in Pittsburgh (above). The collection's prize art-glass windows from the Avery Coonley playhouse, however, are to be sold off individually. Interestingly, neither of the recent shows depended in any significant way on items that Monaghan collected. Other questions linger. Were his acquisitions a mere enthusiasm, but one that encouraged a destructive collecting ethic? Or has all the attention helped Wright owners, who may be able to turn renewed interest into funds for maintenance and restoration? *Peter D. Slatin*

# Coping with Natural Catastrophes

Coast to coast, America has suffered more than its share of natural disasters in the past two years—from the hurricane that ravaged Miami and the flooding of the Mississippi River to the earthquake on the heels of floods and fires that wracked southern California. Disaster experts define three stages where pre-disaster planning is needed and in which architects' expertise can play a part: *response, relief,* and *recovery*. Architects are seeing a larger role for themselves in devising practices and policies that reduce structural vulnerability or speed recovery.

Architects have been deeply involved (often donating their time) in short-term disaster response and relief. More than 100 California architects, trained by the State Office of Emergency Services and coordinated by local chapters of the AIA and other groups, descended on Los Angeles. They worked 12- to 14-hour days assisting officials in quickly evaluating the safety of structures in the wake of Los Angeles's Northridge Quake.

### Planning to mitigate disaster effects

Once the aftershocks fade, the waters subside, and the debris is cleared away, communities often pledge to rebuild at a better, less disaster-prone level. This process, disaster *mitigation*, is at its best a deep and often difficult rethinking of the most vulnerable construction techniques and development patterns. Old ways die hard, though, and the broad changes that experts suggest are often not palatable to victims or seen as too costly. Participants at a 1993 conference on disaster mitigation sponsored by the University of Miami and the Knight Foundation spelled out the dilemmas:

- The community solidarity that often develops immediately after a disaster quickly dissipates and is replaced by whatever splits (by income or race, for example) predated the disaster.
- Disaster victims seek above all to "get back to normal" even if that means returning to patterns that contributed to destruction. It is very difficult to convince long-time land owners, for instance, to resettle outside a low-lying area subject to flooding. People may be under stress for months or years. "It's not the time for social experiments," one participant commented. On the other hand, "normal" for some communities is the ugly reality of poverty.
- Further, normalcy is sometimes not readily attainable. For these victims it's important to be able to sustain themselves in the short term (tent cities aren't good enough) while long-term changes are put in place. (News reports breathlessly portrayed Angelenos transformed into rapid-transit devotees after the trauma of Northridge's collapsed freeways. Months later, transit ridership has returned to pre-quake levels.)
- Some communities do a good job of preparing for disasters and getting relief in. Almost no communities, though, have planned for the problems innate to long-term recovery: most prominently, how to keep fly-by-night contractors from taking advantage of victims.
- Though the Federal Emergency Management Agency (FEMA) and insurance companies have an interest in a recovery effort that reduces future risk, they have done little to encourage pre-disaster planning. There are even disincentives: FEMA emergency aid can't be used to raise flood-damaged buildings above high water or relocate them.

### Rebuilding a downtown

The fact is that the contributions architects can make aren't widely recognized. "Within a week of Hurricane Andrew," comments Elizabeth Plater-Zyberk, of the Miami firm, Andres Duany and Elizabeth Plater-Zyberk (DPZ), "young architects and the AIA were asking what we could do. As time passed, it was clear no one was going to ask architects to get involved. We had to hustle, ask to be involved, and ask to put on charrettes." Still, the unique perspective of architects may be the key to some community's future.

Communities sometimes seek architects' services once recovery flags. Long after the fact of 1989's Loma Prieta quake, California Emergency Design Assistance Teams (CEDATs), organized by the state AIA, were called into a number of smaller devastated

*Towns respond to disasters in varied ways. St. Louis architect Jack Luer has been working as a preservation consultant to three towns hard hit by last year's floods. In St. Genevieve, Mo., an 18th-century French town with a remarkable collection of historic buildings, the sandbags still sat in April where they had been placed the previous July, Luer said. By contrast, the 19th-century Illinois town of Elsa went to work and now, says Luer, "looks like it did 100 years ago." Photos 1, 2, 3 (right) are from the charrette in Valmeyer, a town that sought a new identity on high ground. The residents' favored plan was by a team led by architect Tim McMinn (4, opposite). The main street of Santa Cruz, Calif., destroyed in a 1989 quake, was rebuilt with citizen participation to designs of the Roma group (5, 6).*

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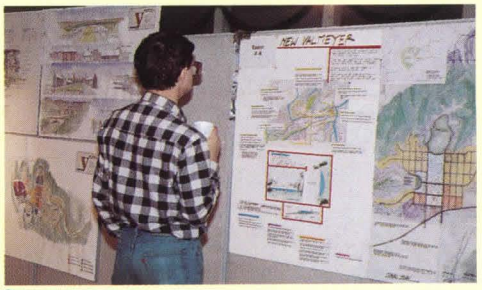

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*Photos this page courtesy AIA St. Louis*

*As part of RECORD's Agenda series on expanding the influence of design, Beth Dunlop considers architects' unique skills in disaster mitigation. The biggest barrier? Convincing communities and government officials of the value of services offered.*

towns. One CEDAT (patterned on AIA's venerable R/UDAT's) offered successful assistance to the city of Santa Cruz, where an already-faltering central business district was all but destroyed by the quake. Six teams—each with at least four members—studied a range of topical issues, and ultimately produced a 95-page booklet of recommendations. "Before the earthquake, there had been a number of planning studies," explains Chris Arnold, a Palo Alto architect and seismic specialist. "The earthquake offered the opportunity to rethink the nature of downtown. In Santa Cruz, people spent about a year re-planning with lots of citizen involvement. They spent a lot of time trying to do it right."

While a number of local architects were commissioned to rebuild individual buildings, the city retained Roma design group, of San Francisco, to create a downtown plan, which was based in large part on the CEDAT planning sessions. "It was gratifying to see citizens show up at meetings with their copy of the workshop booklet in hand," commented Santa Cruz architect Hugh David Carter. It's this kind of unified effort, he says, that has convinced reluctant lenders to commit needed funds. Though Los Angeles is still rebounding not only from 1993-94's triple whammy of fire, flood, and earthquake, but also from the 1992 civil disturbances, it's learning from northern California. Timothy Brandt, of the Historic Resources Group, says, restoring damaged historic structures is essential. "There are ways of combining several issues to provide social services and help keep the identity of neighborhoods."

**Dedication pays off in South Florida**

Architects created compelling visions of the future after 1992's Hurricane Andrew, but have had mixed success. DPZ and other local architects organized pro-bono charrettes to address the pathologies in land-development patterns that contributed to the huge scale of destruction in the suburbs and farmlands south of Miami. The new plan for Florida City, an agricultural town that is Dade County's southernmost, yielded a handsome scheme outlining neighborhood rebuilding while at the same time capturing dollars from tourists who typically passed through without stopping on their way to the Florida Keys or the Everglades (page **41**). Though adopted in principal, the only tangible evidence so far is the commission that DPZ, A+S Architects, and CRA-Clark Architects and Engineers won for a new city hall.

About 150 architects, landscape architects, planners, and private citizens worked collaboratively for three consecutive weekends to produce a series of visionary plans in the form of 13 case studies for what they called the "New South Dade." Though this charrette—sponsored jointly by the University of Miami and Florida International University—dealt with a range of issues from ecology and hydrology (water and drainage from the Everglades are ever-topical issues in South Florida) to historic preservation, a key proposition was the division of the amorphous spec landscape into 28 distinct communities, each with a defined center. This responded to an unanticipated consequence of the storm, which was that there existed no identifiable place of refuge. (Relief workers couldn't find their way around and residents were disoriented; street signs were obliterated as were landscape landmarks such as hedges and trees (page **40**). Jorge Hernandez, an architect and associate professor at the University of Miami, working with a team of architects and land planners, identified sites in each community for "village greens"—plazas fronting on such public buildings as branch libraries, clinics, or daycare centers. These would be hardened against storms and equipped with emergency provisions.

Miami architect Suzanne Martinson showed how one neighborhood could revolve around a rebuilt Caribbean Elementary School, a park, and a senior-citizens housing project (page **40**). The school idea was refined in a second charrette, held just a year after the hurricane, and it's now being designed by Randa Samuels-Richter and Harper Carenno and Mateu. Martinson is doing the elderly housing. Although greeted by widespread

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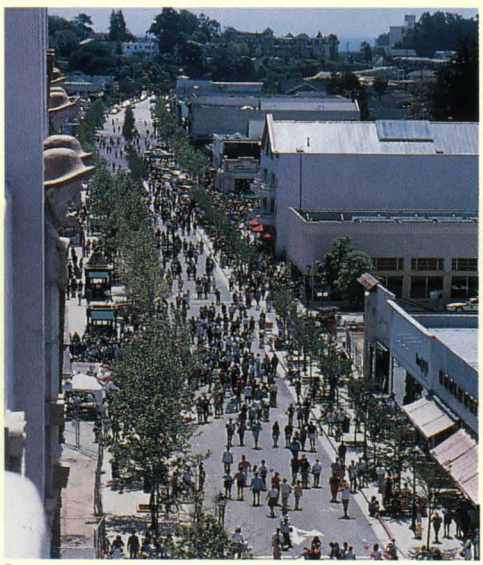

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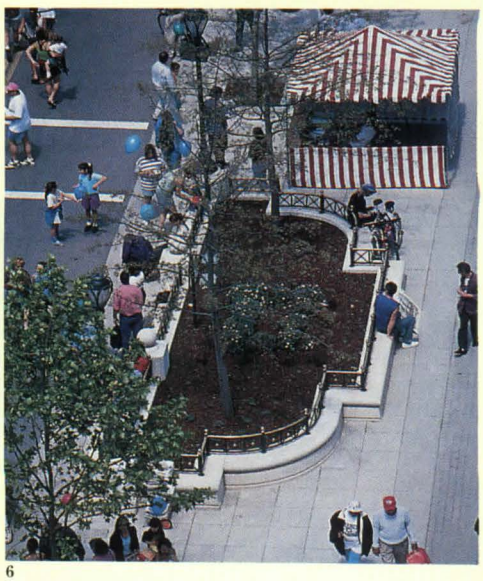

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© Ron Starr

*"It was clear no one was going to ask architects to get involved. We had to hustle, ask to be involved, and ask to put on charrettes."—Elizabeth Plater-Zyberk on Hurricane Andrew recovery efforts.*

critical and public approval, neither the Dade County Planning Department nor We Will Rebuild, the private funding agency that sponsored the South Dade charrette, incorporated such town centers into their recovery or long-term mitigation plans.

**Revitalizing an agricultural district**

In the year after the hurricane, the University of Miami School of Architecture worked with Dade County's Historic Preservation Division to prepare a plan for The Redland, the region's tropical agricultural district. The plan, said Margot Ammidown, who recently left her post as director of the preservation division, attempts to "create a vision of the place to enhance its absolutely unique character." The plan plays up patterns and connections in the landscape: the vernacular farmhouses, barns, and packing houses; the structure of groves and woods (opposite). Its guidelines seek to shore up the agricultural economy, while discreetly accommodating tourists. "The Redland is the last remnant of our cultural heritage—of our agricultural roots—in South Florida," explains Rocco Ceo, an assistant professor of architecture at the University of Miami, who led the study.

In Perrine, a hurricane-swept neighborhood that had long been plagued by substandard housing, crime, and commercial disinvestment, a two-day Miami AIA charrette galvanized the community. Pushed by an active community-development corporation and architect Ron Frazier, Perrine now has a rebuilt elementary school (Jimmie Allen, architect), a new land-use and zoning plan, a rebuilt and expanded neighborhood center (Architects International), funds for a neighborhood health center, and $8 million in public-housing improvements. Frazer had a 90-day contract with the county, but continued for a year pro-bono. "The main thing is to keep the momentum going," he said. "The farther you get from the hurricane, the dimmer peoples' memories get."

**Moving a town out of harms's way**

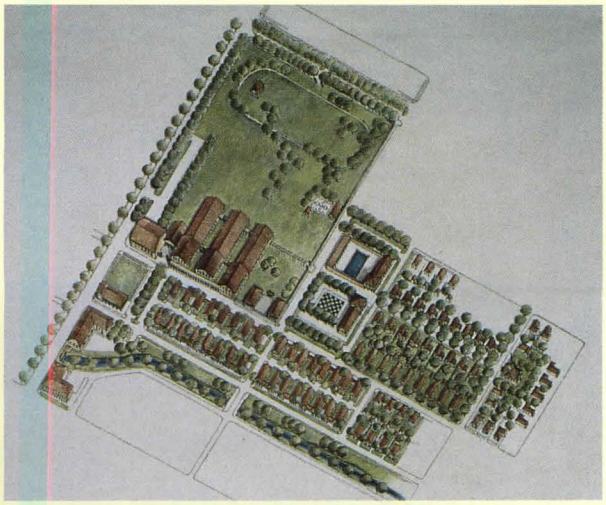
In the wake of the midwest floods, an Illinois town chose an ambitious future. The citizenry of Valmeyer, population 900, decided to move the entire town to higher ground. A suburban-subdivision type plan was quickly produced by a state agency. Then the St. Louis chapter of the AIA, the American Planning Association, and the American Society of Landscape Architects stepped into the process. In November, the three organizations hosted a competitive charrette with residents in which 11 different design teams re-envisioned the town. The winning design was produced by a team led by Tim McMinn, an architect from the Belleville, Ill., firm of FGM architects (page 38).

This plan, McMinn said, was aimed at maintaining "the same strength and character that had been the backbone of the community all these years." The plan, intentionally compact and walkable, focused on a series of sinkholes, transforming them into a small lake that would be part of a central park; the park in turn would be flanked by two churches to the north and south, a civic complex to the east, and a school to the west.

Moving communities is often a less expensive and more environmentally sound alternative than protecting vulnerable neighborhoods with costly new or repaired levees. FEMA, the Army Corps of Engineers, and environmental groups have supported town relocations and property buyouts, but haven't seen the attractiveness of the new Valmeyer as key to getting more reluctant communities to follow suit. Though Valmeyer's citizens voted for the plan, it is at the moment not likely to happen. They have not been able to stand up to the regional planning agency's pod-subdivision layout. "It was not just architecture, not just planning," said McMinn. "We really wanted to give them their town back because they lost everything. To us it was a missed opportunity."

Yes, there's reason to lose hope about disaster mitigation. On the other hand, the flood gates were once again erected at the St. Louis Arch the same April day McMinn was interviewed. By mid-spring, the Mississippi was already rising. Again. *Beth Dunlop*

*Hurricane Andrew leveled landscape features and street signs; victims and relief workers were disoriented for weeks (9). To counter this, the Caribbean Elementary (7) was conceived as town center-cum-emergency shelter—a place residents would know to go to. Post-Hurricane charrettes also proposed restructuring demolished subdivisions to reduce their impact on the environment, as at Naranja Lakes (8).*



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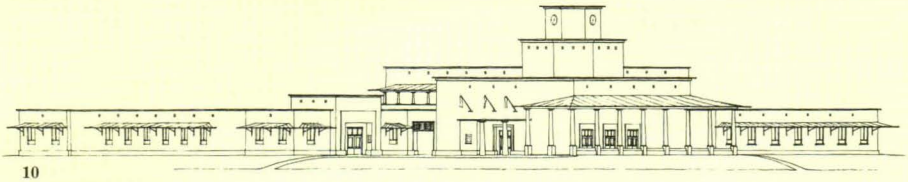

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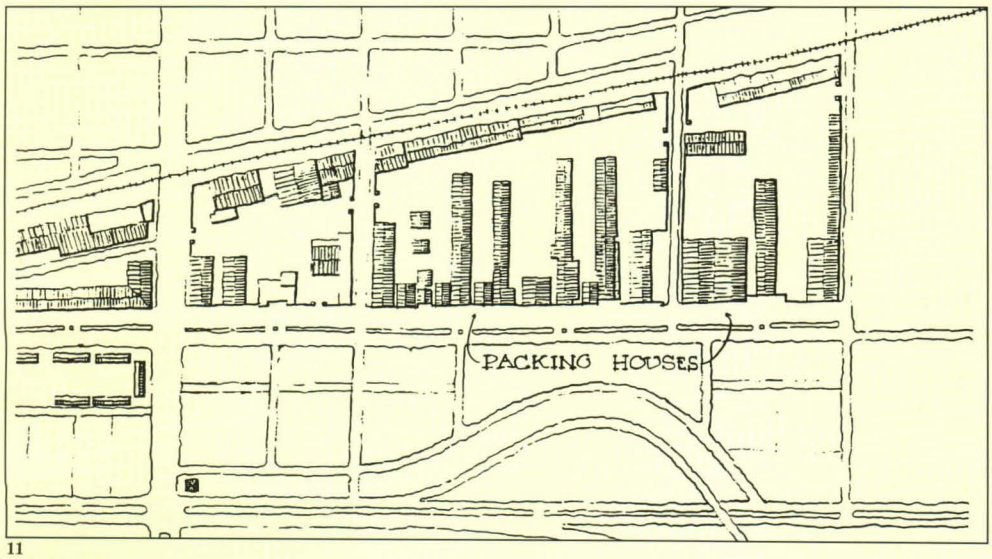


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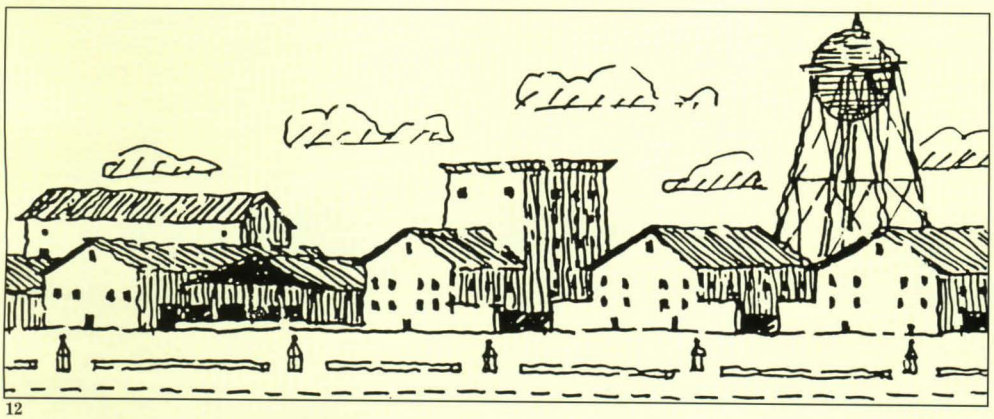

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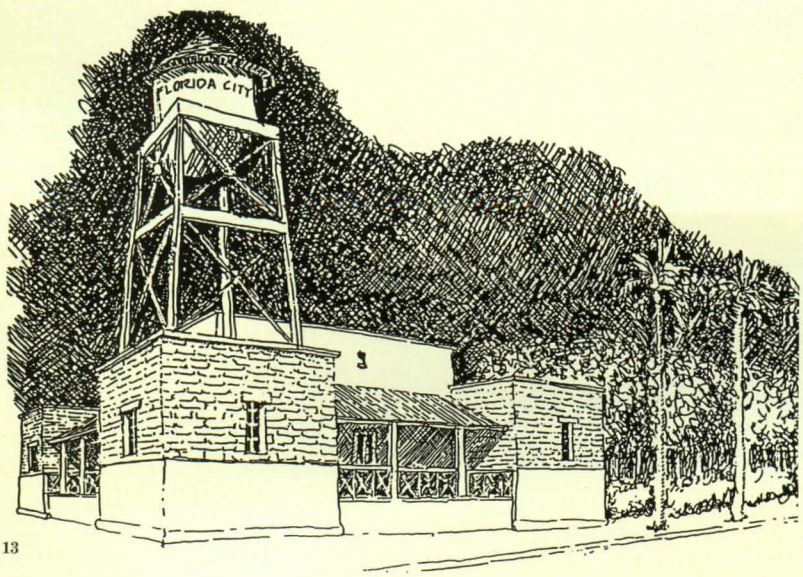


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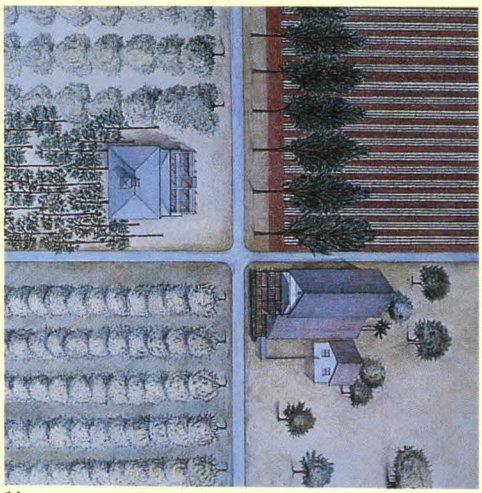
*To lure tourists, the Plan for Florida City envisions retail-filled headhouses (12) attached to existing packing houses (11) and a visitors center (13). A new town hall (10) has been commissioned. The Redland*



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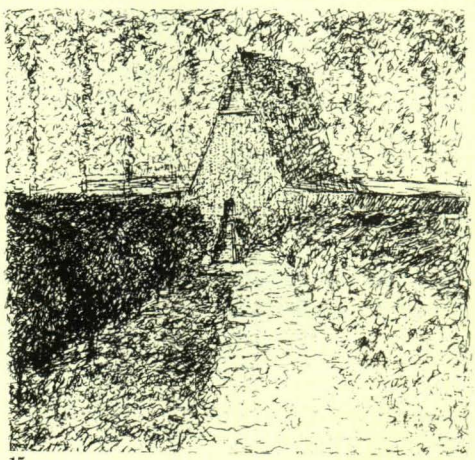

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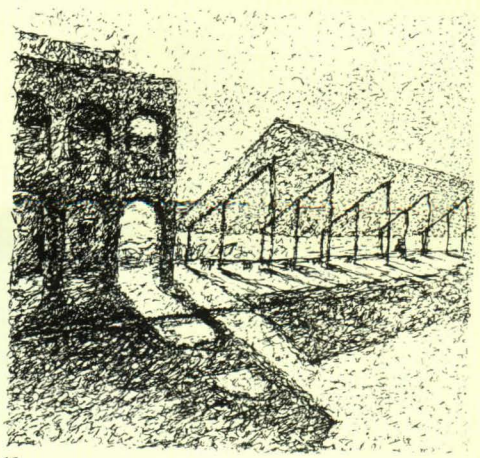

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*Preservation and Tourism Plan draws on the vernacular landscape (14), in proposing a new market (15) and bus stop (16).*

# The Computer As Presentation Tool

It seems only yesterday that what passed for *computer renderings* featured mostly jaggy wireframe perspectives in oversaturated colors dotted with blobs where too-dense line patterns clogged. No more, as many of the 90-some entries in RECORD'S first Computer Delineation Award show. (A sampling of the impressive variety of non-winning entries is shown opposite; the three winners are shown in the following pages.)

The jury members were selected for their experience in design and presentation, not specifically for their computer savvy. Architect Lauretta Vinciarelli teaches at Columbia University. Her watercolors of imagined spaces were shown in RECORD'S September 1993 issue. Paul Stevenson Oles is a partner in Interface Architects in Newton, Mass. He is on the Advisory Council of the American Society of Architectural Perspectivists. Karen Bausman is a partner in Bausman-Gill Architects, a firm whose design work often employs evocative model/sculptures. Paola Antonelli is Associate Curator in the Department of Design at the Museum of Modern Art in New York.

The jury was asked to choose selection criteria. Their consensus was that winners should use the computer in a way that "lets you investigate that which you couldn't otherwise," as Lauretta Vinciarelli put it. Karen Bausman felt the presentations "should show a mind at work." The jurors didn't always agree. Paul Oles suggested the panel "should not get hung up on the connection between representation and what is represented." Other jury members could not premiate any entry that they felt was poorly designed, however brilliantly rendered.

The winners and additional entries will be exhibited at RECORD'S booth at the AEC/Systems '94 computer show in Washington, D. C., June 21-23. We're looking for your comments—by mail (address on letters page) or fax (212/512-4256)—so that we can improve next year's award program.

*James S. Russell*

## From Simple to Sophisticated: A Sampling of Entries

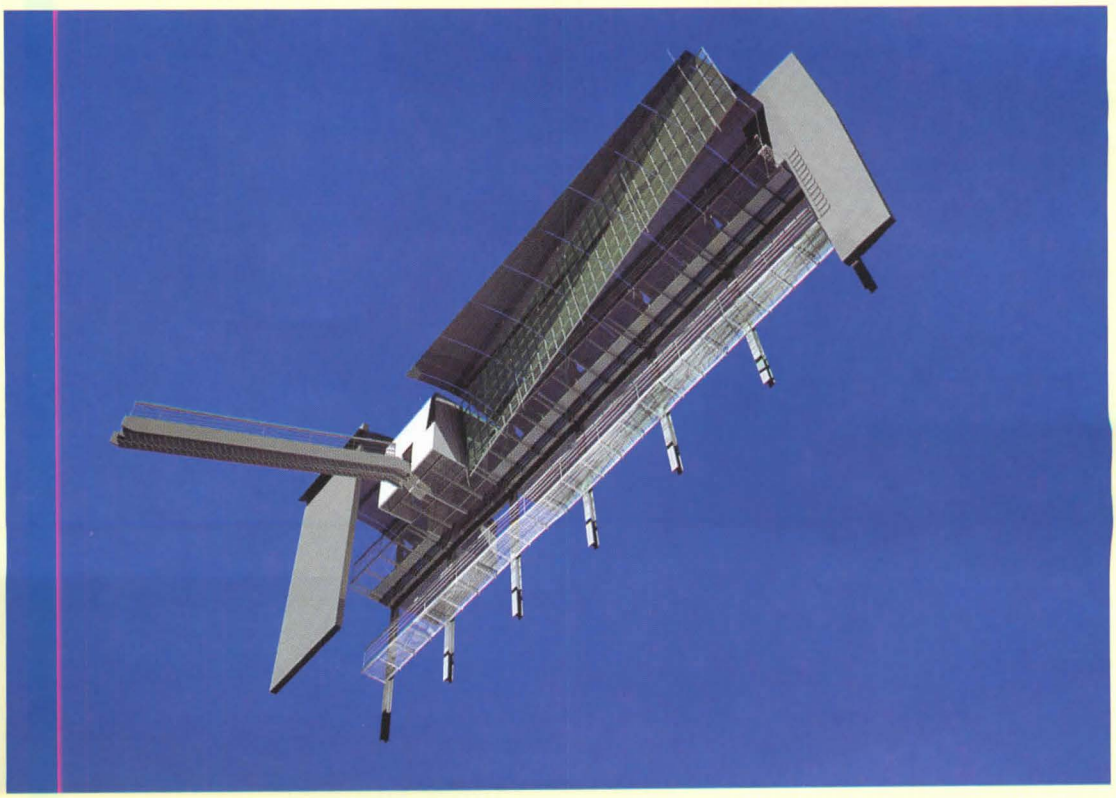
1. Beach house in the Hamptons, by Adam Cohen, Lee Harris Pomeroy Architects, New York City.
2. Children's Discovery Museum, by Robert Frank Associates, San Francisco, for architects Spencer Associates.
3. Yacht Club, by Roger Patton Janssen, West Palm Beach, Fla.
4. A rowhouse retrofit proposal, by Barry Yanku, Brooklyn, N. Y.
5. Graphics for Office Building Renovation, by Architrave, Ltd., Chicago.
6. Oral-B Corporate Headquarters, by DES Architects Engineers, Redwood City, Calif.

*For hardware and software information, see page 161.*

## Honorable Mention: Timothy Collins Douglas

The New York City-based designer calls this a "work in progress," in which the computer model and imaging have been refined steadily since it was assigned as a studio project in the fall of 1988 at Cornell University. It's called A Monument to, and Burial for a Plane Crash. The jurors were impressed by the detail and precision of the image, including the rendering of surface, light, and shadow. They were also intrigued by the graphic power of the "worms-eye" perspective image floating on its deep blue background.

**Computer:** IBM 320H RS6000
**Software:** Unix-based IBM Architecture and Engineering Series for drawing and rendering
**Output:** Iris plotter ■



*In its first Computer Delineation Awards, RECORD challenged readers to "silence the skeptics" by showing their best electronic design presentations. The winners, herewith, and more.*

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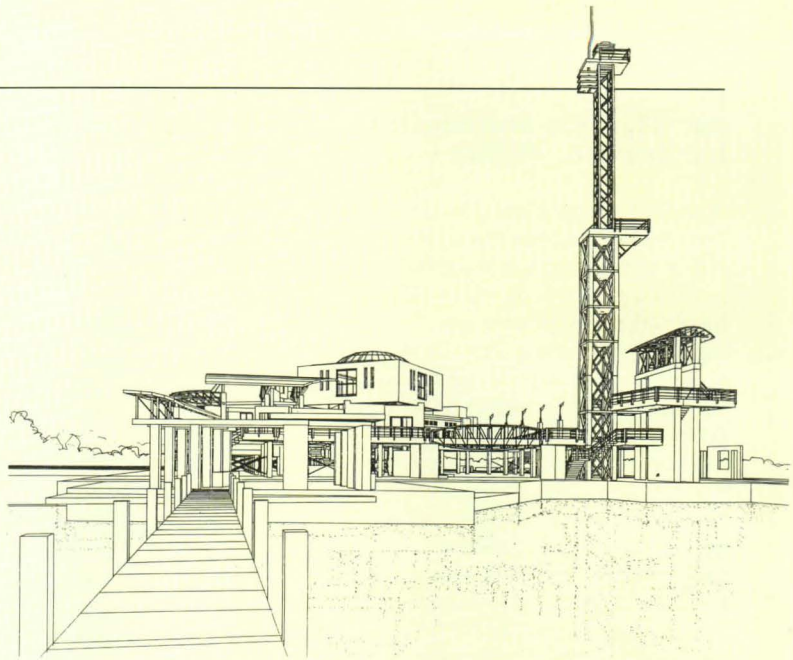

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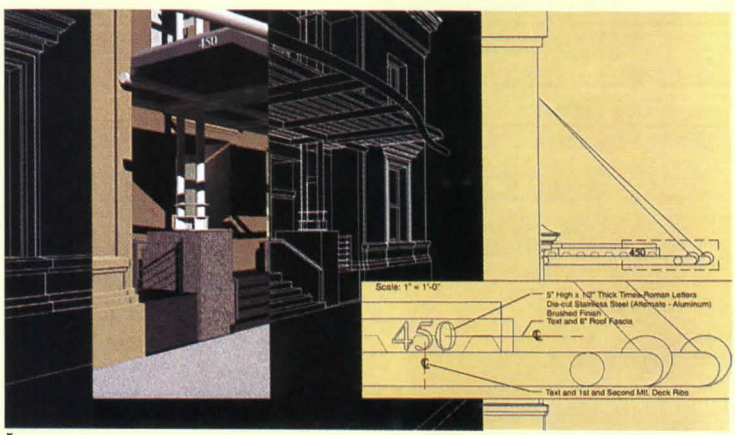


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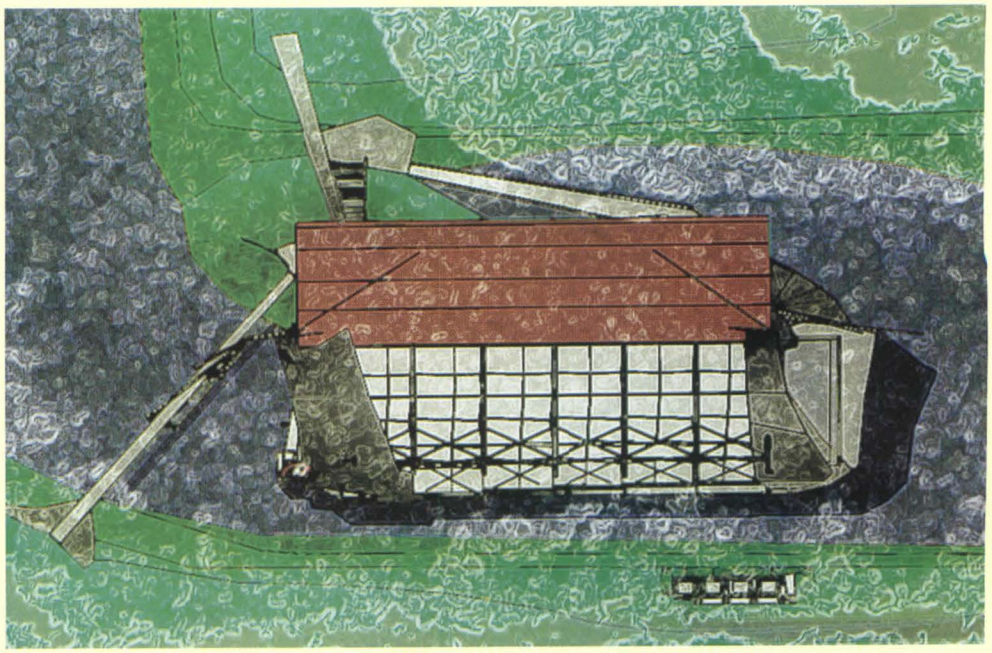
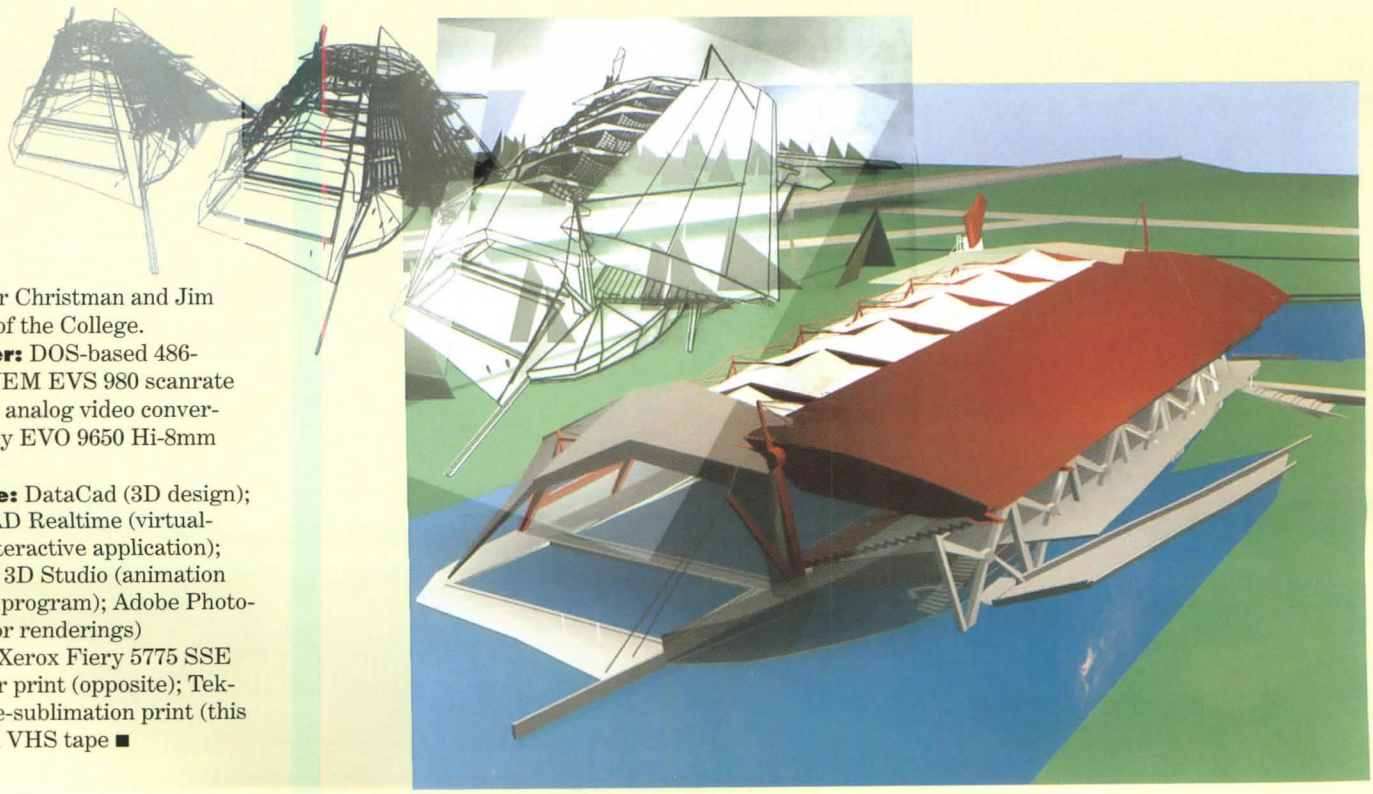
# First Prize

## An Olympic Natatorium by Drew F. Miller

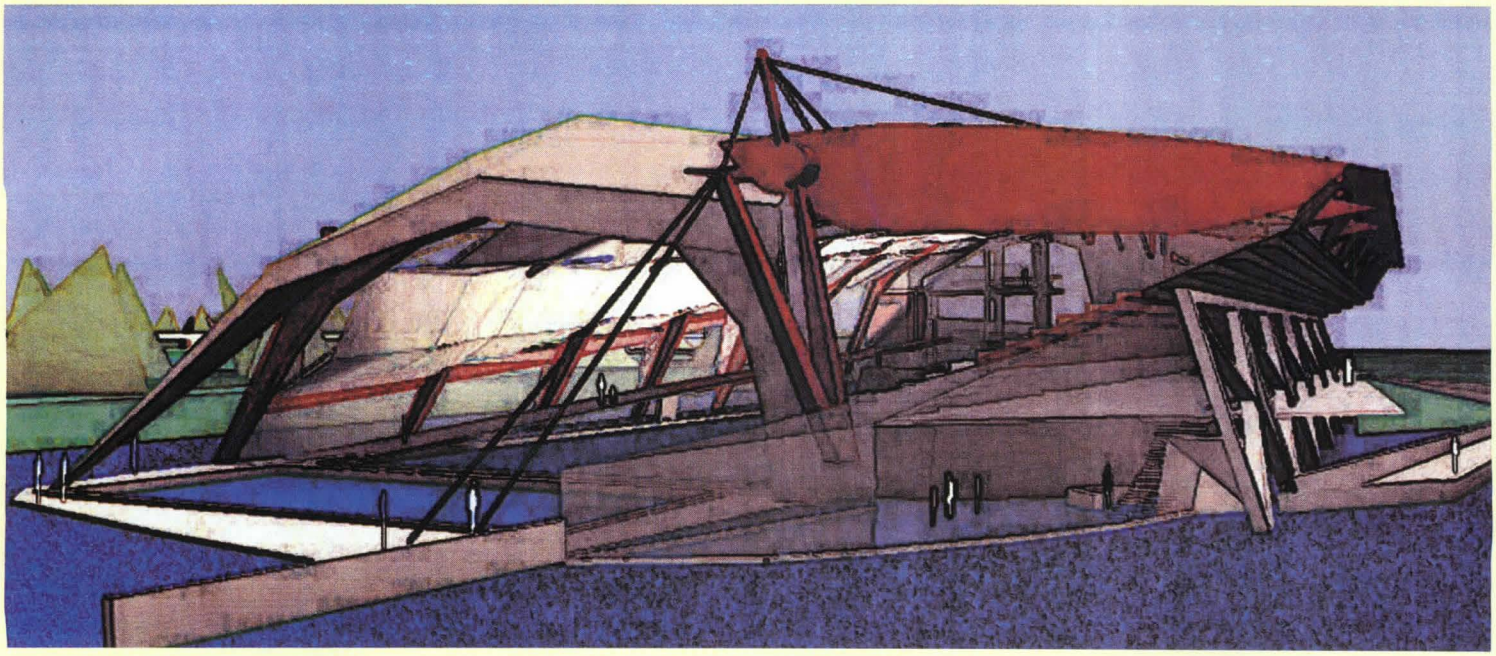


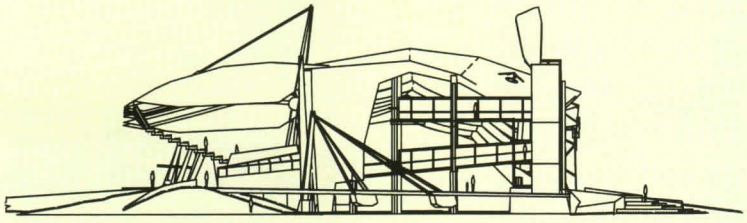
A student at the Savannah (Ga.) College of Art and Design, Drew Miller won a complete Architrion architectural package from BAGH Technologies for an Olympic Natatorium that bridges a small lake. Miller not only created the selection of renderings shown, he submitted an animation that showed how the parts of the design go together. The jury approved of both the design and the presentation. Said juror Oles. "The designer is using the technology to *investigate* certain things." The software permitted numerous ways of evaluating the design, helping, said Paola Antonelli, "move it farther ahead." Miller did the design project for Professor Deirdre Hardy, and worked with Peter Christman and Jim Goodlett of the College.

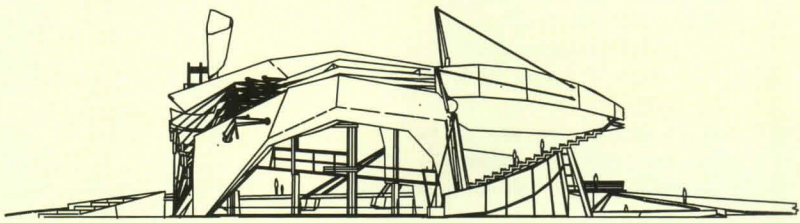


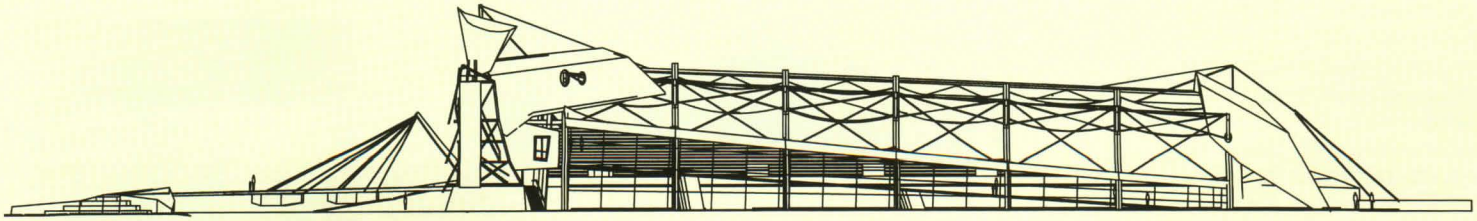
**Computer:** DOS-based 486-66mHz; YEM EVS 980 scanrate (digital to analog video conversion); Sony EVO 9650 Hi-8mm video
**Software:** DataCad (3D design); StereoCAD Realtime (virtual-reality interactive application); Autodesk 3D Studio (animation sequence program); Adobe Photoshop (color renderings)
**Output:** Xerox Fiery 5775 SSE color laser print (opposite); Tektronix dye-sublimation print (this page) and VHS tape ■

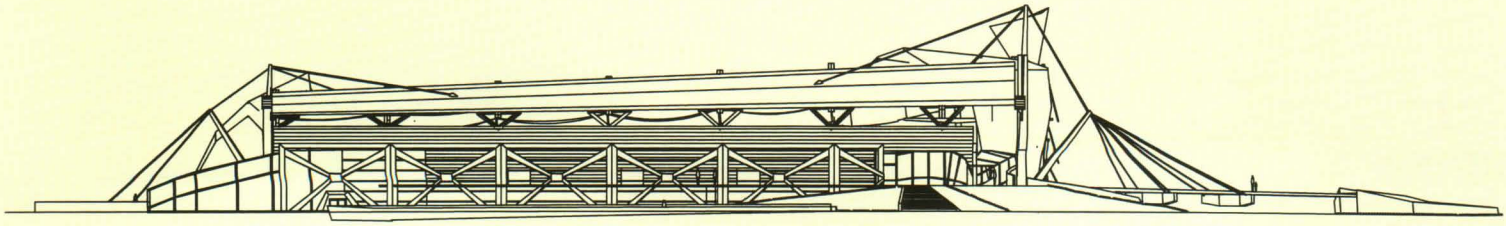
*The First Prize scheme impressed the jury because it used a variety of drawing and rendering techniques to explore the implications of the design and explain it to others.*











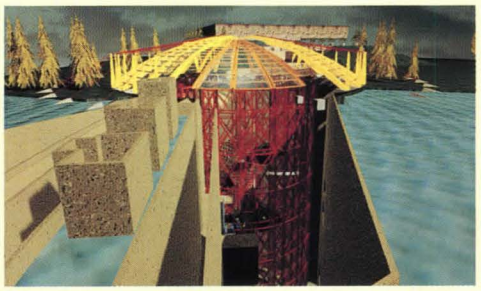
# Second Prize

## A Museum by Taig Youn Cho

The second prize, Softdesk's Auto Architect for Windows, was awarded for this Geochronology Museum, an expansion of the George Page La Brea Tarpit Museum in Los Angeles. The designer described the project through perspective views (one example, opposite), which were amplified by an animated tour (images this page). The animation moves the viewer from the site (1) into the museum, which is in the form of a 120-ft-dia cylinder (2, 3). Visitors see fossils selectively revealed in the soil as they pass downward along the perimeter (4). Six small theaters are suspended near the base (5, 6).

The jury felt the computer was essential to this project's genuinely three-dimensional conception. The animation was the most sophisticated of those considered: theater seating and screens moved to various positions (the screens themselves played—among other "movies"—swimming dolphins, 7). "The mark of the artist hasn't been erased," commented Bausman. Cho, a UCLA architecture student, was assisted by Elizabeth Park of Sun CAD Service.

**Hardware:** IBM compatible 486-66mHz; TAGA 32+ card (NTSC converter); Panasonic AG 7750 (video recorder)
**Software:** Autodesk AutoCAD and AME (3D model builder); Autodesk 3D Studio (animation); Aldus Photostyler and Autodesk AutoAnimator (rendering)
**Output:** VHS tape and Hewlett-Packard 550C inkjet print ■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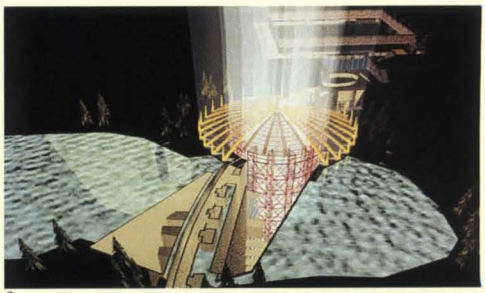
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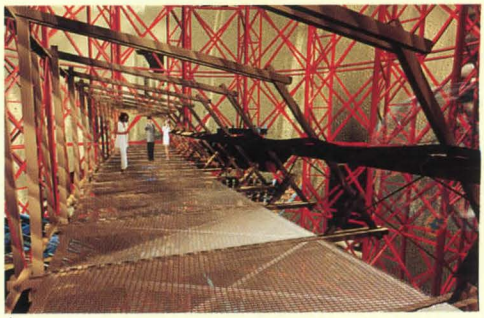
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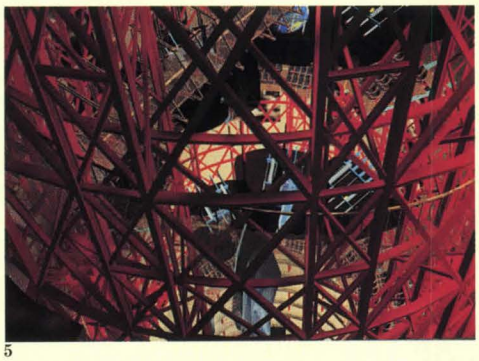
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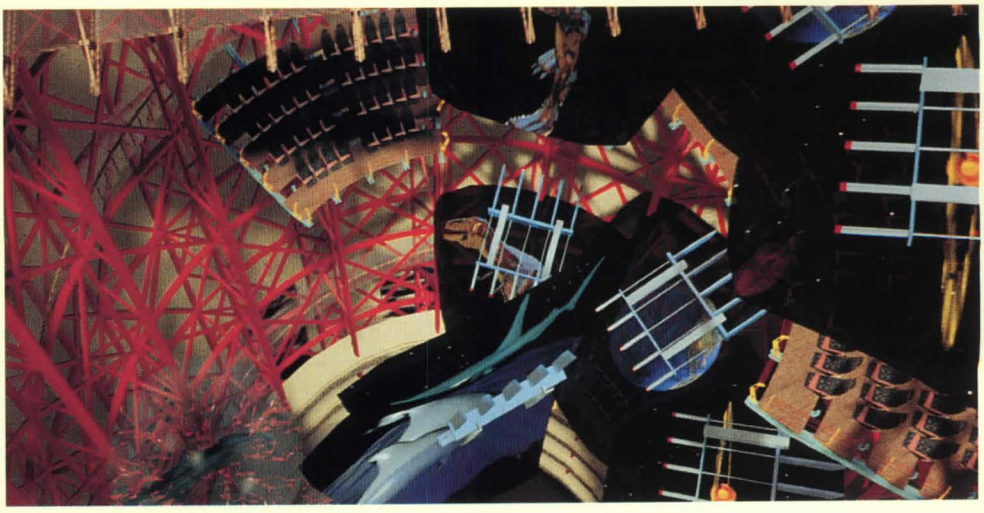
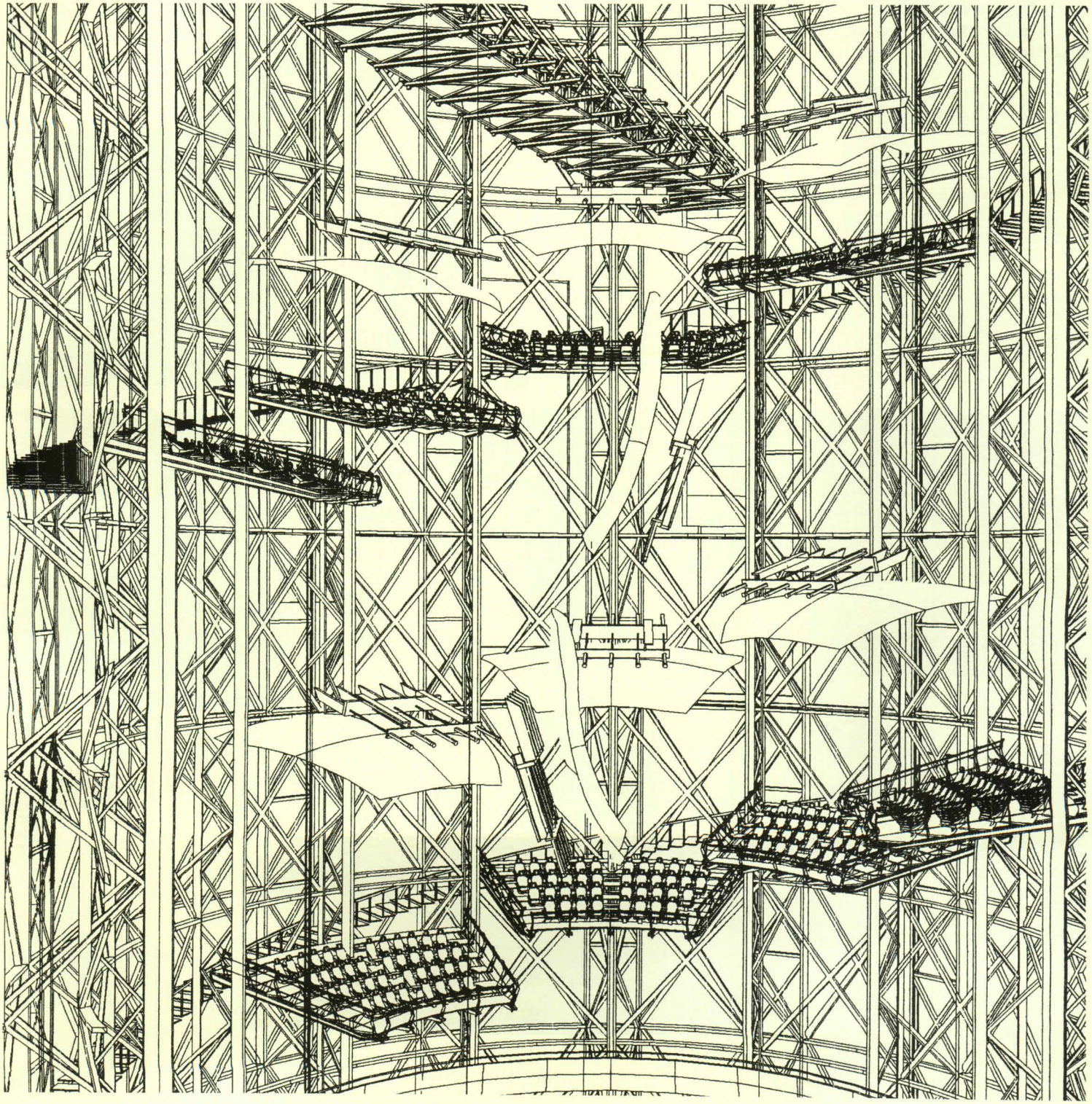

7

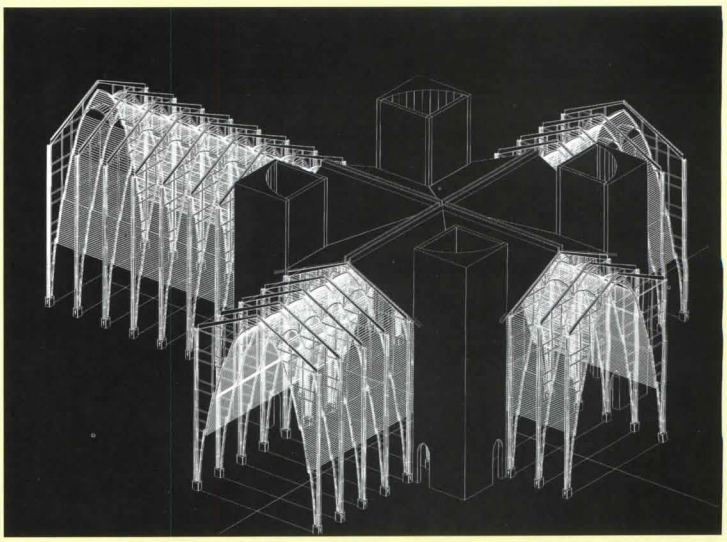
*Jurors awarded the Second Prize primarily on the strength of an animated tour of the entrant's underground museum project. "There's a consistency of design and presentation medium," commented juror Steve Oles.*

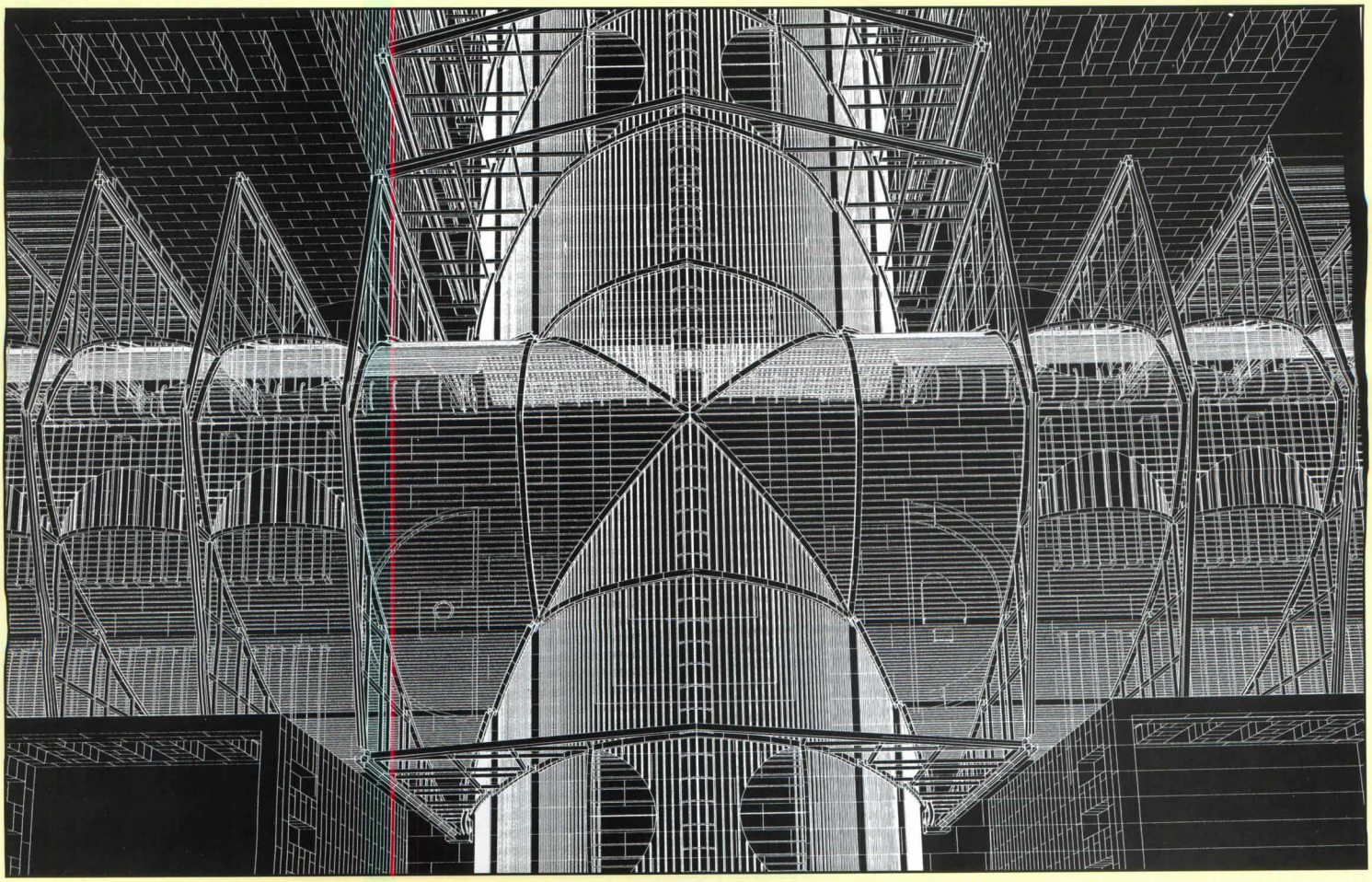


# Third Prize

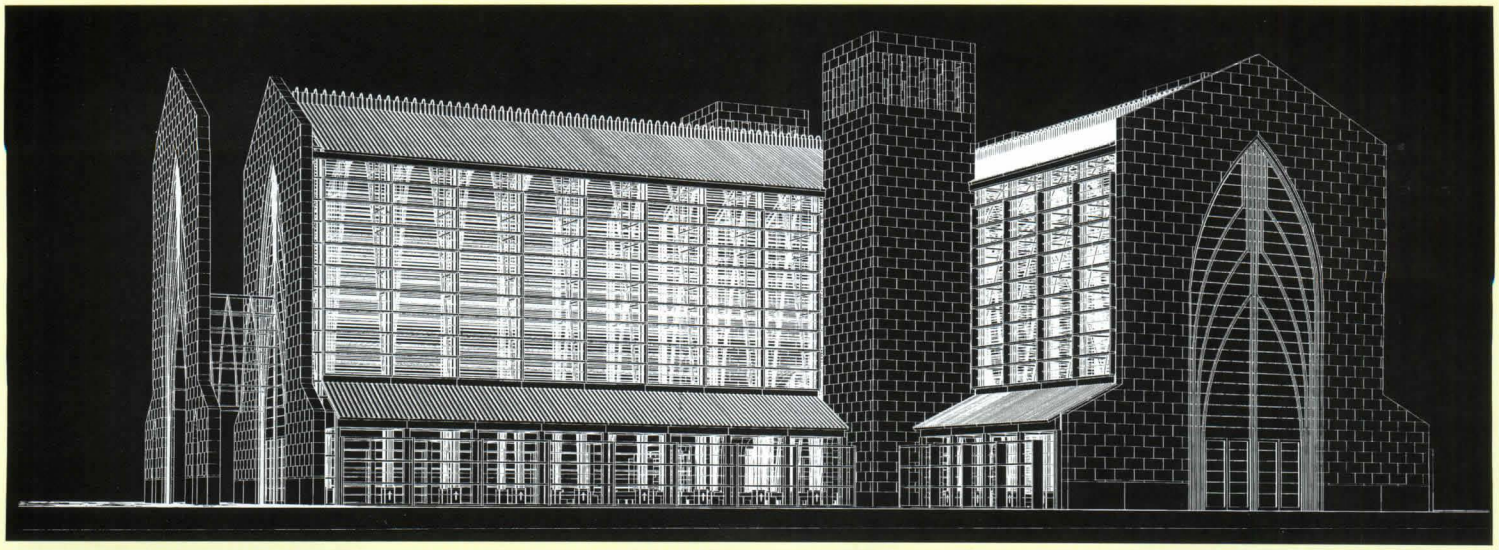
## Epiphany Church by Spillis Candela & Partners

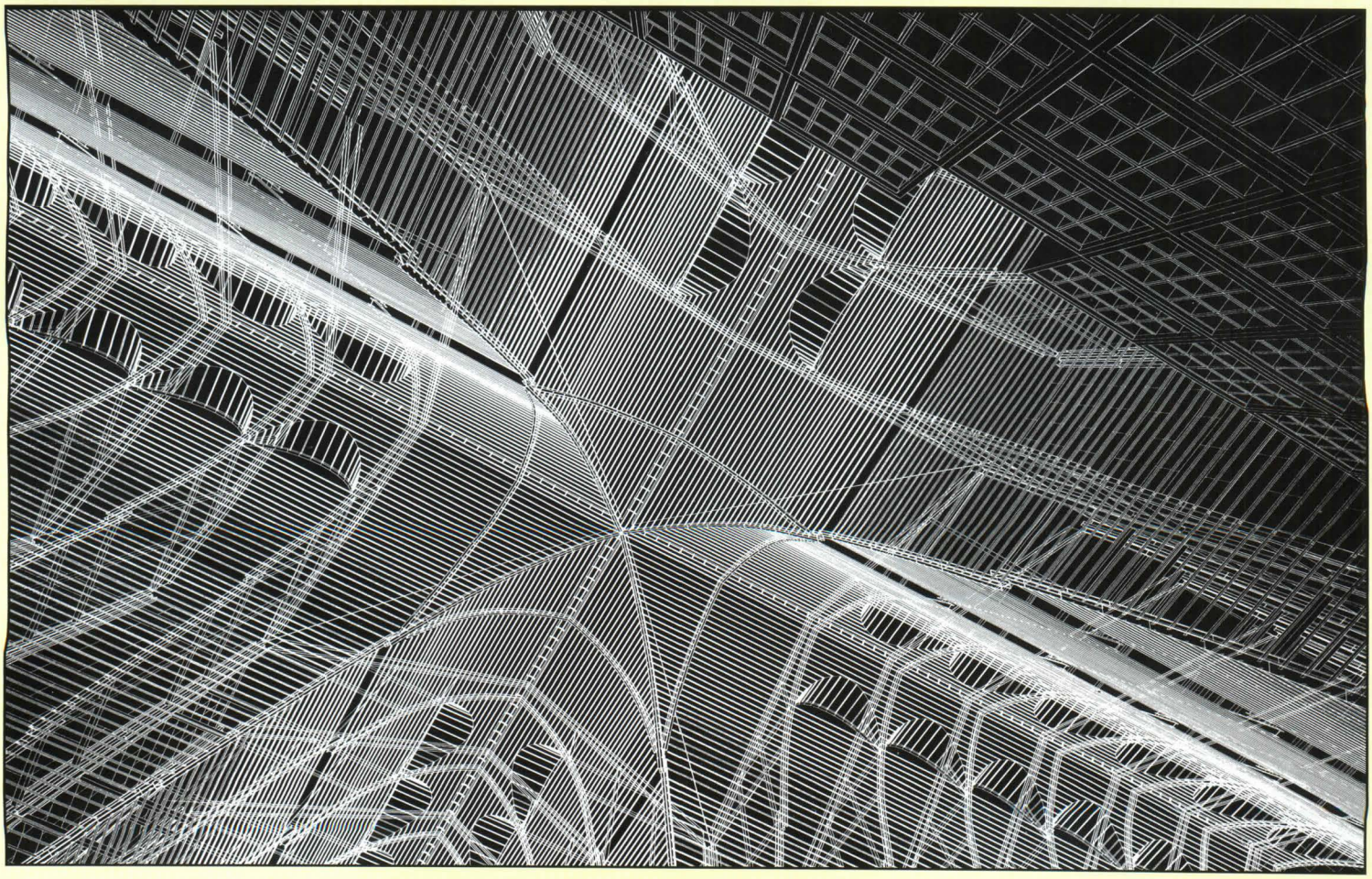
This diocesan church for 1,000 parishioners in Miami was delineated by Efraim Oliver, who will receive the Third Prize, an Advanced Architecture 3D CAD software package from Eagle Point. The church's steel arches, on which acoustically treated, light-filtering metal lattices are mounted, brace external columns. Stone-clad towers house mechanical equipment and brace the project against hurricane winds. The jury split as to whether the drawings explained or obscured the design's mass and transparency. "It may be an example of how the computer can mislead," said Paola Antonelli. Karen Bausman replied, "You get a higher reading through the lines and their weights. They mean something." Design team: Hilario Candela, Aramis Alvarez, J. Emilio Bonilla, Shahrizan Amir Hamzan, Maurice Candela, Meryati Johari, Carlos Vilato.
**Computer:** IBM compatible 486DXZ-66mHz
**Software:** Autodesk AutoCAD 12 AME2.1
**Output:** Hewlett-Packard Designjet 650C inkjet printer ■





*Spillis Candela designed this church to fit an existing campus. Noting that the delineator eschewed electronic pyrotechnics, the jury admired the sheer elegance and sureness of his eye.*





# Primavera Goes Graphical; Hayes Speeds Up

Over the years, as clients have become more cost-conscious, and as project-management software has become more common in architectural practice, there has been a continual tension. Precise and flexible management software requires more data to be entered and more scheduling to be carefully detailed.

The trick, for architects, is to input data the same way you'd input data in a CAD package– by pointing to where you want it on-screen, and then typing or clicking the mouse and dragging. Windows and the Macintosh make this easier. Microsoft has already exploited the Windows interface [ARCHITECTURAL RECORD, July 1993, page 39] for project management. Now Primavera, well-known for its ability to handle truly huge projects at an awesome level of detail—has followed suit.
*Steven S. Ross*

## Primavera P3 for Windows

**Vendor:** Primavera Systems, Inc., Two Bala Plaza, Bala Cynwyd, Pa 19004, 610/667-8600, fax 610/667-7894.
**Equipment required:** IBM PC or compatible with at least 80486 CPU or equivalent, 8 MB of random-access memory (we recommend 16MB), 30 MB of disk space plus room for project files, DOS 5.0 or later, mouse, Windows 3.1 or later, or Windows for Workgroups. Output to pen plotters is worth the wait; the color and layout are gorgeous.
**Price:** Single user license $4,000; three-user LAN installation $8,000; eight-user $15,000. Various discounts available for bulk single users and larger networks. Price includes one year phone support (open except Sundays). Users can also access Primavera's electronic bulletin board and CompuServe forum.

This is the first version of P3 that works with Windows. It offers almost all of the functionality of P3/Finest Hour 5.1 for DOS in an even more intuitive and flexible interface. It should also be easier to keep in a multi-user environment; files can be shared over even a simple network using Windows for Workgroups on the terminals and Windows NT on the server. It is also compatible with Novell NetWare 3.11 or later, NetWare Lite 1.1 or later, LANtastic, Banyan Vines, and many other network packages. (We tested it on NetWare 3.11 and Windows NT).

Projects can be huge, and you can open many projects at once (up to four if SHARE is set at the default P3 supplies upon installation).

When you first open a project, you get a bar chart (Gantt) on the right and an activities list on the left. Each is in a separate window; the vertical scrolling of the two windows is synchronized but the horizontal scroll controls are separate so you can view different sections of data too wide to fit into the display all at once.

Windows allows flexible on-screen editing of the display's appearance; time periods covered, order of the activities, schedules represented by the bar lengths, and so forth. You can also use the mouse to "point" to activities you want linked, or to links you want modified or removed.

In the activities window you can add columns for new data fields; edit existing data, and so forth. You can sort the activities on any field to group them. For WBS (work breakdown structure), you can have up to 20 levels.

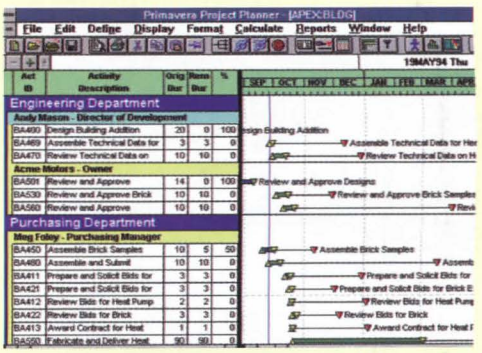
Once the bar chart is done, you can use it as a base for resource use or cost-over-time charts.

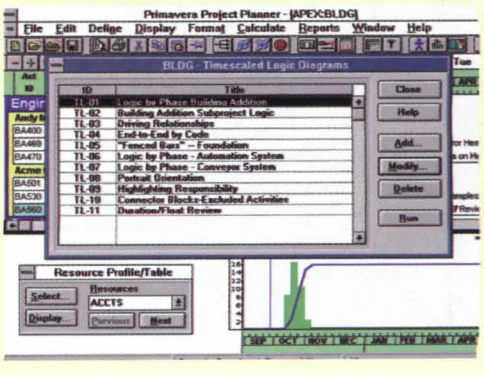
Linked activities can also be displayed in the bar-chart format (timescale linking). Logic diagrams and other standard project-management tools are available within P3 as well.

P3 comes with several interesting add-ons. There's a simple drawing package and a text editor that allow you to add extra elements to any display. There's also a separate report writer (Borland's ReportSmith) that allows sophisticated users to create automatic extracts of P3 data and insert them into other programs. P3 supports Microsoft's ODBC standard for exchanging data with many database formats (Paradox, dBase, comma-separated variables, and so forth).

You could, for instance, come up with a contractor-communications database, and even handle project billing within the framework of ReportSmith. We don't recommend this, because the link between ReportSmith and your latest data entries in P3 itself are not foolproof, but we recognize that many offices use project planners for billing– and that ReportSmith, while not perfect for the task, is the best we've seen yet.

Should DOS users upgrade to Windows? Yes, if they want more flexible output, and yes if they want better links to other software. (P3 for Windows supports OLE and the Windows clipboard.) Yes, too, if the office plans to use simple networking based on Windows NT and Windows for Workgroups. There is a speed issue, however. The Windows version runs a tad slower. But the lag does not get much worse with huge files, and resource-leveling is faster in the Windows version. And working speed (for accomplishing a series of commands necessary to update a project's progress or modify its structure), rather than raw "stopwatch speed" for specific tasks, seems better with the Windows version.




*Top: Bar chart and associated activities' report on screen . Above: Choosing the logic to display in timescaled logic diagram; note resource-use plot in lower right corner.*

The Windows version will run in 8 MB of RAM, but we found performance much improved with more memory; another 8 MB costs about $300 these days. Buy it.

The two P3 versions (Windows and DOS) can coexist in an office because files are identical, with minor exceptions described below. But moving back and forth between the two versions may be awkward for a given employee, because some data presentations are different. When you draw a graph showing resource use over a project, for instance, the DOS version cumulates the use period-by-period. In Windows, you enter the use per period (not the cumulative to-date use.)

*Manuals:* Lots of features, lots of instructions. Three large paperbacks (reference, ReportSmith, project planning text), quick-start guide, tutorials, videotape. First-rate, but don't try to swallow it in a short time. The on-line help is great if you have some basic grounding in project management.

*Ease-of-use:* Terrific, as project managers go. Lots of on-screen, in-diagram entry. This version shares all files almost seamlessly with P3 and Finest Hour for DOS, Versions 5.0 and 5.1. The file structure is identical. PENGUIN networks created with 5.1 can come into P3 for Windows, but they can't go back.

This program does require that the DOS SHARE program (for file sharing and locking in DOS versions 5.0 and higher) be in place, even for single-user installations. The installation program modifies AUTOEXEC.BAT to invoke SHARE. But this will cost you about 20K of normal DOS memory–enough to keep memory hogs like WordPerfect for DOS from loading. You may want to write a batch file to invoke SHARE only when you plan to run P3.

*Error-trapping:* Good. There's a lot of "smarts" built into the project logic. The underlying database is Btrieve, a stable performer. It is possible to run ReportSmith without updating the data dictionary, however. If you do, the resulting report will not be based on the latest data. (Updating data dictionaries can take lots of time for large projects, so users often leave this task for the end of a session.) *S.S.R.*
*Circle* **300**

## Hayes Optima 288 V.FC

**Vendor:** Hayes Microcomputer Products, 5835 Peachtree Corners East, Norcross, Ga 30092-3405, 404/441-1617.
**Price:**
$579 for modem, $99 for ESP card.
**Equipment:** External modem for DOS or Macintosh with raw transmission rate of 28,800 bits per second. Use at this speed on a DOS computer requires special Hayes ESP serial port (available for standard bus or microchannel). Older Macintoshes can't handle the speed, either. We had no trouble with Centris/Quadra 610, but could not achieve maximum speed on an SE. It comes with Windows LE and Windows fax software.

Every once in a while, an advance in computer equipment takes such a large leap that it makes us reconsider a way of doing things. Using a computer modem to transmit large plot files and other graphics over phone lines to a service bureau has not been too popular, for instance, because the transmissions can take so long. But the alternative—moving disks around—is cumbersome and expensive.

The emerging class of modems runs at double or triple the raw speed of earlier units—28,800 bits per second—and offers on-the-fly data compression as well. Hayes, first out of the box late last year with its Optima 288, claims up to an 8-fold compression ratio (230,400 bits per second). That's certainly possible with highly compressible, repetitive files such as simple raster images: TIF or, better yet, PCX images of computer command screens or CAD views. Non-modem compression software such as PKZIP can reduce simple PCX images to as little as 5 percent of original size.

The price on the street—about $500—would pay for about 30 messenger trips and disks.

Earlier in-modem compression schemes have over-promised, because they often work only when identical modems are used to send and receive. At 28,800 bps, however, most vendors will apparently implement an emerging international standard, V.34. That should allow all modems of this speed to "talk" to one another. Hayes promises a cheap (under $100) upgrade of its Optima 288 V.FC when V.34 is finalized. In the meantime, Hayes says its Optima will recognize compression up to 8-fold on any modem implementing the V.42 *bis* standard.

How will such modems perform on typical plot files? We generated two big ones and transmitted them to a service bureau to see. We did not have time to test the Optima with other vendors' products.

A complex 2.3MB HPGL/2 plot file was transmitted in three minutes, 21 seconds. Uncompressed, it would have taken more than three times longer (654 seconds, or almost 11 minutes).

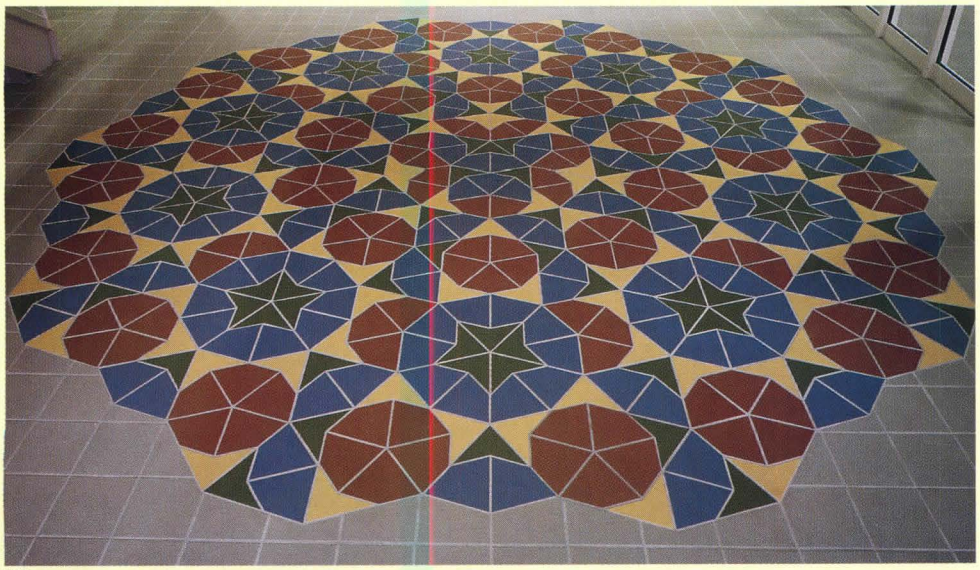
A more redundant HPGL plot file (with lots of repetitive hatch patterns) of 3.7 MB would have taken 1,050 seconds (almost 18 minutes) but actually transmitted in just under four minutes.

At the typical 9,600 bps, uncompressed, the first file would have taken a half-hour, and the second an hour. Nevertheless, the transmission speeds of the 288 correspond to about 94,000 and 127,000 bps, respectively—incredible, but well shy of the claimed 230,400 bps maximum.

All this comes without having to compress files in a separate step before sending.

The Optima comes with good software, but Hayes Smartcom for Windows (a $49 upgrade for Optima owners) and Smartcom II for the Macintosh ($49 to $149 with various upgrade deals) are better. ■
*Circle* **301**

# Tile and Stone Mosaics



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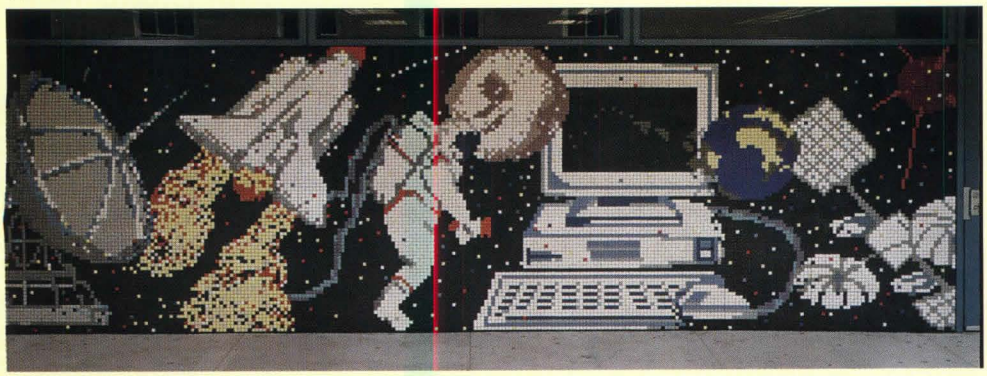
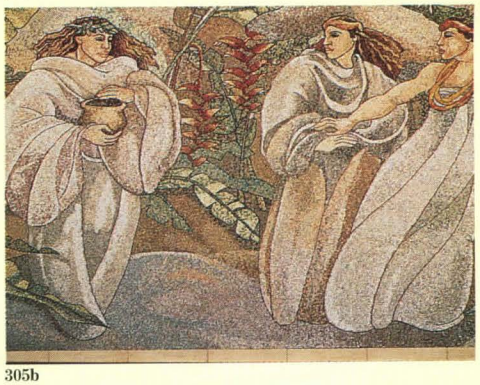


303

304a

304b

305a



305b

**302. Mathematically precise**
As unique as a snowflake (no 10-tile section is identical to any other) water-jet cutters translated physicist Roger Penrose's aperiodic motif into porcelain tile for Carleton College, Northfield, Minn. Two different kite-and-dart shapes were cut from four colors of 8-in. Caesar/Atlantis II tile. Installers set pieces individually, from the center out, following a color-coded working drawing by architects Cambridge Seven Associates, Inc. Buchtal Corp., USA, Roswell, Ga.

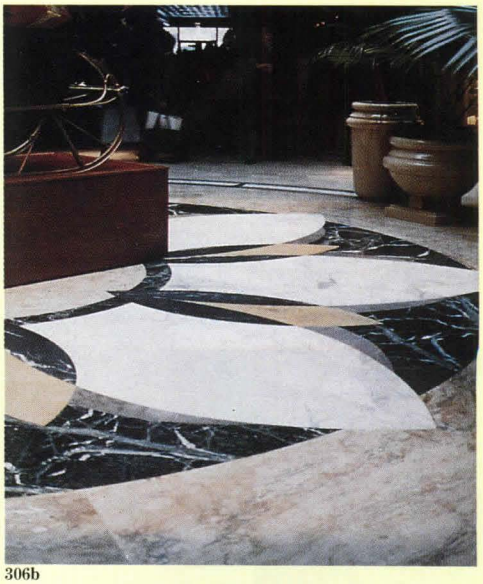
**303. Tile graphics deter graffiti**
The Blurock Partnership, architects of a science building at a vandal-prone Long Beach, Calif., high school, put easy-to-clean porcelain tile on exterior classroom walls. Annette Insalaco-Rogers, ASID, designed seven colorful murals, each 7- by 24-ft, depicting scientific subjects (astronomy is shown), in a successful effort to pre-empt other attempts at decoration. The tile manufacturer translated sketches into CAD cartoons scaled to one-inch mosaic tiles, and supplied the graphic premounted in 12- and 24-in. sheets. Dal-Tile, Dallas.

**304. Novel Italians**
Introduced at last fall's Bologna tile show: Cotto Veneto's stone squares with inlaid design of shells and fossil animals (304a), and Planetti, circular tiles set in special, double-curved inserts, made by La Fabbrica di Faenza. Both available in the U.S. Italian Tile Center, New York City.

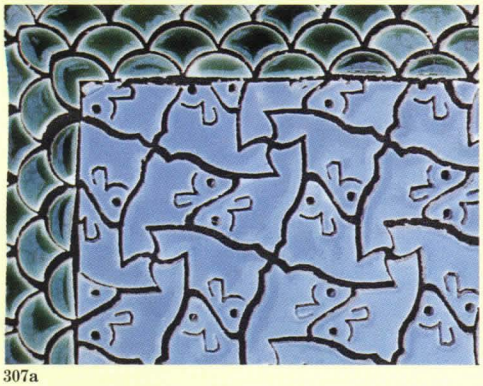
**305. Ancient art, modern materials**
Bisazza, of Vicenza, Italy, makes Byzantine-style glass mosaic in several forms:

*Vector-based CAD software and laser-guided water-jet cutters bring new precision and lower costs for mosaic walls and floors—one of the most ancient architectural embellishments.*

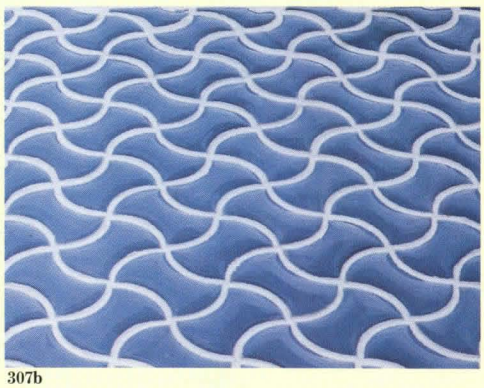
306a



306b



307a



307b

308

square-edged Vetricolor tiles, glass-and-metal Gemme, and a new clear-glass chip in various size gradations that reflects light prismatically. These pieces can be cast into a terrazzo for countertops (305a). A traditional smalti mosaic for a new Hawaiian resort (305b) incorporates hand-broken glass pieces set in an asphaltic base to capture the nuances of a watercolor by artist Yvonne Cheng. Renato Bisazza, Inc., Miami.

**306. State of the art**

The most advanced water-jet technologies are demonstrated in these two large projects: a spectacular map of the world interpreted in dozens of different marbles at the as-yet-unopened Denver airport (306a), and a luxurious stone lobby floor (306b), a series of interlocked medallions ranging up to 120 ft in diameter. Costs for cutting stone with a very-high-pressure abrasive slurry waterjet device have come down while the sophistication of its computerized-control technology has increased. Creative Edge Corporation, Fairfield, Iowa.

**307. Vector-based mosaics**

Another CAD-driven tile-cutting and layout method, Lance McKee's secret is his proprietary software. Refined since its development, MosaiCAD can guide a waterjet to repetitively cut tile in some truly fantastic shapes, including lacy perforations and tiles within tiles (307a). Each tile in a design may be unique. Foot-square components of a large mosaic are supplied on a wire-mesh backing for start-at-the-upper-left-corner installation. Section edges are irregular and fit together like a jigsaw puzzle, making the "seams" invisible (307b). Mosaica, Worcester, Mass.

**308. Traditional artistry**

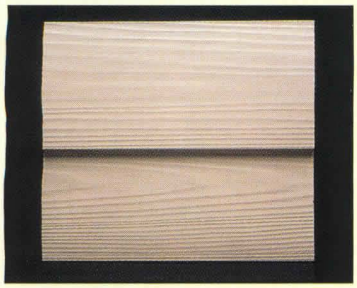
At Franz Mayer studios, both in Munich, Germany, and Fairfield, N.J., human artisans, not computers, do the work of translating an artist's or architect's concept into mosaic. Working with a stockpile of literally tons of glass and stone that offer thousands of subtle color variations, craftsmen in the 140-year-old firm execute commissions in large and small scale. A well-known installation in Munich's Odeonplatz subway station, Karl Knappe's huge mural of rough and smooth marbles, semi-precious stone, and gold and silver smalti measures 10 by 55 feet (detail above). Franz Mayer of Munich, Inc., Fairfield, N.J.

*Tile and setting materials are featured in this month's Product Literature section.*

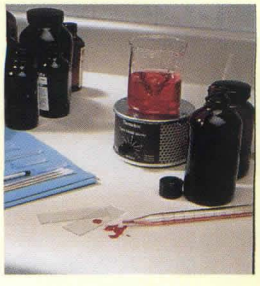
**309. Abstract wallcovering**
Another entry in the 'inspired by Monet's home and garden in Giverny' category, a new Vicrtex pattern interprets the artist's colorations in a jacquard-textured, abstract-floral print. The contract-vinyl wallcovering is rated Class A, Type II, and comes in 22 standard colorways and custom colorations. Forbo Industries, Hazleton, Pa.

**310. Discrete spots**
Described as a track-lighting fixture without the track, individual Lightpoint fittings serve as a low-voltage electrical supply channel for different relatively unobtrusive quartz-halogen lamp heads (Cornetto is shown). The monopoint spots rotate through 360 degrees, and can be adjusted for precise beam control. Lucifer Lighting Co., San Antonio, Texas.

**311. Cobblestone laminates**
This Italian-made surface line has added four cobblestone patterns in soft, multi-toned gray, tan, blue, and rose to the Finti series of stone-look designs. The entire high-pressure Laminati line includes natural motifs as well as dozens of Memphis-inspired designs. Chain-mounted samples available. Abet, Inc., Teterboro, N.J.



**312. Composite-wood siding**
Appropriate for both new construction and re-siding, Colorlok lap siding comes in 11 colors, now including a Prairie Beige developed to be compatible with today's most popular residential masonry and brick colors. Panels feature a self-aligning spline said to insure level installation; wood-grain texture is available in all siding colors. Masonite, Chicago.



**313. Chemical-resistant surface**
Chemsurf laminates are now offered in two new versions: a formable type, for counters or wall treatments which demand no exposed seams, and a fire-retardant configuration (over fire-rated particleboard) intended for applications requiring a Class 1A rating. Tested for extreme chemical resistance, laminates come in 12 colors and eight patterns. Wilsonart, Temple, Texas.

**314. Wright inspired**
Architect Stuart Cohen has designed a no-corner corner window as a standard wood-framed unit, available primed or aluminum-clad in a custom teal finish. The mitred insulating glass needs no supporting mullion, recreating the effect Wright achieved in the corner windows of his home at Spring Green, Wisc., without compromising weathertightness or energy efficiency. Pella Corp., Pella, Iowa.

**315. Stone-porcelain pavers**
Developed for the special stain-resistant requirements of healthcare, retail, and institutional environments, Crystal Flame pavers feature large, multicolor graining on a background of striated color that varies from tile to tile. Twelve-inch squares come in polished or pebble-finish options, in the colors shown; borders and accent trim available. American Olean Tile Co., Lansdale, Pa.

**316. Side/guest chairs**
Seating guru Brian Cox combines a nostalgic ladderback with a slimmed-down upholstered platform in his Franc Chair, one of the designs in the "reasonably priced" Currency Collection. The Yen Chair (not shown) has an oriental flair to the shape of its back and arms. Bernhardt Furniture Co., Lenoir, N.C.

**317. Historically correct**
Architects Goody, Clancy specified handmade German glass almost identical to 18th- and 19th-century glazing for the outboard lights of new energy-efficient windows in Harvard's 1870 Weld Hall. The frames are a new line of true-divided-light wood windows that have the narrow-and-deep muntins of the original fenestration. Architectural Components, Inc., Montague, Mass.

**318. Seismic dampers**
Compact linear-hydraulic dampers effectively dissipate energy from seismic events. Units are said to be maintenance-free, cost less, and to generate output in a form easy to model using existing structural codes. Devices come sized for most building or structural needs, from 1 to 2,000 kip. Passive dampers automatically recenter after shock. Taylor Devices, Inc., N. Tonawanda, N.Y.

**Letters** *Continued from page 29*

the person's time and energy for a period of a year or so. Here, the considerations of supporting the person and partners and friends are most important.

Support groups have been invaluable both from practical and emotional standpoints. Do you have a support group, should be almost your first question as an employer when an employee tells of HIV+ status.

My lover's care, from an HMO that also paid for IV nursing and home hospice care, funded by our firm's insurance under a "domestic partner" arrangement, was first rate–and incidentally, seems to be similar to the Clinton administration's health care proposals. Many medical conditions are being treated more at home, making the sort of accommodation and flexibility discussed above necessary for employees facing many different illnesses.
*Hugh Adams Russell, Principal*
*Russell & Scott Architects*
*Cambridge, Mass.*

**Belluschi Remembered**

Thirty years ago, my senior studio at the University of Florida took an architectural tour of Central Florida. The most memorable location was the home of Mr. and Mrs. Louis Skidmore nestled in the middle of an orange grove. A gracious Mrs. Skidmore led us through her home with obvious pride. I remember her story of their home design history. "After many attempts of home designs by my husband's firm, I finally said, 'Louis, why don't you just hire Pietro to design the house?'"(Skidmore founded SOM.)

This was my first, and most memorable, introduction to the works of [the late] Pietro *Belluschi* [RECORD , April 1994, page 13]. I returned to college after this trip and began to study the work of the man who designed the architect's house.

Ten years ago my career path led me to respond to an advertisement to work for Belluschi & Associates in Arlington, Virginia. I eagerly and aggressively pursued this opportunity to gain close contact with my *icon.* We referred to Pietro as "Maestro," which indeed he was. From his studio in Portland, he would send daily his design details for paving, brick coursing, railing details, etc. All beautifully drafted and shaded with his personal notes about the materials. How I wish I had kept the copies of his sketches. Every two weeks Pietro would visit us in Arlington; he never failed to walk around and visit with each of us. He was genuinely interested in our design ideas, professional history, and opinions, and shared his philosophy liberally with us.
*Jack Kelso, Kelso & Easter*
*Richmond, Va.*

**Afrocentric Architecture**

While it may be true, as Mr. Majekodunmi states [RECORD, January 1994], that we "are no longer Africans" we are more then just Americans. In fact all Americans (even white people) derive part of their identity from another culture. As a result some Americans identify themselves as African-Americans.

All black architects recognize, from their school "daze", that knowing architectural history is considered very important to being an architect. But whose history are we taught in school? Society educates its Architects to create buildings which reflect the culture and values of that society which provided the education. While America is, in reality, a place of *Continued on page 134*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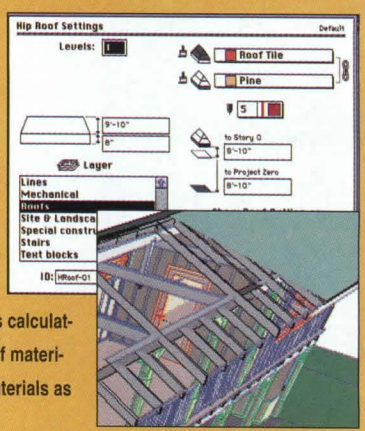


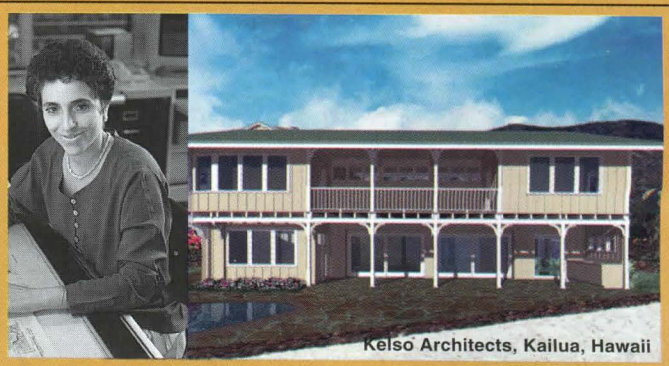


**Lisa Kelso, Kelso Architects, Kailua, Hawaii.:** *In designing this addition to an ocean front residence, we wanted to create a building that was reminiscent of the Hawaii plantation style with exposed roof framing, generous overhangs, and detailed architectural elements. ArchiCAD's roof tool allowed us to easily and accurately model all of the framing and roofs. The slab tool was used to create complex columns, brackets and railings. The result was a realistic image of the finished design.*

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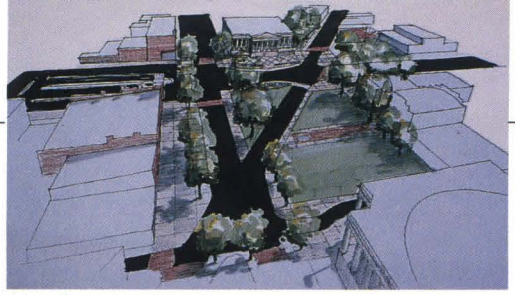
*Trisha Wilson, ASID, IBD, founder of Wilson & Associates, Dallas, Texas. Recently inducted into the 1993 Interior Design Hall of Fame for her stunning work in hospitality design, she is a specifier of DuPont Antron carpet fiber.*

*Building Types Study 717/Infrastructure*

Infrastructure is one of those words that suddenly appeared in everyday conversation, raised during the Clinton/Gore campaign as an issue of great importance on the national agenda. While this month's cover shows that what RECORD editor James Russell calls "the engineered viscera that undergirds our modern lives" can be fascinating, too often it defiles the community of which it is a part. The teams that designed the projects featured on the following pages did not accept the stultifying norm. A chiller plant at UCLA, a functional necessity, has been molded into a powerful sculptural presence (page 104). The final segment of coast-to-coast Interstate 70 highway through dramatic Colorado mountain terrain shows how sensitive design can win over opponents to a project (page 112). A waste-management plant in Phoenix makes community-involving art out of the necessity of recycling garbage (page 98). A new terminal at Chicago's O'Hare creates a welcoming new landmark (page 116), while London's terminus of the Channel Tunnel elegantly restates the train shed (page 90). To provide a glimpse into the possible future, Lisa Wormser and Hank Dittmar of the Surface Transportation Policy Project assess the Intermodal Surface Transportation Efficiency Act, pointing out how architects can work with engineers to improve infrastructure (page 86). *K.D.S.*

*Manufacturers' Sources listed on page 143*

# Destinations



*Civic Center, Macon, Georgia*

Architects were once indispensable partners to civil engineers in "producing such memorable structures as San Francisco's Golden Gate, or the beautifully landscaped parkways around New York City," RECORD noted last year [June 1993]. But "today it's rare to find a prominent bridge or utility structure that departs even slightly from the ultra-standardized civil-engineering kit-of-parts." Now, because of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), design and technical professionals are once again teaming up to promote livelier and more sustainable communities through infrastructure investments.

ISTEA signals the official beginning of the post-Interstate era in the United States: it redefines the federal role in transportation planning, and gives local governments more power to decide for themselves how transportation investment should serve communities. ISTEA also mandates a new state planning process which is parallel to and incorporates regional plans. States are given more leeway to develop their own road-design standards, taking into account the historic and scenic integrity of roads. In addition, a much wider range of projects is eligible for federal transportation funds than ever before. These changes are resulting in new projects combining transportation improvements with community benefits.

**Bridging traditional gaps**

A new bridge will soon welcome airport travelers, pedestrians, and transit users into downtown Pittsburgh's Golden Triangle. Using federal, state, and local funds, the Wabash Bridge will serve "as a transportation link, but [also] as a major bridge design in a virtual museum of bridge designs spanning over a century," says Rob Pfaffman of Bohlin Cywinski Jackson, who headed a team of local architects in a 1993 charette to spark ideas for the bridge design. The new bridge will feature a dedicated transitway, walkways, and pedestrian access to the waterfront (drawing, page 89).

As if time and a river were not enough, the Wabash Bridge project also spans a professional gap opened up by the Interstate-building age—between designers who think about places and engineers who think about destinations. But the design of the Wabash Bridge is also typical of the obstacles to true partnership between architects and engineers: on paper, the bridge is sadly only one segment of a larger system being designed in a standardized way by Baker Engineering, the firm engaged by the Pennsylvania Department of Transportation and the Pittsburgh Port Authority. For example, says Pfaffman, nearby transit stations are not getting the needed attention to detail or to the specific needs of transit users and pedestrians. Pfaffman says the problem "is convincing the engineers that the charette is not the end but the beginning of the design process."

The firm of Doug Farr & Associates in Chicago has brought a whole new meaning to the term "kit-of-parts." Using their newly developed "Sustainable Kit of Parts," the firm brought neighborhood residents into a collaborative design process aimed at revitalizing the Lake Street El train, which was on the verge of shutdown by the Chicago Transit Authority (CTA). Community groups saw the El as the economic lifeline to a neighborhood where unemployment verges on 25% of all residents. In February 1993, the Neighborhood Capital Budget Group, a city-wide coalition of over 200 organizations, joined with the Center for Neighborhood Technology to save the aging rail line and the neighborhoods surrounding it.

Doug Farr & Associates donated time to designing and submitting to community review a series of six transit-based projects to densify housing and intensify employment in the West Garfield neighborhood in the El corridor. The community wanted to establish a 24 hour pedestrian center near the neighborhood's El station at Pulaski and Lake, and to increase safety and opportunities in neighborhoods along the El line. The "kit-of-parts" concept gaved residents hands-on experience in designing their own community's future rather than reacting to a plan that had been pre-designed for them. From start to finish, the process took six planning meetings in six months. In July 1993, the Lake Street El Coalition unveiled the Pulaski and Lake neighborhood design as a prototype for other transit-oriented redevelopment projects. Less than two weeks later, the CTA agreed to preserve the Lake Street El (now renamed the Green Line), earmarking $300 million to upgrade the line. The Green Line began as a privately funded design process. Now federal and local public funds are being sought to design similar plans for additional stations along the route, and ISTEA funds are being requested from the Congestion Mitigation and Air Quality Improvement program. The CTA has offered the required local match of 20 percent. The City of Chicago has committed Community Development Block Grant funds to the project.

The Regional Plan Association (RPA) in New York has established a Transit-Friendly Communities Program to demonstrate the benefits of encouraging growth in existing centers served by rail and transit. The RPA selected four communities to test its combination of environmental simulation and collaborative planning techniques: Yonkers and Patterson in New York, and Princeton Junction and West Windsor in New Jersey. In Yonkers, RPA has been looking to planners, urban designers, transportation experts, and municipal-regulations experts for land-use and design guidelines that give a greater role to Yonkers' historic train station. In February 1994, RPA convened a design charette to explore design and growth options for Yonkers through the use of video simulation. The Environmental Simulation Lab at the New School for Social Research has been working closely with the RPA on this project (model, page 89).

**Where's the money going?**

Federal transportation law once enticed governments to build roads to national standards by providing them with cheap federal money—each local nickel typically earned 95 federal cents. ISTEA makes federal transportation funds more flexible for a variety of transportation options, and establishes a uniform federal share in both road and public-transportation projects. ISTEA also contains specific funding to protect a community and make it more livable, including an $80-million national scenic byway program. State transportation and

*The Intermodal Surface Transportation Efficiency Act, now in its third year, can help architects once again work with engineers to produce better infrastructure, write Lisa Wurmser and Hank Dittmar.*

highway departments must set aside 10 percent of their flexible Surface Transportation Program funds for transportation enhancements. These categories of projects may apply for the funding:

- provision of facilities for pedestrians and bicycles
- acquisition of scenic easements and scenic or historic sites
- scenic or historic highway programs
- landscaping and other scenic beautification
- historic preservation, rehabilitation, and operation of historic transportation facilities (including historic railroad facilities and canals)
- preservation of abandoned railway corridors
- control and removal of outdoor advertising
- archaeological planning and research
- mitigation of water pollution due to stormwater runoff

**Is good design a priority?**

But to succeed, ISTEA's reforms must depend on politics and procedure. At the end of 1993, the results were still ambiguous: for example, while 45 states now had enhancements programs and invested in hundreds of non-traditional projects, only 17 percent of available transportation enhancements funds had been spent. Less than half of the states with enhancements programs had provided for public involvement in their decisions. While some states want to develop their own design standards, by and large the official gospel

*Slowly, our culture's preoccupation with getting there is giving way to focusing on what we find once we arrive.*

of road design continues to be the "Green Book" developed by the American Association of State Highway and Transportation Officials (AASHTO). From the highest order Interstate roads on down, these design standards presume that the ultimate goal of transportation planning and design is to move as many vehicles as quickly as possible with minimum conflict with other vehicles. Questions of setting, context, and community are treated as anomalies in road design.

*AASHTO* has begun to reorient its design recommendations, however. In April, its board of directors adopted a resolution addressing design standards for the National Highway System (NHS). The NHS was created by ISTEA as a system of up to 155,000 miles of mostly existing roads, including the 45,000-mile Interstate. The system is due to be approved by Congress in 1995. Some policy-watchers, fearful that the NHS could lead to additional widening and construction of roads to bring them up to federal standards, have dubbed the program "Son of Interstate." The AASHTO resolution opposes "any Federal requirement to establish a single standard for the NHS," and recommends that "design responsibility for NHS routes be delegated to the states." The resolution also calls for environmental, scenic, historic, community, and preservation concerns to be made a part of design standards for the NHS, as well as standards that promote access for bicycles and pedestrian traffic.

Since most miles of the NHS are in rural areas, techniques for heritage-corridor management promise to protect natural resources and small communities while serving transportation needs. The Chattahoochee-Flint Regional Development Center (RDC) advanced a 56-mile, $5-million Heritage highway in rural west Georgia, combining 20 historic and cultural sites, and recreational, biking and hiking opportunities along a route made up of both state and federal highways. The RDC used the prospect of ISTEA enhancements funding to galvanize a steering committee of local citizens, business leaders, and public officials. The project was ranked fourth by the Georgia Department of Transportation among a priority list of 40 projects selected for funding in the non-metropolitan round by the agency in 1993.

**Reclaiming spaces for the public**

Part of the architect's job in the post-Interstate era is to help transportation engineers reclaim for use by the public those spaces that have been over-designed for vehicles and under-designed for people. For example, architects Russell Claxton and Shannon Fickling have designed an ISTEA enhancement project to re-establish Civic Square in downtown Macon, Georgia (drawing above left). The city recently cleared the last of four contemporary buildings which had blocked the vista between City Hall and Macon Auditorium. Claxton and Fickling worked to define the central space between these buildings, replant trees using Small Business Administration funds, and realign streets and sidewalks to make the downtown more walkable.

"ISTEA has engaged architects in the transportation planning process," says Claxton, a partner at Dennis and Dennis in Macon who also serves on the state's enhancements advisory committee. "Transportation departments used to be thought of as closed entities whose regulations influenced the work of the architect, like building inspectors or the water department. Now architects are in a position to influence transportation."

The Connecticut Department of Transportation has taken a second look at reversing the over-engineering of Route 34 in New Haven. With the help of civic groups, economic development and business interests, Yale University and area medical facilities, ConnDOT has engaged a multi-disciplinary design team to convert the former Route 34 right-of-way into a landscaped boulevard aimed at "making vehicles behave" through the use of actual and perceptual techniques that slow cars down. The new plan calls for a four-lane roadway divided by a landscaped median. On the north side, the boundaries of the right-of-way are irregular, creating opportunities for vest-pocket parks and a meandering bikeway. New open spaces are to be created at cross streets, and the road will terminate at a regional park to serve all the communities connected by the route.

*... the architect's job in the post-Interstate era is to help transportation engineers reclaim public life from spaces under-designed for people...*

The plan for the boulevard will create a market incentive for retaining medical services near downtown by developing a pedestrian environment and open space. Consultants on the project were Holt, Wexler & Farnum; Roth and Moore Architects; Ehrenkrantz & Eckstut Architects; Allan Davis Associates; Science Park Associates; Travers Associates; Diversified Technologies; and the TPA Design Group.

The Olympic Games and ISTEA funding have both spurred a walkways plan that has been on the books for two decades. The Atlanta University Center/West Side Pedestrian Corridor System is sponsored by a consortium of six black colleges in an area adjacent to downtown Atlanta: Clark Atlanta University, Interdenominational Theological Center, Morehouse College, Morehouse School of Medicine, Morris Brown College, and Spelman College. The facilities will play host to several Olympic events, and all hope the walkways plan will give new life to the area, which suffers disproportionately from poverty and disinvestment.

"Architects always have the opportunity to design buildings," says project manager Danita Brown, the Project Manager for the Atlanta University Center and the Corporation for Olympic Development in Atlanta (CODA). "But we don't always get the chance to build neighborhoods and communities. Yet I think a lot of architects are in this profession because they want to serve communities."

**A future for sustainable communities**

Through ISTEA's comprehensive planning process, design professionals can help define new goals for our communities' transportation investments. The following principles reinforce the planning requirements listed in Sections 134 and 135 of ISTEA:

*Conservation:* A conservative approach to transportation would stress use of resources for maintenance and rehabilitation of existing transportation infrastructure. The planning requirements which reflect this goal include a new set of management systems to take stock of existing transportation facilities and services, and monitor improvements to them. Under ISTEA's planning process, the findings of these systems must be used to recommend the best alternatives for a given transportation problem.

This value is reflected other ISTEA planning requirements, especially consideration of how to preserve existing transportation facilities and to meet transportation needs by using them more efficiently. Most specific to this goal is the requirement that agencies consider transportation-system management and investment strategies that make the most efficient use of existing transportation facilities.

*Options:* The nation should seek to provide Americans with real choices for each trip—be they driving, riding transit, bicycling, walking, telecommuting, train, truck, or airplane. These modes may have differing costs associated with them—in time, money, or privacy—but the costs should reflect capital and operating costs as well as social and environmental costs and benefits. ISTEA requires planners to incorporate bicycle and pedestrian facilities in projects wherever appropriate, and to weigh expansion of public transportation services.

*Integration:* Transportation facilities should be designed to support many options and to accommodate various modes of travel—a road should provide safe, convenient, attractive opportunities for the pedestrian, bicyclist, and transit passenger as well as the local auto user, even if this means some sacrifice of speed. In addition, transportation systems and facilities need to be integrated into the community and into the social, built, and natural fabric.

ISTEA requires the coordination of transportation decisions to connect international border crossings, ports, airports, major freight-distribution routes, national parks, recreation and scenic areas, monuments and historic sites, and military installations. It also requires that metropolitan areas be connected and, to ensure this, that their plans and programs be coordinated and reconciled with statewide transportation plans and programs.

**Access instead of mobility**

The Constitution guarantees the pursuit of happiness, not pursuit of speed. The goal of our transportation system should be to provide all Americans with access to jobs, decent housing, the necessities of life, and individual fulfillment. This goal also incorporates notions of social justice, and recognizes that current transportation investment patterns have tended to favor those who can afford mobility, not those who are left behind in rural isolation or urban deterioration.

*ISTEA signals the official beginning of the post-Interstate era in the United States.*

One critical planning concern in ISTEA calls for assessment of the overall social, economic, and environmental effects of transportation decisions. The other is that the effect of transportation decisions on land use be considered. ISTEA also requires that recreational travel and tourism needs be addressed.

**Strategic investment**

Infrastructure investment does lead to jobs. But transportation investments should be viewed as means to enhance regional and national competitiveness. Given limited resources, this goal would target investment to places where it is most needed to cure traffic congestion or to better integrate land uses.

ISTEA calls for greater local involvement in transportation decisions affecting local economies and quality of life. States must consider the

© *Baker Airport Busway*

*Wabash Bridge, part of an 8-mile bus/roadway facility, Pittsburgh (far left). Phase II (multi-purpose plaza and new park) of Larkin Plaza, Yonkers, New York (near left).*

©*Environmental Simulation Center.*

transportation needs of non-metropolitan areas by consulting with local elected officials, and must incorporate the plans of all metropolitan areas within the state. ISTEA stresses fiscal responsibility by requiring state and metropolitan agencies to come up with funding sources for all proposed projects, and by urging agencies to examine innovative mechanisms for financing projects.

**Information technologies**

The promise of the new Intelligent Vehicle Highway System initiative under Title XI of ISTEA is far greater than the ability to put more capacity onto our roadways. IVHS can be the means of building feedback loops into our multi-modal transportation system, so that it can be operated and managed in real time. These information technologies can enhance transit performance, provide the user of the system with meaningful information on route or mode choices, and even reduce safety conflict between different modes. Realizing the promise of managing our system in real time instead relying on 20- and 30-year forecasts could be a key benefit of the new information technology.

The lack of a specific link between the IVHS program and the ISTEA planning requirements means that planners must specify such a link in local planning processes, as it relates to other factors such as reducing traffic congestion, measuring and monitoring the impacts of transportation investments, and expanding public transportation services.

**Avoiding non-renewable resources**

The most obvious resource to conserve is oil. But this goal goes well beyond oil use to encompass the use of materials in roadway construction which employ recycled and recyclable materials, as well as materials that last longer. We need to finally recognize that the concept of "non-renewable" also extends to qualities that are difficult to measure: communities, history, open space, wildlife, and farmland. We should design a transportation system that preserves these resources. ISTEA says transportation plans must be checked for consistency with applicable federal, state, and local energy-conservation programs, goals, and objectives, and must include ways to reduce or prevent traffic congestion and motor-vehicle travel.

The federal government seems to have made a permanent shift on the topic of transportation investment. For the first time in more than two decades, the U.S. Department of Transportation and the Department of Housing and Urban Development have begun to view their respective roles in fostering better community development and transportation connections. Proposed by the two agencies in the President's budget last January, the Livable Communities initiative would provide $30 million next year to communities to develop transportation facilities which help give new life to communities by integrating mixed uses or providing walkable environments. The President's Executive Order on Environmental Justice, issued early in 1993, is intended to raise the issue of the location of facilities and their impact on distressed neighborhoods and poor people.

The change is not universal, however. ISTEA included a set of tools for investment which, without clear operating instructions, could undermine the law's intention of rationalizing transportation decisions at the community level. The National Highway System, mentioned earlier, could overwhelm other efforts to create sound, sustainable transportation options. Fortunately, Secretary of Transportation Federico Pena says he plans to establish a National Transportation System, which includes the NHS, but also weaves in other nationally significant transportation routes. However, some industry groups are keen to make the NHS the next "bigger-and-faster-is-better" investment model, leading to the diversion of funds from other parts of the system and to a flurry of new beltways and road widening in exurbia and across America. If this happens as part of a planned "upgrade to national standards," then any long-term approach to transportation will be doomed.

As noted, ISTEA's establishment of an Intelligent Vehicle Highway System could include public transportation as well as highway transportation. Transportation consultant Donald Camph of Aldaron, Inc. in California has called IVHS "a double-edged sword" providing two possible visions for America's future: either more and bigger roads, now souped up with computer technology, or "an opportunity to harness technology to empower people by providing access— to jobs, to health services, to cultural and recreational opportunities—and by helping to address questions of social equity, environmental quality, and community cohesion." So far, Camph emphasizes, "early indications give reason for concern...IVHS appears to become the transportation sector's equivalent of the military-industrial complex ... a harmonious but perhaps myopic partnership between purveyors of widgets, state DOT officials, and local public works directors."

While the projects discussed here point to a renewed partnership between architects and engineers, real change can only occur when Americans cease to enshrine personal mobility (getting there) at the cost of individual access (being there). ISTEA's provisions strike at the heart of the business-as-usual approach to transportation: they call on planners to evaluate how transportation affects the overall social, economic, and environmental well-being of communities.

In his new book, *Reclaiming Our Cities and Towns*, Australian activist David Engwicht wants to replace the mechanistic thinking, which has led us to segregate and specialize community functions, with a renewed focus on "interdependence and mutual exchange—not necessarily motion." Slowly, our culture's preoccupation with getting there is giving way to focusing on what we find once we arrive.
*Lisa Wormser and Hank Dittmar*

*Lisa Wormser is communications manager of the Surface Transportation Policy Project, a coalition of over 100 groups founded in 1990 to "ensure that transportation policy and investments help conserve energy, protect environmental and aesthetic quality, strengthen the economy, promote social equity, and make communities more liveable." Hank Dittmar is its director.*



# End of the Line

Nicholas Grimshaw's Waterloo Terminal is a response to the novelty of an international train station in Britain, that reinvents the heroic railroad termini of the Victorian era on a difficult site. It does this magnificently, and stands now as a tribute to computer-aided design, linear stiffness analysis, and laser surveying.

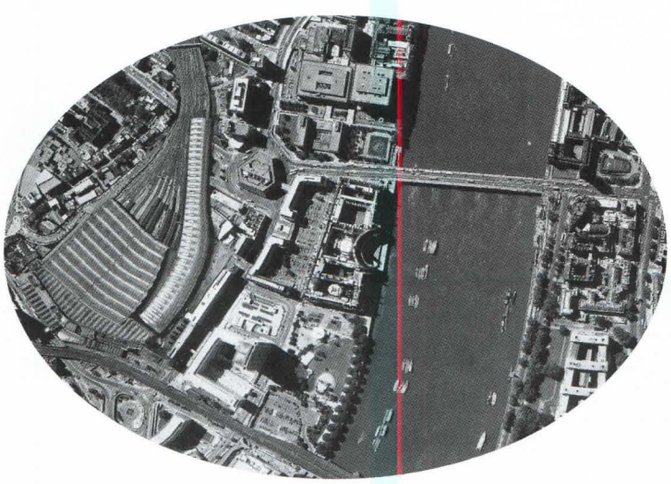
The recipe is simple. Take the standard Victorian glazed-shed railroad terminus—as is best shown in London by Saint Pancras station, a building whose age is precisely the 125 years of Waterloo's design lifetime. Then complicate practically every parameter imaginable. Where there was a level site, let there be contours. Where there was a straight axis, add curvature—a squashed S-bend in this case. Where there was an enclosure of constant section, now let it taper. Where there was symmetry, let there be asymmetry.

The five tracks that carry trains directly from the Channel Tunnel must worm their way around the side of the existing Waterloo Station and squeeze past buildings on sites hard by. Clearing these and rising over major roads requires the track—and thus the building—to bend and undulate. The 1,312-foot long canopy opens out from 115-feet wide at the "country end" to 180 feet at the "town end" (for comparison, the ironwork at Saint Pancras spans 240 feet). The main superstructure unit is a three-pin arch with the central pinning offset to provide sufficient overhead clearance for trains on the outside track. Either side of this pin on each of the 36 trusses set out at roughly 12-foot intervals is a bow-string arch. The truss is internal on the east side, flipping onto the exterior to the west. The secondary structure running along the line of the tracks is braced back to these primary frames both on the exterior and the interior. With the gradual broadening of the arch as it reaches the "town end", it might be supposed that the repetition of parts that is usual in such structures has been sacrificed. Not so, says Anthony Hunt, the structural engineer for the roof and other innovative details. "There are more repeating components than you might at first suppose." Many of the custom-developed castings are standard throughout, but thanks to the use of butt welding of steel tubes of different sizes rather than plate welding of conventional I-beams, many of the structural members are likewise standard.

The east side of this span is clad in rippled stainless-steel decking. Water runs off at the dips; at the crests, the decking does not quite meet and glazing completes the covering. The west side is glazed with sheets that are free to move and sealed with accordion gaskets and wiper blades. The two roof treatments provide for a dramatic variation of light within the building. At night, uplight reflects off the inside of the steel roof. During the morning, there is a chiaroscuro effect, as shafts of light streak across the platforms. In the evening, the hall floods with low sunlight.

The structure is highly labile, a living, breathing thing almost, that moves to accommodate the forces of everything from decelerating trains to snow loads to winds blowing through the open hall. The overall effect of the superstructure is like the exoskeleton of some arthropod squirming through a tight spot. Grimshaw's building may not consciously draw on the themes of the remarkable book, *On Growth and Form* by D'Arcy Thompson and published by Cambridge University Press, which describes how natural forms are governed by physical constraints (although both he and Hunt dimly recollect having read the work), but it does illustrate that the segmented-invertebrate image stems not from the wish to create a zoomorphic work of architecture, simply from site constraints.

The superstructure represents just 10 percent of the £131 million (nearly $200 million) cost of the project. But in considering passenger flow, the paradigm is no longer the Victorian railroad terminus but the modern airport. Departing passengers buy their tickets at open counters rather than at windows. Stores and cafés are located on a mezzanine below track level, along with seating similar to an airport departures lounge, even though waiting times for trains should be just a few minutes. Baggage is not checked for security reasons and because research showed that passengers would only bring more of it. Arriving passengers on their way down from track level to the street or the London Underground will pass through the same mezzanine. As they submerge into this labyrinth, it is the sense of arriving in that hall that they will take away. Or, they may recall a glimpse of the Houses of Parliament they caught as their train pulled in. Ironically, vacillation by the present government over upgrading track between the tunnel and London means eventually that most of the fastest trains from Paris and Brussels will arrive at Saint Pancras, not Waterloo Station. The choice of arriving tortuously in the 21st Century or expeditiously in the 19th seems an excellent metaphor for much in contemporary British life. *Hugh Aldersey-Williams*



© *Michael Dyer Associates Ltd.*

*The £130 million (nearly $200 million) Waterloo International Terminal squeezes in alongside tracks to the main Waterloo Station (left). In this aerial view, Big Ben is top right; the Royal Festival Hall and National Theatre are at the bottom.*

*Grimshaw's structure (left) can appear rather heavy viewed from a distance where the bright blue steelwork appears foreshortened as a dense haze over the terminal. From inside the hall (2) or close to (4), the lightness of touch is impressive, the more so considering the requirement that the structure should be able to withstand the catastrophic eventuality of a runaway train's knocking out the ground pin on one of the spans. This means that each structural component must in effect serve double its apparent purpose. Below the track-level hall, the terminal is much like an airport (3), and the lower part of the western flank where arriving passengers emerge at first reinforces the parallel (1). Only the sharp undulation in the access road gives the game away as one remembers never having seen any airport structure on anything but dead level ground.*

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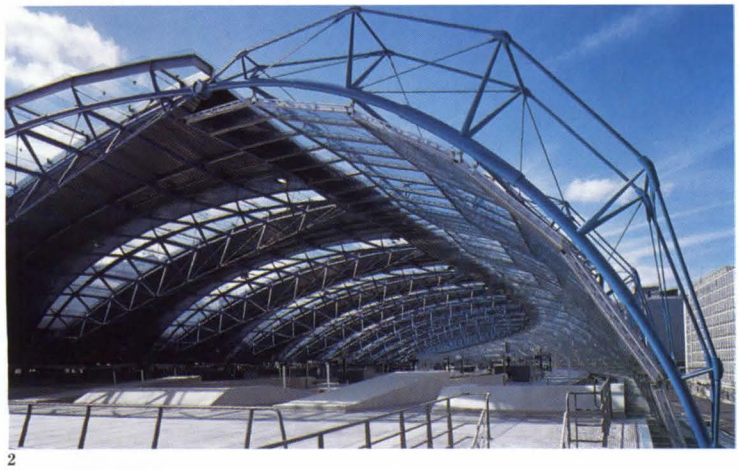

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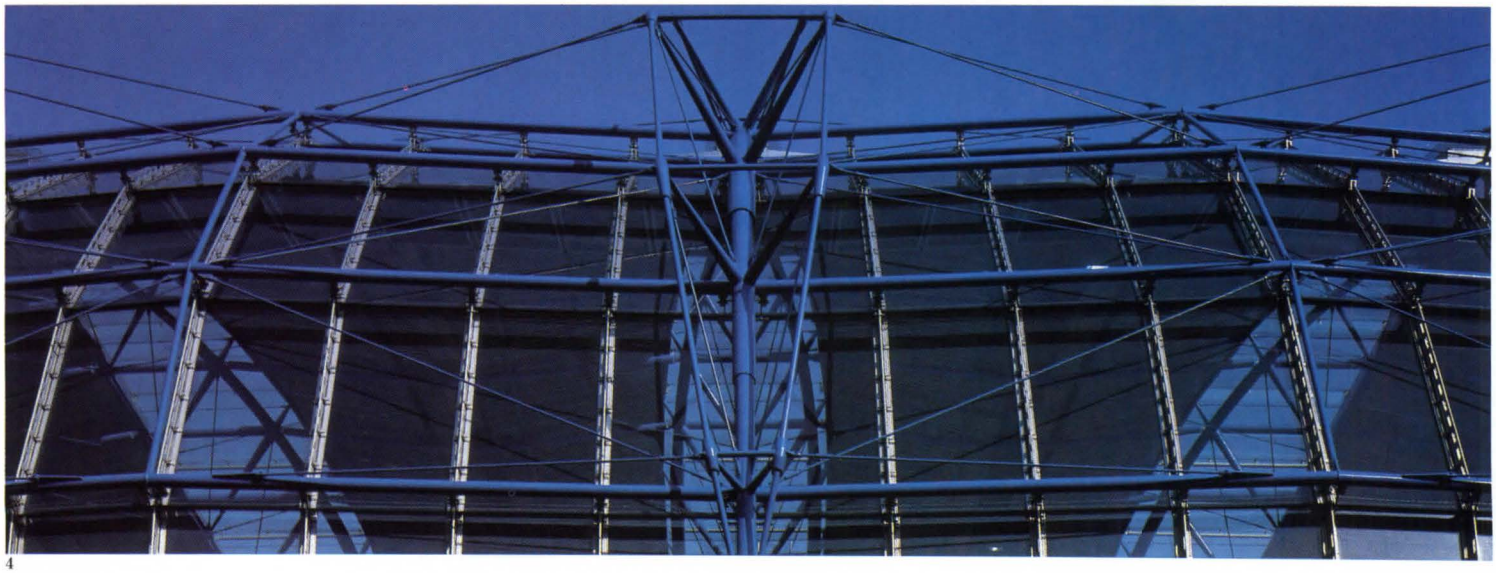

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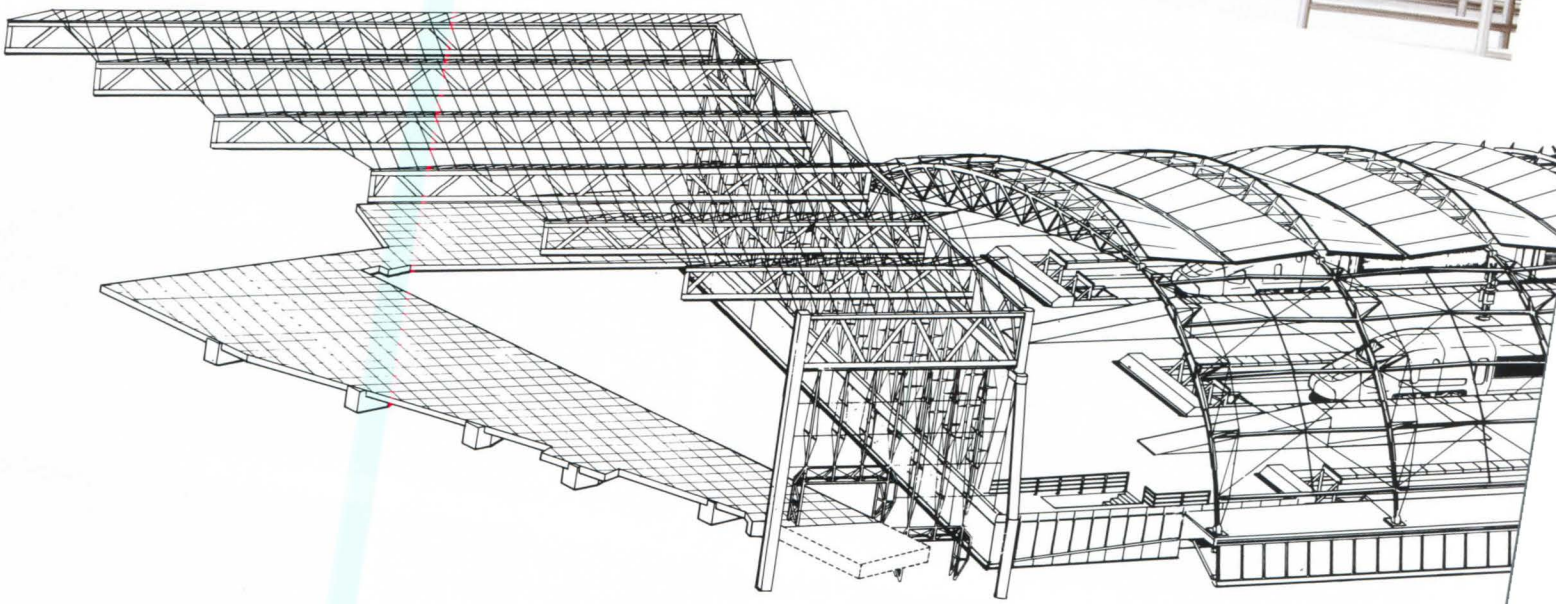
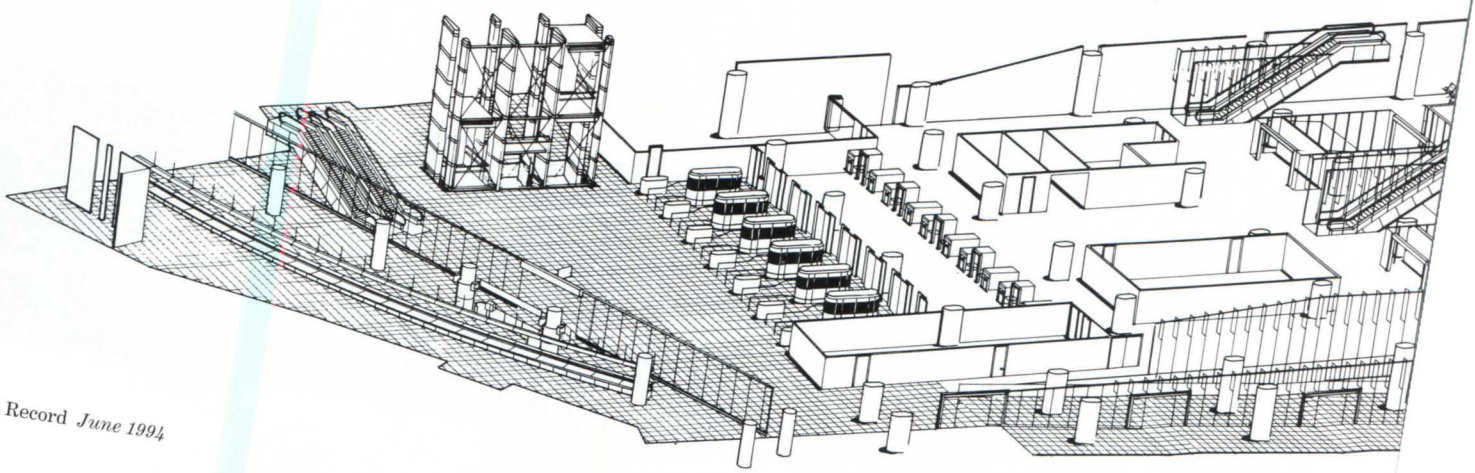
*Below track level, the building functions in layers, the departing passengers waiting on a mezzanine and arriving passengers moving down ramps to ground level. The architects have attended diligently to the impedimenta that surround us when we attempt to travel to another country. Both sets of passengers use some of the same circulation pathways, but at different times. Their segregation for immigration purposes is made possible by sliding doors that act as a valve, opening for arrivals and departures in tune with the train schedules. There is a feeling that this is somehow a temporary measure, to be swept away when it occurs to someone that it is nonsense to monitor the free movement of people and their possessions between foreign lands. Evidence of this emerges in the peculiar design for the passport checkpoints. There is some doubt as to whether Britain*





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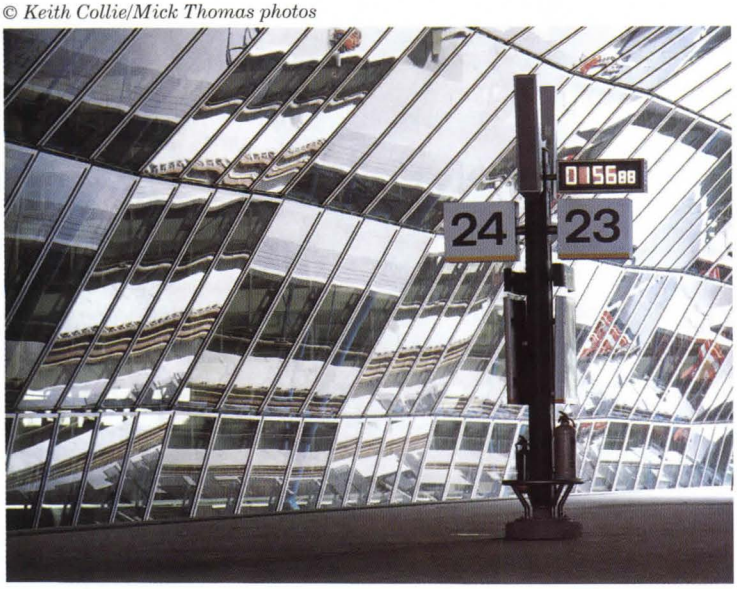
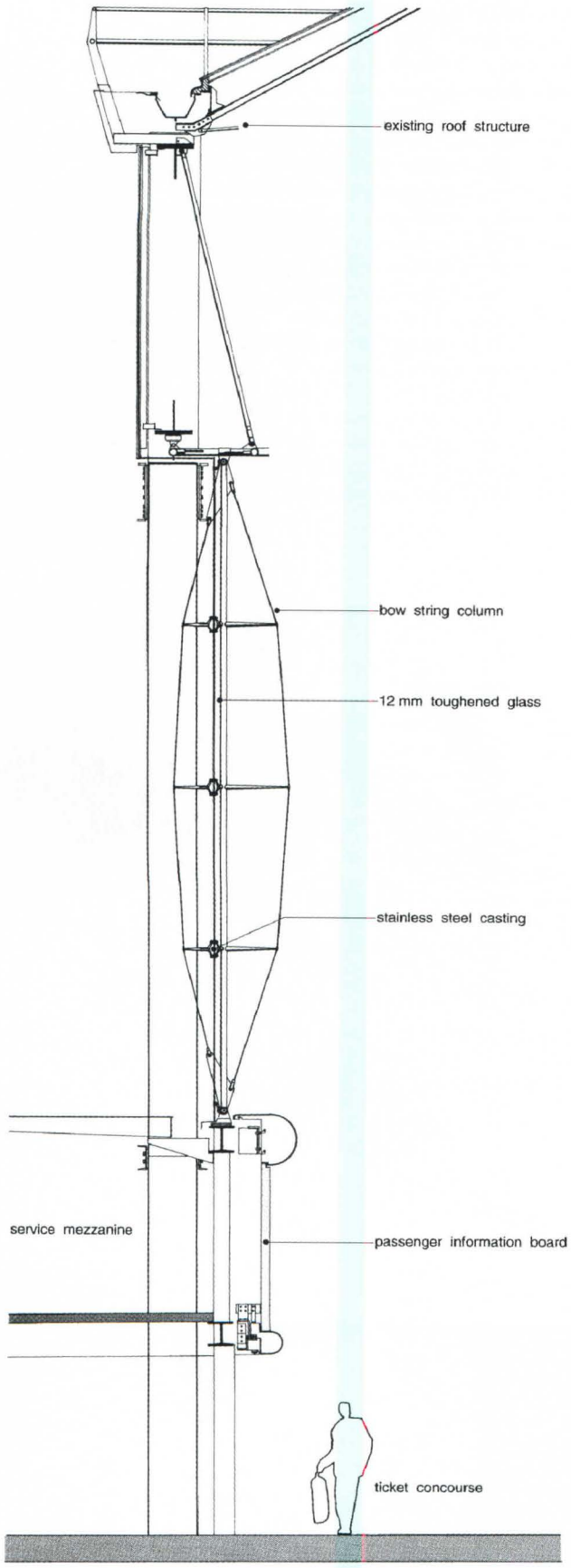



*regards train-board passport checks as adequate and might demand checks on its soil. The architects have allowed for all eventualities with hulking mobile units rather like Daleks that can be deployed if required. Not all the circulation is as transparent as one might like. One has visions of people struggling with carts of baggage on the ramps that one negotiates up to track level. And travellers heading for the London Underground must burrow around in the depths of the building to find their way out, a messy outcome of attempting to reconcile the requirements of two transportation clients while fitting around the substructure of Waterloo's pre-existing British Rail and Underground stations. Throughout the station, many installations such as the ticket booths (left) and signage (right) have been designed to blend with the overall tone.*



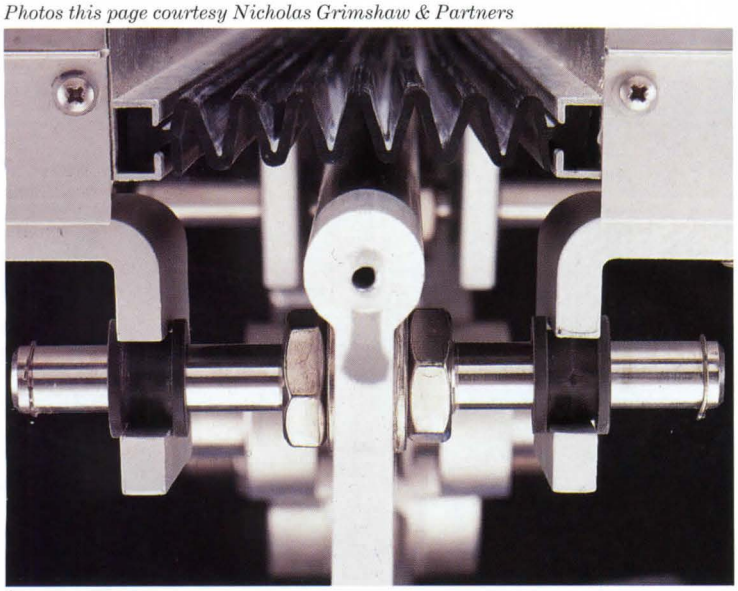

*A new wall rigged exactly like the mast of a yacht (left) provides as near transparent a view as possible from the concourse level of the main part of Waterloo Station (Europe's busiest, serving southern England) across to the new terminal with its gleaming new Eurotrains and blue superstructure.*

*A variety of custom stainless steel components was developed by the architects and YRM Anthony Hunt Associates, without, as is often the case, notable encouragement from the glass manufacturer. The detailing of these components, as well as of other custom-designed items from luminaires to washbasins, is superb and marks a notable improvement over some of Grimshaw's earlier buildings.*

**Credits**

**Project:** *Channel Tunnel Railway Terminal London, England*
**Owner:** *British Railways Board*
**Architects:** *Nicholas Grimshaw & Partners—Nick Grimshaw, Neven Sidor, Directors-in-charge; Andrew Whalley, Associate-in-charge*
**Structural Engineers:** *YRM Anthony Hunt Associates (roof); Sir Alexander Gibb and Partners (foundations); Cass Hayward and Partners; Tony Gee and Partners; British Rail Network Civil Engineer (viaduct)*
**Consultants:** *J. Roger Preston & Partners (serivces); Davis, Langdon & Everest (quantity surveyors); Bovis Construction (construction manager); Lighting Design Partnership (lighting); Henrion, Ludlow, Schmidt (sign consultants); Arup Research and Development (fire engineering)*

*Photos this page courtesy Nicholas Grimshaw & Partners*



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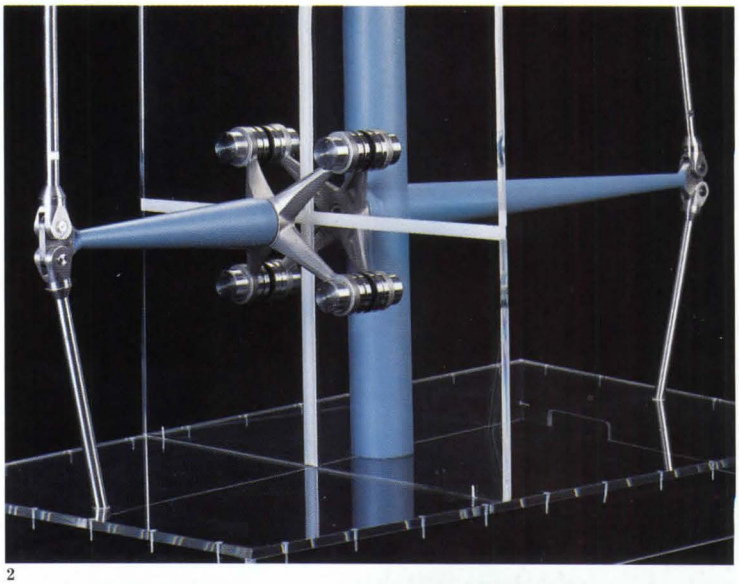

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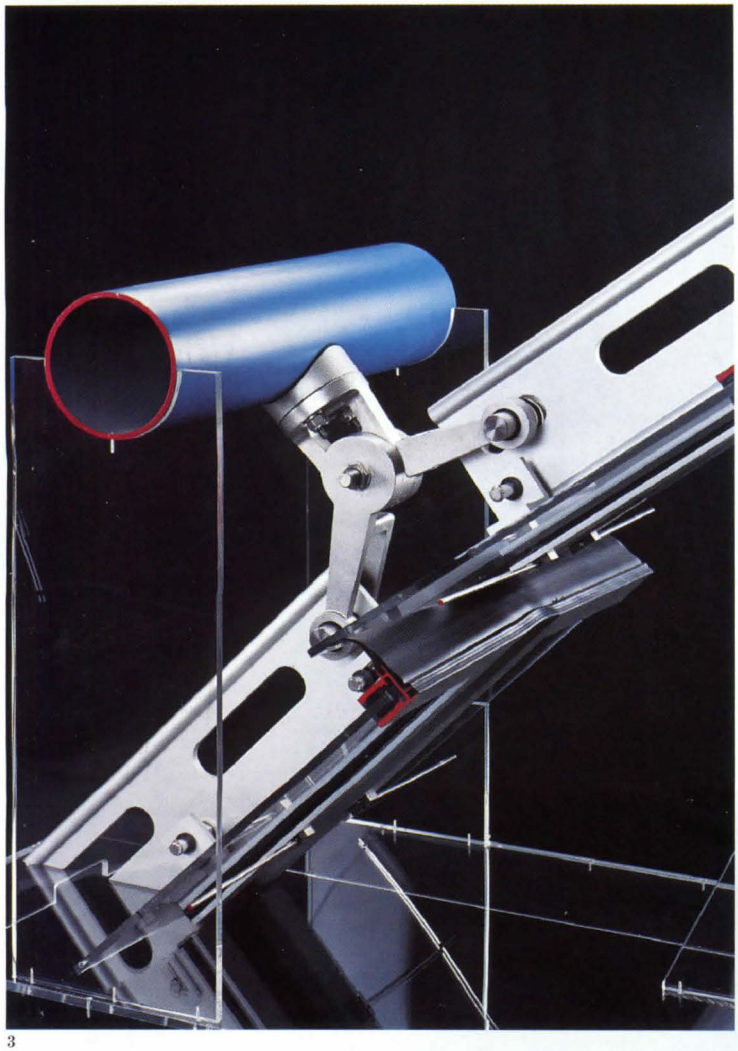
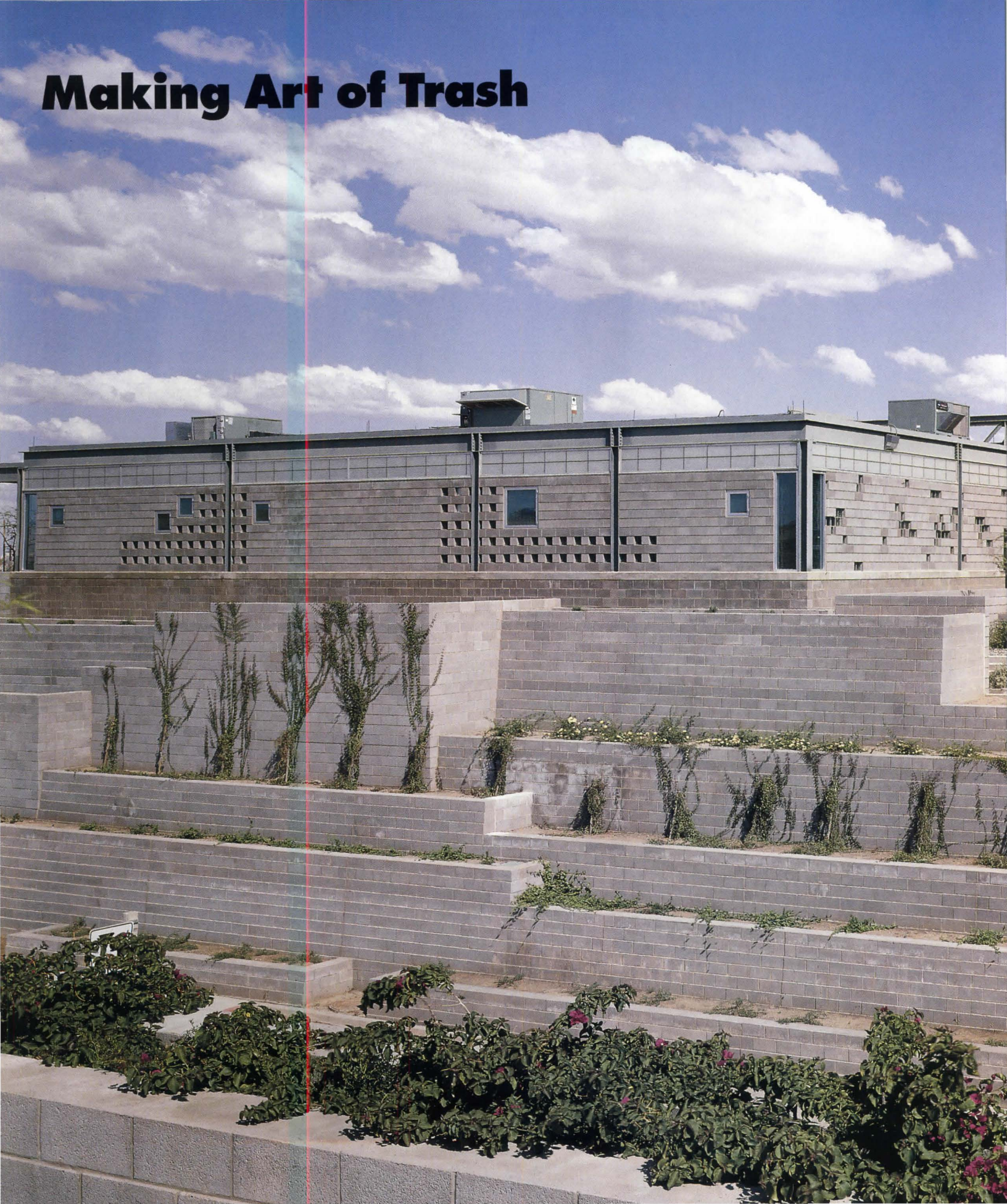


3

4

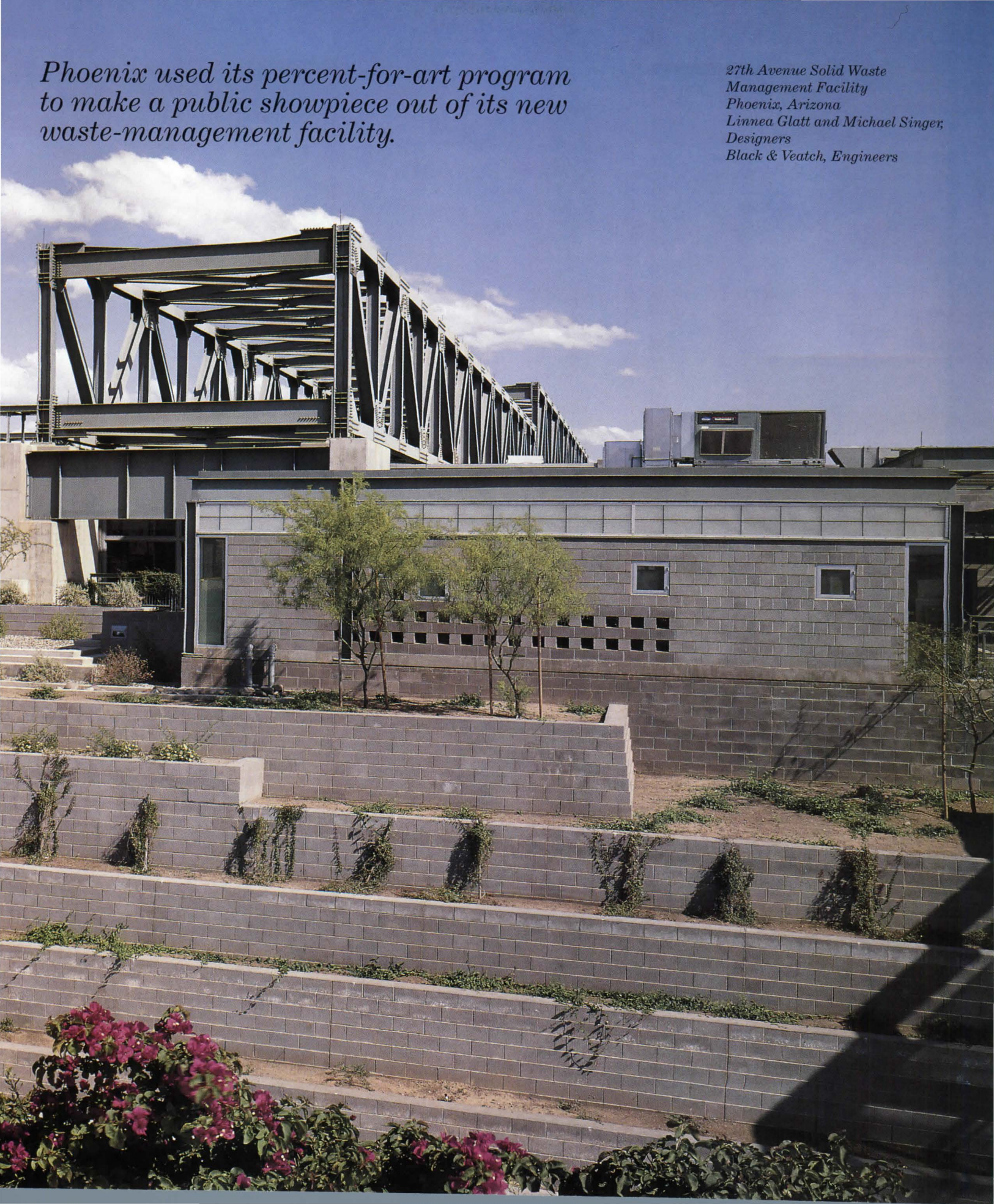
*1. Accordian gasket detail.*
*2. Bowstring wall detail.*
*3. Detail of front glass to roof.*
*4. Patterns for castings in roof structure.*

# Making Art of Trash



*Phoenix used its percent-for-art program to make a public showpiece out of its new waste-management facility.*

*27th Avenue Solid Waste Management Facility*
*Phoenix, Arizona*
*Linnea Glatt and Michael Singer, Designers*
*Black & Veatch, Engineers*



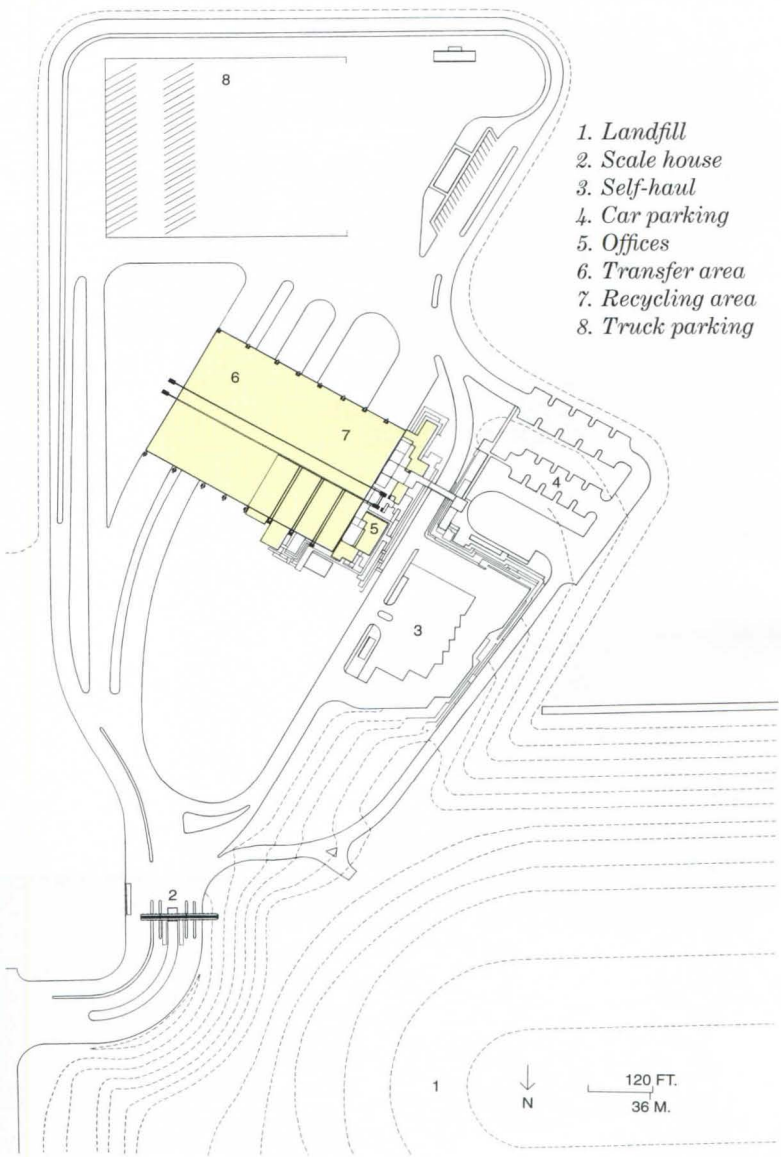
The 27th Avenue Solid Waste Management Facility in Phoenix challenges two conventions: that a garbage plant is unsightly and should be hidden from view, and that the city's eight-year-old percent-for-art program, which allocates up to $1 out of every $100 in municipal construction money to public art, produces, at best, grace-notes for architecture. Credit for this new perspective goes to the Phoenix Arts Commission's founding director Deborah Whitehurst and Gretchen Freeman, public art program manager, who joined with Public Works Department head Ron Jensen to conceive the project not only as a place for garbage transfer, but also as a symbol of the environmental impact of human waste. To realize this ambitious vision, they redefined the public-art program, making it "a tool of urban planning," according to *New York Times* critic Herbert Muschamp—a timely strategy considering infrastructure's growing importance on the national agenda.

The site designated for the facility is in southwest Phoenix, adjacent to a 147-acre landfill, recently topped-off after 15 years of dumping. Initially envisioned as a garbage transfer station, where refuse would be sorted and then trucked to a regional landfill 20 miles away, the project was reworked to accommodate the city's growing recycling program, whose environmental benefits Jensen wanted to stress. In 1989, the Arts Commission asked artists Linnea Glatt and Michael Singer (who work independently) to team up on a conceptual design, making them the impresarios of the project. They reviewed a preliminary scheme developed by engineering firm Black & Veatch, setting out, in their words, "to overcome the 'not in my backyard' syndrome."

Glatt and Singer repositioned the building's functions as proposed by Black & Veatch to allow prevailing winds, which move from west to east, to carry odors away from the site. They also rerouted traffic, separating access by activity and vehicle size. Now visitors and employees take the high road, ascending the landfill for an bird's eye view of the facility and sweeping mountain vistas, purposely straddling the "built" and natural environment. Self-haulers take the middle road to the recycling drop-off area, passing the vaguely Frank Lloyd Wright-inspired terraced concrete-block forms of the administrative wing, oriented toward downtown Phoenix, on the complex's west side. Dump trucks take the low road along the east side, descending into the vast shed for garbage transfer.

Dominating the complex is a massive steel truss, the main structural support for the roof and a billboard of sorts for the facility. Painted a grayish green, the truss and the lush desert vegetation of the courtyards cast a green glow on the muddy cement block—an appropriately green aura for a facility that will eventually cut landfill dumping by 30 percent. *Karen D. Stein*

*A 480-foot-span steel truss dominates the east facade (above). The roof is hung from the truss, creating a flexible two-acre interior space. All columns line the exterior except for two interior supports, which separate garbage transfer and recycling areas. An outdoor amphitheater between offices is used for public educational events (opposite).*

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*Administrative offices and visitor areas are arranged in small clusters around a series of shaded courtyards and walkways (top left and opposite). The main facility is to the west and large windows (bottom left) allow visitors to look inside the transfer and recycling areas (above).*

**Credits**

*27th Avenue Solid Waste Management Facility*
*Phoenix, Arizona*
**Designers:** *Linnea Glatt, Michael Singer—artists-in-charge; Sterling McMurrin, project architect; Richard Epstein, Dino Sakellar, architectural team*
**Engineers:** *Black & Veatch—Dave Mahaffay, principal-in-charge; Brad Hemken, project manager; Doug Hubble, project architect; Richard Reeves, project engineer*
**Consultant:** *Alagia Engineering (structural)*
**General contractor:** *Joe E. Woods*

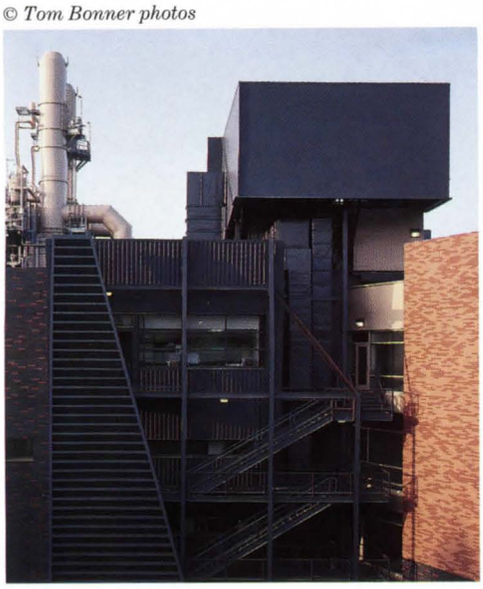
**Up Close**

*Artists as architects.* "What is unusual about this project is that it got built," says artist Linnea Glatt of her and Michael Singer's direction of two teams of architects and engineers. Sterling McMurrin, who worked on the artists' team, observes: "Artists aren't typically considered the people to lead a team, but as an architect it was important to learn that we always need to listen to each other." Glatt and Singer's dominant role in the $15-million Solid Waste Management Facility's design has been criticized for taking work away from project-starved architects, or, at the very least, diluting their authority, a role reversal of the percent-for-art program, where often the site, size, and content of an artist's project is predetermined by the architect. Says Glatt of the debate: "This is indeed the territory of architects; it's the territory of anyone who wanted to make this project an important place for the city."

# Cool Chiller

*UCLA Energy Services Facility*
*Los Angeles, California*
*Parsons Main, Inc., Architects and Engineers*
*Holt Hinshaw Pfau Jones Architecture, Architectural Design Consultants*

© *Tom Bonner photos*



*The south side (opposite) is a high-bay structure with a full basement housing the central plant functions. The design evokes the poetry of this high-tech installation along the great 450-foot facade with a subtly scaled series of splayed panels. Single-wythe brick panels in pink brick with blue brick accents mark the gas turbine generators and absorption refrigeration chillers at the ground floor level. At the upper level, the irregular painted metal screens cloak but do not conceal the cooling towers and the heat recovery steam generators (HRSGs). The two HRSG stacks rise to a maximum allowed 125 feet. On the north front (above), an open metal stair system serves facilities staff offices and workshops.*

*Overleaf: an aerial view from the southeast shows the plant in relation to the main campus (to the right), campus parking, and residential Westwood (above the stacks). The campus police station is at bottom right.*

As infrastructure projects go, UCLA's new central energy services facility had all the cards stacked against it. A container for gas turbines, boilers, chillers, and exhaust stacks, plus miles of pipes, ducts, and raceways, it was also a possible source of noise, vibration, and pollution, and would occupy 450 feet of frontage on an important street to a height of 125 feet. It would be a close neighbor to the student residential area of a major campus and a stone's throw from the well-heeled and articulate communities of Bel Air, Westwood, and Beverly Hills (in a test at the Bel Air Country Club, a bright orange metereological balloon was hoisted next to where the stacks would go, to see if it was visible from the club. It wasn't). This was the challenge the owner tossed to the design-build team of Parsons Main/Kiewitt, with the architects Holt Hinshaw Pfau Jones as architectural consultants. The challenge was part planning, part design, part execution.

Dispersed all over UCLA's sprawling campus was an aging, inefficient, pollution-causing network of boilers and chiller units supplying hospitals, labs, food services, and other campus functions. Electricity was bought at high cost from the Los Angeles Department of Water and Power. In 1987, the University opted for a single, central plant that would supply steam, chilled water, and electricity to the entire campus, centralize control, and reduce air pollution. To enhance efficiency, the University resolved to incorporate co-generation, which uses waste heat to produce steam and more electricity; it dates to the 1960s and requires a very large plant to yield benefits.

The decision was a bold one. Co-generation plants work best when on a single floor, but the 8-acre site had to accommodate chiller and power generating equipment, offices and workshops for the campus facilities department, truck access and a work yard, resulting in a three-story structure—a massive presence.

In the words of Parsons Main project architect Mark Griffith, hired halfway through the project as liaison with Holt Hinshaw Pfau Jones, "here was an industrial type project that needed an architectural solution. Normally a co-gen plant of this type is found in an industrial or rural area, not a suburban campus." The architectural consultants' role was crucial not only in dealing with the planning and design challenges of what one team member called "this elephant," but also in reconciling, in their dealings with what was essentially an engineer-dominated design-build team, traditional mindsets with the mandate to find an appropriate form for a strictly industrial building.

Holt Hinshaw Pfau Jones met with the engineers at Parsons Main and together came up with a unique solution of stacking a co-gen plant on three stories instead of one. Says Wes Jones, design principal (who has since founded his own firm), "You have some real cutting-edge technology here. There's no need to hide it." In the solution, the two heat-recovery generator stacks are a major feature, like on the old ocean liners. At the middle levels, steel screens are designed not to hide but to reveal seductively, like a veil, the high-tech equipment behind. At street level, brick in two shades—pink, and blue for accent—are arranged in panels. These are suspended on the north facade, built up on the south, and splayed in a slightly irregular geometry, to create a lively street rhythm.

"It's easy to post-rationalize a design solution," says Marc Hinshaw, a principal-in-charge with Paul Holt, "and while the design is without question a testament to the power of technology, what really happened here is a sensible response to the program—the need to conserve site area, to maintain air quality, to save money."
*Stephen A. Kliment*

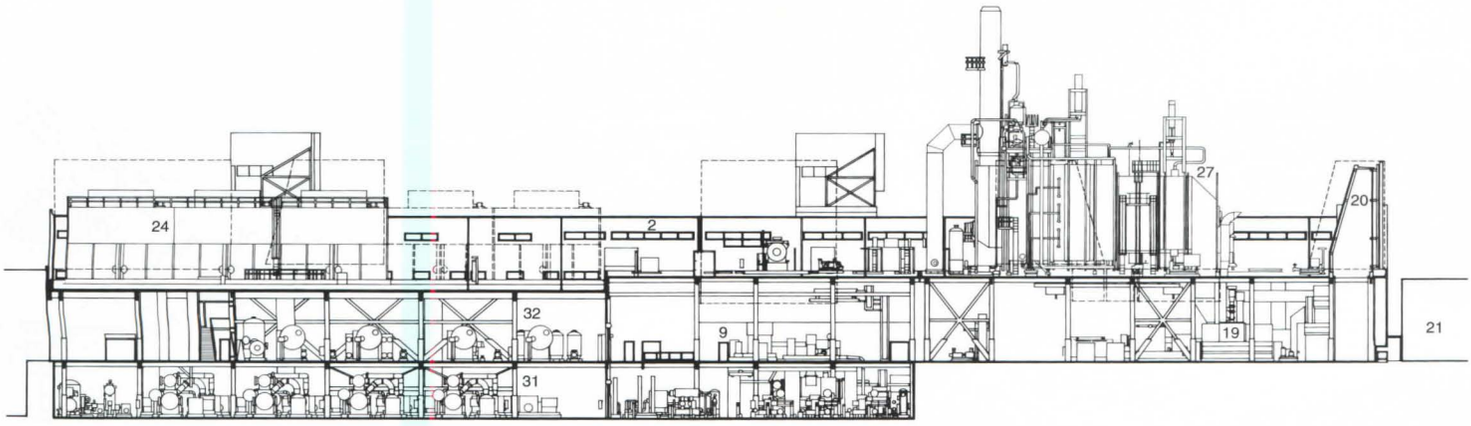


*Overall floor area of 180,000 sq. ft. is divided about equally into plant space on the south or "uninhabited" side of the plan, and facilities offices and workshops on the "inhabited" north. Section B-B clearly shows the relationship between the high-bay plant spaces to the left and the three-story offices and shops to the right. Sections A-A and C-C express the elegance of the serried arrays of equipment with their connecting pipes and raceways.*

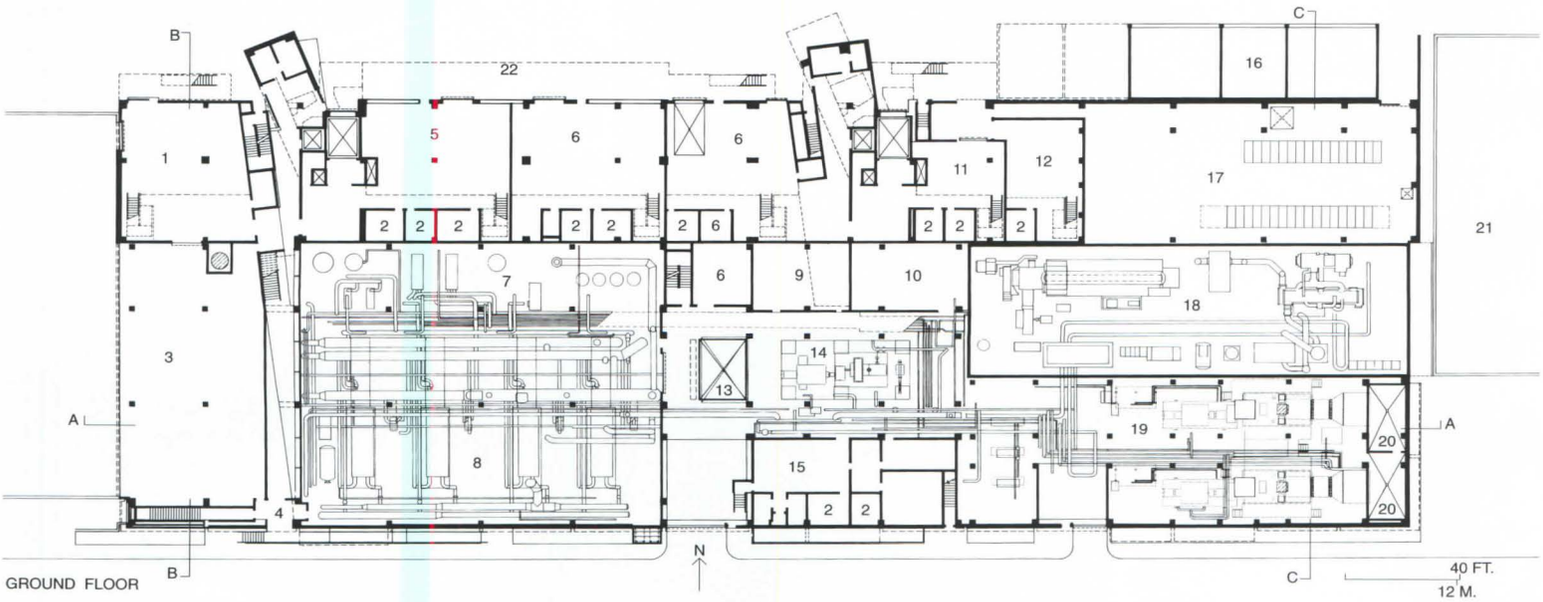
*Of the $180 million invested in the project, $138 million went for construction, the balance for equipment. An economical braced steel-frame structural system meets seismic design requirements and structurally separates dissimilar building functions. Augured cast piles were used in place of driven piles to reduce noise and vibration during construction in this residential student neighborhood. Incorporated in the floor plan (below) is an independent emergency services building(18).*

*In co-generation, fuel goes to a combustion turbine generator to generate electricity. Waste heat is harnessed to produce steam. Steam is used to heat the campus, run a centrifugal chiller which produces chilled water, and a steam generator which produces more electricity. At UCLA, this electricity is used to operate an absorption chiller, which yields more chilled water.*

1. *Masonry shop*
2. *Office*
3. *Future shops*
4. *Entry*
5. *Procurement*
6. *Storage*
7. *Pumps*
8. *Absorption refrigeration units*
9. *Control room*
10. *Relay room*
11. *Staging/dayrm.*
12. *Pest control*
13. *Lift-out panel*
14. *Steam turbine generator*
15. *Maintenance*
16. *Transformers*
17. *Switchgear*
18. *Emergency services building*
19. *Combustion gas turbines*
20. *Air intake*
21. *Police station*
22. *Catwalks (above)*
23. *Conference*
24. *Cooling towers*
25. *Open office*
26. *Ammonia tank*
27. *Heat-recovery steam generators*
28. *Hardware shop*
29. *Plumbing shop*
30. *Electrical shop*
31. *Centrifugal chillers*
32. *Absorption chillers*
33. *Cable vault*




SECTION A-A

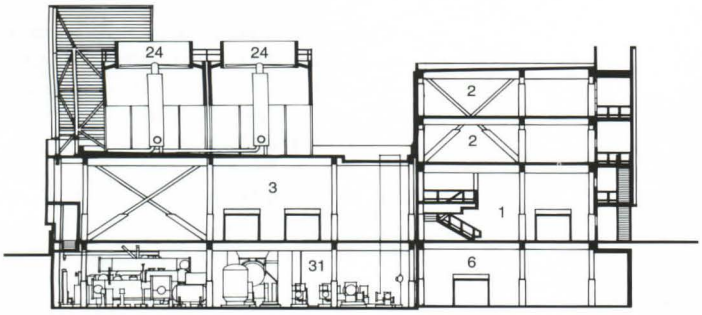



GROUND FLOOR

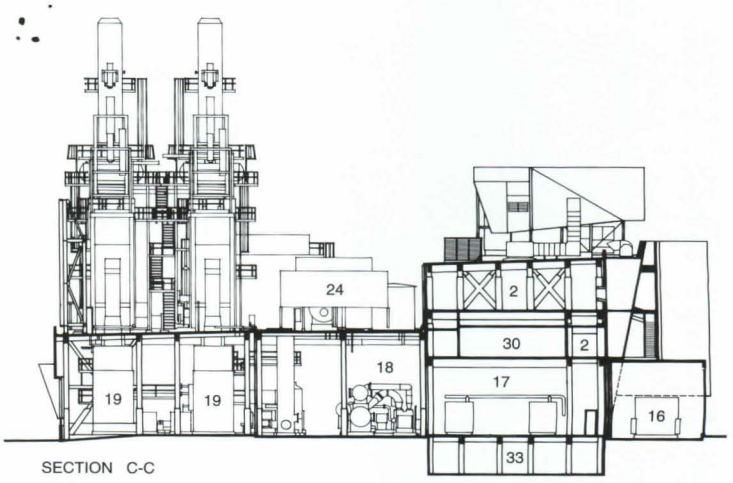
## Up Close

*Process was crucial.* The delivery process began in 1981 in a spirit of alarm over an antiquated, inefficient, and air-polluting generation system. It ended this spring with on-line operation and occupancy by the facilities staff. An RFP was issued in 1987 for a limited design competition. The owner judged each of the five teams on the basis of their qualifications in: engineering, planning, architectural design, financial strength, proposed schedule, cost per delivered unit of chilled water, and quality of presentation. The Parsons Main/Kiewitt design-build team (Kiewitt was the general contractor) won, it believes, in part because 700 of the 1100 judging points were in one way or another impacted by architectural considerations. The team actually came out ahead by over 200 points in the "architectural design" category, ensuring victory by a slim 11 points. The program called for UCLA's facilities group offices to face the road on the south, with the chiller and power plants facing north. In its proposal, which required complete schematics, the Parsons Main/Kiewitt team took the bold step of switching the two, arguing that the plants would do less to tie up traffic if placed on the south side, whereas the facilities staff needed a work yard on the more isolated north. Contracts were signed in 1991. Installation was what one team member calls a "logistical nightmare." Facilities staffs, who occupied some existing buildings on the site, had to keep operating during construction, so an adjacent building was renovated before demolition began. Some units, such as the 5300-ton centrifugal chiller and the steam condenser, were so big they had to be installed in the basement before all the structure was in place. Masses of curving raceways (see cover) were carefully threaded among the columns using slings. Kiewitt builds mostly industrial plants that require close tolerances. UCLA benefited. Says UCLA representative John Krogstedt, "We look at a building that for us displays some of the best detailing that we've seen on campus, and some of the best workmanship."

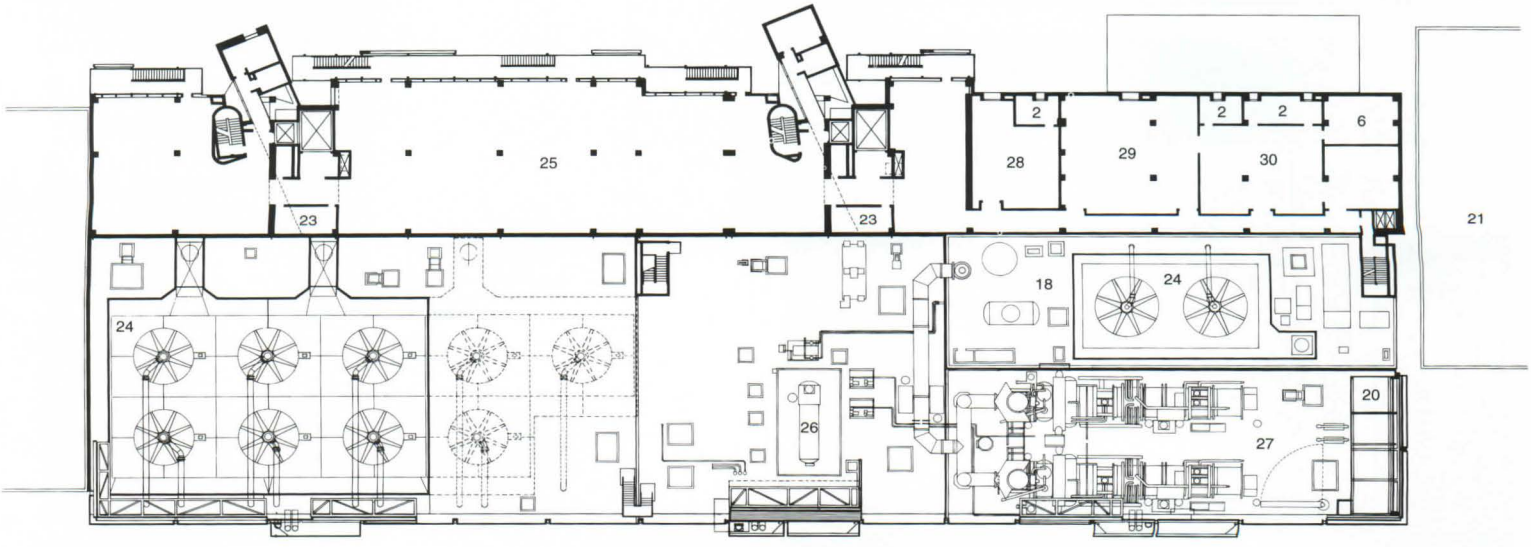
The architectural consultants' own role was crucial not only during selection but also in advising the team in such areas as developing code-compliant design alternatives, consulting on building location, orientation, massing and expression, championing the goals of campus architect Charles "Duke" Oakley as against the UCLA facilities group's traditional cost-driven engineering goals, and above all successfully challenging the team's engineers to accept creative approaches to the final design.



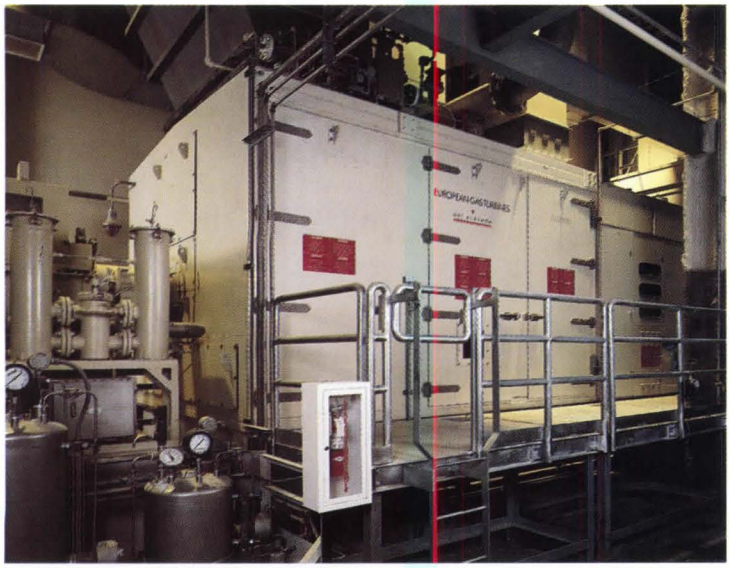

SECTION B-B

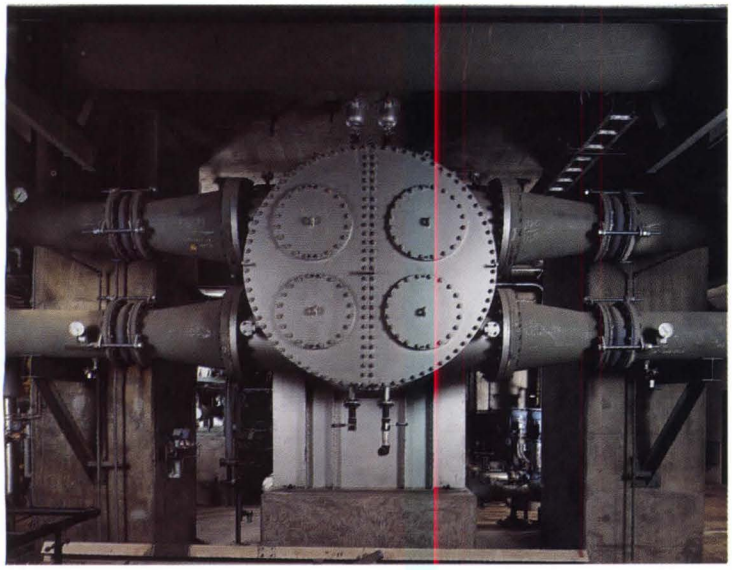


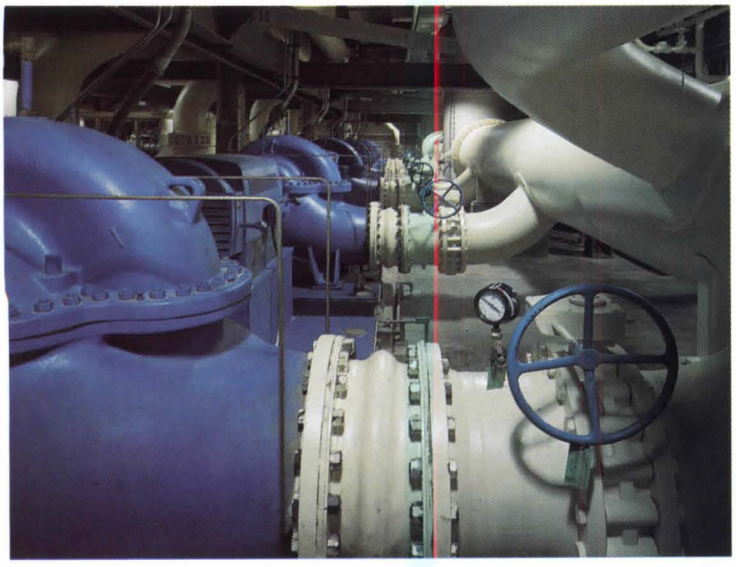

SECTION C-C




SECOND FLOOR



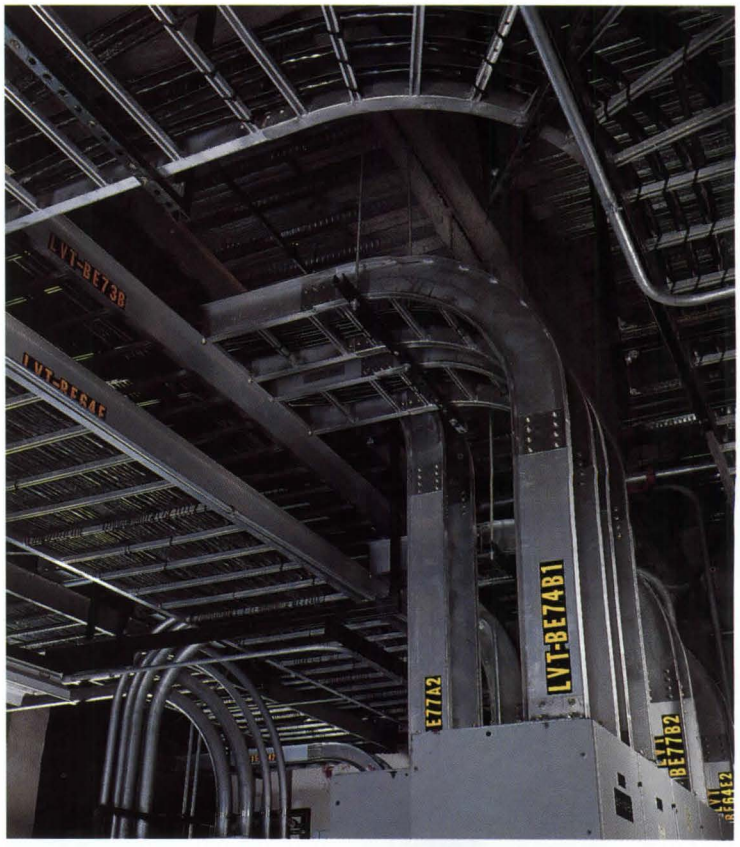




*The assemblage of equipment shown on these pages gives a clue to the plant's powerful formal vocabulary. It includes two gas-fired turbines (left), one steam turbine (a steam-turbine condenser is center left), centrifugal and absorption chillers , pumps (a cooling water pump is shown below left), water demineralization units, and electrical-distribution systems (an electrical cable room is shown opposite top right and on the cover).*

*Fuel gas compressors are shown opposite bottom left, and the thick white plastic-covered pipes (bottom right) are chilled water-distribution lines. The entrance lobby atrium is shown opposite top left.*

**Credits**
*UCLA Energy Services Facility*
*Los Angeles, California*
**Owner:** *University of California, Los Angeles*
**Architects and Engineers:** *Parsons Main, Inc.— Roy E. Gaunt, vice president; Vern Bakker, project manager; Les Wiedemann, project engineer; Mark Griffith, project architect*
**Architectural Design Consultants:** *Holt Hinshaw Pfau Jones Architecture—Paul Holt and Marc Hinshaw, principals-in-charge; Wes Jones, design principal; Dwight Ashdown, project manager; Scott Laidlaw, project architect; Robert Yue, job captain*
**Consultants:** *Engineering Sciences, Inc. (environmental); Harding Lawson Associates (geo-technical)*
**General Contractor:** *Kiewitt Pacific Co.—Ed Gowdy, project manager*


LVT-BE73B
LVT-BE74E
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BE77G2

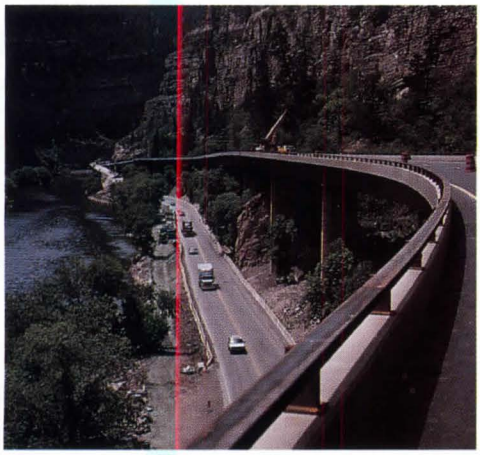
# Take the High Road

The design challenge was as formidable as the terrain was rugged, the setting dramatic, and the public opposition vocal: create a 12.5-mile highway through Glenwood Canyon that would complement the natural beauty of Colorado's Rocky Mountains. The last link in a road running from coast to coast, the Glenwood Canyon segment of Interstate 70 benefited from its status as a high-profile, big-budget project that was permitted to break with many of the standard formulas of highway construction. The result is a road that has won acclaim from civil engineers, environmentalists, and the general public.

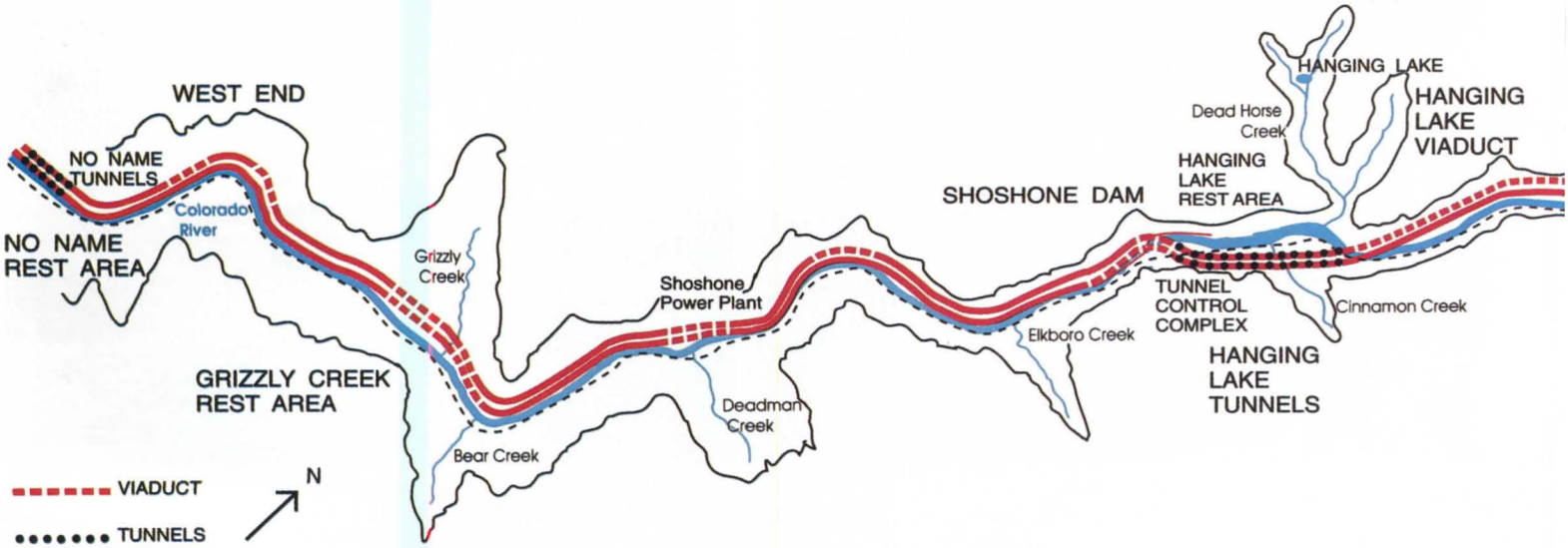
While the usual array of engineers and highway officials were involved in the Glenwood Canyon project, architects played a critical role in making it something special. The first thing they did was attack it. From the early 1960s when the highway authorities began planning a high-traffic replacement for the dangerous two-lane road built through the canyon in the 1930s, architects fought the project tooth-and-nail. Leading the crusade was Sam Caudill, a principal in the Aspen firm of Caudill Gustafson & Associates, who portrayed the highway as an unsightly intrusion that would wreak all kinds of environmental damage and destroy the unique nature of the canyon. As attitudes toward the environment changed over the years, state and federal highway officials tossed out the old plans and rethought I-70.

In 1976 Colorado's governor appointed a Citizens Advisory Committee and named Caudill chairman. That same year the Federal Highway Administration agreed to treat Glenwood Canyon and I-93 in New Hampshire as model projects with extra funding and special care taken for design. When two program-management consultants were hired that year for Glenwood Canyon—Gruen Associates for the east half of the project and Daniel, Mann, Johnson & Mendenhall (DMJM) for the west portion—a major factor in their selection was their design expertise. In fact, each firm brought along a lead designer who was both an architect and an engineer: Edgardo Contini, a vice president of Gruen, and Joseph Passonneau on contract with DMJM. Although involved in most of the design process, Contini died before construction was completed.

Enhancing the effectiveness of the architects was a district engineer for Colorado's Department of Transportation (CDOT), Richard Prosence, who believed in the importance of ecologically sensitive design



*© Herman Guenther photos.*



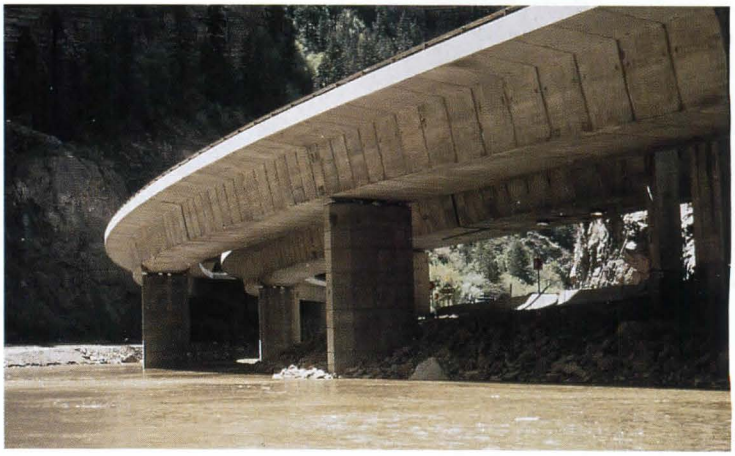
*Architects played a big role in creating a new highway that would enhance, rather than destroy, the natural beauty of a rugged canyon in the Colorado Rockies.*

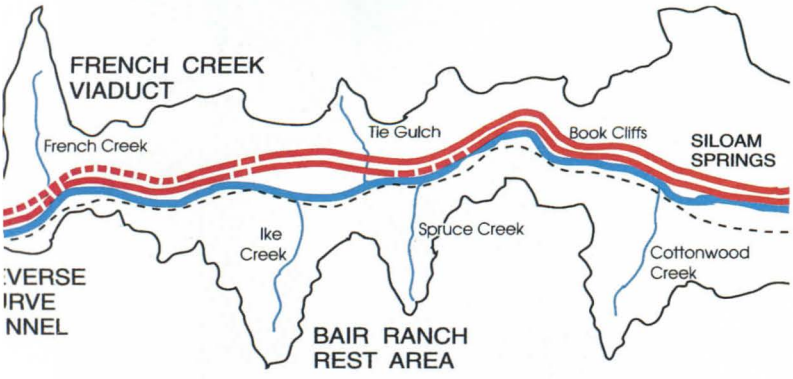
and was tough enough to fight for it at every turn. "Dick Prosence was one of the real heroes of this project," states Passonneau, who adds that Prosence's willingness to fight for design won him the trust of the architects but did not endear him to his colleagues at CDOT.

Splitting the project into two jobs made sense, since the canyon's geology changes radically at its middle point, just below scenic Hanging Lake. The east portion is wide and U-shaped, with unconsolidated clay layers forming the key geological features, while the west is a narrow V-shaped canyon with ankle-shaped slopes called talus runs. The two groups of architects worked together to design a set of common elements—such as bridge piers, road profile, safety barriers, and railings. They also agreed on an overall design approach, explains Passonneau, that incorporated the following beliefs:

- Keep the road out of the bottom of the canyon. "The priceless part of the natural setting is at the bottom, where the river and the fish are," says Passonneau.
- Get the fit between road and landscape right. "The notion of a pretty road is crazy," says Passonneau. "It's the fit, the transition, between the manmade and the natural that's important. The bigger the road and the faster the traffic, the more important the edge is."
- Minimize the amount of pavement.
- Separate the highway into two roads of two lanes each to minimize the amount of cut-and-fill necessary for construction and reduce the visual impact of the road on the landscape. By terracing the highway into two levels—with the eastbound road farther down the slope and the westbound section farther up—the designers let each portion respond individually to changes in the terrain and other site conditions. A bike path runs the entire length of the road and is placed on a third level, closest to the river.

Differences in the nature of the terrain in each half of the canyon caused the designers to vary the approach in their respective portions of the project. In the east, Contini designed a series of long viaducts that raised the road above the ground, thereby reducing the disturbance of natural land forms. Many parts of these viaducts were constructed using a special gantry that put precast-concrete sections into place from above. "The road looks like it's been airlifted into place," exclaims Hermann Guenther, a project manager for DMJM. "It seems to float above the landscape." Another major decision made






*About 150 miles west of Denver, the Glenwood Canyon project runs 12.5 miles through a 2,000-foot deep gorge (map left). The westbound roadway rests on viaducts and bridges, while the eastbound road follows much the same route as the old two-lane highway closer to the river (photos opposite). To prevent traffic from disturbing recreation at Hanging Lake, the road runs through two 4,000-foot-long tunnels (above left). A six-foot-wide pavement overhang and single piers reduce the visual mass of the highway (above).*

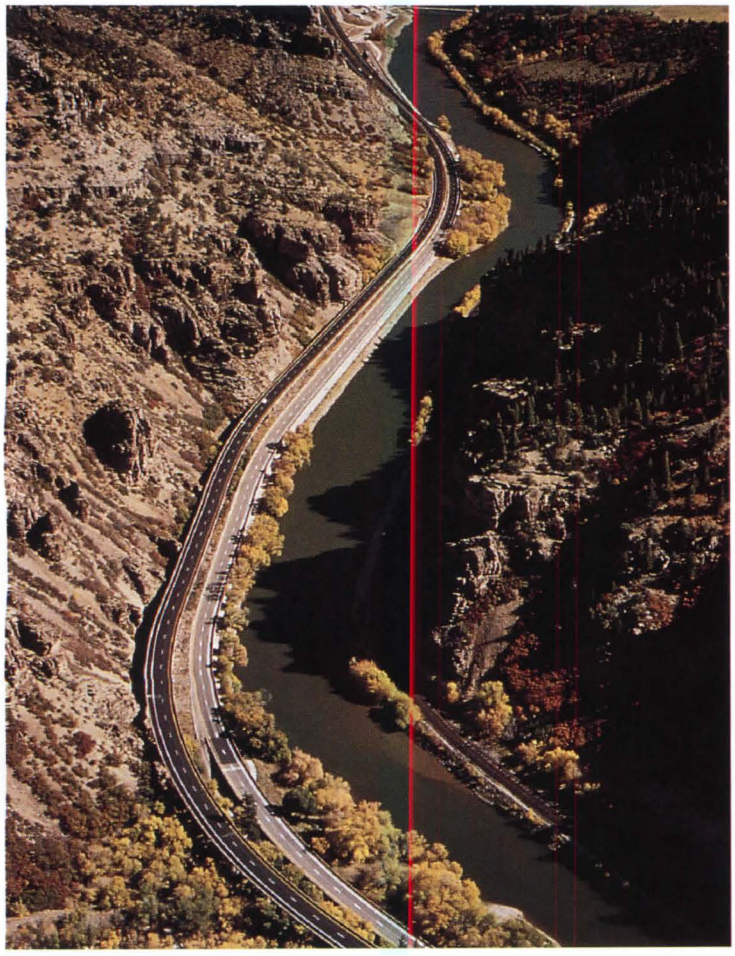
*"I always thought of the canyon as a series or sequence of outdoor rooms, each with its own character and design," says Passonneau.*

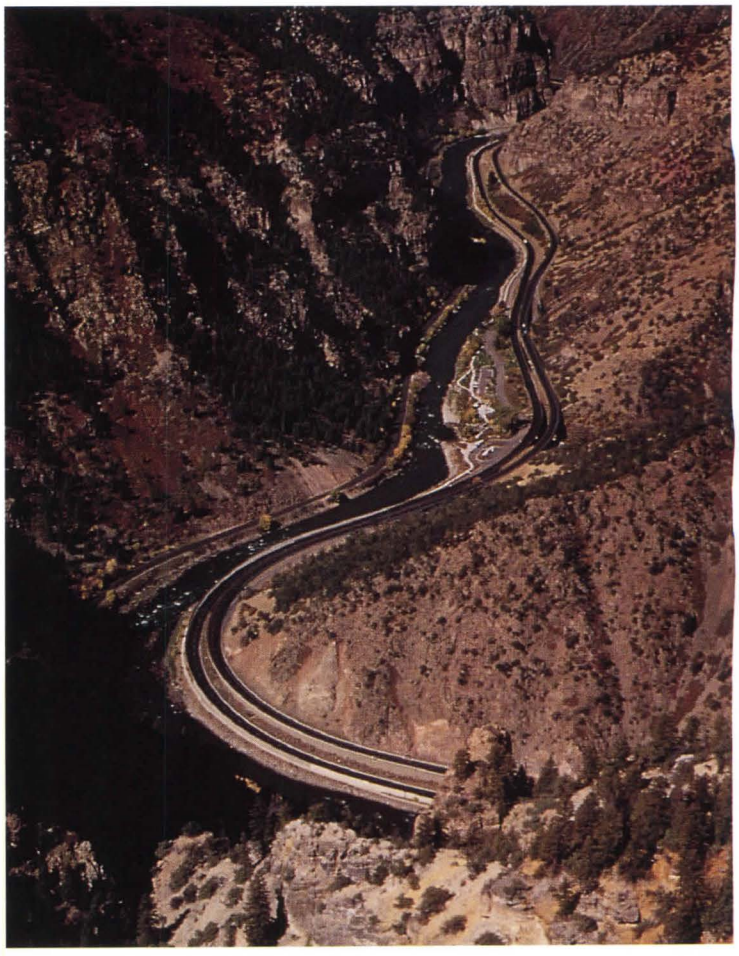
by Contini was to bury the highway in tunnels below Hanging Lake, a part of the canyon cherished for its recreational value.

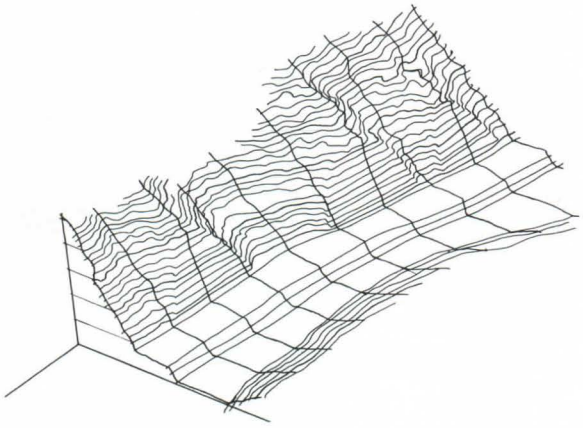
Because the canyon becomes much narrower and the terrain changes more rapidly in the western portion of the project, long viaducts were not practical there. Instead Passonneau and his team pushed the westbound roadway as far up the canyon wall as possible and used many short bridges to span ravines, valleys, and delicate land forms. To make the road fit as neatly as possible into the landscape, the architects fine-tuned its placement late in the design phase, often moving it a few feet here or there.

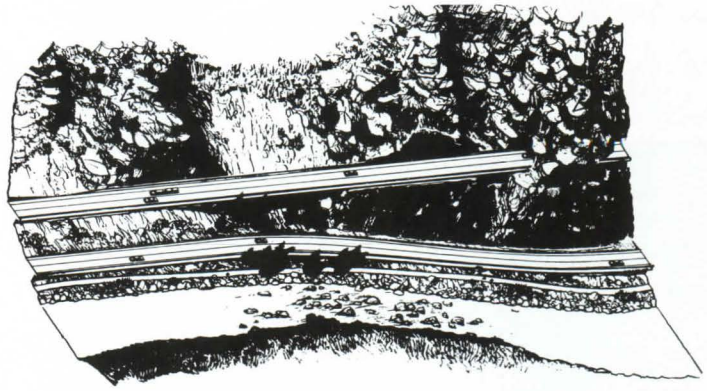
While Contini tended to use models during the design phase of his section of the canyon, Passonneau relied heavily on several different kinds of drawings to help him analyze design alternatives and communicate these to other people. The most important of these were isometric drawings that combine the realism of architectural perspective sketches in depicting background features with the accuracy of engineering drawings in showing the highway design. Starting with a topographic "armature" drawn according to isometric convention (opposite, top left), the architects would sketch in the existing terrain and then show the proposed highway in its setting (opposite, top right). By inserting various highway designs into the base drawing, Passonneau and his team were able to properly examine alternative proposals, then share them with other project members and the general public. Other drawings that Passonneau used included "cartoons" explaining basic principles (opposite) and "murals" that combine sketches from nature, diagrams, plans, and sections. Like storyboards that filmmakers use to show a sequence of scenes, these murals tell stories about how the river's edge or some other feature would unfold as a motorist drove along the highway. "I always thought of the canyon as a series or sequence of outdoor rooms, each with its own character and design," explains Passonneau.

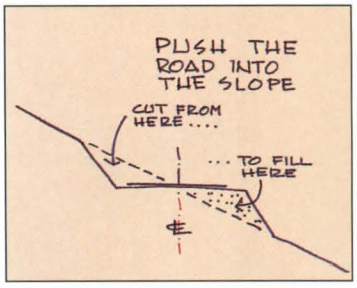
Recognizing the canyon as a unique recreational resource, the highway authorities included the bike path and four rest areas that service hikers and campers as much as they do motorists. The project also involved repairing environmental damage done in the past and planting 180,000 native plants and trees which had been given a head-start on life in greenhouses. *Clifford A. Pearson*

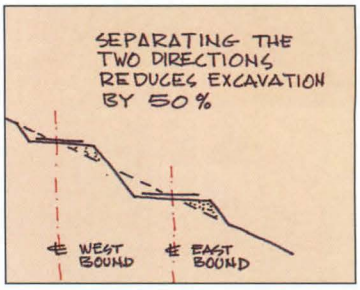


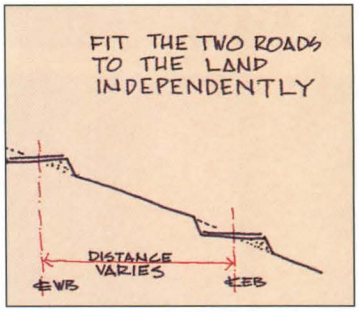


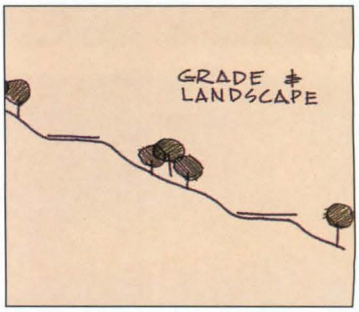






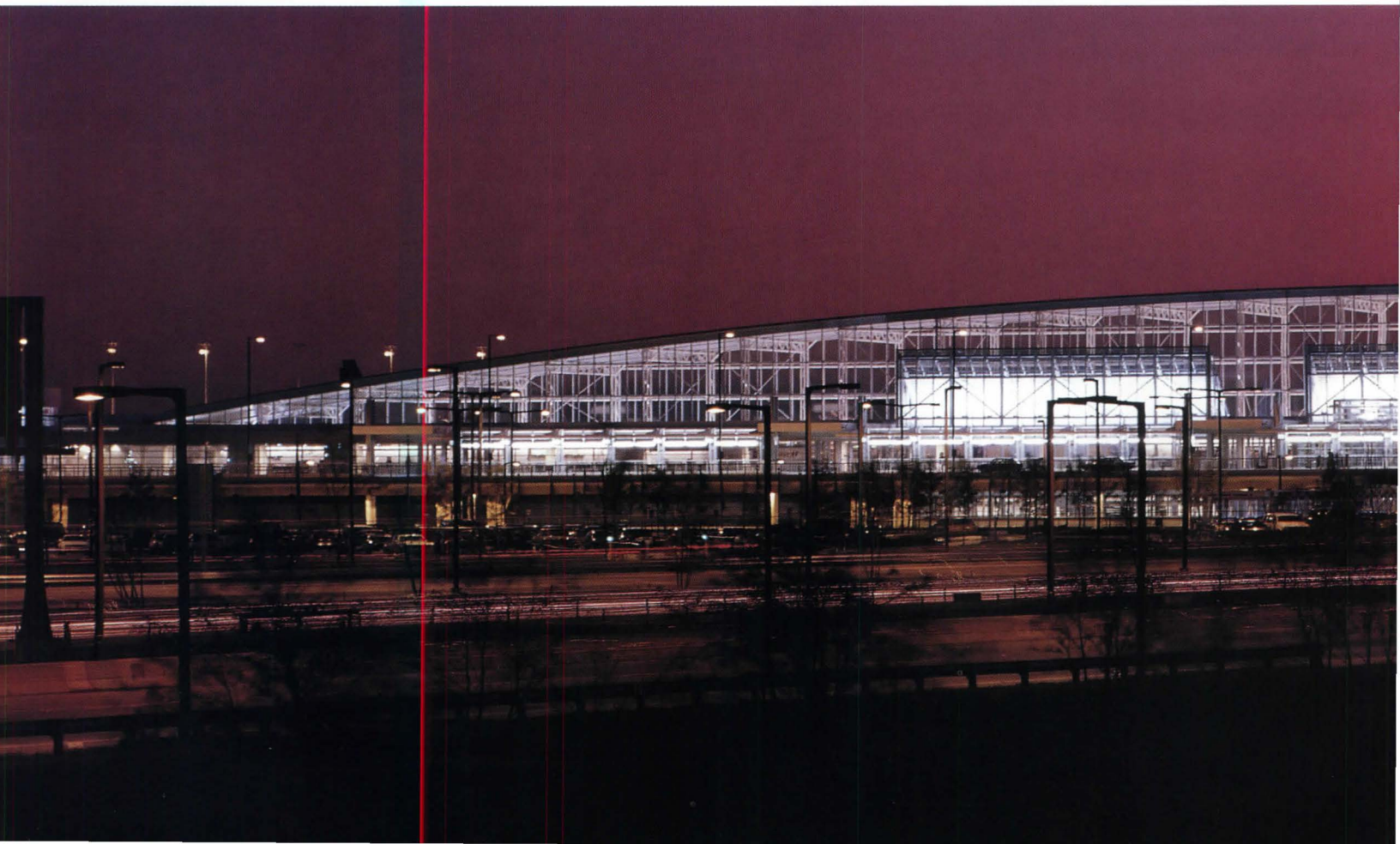




*The French Creek Viaduct, made of more than 600 precast-concrete segments, runs through the U-shaped east portion of the canyon (opposite left). In the west half of the project, the canyon is much narrower and the highway must snake through difficult terrain (opposite right). The basic strategy in the western portion of the project was to slide the westbound roadway up the side of the canyon (left). To communicate their ideas , the architects used a variety of drawings, including "cartoons" showing basic design principles (above) and isometrics that start with a topographic armature and then are fleshed out to show the road in its canyon setting (top).*

**Credits**
*I-70 Glenwood Canyon*
*Western Colorado*
**Owner:** *Colorado Department of Transportation*
**Architect (west portion):** *Daniel, Mann, Johnson & Mendenhall—Joseph Passonneau, principal designer; Gilbert L. Butler, John L. Haley, principals-in-charge of program management; Hermann Guenther, project manager*
**Architect (east portion):** *Gruen Associates—Edgardo Contini, principal designer*
**Consultants:** *DeLeuw, Cather & Company (common-element design standards); Parsons Brinckerhoff (tunnel design); Woodward-Clyde (structural design of tunnels)*

# Form Follows Flight

*Like other classic terminals, railroad and airline alike, the new International Terminal at O'Hare evokes wanderlust.*

*New International Terminal*
*Chicago O'Hare International Airport*
*Chicago, Illinois*
*Perkins & Will, Architects and Engineers*
*Heard & Associates, Ltd. Architects*

© *Nick Merrick, Hedrich Blessing photos*

The desire to capture the adventure of travel has repeatedly inspired architects to design some of their most memorable buildings. Eero Saarinen's Trans World Airlines Terminal at Kennedy International Airport, which interpreted the fluid motion of flight in graceful concrete forms, and McKim, Mead and White's Pennsylvania Station in New York City, with its soaring waiting room, glass roof, and exposed lightweight structural system are favorite examples. Ironically, at O'Hare International's youngest terminals, Murphy/Jahn's United Airlines Terminal and Perkins & Wills' new International Terminal, it is not a vaulted concrete airport that is used to evoke wanderlust, but rather monumental daylit rooms framed in lightweight, exposed steel in many ways more reminiscent of Penn Station. Travelers who never set foot in that station nor any of the huge glass train sheds of Europe instinctively seem to compare these airport terminals to the great stations of the steam age.

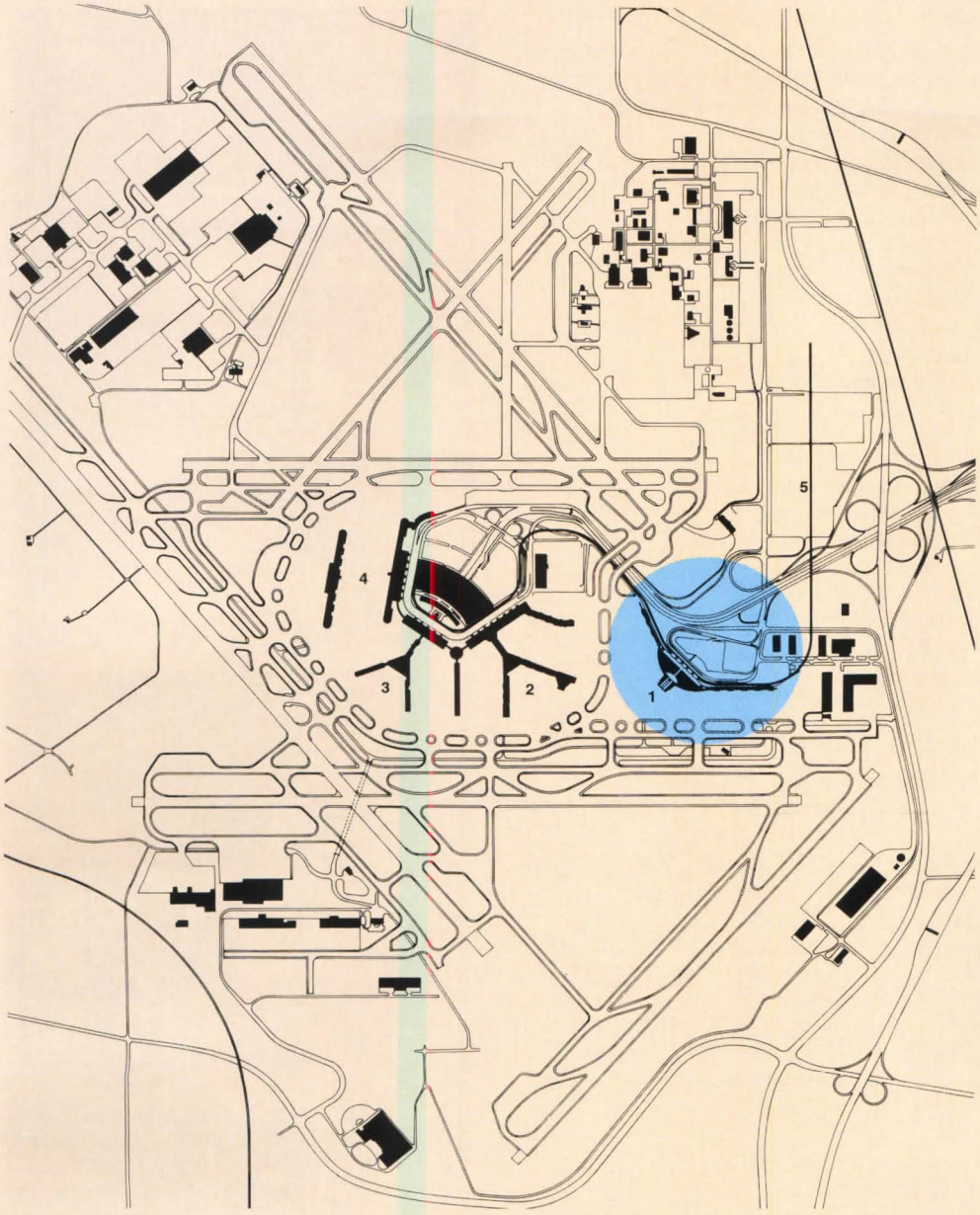
Ralph Johnson, design principal for Perkins & Will on the International Terminal, disavows the notion that his building is inspired by these sources, or its arching structure by less elegantly proportioned quonset-style airplane hangars. "Although I've always admired airplane hangars, I think the whole study revolved around the building's profiles rather than trying to consciously create an image that refers to any particular building type. Subconsciously, however, all architects study history. There's this whole catalog of things that come out in your designs, regardless of whether you want them to. The more creative architects are the ones who use them in the most unique way."

"Even though international terminals are very linear—there is no back-and-forth exchange between concourses as there is in domestic terminals—this is a building that had to be conceived in section—a series of spaces of varying heights arranged along the axis of different circulation activities that occur as part of the sequence of departing or arriving. One begins to read this on the outside of the building. Though we didn't have much flexibility in siting the building because the master plan had already determined the location and elevation of the runways, people-movers, roads, and parking, we did recognize there was an opportunity to create the proper gateway image in the profile of the 800-foot-long ticketing pavilion. We studied various shapes, and decided we should really take advantage of this particular profile, because it can be seen from such a great distance."

Inside, the roof structure of the ticketing pavilion soars in the daylight. "The pavilion piece is low at the ends and high in the middle, suggesting the movement of the circulation. After ticketing, everyone goes to the middle, where the roof is highest, says Johnson." The roof of the galleria starts out low where it meets the ticketing pavilion, climbing as travelers approach departure security, where it is anchored at its highest point by the ramp-control tower.

The need for daylight in the arrival spaces—a sterile corridor (so-called because incoming passengers are not allowed any contact with non-passengers before going through customs and immigration), passports and customs, baggage claim, and the arrivals hall—also influenced the final form of the building. "One thing that worked to our advantage," says Johnson, "was that these are single-loaded concourses, so we were able to have light even at these lower arrival corridors. At the arrivals hall, we were able to provide borrowed light through the people-mover stations, and skylights over immigration/customs and baggage claim. There are very few terminals with good arrival spaces, because they always tend to be underground." *Charles Linn*

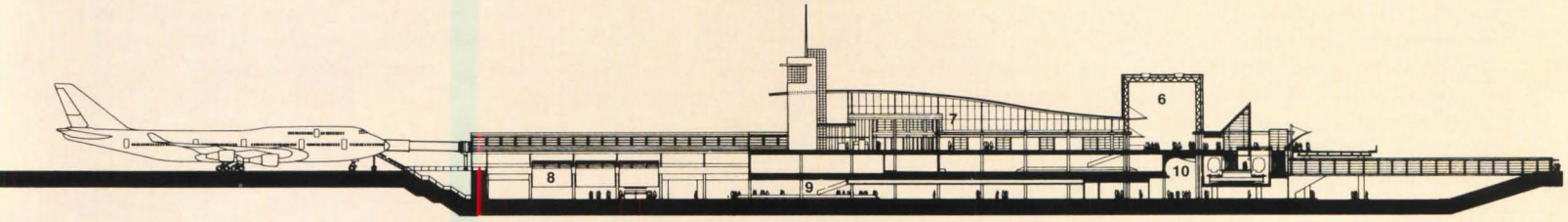
*The ramp-control tower (top, above) serves in Ralph Johnson's words, as "the structural fulcrum piece for the whole composition; the whole concourse and galleria piece is focused on the tower." Round skylights over the customs hall can be seen below the tower. Bridges connect the ticketing pavilion with ground transportation (bottom).*

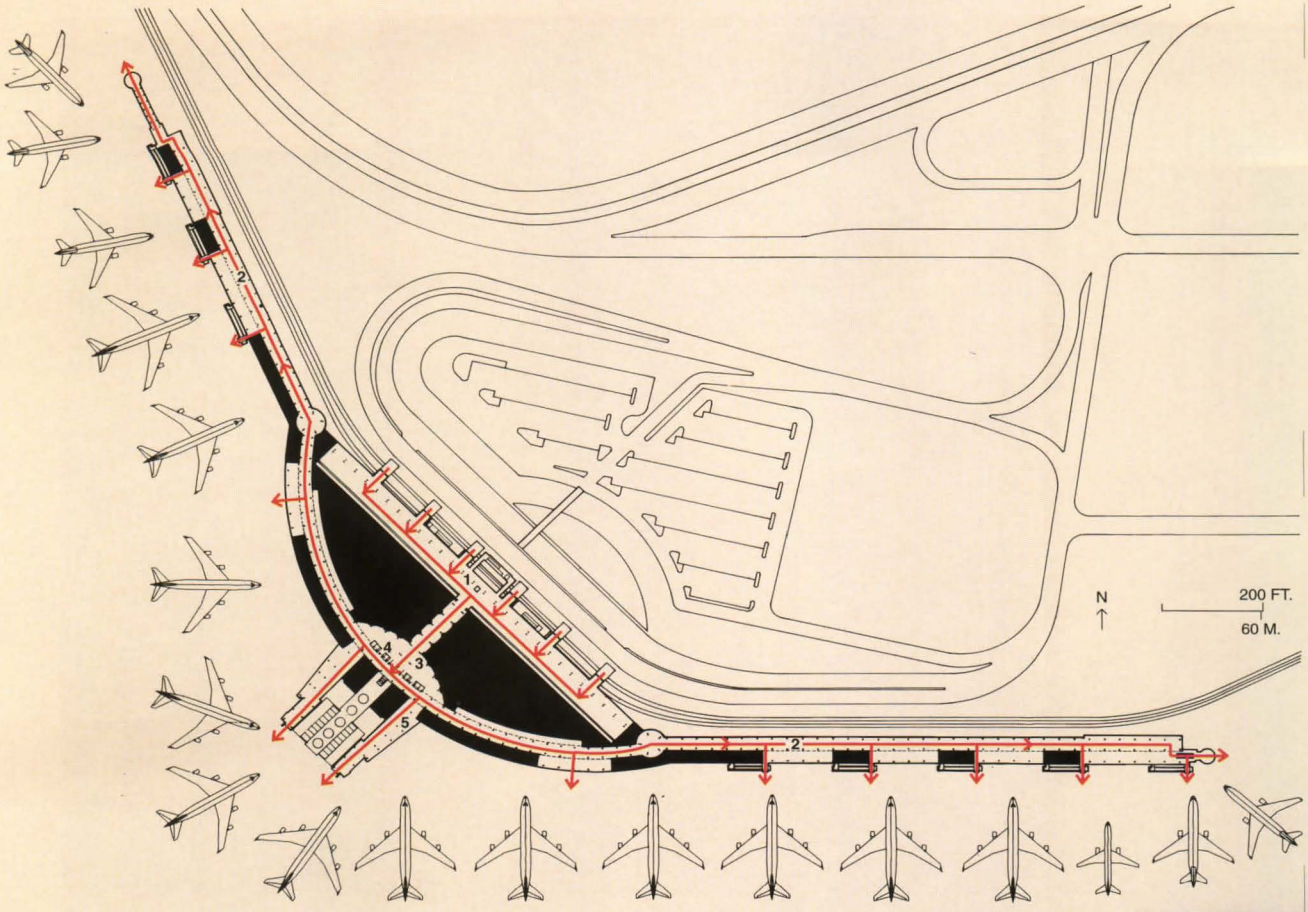



1. *International terminal*
2. *American Airlines terminal*
3. *Shared-use terminal*
4. *United Airlines terminal*
5. *People mover*
6. *Ticketing pavilion*
7. *Galleria*
8. *Passport/ customs*
9. *Baggage claim*
10. *Arrivals hall*

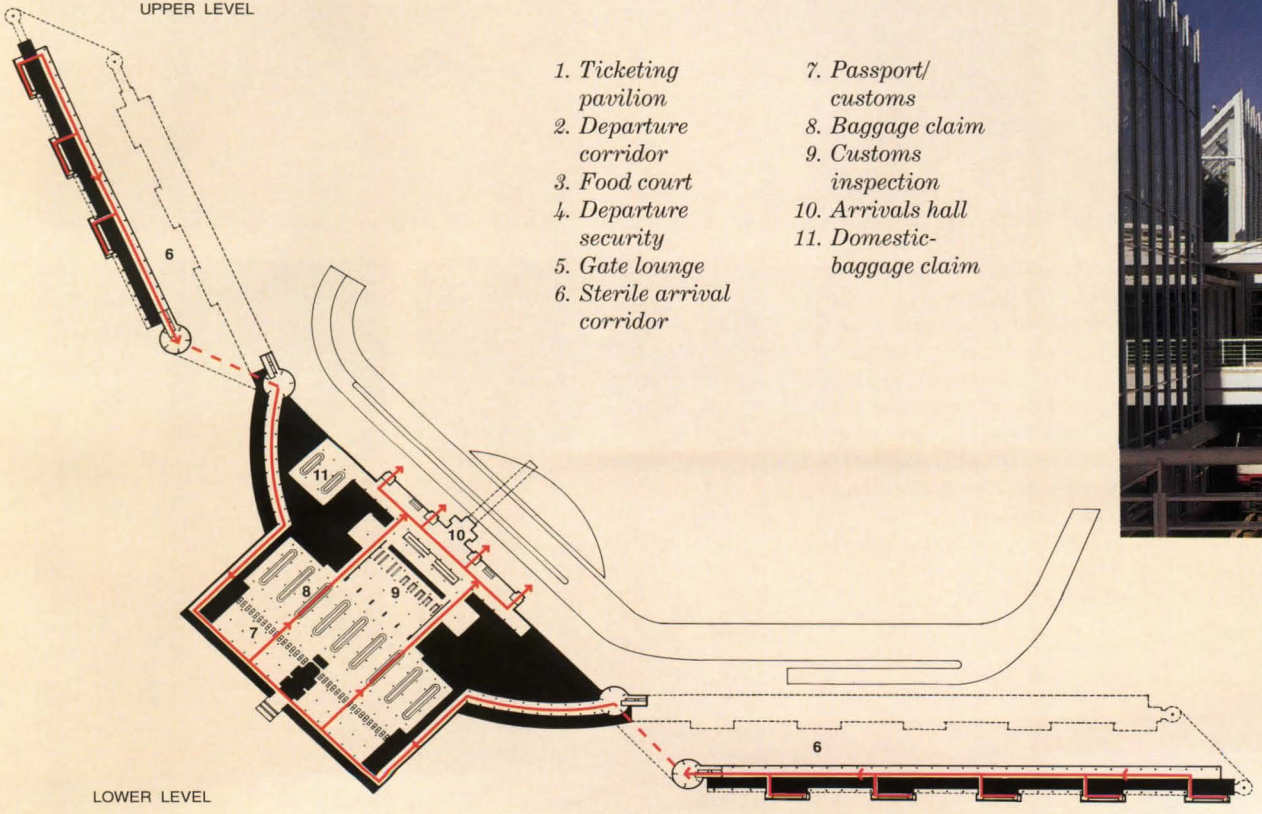
**Up Close**

*Circulation and security.* The master plan of the O'Hare International Airport predetermined the locations of the circulation systems serving the new International Terminal at O'Hare, as well as the terminal itself (site plan left). Pedestrian bridges (below) connect the interior of the terminal with vehicular and people-mover systems outside. Inside (see plans opposite), unlike domestic terminals, the circulation of arriving and departing passengers is kept completely isolated: their movement is in opposite directions, and therefore on different levels. The need to provide security and prevent the transfer of contraband through airports has definitely influenced the layout of circulation patterns. For example, Johnson tried originally to have more than a single connecting point between ticketing and the departure corridor, but that was ruled out. So was a "fishbowl" space that would allow arriving passengers coming through customs to be observed from above while claiming baggage. "You can't do that anymore—smugglers use hand signals," says Johnson. "The Federal Inspection Service has tightened up its regulations because of concerns over drugs and terrorism. Even the arrival corridor is completely sterile—passengers can't have any contact with outsiders until they've been through customs."



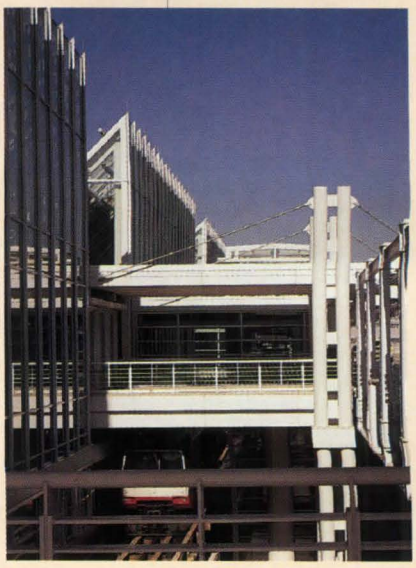



UPPER LEVEL

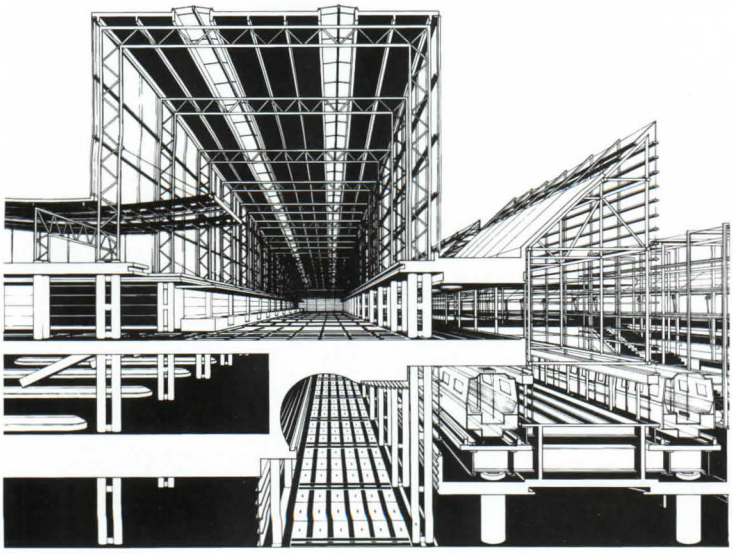



LOWER LEVEL

1. *Ticketing pavilion*
2. *Departure corridor*
3. *Food court*
4. *Departure security*
5. *Gate lounge*
6. *Sterile arrival corridor*
7. *Passport/ customs*
8. *Baggage claim*
9. *Customs inspection*
10. *Arrivals hall*
11. *Domestic-baggage claim*



*The monumental proportions of the International Terminal's soaring ticketing pavilion (above), concourses, and people-mover station (left and right bottom), and galleria (opposite), evoke the sense of adventure people associate with travel, although architect Ralph Johnson dismisses the idea he was inspired by any sort of transportation-building precedent. "I was thinking of it as a bridge-like structure, sitting in the midst of all the other infrastructure— the bridges of the train and all of the freeway ramps. In a very abstract sort of way, of engineering or industrial metaphor, or hangars— something that had the scale of that kind of infrastructure work, the language of infrastructure." The section drawing (opposite) confirms Johnson's notion that the structure literally does act as a bridge between ground and air-transportation systems: the people-mover and ground-transportation systems are located to the right, and air transportation is located through the ticketing pavilion to the left.*



**Credits**

*International Terminal*
*Chicago O'Hare International Airport*
*Chicago, Illinois*
**Owner:** *City of Chicago Department of Aviation*
**Architects:** *Perkins & Will Group—Ralph Johnson, design principal; James Stevenson, managing principal; James Economos, project manager; Heard & Associates, Ltd. (associate architects)*
**Engineers:** *Perkins & Will Group; Consoer, Townsend & Associates*
**Consultants:** *Avila & Associates (civil engineering and surveying); Carol Naughton & Associates (signage); Globetrotters Engineering (civil design); Restrepo Group (cost estimating); d'Escoto (mechanical/electrical/structural); I. Robinson and Associates (interiors); Wells Engineering (structural); Rolf Jensen & Associates (fire protection); Duignan-Woods (fire protection, plumbing); Thompson Consultants (programming, planning); Hanscomb Associates (cost estimating); David A. Mintz (lighting); R. Lawrence Kirkegaard (communication, acoustics) Black & Veatch (hydronics); Engineers International (soil/geotechnical)*

# Focus on: Fitting Infrastructure

*While designed for basically utilitarian purposes, all of the projects shown here demonstrate an unusual sensitivity to the end-user–the public that paid for them. For the architects, this was not always easy. For instance, Barton Phelps was in virgin territory when he produced the North Hollywood Pump Station. His engineer clients in the Los Angeles Department of Water and Power had, in recent years, used prefabricated structures until his assignment, when the city Cultural Affairs Commission stepped in. "Once water-pumping stations, which brought the miracle of life, used to be celebrations," recalls Phelps, as was the case with the small Spanish Revival station his new building would replace. "More recently, the only celebration*

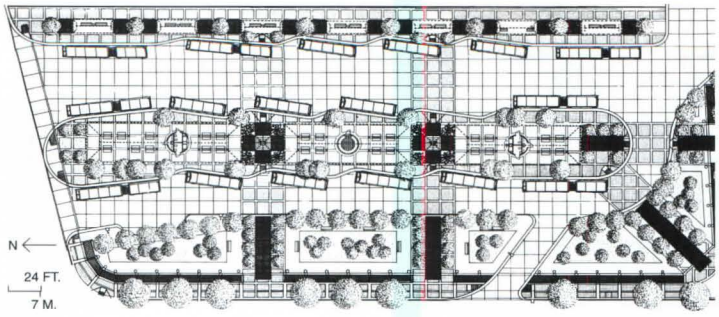
## North Hollywood

*Pump Station*
*Los Angeles, California*
*Delon Hampton Associates, Architects and Engineers*
*Barton Phelps & Associates, Associated Architects for Design*

© Tom Bonner

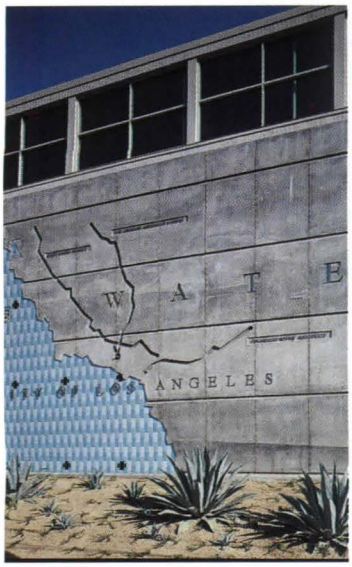
## Ronstadt Transportation Center

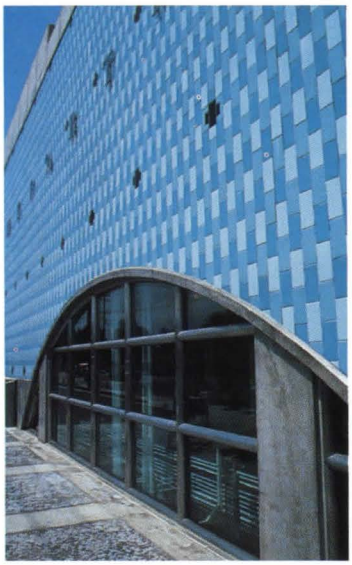
*Tucson, Arizona*
*C. W. Fentress J. H. Bradburn and Associates, Architects*



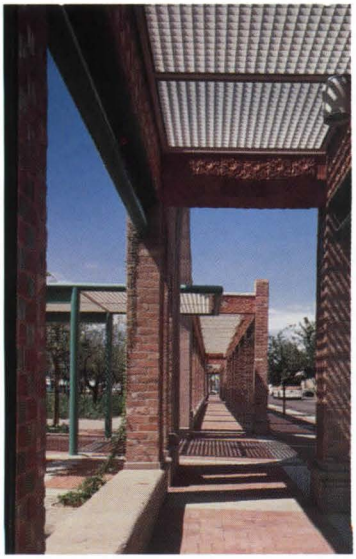

© Nick Merrick-Hedrich Blessing.

*you got was when you turned on the tap." Still, with the Cultural Affairs Commission's support, he was able to bring back the spirit of public amenity within the low budget that had once been allotted for unfriendly metal buildings out of catalogs. Architects C. W. Fentress J. H. Bradburn may have had more sympathetic clients for the Ronstadt Transportation Center in Tucson, but still the architects were taxed with having to bring a basically incompatible function–the heavy traffic of buses–into a delicate historic district. Their solution: screen off the buses with a neighborhood-friendly arcade. The biggest planning challenge may have been the one faced by architects Domenech Hicks & Krockmalnic at Dudley Station, Boston, when they unified a forbidding dark forest of elevated transit-line columns into a welcoming thoroughfare for Roxbury's business district, and reused several of the once-obstructing existing buildings on the site in the process. Gensler and Associates adapted the design language of surrounding boxy buildings in creating an open jet-age gateway at Jefferson County Airport. And HNTB made paying a toll almost a pleasure in the preserved sylvan precincts of Boulevard Bridge.*



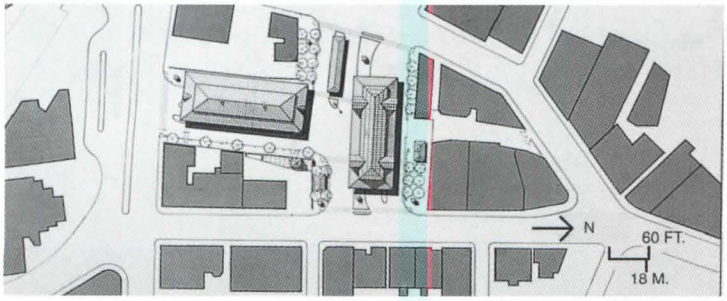
**Welcoming waters**
An elegantly inscribed concrete-paver plaque before the arched window explains that much of the water entering this station, which supplies central Los Angeles, comes via aqueduct from snow run-off in the Sierra Nevada Mountains some 340 miles away. Through this window, passersby see the three largest of 11 turbine pumps that can be run in reverse during off hours to generate electricity. These pumps account for almost 90 percent of the building's $22-million cost and the client Department of Water and Power was proud to show them off. Not so, the building's product, water. In fact, Barton Phelps had to submit four schemes, including ones using water as decorative elements, before he could definitively identify what the program parameters were. The final scheme is a massive poured-concrete box that shields much of the loud machine noise inside. The front is a billboard showing the ocean in blue tile and the coast in exposed concrete formed with finish plywood onto which lettering, joints, and topographic features were applied. "It was a serious casting job," says Phelps. *Charles K. Hoyt*



**Transport mecca**
Architects C. W. Fentress J. H. Bradburn took full advantage of Tucson's warm, sunny climate when they created this 18-berth central hub for the local bus system. Passenger-waiting areas are open to the outdoors and protected from sun and occasional rain by copper shed roofs supported by light steel trusses. The only enclosure is a shielding wall at the site perimeter, where the busy new facility faces two quiet streets of Tucson's historic district. Here, arcades built of old brick are covered by open-grid steel sunscreens. A monumental main terminal entrance, complete with traditional clock, pierces this wall at a corner facing the city's main pedestrian street, which leads to the downtown business district. Once inside, passengers are guided across scored-concrete bus ways by colored masonry pavers. Two 50-foot wind towers located between the central waiting areas provide natural cooling. Based on ancient Middle Eastern models, the towers' advanced functioning that cools with wet screens was developed at the University of Arizona Environmental Research Laboratory *C.K.H.*.

## Dudley Station Rehabilitation

*Boston, Massachusetts*
*Domenech Hicks & Krockmalnic Architects*

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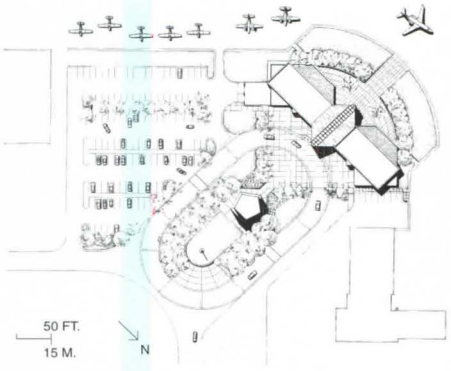
## Jefferson County Airport

*Bloomfield, Colorado*
*Gensler and Associates, Architects*

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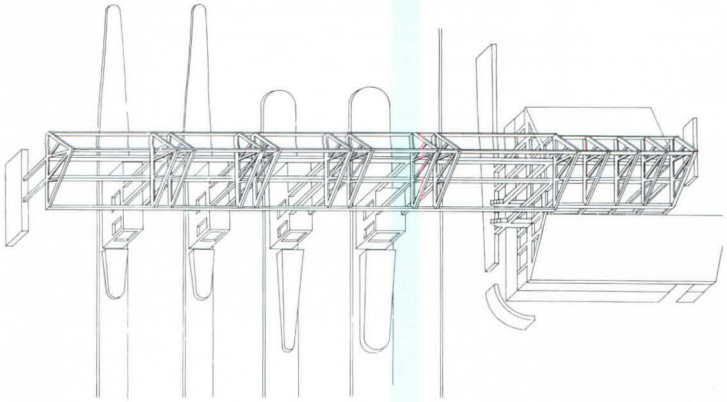
## Boulevard Bridge

*Richmond, Virginia*
*HNTB, Architects, Engineers, Planners*



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### Transit update

Architect Albert Wadsworth Longfellow won his commission to design the Dudley Station on a former elevated commuter rail line in a competition in 1901. But by the 1950s, when part of the steel-frame copper-clad structure was demolished, both the station and its Roxbury neighborhood were falling on hard times. Blighted by abandoned elevated tracks, the dark site became an unfriendly gateway to a community served by buses. Charged by client Massachusetts Bay Transportation Authority to revitalize the area with a new welcoming and efficient bus hub that would unite rather than rend the surrounding blocks, architects Domenech Hicks & Krockmalnic demolished the elevated tracks and, with the help of engineers Fredric R. Harris, lowered the historic structure to the ground, locating it to serve buses on local routes. They replicated missing elements using copper-sided fiberglass, and added a whole new copper roof and enclosed heated waiting areas. An entirely new structure of a similar-but-simpler design (left in plan) accommodates buses routed to center city. *C.K.H.*

### High-flying hospitality

This new 27,000 square-foot $2.5-million facility exemplifies a growing market for airport design: the private- and corporate-plane traveler. Conceived as a quick in-and-out central meeting place between Denver and Boulder, where one enjoys skyline views of both cities, the building has a second floor primarily devoted to meeting, dining, and entertainment rooms. Much of the first floor is occupied by pilot waiting areas, including a route-plotting desk, and space leased to private corporations. Amenities include a landscaped transition area between tarmac and building, and a central two-story skylit lobby, which bows to local construction tradition with exposed heavy-timber beams and wood roof decking. Project designer Roger Kish took other design cues from neighboring boxy brick buildings, says principal-in-charge Phillip McCurdy, and gave a jet-age twist by breaking out of the rectangular steel-frame envelope with glass and metal angled projections. Lightweight aluminum panels on these "wings" are laminated over a rigid backing to prevent oil-canning. *C.K.H.*

### Natural passage

Unlike many communities that prefer to replace their bridges than care for them, Richmond commissioned architects, engineers, and planners HNTB to rehabilitate its 2,034-foot span, built over the James River in the early 1920s and approached through historic Byrd Park. The client also wanted a new toll facility in keeping with the site's scenic character. Part of the designers' challenge was to integrate an enormous 16 1/2-foot-high roof over the toll booths with a small 860-square-foot operations building while not overwhelming it. The solution is a unified roof over both facilities. Exposed wood trusses support a stained-cedar-shingle roof. Painted cedar clads the building, which holds toilets, a break area, lockers, and toll-counting rooms. The design passed the local planning board with flying colors, recalls HNTB project designer John Engelhardt. Not all is rustic however. The toll booths have metal siding. "If the wood structure is the barn," he explains, "the booths are the farm machines." The large booth nearest the operations center is fitted for disabled workers. *C.K.H.*

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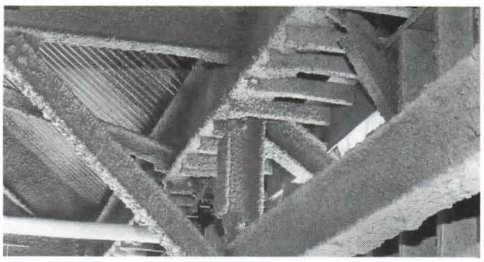
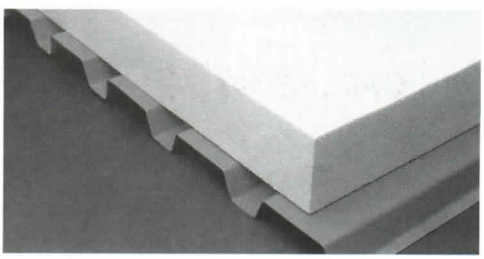
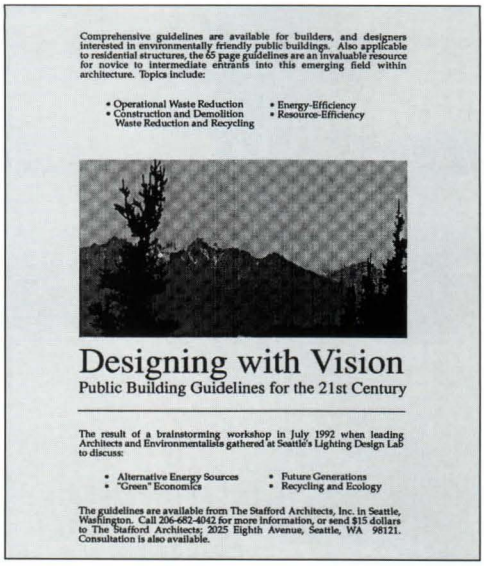
**319. Database of construction clauses**
The Contract Constructor, a document assembly program, allows users to amend preprinted contracts or create them from scratch, selecting from an "extensive" database of alternate text provisions. A checklist helps the architect vet the draft for omitted information; gives risk-allocation help for projects from homes to highways. 800/257-4637. Alpine Press, Inc., Boulder, Colo.



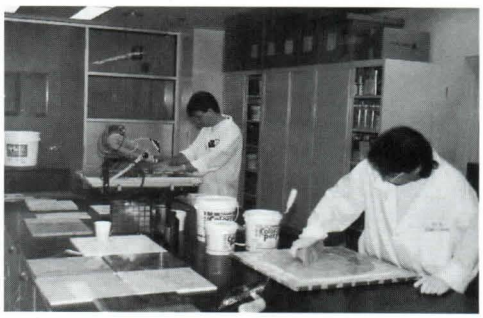
**320. Spray-applied fireproofing**
Blaze-Shield II is described as a dry-spray product capable of exceptional density, with bond and compressive strengths that make it the technical equivalent of comparable wet-spray, cementitious materials. ASTM E119 tests yield ratings of up to four hours for floor/ceiling, beam, bar-joist, and other constructions. Sound absorbing and insulating. Isolatek International, Stanhope, N.J.



**321. Direct-to-metal deck insulation**
Perform/Protect EPS board has a flame-retardant coating that allows it to meet UL 1256 standards for foam plastic in roof-deck assemblies without an additional thermal barrier. Can be used with any commercial roofing. AFM Corp., Excelsior, Minn.




**322. Recycled building materials**
The Harris Directory is a US/Canada database of over 1,500 recycled-content building materials. Listings are organized by CSI Division and Section, with each entry citing the recycled content, environmental benefits, results of recognized test protocols, and contact data for each manufacturer. Available on Excel 4.0 for Mac and DOS. Single edition $45; volume and multiple-site discounts; semi-annual updates planned. FAX: 206/447-1670. The Stafford Architects, Seattle.



**323. Tile-installation specs on disk**
Technical specification software provides information on installing and maintaining ceramic tile and stone surfaces using Hydroment and CeramaSeal products. Sections describe applications on different surfaces, reference standards, quality assurance, delivery, and storage documentation. A section on execution details the preparation, installation, protection, and correct maintenance of various hard-surface floors. No charge. Bostik, Inc., Middleton, Mass.

*Continued on page 133*

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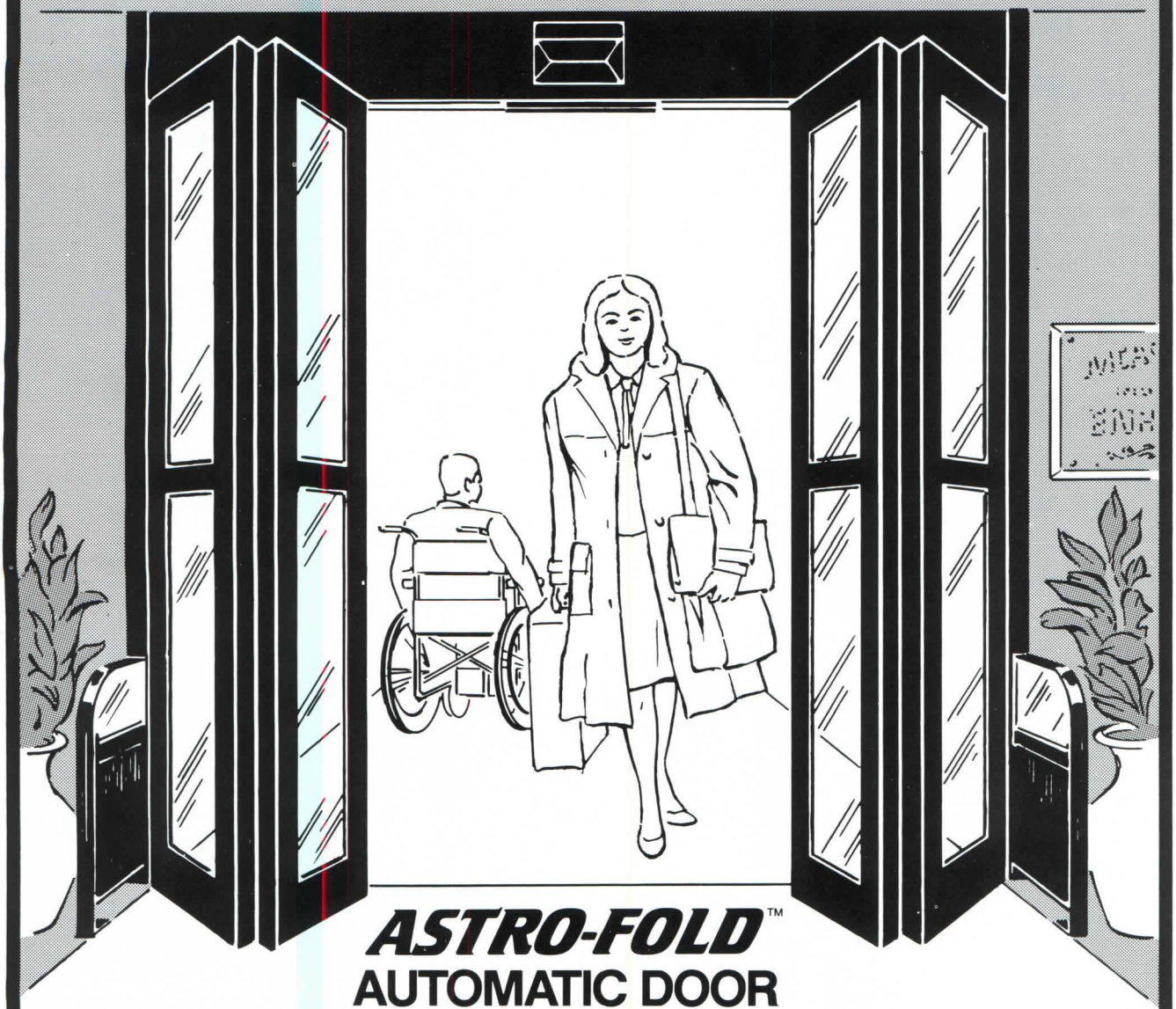

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Habitat '94, Edmonton, Alberta, Canada. "New Frontiers in Housing and Planning." For more information, fax 403/487-2417.

**Competitions**

- The Society for Marketing Professional Services Annual Awards Program. The most outstanding submission will be honored with a "Best of Show" award. Deadline is June 3, 1994. Call 800/292-7677 for more information.
- The Precast/Prestressed Concrete Institute's Professional Design Awards Program call for Entries deadline is June 30, 1994. For more information call 312/786-0300.
- Institute of Business Designers is accepting entries for its product design competition. The deadline for submission is July 1, 1994. Call *Mary Rose Mazza*, 312/467-1950.
- The AIA New York Chapter 1994 Design Awards Program deadline for receipt of entry forms and fees is 5:00 p.m. July 6, 1994. Work anywhere by New York City architects is eligible. Call Judy Rowe at 212/683-0023.
- Cedar Architectural Awards entry deadline is July 1. Buildings using Western red cedar products are eligible. Call 604/687-0266.
- Society of American Registered Architects announces its 1994 National Design Competition; deadline is July 22, 1994. It is open to all SARA members and non-members. Call Stan Banash, 312/763-5767.
- Application forms for the Urban Experience program to work out and present new ideas for urban design and redevelopment of the city of Kiev, Ukraine, are available. Final registration is during the month of June 1994. The program is organized in three stages, with August 1994 the date for problem definition and concept development. For details and a form, fax Dean of Architecture Faculty, Ukrainian Academy of Arts, 20 Smirnova-Lastochkina Street, 252053 Ukraine (+7044) 212-1946 (office) or phone (+7044) 225-5101 (home).■

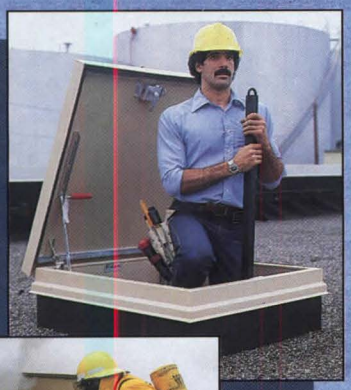
**Letters** *Continued from page 2*

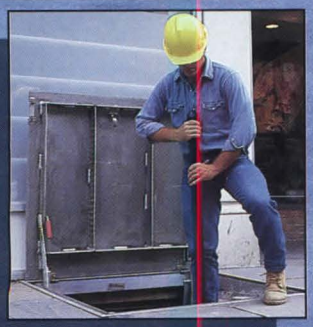
Looking back, I wish I had taken more time off earlier to spend with my lover. I wonder how accommodating we would have been to an employee in the same situation? This can be extremely difficult *if the employee is gay* and in the closet and worried about homophobia in his workplace. AIDS is preferably treated at home most of the time, even at the late stages, but it takes a lot of time and support to make it work. Employees can participate in the care of friends and lovers.

People in my support group usually work too long, often giving all their "feeling good" time to work. A better standard for the person who wants to continue working might be giving half of quality time to work, but this poses major problems with most disability insurance, which doesn't allow for part-time disability. As treatments and prophylaxis for infections are developed, the length of full-blown AIDS has been increasing, and hopefully some day SOON, people will be maintained at this stage indefinitely, if not actually "cured". In the last stage of AIDS, dealing with infections consumes all

*Continued on page 61*

# Proving Ground





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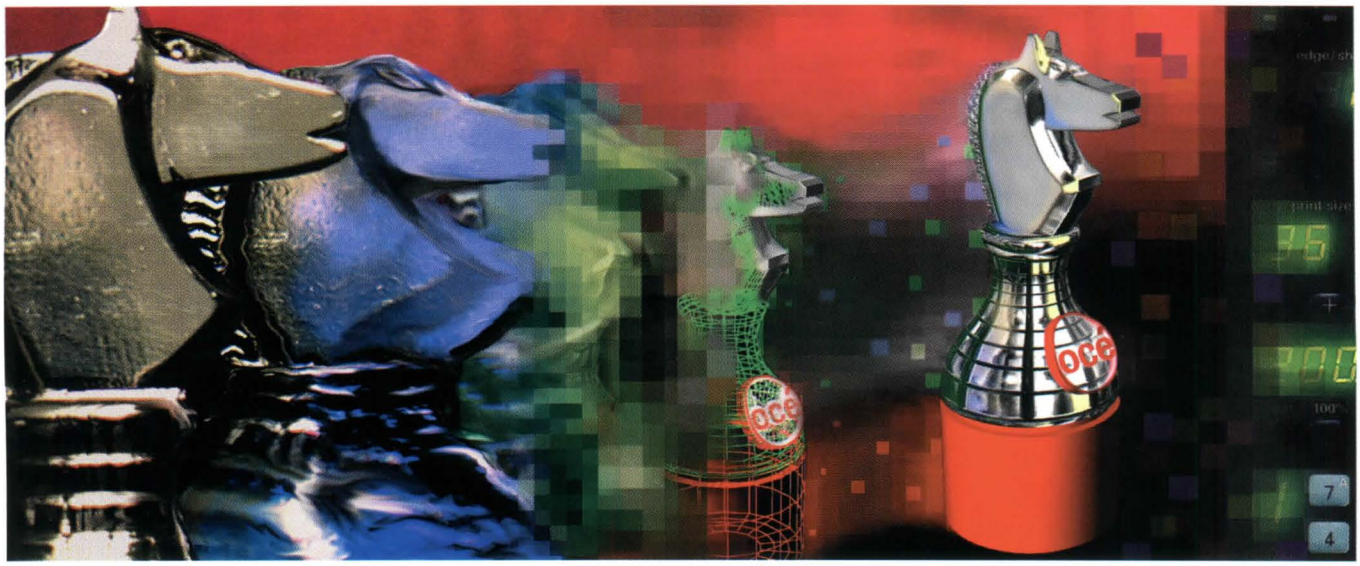


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