



WHAT'S BEHIND
THE WINDOWS AT
BELL ATLANTIC?



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Future hope

It was with great satisfaction that I joined the centennial celebration of ARCHITECTURAL RECORD, particularly for having been invited to be among the discussants at "Future Talk" [RECORD, July 1991, pages 176-81]. What is significant, if not profound, is that we have for the first time an agreement on a range of concerns. A body of principles, a sense of purpose, a feeling of rededication, a new professional ethic; after much floundering and loss of direction, perhaps at last, a new architectural movement.

RECORD should be applauded not only for its 100 years of fine performance, but also for bringing together a symposium that has brought these commonly felt principles into focus.

*John M. Johansen, Architect
New York City*

Planning for preservation

I appreciated your August editorial ["Adding to a Masterpiece," RECORD, August 1991, page 9] for the very real problem it addresses: that of how to plan for inevitable changes to significant buildings and ideas. The preservation field has a sensible and effective way of establishing an approach to significant buildings, prior to rehabilitation. Such tools go by various names—historic structures reports, cultural landscape evaluation, etc.—but what they have in common is the goal of critically evaluating the qualities and features of a building or place, and of rating the whole and its elements. What comes out of this process are not design goals, but rather qualified criteria that become a formal basis for future planning and design changes.

This is called preservation plan-

ning, which is distinguished from a more architectural type of planning by the modesty of its intentions. I advocate such an approach because what buildings such as the Guggenheim or the Kimbell need in order to evolve is certainly not *more* ego but *less*, in the form of modest planning efforts which allow the building to be carefully critiqued and evaluated on its own merits. The most successful of these documents let the building speak for itself.

*Mark Hulbert, Architect
San Francisco*

Juries on trial

Kathryn Anthony's "Juries on Trial" [RECORD, July 1991, pages 77-78] successfully covers every complaint I heard about juries while pursuing my architecture degree. However, in a way similar to the negative juries she criticizes, she fails to adequately give credit for the positive aspects. After four years of architecture school, I cannot remember a formal jury that did not involve some severely hurt feelings, but my classmates and I were always able to sort out the narrow-minded, malicious attacks from the qualified commentaries on the inadequacies of our designs, however brutal. For some of those classmates who were the best judges of their own talent, that meant choosing another field of endeavor.

A student's thorough knowledge of his or her own work is the best defense. A battered ego today is much better than a lifetime as a starving architect.

*James W. Leutgens,
University of North Carolina
at Charlotte,
College of Architecture
Class of '91
Charlotte, North Carolina*

October 2-31

"Design Explorations: 2001 Prototype Exhibition," Parsons School of Design, 2 West 13th St., New York City. 212/535-0529.

October 15

"Authors in Architecture: Cesar Pelli," an ongoing series sponsored by the National Institute for Architectural Education, 30 W. 22nd St., New York City. 212/924-7000.

October 10-12

"Make No Little Plans," Urban Waterfronts '91, Washington, D. C., Ramada Renaissance, sponsored by the Waterfront Center. 202/337-0856.

October 17-19

"Designer's Saturday," International Design Center New York, 29-10 Thomson Ave., Long Island City, N. Y. 11101. 718/937-7474.

October 18-20

"Louis I. Kahn and the Philadelphia School," Design Conference '91, Philadelphia, sponsored by the AIA Committee on Design. P. O. Box 18060, 202/626-7366.

October 20-January 5

"Louis I. Kahn: In the Realm of Architecture," Philadelphia Museum of Art. For other dates and locations: 215/621-2766.

October 28-31

A/E/C/ Systems Fall '91, Nashville Convention Center, Nashville, Tenn. Contact Share Price, 800/451-1196.

November 8-9

International Trends in World Markets Conference, San Francisco, sponsored by the AIA International Committee. 202/626-7415.

November 15-December 7

"Arthur Cotton Moore," paintings, Hokin Kaufman Gallery, 210 W. Superior St., Chicago.

December 4-6

Construct Canada, Metro Toronto Convention Centre. 416/869-1156.

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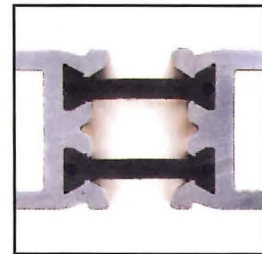


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Ways to Navigate the Environmental Minefield

Everyone should read the article on page 36 entitled "How Green is My Building?". For once we get a perspective on the exaggerated claims and often conflicting choices offered architects as they go about giving the client a building that is environmentally correct, yet at the same time beautiful, efficient, and affordable.

Here are some of the environmental dilemmas architects face:

- Steel vs aluminum. Aluminum requires scads of energy to produce, and mining it is unkind to the environment. However, the process yields far less waste than steel, and almost all aluminum can be recycled. But, mining the ingredients of steel destroys less of the environment, and since steel is stronger, less of it is needed.
- To save energy, ASHRAE standards of the early 1980s lowered fresh-air change requirements, but helped bring about some of our indoor-air problems.
- Using the minimum of resources may seem to help the cause of the environment but, as architect Bill McDonough points out, risks alienating your client if this leads to a poorly performing building.
- Tightening the definition of designated wetlands may open up more land for development and increase the nation's GNP, but at what price to recharging aquifers and filtering pollution?

The article raises beacons for architects who seek to navigate the environmental minefield:

1. Instead of looking at saving energy and respecting the environment as two distinct issues, look at them as one. See how each approach reinforces the other.
2. You're not doing your client any favors by sticking to code minimums or working around conservation mandates. Clients are more environmentally conscious than you think, and they may end up blaming you if you don't raise their horizon by proposing state-of-the art solutions.
3. Look closely at manufacturers' claims of "greenness." Make sure you understand the trade-offs in using alternate products.
4. Use your influence with manufacturers to underscore your concern for environmentally proper materials, products, and systems, and insist on substantiation of performance claims. Consult the article for its list of references on procedures.
5. Community development that helps cut down on use of private cars may do more to preserve the environment than countless environmentally correct buildings.
6. Re-using existing buildings is a great resource saver.
7. Don't expect clear-cut answers. Rather, use your training and experience to develop a sense of design that over the long term will wreak the least havoc on the environment. You can learn to do this without adding to construction cost, or necessarily increasing your fee.
8. Think of green design as opportunity, not constraint.

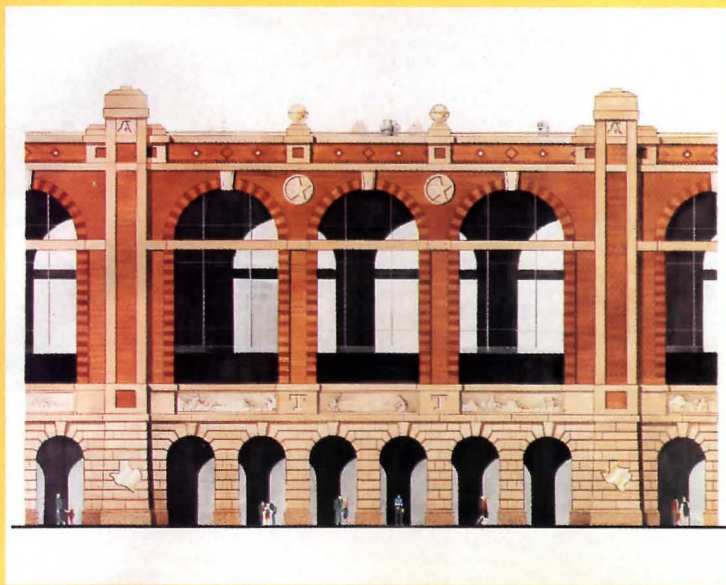
Venus, a planet in many ways like ours, underwent global warming and now enjoys a surface temperature of 900 degrees. Since, unlike Venus, we have some control over our fate, it isn't too late to take things in hand.

Stephen A. Kliment



Texas

D.C. Architect Wins Big-League Stadium Competition



Following a competition among 17 firms that produced a gusher of Texas League inventions, the Texas Rangers selected three firms to collaborate on a new 52,000-seat baseball stadium. Washington, D. C.-based David M. Schwarz/Architectural Services is

design architect on a team that also comprises HNTB of Kansas City and HKS, Inc. of Dallas. Schwarz's design, which includes a master plan for 275 acres around the stadium in Arlington, outside Fort Worth, combines pink Texas granite and brick, in-

corporating images of longhorn steer and Texas star in the facade. (Moore/Andersson of Austin proposed a star-shaped stadium; Michael Graves suggested a Texas-shape lake, complete with oil-derrick geysers.) Make a date for Opening Day 1994. ■

New York

National Black Theater Awaits Debut on 125th Street



es Francois

"We put the entrance on Fifth Avenue to get that exclusive address," says architect Gerard Pierre Paul of Geppaul Architects about the new 32,000-sq-ft National Black Theater, which occupies a corner of Fifth Avenue and 125th Street, in the heart of Harlem. The \$4.2-million project has been in motion since the mid-1980s, when a fire in a ground-floor dry cleaner destroyed the theater's existing headquarters at the same location. The masonry facade, with its aluminum-clad structural columns and a cornice that blends in with 125th Street's low silhouette,

is largely complete. Retail space at street level and offices on the second floor have been partly leased. But the architects and theater are awaiting funds to complete the now-bare third-floor performance space under a hexagonal dome, which they expect to finish in 1992. Urged on by the client, traditional Yoruba artists were commissioned to create the fiberglass-and-concrete frieze that skirts the base of the exterior, along with wall-size stamped-metal reliefs and wooden sculptures for the ground-floor and theater lobbies. *P. D. S.*

Ando Comments on Ando MoMA Show

Mitsuo Matsuoka



At *RECORD's* request, Tadao Ando submitted "Toward New Horizons in Architecture," his reflections on the exhibition "Tadao Ando," at New York's Museum of Modern Art through December:

Postmodernism denounced the poverty of Modernism, which had become little more than a product of mechanical procedure. Postmodernism endeavored to recover the richness Modernism appeared to have discarded, utilizing history, taste, and ornament. Yet, has the dynamic of the movement actu-

ally enriched contemporary architecture? On the contrary, I think it has become locked into hackneyed expression, producing a flood of formalistic play that is resulting in pandemonium. The road I see open to contemporary architecture is that of development through and beyond Modernism. This means replacing the mechanical, lethargic, and mediocre method to which Modernism has succumbed with the vitality that marked its beginnings. An architecture that can breathe new vigor into the human spirit will also clear the way through the present architectural impasse. ■

Missouri

Birkerts Designs KC's New Kemper

With Gunnar Birkerts's design for the \$7-million Kemper Museum of Contemporary Art, Kansas City joins the list of cities with *brave new art* museums. The project, a gift to the Kansas City Art Institute, sits on 2.8 acres across from the institute's main campus. Birkerts sees the 35,000-sq-ft building as expressing the evolution of modern art through the unfolding of a "free-flowing interior space," with continuity established by a "ribbon" of natural light. Groundbreaking for the concrete, steel, and glass structure is set for next spring. ■



Briefs

Venice Biennale

Rafael Moneo won the commission for the Palazzo del Cinema at the Venice Biennale. Chosen from 14 entries, including schemes by Steven Holl and Aldo Rossi, Moneo's simple design recalls the sort of movie house found in small-town Texas—or Italy—in the 1940s. "A Gateway for Venice," a redesign of the Piazzale Roma, went to London architect Edward Jones. Austria (Hans Hollein) was cited for the best national pavilion. And the Venice Prize, for the best space designed by an architectural school, went to the Department of Architecture at the University of Auckland, New Zealand, chosen from 45 entries. *RECORD* Design News will carry a full report on the Biennale next month.

Awards

An international jury led by Indian architect Charles Correa has chosen an equally international group of five firms in a competition for the "Revitalization of the Historic City of Samarkand." Judging took place August 13 in the Soviet republic of Uzbekistan for the competition, which was sponsored by the U. S. S. R. Union of Architects, the Aga Khan Trust for Culture, and the Uzbek Union of Architects. The winners: Patrick Berger France; Studio 333 (Stephen McDougal), United Kingdom; Ohno Laboratory (Hidatoshi Ohno), Japan; ARCSIM, (Alexander Larin), U. S. S. R.; and Faruk Yorgancioglu and Kaya Arikoglu, U. S. What next? Says Dr. Sahnü Ozkan of the Aga Khan Trust, "a client, we hope."

Competitions

- The National Building Museum invites amateur and professional photographers to submit photographs of craftsmen and workers constructing buildings, bridges, and other structures to its third "A Moment in Building" contest. Deadline is January 31, 1992. For information: 202/272-2448.
- The Chicago Athenaeum: The Center for Art, Architecture, and Urban Studies has named a jury for the second edition of its competition for "The Most Beautiful House in the World." This edition focuses on two-family houses. The jury is Leon Krier, Paolo Portoghesi, Toyo Ito, Alessandro Mendini, and Richard Meier. December 15 is the last day for applications to participate. Write Glen Ryniewski, Director of Marketing, the Chicago Athenaeum, Box 3680, Merchandise Mart Plaza, Chicago 60654; 312/829-9650. ■

New-Age Suburb for West Sacramento

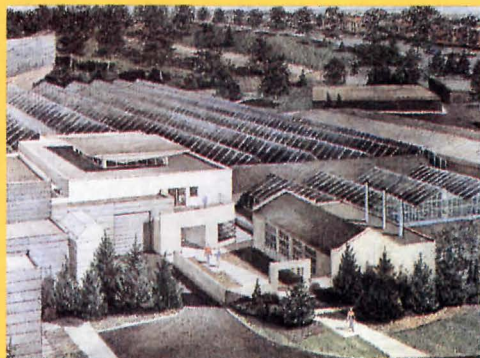
The small but ambitious community of West Sacramento got some big-time attention recently, hosting a weeklong charette that brought together four national planning teams, each espousing a different brand of suburban development. West Sacramento, across the Sacramento River from the state capital, was seeking a plan for Southport, 7,120 acres of largely undeveloped industrial land surrounded on three sides by the river and the city's deep-water canal.

Urban Design Studio, from West Palm Beach, Florida, offered "contemporary suburban development"—golf courses and cul-de-sacs. The San Francisco firm of Phillips Brant Reddick, best known for its master plan of Rancho Santa Margarita in Orange County, proposed so-called "density clusters," population centers built around sizable pockets of open space. Andres Duany and Elizabeth Plater-Zyberk of Miami (see profile, pages 110-119) and Peter Calthorpe, also of San Francisco, weighed in with their familiar and highly sought-after transit and pedestrian-oriented village plans.

Each firm seemed to be trying to outdo the other in designing walkability and compactness. Duany said his firm's plan pieced 90 percent of the residential development within a quarter-mile walk of a neighborhood square and transit stop, while Calthorpe put 70 percent of his village areas within a half-mile walk. He said after the charette that his "village centers" were true public meeting places while most of Duany's were mini-centers with little more than convenience stores to anchor them.

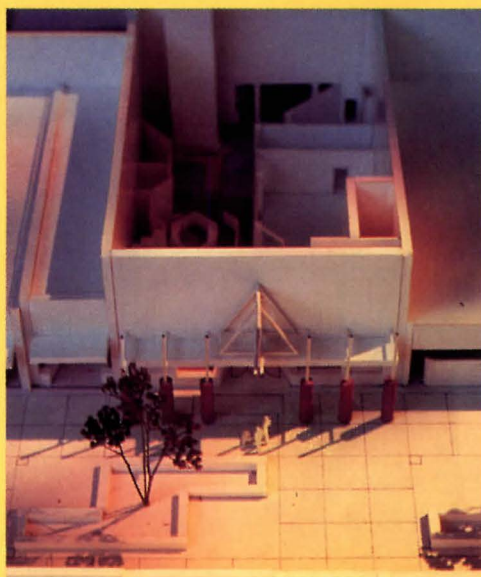
The city of West Sacramento, which has been struggling since its 1987 incorporation to capture some of the region's phenomenal growth, has a budget of \$475,000 to plan for Southport. The city intends to use much of what was left after the charette to choose one or more of the competing firms to draw up a master plan for the area. That plan, to be selected this fall, faces a host of obstacles, ranging from accessibility to protecting the area's abundant wildlife. "We've got one chance to plan for Southport," says Stephen Matek, the city's community development director, "and we want to make sure we do it right." *Gary Delsohn*

Mackey Designs Haven for Endangered Plants



Mackey Associates of St. Louis has designed new headquarters for the Center for Plant Conservation of the Missouri Botanical Gardens. The center is a nationwide network of 21 botanical gardens that work to save endangered plant life. The new building, which will open next summer, includes renovation of a 2,800-sq-ft parks building and provides 8,000 sq ft of new space. The program calls for offices for the center and other departments of the Botanical Gardens, and creates floral transfer connections to greenhouses for treating endangered species. *P. D. S.*

Making Serious Fun of Child's Play



Two projects scaled for children use participation and involvement as focal points of their design and program. Cooper-Lecky Architects' National Children's Center (above), a 56,000-sq-ft building on a 3.5-acre complex in residential Washington, D. C., uses a series of "family-scaled" units, grouped around outdoor play sculptures, to create interest and responsiveness in visitors. The center is a privately funded day-care facility for severely disabled children and adults, serving clients from preschool to age 60. Less pressing but equally playful is AP2 Architects' proposal for a children's museum in Portsmouth, Virginia (left), located in an abandoned department store. Together with joint-venture designer Hands On!, AP2 has created steel play structures throughout the site that recall Portsmouth's history as a shipbuilding center. ■

Otay Mesa: Messages from South of the Border

Although the city of Tijuana grew up as a sinful alternative to the rather staid life of San Diego, just across the border, today Tijuana has become a city of over a million inhabitants with a culture and economic base that rival San Diego's. While the area north of the border continues to sprawl into subdivisions, shopping malls, and office clusters, Tijuana is growing at an even faster rate but in a more dense fashion. What is especially remarkable is the adaptation of building methods developed in California to the different economic conditions, social structures, and cultural heritage of Mexico.

Nowhere is the contrast clearer than on Otay Mesa. This flat range just east of Tijuana is bisected by the border. It has become the center for the development of *maquiladores*, the assembly plants specializing in the use of cheap labor and land to put together products for the American market (top photo). The open scrubland of the mesa is being taken over by the tilt-up building boxes that house these plants. While those on the American side are surrounded by carefully landscaped parking lots, the *maquiladores* in Mexico are grouped closely together and are devoid of any kind of landscaping. Moreover, they are surrounded by residential neighborhoods, while in the U. S., the plants sit in not-so-splendid isolation, dependent on equally isolated residential developments miles away.

The *Ciudad Industrial*, as the planned industrial side of the mesa is called, is brown and barren because the city of Tijuana can't waste money on water for irrigation. Its more than 100 plants (many of which are now owned by Japanese and Korean companies) are closely grouped because its inhabitants often can't afford cars. But the result is a dense neighborhood with a great deal more life and vitality than is found just across the border. The Mexican residential neighborhoods—some planned by the government in the 1970s, some private—that have sprung up just to the west and south of the *ciudad* are laid out on a nested grid pattern more reminiscent of Spanish than Anglo traditions, and the houses are tightly packed. Yet many of the actual forms mimic the stucco boxes of Southern California,

complete with sloping tile roofs and sliding glass doors. Nor can you tell the condominiums from their northern counterparts. What is different is the way the Mexican condominiums have been built and adapted. A tradition of poured-in-place concrete structure shows up not only in houses under construction, but also in the extensions that have been built by inhabitants themselves, and in expressed brick infill patterns. Mexican condominiums are painted in bold, abstract colors, rather than decorated with Postmodern garlands.

Combined with the proximity of stores and places of work, these variations on an imported theme would seem to make Otay Mesa an attractive model for rethinking suburban sprawl. Yet these conditions are the product of improvisation driven by scarce resources, and their charms are at least partly due to less-than-adequate civic amenities. As Tijuana and San Diego continue to grow closer together, it will be worth watching to see if the more adaptable and denser architecture of Otay Mesa moves north.

Aaron Betsky



Tom Bonner photos

Return to Roots Spurs Inner-City and Border Preservation

Gerald Moorhead photos



1 An urban-planning initiative in a Houston slum and a new historic-preservation corridor on the Texas-Mexico border rely on community involvement to bring both contemporary urban and Spanish colonial ruins to productive life. Just west of Houston's downtown highrises lies the Fourth Ward (1,2), a neighborhood in decay for decades that is now the focus of debate as a group of developers and land owners, the Founders Park Venture, proceed with an urban master plan to rebuild 650 acres centered on Founders Park (3), a cemetery holding remains of several Houston patriarchs. The concepts for the plan grew out of a series of community forums held in 1990 by developers hoping to build public involvement. Architects from Sikes Jennings Kelly Brewer of Houston and Carr Lynch Hack and Sandell of Cambridge, Massachusetts, led the design work.

The resulting master plan projects a 20-year phased development containing 2,800 housing units on 144 acres, 19 acres of mixed-use retail, 2.5 million square feet of office space on two parcels totaling 55 acres, and a 12-



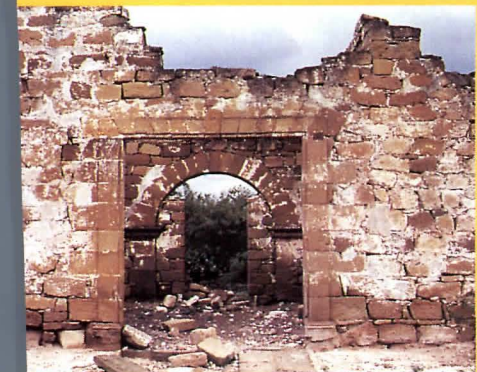
2 block historic district that consolidates the scattered buildings of the present National Register District into a reconstructed neighborhood. Much of the existing street pattern of 200-foot-square blocks will be restructured, providing open space, parks, and boulevard links to the nearby Buffalo Bayou green belt. An old school will be adapted for a community and cultural center, and small neighborhoods will be further buffered by the mixed-use zone adjacent to downtown. Further action is on hold until the status of Allen Parkway Village, a 1,000-unit public housing project built in 1940, is resolved. The city housing authority has been trying for nearly a decade to raze the project and sell the land, a prime boundary zone along Buffalo Bayou leading to downtown and zoned in the master plan for commercial and residential use. Action is expected this fall.

Along the Rio Grande border between Texas and Mexico, a new preservation program, "Los Caminos del Rio [The Roads of the River] Heritage Project," sponsored by the Texas Historical Commission and funded by the Meadows Foundation of Dallas, is the

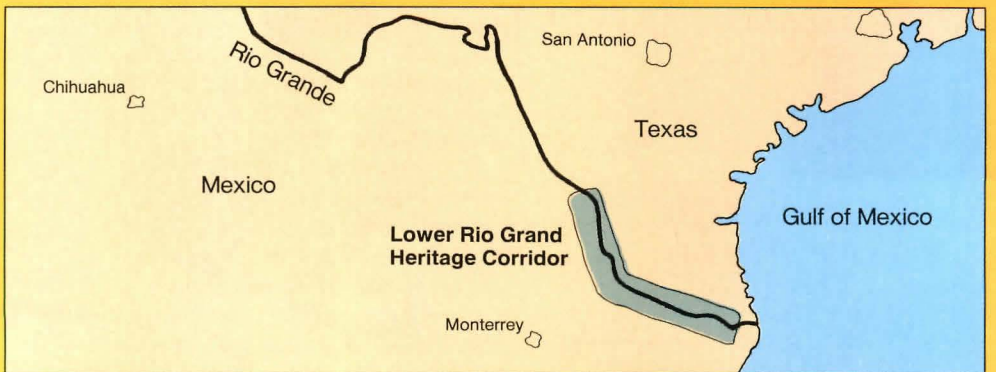


3 area's first binational preservation effort. Its goal is to protect and develop the physical and cultural history of a 200-mile-long corridor extending from Brownsville on the Gulf Coast upriver to Laredo (5). The Los Caminos Project seeks to spur economic development on both sides of the border through local participation in preservation projects. It will take advantage of crafts and skills still thriving in Mexico that can be taught in local schools and applied to restore buildings such as a 19th-century residence in Tamaulipas, Mexico (4).

A nonprofit foundation was established in May to acquire, restore, and manage historic properties, as well as raise funds, coordinate local government and civic groups, and attract tourists to the region. With Mario L. Sanchez, the architect who is the program's director, the Texas Historical Commission has produced *A Shared Experience*, a reference book that discusses 231 historic sites and buildings. It also looks at 20 important structures, covering materials, building techniques, and restoration needs.
Gerald Moorhead



Mario L. Sanchez



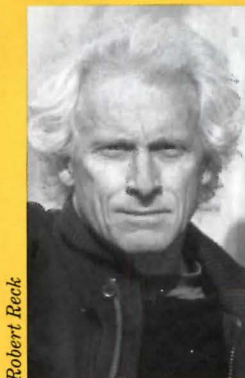
Massachusetts

Keeping the Fun (and the Work) in Successful Practice

Most architects would rather discuss design than practice. At least this emerged from a recent two-day seminar at the Harvard Graduate School of Design, where Ricardo Legorreta, Michael McKinnell, Antoine Predock, and Jan Keane, a partner at Mitchell/Giurgola, explored how they organize their practices to do their best work. To some extent each speaker evaded the subject, perhaps to preserve the mysteries of process. Still, the program offered insights into office structures and design methods.

One agenda item dealt with the price of success. Is it possible for architectural stars to remain deeply involved in projects as their firms become busier and larger? Legorreta, McKinnell (above right), and Predock (above left) acknowledged the value of collaboration and spoke warmly of their staffs. "It is beautiful to be a quarterback," said Legorreta. "But what can a quarterback do without a team?" Still, these designers try to keep close control over major projects. Predock seeks especially to retain the outlook of an individual practitioner. In contrast, Mitchell/Giurgola takes a more corporate approach. While Romaldo Giurgola is deeply involved in one or two projects, design responsibility is generously dispersed. All agreed that, to produce the highly personal work for which they are known, it helps to maintain a studio like atmosphere in the office. Occasionally this means refusing work, so as not to grow too large. (These are medium-sized practices, ranging in size from 30 to 50 employees.)

The sessions provided fascinating glimpses into design processes. For McKinnell, the most satisfying work results from close collaboration with clients. Conversational nooks in the floor plan of the American Academy of Arts and Sciences, for example, were a response to Dr. Edwin Land's conviction that nothing useful ever happens in committees, hence the building should encourage intimate talk. Conversely, McKinnell finds



Robert Reck



working with clients' *representatives* dispiriting. "They are not patrons," he explained. "They're simply doing a job."

Several aspects of current practice, such as growing regulation of building, was deplored. McKinnell suggested that, should codes continue to become stricter, buildings will have to be constructed of "fire-proofed foam rubber." Jan Keane struck a chord when she singled out marketing as the "most depressing" part of practice. All four prefer more subtle, less systematic ways of attracting business (i. e., referrals from friends, family, and past clients; competitions; lecturing, etc.) to more aggressive corporate marketing strategies.

Legorreta raised the broadest practice issue as he lamented the profession's diminished role in design and construction. "Buildings today are designed by developers, politicians, institutions, even architecture critics," the Mexico City-based architect said. He felt architects had become accustomed to their narrowed role. Decrying the profession's recent cachet, Legorreta warned against settling for fast-changing design trends. "When we ask ourselves if [the profession] has truly enriched life in the last century, we have to admit we've fallen short." To regain its authority, architects must once again design buildings and cities that enrich the spirit of society. *Nancy Levinson*

Procurement

Feds Want Level Procurement Field

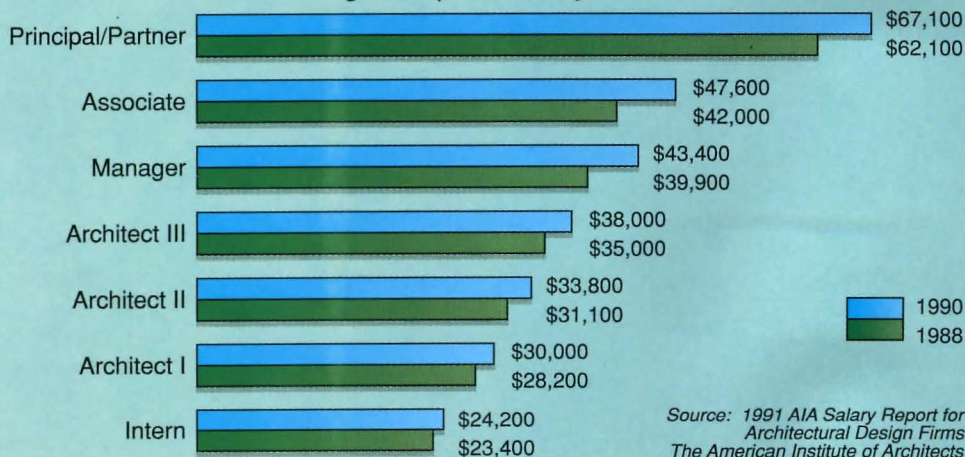
Is the Federal Procurement Integrity Act, designed to guard against abuse of federal contracts, drying up advance information on government construction? If it is, isn't that what it's supposed to do? Mark M. Price, president of Washington-based Building Development Counsel, thinks such advance information is crucial to helping A/E firms pick federal projects to bid on. "The introduction of the Federal Procurement Integrity Act has seriously affected the architectural community," Price wrote to Senator William V. Roth, Jr. (R-Del.), ranking minority member of the Senate's Governmental Affairs Committee. "If a firm is to successfully pursue a given federal assignment, it is essential that the firm thoroughly understand the scope of work and the selection criteria which will be required." Senator Roth replied that the Act "does not alter the process for selecting firms to perform architectural, engineering, and related services." Roth added that federal policy, as stated in the Brooks Act of 1972, is to "publicly announce all requirements for architectural and engineering services, and to negotiate contracts on the basis of demonstrated competence and qualification for the type of services required."

James McGranahan, chairman of the AIA's federal agency liaison group, says the new law hasn't created any significant problem, and is actually leveling the playing field, as was intended. Ann Spudis, director of federal procurement for the American Consulting Engineers Council, says the act is too vague, and so has had a dampening effect on procurement activities: "Our members treat it very cautiously." Still, confusion, or at least inconsistency, reigns. While the General Services Administration now refuses to release information on projects before publication, agencies such as the Veterans Administration and the Bureau of Prisons will do so on request. There is no advance word on when the agencies will reach consensus. *Peter Hoffmann*

Architects' Salaries Fight Gravity

Architects' Compensation

Average Compensation by Position



Source: 1991 AIA Salary Report for Architectural Design Firms
The American Institute of Architects

The AIA released its *1991 Salary Report for Architectural Design Firms*, a biennial publication. The report confirms what most already know—if you're lucky enough to have a job, your salary hasn't gone anywhere fast, though it may have edged up since 1988 (see chart, left). Rates of increase at the highest and lowest levels of practice were well below those of the 1989 survey, in which average salaries rose over 7 percent, keeping pace with the Consumer Price Index; gains in principals' compensation, at 15 percent in 1989, were double the CPI. This year's report shows principals' income gained just 7.5 percent, while the average junior employee's salary grew even more slowly. January figures indicated a 5 percent drop in the nationwide workforce, to 130,000, but that trend has probably accelerated, especially in the Northeast. *P. D. S.*

RECORD Holds Party of the Century



Anne Baasch Maio

Celebrating ARCHITECTURAL RECORD's 100th birthday, over 250 design professionals, building-industry executives, and advertisers joined the RECORD staff July 30 in New York City at the invitation of McGraw-Hill Chief Executive Joseph Dionne (right, with editor-in-chief Stephen Kliment, left, and publisher Roscoe Smith), as they blew out 100 candles atop a structurally sound cake, complete with setbacks. The party capped months of preparation for the 300-page July issue, which marked the beginning of the magazine's 101st year. Noting that few magazines of any kind and certainly none in architecture can point to 100 years of continuous service to their readers, editor Stephen Kliment promised to continue publishing "the best of what is being designed, the best technical and practice tools, and the most cogent criticism." ■

Briefs

Appointments

- Harry G. Robinson, III, Dean of the School of Architecture and Planning at Howard University, is the new First Vice President/President Designate of the National Council of Architectural Registration Boards.
- Frances Halsband, a practicing architect and the president of the New York Chapter of the AIA, has been named Dean of the School of Architecture at Pratt Institute.

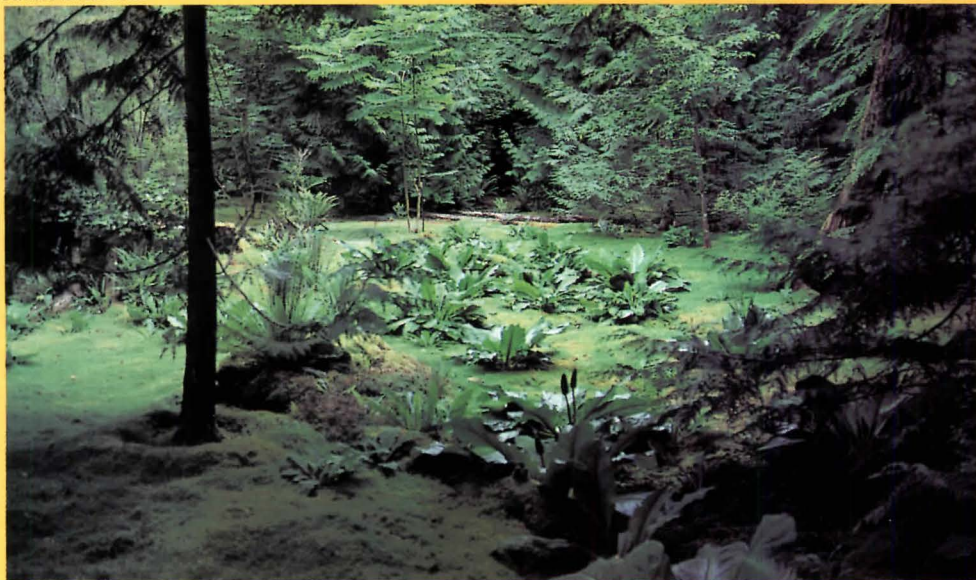
Call for papers

"Architecture Students: Less Is More?" is the topic for the 1991-92 Walter Wagner Education Forum, cosponsored by ARCHITECTURAL RECORD and the AIA. Professors and practicing architects can submit papers for consideration to Joseph Bilello, Architects in Education Committee, AIA, 1735 New York Ave. N. W., Washington, D. C. 20006; 202/626-7358. ■

Environment

Wetlands Proposal Draws Fire from Environmentalists

James S. Russell



How wet is wet? At least 15 days, says the U. S. Army Corps of Engineers. This non sequitur is part of proposed changes in the *Wetlands Delineation Manual*, in effect since 1989 in an evolution of regulation that began in 1975. The definition is important because designated wetlands may be subject to development restrictions. Published in August and now in a 60-day period of public comment, the new regulations would redefine a wetland as soil having standing water for 15 consecutive days, or surface saturation for 21 days, during a growing season. The much broader 1989 definition covered areas of peat-based soil, or those that had water within 18 inches of the surface for at least seven days during a growing season.

The changes could open up previously protected acreage nationwide to developers and farmers. Most affected are marshlands in areas that are key to wildlife migrations, such as Eastern Long Island and the Chesapeake Bay on the East Coast, as well as the "prairie potholes" of the Midwest, where water "pools" or "ponds." Thousands of acres of the Everglades could open to development.

No hard figures are available, but Steve Moyer of the National Wildlife Federation says that up to a third of the 100 million acres of wetlands could be affected. But Mike Luzier, director of environmental regulations at the National Association of Home Builders, calls such estimates unreliable. "I don't think there's a credible answer to the question of how much land this affects." Luzier points out that while the standards will change, the indicators that determine a wetland will remain substantially in place, slowing the redefinition process. Many so-called wetlands don't function as such, argues Luzier, "and we would like to see those areas free of regulation as wetlands."

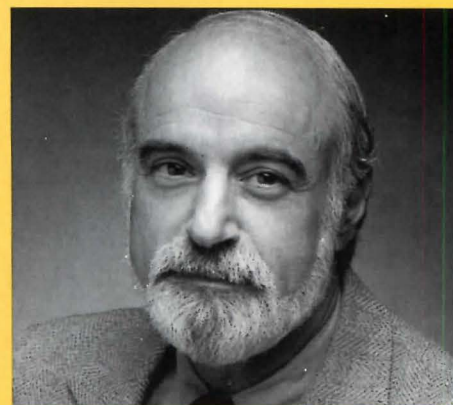
Once the public-comment period is over, the four federal agencies that administer wetlands regulation—the Corps, the EPA, the Fish & Wildlife Service, and the Soil Conservation Service—will issue a final set of regulations, probably early next year. The Administration, says Moyer, "will be hard-pressed to ignore the evidence" that its election-year promise of "no net loss" to wetlands is being broken. *P. D. S.*

Construction Technology

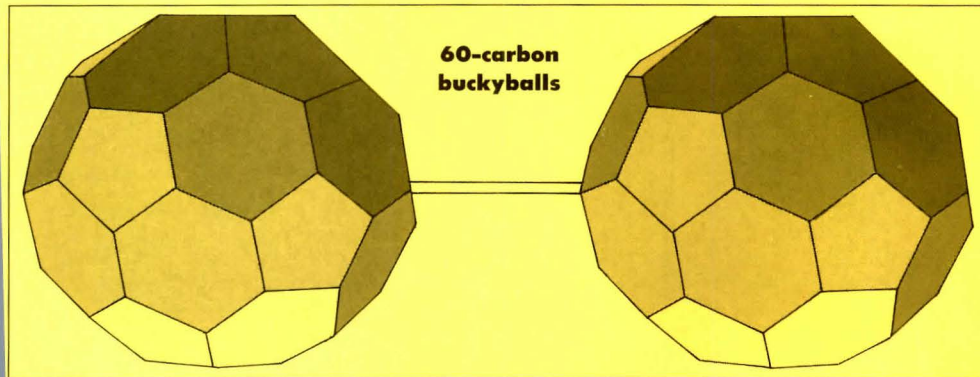
Preventive Medicine for Sick Buildings

Though there's much to argue about the causes and cures for indoor-air quality problems [RECORD, November 1990, page 105-106], the consensus is that problems are most severe right after occupancy of a new or remodeled space. An article in the May 1991 issue of *Indoor Air Bulletin*, edited by indoor-air expert Hal Levin, focuses on detoxification, and on solutions for construction in occupied buildings.

Construction-period problems are easy to overlook during design, yet air-quality problems that begin during construction may well carry over into occupancy. Among Levin's recommendations: take a wide-ranging "building ecology" approach to managing air quality; i.e., look at the whole picture. Select building materials carefully, avoiding strong "emitters" or toxins; isolate construction zones in occupied buildings; air out construction areas 100 percent before occupancy; maximize ventilation by sealing return air ducts and using direct exhaust; and, crucially, commission the hvac system defining performance criteria and measuring results. Levin points out that controlling pollution sources at the outset, rather than trying to fix problems later through improved ventilation, contributes to financial as well as environmental health. Levin's newsletter may be had by writing to P. O. Box 8446, Santa Cruz, Calif. 95061. ■



Is There a Buckyball in Your Future?



Finding essential form is every architect's dream, but it will be tough to get more essential than the buckminsterfullerene, or "buckyball," a molecule joined by electronic bonds between carbon atoms with a geodesic structure not unlike that designed by Buckminster Fuller, who died in 1983. Recent discovery of an easy way to create them in the lab has led to an explosion of research. While some scientists think buckyballs have huge commercial promise, especially in superconductivity, most just seem to be having fun playing with them. ■

Briefs

Radon dangers reconsidered

Actual human exposure to radon is about 30 percent of levels measured in residential basements, according to a recent study sponsored by the American Cancer Society. Until now, experts have advised remedial measures for radon, assuming that humans are exposed to amounts similar to those measured in air. If the results are confirmed, they would indicate a lower level of radon danger than is commonly assumed. The Environmental Protection Agency is currently examining the results but had not at this writing changed its recommendations for testing or remediation [RECORD, November 1990, page 105].

Fire-retardant plywood

A tentative settlement has been reached in lawsuits related to failures of roofs sheathed with defective fire-retardant plywood, reports the *Wall Street Journal*. Homebuilders sued manufacturers after being forced to replace roofs in which the plywood deteriorated, losing strength due to chemical changes within the panels [RECORD, August 1990, page 99]. Up to 250,000 owners may be affected. Under the agreement homeowners

would file complaints with an administrator, who would determine if roofs needed replacement or repair.

Managing asbestos

The American Medical Association's Council of Scientific Affairs has gone on record as recommending management of asbestos in place where possible. Its report adds to the gathering consensus that removal of asbestos in buildings should occur only when it poses a danger [RECORD, October 1990, pages 110-111]. The risk remains, though, that in buildings with poor management or in jurisdictions with loose enforcement, asbestos will be released, exposing building workers and occupants to cancer-causing levels of the fiber. Meanwhile . . .

Cancer-causing fiberglass?

The Labor Department has decided to require glass-fiber insulation products to carry cancer warnings. Some experts have compared the risk to that from asbestos, but the health risk to users and installers, if any, has yet to be quantified (an increase in respiratory-tract cancers *has* been reported among fiberglass-production workers, however). ■

Publications

Least-Cost Energy Decisions: An Introduction to Life-Cycle Cost Analysis,

produced by the National Institute of Standards and Technology, is a one-hour videotape that helps professionals assess the relative value of energy-saving approaches. For VHS format (\$25) from Video Transfer Inc., 5709-B Arundel Avenue, Rockville, Md. 28052.

Ventilation Directory is a 64-page, \$40 guide published by the National Conference of States on Building Codes and Standards that summarizes regulatory criteria affecting ventilation and indoor-air quality in several model codes, certain ASHRAE standards, and special provisions in certain states. Information: NCSBCS, 505 Huntmar Park Drive, Suite 210, Herndon, Va. 22070 (703/437-0100).

Standards: Six new integrated acoustical standards for open-plan offices have been developed by the American Society for Testing and Materials. They will permit specification by performance for ceiling assemblies and furniture and wall panels. ASTM, 1916 Race Street, Philadelphia, Pa. 19103. ■

Fire-labeled Glazings

For more information, circle item numbers on Reader Service Cards.

Specifiers of fire-rated glazing know that product performance can be way ahead of the idiosyncratic tests and codes regulating their use in buildings. Members of committees such as NFPA 80 (Fire Doors and Windows Installation Standard) suggest that architects wishing to use fire-rated glazing products keep two points in mind:

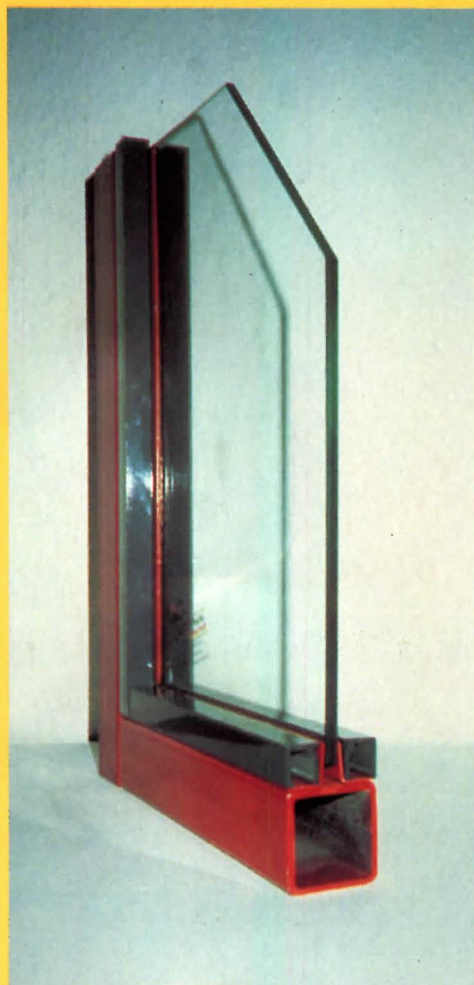
1. Don't compromise the heat-resistive properties of a fire wall with a too-large fire-rated window, no matter how high its rating. A fire wall must meet ASTM E119 standards for radiant heat transfer and ignition of materials on the unexposed side.
2. Be aware of the life-safety characteristics of the glazing. The draft revision of the 1993 edition of NFPA 80, now out for comment, calls attention to the need to specify a safety-glass product in hazardous locations subject to human impact. *J. F. B.*

300. Meeting the safety-glazing requirements of CPSC 16, Pyroswiss is a fully tempered, optically clear fire-protective glass from Europe that has recently passed Warnock Hersey 20-, 30-, and 45-minute fire tests in a .234-in. thickness. Safety and Fire Technology, Inc., Div. O'Keeffe's, Inc.

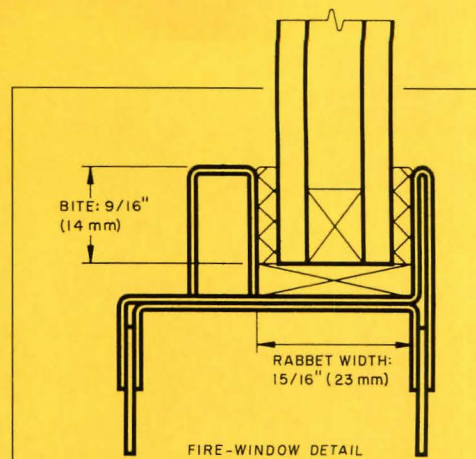
301. Contraflam, a clear, gel-filled unit that meets the radiant-heat transfer standards of ASTM E119, comes in a thinner, 20-minute make-up for use in standard labeled framing systems. Only 5/8-in.-thick, CF-20 comes in sizes up to 2,490 sq in. Safety and Fire Technology, Inc., Div. O'Keeffe's, Inc.

302. Made in Belgium and widely used in Europe, Pyrobel is a sandwich of sheet glass and intumescent interlayers. In the 21-mm-thick configuration illustrated, Pyrobel recently qualified in the U. S. as a fire-resistive building construction as per ASTM E119-88, and for impact resistance under the Consumer Product Safety Commission's Safety Standard for Architectural Glazing Materials, Part 1201. For interior use, the product has a very light "whisky" tint and can be cut to size on-site. Glaverbel.

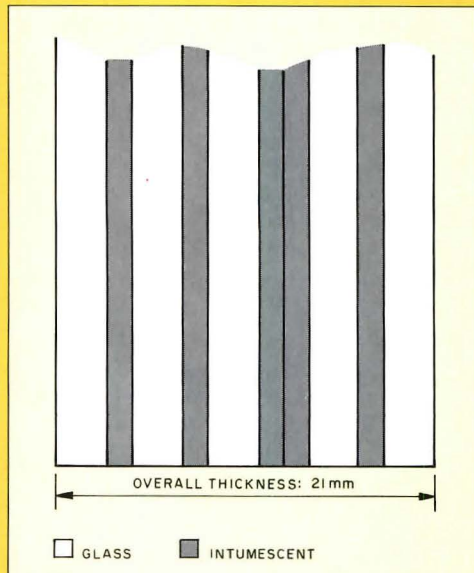
303. Pyran, a prestressed borosilicate glass that will stay clear even under extremely high fire temperatures, is available as a fire-protective window glass in sizes of up to 1,296 sq in. per panel. Schott. ■



300



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303

Color It Yourself



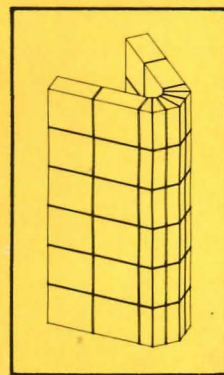
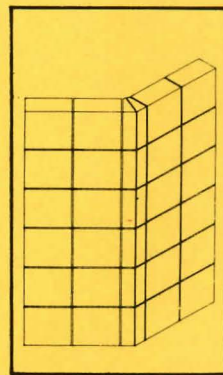
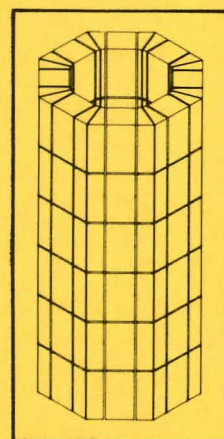
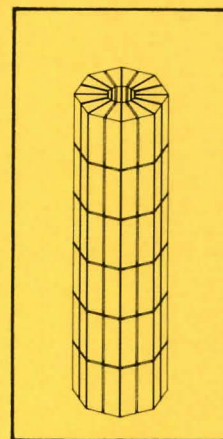
304

304. Peter Danko calls the cheerful seats shown at top "Chairs for the Electronic Cottage," combining simple, folksy decoration with high-tech composite wood and stressed-skin seat construction. Rugged enough for use in food courts, the chair has a folded-wood back and decoration and bentwood legs in custom-color dyed wood, an integral finish

that will not wear off. Danko feels that his newest armchair (above) has personality, warmth, life, and comfort: an expressive soul. Made almost completely of wood, the chair's joints flex for individual ease in health-care, task, and other long-term seating applications. Formed arms can be colored, or black as shown. Peter Danko + Associates, Inc. ■

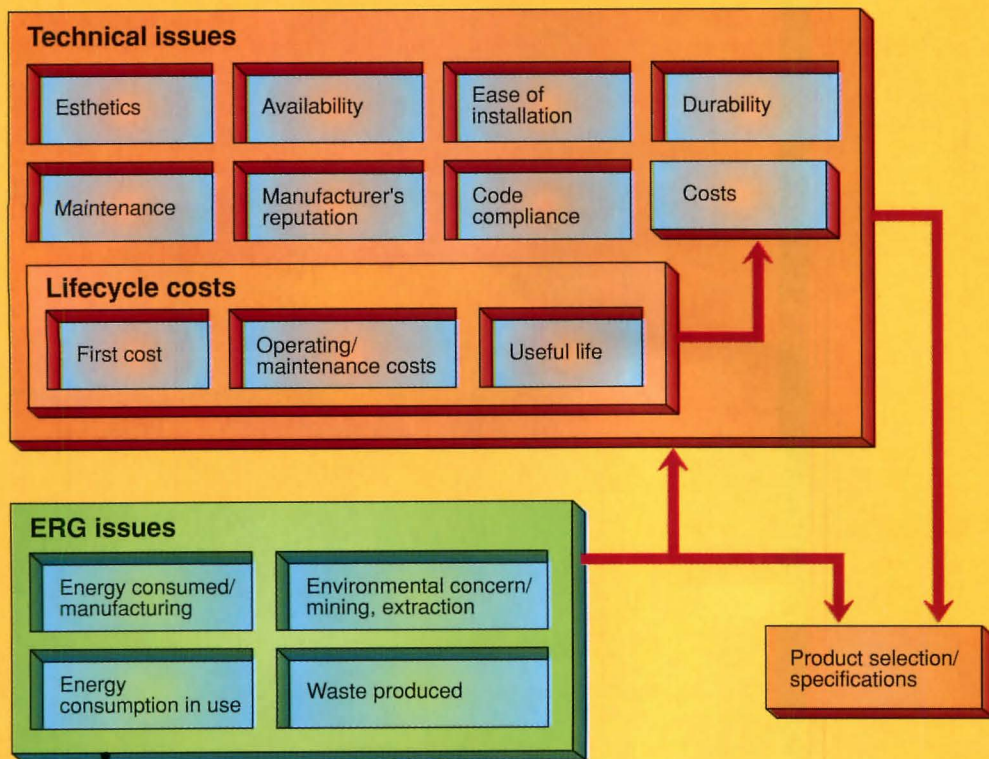
By Degrees

305. Tridron 45 is a new triangular shape that adds a great deal of flexibility to the layout of panels, walls, and partitions by allowing angles formerly impossible in glass block. Drawings illustrate some design possibilities: columns formed with multiples of the 45-degree shape and combining the Tridron with rectangular block; a simple 45-degree turn; or three Tridron blocks positioned to create a sharp curve. Available in both Decora and clear Vue patterns. Pittsburgh Corning Corp. ■



305

How Green Is My Building?



The Environmental Resource Guide introduces new issues in product selection.

In what is clearly the second wave of environmentalism (Earth Day, 20 years ago, signaled the first), Jimmy Carter-style sacrifice is out and “50 ways to save the earth” is in. In this atmosphere it is difficult to tell gimmickry from substance, and architects have too often found themselves responding (or, more likely, feeling unable to respond) to the ecological issue of the moment, be it the fate of exotic wood species or depletion of the ozone layer. Under ideal circumstances most architects would like to know enough about these matters to design appropriately, but the knowledge and judgment required often go well beyond the architect’s training or experience. And typical fee structures won’t support in-depth research.

Now the AIA has weighed in with its Environmental Resource Guide (ERG), a series of documents offered on a subscription basis that is intended to assist architects in evaluating the environmental consequences of design decisions. The guide has received more publicity than anything the AIA has done in recent years, though it does not yet

exist and there are still relatively few people who really know what it is and how architects can apply it in practice.

Will the ERG’s product assessments make it easier for architects to attain environmentally responsive design? Consider the first installment, “Aluminum and the Environment,” which states that mining bauxite for aluminum creates toxic sludge that may affect some tropical rain forests, and which says that aluminum requires enormous amounts of energy to produce, and renders fluoride, sulfur dioxide, and volatile organic compounds in primary production, and toxic wastewater and other pollutants in fabrication and alloying. On the other hand, the report notes, aluminum produces only one-tenth the waste of steel production and can be recycled (saving some 96 percent of the energy required for original production). Confused yet?

Or would you rather consider that the ERG’s comparisons with steel are on a pound for pound basis, though steel weighs

much more per unit length than aluminum (thereby reducing steel’s advantages considerably), that aluminum is more readily fabricated into energy-conserving window assemblies, that aluminum can be protected by relatively benign anodizing, while steel must be coated with solvent-based paint?

Even though this first report is concise and easy to understand (thanks to Doug Greenwood, the AIA’s liaison), it seems future assessments will inevitably miss some issues and introduce others that are difficult for architects to resolve, especially when they enter areas in which architects are not typically expert (what kind and amount of waste is acceptable, for example). Nearly everyone agrees that we must be more careful in the way we treat the land, water, and air, but tough decisions need to be made (say, asphalt shingles from nonrenewable oil versus cedar shakes from forests that are not being replaced quickly enough) and there is a temptation to throw up our hands and say that nothing any one firm or individual does is going to make a difference.

Many claim that the architect *can* make a difference, chief among them members of the AIA’s Committee on the Environment, which is responsible for the ERG. “Having worked on these issues with the AIA since 1978,” explains Gregory Franta of the ENSAR Group, “I’ve seen an evolution of design process such that energy and environmental quality issues have matured. We’ve therefore extended the AIA’s role to environmental quality as a basis of decision-making.” But it’s not always easy to instill such a sensibility into office practice. Without exactly admitting it, the profession has pigeonholed the environmentally enthusiastic. The result is that concerned practitioners find themselves outside the group of high-profile architects who regularly appear in the press, and lumped instead with an older generation that, in the words of committee member William McDonough, made “the house that looked like a solar collector.”

Environment in the mainstream

Those architects who have made the environment a focus of their practice feel deeply that the profession must integrate an ecological culture into everyday practice. In

The AIA's Environmental Resource Guide may prove to be too ambitious in its analysis of materials, but it's just one of many tools to instill an environmental ethic in practice.

this, the ERG is a means, not an end. To give environmental issues their due in the design process, though, is not always to place them in the forefront. "We're not saying to the client, here's the budget and here's the extra 10 percent for the environment," comments Franta. "We're trying to make the whole project work, including the environmental goals." Even the environmental community is fragmented—one group is expert on ozone-depleting chlorofluorocarbons, but cannot speak to global warming caused by burning fossil fuels. How is an architect supposed to make a decision?

First, set priorities. There is a great deal that the architect can influence without becoming an expert in off-gassing synthetic fibers or frequencies of electromagnetic fields. Among often-mentioned strategies:

- **Conservation:** Though they are often categorized separately, energy-conscious design and environmentally conscious design may mutually reinforce each other. The benefits are often large; paybacks are getting shorter and are quantifiable. "We like to say resource-conserving buildings rather than energy-saving buildings," comments Stephen Selkowitz, of Lawrence Berkeley Laboratory's Windows and Daylighting Group. To achieve this synergy takes care, however: witness the gathering consensus that standards promulgated by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers were too zealous in lowering fresh-air change requirements in the early '80s (to save energy), which gave rise to the indoor-air problems of the late '80s.

- **Keep up to date:** Most environmental issues will probably not reach stasis in our lifetime, if ever. Experts feel that with broad knowledge it is not difficult to achieve significant improvement in terms of environmentally sensitive design (insulating glass, once thought a premium product, is now nearly universal). It is the uninformed who conclude that only meeting code requirements or getting around conservation mandates is serving the client. (There is potential liability in not knowing what you could do about asbestos, for example.) It is in this area that the ERG will likely prove its worth in giving architects a handy one-stop reference to the environmental issues that affect building construction.

- **Evaluate the efficacy of claims:** This can be a difficult process. But guidelines that consumer advocates have promulgated for manufacturers can be applied on an architectural level as well. (In response to a lack of federal definitions for terms commonly used in "green" product promotions, a group of 11 state attorneys general have issued guidelines of their own, published as the "Green Report II.")

- **Alternative products:** New or alternative products should be able to meet industry standards for the materials they replace. If they can't, the trade-offs should be clear. (Refrigerants that substitute for ozone-depleting CFCs may mean that air-cooling equipment operates less efficiently, for example.) Ask manufacturers for independent laboratory data including accelerated-aging tests to support claims. And ask if alternate materials have performance or functional deficiencies that the replaced product lacks.

The marketing of trivial, inaccurate, or incomplete environmental claims for products muddies, as it were, the environmental waters. While such tactics are not used as aggressively in the construction field as in consumer products, the guidelines promulgated by the attorneys general who prepared the Green Report II are useful in evaluating manufacturer claims. The report rejects "generalized environmental claims" (producers should state the precise environmental benefits) and promotions that imply that a product has been modified when all that has changed is that a "previously existing but previously unadvertised positive environmental attribute" is being trumpeted.

The report says that such terms as "recyclable," "degradable," and "compostable" should be limited to products for which such programs are well established. And products should only be labeled "recycled" when their constituent materials are retrieved from products already used. Some items labeled as containing recycled material are really made of "reprocessed industrial material"—byproducts of manufacturing. This reintroduction of scrap products is a laudable goal, but it doesn't rank in environmental value with the re-use of materials retrieved from disposed products.

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Environmental Quality in Offices, by Jacqueline C. Vischer. New York: Van Nostrand Reinhold, 1988, 250 pages, \$38.95.

Superinsulated Design and Construction: A Guide to Building Energy-Efficient Homes, by Thomas Lenchek, Chris Mattock, and John Raabe. New York: Van Nostrand Reinhold, 1991, 256 pages, \$29.95.

Solar Interiors: Energy-Efficient Spaces Designed for Comfort, by Katherine Panchyk. New York: Van Nostrand Reinhold, 1991, 176 pages, \$29.95.

Solar Building Architecture, Bruce Anderson, editor. Cambridge: MIT Press, 1990, 346 pages, \$42.50.

Passive Cooling, Jeffrey Cook, editor. Cambridge: MIT Press, 1989, 600 pages, \$50.

The Green Report II: Recommendations for Responsible Environmental Advertising. Obtain from the office of the attorney general in: California, Florida, Massachusetts, Minnesota, Missouri, New York, Tennessee, Texas, Utah, Washington, and Wisconsin.

DOE-2, software for IBM PC-type computers evaluating thermal performance of the building envelope. Simulation Research Group, MS 90-3147, Lawrence Berkeley Laboratory, Berkeley, Calif. 94720

Windows 3.02, a software program for IBM PCs and compatibles developed by the Lawrence Berkeley Laboratory for analyzing windows and daylighting. Contact Bostik Construction Products, P. O. Box 8, Huntington Valley, Pa. 19006.

Solar Position Calculator, a software template for use with Microsoft Excel for IBM PC-type computers or Apple Macintosh, \$24. Heizer Software, P. O. Box 232019, Pleasant Hill, Calif. 94523.

Where the ERG fits in

The ERG has the ambitious goal of expanding the kinds of issues architects consider in selecting products. It proposes an analysis of the environmental costs of a material or product through its entire life cycle, ranging from energy consumed in manufacturing and the environmental costs of materials extraction to the likelihood that the material will be recycled when the building is altered or demolished. This information must be integrated into the already formidable decision-making process for choosing technologies including conventional life-cycle analysis related to costs (chart page 36).

The ERG reports are an ambitious undertaking. "It involves very complicated life-cycle analysis and research that, frankly, hasn't been done," explains Robert Berkebile, chairman of the AIA's Committee on the Environment. The AIA does not itself have the resources to do the job and, as a result, has been able to do only limited original research, supported by an EPA grant. The staff must rely largely on information provided by industry sources, much of which can be hard to verify. And some industries may quietly stonewall data that portray them unflatteringly. On the other hand, the AIA can call upon a Scientific Advisory Group with members drawn from such organizations as the Natural Resources Defense Council, the Rocky Mountain Institute, the Environmental Protection Agency, and the Smithsonian Institution. "We're trying to get some peer review that we can believe in," explains AIA's Doug Greenwood, though he notes, "Our goal is not to put industry out of business. We're trying to let architects know what the pluses and minuses are and let them make their own decisions."

One result of the ERG is, as William McDonough says, "putting manufacturers on notice that certain criteria will be examined. It will help manufacturers to question some of their practices and lead them to improve. Another effect will be to establish criteria for making products. And new products will rise to respond."

Life-cycle costs—the big picture

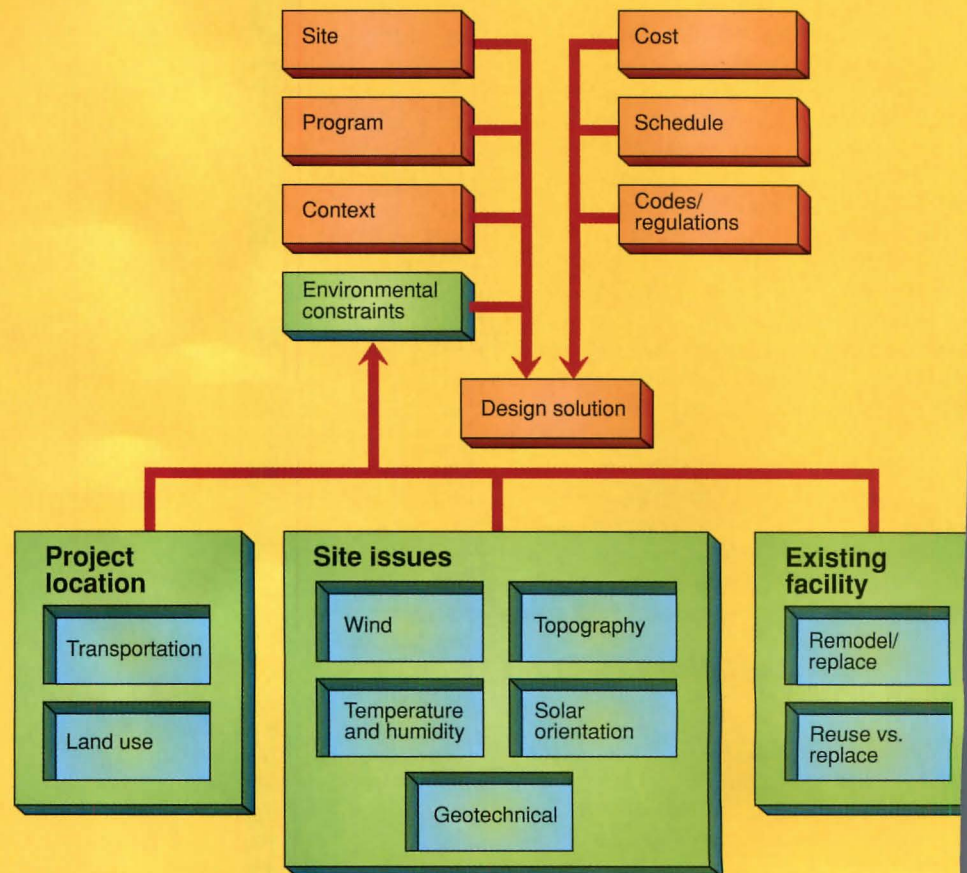
As the profession becomes more environmentally literate, it will be easier to separate

valid features from promotional hype. But in promoting a whole-life analysis of products, advocates are asking architects to make judgments in areas in which they are not expert, as the report on aluminum makes clear. In the consumer area, the attorneys general call these "product life assessments," and they have criticized promotional use of industry-sponsored studies such as those that purport to either prove or disprove that paper bags are better for the environment than plastic or that disposable diapers are better than reusable ones. The report recommends against the use of these studies for *promotion* until "uniform methods for conducting such assessments are developed" (although it doesn't discourage such *research* for the purpose of improving products). Buildings provide far more varied circumstances than

consumer products do, however, and even at its most comprehensive the ERG may never give us the clear-cut answers we expect. Until we see more of the ERG, architects would be prudent to follow the guidance of the attorneys general. It is also premature to expect much of life-cycle analysis. As Doug Greenwood notes, "We're still trying to develop a life-cycle analysis methodology. And, to do a good one is very expensive."

What is the client's role?

How far can one take a client into unfamiliar or alternative design approaches? The nature of architectural services is personal, and architects are often reluctant to risk damaging the client-architect chemistry by questioning the client's predilections or values. But you don't always have to.



Many architectural decisions affect a project's environmental burden.

"Everyone is bottom-line oriented," says Gregory Franta, "but all clients have an interest in more environmentally responsive design. They ask what they should do and still remain competitive." Franta notes that even clients who are extremely concerned about up-front costs "are often willing to do a fair number of things that can be done on a normal budget. And as we get to know the issues better, we can do a lot without additional fees." Where specialized research is called for, clients should be willing to pay for it, and deeper knowledge by architects can be a marketing tool. Greenwood gave the example of a client with emphysema who was concerned about indoor-air quality.

To the extent that they don't have noticeable impact on client expectations, many architects simply design environmental strategies into buildings as a matter of course (taking care with solar orientation, for example). But when it comes time to explain complex issues, architects have found many clients

forays into reforestation and restoration. But all too often architects' work for well-heeled clients sends the wrong signal. Does it do much for a reputation, wonders Richard Heede, senior research associate at the Rocky Mountain Institute, when giant houses in hyperaffluent Aspen "use six inefficient boilers to run the house and six more to melt snow off the driveway?"

The environment that architects make

Even when the ERG is more complete, many architects will still be uncomfortable with evaluating the toxic waste produced by one product against the toxic waste produced by an alternative. Luckily, many of the decisions architects make in the everyday design process can do a great deal to reduce a project's burden on the environment (chart opposite). Research has only confirmed that sensitivity to climatic and other site issues can pay big dividends in energy saved and user comfort and satisfaction.

• *Land use:* Though many assail the waste-

community, designing neighborhoods with a walkable mix of functions dense enough to support convenient rail and bus service (see pages 110-119).

• *Site use:* Harnessing local wind, topographic, geological, and microclimatic features, always part of the design process, now is becoming easier by means of computerized analysis. There also remain low-tech ways to understand the nature of the site. James Cutler does topographic surveying of raw sites himself. "To deal thoughtfully with it, you physically engage yourself with the property," he says.

• *Existing structures:* Some argue that reusing an existing building is the most important decision an architect can make. With the help of the Croxton Collaborative, both the Audubon Society and the Natural Resources Defense Council chose aging loft buildings of great character in New York City for their headquarters [RECORD, June 1991, page 38, and October 1989, pages 128-133]. Remodeling and re-using, or adding to, existing space requires fewer resources and doesn't demand new infrastructure.

The heirloom effect

For those who are indifferent to environmentally oriented design, there is a sense that we have to reduce our living standard—that protecting the environment presents a series of unpalatable alternatives. William McDonough rejects this view. "You can't look at it in this mechanistic way. That's the sad fate of solar. You need to deal with these issues in a way that enriches the design palette. We regard environmental issues as both quality and esthetic issues. As you become more informed, you cannot see, for example, a boardroom paneled in mahogany as beautiful, knowing what is happening in the rain forests."

McDonough notes that merely using the minimum of resources isn't enough if it means jeopardizing performance or if the client is dissatisfied and tears it out. He judges his work by what he calls "the heirloom concept." "It's important to do fine work because fine work will last longer. If I design a \$40,000 staircase that is incredibly beautiful, it will never be thrown away."

James S. Russell

"You need to deal with environmental issues in a way that enriches the design palette. We regard them as both quality and esthetic issues"—William McDonough

surprisingly receptive. Institutional and long-term corporate owners, for example, have a stake in providing a built environment that is healthy in both the narrow indoor-air quality sense and in broader ecological terms. Some clients will go well beyond conventional practice. James Cutler, with Peter Bohlin, has persuaded billionaire William Gates to restore a waterfront marsh and damaged forest on the site of his new multimillion dollar residence near Seattle [RECORD, September 1990, page 25]. And Gates has agreed to open a mill to reprocess used timber so that no old-growth trees need be used to construct the house. "We're going to have as good if not better lumber than you can get anywhere else in the world," says Cutler. "We don't know yet whether it will work economically, but Bill has supported it." It can be argued that only a healthy client like Gates can afford these

fulness in America's love of the automobile, evidence increasingly shows that development strategies that favor low-density auto-oriented uses contribute greatly to auto dependence, with consequent air pollution, traffic congestion, noise, land despoliation, and polluted runoff. Residents of New York City and Chicago, for example, consume only two-thirds the auto fuel used by residents of sprawling Houston and Phoenix, according to Peter W. G. Newman and Jeffrey R. Kenworthy (in the *APA Journal*, Winter 1989). Analysts Harry W. Richardson and Peter Gordon have reported in *Urban Land* that Americans are making increasing numbers of "nonwork" auto trips, testimony to the fact that in many suburban residential areas and work places the purchase of a drugstore item or quart of milk requires getting in the car. Increasing numbers of architects are looking at the scale of the

AutoShade Version 2.0

AutoShade-Kitchen with "full shade" takes only a minute or two. Rendering was done at low resolution—320 by 200 pixels—and 256 colors, and could have been done faster at 640 by 480 pixels and 16 colors.

Everything is included in this upgrade. This version is meant to be used with Release 10 or 11 of AutoCAD. As with earlier versions, users create shaded images inside AutoCAD, using a variety of light sources and "cameras" (eye points). The lights cast shadows and interact with surface textures to simulate reflections. The resulting files are then manipulated outside of AutoCAD, in AutoShade itself.

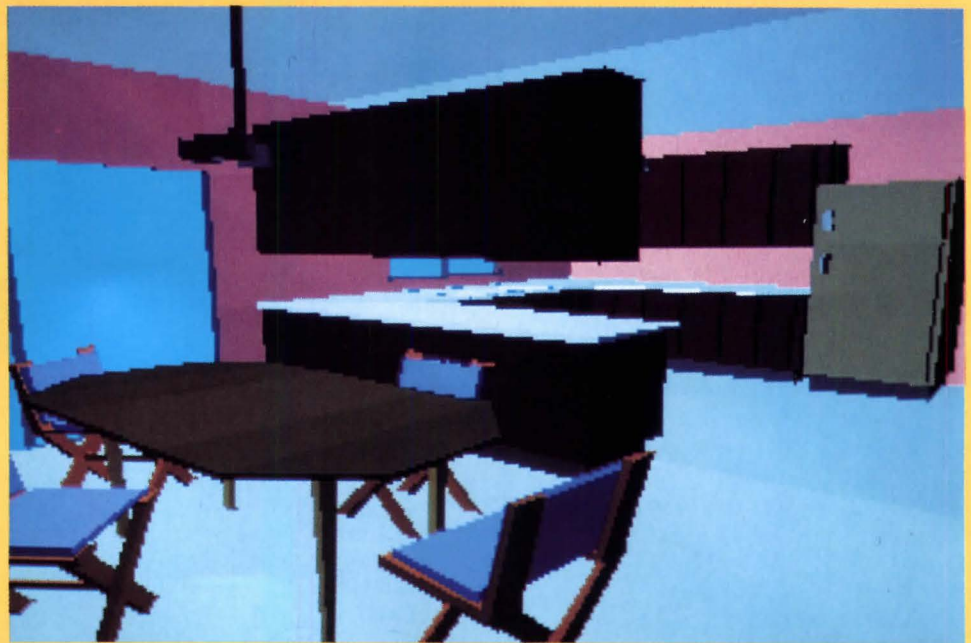
This version's menu structure is far superior to Version 1.1's, and it includes a smoothing option that erases the ridges between facets on a curved surface. In addition, Pixar's RenderMan is available as an extra-cost option; for those with fancy monitors or access to devices for creating color slides, the final image can be near photo quality. AutoFlix Version 2, an animation package, is standard. This version of AutoFlix supports VGA monitors, so the final animated image can be quite realistic—although not photo quality. AutoFlix can animate a walk-through of an unshaded image, too—a nice shortcut.

In general, all the steps to creating rendered images are straightforward and logical but everything is astoundingly time-consuming. And quirks such as shading objects partially inside the focal plane and partially outside force many retries.

RenderMan itself can use the Weitek 3167 floating-point coprocessor chip to cut rendering times roughly in half. Most computers cannot hold the Weitek if they already have an 80387 coprocessor or compatible installed, however. And you'll need the 80387 for AutoCAD itself. We successfully tested AutoShade in an IBM PS/2 Model 80 with both Weitek and Intel 80387, and with Cyrix 83D87 FasMath as an 80387 substitute.

Images can be saved to a TGA or TIFF file; such files are standard at service bureaus and in graphics and desktop publishing packages.

Architects we showed the package to said they'd use it more for rendering special-order fixtures, lights, and decorative work than for entire rooms or structures. Renderings of such "small" objects take only a few minutes. **Circle number 307**



What To Expect

Equipment required: Computer equipped with 80386, 80386SX, or 80486 CPU, 4MB of random-access memory (6MB strongly recommended), coprocessor, and mouse or digitizer. Reserve plenty of fixed disk space, too. We filled 80MB with one animation. Use equipment offering at least a 16-bit video-frame buffer to see good color on the screen.

Vendor: Autodesk, Inc., 2320 Marinship Way, Sausalito, Calif. 94965, phone 415/332-2344. The price is \$500 without RenderMan and \$1,000 with it. Service, as with other Autodesk products, is through dealers. For older versions, the upgrade without RenderMan is \$100, and with RenderMan, \$500.

Manuals: Standard Autodesk, a user guide for AutoShade, another for AutoFlix, a superb tutorial, and 100 pages of installation tips. The material assumes you are thoroughly familiar with AutoCAD itself.

Ease-of-use: The biggest problem is an old one: you set up the view in one program, AutoCAD, and do the rendering in another, AutoShade. Nevertheless, simple things are essentially intuitive, and complicated things are, well, complicated. That's about the best

you can ever expect from such full-featured software. Colors can be selected interactively within AutoCAD.

Error-trapping: The biggest danger is running out of fixed-disk space in the middle of a task, even though the image files are compressed. You can bring cameras and lights so close together while setting up scenes to shade that you can't easily select one or the other for moving. Each light gets a name. Get into the habit of using only six-character names, because RenderMan will add two extra characters to point-source lights.

Texture maps don't always work well on surfaces formed by extrusion; the texture maps appear extruded, too.

The default file structure is neither TGA nor TIFF; it is AutoCAD's own RND format. A 32-bit TGA file will lose color information when passed through a 16-bit Targa card.

You will be tempted to build automatic scripts—macros—to handle nightlong tasks. Make sure they do not contain interactive prompts. When you run the scripts in batch mode, the prompts stop the script.

In contrast to September's focus on the private realm of interiors, we turn our attention this month to the architect's more public role as a shaper of cities. That role finds physical form in two major museum additions in London: Venturi, Scott Brown's Sainsbury Wing of the National Gallery (page 72), which was born in controversy and continues to elicit mixed reviews, and Foster Associates' Sackler Galleries for the Royal Academy (page 88), an uncharacteristically understated (for Foster) insertion. Far less understated is Richard Meier's scheme for the J. Paul Getty Center in Los Angeles (pages 80). Though hard at work on this cultural complex since 1984, the Getty has kept Meier's design under wraps—until now. In his report Cliff Pearson calls the project a marriage of buildings and landscape, revealing “the closet Classicist that Meier has perhaps always been.” Similarly, Roger Kimball's re-evaluation of Louis Kahn on the eve of a retrospective exhibition uncovers the Modern master's Classical roots (page 94).

Andres Duany and Elizabeth Plater-Zyberk have been shaping new cities and recasting existing ones through a series of town-planning charettes meant to re-establish America's urban values. Beth Dunlop reports on their work (page 110). William Rawn's performance pavilion in Lowell, Massachusetts, has given the old mill town a new public gathering place (page 104), while Skidmore, Owings & Merrill's work for Columbia Presbyterian Medical Center in New York (page 120) creates order out of a big-city hospital's typically chaotic web. *P. M. S.*

To Mannerism Born

Completion of the Sainsbury Wing will not likely end debate over its place in London's streetscape—or its role as a house for art.



*Sainsbury Wing
The National Gallery
London, England
Venturi, Scott Brown and
Associates, Architects
Sheppard Robson,
Associated Architects*





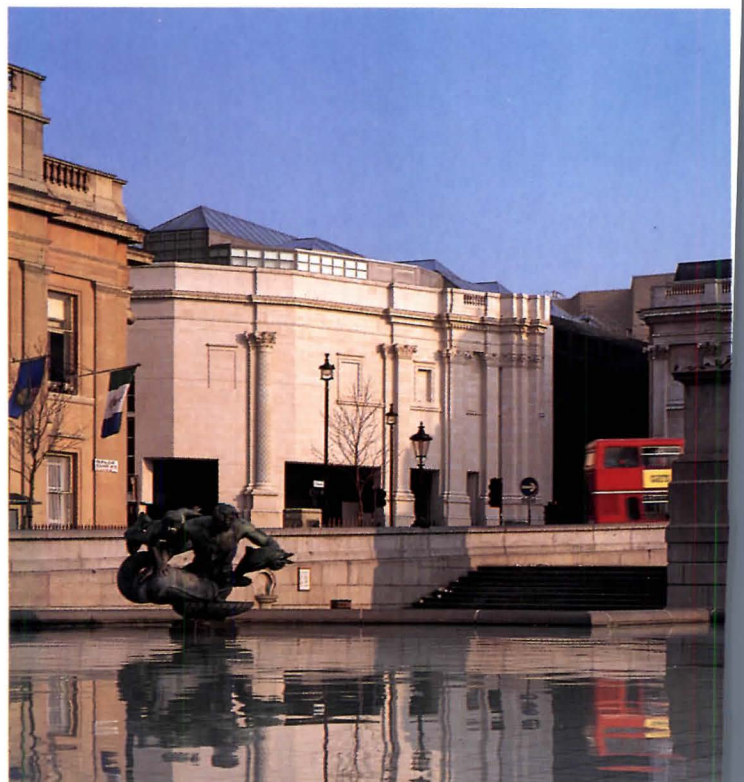
1



2



3



4

Throughout the highly public design and construction of the Sainsbury Wing, critics have focused on the project's role in Trafalgar Square (even though the corner site's relationship to the square is ambiguous). With the extension to William Wilkins's 1838 original National Gallery now complete, it is clear that Venturi, Scott Brown and Associates lavished far more of their attention *inside* on the new galleries. Here they faced the modern conflict between the architect, who wants a room that palpably seems part of the world outside with changing light and views; the curators, who want to control every aspect of light, temperature, and humidity; and 4 million annual visitors, who expect some realistic experience of the collection—in this case, the gallery's diminutively scaled and extremely precious Early Renaissance holdings. VSB embarked on a daring course by trying to please all three constituencies.

In choosing Sir John Soane's 1814 Dulwich Gallery as a model for the exhibition rooms, the architects found a way to introduce natural light that visibly changes over time. The rooms are small in plan yet lofty, which lets high clerestories illuminate the overall space while allowing the curator to keep the amount of light that actually falls on the paintings low [see RECORD, May 1989, pages 150-153]. It works; the rooms do appear well lit. In the galleries the architects have indeed accomplished all that they set out to do—a staggering achievement considering the number of unhappy marriages between art and architecture that have occurred in this century.

Elsewhere, the architects' intentions seem less clear, and the results more ambiguous. A grand stair, its dark gridded glazing a reference to Mies van der Rohe, according to Scott Brown, carries visitors to the galleries under punched-metal arches. While the Dulwich model for the galleries is wonderfully resonant—and doesn't depend on a prior knowledge of history to be appreciated—both the Mies allusion and the arches are gratuitous. (Incidentally, the arches, if more fully explored, might have become an ingenious take on the 19th-century English engineering that inspired early Modern architects.)

On the outside, the Sainsbury Wing is so self-effacing that it's hard to imagine what all the noise was about. Deferentially chamfered at the corner, the addition is at its softest and most romantic from the steps of St. Martin in the Fields (overleaf). Close up, VSB's patented Mannerist devices are visible—the transformation from Wilkinsian pilaster to engaged column (1, opposite), the transition from decorated to plain entablature, and the progressive flattening of blind windows. Unfortunately, these flourishes do not serve any discernible theme. Even the tension between interior and exterior is lost because the glass facing Jubilee Walk and within the entrance portico is too deeply tinted, the mullions too dark to be visible (2, 3). Instead of seeing a gridded-glass conservatory within the Portland-stone envelope (as design models indicate we should), we see only the roof's light monitors, which look unresolved on the exterior because they follow the order of the interior (4).

With the publication of *Complexity and Contradiction in Architecture* (1966), Venturi and Scott Brown through their writings and projects opened the eyes of a whole generation. They showed us how architects of the past—whether by intention or accident—misread the ordering systems of their predecessors, giving us marvelous "mistakes" by Hawksmoor and Lutyens. If the Sainsbury Wing's exterior doesn't give us a genuinely new interpretation of the past (did the rancor surrounding the project take its toll?), the pleasure the galleries give more than makes up for it.

James S. Russell

Viewpoint, by Martin Pawley

The extension to the National Gallery in Trafalgar Square has had a checkered history ever since the site's purchase in 1959. More than 80 architects prepared designs in 1982, when the Thatcher government proposed underwriting the extension by including commercial space, and the winning scheme was the subject of famous criticism by the Prince of Wales. By the time the Sainsburys, ultimate donors of the wing, drew up their short list in 1985, the portents were not good. So when Robert Venturi's proposal was unveiled in 1987, I thought he had achieved a miracle. Not everyone agreed. Confronted with a solution that defied all their predictions, many critics yelled themselves hoarse, bewailing the appointment of a jokey American architect and claiming he had designed the building on a Clipper Class napkin. But Venturi hadn't played any jokes. He had played, but with the restraint of a master. As built, the wing faithfully reflects VSB's original scheme. Every chamfered impost, every baroque modulation, every broken molding and chiseled Roman letter is exactly where it was on the drawings. This fidelity proves that the building was thought out, not dressed up.

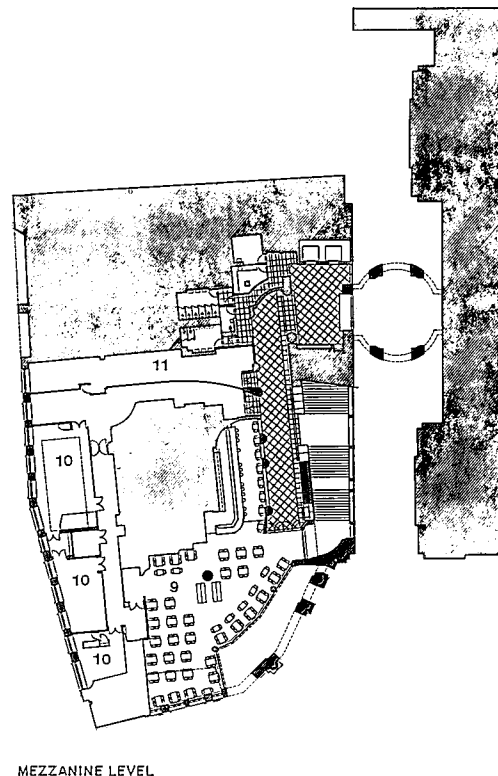
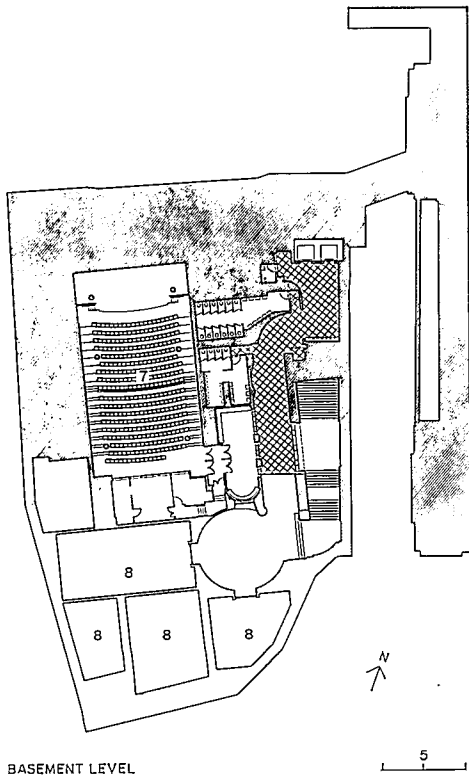
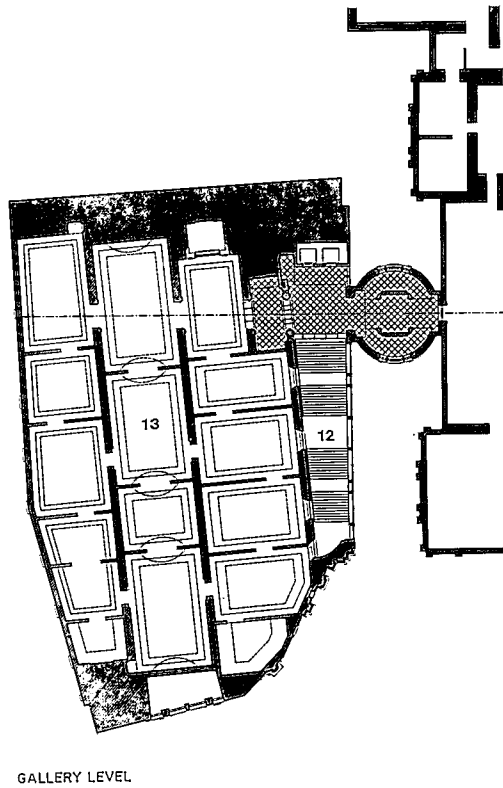
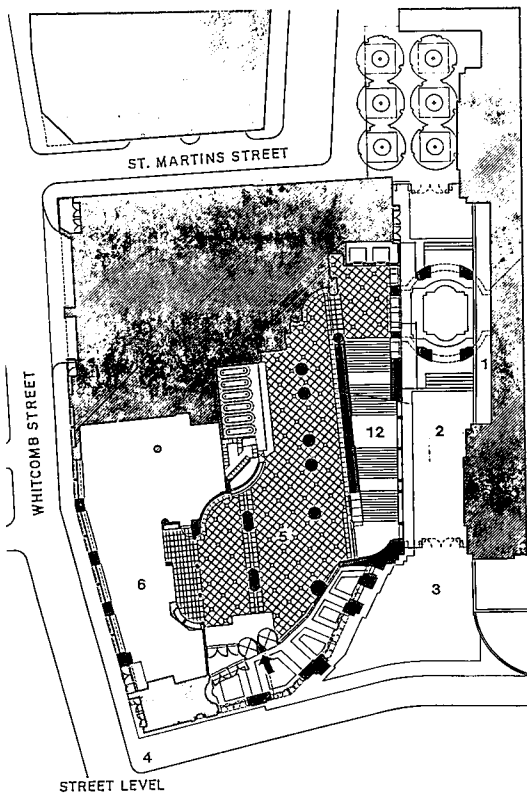
Despite all the fuss it has caused, the Sainsbury Wing is only an extension to an overrated original on a site of overrated importance. One of the reasons it did not include another 20,000 square feet of gallery space was the mundane one that only a separate building could avoid over \$7 million in value-added tax.

Though he was commissioned as an artist and intellectual, Venturi understood these matters. He dealt straightforwardly with all the contextual and gallery directives of the client, and has produced a building that has a number of pleasing elements: the thinness of the Trafalgar Square facade (deliberately no more than a modeled screen); the literal and symbolic fadeout of the screen's classical detailing as the eye moves away from the Wilkins building; the main openings in the facade—Dixwell firehouse-sized—that cleverly afford views from the mezzanine without appearing to; the blank brickwork walls on tight, narrow streets at the sides and back where no elaboration is necessary.

Great architecture must often be made of daring Faustian bargains, and Venturi pulls no punches in stuffing a shockingly low entrance hall under the lofty spaces above. The visitor progresses to a surprisingly unobvious "grand" staircase. Its black granite steps lead up a tall, echoing slot between a sturdily framed glass wall (through which the original building's facade is visible) and an even more massive stone-faced wall. The stair is topped by flimsy sub-Victorian fake trusses. The stone of the inner wall is punched with such abandon that you can almost feel its weight.

*All the scrimping on headroom below is transformed to an enormous height at the top of the stair, where the visitor reaches the 16 main galleries. Here VSB has produced an Escherlike succession of slightly varied, kiln-shaped rooms, all too tall and too indirectly lit. Experts in Renaissance art apparently insisted upon gray as the best backdrop to the gold pigment prevalent in the paintings, but it has a suffocating effect on everything else. Venturi's elaborately slashed, cut, broken, bent, and distorted classical detailing is muted, like a primer-painted car body. The effect on the visitor is a chilling claustrophobia—the child from *The Shining* may pedal through at any moment.*

Martin Pawley is an author and architectural critic in London.



The Sainsbury Wing was designed around the main-floor galleries (plan near left), which are set at the same level as the original building, one story above the street. The wing's oblong form was shaped by surrounding streets, and was chamfered at Trafalgar Square (lower right in drawings) so that observers can see it as visually extending the Wilkins building. The architects permitted these external circumstances to distort the shapes of the essentially rectangular rooms and their relationship to each other. A skewed vista from the top of the grand stair (opposite) focuses on Cima's altarpiece, The Incredulity of Saint Thomas. The stair is also the arrival point for visitors from the main gallery; they cross Jubilee Walk through a knucklelike connector. The partitions were designed to be permanent for a collection not expected to change. (The architects placed flexible, electrically lit exhibition spaces in the lower basement to accommodate traveling exhibitions.) The design squeezes two levels comprising lobby, store, restaurant, and conference rooms (as well as a huge volume of back-of-the-house space serving the entire museum) between the street level and gallery levels.

1. Wilkins building
2. Jubilee Walk
3. Trafalgar Square
4. Pall Mall
5. Entrance foyer
6. Gallery shop
7. Lecture theater
8. Temporary exhibition
9. Restaurant
10. Conference suite
11. Computerized information room
12. Grand stair
13. Early Renaissance and Northern European galleries





In rethinking Soane's Dulwich Gallery model, the architects have served the visitor: the galleries are small enough to be intimate, high and light enough to seem uncrowded (opposite). The paintings are widely spaced and the doors large to permit easy passage of crowds (the moldings break at these openings in a bit of Venturi, Scott Brown Mannerism). The gradation from natural light high in the room to the completely controlled light on the paintings is nearly invisible, allowing the limpid colors of the Renaissance and the gold frames to glow against the cool gray walls. The grand stair (top left) filters sun from windows into a gallery (top right). Even paintings on the bridge to the Wilkins building are protected from direct light (middle).

Credits

*Sainsbury Wing
The National Gallery
London, England*

Architect:

Venturi, Scott Brown and Associates—Robert Venturi, principal-in-charge; David Vaughan, project director; John Chase, John Hunter, Denise Scott Brown, John Rauch, Steven Izenour, William Algie, Ed Barnhart, Britt Brewer, Andrew Erstad, Steve Glascock, James Kolker, Jeff Krieger, Perry Kulper, Brian LaBau, Robert Marker, Richard Mohler, Tom Purdy, George Ross, Mark Schlenker, Garreth Schuh, David Singer, Richard Stokes, Nancy Rogo Trainer, Maurice Weintraub, Mark Wieand, project team

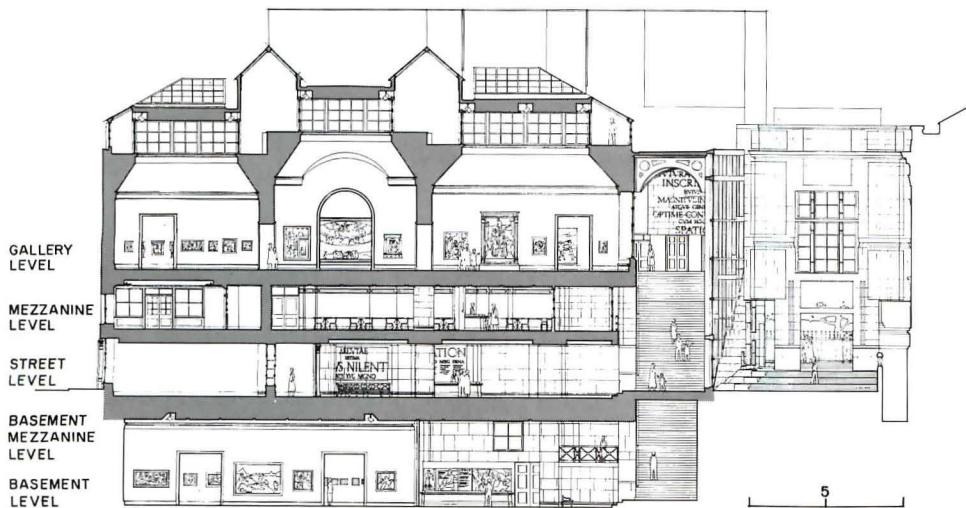
Associated Architect:

Sheppard Robson

Engineers: *Ove Arup and Partners (structural); Ove Arup and Partners with Jaros Baum and Bolles (mechanical)*

Consultants: *Jules Fisher and Paul Marantz, Inc. (lighting); Arup Associates (acoustical)*

Construction Manager: *Sir Robert McAlpine Construction Management Lt*



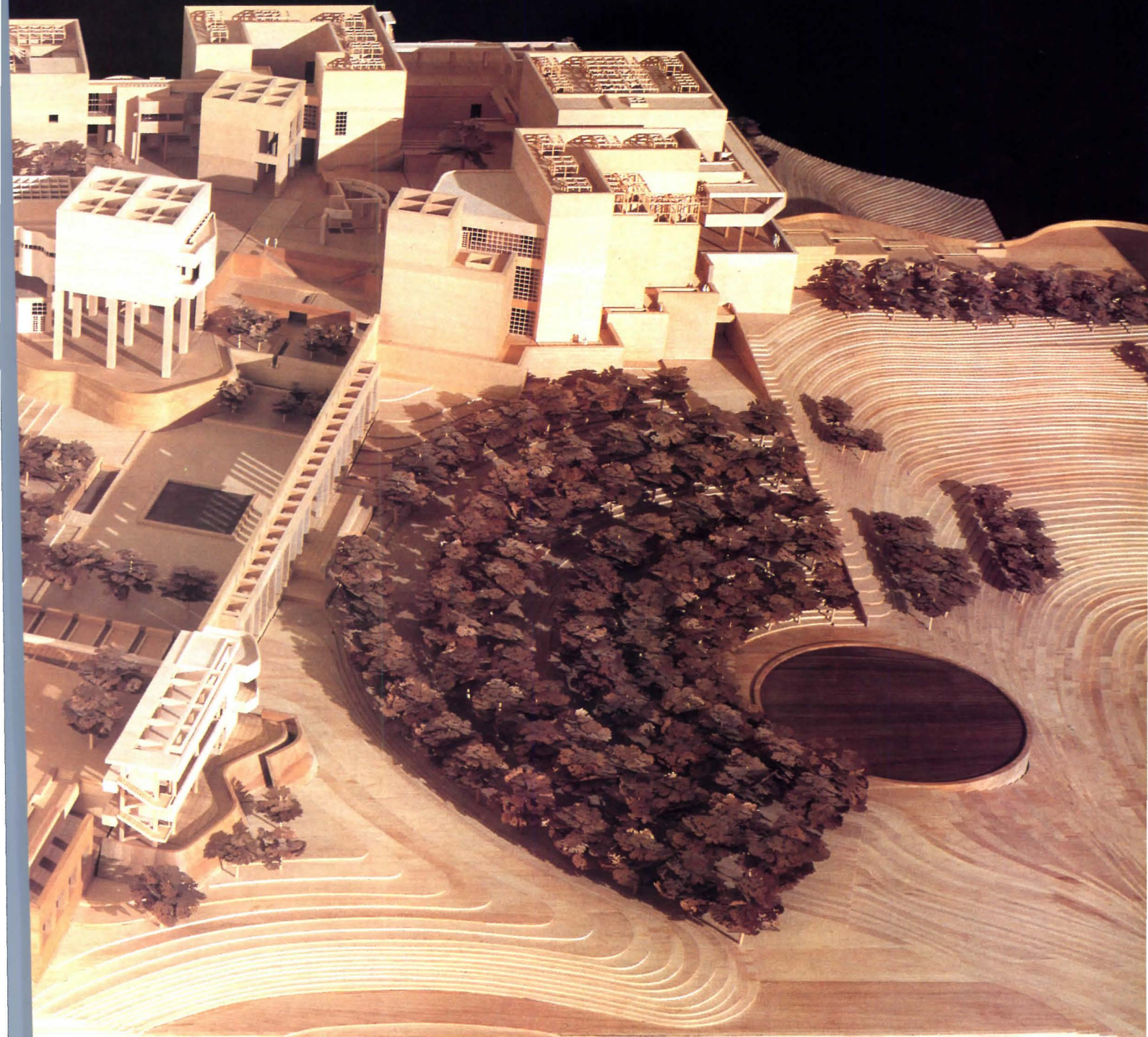


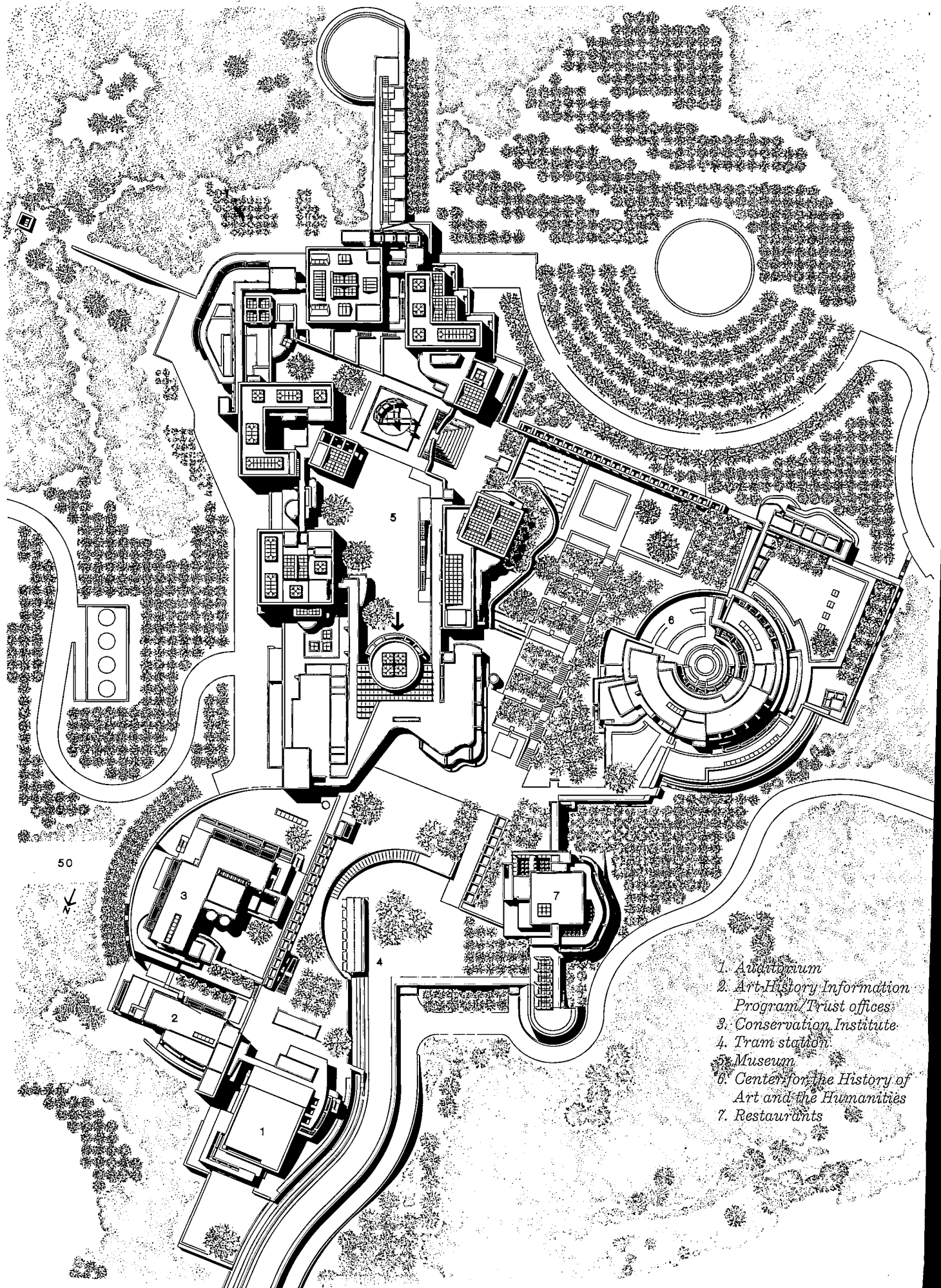
Unveiling a Modern Classic



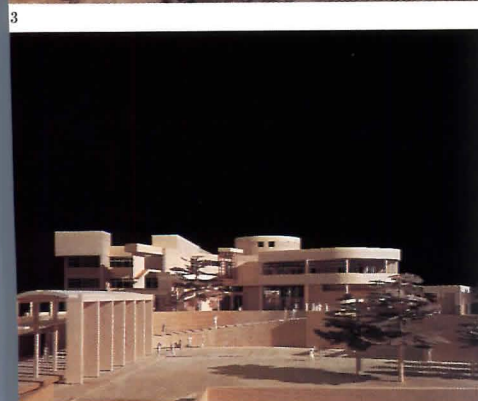
Richard Meier's long-awaited designs for the Getty Center show his skill in applying Modernism to a Classical program.

*J. Paul Getty Center
Los Angeles, California
Richard Meier & Partners,
Architect*





1. Auditorium
2. Art History Information Program/Trust offices
3. Conservation Institute
4. Tram station
5. Museum
6. Center for the History of Art and the Humanities
7. Restaurants



View from the north
View from the south
View from the east
View from tram station

No one can accuse Richard Meier of turning historicist or playing any Postmodern games with his designs for the J. Paul Getty Center in west Los Angeles. No broken pediments or cute Mediterranean allusions for Meier, not even on a \$360-million project like this one. But the Getty Museum—famous for its Roman-styled villa in Malibu (which will remain as a home for ancient art) and its collections of European paintings, illuminated manuscripts, and decorative arts—has revealed the closet Classicist that Meier has perhaps always been. Hiding behind the white-enameled panels and Corbusian forms of his completed buildings have been the disciplined plans and fine details of an architect who believes in Vitruvius’s dictum on architecture calling for “commodity, firmness, and delight.” The Getty commission, though, brings these aspects of Meier’s work to the fore, while offering him the opportunity to weave his architecture into a landscape worthy of a Renaissance prince.

The Getty Trust’s deep pockets and its grand vision of a complex encompassing a new museum, a Center for the History of Art and the Humanities, a Conservation Institute, various educational programs, an auditorium, restaurants, and offices have made this project one of the most talked about since Meier was hired in 1984. Construction begins soon and is set to be completed in 1996.

According to Meier, the spectacular 110-acre site in the Santa Monica Mountains exerted a powerful influence on the overall layout of the complex. Early sketches, dated September 1986 (page 84), show how Meier aligned the project’s six major buildings on the site’s two intersecting ridges and responded to the 22.5-degree bend in the San Diego Freeway on the eastern edge of the property by shifting a grid that would later determine the orientation of elements such as the Conservation Institute and the museum’s temporary-exhibits gallery. The final plans (page 85) show a tighter, more cohesive campus on top of the hill, connected to an underground garage and entry pavilion three-quarters of a mile away by elevated tram.

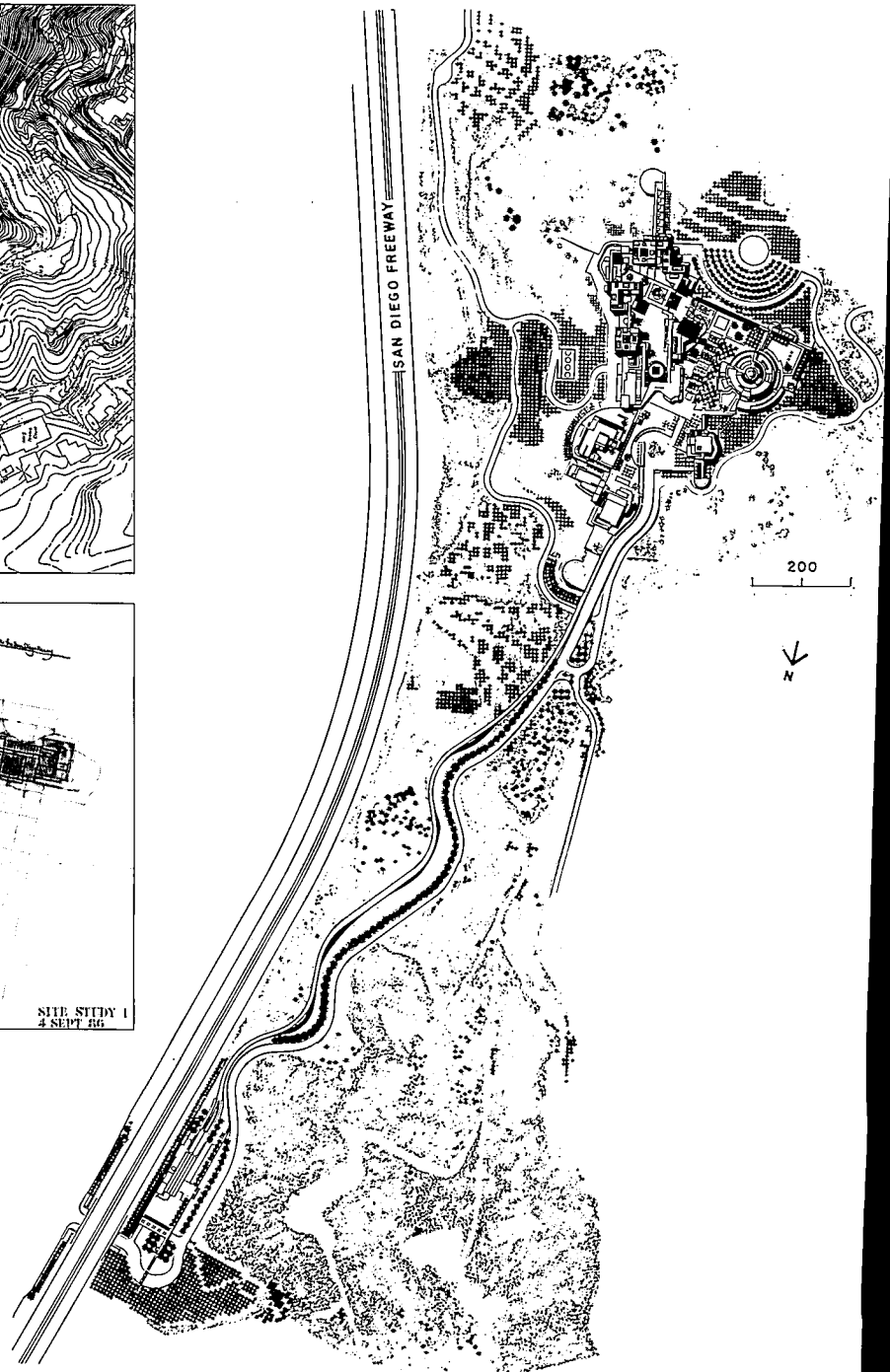
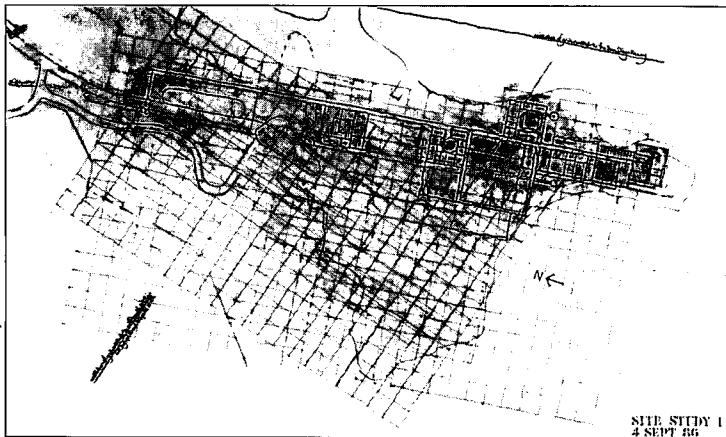
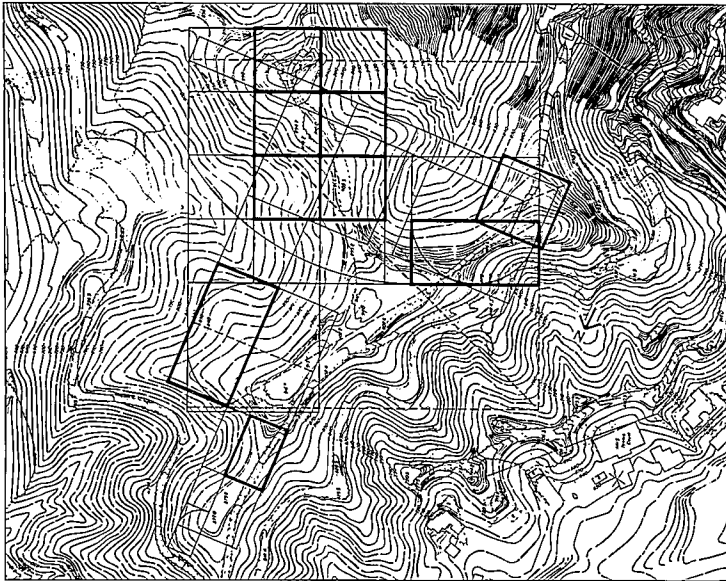
Just as Renaissance palaces often presented a grand facade to approaching visitors and a less imposing face to backyard gardens, Meier treats the Getty’s long freeway side on the east as an edge and breaks down the massing of the complex on the west where it overlooks an adjacent residential area and the Pacific Ocean. Between the twin ridges on which the major buildings sit, the architect plans a series of landscaped terraces ending with a circular reflecting pool. The museum itself is a set of five gallery pavilions attached to a cylindrical entry atrium and surrounding a garden courtyard (plans, page 85). Each pavilion rises two stories above grade with paintings in skylit galleries on the upper floor and light-sensitive art on the lower one. Breaking down the separation of outdoors and in, Meier connected the pavilions with covered or glass-enclosed bridges—some on the ground level, others above. Although the galleries unfold in chronological order, according to the period of their art, Meier’s plan allows visitors to relax in the courtyard between pavilions and chart their own course from one gallery to another.

The complexity of the Getty’s program and the desire to give each element a distinct identity made finding a common theme for the entire complex a daunting task. “Our biggest challenge was keeping it all together,” says Meier. The center’s carefully planned system of paths helps solve the problem, moving visitors from indoors to covered courtyards, outdoor gardens, and then back indoors—always relating architecture to what’s all around it. “The relationship of buildings to landscape,” explains Meier, “is explored in this project more than anywhere else in my work.” *Clifford A. Pearson*

Early schematic sketches from September 1986 (below left) show how the site's topographical features shaped Meier's designs, leading him to arrange the center's major buildings along two ridges that intersect at a 22.5-degree angle (the same as a bend in the San Diego Freeway on the site's eastern edge). Meier recognized the importance of this angle by laying a shifted grid on top of

the center's dominant grid. Most visitors to the Getty Center will park in a 1,200-car underground garage at the northern tip of the site and then take an electric tram three-quarters of a mile up the hill to the main campus. The six major buildings occupying the campus comprise 940,000 square feet and are set within 24 acres of gardens, courtyards, and terraces. Another 86

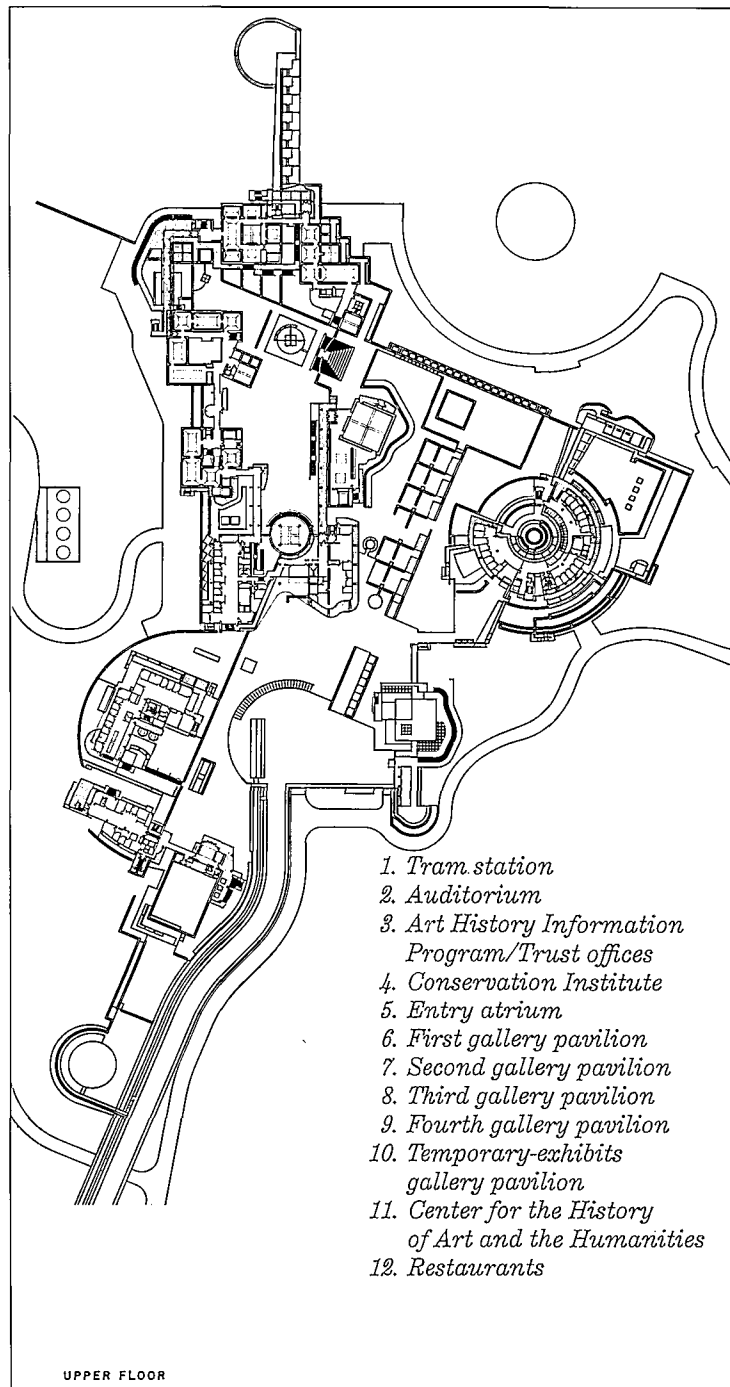
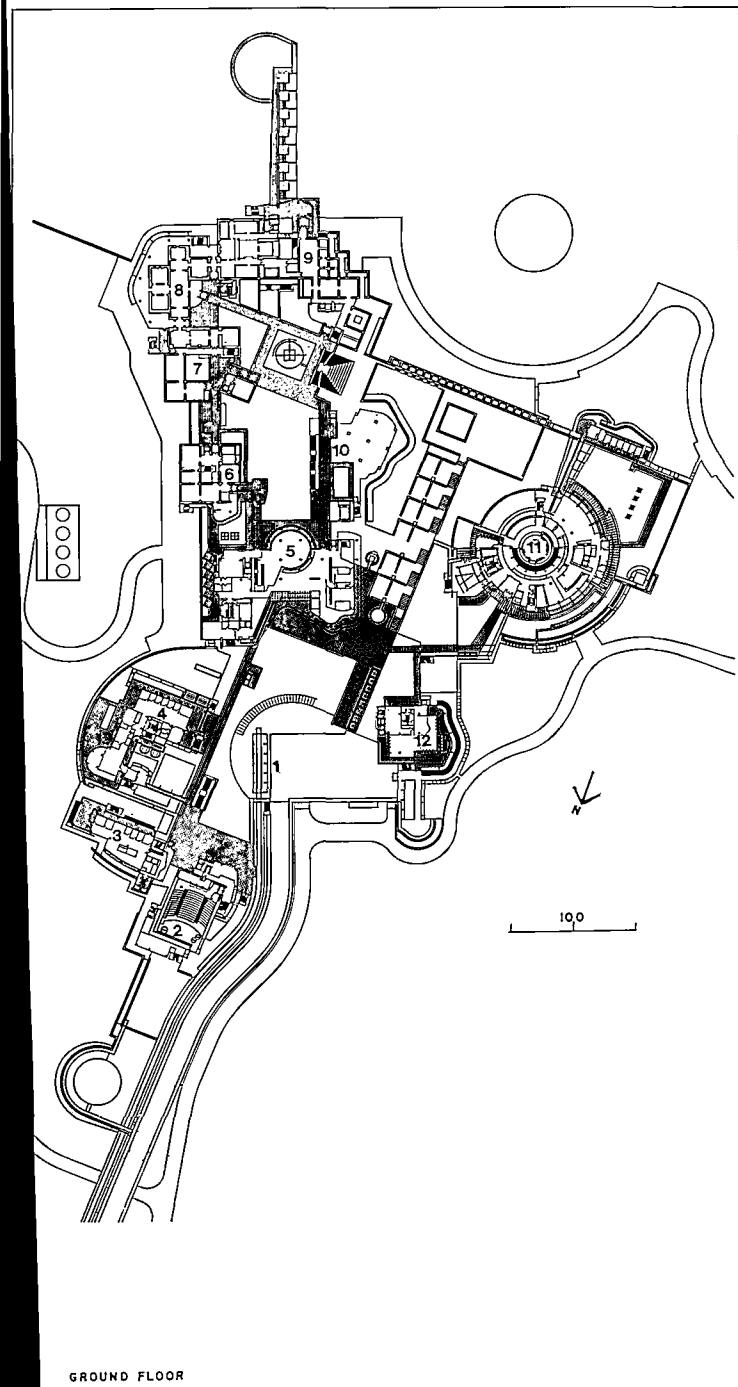
acres will be preserved in a natural state. "I had hoped to do something like the Villa d'Este in Tivoli with all its fountains," says Meier, referring to one of the 16th century's grandest gardens. "But it's impossible to use all that water today in Southern California." Instead he modeled the Getty's series of cascading outdoor steps, ramps, and terraces on the Villa Lante in Bagnaia.



The Getty Center will take advantage of the Southern California climate, offering visitors many chances to move from indoors to outdoors and back inside. By tying the buildings closely to the landscape, Meier ensures that the museum and its sister institutions will not be hermetically sealed environments. Although underground parking for 350 cars will be available on top of the

hill, most visitors will arrive at a barrel-vaulted tram station (1). Just east of the station will be the Conservation Institute (4), a building that Meier calls the most "Californian" in style because it wraps around a courtyard and features twin exterior elevators and outdoor stairs. Just north of the Institute will be a building for the Art History Information Program and the Getty Trust

offices (3) and a 450-seat auditorium (2). West of the tram station will be a restaurant/cafe building offering outdoor and indoor dining (12). South of the station will be the museum with its entry atrium (5) and its five gallery pavilions (6, 7, 8, 9, 10). Set off on a separate ridge will be the Center for the History of Art and the Humanities (11), a research institution mostly for scholars.



1. Tram station
2. Auditorium
3. Art History Information Program/Trust offices
4. Conservation Institute
5. Entry atrium
6. First gallery pavilion
7. Second gallery pavilion
8. Third gallery pavilion
9. Fourth gallery pavilion
10. Temporary-exhibits gallery pavilion
11. Center for the History of Art and the Humanities
12. Restaurants

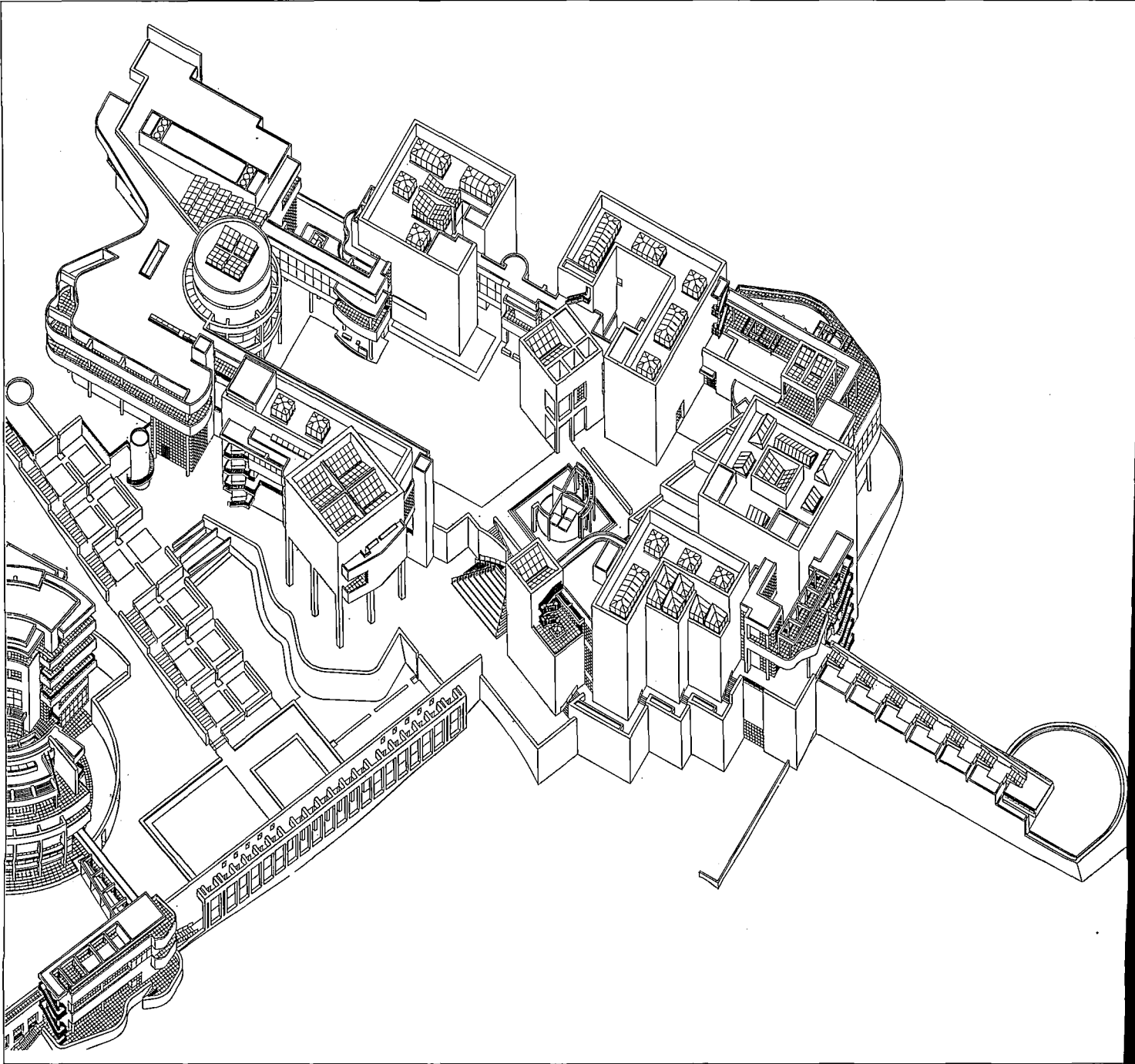
GROUND FLOOR

UPPER FLOOR

The 360,000-square-foot Getty Museum (below) will be a series of gallery pavilions wrapping around a 61,000-square-foot garden courtyard. Galleries in four of the pavilions will look onto atriums, three of them covered by skylights and the fourth open to the sky. The two-story pavilions will present paintings in skylit galleries on their upper floor and more light-sensitive art such as

drawings and manuscripts below. Arranged in chronological order, the galleries will start with the earliest art in the pavilion just south of the lobby and then move clockwise until reaching the pavilion for temporary exhibits. The pavilions will be connected to each other with enclosed and covered bridges that will also let visitors exit to the courtyard between galleries. Such a plan

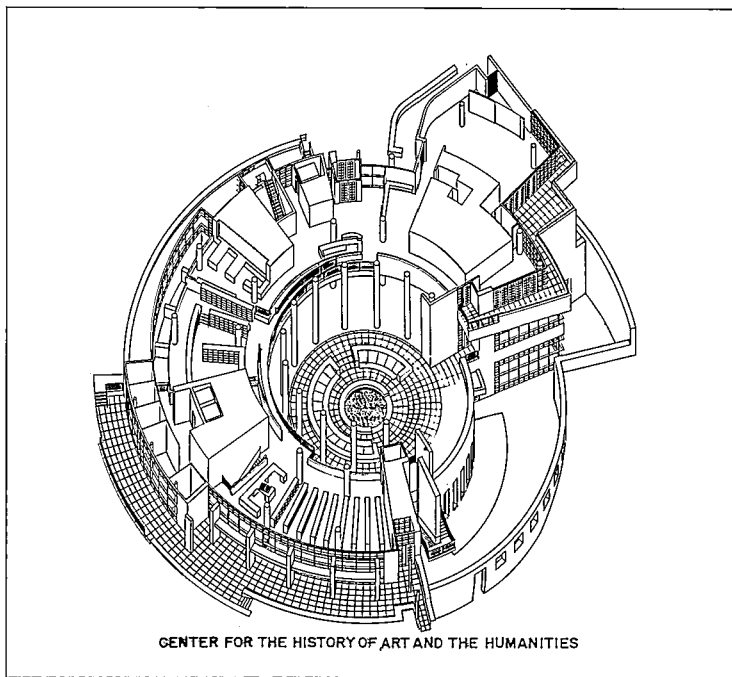
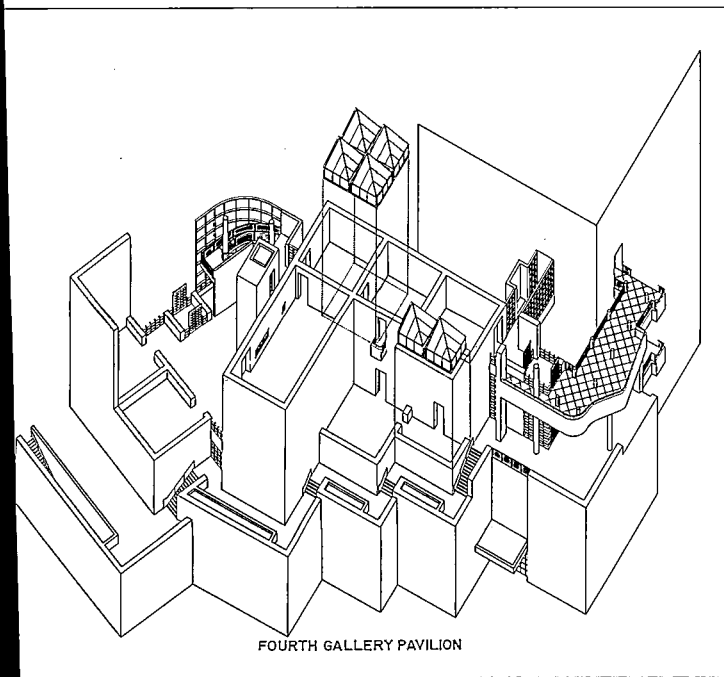
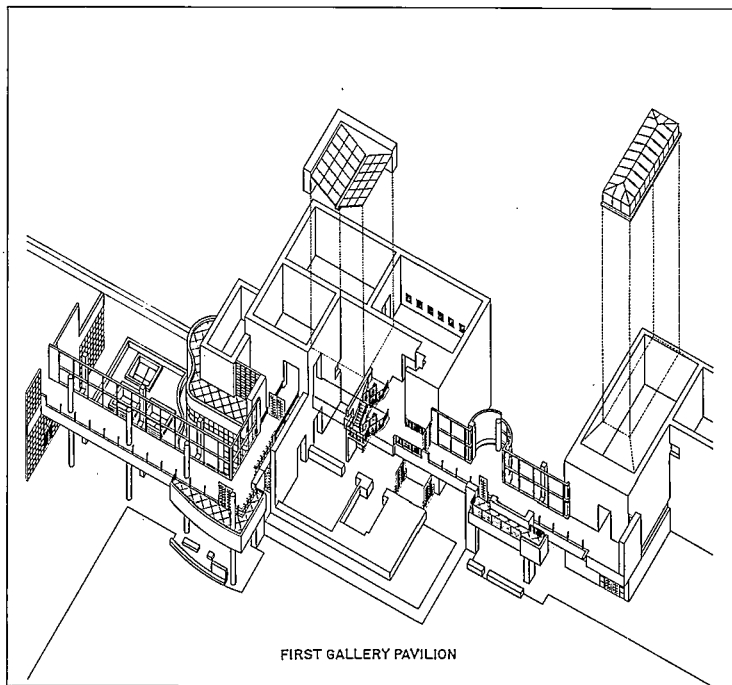
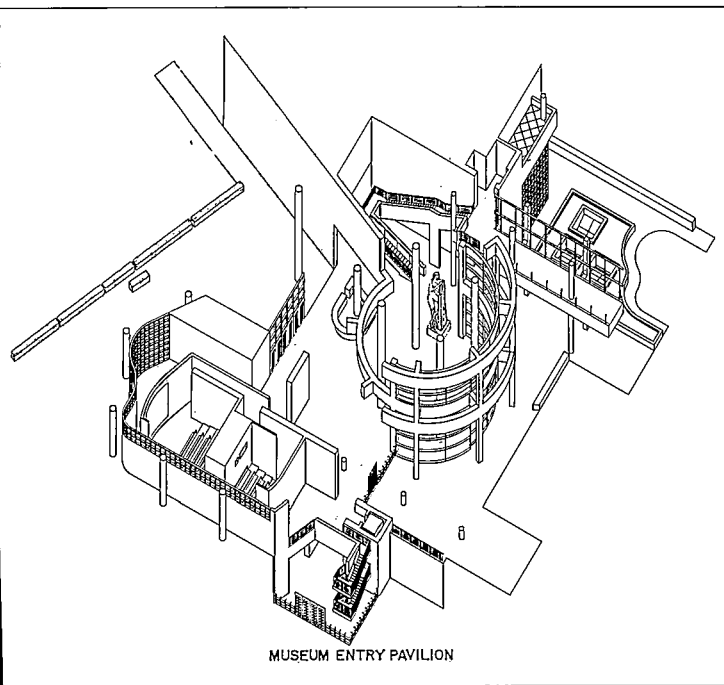
should encourage visitors to chart their own course through the collections, reducing crowding in the first galleries. The buildings at the Getty Center will be concrete structures clad in beige travertine and enameled metal panels. Because of its more formal program, the museum will have the most stone, while the other buildings will feature more metal paneling and glazing.



The museum's entry atrium (below) will feature a two-story hall with two orientation theaters and a bookstore. A covered second-story bridge will lead to the first gallery pavilion (below) where the earliest art in the museum will be shown. (Ancient Greek and Roman art will remain at the Getty's villa in Malibu.) The fourth gallery pavilion (below) will exhibit 18th- and 19th-

century art as well as photography. The suites of galleries in each pavilion will be Classically proportioned rooms with wainscoting, oak floors, and traditional architectural detailing—elements not found in Meier's previous work. "Richard saw in this project an opportunity to re-establish his connection with his 19th-century ancestors such as John Soane, Carl Friedrich

Schinkel, and Wilhelm von Klenze," says the museum's director John Walsh. The plan for the Center for the History of Art and the Humanities, the Getty's research arm (below), features a continuous ramp descending through loftlike reading areas and into a tall reference room. Meier adopted the circular plan to reflect the research center's interdisciplinary approach.



Royal Wedding

*Sackler Galleries
The Royal Academy
London, England
Foster Associates, Archi*



Using existing light wells between the two older buildings, Foster has created new central circulation space for the entire Royal Academy as well as direct access to the new Sackler exhibition galleries. A Palladian-style wall of the 18th-century Burlington House is now visible through the chrome-trimmed polished glass of an elevator enclosure that nearly fills the 14-foot-wide space (opposite).

Although much has been spoken and written about “marriages between the old and the new,” about compatibility and fitting in, examples of new buildings that are truly successful close neighbors of existing ones are rare—witness the controversial Sainsbury Wing of the National Gallery in London (see page 72, this issue). Also in London, at the venerable Royal Academy, Norman Foster has skillfully transformed old galleries into a pristine new exhibition space while providing an unabashedly up-to-date way to reach them.

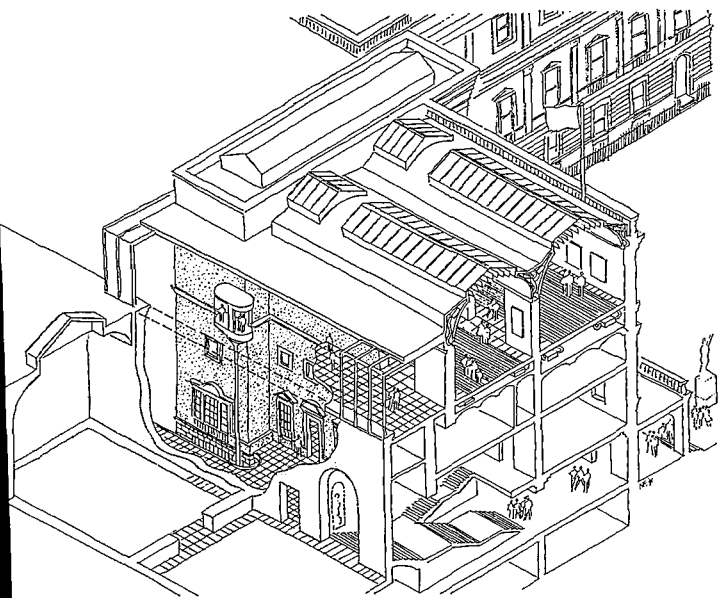
Britain’s leading high-tech architect has not been shy bringing the late 20th century face to face with the past. Like many older European institutions devoted to the arts, the Royal Academy occupies distinguished historic premises. The RA, a venerable force in British art for the past two centuries, was founded by King George III in 1768 as a private institution devoted to the teaching and exhibition of fine arts. In 1868 the RA moved to Burlington House, a 17th-century building in Piccadilly that had been remodeled in the Palladian style by Lord Burlington. At that time the Academy built a series of exhibition galleries and teaching rooms in a separate structure located in the garden behind Burlington House, in addition to a series of diploma galleries on the second floor of the house itself.

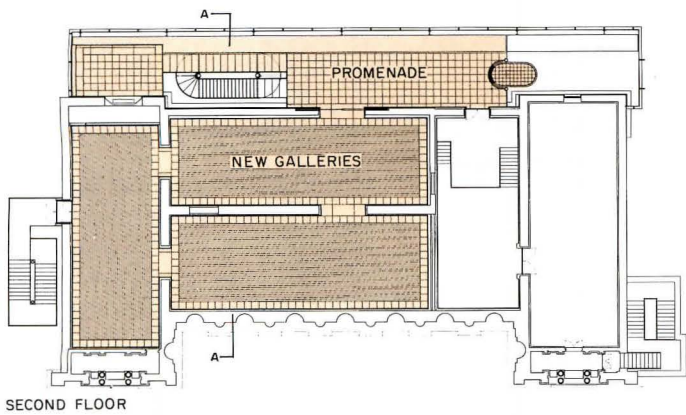
Foster’s assignment was essentially twofold: to provide badly needed toplit galleries in place of the little-used diploma galleries, and to devise a means of moving both visitors and works of art vertically to all of the galleries. Toward the latter end, Foster placed a new stair and elevator in the 14-foot-wide slot between Burlington House and the 19th-century gallery structure in the garden. His work has had to be uncharacteristically self-effacing (it is, in fact, invisible until one is inside the building). As visitors move around the main stair on the ground floor to either the new stair hall or the new elevator, they can admire the restored outer walls of the 18th-century garden front of the old Burlington House, which have been revealed for the first time in 120 years. Also now visible is the Victorian outer wall of the main galleries.

Foster has taken a difficult problem and created a tour de force by making this narrow space into a hall of light. The infill structure is held away from the older structures by a walkable edge of glass. Light filters down through the glass treads of a meticulously detailed stair and through a glass-enclosed elevator. At the second floor, visitors approach the exhibition galleries via a new sculpture promenade, where lightweight structural framing is delicately expressed between panels of translucent white glass. This transitional space is the new home for the Royal Academy’s greatest treasure—Michaelangelo’s tondo of *The Virgin and Child with the Infant St. John*—which Foster set into a stone wall surrounded by seats.

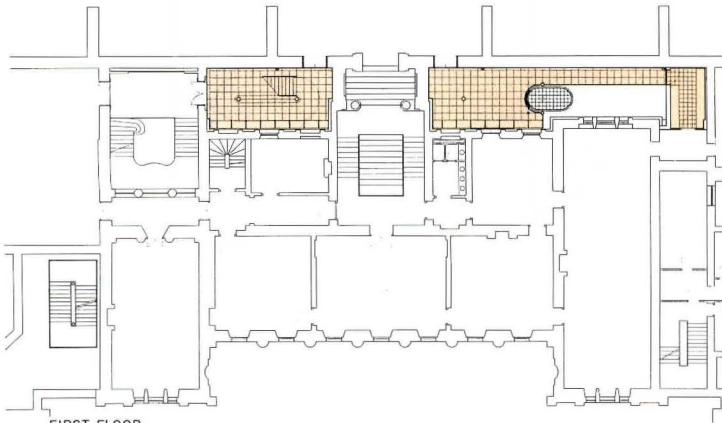
The hall of light is a prelude to the suite of three rooms that compose the Sackler Galleries. From the project’s outset, Foster’s sketches for these white-painted galleries show coved ceilings with movable vertical louvers at the apex to control the entry of sunlight. There are no complex reflectors as there are, say, at Louis Kahn’s Kimbell. The roof louvers at the Royal Academy can easily be opened to allow a view of the sky. The new galleries themselves are solid and simple, their plainness relieved by the elegance of the coved ceilings. In these strongly lit rooms Foster achieves a sense of elegance that is utterly and powerfully calm. The architecture—and the technical environment—are at the service of the art. It is a cool triumph. *Colin Amery*

Colin Amery is architecture critic of London’s Financial Times.

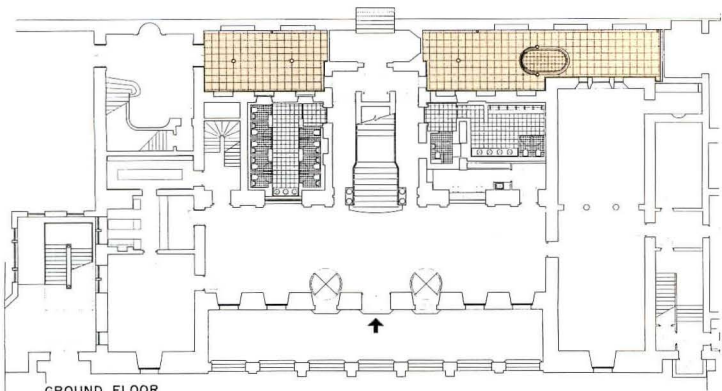




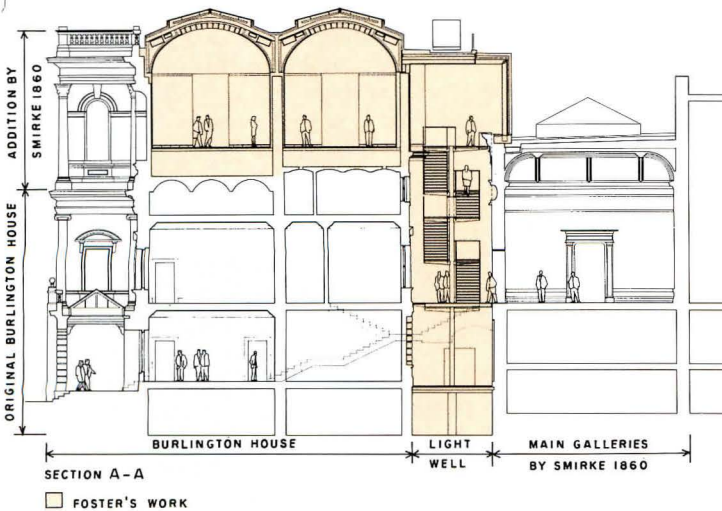
SECOND FLOOR



FIRST FLOOR



GROUND FLOOR

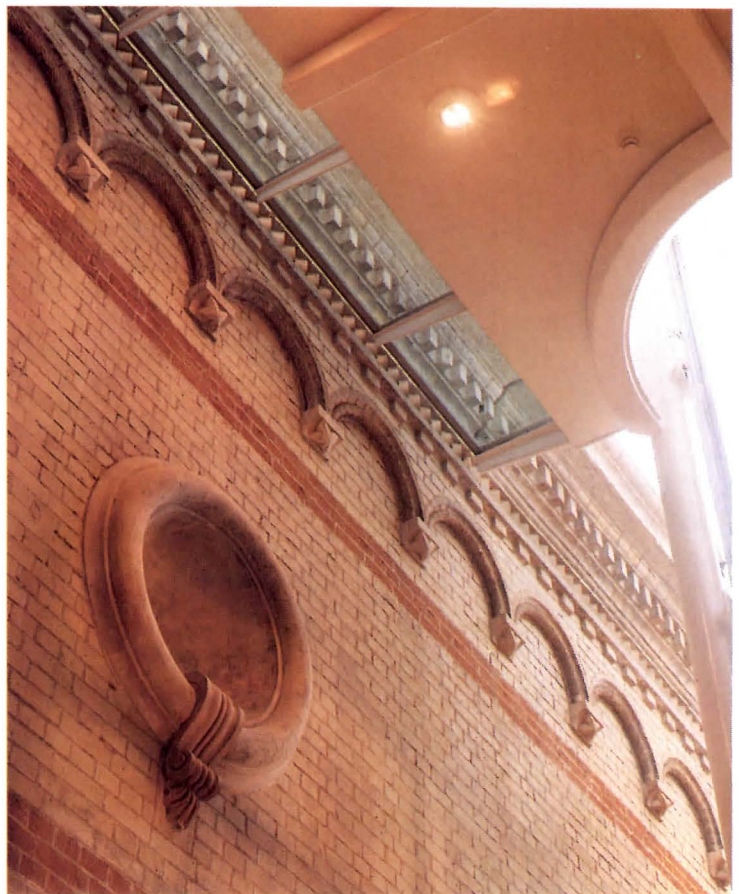


SECTION A-A

FOSTER'S WORK



Above: A 19th-century sculpture of a stretching youth called *The Sluggard*, by Royal Academician Lord Leighton, is opposed by a new hydraulically powered glass elevator. Opposite: Foster's liberal use of glass on the hall's staircase (photos 1 and 2) allows top light to penetrate deeply into the narrow well. The new steel-and-glass enclosure for the second-floor sculpture promenade rises behind the parapet of the Academy's late 19th-century gallery addition (3) to meet the higher roof of Burlington House. The glass edge of Foster's insertion permits the entire facade to be seen, including finely cut stone roundels not previously visible to the public (4).





The second-floor sculpture promenade is bathed in light through translucent glass (top left and opposite). A glazed border along the promenade's stone floor lights newly exposed facades below, while a 19th-century cornice provides a plinth for the display of sculpture. Ceiling louvers in the Sackler Galleries (bottom left) monitor incoming light and adjust to reflect ambient conditions. Beneath the ceiling vaults air travels from wall slots in upward and downward paths ventilating visitor space, but barely exposing art to changes in temperature and humidity.

Credits

Sackler Galleries

*The Royal Academy
London, England*

Owner: *The Royal Academy*

Architect: *Foster Associates—
Norman Foster, Spencer de
Grey, Tim Quick, John Silver,
John Small, Julia Barfield,
Mike Elkan, project team*

Engineers: *Anthony Hunt
Associates (structural); James
Briggs Associates (mechanical/
electrical/plumbing)*

Consultants: *George Sexton
Associates (lighting); Julian
Harrap Architects (historic
buildings consultant); Davis
Langdon and Everest (cost)*

General Contractor:
Bovis Construction Ltd.



Kahn Reconsidered

It is one of the peculiarities of triumphant artistic celebrity to induce temporary critical blindness. For those susceptible to its charms, this flash of fashionableness can be dazzling. Under its spell, all distinctions are void: the only thing one sees are stars. In the end, this intoxication proves doubly unfortunate, for when its effects dissipate—as they always do—one tends to be left with a hangover of disillusionment, reassessment, and resentment. All too often, yesterday's darling becomes tomorrow's discarded hero whose virtues are as invisible as his shortcomings once were.

The legacy of the distinguished Modernist Louis Isadore Kahn (1901-1974) is shaping up to be a specimen case in point. By the time of his death, Kahn was world-famous, renowned almost as much for his mystical musings about architecture and Being as for a handful of boldly imagined and exquisitely crafted buildings. The Alfred Newton Richards Medical Research Building in Philadelphia, the Salk Institute for Biological Studies in La Jolla, California, the library for Philips Exeter Academy in Exeter, New Hampshire, the Kimbell Art Museum in Fort Worth, Texas—generally regarded as Kahn's masterpiece—and the Yale Center for British Art (YCBA): these pristine architectural gems catapulted Kahn's reputation into that untouchable stratosphere where discrimination bows to adulation. Twenty years later, the adulation continues. Almost everyone—Modernists, Postmodernists, Deconstructionists, even many Traditionalists—wants to bask in Kahn's aura: all claim him as a mascot for their own brand of architectural practice.

There is no doubt that Kahn was a remarkably gifted architect. The Salk Institute and, especially, his museums seem assured of a lasting place in the pantheon of late 20th-century architecture. But some of the claims made on his behalf are positively embarrassing. Consider the performance of Kahn's longtime friend, the Yale architectural impresario Vincent Scully. Professor Scully has written original and important things about Kahn's work, especially its sources in 18th-century re-imaginings of monumental Roman architecture (Ledoux, Piranesi, etc.). And he, too, has noted that in his later years Kahn was given to broadcasting "even slightly sort of false stuff" in his heady, mystical pronouncements. Yet Scully has also long occupied a prominent place on what we might call the committee for Kahn's deification. It goes without saying that, in Scully's view, Kahn's work constitutes "the single wholly satisfactory achievement of the late modernist aim in architecture."

And that's the least of it. Not only does Scully find Kahn "a supremely great architect," one who emanates "a presence, an aura, unmatched by that of any other architect of the present day" (including Mies, Corbu, Wright), he also has occasion to compare Kahn's achievement to everything from the novels of Tolstoy (though he lik-

ens Kahn's "glare" to that of "the young Gorky") to the handiwork of, well, God. Kahn's buildings are thus said to "shape spaces heavy with light like the first light ever loosed on the world . . . They thrum with silence, as with the presence of God." Amen.

Kahn on view around the world

The current traveling retrospective of Kahn's work—Scully's observations are quoted from the introduction he contributed to the exhibition catalog—is partly another expression of the starry-eyed Kahn industry, partly a scholarly effort to detail the evolution of Kahn's career and reflect on the gestation, design, and fate of his signature buildings and architectural projects. Together with a spate of handsome books on the architect from Rizzoli, the retrospective offers us an opportunity to begin a sober review of Kahn's distinctive achievements and lessons for contemporary practice.

In many respects, the story of Kahn's career is a tale of the triumph of talent and perseverance over adversity, a classic instance of the American Dream come true. Kahn was born on a small island off the coast of Estonia to poor, but literate, Jewish parents. When he was three he suffered a horrible accident that disfigured him for life. Attracted by the colorful glittering of burning coals, the young boy reached into the fire and pulled some coals onto his apron. They immediately burst into flames, burning and irreparably scarring his hands and face. According to Kahn scholar Patricia Cummings Loud (who contributed to the exhibition catalog), his mother took the accident as a sign that her son had been "touched by destiny" and subsequently singled him out for special nurture and support.

Kahn's father immigrated to the United States in 1904, and was followed by the rest of the family in 1906. They settled near relatives in Philadelphia, the city that would be home to Louis for the rest of his life. Some two years after arriving, Kahn's father, Leopold, sustained a serious back injury that put an end to his employment as a laborer. The family subsisted largely on the meager wages Kahn's mother earned by her sewing and needlepoint. Nevertheless, Kahn's talent as a draftsman was recognized early. One story has it that a drawing of a steamship that the five-year-old Louis did while crossing the Atlantic with his mother and siblings won him a box of oranges from the ship's captain.

Young Kahn discovers architecture

In high school, Kahn took a course in architectural history that decided him on his vocation. He went to the University of Pennsylvania to study architecture, and was there steeped in the Beaux-Arts tradition under the tutelage of Paul Cret. He completed his training in 1924 and, after working a few years as a draftsman and apprentice designer, managed to save enough money to embark on a yearlong

Louis Kahn is the subject of a major retrospective opening this month. Essay by Roger Kimball, photographs by Grant Mudford.

tour of Europe. Returning to Philadelphia in 1929, he went to work for Cret, but the Depression soon put him out of work. It was around this time that Kahn became absorbed in the Modernism of Le Corbusier, whose influence can be felt throughout his later work. The 1930s and early '40s were lean years for the architect. He worked with several firms, mostly on housing projects and designs for private houses, and during the war was involved in several government-sponsored projects.

By the mid-'40s, Kahn was beginning to be well known. In 1947, he was invited to Yale University to be a visiting critic of design. In 1950, he traveled on a fellowship to the American Academy in Rome where the ruins, especially of the Pantheon and the Baths of Caracalla, made an indelible impression on him. Their combination of rugged monumentality and simplicity of design became one of Kahn's most abiding sources of inspiration. In a letter to his office at the time, he wrote that "the architecture in Italy will remain as the inspirational source of the works of the future. Those who don't see it that way ought to look again. Our stuff looks tinny compared to it and all the pure forms have been tried in all variations. What is necessary is the interpretation of the architecture of Italy as it relates to our knowledge of building and needs." All the best of Kahn's mature work bears the stamp of that aspiration, summed up in Alberti's famous definition of beauty as the "the harmony and concord of all parts achieved in such a manner that nothing could be added or taken away or altered except for the worse."

Kahn's big break

In 1951, when he was 50, Kahn's moment finally came: he was asked to take over as architect for the Yale University Art Gallery after Philip Goodwin (co-architect of the Museum of Modern Art in New York) had to withdraw from the commission because of an impending eye operation. Kahn's strikingly original design for the Yale Art Gallery—exceptionally lucid yet still warm and inviting—established his national reputation. By the early 1960s he was beginning to be something of a legend among architects. His gnomic utterances and questions—"All matter is spent light," "What does an arch want to be?"—helped make him a kind of guru among his students at Yale; later he could descend into what the authors of the exhibition catalog refer to as a "cantankerous mysticism." As an architect who worked with Kahn in the '60s recalled, "In the later years, one of the difficulties was that he seemed to have too many people in his office who almost deified him." Nevertheless, if Kahn waxed increasingly idiosyncratic and portentous, his buildings achieved an ever greater clarity of design and justly won him a wide critical following.

Unfortunately, though, Kahn's contributions to architecture are more often admired than emulated. In an age when Postmodern

trivia and Deconstructivist hermeticism seem to have triumphed everywhere, he stands as a rare example of Modernist probity. Indeed, while Kahn came firmly out of the Beaux-Arts tradition, in his maturity he emerged as an important American Modernist, perhaps the foremost American Modernist of the '50s and '60s. Like all the great Modernists, he did not reject architectural history or tradition, but adapted both to contemporary needs and what he liked to call "availabilities." The vaulted galleries of the Kimbell, for example, are perfectly traditional in conception yet superbly contemporary in execution and feeling. Similarly, the design of the YCBA, organized around courtyards with commercial rental space on the ground floor, is clearly reminiscent of traditional Italian Renaissance townhouses (Kahn labeled one early facade study for the museum "Palazzo Melloni"). Yet nothing could be more contemporary in its use of materials, disposition of light, and ambiance than that elegant urban museum. "Tradition," Kahn noted, "gives you the powers of anticipation from which you know what will last when you create." "Being traditional," in architecture as elsewhere, does not mean simply recapitulating the past but appropriating it in a way that honestly addresses contemporary possibilities.

Was Kahn a true Modernist?

Today, when "Modernism" has become a term of opprobrium for many critics, it is often claimed that Kahn was not really, or not finally, a Modernist. It is true that his buildings do not look like those of Corbu or Mies. But few architects are closer to the spirit of those Modernist masters in their attention to detail, rejection of applied ornamentation, and delight in the esthetic potential of contemporary building materials and engineering techniques. This is not to say that Kahn is finally as original or as great an architect as either, or indeed as Wright. Notwithstanding the inflated claims of Kahn's partisans, it must be conceded that he stands as a perfector

Continued on page 143

Organized by The Museum of Contemporary Art, Los Angeles, "Louis I. Kahn: In the Realm of Architecture" opens this month at the Philadelphia Museum of Art, where it remains until January 5, 1992. It then travels to the Centre Georges Pompidou in Paris (March 4-May 11, 1992), the Museum of Modern Art, New York (June 14-August 18, 1992), the Museum of Modern Art, Gunma, Japan (September 26-November 3, 1992), the Museum of Contemporary Art, Los Angeles (March 7-May 30, 1993), the Kimbell Art Museum, Fort Worth, Texas (July 3-October 10, 1993), and the Wexner Center for the Arts, Ohio State University, Columbus, Ohio (November 17, 1993-February 1, 1994).

Roger Kimball is Managing Editor of The New Criterion and a frequent contributor to RECORD.

Yale University Art Gallery
New Haven, Connecticut
1951-53

1. Aerial photograph showing Yale Art Gallery (foreground) and Yale Center for British Art
2. Rear garden
3. Gallery, with stairwell beyond



1



2



3

**Yale Center for British Art
New Haven, Connecticut
1969-74**

- 4. Gallery, with atrium beyond
- 5. Gallery with stairwell
- 6. Gallery
- 7. Exterior

Following pages

- 8, 9. Korman House, Fort Washington, Pa., 1971-73
- 10, 11. Weiss House, East Norriton Township, Pa., 1947-50
- 12, 13. Fisher House, Hatboro, Pa., 1960-67

- 14, 15. Esherick House, Philadelphia, Pa., 1959-61
- 16, 17. First Unitarian Church and School, Rochester, N. Y., 1959-69
- 18, 19. Eleanor Donnelley Erdman Hall, Bryn Mawr College, Pennsylvania, 1960-65



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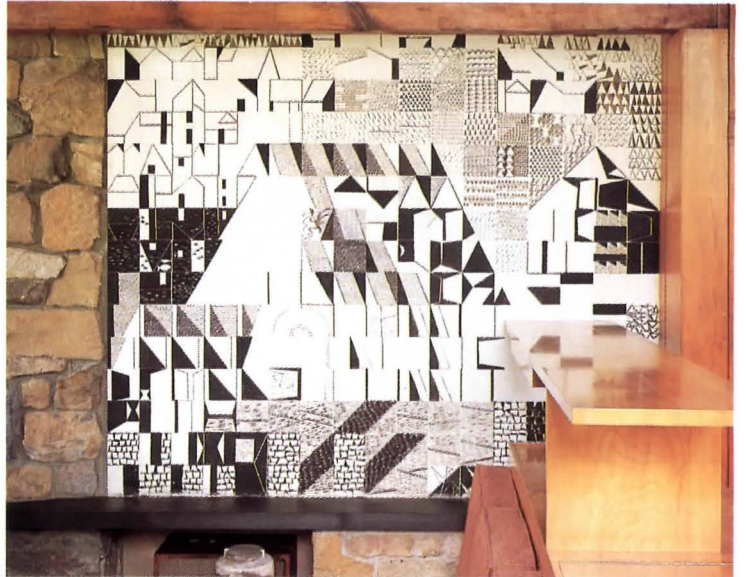
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19



**Salk Institute for
Biological Studies
La Jolla, California
1959-65**

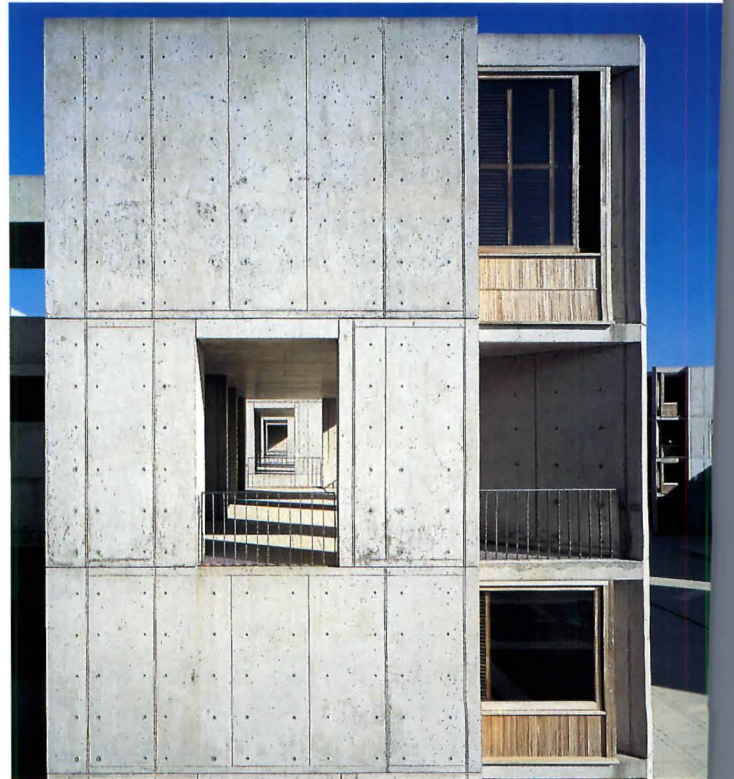
*20. View of Salk complex, looking west
21, 22. View of study towers,
and walkways in between the towers*



20



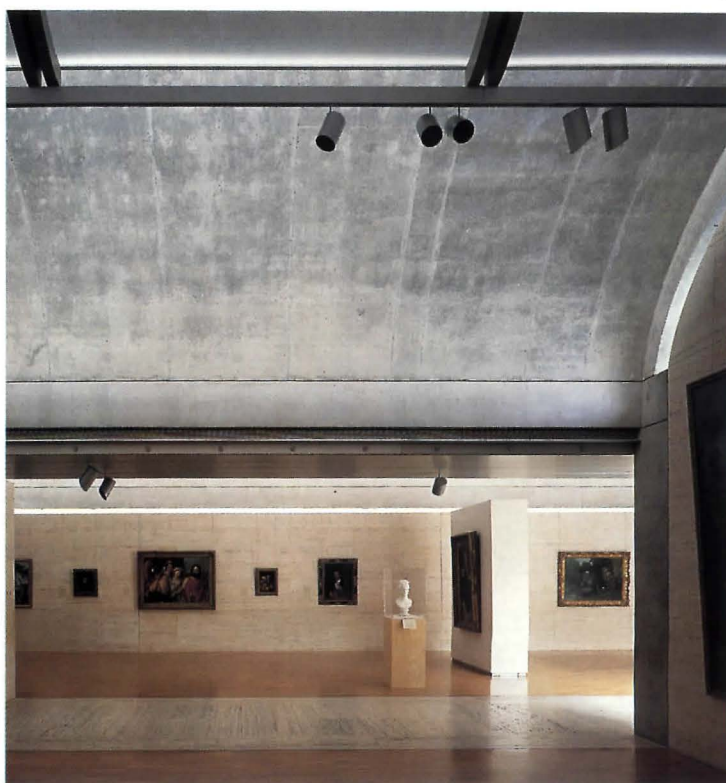
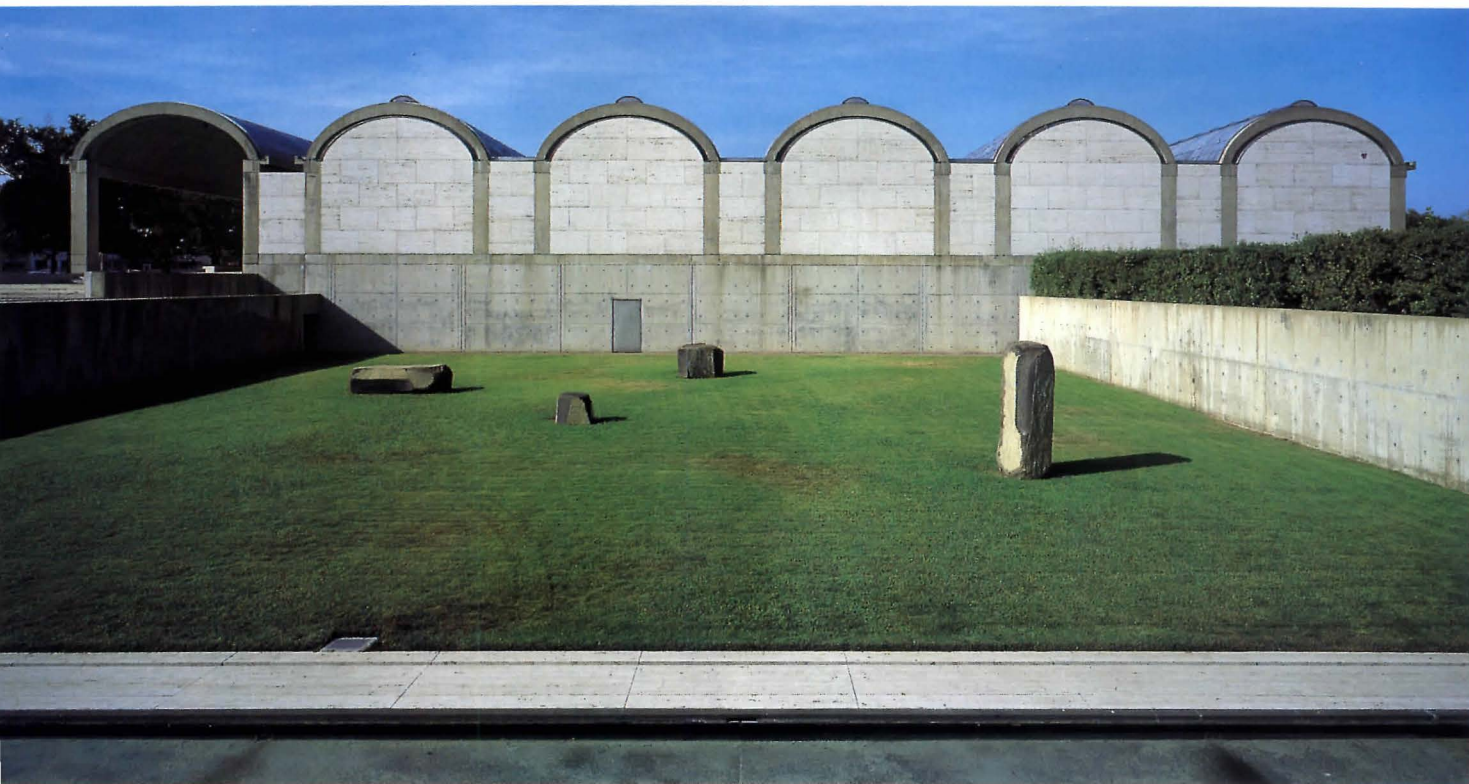
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22

**Kimbell Art Museum,
Fort Worth, Texas
1966-72**

- 23. View of south garden*
- 24. South courtyard*
- 25. Galleries*



25

**Library and Dining Hall,
Philips Exeter Academy,
Exeter, New Hampshire
1965-72**

- 26. Library desk and stacks above
- 27. View of central atrium
- 28. Entrance, with atrium beyond



26



27



28

**Alfred Newton Richards
Medical Research Building and Biology Building,
University of Pennsylvania, Philadelphia
1957-65**

- 29. Overall view of complex
- 30. Richards Building ventilation towers
- 31. Biology Building towers
- 32. Corner detail



29



30



31



32

Facing the Past

*Lowell Performance Pavilion
Boarding House Park
Lowell, Massachusetts
William Rawn Associates,
Architect*



*An outdoor performing-arts
shed strengthens Lowell's
ongoing urban revival.*



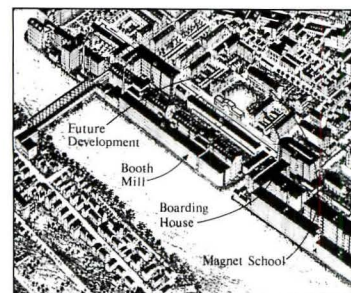
Visiting Lowell, Massachusetts, in the 1840s, Charles Dickens described this archetypal 19th-century mill town, founded in 1822 on the banks of the Merrimack River, as a “large, populous, thriving place.” A century later, he would have found the city much changed. The textile manufacturers had begun to move south, taking with them prosperity and leaving dozens of empty mills—strong brick and granite buildings along miles of canals. Against great odds Lowell refused to die, however. The latest chapter in its history began in the 1970s, with the creation of the Lowell National Historical Park (LNHP), whose theme is the city’s industrial past. And recently, under the guidance of the federally funded Lowell Historic Preservation Commission (LHPC), the city has completed a new portion of the park’s overall plan—the Performance Pavilion, designed by William Rawn Associates.

The pavilion is a key component of Boarding House Park, a new city-block-sized open space designed by landscape architects Brown and Rowe. (The park’s name commemorates mill-girls’ housing that once occupied the site.) Although the Commissioners saw the pavilion as the park’s central focus, they lacked any clear image of the structure itself. But they knew what they *didn’t* want. So one day they drove the architects to a nearby field and pointed to a forlorn-looking 1970s-vintage bandstand—a plain concrete platform topped by a spindly steel canopy. It was clear to Rawn that this structure’s shortcomings lay in its “objectlike” quality: sitting in the midst of a lawn, it failed to define or enclose space. It was also obvious that the new pavilion offered a rich urban opportunity. Located in downtown Lowell, with low-rise brick buildings to the west and south, and a similarly massed building planned to the east, Boarding House Park needed only a strong northern edge to become a true outdoor room.

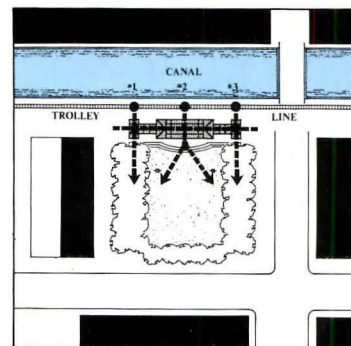
To provide that edge, the architects designed the pavilion as a 140-foot-long open-air building that runs parallel to the old Eastern Canal. This extended structure satisfies the LHPC’s varied performance program. A 30- by 32-foot proscenium-arch main stage works well for medium-sized productions of music, dance, and theater; side pavilions comfortably accommodate the more intimate scale of National Park Service lectures; and a 12-foot-wide central spine serves as an aisle for ethnic food festivals, as a link between two LNHP museums, and as a rather grand trolley stop.

Rawn and the park commission agreed that the pavilion should be both contextual *and* contemporary—“nothing mock historical,” in Rawn’s words, “no overly cute replication of Victorian forms.” Toward that end, the pavilion’s austere lower portion consists of a simple 3-foot-high, stepped concrete plinth, from which rise 8-inch-diameter, 8-foot 6-inch tall steel columns. Above this datum, in counterpoint, sits a fanciful steel superstructure whose 3-inch tubes and perforated grids give the pavilion a hard-edged delicacy and a crisp laciness. (Steel was chosen not only for its resistance to vandalism but also for its skeletal qualities, since the LHPC specified that the pavilion not obscure views across the canal of the mid-19th-century Boott Cotton Mills.)

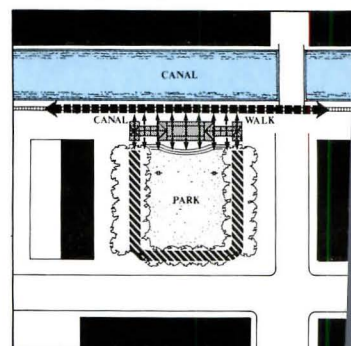
If the pavilion works well as a cultural, recreational, and commercial place, it has also become Lowell’s major outdoor civic space. It was here, for instance, that native son and former U. S. Senator Paul Tsongas announced his presidential candidacy. “The creation of the Lowell National Historical Park has been about rejuvenating the spirit of the city,” says Rawn. “So to have that process result in the making of an honest-to-goodness civic gathering space is immensely satisfying.” *Nancy Levinson*



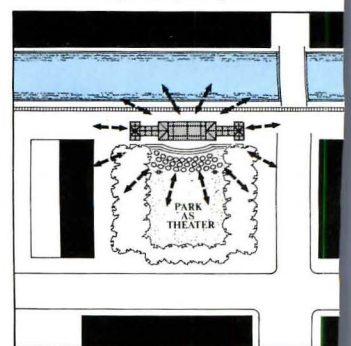
Part of the recently completed Boarding House Park, the Performance Pavilion is located in the heart of the Lowell National Historical Park (above). The 140-foot-long structure parallels the Eastern Canal and Merrimack River (top opposite), and encloses the park’s northern edge to form a new civic gathering place (bottom opposite).



Trellis as point of arrival



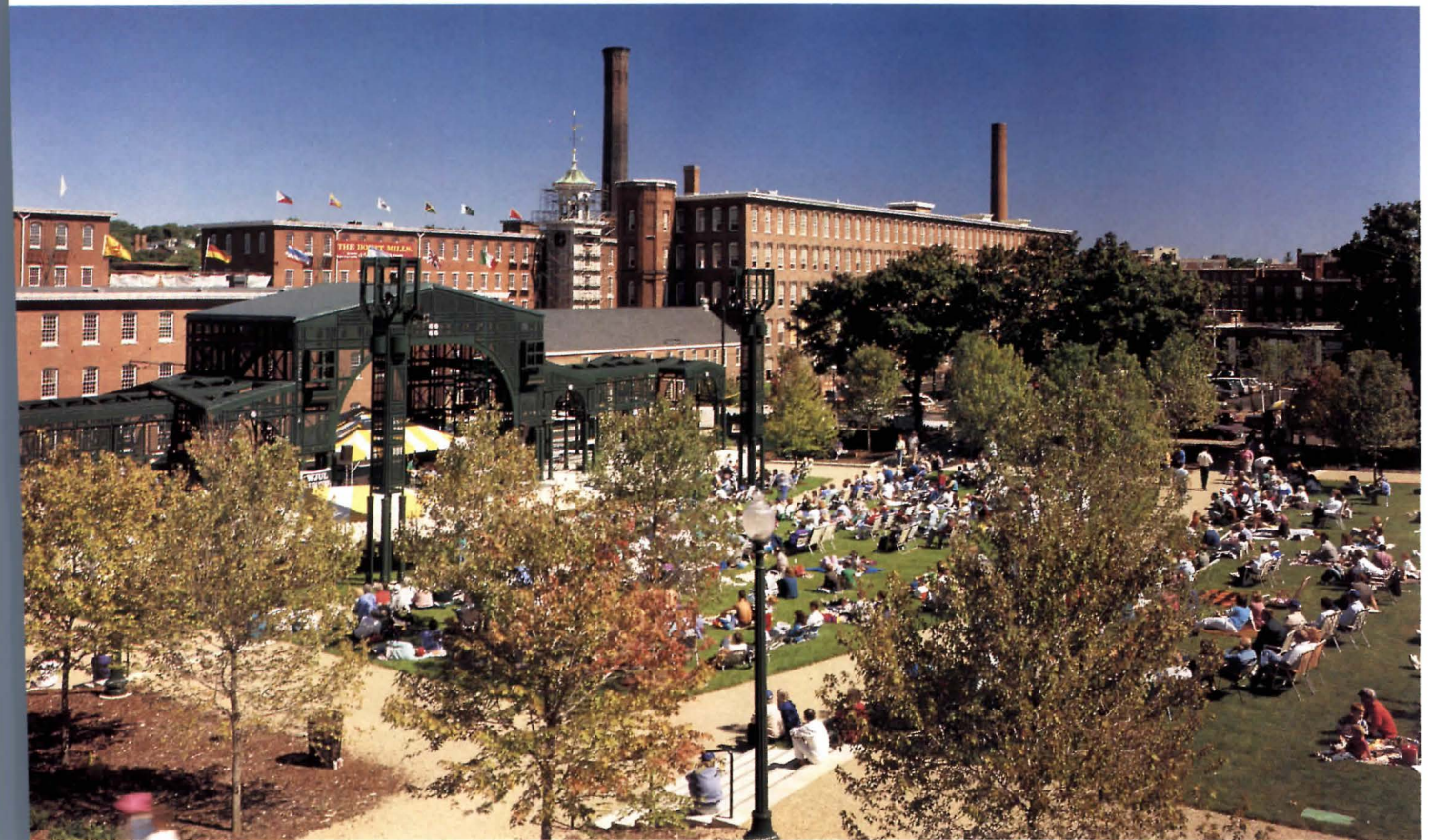
Trellis as edge to open space

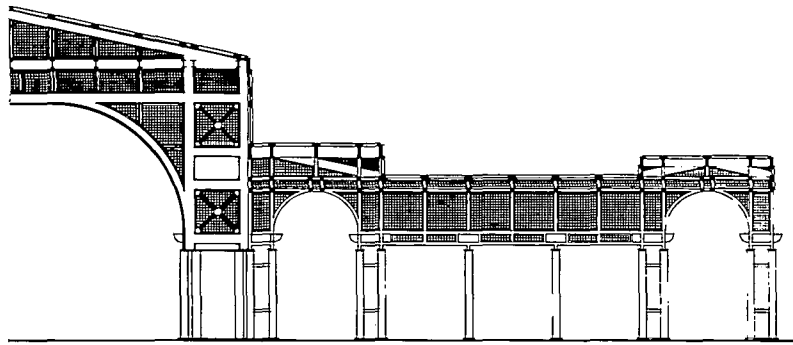


Trellis as theater

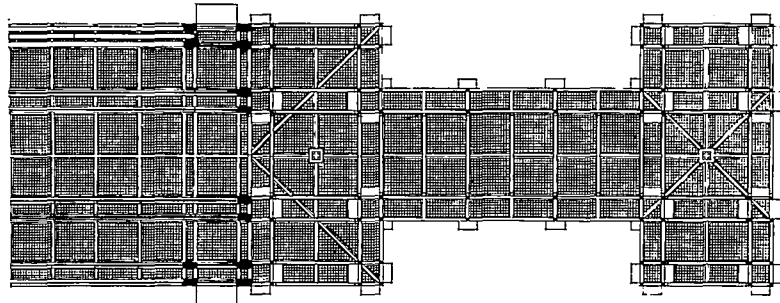


© Steve Rosenthal photos

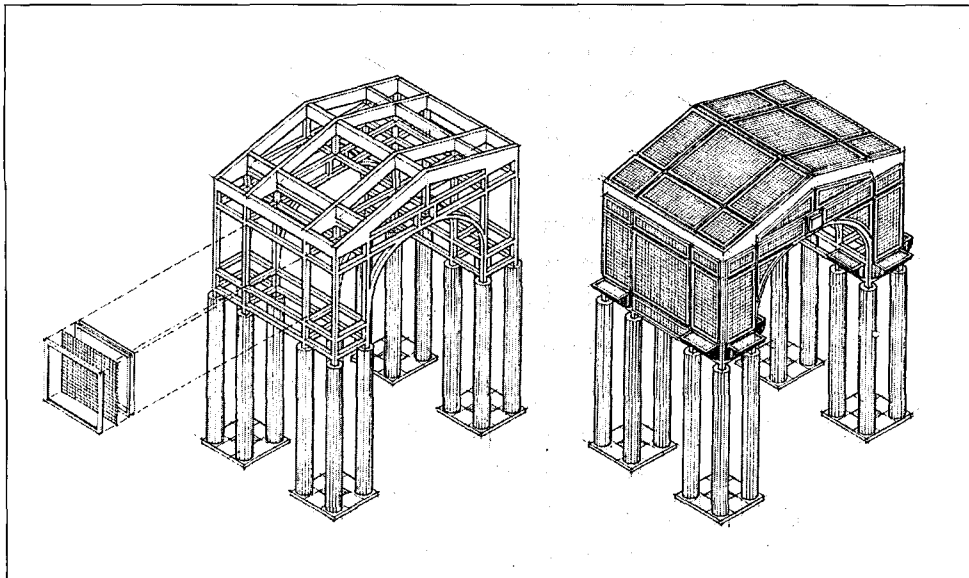




TRANSVERSE SECTION



REFLECTED CEILING PLAN



A mix of restraint and exuberance owes to a three-part design (opposite) comprising a 3-foot-high poured-concrete plinth; a zone of 8-inch-diameter steel columns; and an elaborate steel superstructure of 3-inch tubes and perforated grids set within angles. (Those familiar with Rawn's career as an artist will note the relationship between his silkscreen compositions and this use of perforated steel grids.) In both form and detailing, the architects avoided historical, especially Victorian, allusion. Connections are welded, not bolted, and no diagonal bracing has been used. The structure acts as its own rigid frame.

Credits

Lowell Performance Pavilion
Lowell, Massachusetts

Owner: Lowell Historic Preservation Commission, National Park Service

Architect: William Rawn Associates—William L. Rawn, III, principal-in-charge; Alan Joslin, project architect; Diane Sokal, Ed Chang, Bea Goeller, project team

Landscape Architect: Brown & Rowe—Nina Brown, Clarissa Rowe, Kate Troast, Carol Schein

Engineers: LeMessurier Consultants (structural); Metcalf Engineering (electrical); Mistry Associates (civil)

Consultant: Theatre Projects, Inc. (theater)

General Contractor: Middlesex Construction



Our Towns

Nearly 10 years after completing their plan for Seaside, Florida, Andres Duany and Elizabeth Plater-Zyberk now rank among this country's most influential urban planners. Their current

Town by town and suburb by suburb, Andres Duany and Elizabeth Plater-Zyberk are redesigning pieces of America, creating places that make sense to people. Although the towns they have designed are both rigorously conceived and deeply rooted in history, they are also brilliant for their simplicity, with sidewalks and tree-lined streets, corner stores and neighborhood playgrounds, and schools that children can ride bicycles to, alone. These are towns that show an implicit understanding of human nature and obvious logic. Bus stops are carefully placed within a five-minute walk of residential neighborhoods and places of employment; day-care centers and other services are sensibly positioned to meet peoples' needs.

Most of these towns are still paper visions; Seaside, their first and most famous, is the only one anywhere near a state of completion. Others—including Blount Springs and Tannin in Alabama, the Kentlands in Maryland, Windsor and Wellington in Florida—are now underway (see pages 114-119). And yet, the idea of rebuilding the American town with its traditional neighborhoods has such powerful appeal that the list of converts grows longer every year.

As proof of the power of their ideas, Duany and Plater-Zyberk continue to be wooed by enlightened developers of new towns and by communities attempting to re-establish a lost sense of place. Ten years after Seaside, they have designed more than 40 new towns—the majority still on the drawing boards—and redesigned a half-dozen older cities, as big as St. Louis and as small as the Florida town of Stuart. Duany and Plater-Zyberk are also collaborating on a redevelopment plan for downtown Los Angeles and continuing to work on revisions to a zoning code governing Dade County, the sprawling suburbs of their own hometown, Miami.

The architects' admirers range from Prince Charles of England, who has commissioned them to work on a new town he is building on royal land, to Beverly Bickell of Oklahoma, a self-described prisoner of suburban Tulsa who carries on a regular correspondence with the planners. If Duany and Plater-Zyberk have become the gurus of a resurging neighborhood movement, it is because their work gives concrete expression to the unfulfilled dreams of American suburbia. Says Plater-Zyberk: "We've come to realize there was a bigger audience. Once you make design accessible, then you see that many, many people are interested in it. We've developed not just a personal architectural agenda but architecture that is understandable and accessible—and not just to the initiated."

At the beginning of their careers, Duany and Plater-Zyberk's architecture was a scholarly exercise in rigorous late 20th-century classicism [see RECORD, mid-April 1986, pages 134-139]. To a certain extent it still is, though in much of their planning work intellect is

overlaid with humanism and charm. They invoke Renaissance rules of design, and force suburbs such as Avalon Park outside of Orlando to respect the Jeffersonian mile-square grid. "Beneath it all is the belief that it all depends on good design," says Plater-Zyberk. "We really believe that there's a right way to do things."

That is because they have come to understand the urgency of getting Americans out of their automobiles. "There is only one solution: bringing together the places we live and work. There are not several solutions," says Duany. Duany and Plater-Zyberk lament the waste of Americans sitting for hours in clogged traffic—money, non-renewable resources, land, time. Without a radical change, says Duany, "we are going to be remembered as the generation that ruined America. And why?" Uncompromisingly blunt, he mocks people who drive to a local health club "so they can use the walking machines." Plater-Zyberk charts a calmer but no less steadfast course, saying that "a strong neighborhood identity in a city is a good structure as long as there is a public realm. Sociologically, everybody wants a strong neighborhood identity in compensation for the universalization of culture in the 20th century."

Classic American towns from a Little Havana warehouse

Duany and Plater-Zyberk Architects occupies a converted warehouse on a decidedly unfashionable side street in Miami's Little Havana. The warehouse has been elegantly converted to reflect the firm's interest in classicism ("I think it's Roman style," said a rather awed young clerk after making a delivery there recently). The firm—it is known by its initials, DPZ—also does other design work, most of it residential. Plater-Zyberk, moreover, teaches at the University of Miami, where she and Duany helped found a graduate program in suburb and town design, a masters-degree course that takes a fresh, interdisciplinary look at small-town urban planning. They regularly invite geographers, historians, demographers, psychologists, futurists, and sociologists to their classes.

Both Duany and Plater-Zyberk hold undergraduate degrees from Princeton and graduate degrees from Yale. (Although they met in college, they didn't marry until 1976, after they had moved to Miami.) As former students of Vincent Scully, Kenneth Frampton, and Allan Greenberg, they look back and realize that they were educated at a time when scholars and architects were renewing interest in American architecture and in classicism. It was with this grounding and the high expectations of youth that they came to Miami, only to find that "there were no patrons for architecture, just clients." And the clients were developers, interested in building at a large scale and at a rapid pace. "It is a region that is building itself by the square mile," says Plater-Zyberk. The first opportunity to build came in a 110-unit development in Boca Raton called Charleston

work marks a commitment to reverse the damage caused by years of suburban sprawl and return to the values that once shaped America's urban form.

By Beth Dunlop

Place, townhouses typical of suburban housing all over America. "We leapt at the prospect of rethinking it," says Plater-Zyberk, "of taking our academic background and applying it. Our education always taught us to push the limits, the critical practice."

Coincidentally, Plater-Zyberk was at that time a visiting critic at the University of Maryland, along with Washington, D. C., architect Pat Pinnell. One day, Pinnell, while browsing through the rare-book library, pulled out a dusty tome called *Civic Art*, a book "unknown since before our birth," says Plater-Zyberk. "That was the breakthrough." First published in 1922 by two landscape architects named Werner Hegemann and Elbert Peets, *Civic Art* is a compendium of ideas about towns, replete with plans, photos, and drawings. Princeton University Press republished the book in 1988, and it has become a great inspiration and resource for town planners.

Back in South Florida, Charleston Place became "an urban fragment subverting suburban sprawl," a project based on strong historical precedent. It was a seminal project, and not just because Duany and Plater-Zyberk took an urban model for a suburban housing complex and made it successful. "It really became a neighborhood," says Plater-Zyberk. But Charleston Place offered some sobering lessons, too. Along the way, they wanted to link the housing to a shopping center next door, but the Boca Raton zoning code would not allow a pedestrian connection between one distinct use and another. That ruling flew in the face of all common sense, much less good design, and it was irrational enough to send Duany and Plater-Zyberk down an unexpected career path.

It was at this time that Robert Davis commissioned them to do the plan for Seaside, the celebrated new town on Florida's Gulf Coast. Together with Davis and his wife Daryl Rose, Duany and Plater-Zyberk set off to explore small Southern towns, and they began to think of the whole history of town design in America. The result of their research is a body of work that now runs the gamut from Windsor (pages 114-115), a town with aspirations so aristocratic that its entrance is flanked by two polo fields, to Bienestar, a trailer park outside Phoenix that is intended to deal with the pervasive American issue of affordable housing. Duany and Plater-Zyberk take this problem seriously and because they are so frequently asked if their system works at the level of affordable housing, Duany went to a trailer manufacturer and "found out that there's no reason why they can't be great."

IDS, TUDs, and other tools of their trade

typical DPZ town plan is pithy and precise. It is the product of one or two energetic and intensive charettes, and it generally comprises codes and regulations, exquisite drawings, a narrative document,

and a videotape of the final presentation. Recent town plans have even included some cleverly drawn cartoons.

Their chief tool is what they call a TND, shorthand for Traditional Neighborhood Development, executed in a simple code and a series of regulations over architecture, urban design, and landscape. To date, that methodology has produced towns that promise beauty and brilliance, and others that may fall short of that and merely become good places to live with nice streets and lots of trees. Duany and Plater-Zyberk are now evolving a TUD—Traditional Urban District—to provide prototypes and guidelines for center-city redevelopment, a more daunting task that takes the already-built and makes it work.

In real-life situations, the odds are often heavily stacked against sensible ideas. Dade County, for example, adopted the TND, but then made it optional, so that developers can choose whether they want to create a town with a plan or simply go with the conventional spaghetti-bowl approach of cul-de-sac streets tucked away behind guardhouses. Similarly, after DPZ created a growth-management plan for Ocala, Florida's Marion County (one of the 10 fastest-growing areas in America), they discovered that most of the countryside was already spoken for. Their efforts to counteract the "great swaths of plotted destruction," says Duany, were fairly moot. During that controversial planning process, Duany and Plater-Zyberk were for the first time called Communists—an irony given that they espouse values as uncontestedly American as apple pie and that both of their families fled Communist regimes (he is Cuban-born; she is the daughter of Polish expatriates).

Happily, few of their projects become so acrimonious. By the end of a charette, nearly everyone is a true believer. In Stuart, where Duany and Plater-Zyberk helped the citizens save an old courthouse and fight off an ill-conceived Department of Transportation plan, the townsfolk became converts and are ardently carrying out the whole downtown renewal plan. Developers who suffer through the arduous task of convincing fire departments and school boards to change entrenched patterns say that, in the long run, the pain is worth it.

Determining a sense of place

In their planning work DPZ's preoccupation, always, is history—not just understanding it, but also making it, which requires both persistence and patience. A town that has a history evolves over time, which means that its planners cannot expect instant gratification. Still, although the evolution from idea to reality can take decades, the design work goes relatively quickly. Using the computer, a DPZ team can put together a town that might have taken Raymond Unwin or John Nolen a year to create in the 1920s. Which isn't to im-

If Duany and Plater-Zyberk have become the gurus of a resurging neighborhood movement, it is because their work gives concrete expression to the unfulfilled dreams of American suburbia.

ply that more traditional tools of urban design—trial and error—are bypassed: today, the time frame is compressed because every drawing can be shifted, adjusted, or reconciled in a matter of minutes.

Each town that DPZ designs or redesigns is the product of hard study and an occasional revelation. (For example, while designing the Virginia town of Belmont, they found a better building lot in the English rod system—a 16-foot-wide unit that adapts well to a varied housing stock.) Unlike Seaside, moreover, which was 80 acres of pristine coastal land with just one road running through it, recent DPZ projects—Blount Springs, Avalon Park in Orlando, Nance Canyon in Northern California—have offered far more challenging and varied terrain. Avalon Park, a 10,000-acre community, was the first project to pose real ecological questions; Duany and Plater-Zyberk responded with special preserve areas for birds and continuous greenways so that the wild animals could roam free.

Some elements of town design are repeated over and over. Especially greenbelts. “For us,” says Duany, “greenbelts have become mandatory, which is interesting because they have always been an ideal.” What is more, every neighborhood in a DPZ town plan has a central green with a civic building or a service as its focal point. Duany and Plater-Zyberk govern many aspects of a town design by the five-minute walking rule, the distance that people willingly walk to the bus, the store, or work. It is an Americanized adaptation of Leon Krier’s 10-minute pedestrian zones. “The guiding principle here,” says Plater-Zyberk, “is to make enclosed urban spaces that are meaningful enough that you might walk there. That’s ultimately the critical issue in terms of resources.”

Other concepts are basic to every design. Duany and Plater-Zyberk detail every road, specifying a wide variety of types from narrow alleys to broader through-streets. Esthetics and pragmatics go hand in hand: a typical code might indicate the proportionate relationship of street to building, noting that it is under the Renaissance standard of six-to-one that tall trees must line the sidewalk to compensate. Every town plan includes a detailed landscape code and a litany of allowable building types. This latter element is critical. “The philosophy here is that urban design comes directly from knowing about building types,” says Plater-Zyberk. “If you don’t think in those terms, of types, the buildings become blobs.”

DPZ’s architectural codes, which vary from town to town, are based on historic styles and the local vernacular. The codes are tightly drawn, but, as Seaside has shown, there is room for individual invention. Each new town poses its own peculiar challenges of ecology, economics, and education. In California, Nance Canyon was designed around the idea of luring the research and development

industry; in Florida, the 2.5-square-mile town of Wellington will have a satellite campus of Florida Atlantic University.

The Kentlands (pages 118-119)—a 4,500-person town on former farmland near Gaithersburg, Maryland—will be anchored on one end by a shopping mall. Given their natural aversion to conventional malls, DPZ grappled long and hard with this dilemma. They ultimately elected to let the mall have a typical elevation facing the highway and a second, civic-minded facade on the town side. The mall was further adapted so that its parking lot can accommodate the future mixed-use development. Malls and strip shopping centers are the ubiquitous symbols of suburban formlessness; in the Kentlands and other projects, Duany and Plater-Zyberk have nudged, cajoled, and reshaped the shopping complex to become more a part of town. (DPZ’s most complete project to date in this category is Mashpee Commons—RECORD, March 1989, pages 84-89.)

Although the collaborative spirit of DPZ’s charettes is meant to guarantee diversity, the planners’ codes are strong enough to guard against absurd gestures. By DPZ’s way of thinking, there is no such thing as an isolated act of architecture. Town design is a collective experience, and DPZ brings in other architects—Rodolfo Machado and Jorge Silvetti, Hugh Newell Jacobsen, and Peter Calthorpe, among many others—to ensure that this be so. Duany and Plater-Zyberk are generous with credits to their colleagues, and have become patrons of a whole generation of younger architects who have found a foothold in design commissions from the new towns.

That, in fact, was the great genius of Seaside, which quickly became the province of many architects’ visions. With its postcard imagery and now-celebrated one-page code governing all development, Seaside indeed may be the most important and convincing example of urbanism built in recent time. But it is also very small, a summer-time resort for an affluent few. It does not put all of Duany and Plater-Zyberk’s ideas of town design to the tough tests. That will come as the next generation of new towns falls in, house by house, street by street, neighborhood by neighborhood.

In the meantime, Prince Charles continues to praise their work. Beverly Bickell keeps on writing from her cul-de-sac suburb of Tulsa. Architects, planners, and even developers are beginning to espouse DPZ’s ideas with the conviction of religious converts. Obviously, Duany and Plater-Zyberk have touched a chord in American architecture. Perhaps that is because they steadfastly refuse to dilute their ideals, preferring instead the more difficult, but for them more rewarding, task of reshaping reality.

Beth Dunlop is the architecture critic of The Miami Herald.

*Top: Village of Windsor,
Vero Beach, Florida
Bottom left: Tannin Village,
Orange Beach, Alabama
Bottom right: The Kentlands,
Gaithersburg, Maryland*



Thomas Delbeck



Berge Gounares



© Frederick Charles

Village of Windsor Vero Beach, Florida

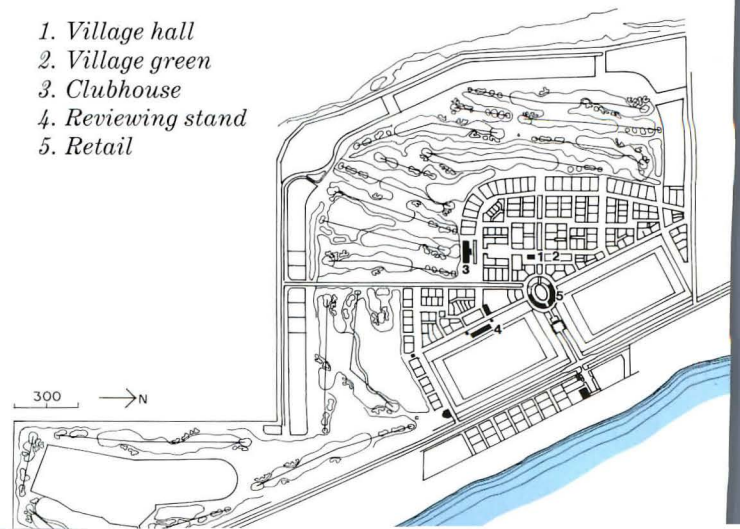
The Village of Windsor, a Florida resort community 70 miles north of Palm Beach, is Duany Plater-Zyberk's most tightly controlled plan. Set on 80 acres within a 400-acre site that includes a golf course and two polo fields, Windsor's plan includes not only the irregular weave of its village streets, with urban-scaled house lots, but also a perimeter of half-acre lots and a strip of Atlantic

beachfront sites. Windsor's defining feature is the fence: all houses must be built to the street, and fences required along each lot line must be at least 6 feet high. Each lot—even the smallest—has an interior courtyard. Along with spelling out materials, such as masonry bases topped by wood, Windsor's codes are also specific on proportions for elements like piers and porch

© Thomas Delbeck photos



1. Village hall
2. Village green
3. Clubhouse
4. Reviewing stand
5. Retail



posts. "Building codes can force owners into expensive solutions that are not necessarily the best," says Town Architect Scott Merrill. "Here, there's no excuse for bad solutions." Buyers have been drawn to the interior lots, perhaps by the urbanity of a plan based loosely on regional models like St. Augustine and Coral Gables. "It's a real act of courage to embark on a model that hasn't been

tested in 60 years," says Merrill, who has designed a sideyard house, one of several at Windsor. Three Merrill rowhouses are also under construction. Other projects include a DPZ-designed house and a Charleston house (a type the planners are moving away from at Windsor). Hugh Newell Jacobson, who designed the entrance gatehouses, has also designed a house for Windsor.

Despite its village hall and green, Windsor includes fewer public features than other DPZ plans. But the gently fragmented grid and narrow, curving streets set off by commons are already asserting themselves as models of a new neighborhood-based urbanity.



Tannin Village Orange Beach, Alabama

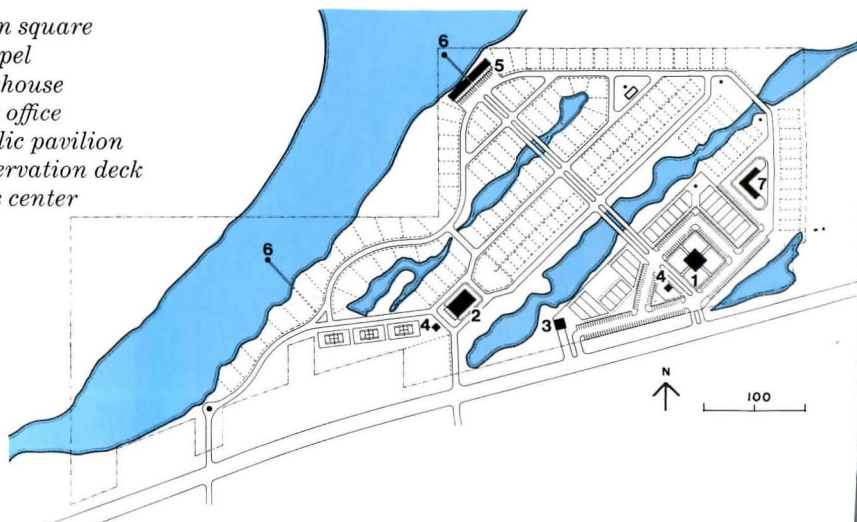
Six years ago, when George Gounares was looking for a town planner, the last of many he interviewed before talking with Andres Duany told the first-time developer that his notion of creating "a sense of place" was "stupid." Today three houses are built and two more are under construction at Tannin Village, a 60-acre planned community on the Gulf Coast of Alabama. Sur-

rounded on three sides by the wetlands of Alabama State Park, Tannin has 150 lots laid out around and between two manmade lakes that were dug to drain the site (plan below). Although Tannin is half as dense as Seaside, its physical situation just north of and parallel to a state highway that follows the coast is similar to the Florida town's setting. Tannin's southeast corner is

George Gounares photos



1. Town square
2. Chapel
3. Firehouse
4. Post office
5. Public pavilion
6. Observation deck
7. Arts center



anchored by the town square, which is located directly opposite a public pavilion. The pavilion terminates the town's main north-south road and offers one of two observation decks that project out over the swamps to the north. A firehouse will rise just off the highway to the south. At the southwest corner, a chapel marks the entrance to the project's first phase, which com-

prises 28 lots between the lakes. A post office, now in place across from the chapel, will be relocated intact across from the village square in the second phase of construction. The two bungalow-style houses already built were designed by architects Melanie Taylor (bottom left opposite) and Brad Patterson (top left opposite), while the Charleston single house (top right) was designed by its

owner. Houses currently under construction are by Frank Martinez and Roger Ferris. Gounares rejected one design because it had a double porch and a too-steep roof pitch, breaking Tannin's Urban and Architectural Codes. These one-page documents are the backbone of every Duany Plater-Zyberk plan, and here they draw on the Southern vernacular for guidance in form and materials.



The Kentlands Gaithersburg, Maryland

The Kentlands "is our worst-case scenario," says Elizabeth Plater-Zyberk. "It's a real test of the codes." That's because Joseph Alfandre, the developer of this 352-acre site centered around a group of 19th-century farm buildings an hour from Baltimore, isn't selling individual lots. Instead Alfandre, an experienced suburban developer used to building conventional pods

and cul-de-sacs, sells parcels of three-to-forty Kentlands sites to other builders, who then erect spec houses to fit in DPZ's charette-drawn Traditional Urban Developments—i.e., neighborhoods. For builders seeking to cut costs, the first points of attack are the codes specifying materials. Thus Town Architect Mike Watkins has permitted the use of wood fiberboard instead of wood sid-

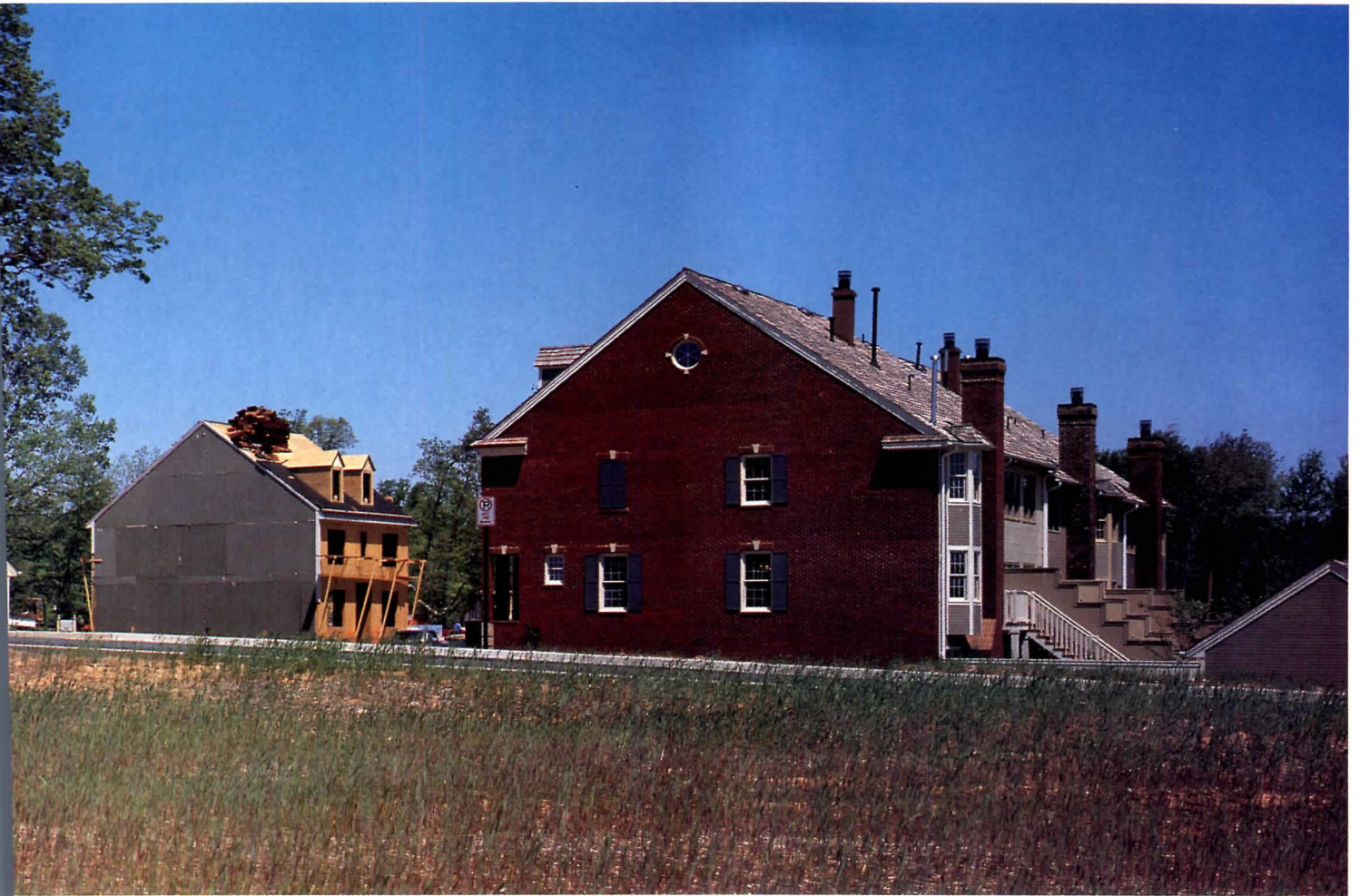
© Frederick Charles photos



ing on nonstreet elevations, and asphalt shingles instead of cedar shakes on Kentlands' multifamily dwellings and some houses. Where the codes remain firm, and where the Kentlands clearly differs from conventional developments and aligns with other DPZ towns, is at its street wall. Close-knit houses with small porches and shallow yards stand side by side, the narrow

distance between them spelled out in codes that also specify porch location, yard depth, the relationship of facade to street wall. Low picket or metal fences are mandated on front streets, while higher fences line the service alleys that run behind every street. DPZ ensured architectural variety by varying code-written lot sizes and house types; the architects also incorporated existing land-

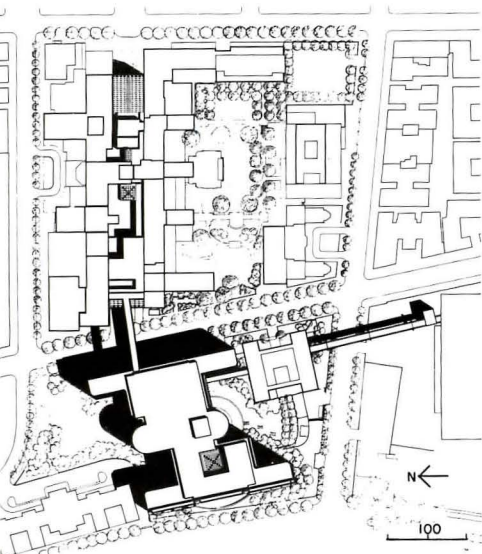
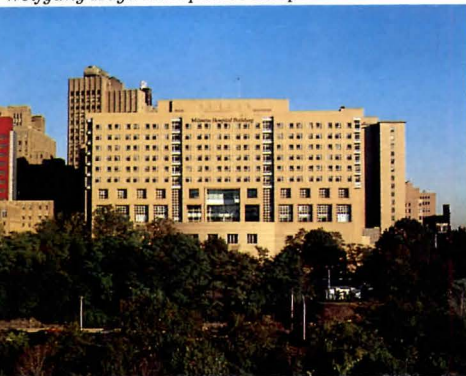
scape elements and topography to add some surprises to the grid. About 80 units are built or under construction, and two-thirds of the 1,700 lots have been sold to other developers.



Strong Medicine

*Milstein Hospital Building
Columbia Presbyterian Medical Center
New York City
Skidmore, Owings & Merrill (New York),
Architect*





Aside from forging an efficient link with the original hospital, prime concerns in the siting of Presbyterian Hospital's new 745-bed replacement facility (entrance opposite) were to exploit its Hudson River frontage and to preserve existing green space. The view of the hospital from the New Jersey side of the river (above) also influenced the building's overall massing and west-facing elevation.

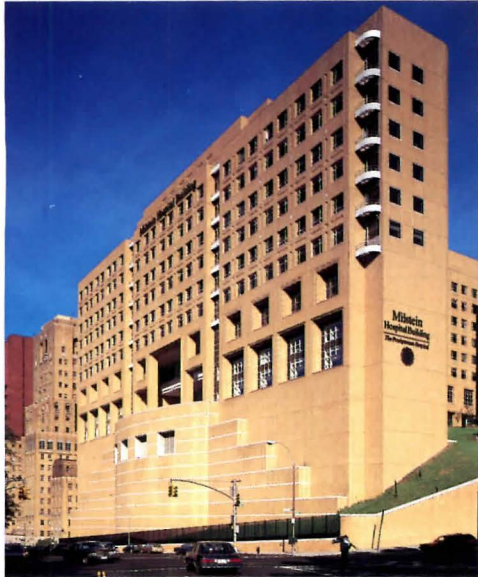
In current health-care circles it is fashionable to refer to big big-city hospitals as dinosaurs, too slow to keep up with a fluid medical world of cost constraints, rapid technological advances, and a drive toward outpatient care that results in fewer and shorter hospitalizations. Many such institutions are further encumbered by deteriorating surroundings, inadequate physical plant, and a dearth of available land for new buildings. But they are not yet extinct. New York City's Columbia Presbyterian Medical Center, for example, has called on Skidmore, Owings & Merrill to help it respond physically to a new generation of medical and planning issues.

The Milstein pavilion is a 745-bed acute-care hospital that replaces obsolete inpatient facilities of the original Presbyterian Hospital, a top-flight teaching hospital partnered by Columbia University's College of Physicians and Surgeons. The new building is the centerpiece of a 10-year modernization program that also included the construction of a nearby 300-bed community hospital offering primary care to residents of the inner-city neighborhood surrounding the medical center. A major goal was to re-unify the campus by consolidating related therapeutic services that had become scattered and disconnected as the hospital grew. But in addition to improving operating efficiency, Milstein also embodies the medical center's quest for a competitive edge in attracting patients and—as important—staff. In a process design partner Michael McCarthy describes as “planning from the inside out and the outside in,” the planning team fielded by SOM began by exploring the relative advantages of potential sites on and near the medical-center campus, at the same time developing an “ideal” model for the patient-care units (PCUs), the hospital's basic building block.

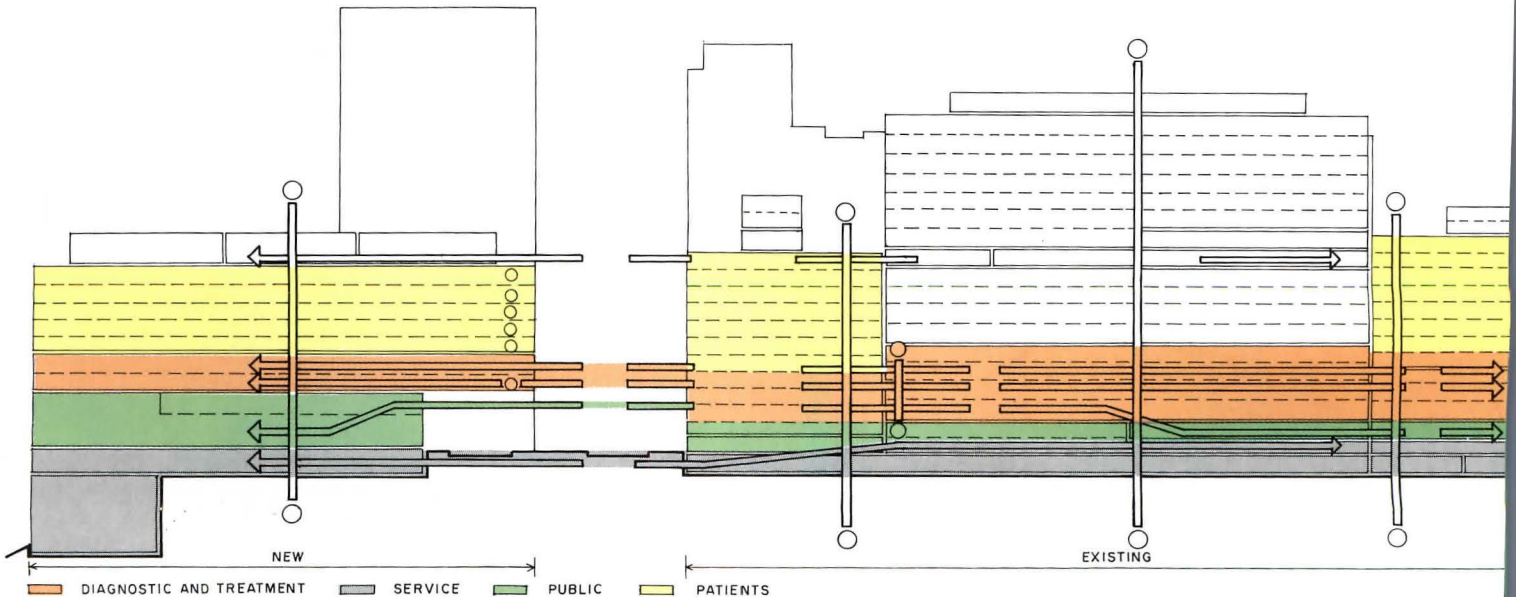
Maneuvering among the prescriptions and proscriptions of codes and regulations, the planners arrived at an L-shaped 36-bed unit with the nursing station at the inner angle in easy monitoring range of all patient rooms. Since these rooms are necessarily placed at the building perimeter, pairing PCUs produced large envelopes of interior space for circulation as well as for the staff, service, and clinical functions, which play a key role in a teaching hospital. The final configuration places four paired PCUs and their support space on each patient-room floor, with one pair slightly offset from the central circulation core to make the most of the site's river frontage.

Although two existing buildings had to be razed, the site combines the dual assets of majestic Hudson River views and adjacency to the medical center's original buildings, which consist of two parallel 22-story slabs: the existing Presbyterian Hospital, which houses clinical functions, and a university building containing teaching facilities. The new hospital lies across their axis, where a street between the two has been converted to an enclosed concourse that provides a direct sheltered route from the local subway station through the older complex. Dubbed the Energy Court, the galleria also assists with energy management. In addition, overhead bridges join old and new at the Milstein building's top floor and at three lower levels. The latter house diagnostic and treatment (D&T) areas and surgical suites with closely related intensive-care units. Public lobbies and lounges as well as admissions, a conference center, administration, and social services occupy the street level and mezzanine.

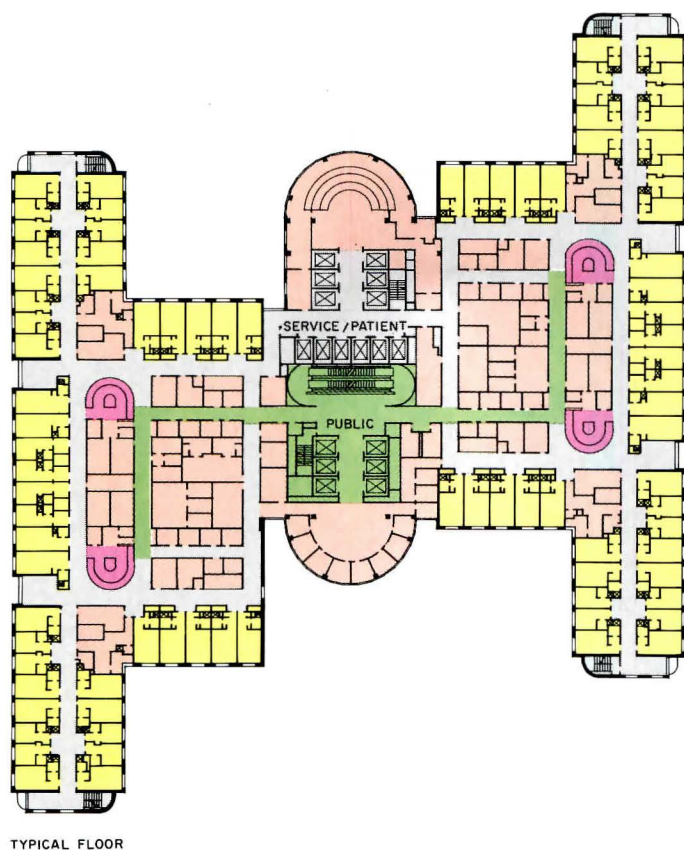
The new pavilion also recaptures a particular strong point of the original complex—the same-floor connection between departments of the medical school and the hospital's corresponding treatment facilities. Responding to a former source of staff frustration, vertical
Continued on page 126



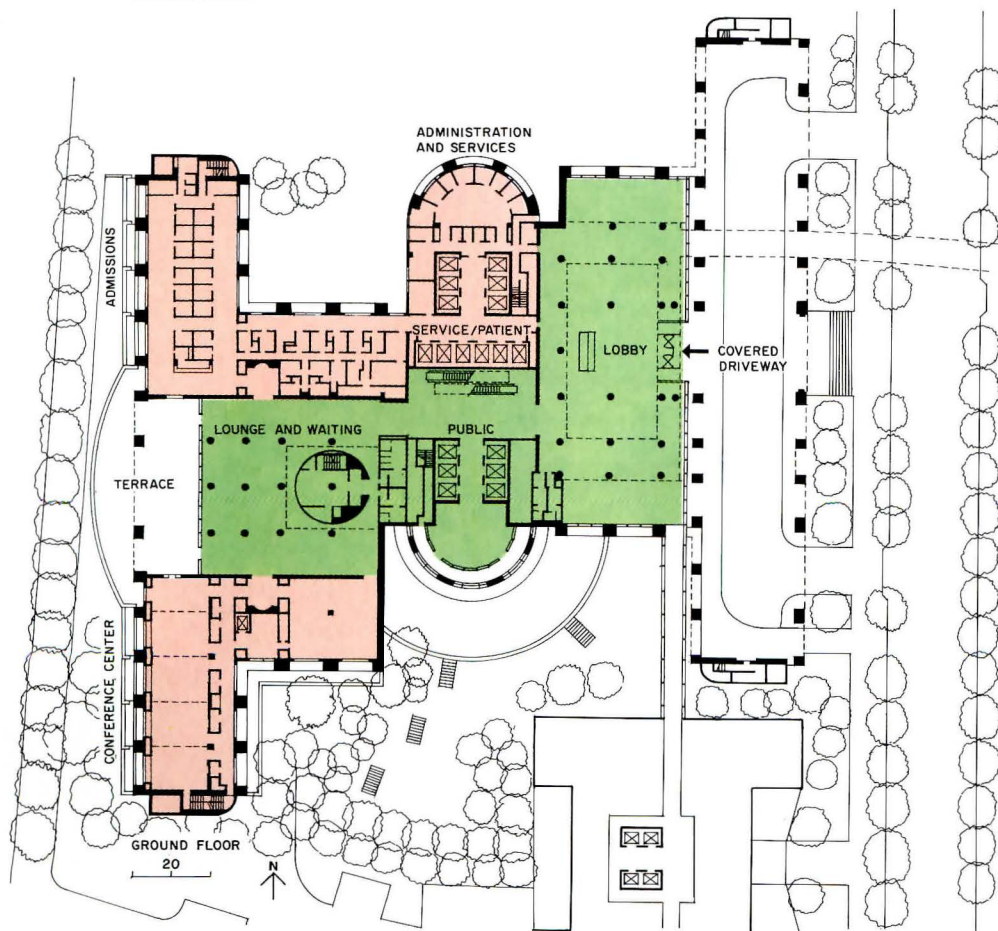
Although its color is compatible with the gray-brown hues that dominate the medical-center campus, the Milstein Hospital building makes a vigorous statement of its own. Beginning with specially made 8-inch-square pale-brown bricks, the composition builds up in a gridlike pattern of squares, neither vertical nor horizontal in emphasis. Square four-room units, each containing four square windows, are defined by crosses recessed into the brick panels. The windows themselves are oversized and varied by shifts in the positioning of the horizontal muntin and an operable casement. The white-painted metal windows also presage the crisp glass-and-metal curtain walls that complement the muted masonry. Coated glass made to match the brick clads semicircular "knuckles" on north and south (photo lower left), while white metal grids announce floor lounges, lobbies, and other public spaces. Presenting the hospital's best vantage to the river, the west facade (upper left) rises from a mechanical base that lifts it above the tree tops along the river highway. On the street-facing facade (opposite), Warren trusses form glassed-in bridges that link related services in the old and new buildings (section below).







TYPICAL FLOOR



Operating efficiency and clarity of circulation are built into the Milstein Hospital from the ground up. At street level (plan lower left) the facade holds the established building line with robust pillars fronting a covered drive. The glass-enclosed main lobby gives direct access to administrative and social services as well as to the public elevators and escalator. Beyond this circulation core, a secondary lounge and waiting room with west-facing terrace serve the conference center on one side and on the other the admissions suite, which leads to patient and service elevators. The typical nursing floor (upper left) continues the separation of circulation routes for visitors from those for patients, staff, and services. The floor configuration is derived from four basic L-shaped patient-care units of 36 beds around a nursing station, which also acts as an orientation and control point for visitors. Paired, the perimeter PCUs open flexible interior space for clinical and teaching uses, including fast-changing diagnostic imaging technologies. Reinforced by corridor ceiling lighting and patterned floors, daylight and views from lounges next to the nursing stations (3) and at corridor ends (1, 2, 4) aid orientation within PCUs. Patient rooms (5) also enjoy view from big, square, low-silled windows. In the McKean Pavilion's top-floor PCUs for well-heeled patients, a glass-topped atrium that serves as entry court and lounge augments exterior room openings (6).



Continued from page 120

circulation routes within the new hospital are both numerous and tightly segregated for use by visitors, staff, and service. For good measure, escalators assure no-wait transport from floor to floor. The result is a sizable circulation core. Yet at 36 beds per PCU, four-unit floors of 80,000 square feet generate enough contiguous “generic” space between the perimeter rooms and the core to accommodate service and support functions as well as staff and research facilities previously housed separately. Moreover, the combined areas are free of fixed elements that would hinder rearranging and reassigning the spaces as needs—or technology—change.

At the same time, however, the generously sized floor plates prompted the architects to place a premium on clarity of circulation, assuring the ease of internal orientation that is critical to the comfort of staff as well as visitors. Separate paths for the hospital’s several populations are set up within each floor, with public corridors clearly distinct from service and supply routes. Other measures whose primary aim was to humanize the hospital environment—attention to scale and an emphasis on access to natural light and views—also abet wayfinding.

To scale down the hospital’s potentially intimidating 839,000-square-foot overall size, the four-way division of each floor’s patient-care units created comprehensible neighborhoods that pinwheel around the public elevator lobby. From the lobby the corridors lead directly to the nurses’ stations so that a visitor approaching a patient-care unit is also approaching a person—who can in turn monitor and control the visitor’s access to patients. In addition, natural light is deployed as both an amenity and an orienting device. The ends of corridors within the patient-care units are marked by broad-windowed lounges that open to daylight and views. The larger lounges at the elbow of the L-shaped units also contribute borrowed light to the adjacent nursing stations. Within individual rooms, low-silled windows allow bed-bound patients to look out to the Palisades across the Hudson or to nearby gardens.

To the SOM architectural team the complexity and scale of the Milstein project, and the need to reconcile the differing perspectives of a hydra-headed client, are familiar issues. It is the day-to-day well-being of patients, staff, and visitors, and the attention to detail it demands, that they see as the special challenge—and reward—of health-care design. *Margaret Gaskie*

Credits

Milstein Hospital Building

Columbia Presbyterian Medical Center

New York City

Owner: *The Presbyterian Hospital in the City of New York*

Architect: *Skidmore, Owings & Merrill (New York)—Michael McCarthy, design partner; Leon Moed, administrative partner; Gert D. Thorn, project manager and senior designer/architecture; Peter Ruggiero, senior designer/architecture; Lynn Collinson, senior interior designer; Philip Monteleoni, senior hospital planner; Barry Oberlander, senior technical coordinator; Carl Galioto, senior technical coordinator*

Engineers: *Skidmore, Owings & Merrill (New York) (structural); Jaros, Baum & Bolles (mechanical/electrical/plumbing)*

Consultants: *The SWA Group (landscape); Fisher/Marantz (lighting); Roman/Gatland (food service); Presbyterian Health Resources, Inc. (equipment)*

Project Manager: *Fishman Construction Company*

Construction Manager: *Walsh Construction Company*



Despite the emphasis on operating efficiency, the Milstein Hospital’s amenities include spacious and well-appointed public rooms. The main street-floor lobby (opposite), for example, is paired with a smaller lobby (top photo) between the admitting suite and the conference center (middle). On the top floor, visitors enter the VIP wing via an atrium/lounge (bottom).



Pre-Engineered By Design

By offering economies of scale, speed of erection, and already-proven details, pre-engineered buildings allow architects to use scarce dollars to create a distinctive structure or add specialized spaces and details. According to the Metal Building Manufacturers Association, some 50 percent of the square footage of one- and two-story nonresidential construction in this country involves pre-engineered components. Although around 34 percent of this figure is for manufacturing use, pre-engineered buildings are increasingly employed for small-scale commercial, community, and institutional uses.

There is a lingering sense that these are not architect-designed buildings. Don Pratt, president of Butler Manufacturing, replies, "This stems from the origins of the industry, in which the components were simply catalog items shipped out to customers from a warehouse." The field has evolved over the last 20 years, though, and today offers many framing and cladding options. Manufacturers now avidly court architects. The completely integrated system building, which is also the least costly, typically incorporates a steel structural frame (including a system of metal girts that supports the exterior cladding), insulation, and prefinished metal roofing and siding. The architect can also sheath the building in materials ranging from synthetic stucco to brick. In most retail structures, for example, the client buys only the steel frame from the manufacturer, roofing the building with any widely available commercial system, enclosing the sides and rear in precast concrete or concrete block, and installing storefront window walls on the entrance elevation.

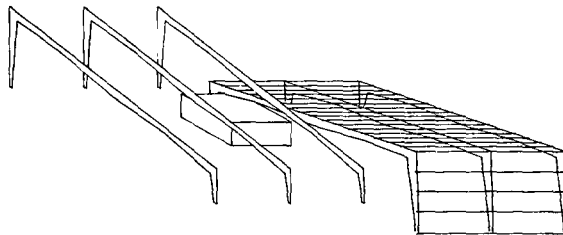
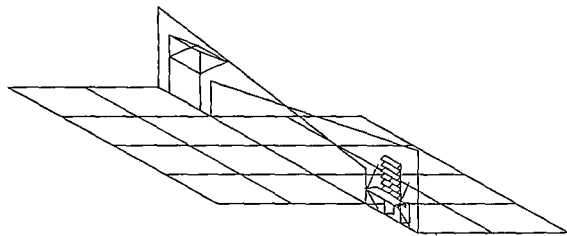
Who's in charge?

Pre-engineered buildings remain the choice for cost-driven clients, who often don't regard conventional architectural services as important. Many pre-engineered building dealers are general contractors who prefer to offer owners a complete design-build package, selling essentially similar products. "We work directly with the person putting up the money," one industry official says. Even when the ar-

chitect is hired by a client and brings business to a dealer, some dealers will not hesitate to advise owners of the cost savings that would accrue through dispensing with the architect's services. Typical of this situation was a project in rural Pennsylvania for a rapidly growing medical imaging firm. Harris Steinberg, of Steinberg and Schade Architects, recalls, "There was some tension between the contractor and our firm because they didn't know how to work with architects." The owner had never used architectural services either (the business grew out of construction trailers), but the program, of offices, engineering laboratories, and product-assembly areas, made retaining an architect almost essential. Steinberg and Schade's completed design—a barnlike shed sheathed in brick and punctuated by dormers and a cupola—has boosted the owner's image in the area.

Once an appropriate relationship is established, though, many architects find it rewarding to work with these structures. While manufacturers extol the qualities of new, more finished-looking components (like standing-seam roofs in many colors that have replaced unpainted corrugated ones), some architects are happy to explore the esthetic possibilities of the industrial look—the exposed fasteners, the metallic surfaces, and the angularity of the framing. The two examples shown in the following pages give a sense of the range of expression possible. Margaret Helfand deviated only minimally from the manufacturer's kit of parts (drawings below and photo top right), while Shaughnessy Fickel and Scott's union hall became a demonstration of the sheet-metal workers' art (bottom right)

In a turn-key project, built without benefit of an architect, the manufacturer becomes responsible for making the design suitable and the details effective. Though manufacturers tout flexibility and variety, they are only prepared to stand behind details and assemblies that are standard and have been tested. The architect takes on design responsibility to the extent that she or he departs from these elements, though many manufacturers will offer standard details for



Technology focus: systems buildings offer more flexibility than ever, but to enjoy the benefits architects must play by the industry's rules.

Attaching cladding that is provided "by others." Most manufacturers prefer to furnish technical assistance at the design phase (even when the project must be bid), so that the designer deploys components with the greatest efficiency. One should bear in mind, however, that manufacturers' details are not applicable in every building-code jurisdiction, nor are pre-engineered structures for some types of occupancy accepted by every code official (and, in some areas, by lenders).

Making the system work for you

You can build just about any kind of low-rise project as a pre-engineered structure; if the design is too quirky, however, the economies won't be there. Paul D. Nimtz, president of PDN Associates, a metal buildings consultant, suggests the following parameters: "There are advantages to staying within 20- to 25-ft bay spacings, and most manufacturers are set up on 5-ft increments. [Product literature details the spans offered by various structural systems.] Use external drainage instead of interior gutters. The more flashings and penetrations on the roof, the higher the cost will be."

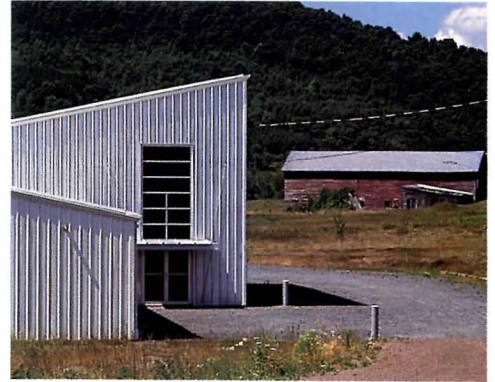
Because the systems are often selected for cost reasons, the architect should be aware that details are sometimes executed on site with an eye more to construction expediency than to strict compliance with the design. Hurricane Hugo in 1989 peeled off many metal roofs that should have survived. And Margaret Helfand found that steel inspection of pre-engineered buildings by an independent agency was unusual. In standard details, condensation control and protection against moisture infiltration are often minimal.

James S. Russell

Further information

The Metal Building Manufacturers Association offers *The Low-Rise Building Systems Manual* (\$25) and other publications. MBNA, 300 Sumner Avenue, Cleveland, Ohio 44115-2851

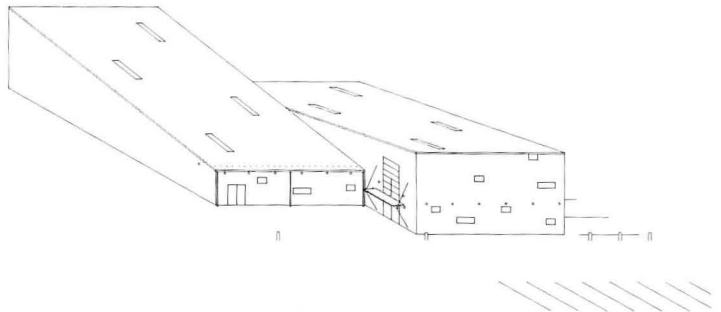
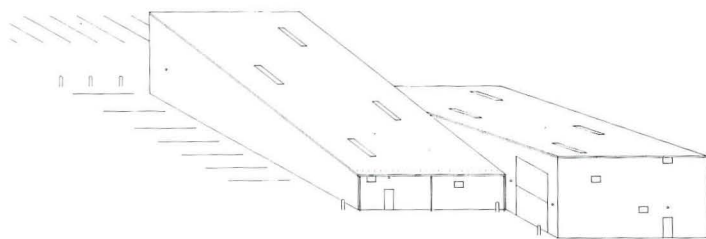
© Paul Warchol



© T. Sanders/Architectural Fotografics



Top: The Pakatakan Industrial Park contrasts with an earlier method of systems building—a barn. Bottom: Pre-engineered framing is exposed at the Sheet Metal Workers' Union Hall.



Pakatakan Industrial Park Arkville, New York

The Pakatakan Industrial Park was conceived in 1984 by the M-Ark Project, a community-revitalization foundation, to attract additional employment to New York's depressed Catskill region. It took several years to raise funds and acquire a site. With its \$27-per-sq-ft budget, "there was no question that it would be a pre-engineered building," recalls architect Margaret Helfand.

Though contractors offered to design and build the structure, the client chose Helfand on the basis of a previous project she designed in the tiny village of Arkville. "The site is low in a valley and this is a resort area, so the building had to fit in," explains Jane Meier, former executive director of M-Ark. "It was clear to the board what having a good architect could do for us." In her design,

© Paul Warchol photos



Helfand held to the simplest pre-engineered system—a slope-roofed shed with painted sheet-metal siding. She presented three massing configurations for the 8,000-sq-ft program, and the board chose one that could be occupied by a single tenant or split. In making the building distinctive, Helfand worked with standard elements: she deftly sprinkled windows and skylights (opposite top), used an

airplane-hanger door for loading (opposite bottom left), and designed a cable-supported entrance canopy (detail below). Although the building has a service core and connected utilities, including a sprinkler line, other fitout will be by tenants. A victim of the recession, the project at press time had not attracted an occupant, though a farmers' market has drawn big crowds.

Credits

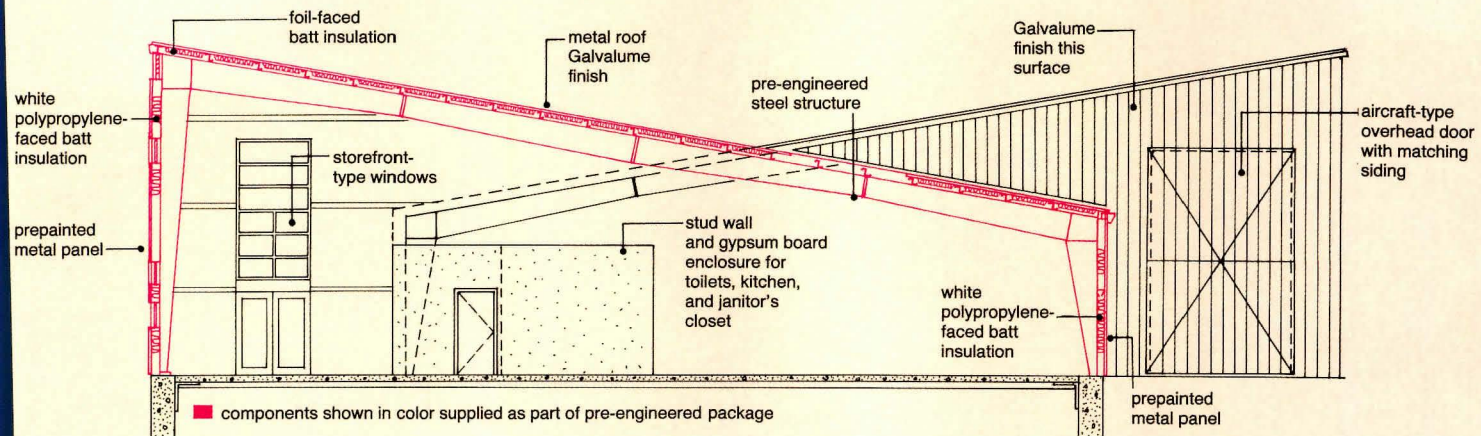
*Pakatakan Industrial Park
Arkville, New York*

Owner: M-Ark Project, Inc.

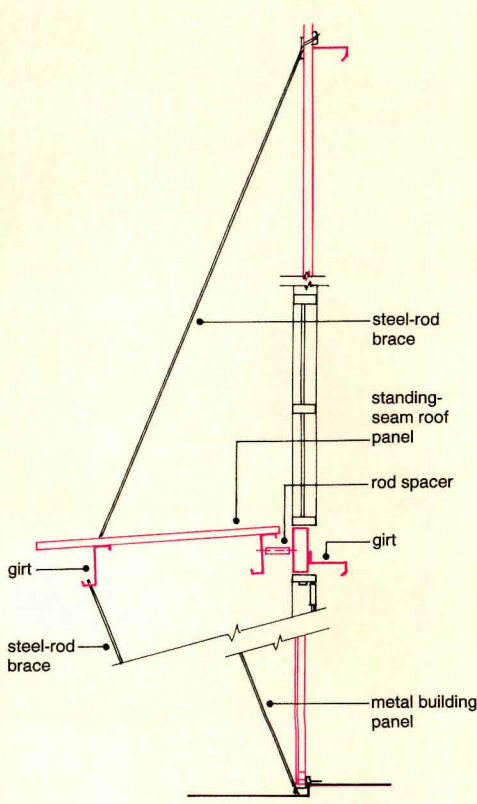
Architect: Margaret Helfand Architects—Marti Cowan, project architect

General Contractor: Jones-Marinich, Inc.

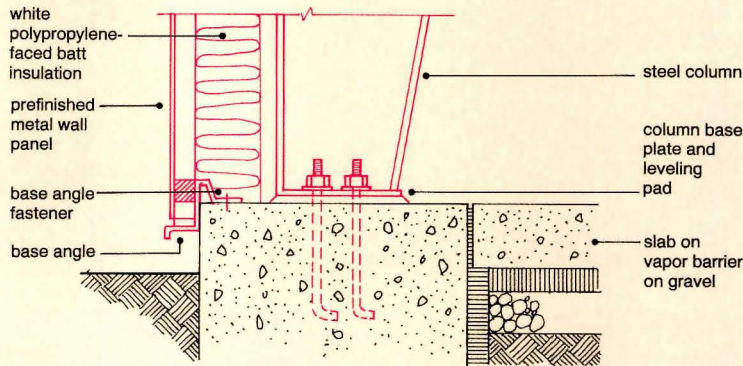
Manufacturer: American Buildings Company



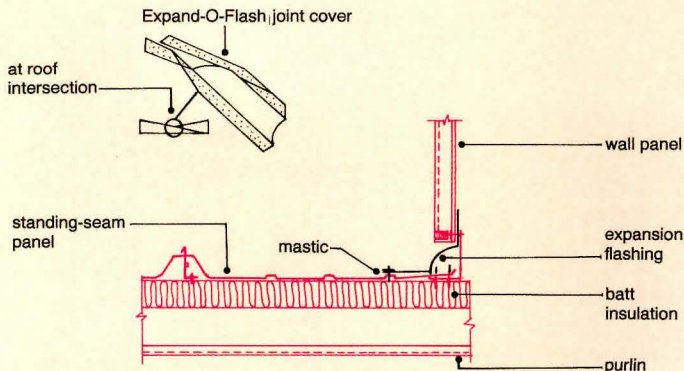
SECTION



ENTRANCE CANOPY



COLUMN AT FOUNDATION



WALL-TO-ROOF EXPANSION JOINT

Sheet Metal Workers' Union Hall Kansas City, Missouri

By keeping the structure of a 16,500-sq-ft union hall simple, Shaughnessy Fickel and Scott were able to let members of the sheet-metal workers' local show off their skills while sticking within the project's limited budget. And, with its relatively complex massing and sophisticated details, the hall demonstrates the flexibility of pre-engineered structures. The structure is set into a hillside

(bottom left) and its roof gable steps up on one side to reflect the varied functions housed within. Management offices are located in the low volume to the left of the entrance (bottom right), and a corridor leads past business-agent offices to a 300-seat meeting hall, located at the rear under the highest part of the roof (top). The stepped roof gables were more complex than is usual in this

© T. Sanders/Architectural Fotografics



© Mike Sinclair/Sinclair Reinsch photos except as noted

© Michael Christianer



ilding type, and it took sev-
al shop-drawing submittals
fore the manufacturer fully
nderstood the architect's de-
gn intent. Although the
rchitects applied standard de-
ils to the interface of the
fferent rooflines, they did
ry the manufacturer's details
develop a deep modeling of
e elevations. Horizontal girts,
hich stiffen the structure and
upport wall cladding, are typi-

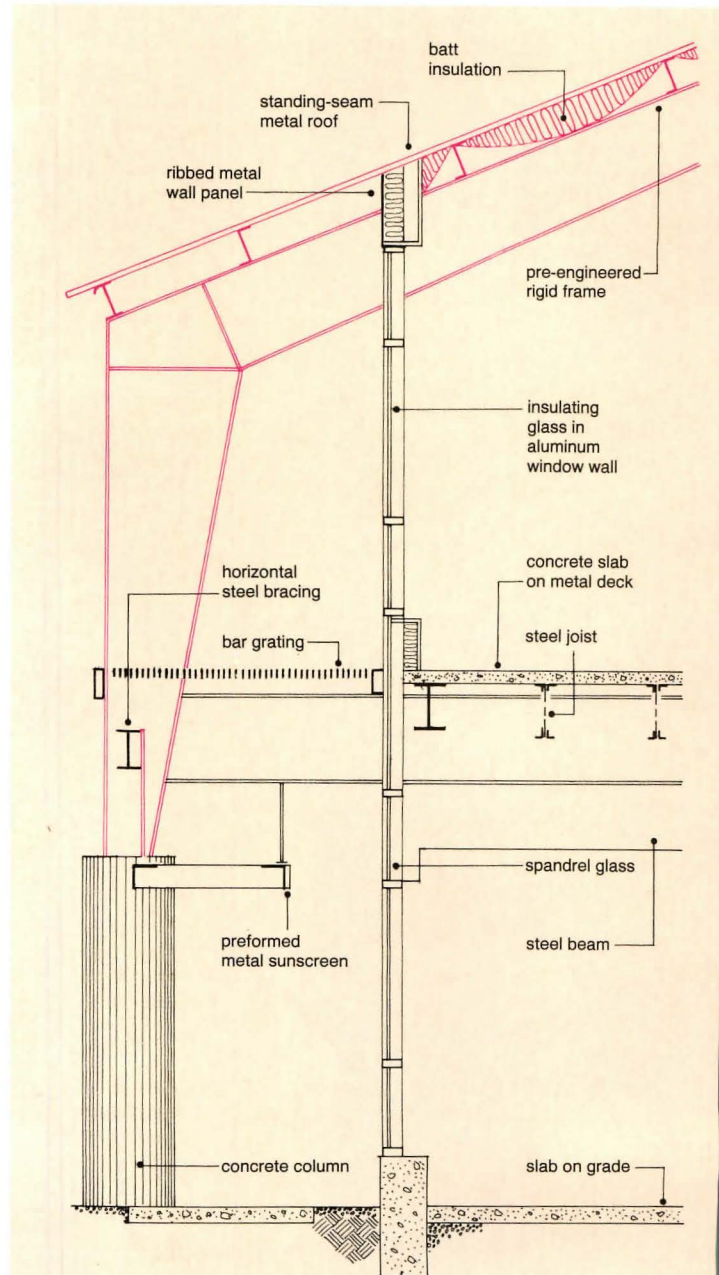
cally set flush with the exterior
of the welded-steel structural
frames. The architects attached
some girts to the outside of the
frame, so that windows would
appear inset (below, and detail,
page 135). The bulk of the build-
ing is sheathed in unfinished
aluminum panels, but the ar-
chitects varied the wall surface
with prefinished steel panels at
the window insets and painted-
metal stripes.

© Michael Christianer



At the south elevation, which commands views of two ponds, the roof extends 6 ft beyond the wall, exposing the steel frame and shading the interiors (below). The architects were concerned lest the steel-frame penetrations draw winter heat from the meeting hall, but this has not proven to be a problem (section below). Although manufacturers are able to construct multistory buildings,

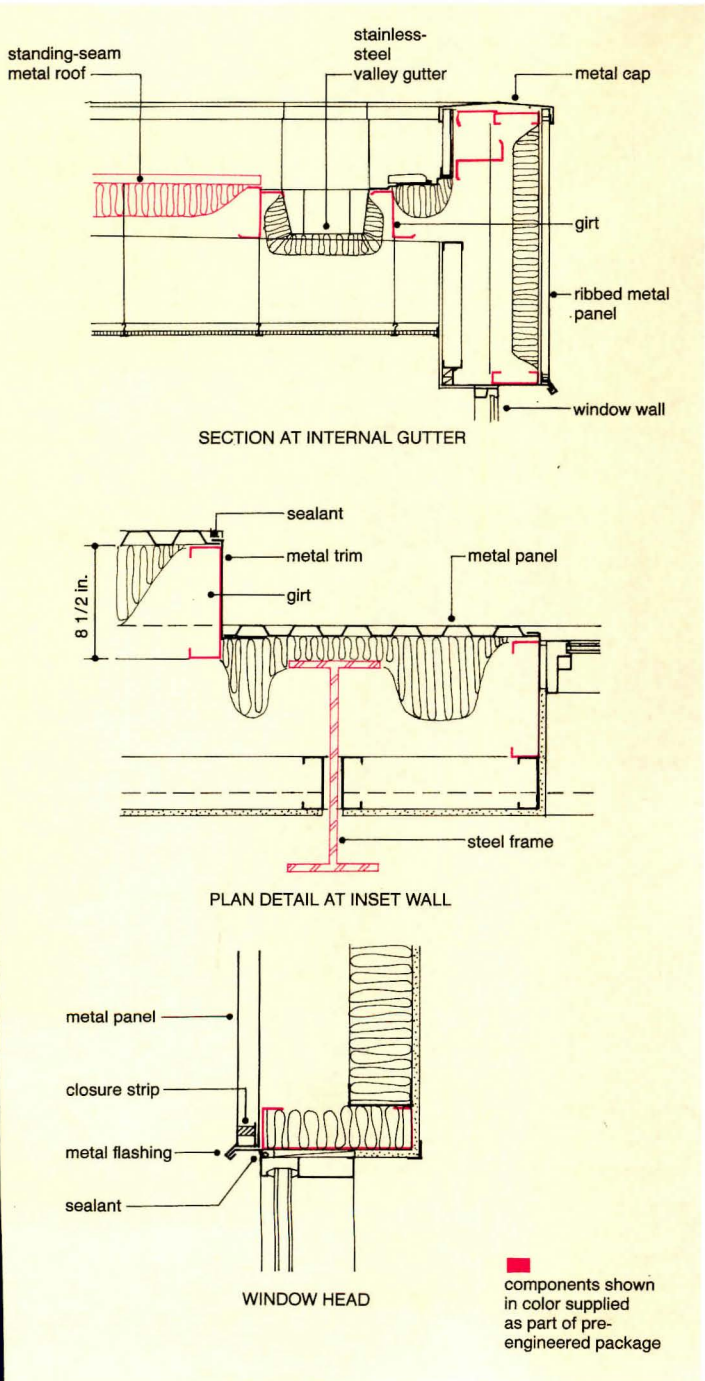
in this case the structure of the main floor was fabricated separately. A storefront glazing system takes the place of the manufacturer's standard windows, and the architects specified some internal gutters for a neater appearance (top detail opposite). Drywall finishes were carried up only to the height needed to protect the insulation on the inside (below). Thanks to careful



arrangement of frame bracing, ductwork, skylights, and a lighting grid, the ceiling has an unusual elegance (below right).

C. Michael Shaughnessy, principal-in-charge; Michael Christianer, project designer
Engineers: Bob D. Campbell (structural); Henderson Engineers, Inc. (mechanical); Tuttle Ayers Woodward (civil)
General Contractor: A. L. Huber & Sons, Inc.
Manufacturer: Varco-Pruden
Sheet Metal: A. Zahner Sheet Metal Company

Credits
Sheet Metal Workers' Union Hall
 Kansas City, Missouri
Owner: Sheet Metal Workers Local No. 2
Architect: Shaughnessy Fickel and Scott Architects—



It could take you 10 years to learn how much a roof costs.

For the most part, when you buy something, the price you pay is usually right there on the tag. Not so with a roof. Because the real cost of a roof depends on a number of factors over time. Like ten years.

Ten years of energy bills can sure add up.

Over ten years, energy savings from our white Hi-Tuff® roof can really add up.

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Why was that cheap roof so expensive to install?

Just take a look at the roof below. As you can see, it's a BUR. And like most of those roofs, it takes a small army to put it down. Now, a Stevens Hi-Tuff® roof doesn't need that many installers. Try half. Maybe fewer.

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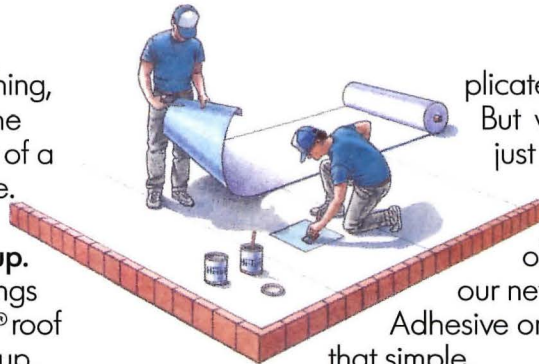
Your client's money stays on the roof instead of walking off at the end of the job.



Maintaining a roof can be easier than you think.

Like most things in life, a roof needs upkeep. Some systems even need expensive coatings every few years to keep their ratings. Not Hi-Tuff®. It stays white and naturally fire resistant, because it's made from DuPont's Hypalon (CSPE) synthetic rubber.

But what if somebody pokes a hole in your roof? Repairing some systems can be pretty com-



plicated. And expensive. But with Hi-Tuff® we just clean the spot, cut a patch and then bond it to the old surface with either our new Hi-Tuff® Repair Adhesive or hot-air welding. It's that simple.

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For years, top architects have been using CAD to design buildings. Now, we have an Electronic CADalog to help create details and customized, architectural quality specifications for the roofs you design. Fast. In minutes instead of hours or days.

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Hi-Tuff® roof system you can install. What components to use. In fact, it even cross-references the available FM and UL classifications, and gives you the approved insulations for those ratings. And it's compatible with popular



DXF-based CAD systems like AutoCAD®, Versacad®, and Intergraph®.

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So, if you'd rather talk than read, call Bruce Abbott or Dave Brown at (800) 621-ROOF.

They'll give you all the information you need. Which should take a lot less than ten years.

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AutoCAD® is a registered trademark of Autodesk, Inc.

Electronic CADalog is a trademark of Vertex Design Systems.

Versacad® is a registered trademark of Versatech.

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Velour Texture
Manganese/Heavy

Velour Texture
Mahogany Color

Velour Texture
Manganese/Fine

Velour Texture
Butte Brown Color

Island Teal

Dawn Grey Mat

Indian Turquoise

Palisade Blue

Sandrift

Mountain Blue

Peach Sand

Terra Cotta

Highland Heather

Misty Grey

Pumice

Prairie Peach

Frost White Satin

Adobe

Architect:
Murphy/Jahn

Livingston Plaza, Brooklyn, NY

THE -MILLENNIUM- COLLECTION

stark
Stark Ceramics, Inc.

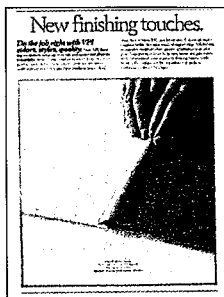
Introducing a new Millennium of spirited design. It starts with your inspiration and culminates with Stark Ceramics' Millennium Collection. A peerless structural glazed ceramic wall product for exteriors that lets you design a building that's modern and sleek or warm and inviting. Create your next masterwork with Millennium. **1 800 321 0662**

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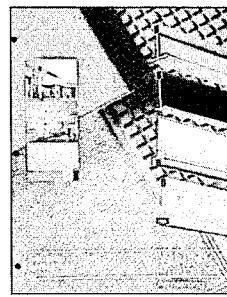
For more information, circle item numbers on Reader Service Cards.



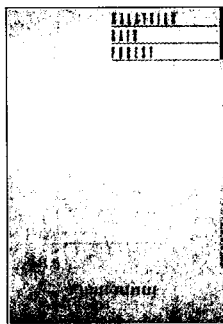
Elevator Cabs
Planning Guide on Spectrum Series components features pre-engineered cabs or interiors customized from a range of optional finishes, railings, door styles, and ceilings.
Schindler.
400



Flooring Accessories
New line of carpet and tile reducers, strips, and joiners come in black, brown, taupe, and gray. Said to be strong and durable.
Vinyl Plastics, Inc.
401



Grid Suspension Systems
Catalog describes full line of acoustical ceiling systems. UL-listed designs, grid/ceiling compatibility charts, load data, and maintenance guide included.
Armstrong.
402



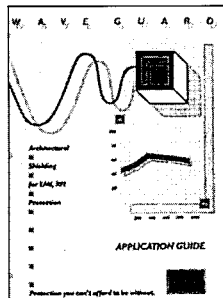
Sustained-yield Forestry
Describes how the lumber industry in the rainforest is regulated, and explains the goals of conservation research and timber management.
Malaysian Timber Industry Board.
403



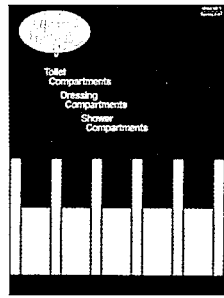
Sliding Doors
Covers sliding, folding, and swinging doors and operators for industrial and commercial use. Includes fire-rated units and an automatic door that can be concealed in a standard stud wall.
The F. L. Saino Co.
404



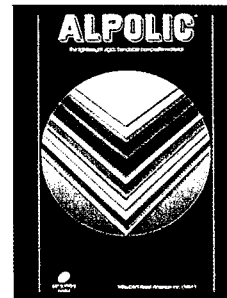
Joint Covers
A 24-page catalog features a line of expansion-joint covers for walls, floors, traffic surfaces, and roofs. Fire-rated and special designs included; functional joint requirements are diagrammed.
Metalines, Inc.
405



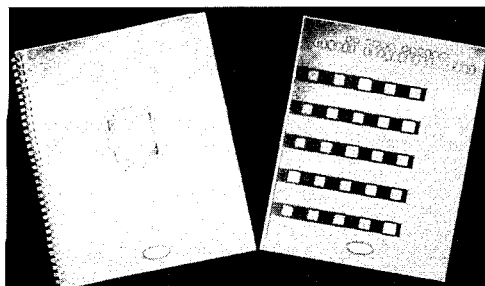
EMI Shielding
A 64-page reference guide explains electromagnetic/radio-frequency interference, and shows how a line of water-based copper paints can provide economical architectural shielding.
Spraylat Corp.
406



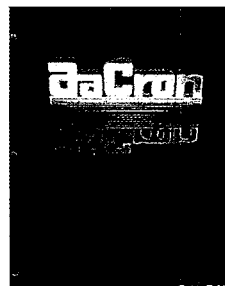
Compartments
Toilet and shower partitions shown include solid-core stainless steel, enamel-finished metal, and laminate constructions; all mounting options and finish colors illustrated.
Metpar.
407



Cladding Panels
A metal-faced composite sheet, Alpolic comes in anodized and custom-color-paint finish options. Brochure pictures recent projects and provides technical data.
Mitsubishi Kasei America Inc.
408



Carpet Specification
A kit from the makers of Antron nylon stresses the impact of the carpet fiber itself on the construction, appearance, and maintenance of commercial carpeting.
DuPont.
409



Colored Aluminum
Multiple color options in anodized aluminum include bronzes, pinks, burgundies, golds, browns, oranges, and black, in matte or reflective finishes. Suitable for architectural applications such as windows, store-

fronts, panels, and trim, anodizing systems can handle sections as long as 40 ft. New blue, green, and white anodizing will be available early in 1992.
AaCron, Inc.
410

Continued on page 140



Trial by fire.

When the Edmonton Law Courts wanted a fire-retardant panel for their expansion project, the decision was in favor of Duraflake® FR. The Class I fire-rated particleboard that's gone through trial after trial.

It has a UL flame spread rating of 20. And a smoke developed rating of 25. Plus it's stable and won't bleed chemicals. Important requirements when laminating fine veneers such as the teak used in Edmonton's courtrooms.

You can order Duraflake FR cut-to-size, or in four- or five-foot wide panels of standard length. Four-foot wide panels are also available up to 18 feet in length. It's even available as a high-pressure laminate panel called DuraDesign® FR, for use in casegoods and furniture.

If you have to meet strict fire codes, call (503) 926-5866 for Duraflake FR. And give it a trial.



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Duraflake Division
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Albany, Oregon 97321
(503) 928-3341

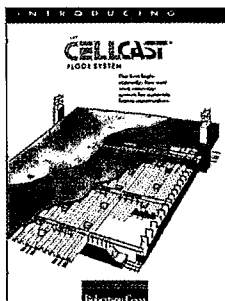
For more information, circle item numbers on Reader Service Cards.



Water-saving Faucets

Sensorflo faucets for commercial and residential applications come in both gooseneck and low-profile styles with temperature-mixing valves that use up to 85 percent less water. Speakman.

411

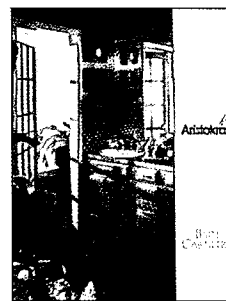


Built-in Raceway

The Cellcast Floor allows high-capacity, low-cost wire and cable distribution in cast-in-place concrete decks while increasing the decks' structural strength and diaphragm action.

H. H. Robertson.

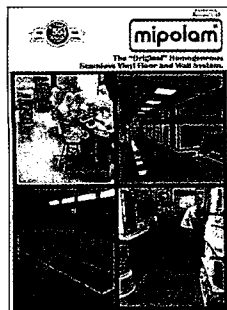
412



Bath Cabinetry

Features new Vienna Rouge and Café door styles as well as traditional and contemporary designs. Convenience fittings include a cosmetic drawer and pull-out clothes hampers. Aristokraft.

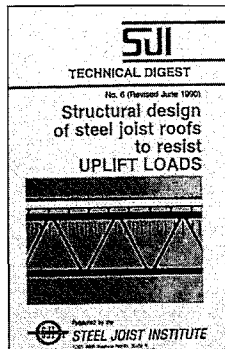
413



Seamless Vinyl

Catalog on Mipolam heat-welded PVC sheet and tile explains how the floor becomes monolithic upon installation, creating an easily maintained, comfortable, and sanitary surface. Hüls America.

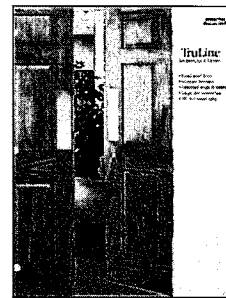
414



Steel-joist Design

An 18-page Technical Digest discusses the vertical wind forces on open-web steel roof joists, and suggests uplift-resisting design strategies for both K- and LH-series members. Steel Joist Institute.

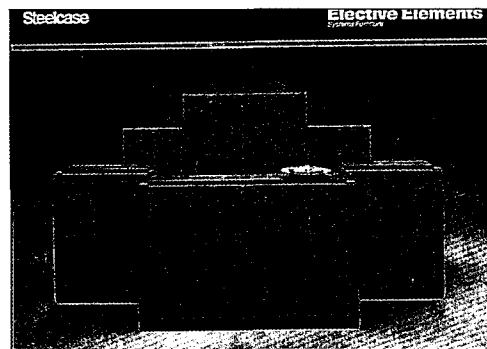
415



Architectural Doors

Raised-panel doors feature a realistic stile-and-rail look, and come in birch, cherry, white and red oak, mahogany, pine, walnut, and maple woods. Fire ratings of up to 60 minutes. TruLine.

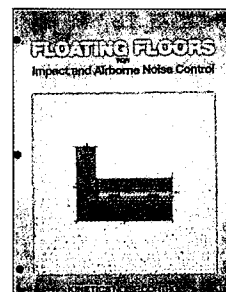
416



Systems Furniture

Color brochure features the design versatility of Elective Elements components, showing wood veneer, laminate, drawer pull, storage, and panel options in task-specific use. Steelcase.

417

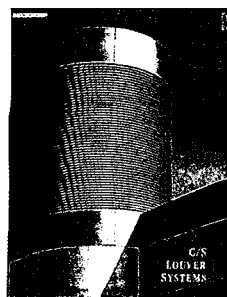


Acoustic Floors

The floating floor is described as a cost effective construction technique that reduces airborne sounds in spaces near high-noise areas by creating a composite floor in the noisy spaces. The floor comes in both wood

and concrete configurations. Brochure describes different installations with STC ratings of 50 to 73. Kinetics Noise Control.

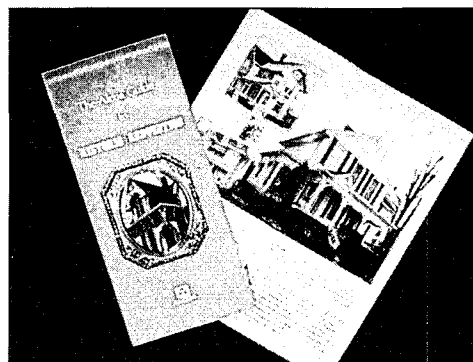
418



Louver Systems

A 32-page catalog describes how new proprietary fixed-louver designs provide free areas of 48 percent and significantly reduce the size and cost of systems while providing required air volume. C/S Group.

419



Renovation Guide

A color folder provides general information on federal historic renovation guidelines, explains when substitute siding materials are acceptable, and illustrates remodeling projects. Stresses the impor-

tance of choosing the appropriate siding profile and architectural detail and using correct installation techniques. Alcoa Building Products.

420

Kahn Reconsidered

Continued from page 95

rather than originator of an architectural tradition. But what other recent architect has managed to imbue cast concrete with such dignity and even sumptuousness? In the exhibition catalog, David De Long rightly notes that at the Salk "the standards that were set then for poured-in-place concrete have never been surpassed and have rarely been equalled. Transformed into an elegant material, the concrete overshadowed even the beauties of the travertine paving."

Where Kahn's former associate Robert Venturi, for example, might have provided us with a faux Corinthian column, Kahn himself was content to let the materials he used speak for themselves through the strength of his design and rigorous craftsmanship. It simply will not do to transform Kahn into a postmodernist before his time. As Loud has insisted elsewhere, "Kahn accepted the premises of the International Style." Though his buildings are not the glass boxes we tend (too narrowly) to associate with the term, they do display a commitment to structural honesty that is a hallmark of high modernism. "The artist," Kahn wrote, "inadvertently keeps the marks which reveal how a thing is done." Moreover, everything we know about Kahn suggests that he would have loathed the cute appliques of postmodernism and the tortured pomposes that parade under the banner of deconstructivism.

One of the chief merits of Kahn's best buildings—what makes each of them an architectural success in the fullest sense—is the happy marriage of architectural individuality and what we might call architectural visibility. There are certainly many quirky contemporary buildings than Kahn's—architecture in the 1970s and 1980s has been virtually defined by quirkiness—but few perhaps that are genuinely more distinctive architectural creations. The post-tensioned barrel vaults of the Kimbell, the tetrahedral ceiling of the Yale Art Gallery, the cylindrical stairwells of the Yale Art Gallery and YCBA, the rosette-like windows of the library at Exeter: these are signature architectural innovations that helped make these buildings the memorable works that they are.

But it is part of Kahn's genius that these distinctive elements never intrude upon the viewer. His buildings are individual to the point of idiosyncrasy, yet they remain transparent to the works of art they house. Kahn predicted that on a dark day the panels of dark, unpolished stainless steel used on the facade of the YCBA would seem like a moth but that on bright days they would seem like a butterfly. And so, in a sense, they do. Like the beautiful contrast of unfinished blond oak against the cool, smokiness of precast

concrete he achieved inside the building, one's experience of those panels are certainly part of what we take away from a visit to the YCBA. But while we are looking at the works of art inside, the building exists only as a serene and reticent presence: that indeed is part of its greatness. Kahn was in the habit of asking, "What does a building want to be?" Among his rare gifts were the patience to listen and the wit to discern the answer. ■



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Manufacturer Sources

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Pages 72-79

The National Gallery Sainsbury Wing
 Centuri, Scott Brown and Associates, Inc., Architect/Sheppard Robson, Associated Architects
 Windows: Josef Gartner and Co. Ornamental ironwork: Cromwell Ironmasters. Elevators: Fujitec (UK) Ltd. Skylight shading: Technical Blinds. Lazing: Bruder Eckelt GmbH. Fire glass: Schott (Gyran). Slate: Burlington Slate Ltd. Sandstone: Manni SRL. Limestone: Sogepierre. Granite: Cold Spring, Inc. Resilient flooring: Altro Floors, Ltd.; Armstrong World Industries, Ltd.

Pages 88-93

Royal Academy Sackler Galleries
 Foster Associates, Architect
 Curtain wall: GIG. Glass staircase: Brent Metalwork. Downlighting: ERCO. Elevator: Otis.

Pages 104-109

Dowell Performance Pavilion
 William Rawn Associates, Architects, Inc.
 Paint: Duncan Industries; Tnemec. Uplighting: Mega/FS.

Pages 120-127

Wilstein/Columbia Presbyterian Hospital
 Sidmore, Owings & Merrill, Architect

Pages 120-123—Beige and white brick: Glenery. Roofing: American Hydrotech. Windows, curtain wall, and metal panels: Zimmcor. Tinted glass: Falconer.

Page 125—(top left, center left and right) Resilient flooring and acoustic ceiling: Armstrong World Industries. Cove base: Johnsonite. Hardware: Stanley. Lever-handle locksets: Corbin. Corner guards and handrails: C/S Group. Waiting-room seating: CI Designs. Vinyl upholstery: Majalite (Finesse). Oak tables: Intrex. (top right) Carpeting: Lees. Window shading: Mechoshade. Armchair: Charles McMurray Designs. Upholstery: Unika Vaev (USA). Sofa: Woodlee. Upholstery: Jack Lenor Larsen. Drum table: Intrex. (lower left) Cubicle fabric: DesignTex. Resilient flooring and ceiling tile: Armstrong World Industries. Window blinds: Levelor. Recessed down lights: Alkco. Art work: Tino Zago. (lower right) Door: Weyerhaeuser. Pulls: Glynn-Johnson. Office chairs: Stendig. Bed: Hill-Rom. Night table: Knhardt. Table lamps: Nessen. Drapery fabric: Schumacher & Co. Carpeting: Lees. Tables: Intrex. Armchair: Charles McMurray Design.

Page 126—(top) Wood-framed upholstered seating: CI Designs. Upholstery: Majalite Vinyl (Finesse). Tables: Intrex. Planters: Architectural Supplements. Terrazzo flooring: D. Magnan Co. Carpeting: Lees. Bowl-shaped planters: Intrex. Terrace seating: Stendig. Terrace planters: Weatherend. Roof pavers: Hastings. (center) Guest seating: Stow & Davis. Upholstery: Boris Kroll. Movable wall system: I. A. C. Carpeting: Lees. Door hardware: Von Duprin. Door-light glass: Falconer. Anigre veneer paneling: U. S. Veneer. (bottom) Circular bench: Weatherend. Upholstery: Donghia. Tables: Custom Interior Decor; Intrex. Pyramid skylight: Fisher. Glass:

Falconer. Sun screen: Mecho Shade Corp. Louver doors: Creative Woodworking (custom). Planters: Weatherend; Architectural Supplements. Carpeting: Lees.

Pages 129-131

Pakatakan Industrial Park
 Margaret Helfand Architects
 Structural system and white long-span panels: American Buildings Co. Metallic panel: Bethlehem Steel Corp. (Galvalume). Windows: Acorn Building Components, Inc. Bi-fold doors: Wilson Industrial Doors, Inc. Exterior fixtures: Stonco.

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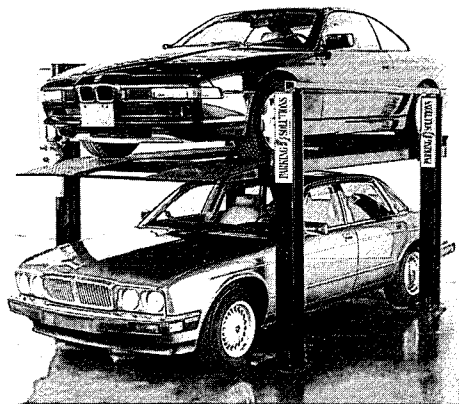
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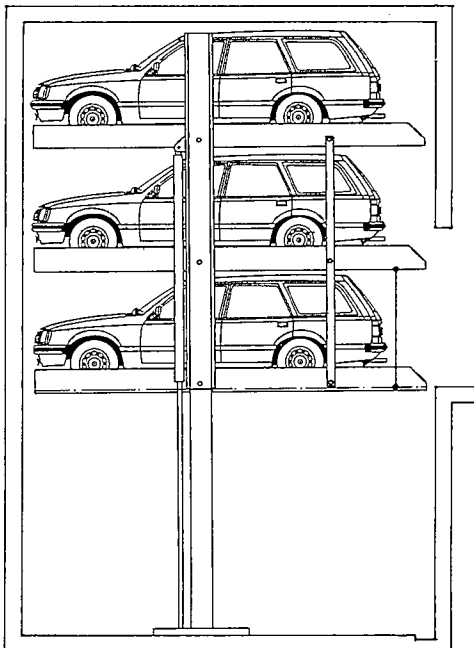
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Product News



308. High density. Lifts that store two cars in one space were used to minimize the size and double the capacity of a large new garage designed for the space-saving devices at Harvard University. Commercial versions can be installed on existing concrete, hold vehicles up to 7,000 lbs, and need only 10 1/2 ft of headroom. Pictured is a new, less expensive lift, for sports cars that weigh up to 3,000 lbs Parking Solutions.



309. Triple-decker. An advantage of the German-made Klaus ParkLift is that each car is independently accessible: you can be "first off" no matter in which order the cars were parked. The hydraulically operated mechanism comes in two- and three-car versions, especially suitable for tight urban infill sites where where space is at a premium. Heidinger Marketing. ■

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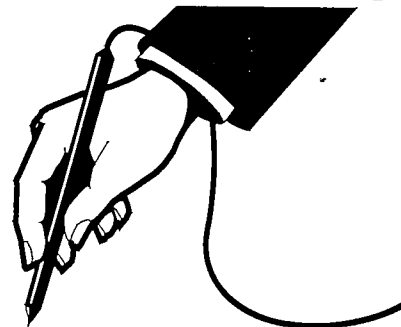
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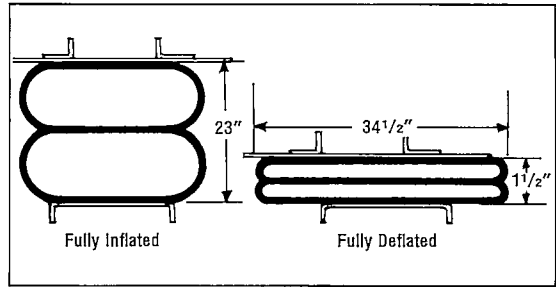
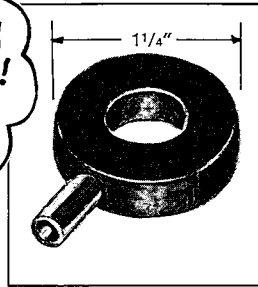
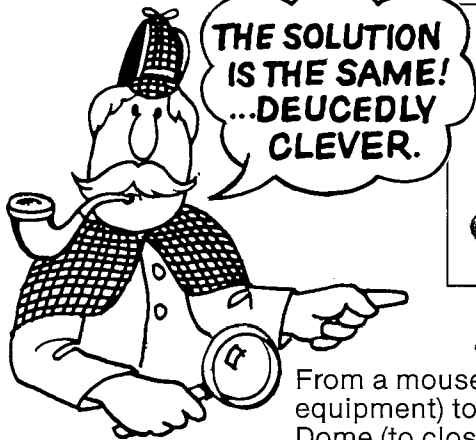


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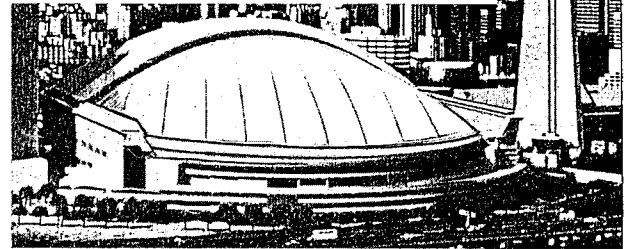
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