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Marfa Marvelous

Donald Judd's Marfa, Texas, work [RECORD, January 1993, page 82] so clearly reinforces Mies's statement: "Less is more." Showing Marfa photos was a brilliant choice, and is a lesson for us all. RECORD makes a strong statement for the '90s and beyond with your Renovation issue focused on project after project where clean up/simplify obviously makes more sense than rebuild/add-on/glitzy. Now if we'd learn to keep new projects as spare and direct!

*Daniel Sullivan, Architect
Truro, Massachusetts*

"Classicists Are Here"

Regarding your editorial in RECORD, January 1993, page 13, I feel I must stand up for an "allegiance to the friendly and recognizable and understandable . . ." (your quote) architecture within our own country by architects *not* practicing as Postmodernist. You ignored the genuine classicists within America and their organizations.

Perhaps it is only the architectural media which have failed to recognize our own strength. As recently as October 1992, the Classical Architectural League held an international conference on "Emerging Young Classicists" in Washington, D. C. Classical America, with Henry Hope Reed as president, holds an annual awards program, sponsors classes in drawing the classical, and publishes their own series of related books and videos.

You said "tradition dies hard even in our country." Is ignoring the chance "to express" modern technology silly and costly when the earth is rapidly running out

of natural resources? Traditional materials are not only more humane to the eye and touch, but also more environmentally friendly. As British architect Quinlan Terry has pointed out: ". . . clay bricks, clay tiles, lime mortar, stone and slate . . . can always be reused—even lime mortar can be put on the land." Can the same be said of [all of the modern high-tech materials that] not only lack the life of traditional materials, but also consume more energy and produce more more toxic waste?

Is it really wise to accept and promote *all* new technologies? Don't be so naive as to believe there are no genuine classicists left in America. For we are here, thanks in large part to a public who has never forgotten the tradition, and who is not interested in architecture for architects.
*Steve Wiseman, Architect
Lexington, Kentucky*

Reverse Discrimination

On page 26 of RECORD, January 1993, a headline stated "Minority Architects Select Seven Buildings as Design-Award Winners." publicizing architectural firms, presumably minority owned, responsible for designing award worthy projects as recognized by the National Organization of Minority Architects. In my opinion, the organization and its award intent is practicing exactly what we are attempting to eliminate—discrimination. Non-minority architectural firms are intentionally excluded from the benefits offered by the organization, including the design competition. Furthermore, the organization as titled implies a racist attitude!

I am appalled by all acts of discrimination—race cannot be
Continued on page 119

Through May 30

Major retrospective, "Louis Kahn: In the Realm of Architecture," Museum of Contemporary Art, Los Angeles. Contact Dawn Setzer, 213/621-1750.

March 6-April 15

Symposium on the work of N. W. Overstreet and Robert Overstreet, two Mississippi architects; \$45; \$35 members; \$20 students. Mississippi Museum of Art, Jackson, Miss., 800/423-4971.

March 25

Lecture on "Manhattan: Grand Central Partnership" by Jane Thompson of BTA, Boston; Daniel Beiderman of the GCP; Robert Rosan of Urban Land Institute. Cooper-Hewitt Museum, New York City, 212/860-6894.

April 6-July 25

Exhibition of "Czech Cubism: Architecture and Design" including architecture, furniture, and decorative arts. Lecture April 29 by Miroslav Base, Prague; Ronald Lee Fleming, Townscape Institute; Jan Hird Pokorny, architect; John Stubbs, World Monuments Fund. Cooper-Hewitt Museum, New York City, 212/860-6894.

April 24

Seminar on "Creating the Classical Interior Today," New York Academy of Art, New York City, 212/505-5300.

May 2-5

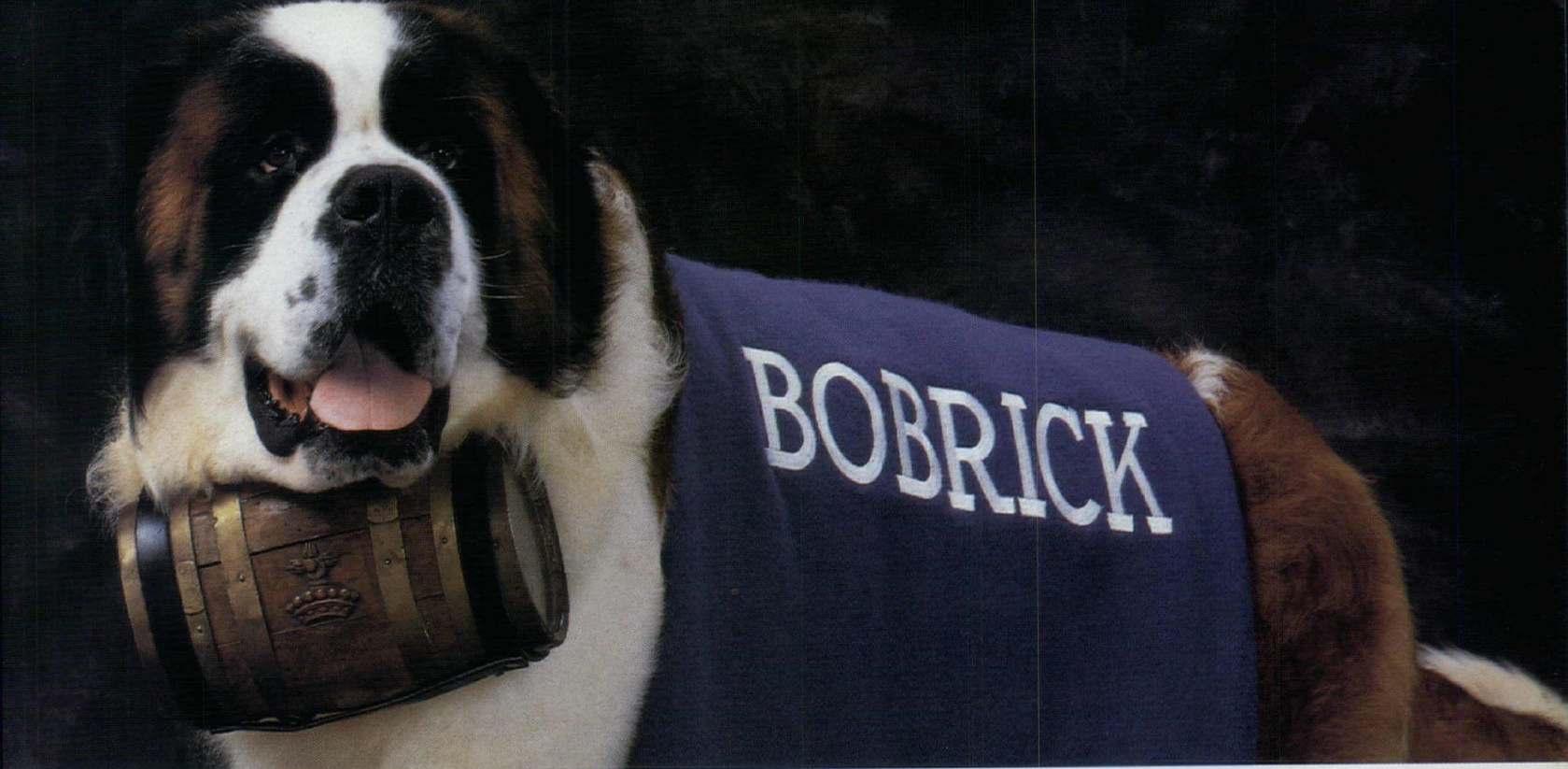
American Consulting Engineers Council annual convention, 1015 Fifteenth St. N. W., Washington, D. C., 202/347-7474.

May 15-July 18

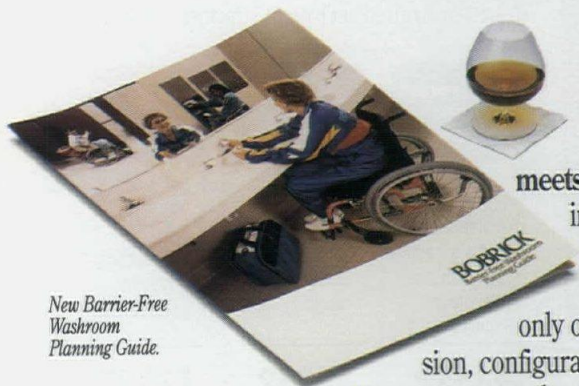
Exhibition of "Put the City Up: Chicago Commercial Architecture, 1820-1992," Contact Chicago Architecture Foundation, 312/922-3432.

May 20

Lecture on "Toronto Within Its Region" by Ken Greenberg,
Continued on page 119



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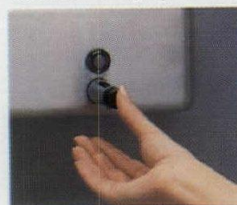
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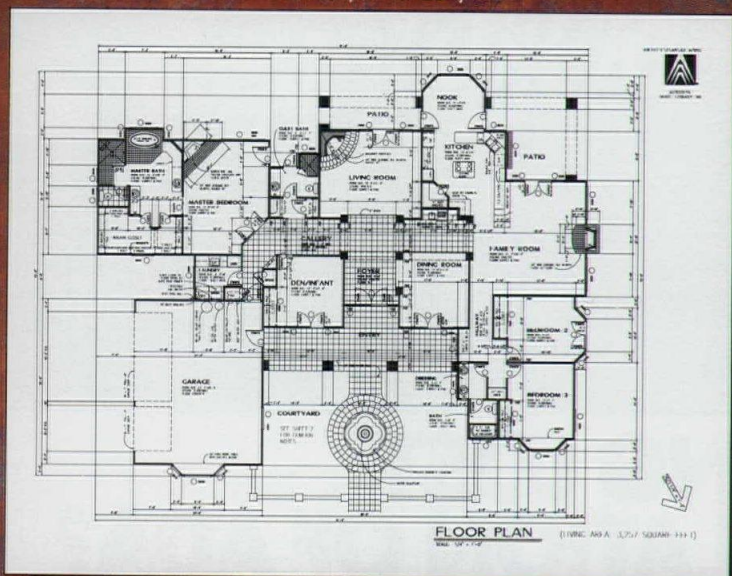
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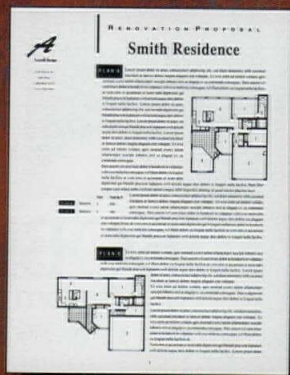
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Gut Issue Two: Managing Leaner/Mixed Blessing: The Architectural Works Copyright Protection Act Is Not All It Seems, by Carl M. Sapers/Controlling Delay Claims / Specification Series: Ceramic-Tile Flooring

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Hodgetts and Fung Design Associates, Architect © Grant Mudford photo

Back to the future . . .

F

ast times call for change. So the management gurus tell us, and who dares doubt them? The landscape is littered with the bleached bones of companies that . . . well, you know the rest. But some change turns out to be just so much small change. You see it in the company that becomes a chameleon, shifting restlessly with every shadow glimpsed in the crystal ball, putting a new spin on its message and its methods from one day to the next. Dealing with chameleons isn't much fun. What seems like forward movement can often be little more than agitation, with nothing gained and the crucial loss of a company's history and identity. For change to make sense, origins and evolution must intelligently mesh.

But shall we cut to the chase?



tarting in the sixties, Forms + Surfaces built a reputation for innovative forward-thinking design made

enduring by classic craftsmanship. Then came the eighties (surely, you remember them). Like many small, highly motivated companies, Forms + Surfaces became part of a larger corporation. Amid the feeding frenzy of a big fish/little fish era, this may not have been the gulp heard 'round the world, but it had the significant effect of making us a very small division in a very large conglomerate. But with a recent acquisition the company is once more in private hands and our design-intensive past is prologue to the future. New management has joined the gifted craftsmen and staff who have been with the company for years, and together we're making things happen. Real things. Our first order of business is a renewal of our dedication to quality, from creation and manufacture to distribution and support. As in the past, design energizes and directs our future plans. We're making a great leap backwards, to the kind of dramatic new thinking these fast times—and our customers—demand. In a way, we're changing in order to stay the same.

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Partnering Makes Sense

"I have trouble with the word 'partnering,'" general contractor Anthony Espinosa told *Wall Street Journal* reporter Jim Carlton in a February 10, 1993, article. "It's a warm and fuzzy word. I'm used to coming in with a 12-shot repeater and putting it on the table beside me."

Warm and fuzzy it is: it comes out in favor of commitment, trust, understanding, and excellence, all of them honorable qualities that tend to lose impact with too much repetition.

But look again. Partnering is a concept that genuinely hopes to undercut the enormous volume of construction disputes and cost overruns that day-in and day-out make a shambles of civilized intercourse in this still most fragmented of industries. Originating in the chemical industry, partnering was adopted by the U. S. Corps of Engineers as a loosely structured operating method that obliges design firms, general and subcontractors, owners, fabricators, and others in the building industry to commit to partnering on projects in order to improve design and reduce completion time or, in Corps language, "to create a new cooperative attitude in completing government contracts." Using suggested procedures, all of the many members of the building team agree to meet at predetermined times or as needed, to place issues of dispute on the table and resolve them *as soon as they come up*. The idea is to head off such time-wasting but all-too-common recourses as delay claims, unnecessary change orders, work stoppage, mediation, arbitration, or, as a costly last resort, full-scale court litigation.

The main champion of this civilized method has been the American Consulting Engineers Council, an organization made up of firms, not individuals. ACEC claims that on over 100 construction projects on which partnering was used, all were completed on time, on budget, and without major claims after completion. Typically, partnering—which always supplements, not replaces, the conventional forms of agreement between the parties—involves some sort of retreat away from the bustle, where the parties can talk out the difficulty and, following certain guidelines and procedures developed by the Corps of Engineers and ACEC, hope to restore peace with honor. (A request to Ms. Lee Garrigan at ACEC, 1015 15th Street, N. W., Washington, D. C. 20005 will get you the basic documents that describe this fresh new method of controlling tensions and encouraging concord in our \$267-billion industry.)

Architects should champion this worthy initiative. This may be one opportunity for the profession to regain its influence in the contract-administration phase, where its role has gradually eroded from "inspection" to "supervision" to "observation" and next—who knows—to "visitation." And when partnering takes hold, perhaps RECORD will no longer be dutybound to publish articles such as "Controlling Delay Claims" (see page 22), describing nasty scenarios of skullduggery and how to deal with them.

Partnering is a solution, and a good one. *Stephen A. Kliment*



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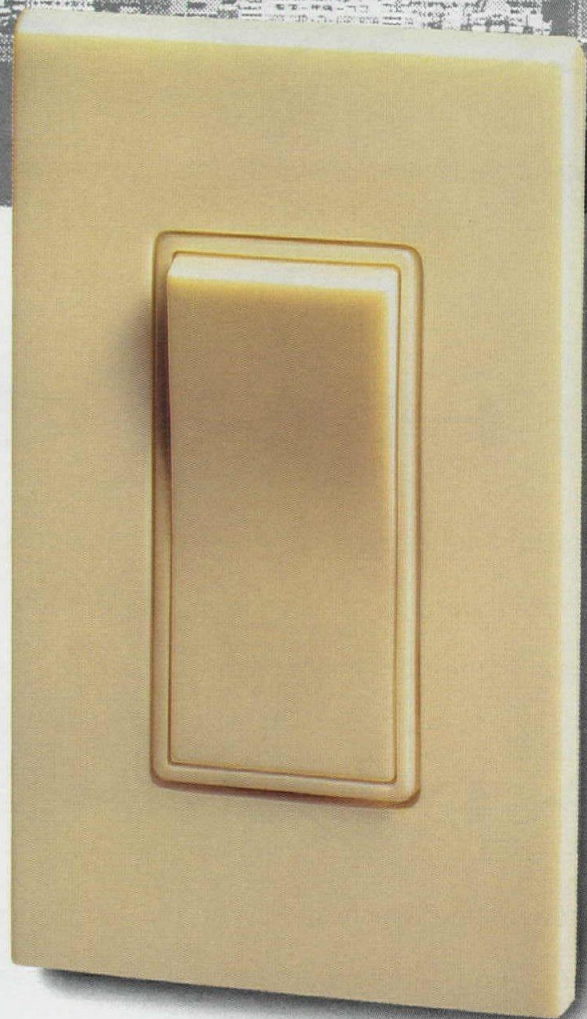
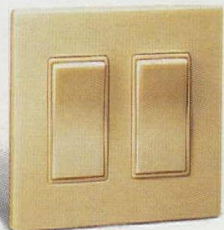
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Florida

Design and Budget Stretched to Give Distressed Community "Glorified-Lego-Set" School



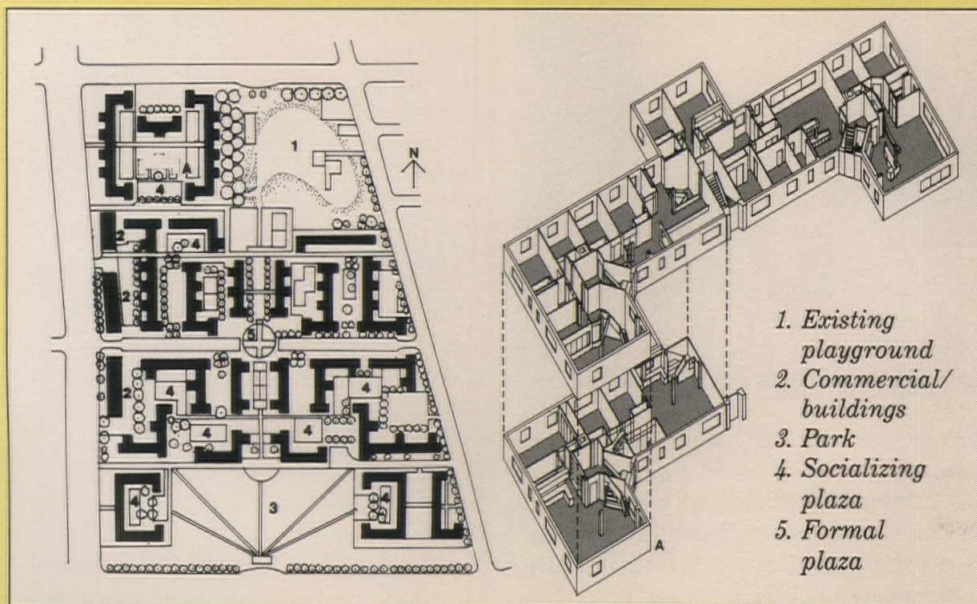
Devastation was a way of life in parts of Dade County long before Hurricane Andrew hit, and when architect Peter Blitstein began renovating the A. L. Lewis Elementary School in Homestead, he recommended it be torn down. "Morally, I couldn't keep going

with it," he says. Hired to rebuild, he stretched design and budget limits to give a perennially distressed community an educational focal point of bright color, individual components, and familiar scale. Yellow circulation segments join administrative block

(left), vaulted entry (center), and porched classrooms (right). Materials are painted stucco, red and yellow tile, glass block, and blue and green standing-seam metal roof. Blitstein calls the 885-student facility a "glorified Lego set." ■

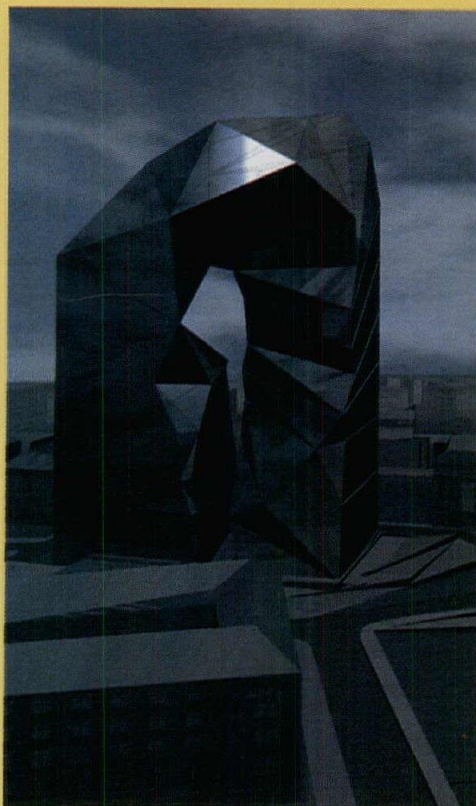
Cincinnati

Convert Second-Oldest U. S. Public-Housing Project To 1990s Needs



Tenants at the Laurel Homes public housing project are out to prove that resident control plus renovation of their sturdy buildings to stem overcrowding can generate the will to drive out drugs and crime and reunite some of the city's poorest citizens with the rest of society. For a test building, Duraid Da'as, director of Community Planning and Design at the University of Cincinnati, and architecture professor Wolfgang Preiser, relocate some tenants to suitable nearby buildings and combine existing one-bedroom units into larger units suitable for family life. Overall goals include 25 renovated residential and three commercial buildings, 19 playgrounds, 10 plazas, a recycling center, a child-development center, social-service sites, and a resident contracting corps. "Architecture is more complicated than [just] architecture," says Da'as. ■

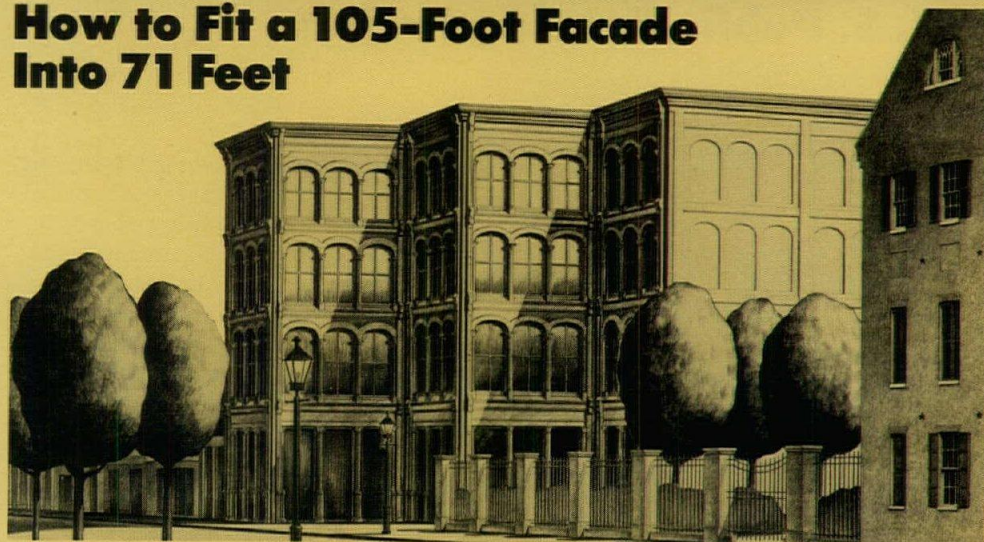
Max Reinhardt Monument Challenges "Business as Usual"



Peter Eisenman's Max Reinhardt Haus in East Berlin challenges the reunited city's headlong rush to rebuild as little more than a commercial capital. The startling Möbius-strip configuration honors the contributions of the theatrical impresario—"foreigner" from Austria, Jew, and exile after 1933—to German and world culture, by combining a state-of-the-art flexible theater and extensive archives with offices, retail, cafés, clubs, and movies to support them. The Reinhardtian meld of human activities takes place on the site of the controversial Grosses Schauspielhaus designed for him by Hans Poelzig in 1918 and destroyed during World War II. "Every time you construct a building, you are also making a symbolic gesture," says developer Dieter Bok. "Usually, the message is simply 'business as usual.' 'Business as usual' cannot be the predominant message at this moment, for Germany or for Europe. We hope to encourage people to imagine a future Germany based on the most vital part of our past." The 34-story project also challenges Berlin's height limits and the phallic form of skyscrapers—Eisenman calls it "bisexual." ■

Baltimore

How to Fit a 105-Foot Facade Into 71 Feet



Peterson & Brickbauer is pleating a historic cast-iron facade in order to slip it on to the narrow front elevation of the City Life Museums' new exhibition center. Salvaged from a demolished building, the 105-ft-wide, four-story component folds along the edges of

each of its five bays as it sawtooths its way across the 71-ft-wide parcel. Construction of this latest phase of Baltimore's urban history museum of restorations and replicas is expected to begin this spring for completion in the summer of 1994. ■

Briefs

Tigerman loses post

University of Illinois School of Architecture has fired director Stanley Tigerman, reportedly for his authoritarian style and for redirecting the school toward unorthodox theory. "They are not renewing my contract, which is tantamount to the same thing," says Tigerman. "The fact is I tried to make the school into what I thought was a good school, and in that I succeeded. There are other things going on in my life." Tigerman held the post since 1985 and is still a tenured professor. He is developing a Bauhaus-like architecture and design school with interior designer Eva Maddox. *Victoria Lautman*

Planning, Houston-style

Two years after the Houston City Council voted unanimously to begin a process of comprehensive planning and zoning, a draft ordinance and land-use maps have been completed. Approval is expected in several months. The Planning and Development Department is expected to start the comprehensive plan early this year, although it was originally intended to proceed concurrent with zoning. The zoning maps categorize Houston's 600 sq mi into nine existing land-use types: four residential groups, urban neighborhood, major activity center, industrial, open (all uses except industrial), and green space. Blanket-type regulations for these simplistic zones impose low-density, suburban traits on the whole city. Opposition petitions are circulating to call a referendum election in January 1994. *Gerald Moorhead*

AIDS playroom

Felix Drury's pediatric AIDS playroom at Bronx Municipal Hospital in New York is a prototype for installations across the U. S.

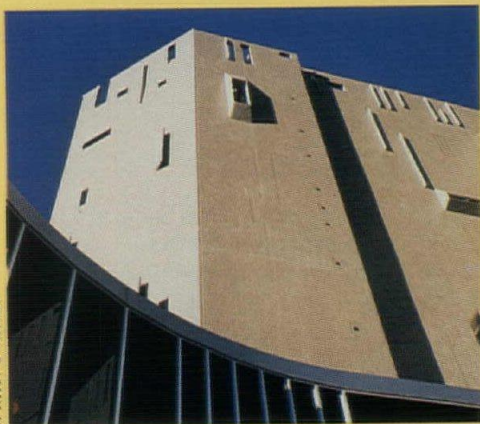
Competitions

- March 20 is the deadline to apply for an International Forum of Young Architects competition to be held in Chicago June 9-18. Contact Forum USA, College Park, Md. 20742-14411, 301/405-6284.
- May 3 is the deadline for the Vinyl Window and Door Institute competition. Contact VWD, 355 Lexington Ave., New York, N. Y. 10017, 212/351-5400, FAX: 212/697-0156.

Bruce Kelly dies at 44

Bruce Kelly died of AIDS in January. He had been involved in restoring New York's Central Park (where he designed the Strawberry Fields memorial to John Lennon). ■

Show Time for Architecture



Winter Prather

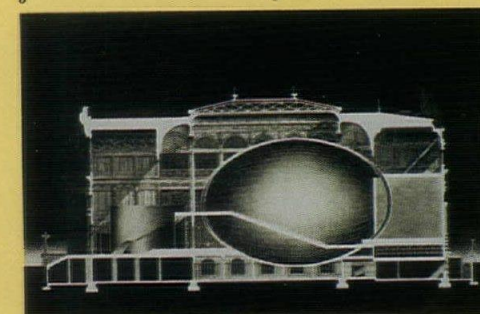


Atsushi Nakamichi



Barnes-Crosby

Mitsuo Matsuoka



5

1. Gio Ponti's 1971 Denver Art Museum is hosting an exploration (ending February 6, 1994) of the Ponti/James Sudler collaboration. It opens April 1.

2. Shin Takamatsu, whose rejection of standard rules of composition and proportion has drawn passionate reaction, has his first U. S. show at San Francisco's Museum of Modern Art March 4-June 6. He is a leader of the "third generation" of postwar Japanese architects, who have displaced earlier generations' Western rationalist and Modernist impulses with a synthesis of traditional form, structuralist theory, and individualistic vision.

3. "Put the City Up" examines economic, social, and geopolitical impacts on the evolution of Chicago's commercial architecture from 1820 on at the Smithsonian's Museum of American History in Washington, D. C. until March 31, and Chicago's Harold Washington Library May 15-July 17.

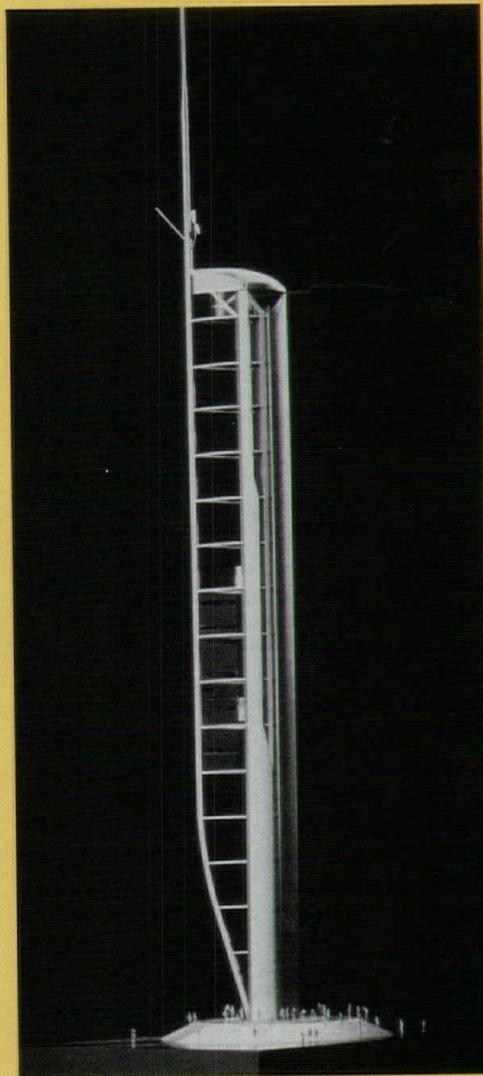
4. The Federal Government as client is the focus of "From Mars to Main Street" at the National Building Museum through December 31. Lee Skolnick's installation places design in the context of cultural, social, political, and economic events from 1965 to 1990.

5. Tadao Ando's criticism of culture severed from spirit by economic, legal, and technological distractions is on view in 31 projects at the Pompidou in Paris through May 24, then moves to London and Barcelona.

Honors for 1993 (and 25-year award)

AIA 1993 Honor Awards go to Buckhead Library by Scogin Elam and Bray; Canal + by Richard Meier; Colton Palms by Valerio Associates; Furness Building by Venturi, Scott Brown; Hole-in-the-Wall Gang Camp by Hammond Beeby & Babka; Voorsanger's Hostos Community College; Hynes Convention Center by Kallmann McKinnell & Wood; 202 Island Inn by Rob Wellington Quigley; Langham Court by Goody, Clancy; Morton International by Perkins & Will; Mt. Carmel School by Lord, Aeck & Sargent; Nations Bank by Wolfe+; Princeton Engineering Parking by Machado and Silvetti; McLier's Rookery; Seamen's Church Institute by James Stewart Polshak; Stretto House by Steven Holl; Bloedel Education Center by James Cutler; and Eisenman's Wexner Center. The 25-Year Award goes to Eero Saarinen's 1957 design of John Deere & Co., which was carried out by Kevin Roche. ■

Revolving Spindle Wins Tower Contest



Richard Horden Associates has won the Glasgow Tower Competition with a revolving 420-ft winged spindle. Aerodynamic design and the concentration of most of the public and commercial activities at the base lightens the tower load and cuts turntable costs. A computer accommodates turntable movement to shifts in wind direction. A cabin atop the shaft offers views of the city and surrounding mountains and waterways, and can be used for gatherings, wedding receptions, and school groups studying radar, satellite, weather, and other information gathered by the crowning communications mast. The slatted wing accommodates advertising banners and digital displays. Most components can be produced by the Glasgow shipyards and allied trades. ■

Princeton School of Architecture

How Students Learn to Love Engineering

To many architectural students, mechanical engineering can be mystifying. This is understandable. Most architectural elements (walls, beams, columns, floors, etc.) are static, while mechanical systems (heating, ventilation, air conditioning) are dynamic.

In his graduate course on mechanical engineering at Princeton University's School of Architecture, Norman Kurtz attempts to break down the barriers and get a dialogue going. His intent is not to turn his students into mini-engineers, but to provide them with the tools they will need to communicate intelligently with mechanical and electrical consultants—in other words, an understanding of the basic principles and a knowledge of the different available design options.

Instead of lecturing students, Kurtz patterns his course on the case-study method used at Harvard Business School. Students learn to apply engineering principles to actual design problems. In the first three of 12 sessions, he does explain the rudiments of refrigeration, heating and cooling loads, energy sources, psychometrics, and considerations that will influence building design. The key, he says, is understanding that they have more to do with the occupants of the building than with the structure itself.

Comfort levels must be quantified. Kurtz has found that most architects are not good at calculations needed to determine cooling and heating capacity, air quantity, air velocity, temperature levels, and duct and pipe sizes, for example. He weans his students early with a few basic calculations to prepare them for the more complex ones needed in actual case studies.

In his choice of case studies, he starts with simple ones and progresses to the more complex. In his first assignment, Kurtz asks students to calculate the heating and cooling load of the architectural studio in which they sit. The building has a high window-to-wall

ratio plus skylights and, as a result, tends to be cold in winter and hot in summer. He asks students to calculate how the building's heat loss would change due to different types of glass in the windows. For instance, if double glazing were used instead of single-pane windows, would the saving in reduced heat loss during winter months offset the extra cost of material and installation? And what about the effect on heat gain in summer?

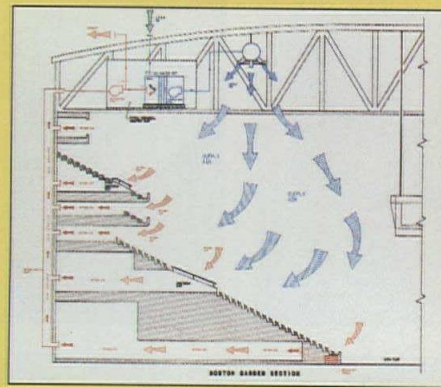
He asks students to review the building's original mechanical and architectural drawings. This helps them become accustomed to reading such documents and learning how to compile the numerical data they need to compute their solutions. Next, Kurtz has students study their dormitories to demonstrate the type of engineering systems used in housing. They prepare flow charts of the mechanical systems of the university's library, a dining hall, and more complicated classroom buildings.

For each session, the class is divided into teams of three or four, with each group given a different assignment. This way, the students practice working together as a unit, an activity in which they must be adept as professionals. Each group is then asked to present its findings to the class. This exercise helps students develop the presentation skills they will later need as architects dealing with clients. Late in the course, students are asked to design systems for a variety of complex building types such as office buildings, arenas, and hotels (see section of Boston Sports Garden right). In many instances, students work in the Flack + Kurtz office on projects designed by well-known architects. Students have only architectural schematic drawings to work from.

On-site visits give the students a better understanding of how systems operate, the size of their various components, and their placement within a building. One such visit took students to the Helmut Jahn-designed

One Liberty Place, an office building in Philadelphia. The project was the outcome of a successful coordination between architect and engineer. Building setbacks conceal heating elements that keep the sloped glass roofs free of ice and snow. Other unique engineering techniques include super-cold air to minimize air-conditioning duct size, compartmentalized air-conditioning units on each floor, the use of returned chilled water for tenant condenser water use, and a high-voltage electrical distribution system with double-ended substations for flexibility and reliability.

A visit to Prudential Insurance Company's Enerplex at Princeton's Forrestal Center introduces students to a pair of office buildings that exemplify various aspects of energy conservation. Here students learn about active solar-collection systems on one building and passive energy-conservation systems on the other. ■



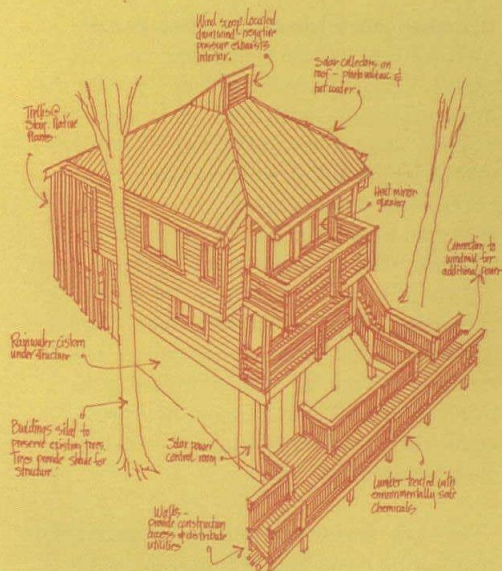
Student project: Boston Sports Garden.

"Greenecture"

Making Resorts Sustainable

Developer Stanley Selengut is building a track record for ecologically responsive resorts, first with his 17-year-old Maho Bay Camps, located inside the Virgin Islands National Park on St. John, then with the recent Campamento Camani in the Venezuelan rain forest, and now with a "Sustainable Development and Research Center" next to Maho Bay. While the original camps were noted for their rugged accommodations (unscreened cabins slung in trees where local lizards keep down the insect population), he describes his new venture, designed by architects James Hadley and Gary Turner, as "luxurious" homes (drawing below). These (and their access walks) will be raised above ground to avoid disturbing it, will rely entirely on solar energy and wind generators for power and on wind scoops for ventilation and, like the camps, will have recyclable sewage systems for irrigation and toilet flushing. One new technique will be treating wood used for construction with nontoxic borax for rot and vermin protection.

C. K. H.



Marketing Overseas

U. S. Architects Sell Design Development, Site Sensitivity to Taiwan Market



Design development and sensitivity to a building's natural surroundings are serving Americans well as they seek commissions in emerging markets such as the Pacific Rim. While these concerns are seen in the United States as normal links in the design process, they seem to offer Americans a unique advantage over architects from other nations working in the Far East. That's the experience of LPA, Inc., Sacramento, Calif., an architectural firm that set up shop in Taiwan's capital of Taipei some three years ago.

Taiwan, lying a mere 100 miles off the shore of its archrival, mainland China, is now preparing to spend some \$300 billion on just about everything buildable—schools, housing, cultural facilities, and infrastructure, including water-treatment and sewage plants, new roads, and high-speed trains. It's a per-capita scale that is difficult to find anywhere else in the world.

Robert Egan, the firm's principal in Taipei, sees the most frustrating part of work there in familiarizing potential clients with the need for design development in a country where it is almost unknown. Explains Egan: "They jump from schematic designs into construction documents, which is one of the reasons this place looks the way it does." Depressingly drab is one popular description. What does impress Taiwanese clients is U. S. architects' sensitivity to local

conditions—both the natural environment and indigenous building patterns. That was the case in LPA's design of a new 54-acre headquarters complex for the Taiwanese Park Service in the East Coast National Scenic Area (drawing above). Robert R. Coffee, the firm's design principal in charge of the project, recalls the comments of Dr. C. Mao, director general of Taiwan's Tourism Bureau, who was "truly impressed with sensitivity to the natural." Taiwan, explained Coffee, has been "on a blitz of economic development and, for the most part, has not paid attention to ecology."

Another current LPA project is a 9-million square-foot mixed-use project in downtown Taipei on the site of a former automobile factory, where it is again trying to work with context. "Here, density is a key issue," says Egan. Taiwan's population density is second only to Bangladesh. Historically, Taiwan's projects have been "individual buildings coupled with fragmented planning," he adds. "They really need comprehensive plans for their cities." Sensitivity to the local environment naturally includes the way business is conducted. "We are trying to develop business in a different culture, the oldest culture on the planet," muses Egan. "Well, that takes time." A special section on Pacific Rim opportunities follows page 114 of this issue. *Peter Hoffmann, Washington, D. C.*

This Month

Managing Leaner. Page 18.

RECORD finds that many architects are doing as well or better than more conventional businesses in tapping new ways to keep their office costs down.

Mixed Blessing: The Architectural Works Copyright Protection Act Is Not All It Seems. Page 21.

Legal guru Carl Sapers takes a new look at the 1990 law and finds it not an unmitigated blessing.

Controlling Delay Claims. Page 22.

The latest weapon in the contractor's arsenal could be the toughest for architects to defuse. Here are some suggestions of how to go about it.

Gut Issues '93: New Approaches to Practice

As it will every other month, RECORD continues interviews with principals of varied firms around the country on topics of basic concern—asking what they're experiencing, how well they're coping in a flat market, and how they think the profession should mobilize for action in an increasingly diverse marketplace. This month: measures that firms are using to cut operating costs and how well those measures are working.

C. K. H.

Managing Leaner: How Architects Are Controlling Their Operating Costs

Tight ships for tight times? It's true that competition for work is up (see RECORD report, January 1993, pages 30-33), while billings and the volume of work in many architectural offices are down. Nearly half of the 100 respondents in this RECORD survey report that the construction-dollar value of their commissions has declined in the past two years—an average of 10 to 25 percent and as much as 90 percent in a few cases. But almost all admitted to cutting costs, even in offices with a rise in work and billings. It is clear that architects, like commercial-business people, are trimming sails—whether for better profits or simple survival. What are they doing and how well is it working?

Growing workloads; shrinking staffs

"The dollar value of our projects and billings have quadrupled in the past two years," reports the head of an architectural firm in Montana, that nonetheless resolved to reduce its professional staff to four people. "We've raised fees twice," he adds. The secret to attracting so much work: "We went into project management, which really counts in our extreme climate. If you don't get a building in the ground on time, it's delayed six months. We've cut inexperienced staff that couldn't keep up."

How do architectural offices with increased workloads and diminished staffs cope? Most say with more CAD—confirming many employees' fears that they may be replaced with machines. "I've eliminated my whole office staff with a computer," says David Steele in Philadelphia. But many firms that saw dropping workloads but kept their professional head count steady report increased use of CAD as well.

"We've used the downturn as an opportunity to get rid of inexperienced staff and attract some new senior staff," says the head of a very large California architectural and engineering firm that is also reorganizing from a departmental to a team structure, believing it more efficient. Other solutions: increased overtime for everyone, using temps when the going gets heavy, and more senior-staff time on production and less at conventions and in professional-education courses (which may be effective short-term,

but will, later on, have the consequences of stagnant knowledge, as well as running afoul of AIA requirements for those who are members).

Three out of five responding architectural firms with growing workloads and smaller staffs took reductions in fees. Not only did they dismiss professionals to keep profits steady; they also dispensed with clerical help, and sublet their excess space, giving them the added advantage of sharing facilities such as conference rooms and CAD stations with other architects. A Philadelphia office, with a current count of 35 professionals, cut not junior staff, but senior members to make up for reduced hourly rates that its clients demanded for the firm's mix of hotel, parking-garage, and medical-research projects.

"Computers, phone-answering machines, and cellular phones make the receptionist unnecessary," says another Philadelphia architect who is a lone proprietor with twice-normal billings. "I am reluctant to buy expensive brand-name [computer] equipment," he adds. "With rapid obsolescence, the less-expensive clones work just as well and can be updated in three to five years at much less expense. I am much more concerned about buying the right software than hardware, which depreciates very quickly."

Growing work loads; no added staff

"We are heavily into renaissance people," says J. F. Borrelli in New York City. By this, he means people with multiple talents who quickly adapt to a wide variety of projects and tasks, including an increasing use of CAD. With billings up 125 percent in the past two years, his firm has kept a steady roster of 65 professionals and is much more typical of firms with rising workloads than those that report letting people go. While some two out of three in this group took reductions in fees, all seemed to find ways other than staff cuts to keep their profits in pace with the growing value of buildings they designed.

"We work closer with general contractors on monitoring costs than we used to," reports G. Williamson Archer, of Archer & Archer in Meridian, Mississippi. This not only cuts the

RECORD finds that architects are paralleling their more commercial peers in finding ways to keep their office costs down.

costs of redesigning for his firm of four professionals; it also helps attract new commissions. In a reverse tack for firms trying to cope these days, he has decided to go from specialist to generalist.

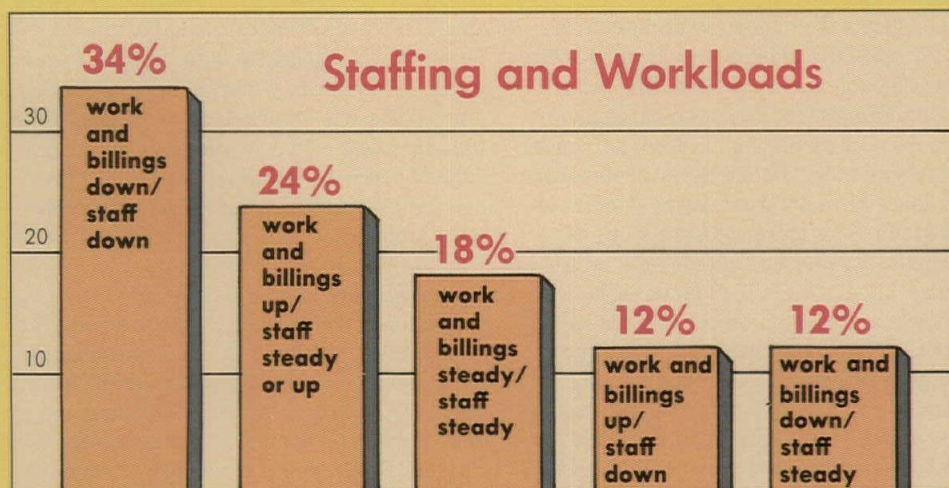
One Pittsburgh firm of 24 architects has found savings in insurance. "Liability carriers are much more competitive these days," observes its president. He has also passed some health-care insurance costs on to employees, pays more attention to project management, and is careful about spending time and money pursuing none but the most likely clients.

"If reduced fees mean limiting service, it's a sure path to failure," observes R. C. Newmann of Newmann Monson in Iowa City, Iowa. His firm of 12 professionals has moved to CAD and computerized accounting for quicker billing. His firm has not reduced fees or expenses, but he notes: "It is increasingly difficult to remain competitive."

"We have moved into new services," reports Tom Lee, a principal in Bay Architects Associated in San Francisco. Among them, he lists construction management, engineering, value engineering, and building operations. Says a Zeeland, Michigan, architect with one other professional in his office: "We have reduced consultants' work and do as much work as we can in house." A lone practitioner in Basalt, Colorado, reports the same.

Others have taken the opposite approach: "We've cut scope of services—especially construction administration," says the principal of a three-architect firm in Atlanta. "We never had the luxury of cutting costs." His firm opened in 1989.

If all else fails, there's always the principals' salaries. "My draw year before last was \$15,000," says the head of a firm of three in Chicago. Despite a modest increase in the value of billings and projects, he also had to reduce spending on rent and drafting materials. In any case, "the principals wind up doing more work," says David Bradley of Bradley Architects in San Antonio. They spend more time pursuing commissions and often do more administration to compensate for reduced clerical and accounting help.



Most offices with dropping workloads and billings cut staff, but others kept staff by cutting overhead and salaries. Some with rising workloads and billings cut staff anyway.

Not unsurprising, the architects who kept their billings, workloads, and staffs steady felt little desire to change the way they run their offices. A few planned to tighten project-management controls or to introduce more CAD production. "Sure, we're doing more work on CAD," says an architect in Thiensville, Wisconsin. "It's because the clients want it. I'm not sure it's even efficient."

Work down; no staff cuts

"We've had to reduce salaries and overhead 20 percent," reports Paul Clark of Colimore Clark Associates in Annapolis, which specializes in government work. His action is typical of those firms opting to keep their professional staffs together despite shrinking commissions. Both the value of projects in his office and billings have fallen by amounts similar to salary and overhead reductions. But he hasn't stopped with these savings. His firm has streamlined its marketing by only going after projects it is truly qualified for. And, the principals spend more time on working drawings and contract administration with less drafting and clerical help. Another firm in Redondo Beach has reduced hours (and salaries) by 30 percent.

A sole practitioner in Jackson, California, with no staff to cut, has said goodbye to consultants and other suppliers of goods and services, such as temporary draftspeople, opting instead to do more work on CAD and move into a smaller office closer to home,

saving rent and commuting costs. A sole practitioner in Massachusetts has greatly reduced research and travel, hampering his quest for new work—two measures that could lead to a spiraling reduction in volume of work. Says a sole practitioner in Virginia with work down 10 to 25 percent: "With low rent and the most basic phone service available, about the only thing left to cut is liability- and health-insurance coverage, and IRA contributions. I should have gone on working for someone else 21 years ago when I went on my own. At 63, with no way possible to retire and my house refinanced to pay for my office, I am not a happy camper."

Work down; staff down

"We did everything—reduced capital and overhead expenses by deferring purchases of equipment and supplies, freezing pay, monitoring job costs, modifying our phone system to accurately bill expenses, and looking at our CAD use for maximum efficiency. We went after every possible reimbursable," explains a Greenville, South Carolina, architect who, faced with a 25- to 50-percent reduction in work and billings, finally had to let one of his four professionals go. He made the often-painful decision made by most of those with reduced workloads. One Miami firm, which lost more than half its work, went from six to two professionals in the past two years. "Two senior expensive people left and we were not sorry to see them go," says a lucky Santa Monica architect,

whose office still employs 10 architects although work and billings are down between 10 and 25 percent. The result: "The principals do more project management and we use more part-time help." Indeed, part-time is a favorite tactic among many firms whose work loads have not gone down as much as their staffs. So is increasing the work of principals. "It's no fun," comments an Atlanta architect who still employs eight architects and has had to cut his own salary to do it. "Principals' hourly rates are the same as in '87," says Carl Handman in Wilkes Barre, Pennsylvania. He has also reduced hours for his staff of three, made it clear to them that productivity and hours

Offices With Reduced Staffs Are:

1. Using more CAD.
2. Moving to smaller offices or subletting space.
3. Deferring CAD and other capital-equipment purchases.
4. Putting more workload on seniors and principals.
5. Taking a closer look at CAD efficiency.
6. Putting more workload on everyone.
7. Using more temporary help.
8. Cutting principals' salaries.
9. Doing more work in-house that used to be done by outside providers such as modelmakers.
10. Using better systems to monitor hours spent on each project.
11. Putting across the idea of productivity to staff.
12. Making more hours billable.
13. Cutting senior staff because of reduced hourly rates.
14. Increasing overtime when workloads are up.
15. Reducing benefits.
16. Freezing salaries.
17. Making less sales effort through photography and entertainment.
18. Closing shop.

spent on a project matter, and postponed buying CAD. He is also fighting back to recover lost ground by marketing more and going after ADA work. Other techniques for fighting back: "On each project, I've tried to expand services, including interior design and facilities management," says a Harrisburg architect.

Even many architectural firms in which workloads have declined little have had to reduce fees and watch their incomes decline, putting a pinch on expenses and staff. Not only have the retail and office-building clients of Johnson Schmidt Associates in Pittsburgh demanded lower fees; they have insisted that many services that were once reimbursable be included in basic services. In turn, the firm has had to pare down to 14 professionals and do the work in house once done by consultants, including engineers. "Our new project-management program has made our work more efficient and our clients happier," says J. Johnson. Project-management programs meant many things to the respondents. Most monitored hours spent on various phases of work with computerized systems, comparing hours to budgets. One architect in Memphis tried this manually, noting that he spent more time on it than he could be certain it was worth.

A 110-professional architectural and engineering firm in Duncansville, Pennsylvania, reports similar problems and responses. Expecting its educational and health-care work to rise in '93, it has added more CAD equipment. A firm of 12 in Chevy Chase, Maryland, having lowered its fees to stay competitive in its health-care market, is also looking to CAD to make up for lost bodies.

But Carlos Cadiz in San Clemente is taking a closer look at CAD's efficiency for himself and the one other architect remaining in his firm, even though its mainly industrial and commercial work would seem well suited to CAD. "Previously, we did 90 percent on CAD; now we do 60," he says, finding it not that efficient for the way they work. "I am glad I did not go into CAD," says a sole practitioner in West Chester, Pennsylvania, who does mostly institutional work. "Many of my peers have been eaten alive with the expense." It would seem that the smaller the

firm, the more it tends to shy away from such capital-heavy expenditures when work goes down. But not always: "We should have gone to CAD sooner," says the head of another firm of three in Chicago, who finds that it suits the way he works very well.

There seem to be almost as many answers as there are offices. "We've cut everything *except* consultants," replies the Chicago firm. One architect in Newington, Connecticut, down to himself alone in his office, refuses to compromise on fees. "No reductions," he says flatly. *Charles K. Hoyt*

Offices Keeping Staff Are:

1. Using more computer systems in general.
2. Getting better systems of monitoring spending.
3. Deferring CAD and other capital-equipment purchases.
4. Seizing tighter control over project management.
5. Doing more consultants' work, such as engineering in-house.
6. Reducing and refining marketing to concentrate on best prospects.
7. Reducing liability-insurance costs.
8. Reducing health-insurance costs through more pass-along of expenses.
9. Finding less-expensive office space.
10. Keeping office supplies low.
11. Moving to smaller offices.
12. Cutting hours.
13. Reducing staff salaries.
14. Reducing principals' salaries.
15. Cutting travel and research.
16. Putting more workload on seniors and principals.
17. Adding services, such as interior design.
18. Cutting clerical and accounting help.
19. Switching less-profitable work, such as houses, to junior staff.
20. Stopping specialization.
21. Working closer with general contractors to control costs and redesign.
22. Cutting less-profitable services, such as construction management.

Mixed Blessing: The Architectural Works Copyright Protection Act Is Not All It Seems

By Carl M. Sapers

"The intent of the legislation is to protect only what Mr. Graves calls the poetic language of architecture." Thus reads the House Committee report on The Architectural Works Copyright Protection Act that, effective at the end of 1990, added "architectural works" to the categories protected by the copyright laws. The reference to Michael Graves's testimony was to explain the statutory distinction that "the arrangement and composition of spaces and elements of design," are protected while "individual standard features" are not protected. The latter fall under what Graves described as the "internal" language of architecture, which is the "pragmatical, constructional, and technical requirements" of an architect's work.

Another way of delineating the scope of protection defined above is to ascertain if the design elements are functionally required. If they are, they merit no protection. If they are not, they can be copyrighted. Whatever became of form following function?

Prior to the current act, a building itself was not protected because its functional (or utilitarian) aspects were inextricable from its esthetic elements. The Washington Monument was, however, entitled to copyright protection. Plans and drawings avoided this conundrum because, while the esthetic and utilitarian features of the building described in them are inextricable, the copyright act exempts from this test documents with the chief function of conveying information. Clearly, plans and drawings are chiefly to convey information on the manner in which a building is to be built.

Under the current copyright act, owners will want protection

Having engaged an architect to create a design for a new project, how does an owner ensure that he or she will not later be required to tear down the building when the proprietor of the copyright in a prior building with a similar design asks for

Mr. Sapers is a partner in the law firm of Hill & Barlow and an Honorary AIA member. He holds an AIA Allied Professions Medal.

destruction of the infringing architectural work? The House Report is not very helpful, quoting the testimony of the AIA: "We fully expect a court would require a strong showing from a copyright owner before ordering such drastic action." On the following page of the report, we are told that since architectural plans are "frequently deposited with local planning commissions (sic) for approval, a copyright owner can safeguard his rights before [infringing] construction commences through diligent review of public records."

If I were the developer of a new project, I would take little comfort from the invitation to inspect the plans filed with building departments all over the country. But I would most certainly exact the following

Chippendale supplies Lady Y's order by copying AT&T in mahogany. Does Johnson have a claim against Chippendale?

covenant from my architect:

"The Architect represents and warrants (which representation and warranty shall, notwithstanding the applicable statutes of limitation, survive until the building designed by the Architect is destroyed, demolished, or otherwise removed) that the design elements in the building not functionally required are either (1) in the public domain and not subject to a copyright claim by another person or (2) are the Architect's independent creation. If the Architect's representation and warranty proves false in any material respect, the Architect will indemnify and hold harmless the owner, and any successor in title to the Owner, from any loss or expense (including attorney's fees) resulting therefrom. The indemnification in the preceding sentence shall be in addition to all other remedies afforded the Owner by applicable law." How will Michael Graves respond when the owner confronts him with such a clause?

The three-year statute of limitations referred to above runs from the date the plaintiff

knows or should know, in the exercise of reasonable diligence, all facts essential to show the elements of an infringement (*DeGette v. Mine Company Restaurant, Inc.* 751 F2d 1143 10th Circuit Court, 1985). In that case, developers met in 1971 or 1972 with the architect of a Colorado restaurant the developers wanted to imitate, to discuss engaging him to design a Houston restaurant. The developers asked the architect what he would do if they copied his design without engaging him. He replied that he would sue. The Houston restaurant was opened in 1973. The architect first heard in 1976 that there was a restaurant in Houston that copied his design. He filed suit in 1979. Thus, there is a risk that a copyright owner of the first architectural work may not learn it has been copied until years after the second building is built and

cannot bring infringement action since over three years have past since he first acquired knowledge of the infringement.

Proving access

A crucial issue in The Architectural Works Copyright Protection Act is what is described in copyright cases as "access." In the traditional analysis of an alleged infringement of architectural drawings, copying may be inferred when "the plaintiff establishes that the defendant had access to the copyrighted work and that substantial similarities exist between the two works" (*Kunycia v. Melville Realty Company, Inc.*, 1990).

The current Act bars copying an existing architectural work after examining it. But how does one prove access? How many putative infringers walk by Johnson's AT&T building daily? Compare that number with the fairly limited sets of construction documents that the Johnson/Burgee office distributed during project development. Moreover, distinctive buildings are often photographed and millions of readers have

Controlling Delay Claims

doubtless looked fondly at photographs of the facade of the AT&T building in magazines. Let us assume a furniture maker named Chippendale saw such a photograph and decided to supply Lady Y's order for a storage chest by copying that facade in mahogany. Does Johnson have a claim against Chippendale? I confess that I don't know. But the analysis begins with the act itself: "The copyright in an architectural work that has been constructed does not include the right to prevent the making, distributing, or public display of pictures, paintings, photographs, or other pictorial representations of the work, if the building in which the work is embodied is located in or ordinarily visible from a public place." McConnachy Square in Brigadoon may not be photographed because it is only visible once in 100 years.

But surely AT&T's location is a public place, and we can photograph the building without fear. But what of the American Academy on Shady Hill in Cambridge, so grandly landscaped that it can be seen from the road only in the depths of winter? Legislative history informs us that "ordinarily visible" was added to expand the original language, "without condoning trespassing." In any case, the photograph that Chippendale admired must have been wholly legal. If the law prior to the act did not prohibit taking a building from two-dimensional drawings, why should it inhibit Chippendale from creating a highboy or even an architect in San Francisco, who never left California, from designing a facade for Pacific Telesis which resembles that of AT&T, in both cases based upon a magazine photograph?

One argument against Chippendale doing so comes, by analogy, from cases prohibiting three-dimensional dolls modeled after comic-strip characters. For example, *King Features Syndicate v. Fleischer, 1924*. But who would dare trivialize the poetic language of architecture by analogy to Spark Plug or Betty Boop. It remains to be seen how a court will deal with the issue.

The current act will not be fully understood until the courts have their way with it. One fact is, however, clear; it is not an unmitigated blessing. ■

By Elizabeth Miller Chaney

Construction bids today are often based on lean cost assumptions and very tight schedules—both fertile causes of delay claims. The rewards reaped by general contractors from delay-claim settlements often surpass other construction-scope change-order claims, for which there is less supporting evidence in the contractor's favor. Some contractors position themselves from the start of a project to assert these claims, which are on the upswing.

Architects Kaplan/McLaughlin/Diaz recently performed an informal study of delay claims in private- and public-sector projects. The findings: The private-sector is hit with fewer delay claims than the public. Private-sector clients have more power in selecting contractors and are not bound by public bidding policies. Contractors are acutely aware that good relationships with private clients are necessary for good references or future work.

Nailing down the schedule

It's the contractor's right to execute a project on a rapid schedule. However, an extremely fast proposed schedule is often where the trouble starts. Legal precedent, which establishes reasonableness as the basis for a fast schedule's acceptability, leaves interpretation wide open on what "reasonable" is.

Detailed construction schedules are typically not submitted until after the contract is signed. This allows the contractor additional time beyond the bid period to understand the complexity of the project, the site conditions, and the constraints of the owner and governing agencies. However, today's growing delay-claims dictate that the construction schedule be a vital part of contract negotiations. It is the document upon which all delay-claim negotiation is based and it is also important in delay-claims analysis.

The owner, with assistance from the architect, can reduce schedule-associated delay-claim risk by relatively simple means:

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- Stipulating the owner's anticipated schedule for project completion and establishing that there will be no rewards for an early finish.
- Requiring submittal of the initial construction schedule as early as possible—ideally as part of the contractor's bid proposal. However, a more likely scenario is to require a schedule before signing the contract. When appropriate, instructions to bidders might include a statement advising the contractor that early completion schedules *may* be grounds for rejecting the bid.
- Requiring the contractor to stipulate its staffing projections and proposed request-for-information (RFI) turnaround times along with its construction schedule. This will establish the reasonableness of the proposed construction schedule, but has its risks; the architect must be careful to stay out of the contractor's means and methods.
- In the absence of a precontract schedule, require contractors to advise the owner of any intention to attempt an early finish of the project as part of their bid submittal. This statement should also describe the economic advantage to the owner of finishing earlier than the stated contract date.
- Include in the contract documents any owner requirements and constraints that may affect construction progress. This provides a basis for reviewing the reasonableness of the contractor's proposed schedule. Issues might include timing of funding, approvals processes, owner's equipment-delivery dates, and owner's operational constraints, such as representatives who are only available on certain days of the week.
- As part of the bid proposal, require that the contractor provide a fixed unit price per day for delays beyond the contract date.

These procedures *initially* insure the owner against scheduling risk. Unfortunately, public-bidding policies may deny the use of some of them. Owner and architect must take a strong look at the bidding climate to get the most out of the owner's flexibility in responding to overly compressed schedules.

Handling requests for information, information bulletins (IB), and change orders (CO)

The RFI, IB, and CO have always been used to aid understanding of documents and to

*Contractors' delay claims are a growing menace.
Here are ways to head them off.*

record changes. While their purposes ostensibly remain unchanged, RFIs have increasingly become preludes to delay claims. Aggressive delay-claim strategies used by contractors include filing numerous RFIs, often overwhelming architects and their consultants, and lengthening their response time. The resulting bulk of requests is later cited as evidence of inadequate contract documents, and strengthens the contractor's case if architects and their consultants are slow to respond. Owners must be made aware that a flood of requests may indicate the contractor's attempt to get into a position to launch substantial delay claims. The contractor's, architect's, and consul-

in a resulting CO can be isolated. More important, a ratio of RFI-generated COs to total RFIs can be quickly calculated to discredit a potential claim by the contractor that their volume affected the construction progress.

Computerized logging and tracking of RFIs, IBs, and COs

Firms participating in a recent San Francisco roundtable on this subject agreed that architects must have handy access to a comprehensive project-document database. In this way, they'll get prompt updates to the owner and immediate responses to contractor's claims that architects' re-

of these items, noting that they are accepted, rejected, in negotiation, or up for owner approval, as well as the approval status of appropriate regulating agencies. The program is designed to generate regular reports in different forms for in-house, consultant, and owner review.

Preventing the delay-claim process

Setting ground rules for handling information at the prebid conference is important. This shows bidding contractors how the architect intends to handle receiving and transmitting information during the construction phase. In addition, clear instructions in the beginning mean better understanding between architect and contractor later on.

When construction is a quarter of the way through, a meeting among architect, contractor, and a third-party claims consultant will help iron out difficulties and potential delay-claims problems. This objective arbiter should review the "as-built" conditions against the schedule, project manpower, RFI status, and CO resolution. This meeting requirement could be included in the instructions to bidders. The intent of the meeting is to quickly reach a common understanding among owner, architect, and contractor on typical problems that arise in construction, rather than permit creation of hostile barriers.

Educating the owner about today's construction process

Before the bidding process, the architect should, by in-depth discussion, help the owner cope with increasingly sophisticated construction and legal issues, and give guidance through the process of reviewing and selecting a contractor. Defining the process, nuances, hidden agendas, and typical situations will give the owner confidence in the construction process and choice of architect, especially when issues are explained that may otherwise be surprises.

Education must include information on:

- *The process of communicating with the contractor.* The architect should explain in detail the RFI/IB/CO process, the logging and tracking system to be used in managing
- Continued on page 107*

The contractor has the right to a rapid construction schedule. However, an extremely rapid schedule is often where trouble starts.

tant's response to requests and submittals may seem to favor one side or the other. To keep straight to the record of who said what, RFI is answered with an IB. The term information bulletin rather than instruction bulletin is used on purpose to remove prejudice. The general conditions of the contract should specify that the contractor must advise within a specified time period whether a bulletin affects time, cost, or both. If it does, a change order may be issued. The process of information clarification is recorded and resolved. In this process, note that:

- An IB can also be used to issue information unsolicited by an RFI, such as owners' changes in the scope of work.
- An RFI is always answered with an IB.
- An IB must precede a CO, but does not always result in one. First, the contractor must do a cost and scheduling analysis of every IB within a set time period. This cuts down on requests from the contractor by producing an extra administrative burden.
- To keep the process straight, it is important that a single RFI generates a single IB. (Several IBs may be consolidated into a single CO.) The tracking of RFIs reveals the number that actually result in time or cost changes and their turnaround times. Every RFI that results in a change to cost or time

sponses are late or nonexistent.

The data-logging and tracking process has evolved from a management tool to one for risk-control. It must be able to quickly and accurately sort, select, and retrieve information on the status of RFIs, IBs, COs, and schedules. Computers greatly speed up these manipulations over otherwise laborious manual tasks and they make them easier and more accurate.

KMD has formatted its logging and tracking system for potential use as a claims-response tool. It early determined that contractor-based software systems were not appropriate for an architecture firm's daily information management. Using a database software, KMD designed a program that tracks RFIs and IBs, and maintains internal code classifications of their source, whether from tenant requests, document discrepancies, contractor requests, owner directives, new revelations of existing conditions, etc., and classifies the RFI as necessary or unnecessary. In addition, the program also monitors submittals, turnaround times on responses and reviews, notices of incomplete submittals, substitution requests, and change-order requests. It updates the status

Specification Series: Ceramic-Tile Flooring

ANSI A137.1 Specification for Ceramic Tile defines four types of ceramic tile: ceramic mosaic, paver, quarry, and special-purpose tiles.

By Maryrose McGowan

Ceramic-mosaic tiles are formed by either the dust-pressed or plastic methods. They are usually 1/4 to 3/8 inch thick and have a finish face area of less than six square inches. Ceramic mosaic tiles are made of porcelain or natural clay and may contain an abrasive admixture.

Paver tiles are similar to ceramic-mosaic tiles in material and formed by the dust-pressed method. They are larger than ceramic-mosaic tiles, having a facial area of six square inches or more.

Quarry tiles are extruded natural clay or shale and have a finish face similar to that of paver tiles.

Special-purpose tiles have unusual appearance characteristics (such as size, thickness, shape, color, or decoration), performance attributes (such as enhanced resistance to staining, frost, alkalis, acids, thermal shock, impact, or a high coefficient of friction), or design characteristics (such as keys or lugs on the backs or sides).

Unglazed tile is preferred for use as a flooring surface because glazed tile shows traffic wear in time. If specified, glazed tile should be approved for use on floors by the tile manufacturer. ANSI A137.1 requires additional performance tests for color uniformity, crazing, and thermal shock for glazed tile.

Tile-setting methods: The full range of installation methods is available for interior tile applications since temperature and humidity fluctuations in exterior applications do not apply. Ceramic tile can be set on one of two types of mortar beds, isolated or bonded, or directly over a properly prepared subfloor with a thin-set mortar or adhesive.

Maryrose McGowan, AIA, CCS is a specifier for the American Institute of Architects MASTERSPEC program. She lives in Cambridge, Mass.

An isolated mortar bed is designed to separate the expansion and contraction of the tile surface and subfloor. A cleavage membrane is spread over the subfloor and welded wire-fabric reinforcement is buried in the mortar bed.

A bonded mortar bed does *not* separate the stresses of the tile from those of the subfloor. It is similar to isolated construction except the cleavage membrane can be omitted.

Thin-set mortars bond the tile to the subfloor. Control and expansion joints must be provided to minimize internal stresses and subfloor deflection should not exceed 1/360 of the span.

Setting materials: Portland-cement mortar for floors is a mixture of 1 part portland cement and 4 to 5 parts damp sand by volume. ANSI A108.1 specifies two equivalent tile setting methods, installation on a workable mortar bed surface or a cured mortar bed surface with a dry-set or latex-portland cement mortar.

Dry-set mortars are mixtures of portland cement, sand, and additives that increase water retention. They are suitable for thin-set applications and are not intended to be used as setting beds or to level the subfloor. There are also conductive dry-set mortars.

Latex-portland cement mortars are recommended for the installation of porcelain tile. In areas that may never completely dry while in use (e.g. swimming pools) the Tile Council of America (TCA) recommends the completed installation dry thoroughly before being put into use. This critical drying period can last from two weeks to two months depending on climatic conditions.

Noncement setting materials tend to be much more expensive than the cement-based counterparts but offer properties required for some special applications. Furan resin and epoxy mortars both offer strong chemical resistance. Epoxy mortars also provide superior bond strength and impact resistance. Consider modified epoxy where ease of application and minimal shrinkage are important considerations.

Adhesives are also available for thin-set applications of ceramic tile, but caution in specifying must be exercised as they vary greatly in bond strength, can contain irritating solvents, and may be flammable. Epoxy adhesives are selected for their high bond strength and ease of application. Their chemical resistance is superior to that of organic adhesives. Organic adhesives cure by evaporation and come ready to use, not requiring the on-site addition of water.

Grouting materials: Current grout technology has provided improved performance in color stability, stain resistance, and bond strength. However, all of these characteristics are not available in a single grout. The specifier must make a selection based on the project requirements.

There are several popular grout types, of which the portland-cement based are most commonly specified for commercial floor applications. Commercial portland-cement grout produces a water-resistant, dense, uniformly colored joint. ANSI A108.1 Specification for Installation of Ceramic Tile describes the installation of these grout types. Sand portland-cement grout is mixed on site with proportions depending on joint width. Damp curing is required for both sand-portland and portland-cement grouts. Dry-set grout has the same attributes as dry-set mortar. Latex portland cement is a mixture of portland cement, sand-portland cement, or dry-set grouts with a special liquid latex additive such as styrene-butadiene rubber, polyvinyl acetate or acrylic; or a blend of portland cement, graded aggregate, and dry polymer additives to which only water is added at the job site. The addition of latex aids the curing process.

Industrial floors may call for epoxy or furan-resin grouts. Special installation skills and materials (e.g. waxed tile surfaces in the case of furan resin grouts) may be required. Epoxies are recommended for floors with prolonged exposures to temperatures up to 140 deg F. Special high-temperature epoxies and furans are available to perform in temperatures up to 350 deg F. Specifiers should consult with grout manufacturers to select the appropriate grout for the anticipated temperature exposure.

Standards for interior ceramic-tile flooring and an outline specification for common commercial installations.

Guide Specification

PART 1. GENERAL

A. Summary

1. Section 03345—Concrete finishing: Subfloor finish.
2. Section 04455—Marble: Stone thresholds.
3. Section 05800—Expansion Control: Expansion-joint cover assemblies.
4. Section 07100—Waterproofing: Subfloor waterproofing.
5. Section 07920—Sealants and caulking: Control and expansion joints.
6. Section 09780—Floor treatments: Slip resistant finishes.

B. References

1. American National Standards Institute (ANSI).
2. American Society for Testing and Materials (ASTM).
3. Tile Council of America, Inc. (TCA).

C. Submittals

1. Shop Drawings: Indicate tile pattern and expansion joints.
2. Samples: Full-size units mounted on plywood and grouted, not less than 18 inches square. Show full repeat of tile pattern.

D. Quality assurance

1. Tile certification: Grades for each type.
2. Mortar and grout certification: Compliance with referenced standard.

E. Delivery, storage, and handling

1. Packing and Shipping: ANSI A137.1.

F. Project conditions

1. Environmental requirements: Maintain temperature not less than 60 deg F for 24 hours before, during, and seven days after tile installation, unless otherwise indicated by referenced standard.
2. Field measurements: Verify tile layout and pattern dimensions.

G. Maintenance

1. Extra materials: Deliver to Owner full size tile and trim units equal to 5 percent of amount installed.

PART 2 PRODUCTS

A. Ceramic tile: ASTM C242 and ANSI A137.1; standard grade.

1. Grout release coating: Factory-applied. (include where required to protect the tile, e.g., furan grout application on unglazed quarry tile or latex-portland cement grout on unglazed paver tile).
2. Ceramic mosaic tile: Unglazed.
 - a. Porcelain.
 - b. Porcelain with abrasive admixture.
 - c. Natural clay.
 - d. Natural clay with abrasive admixture.
3. Paver tile: Unglazed.
 - a. Porcelain.
 - c. Natural clay.
4. Quarry tile: Unglazed.
 - a. Embedded abrasive aggregate.
5. Trim units: To match adjoining flat tile.

B. Setting materials

1. Portland-cement mortar: ANSI A118.6.
 - a. Portland cement: ASTM C150, Type 1.
2. Sand: ASTM C144.
 - a. Water: Potable.
3. Dry-set portland-cement mortar: ANSI A118.1.
4. Conductive dry-set mortar: ANSI A118.2.
 - a. Latex portland-cement mortar: ANSI A118.4.
 5. Epoxy mortar: ANSI A118.3.
 - a. Modified epoxy-emulsion mortars: ANSI A118.8.
 6. Furan resin mortar: ANSI A118.5.
 7. Epoxy adhesive: ANSI A118.3.
 8. Organic adhesive: ANSI A136.1, Type 1 floor type.
 9. Cleavage membrane
 - a. Roofing felt: ASTM C226: 15 lb. asphalt-saturated.
 - b. Roofing felt: ASTM D227; 13 lb. coal-tar-saturated.
 - c. Polyethylene film: ASTM C171; 4 mils thick.
 - d. Reinforced asphalt paper: ASTM C171, duplex type.
 10. Welded wire fabric: ASTM A185 and ASTM A82.

C. Grouts: ANSI A118.6.

1. Commercial portland-cement grout: ANSI A118.6.
2. Sand portland-cement grout: ANSI A118.6.
3. Dry-set portland-cement grout: ANSI

A118.6.

4. Latex portland-cement grout: ANSI A118.6.

5. Epoxy grout: ANSI A118.3.

6. Furan resin grout: ANSI A118.5.

a. Modified epoxy emulsion grout: ANSI A118.8.

PART 3: EXECUTION

A. Examination: Verify pattern layout and subfloor conditions.

B. Preparation: Verify subfloor is level, dry, and free from dirt, oil, and curing compounds.

C. Installation: ANSI A108 series and TCA Handbook for Ceramic Tile Installation.

1. Mortar installation

a. Portland-cement mortar: ANSI A108.1C.

(for allowing contractor to exercise option of installation with either workable or cured mortar bed).

1. Workable mortar bed: ANSI A108.1A.

2. Cured mortar bed: ANSI A108.1B.

b. Dry-set portland-cement mortar: ANSI A108.5.

c. Conductive dry-set mortar: ANSI A108.7.

d. Latex portland-cement mortar: ANSI A108.5.

e. Modified epoxy emulsion mortars: ANSI A108.9.

f. Furan resin mortar: ANSI A108.8.

g. Epoxy adhesive: ANSI A108.4.

h. Organic adhesive: ANSI A108.4.

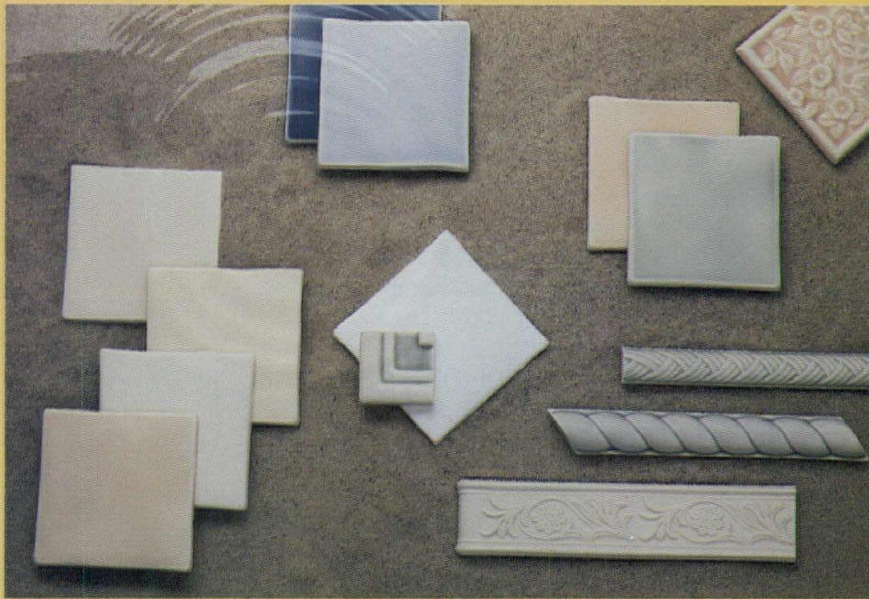
2. Grout installation: ANSI A108.10.

D. Tile Schedule

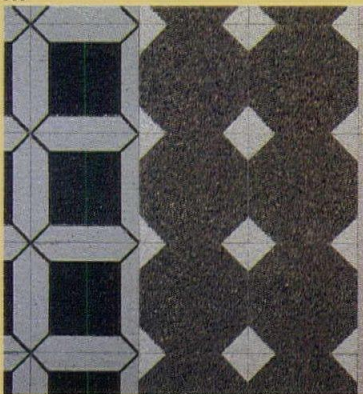
(Add schedule and grout colors)

The Tile Council of America, Inc. publishes the Handbook for Ceramic Tile Installation. Write TCA at P.O. Box 326, Princeton, New Jersey 08542-0326, 609/921-7050. The 1993 edition of the 35-page Handbook costs \$2.

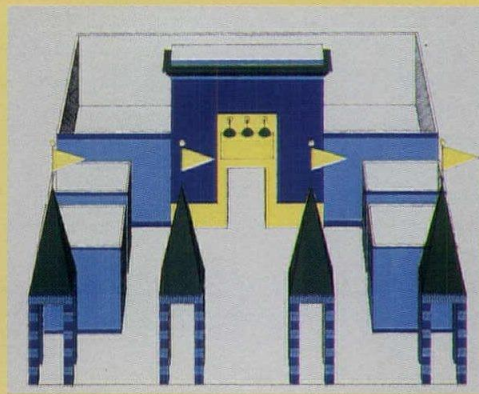
Ceramic Tile



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The International Tile and Stone Exposition (IT&SE) is usually one of the best building-product shows, attracting everyone concerned with the architectural use of tile and stone—specifiers, manufacturers, vendors, and installers—with an enormous hands-on display.

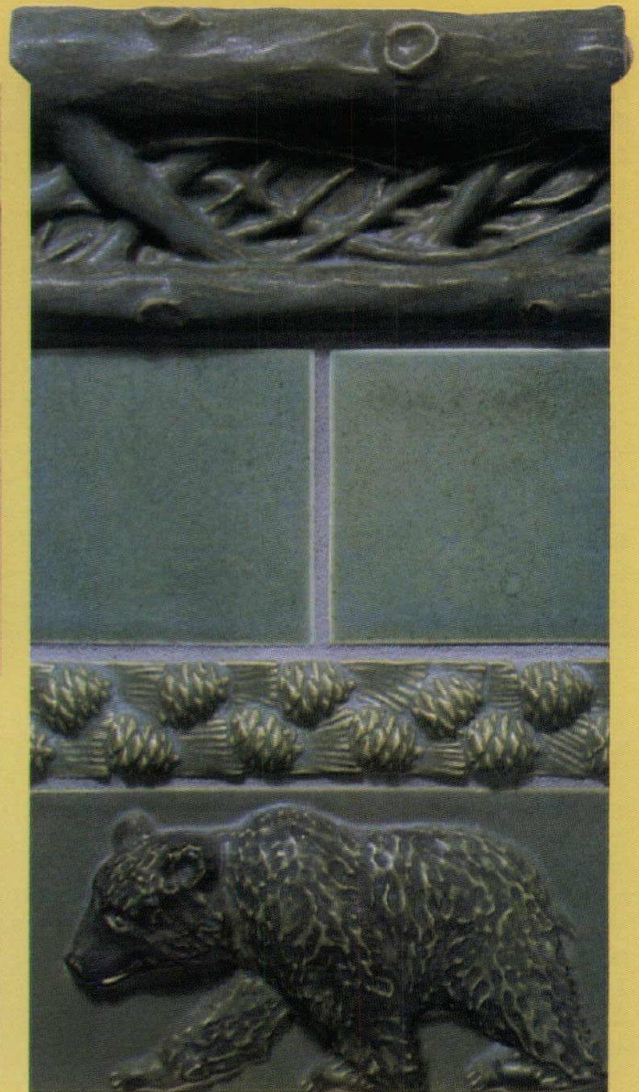
Exhibits from over 35 countries provide a close look at hundreds of ceramics and agglomerate stone, and natural stones in dimension, slab, and tile format. There is also substantial participation by setting-materials and maintenance-product vendors. Seminars tend to be specific and problem/solution oriented, and range from choosing the right stone for a skyscraper to how to make money setting tile. The 1993 show will be held in Miami Beach, April 21-24. Phone 407-747-9400 for information. *J. F. B.*

300. Puddled

Echo 4- by 4-in. tiles have a variegated surface and hand-formed edges that catch translucent glaze unevenly, creating different color values. Rope, weave, trellis, and floral trim pieces accent the mottled field tiles, which come in 12 pastel colorations. Latco Products, Los Angeles.

301. Cast-marble flooring

A new production process lets a designer combine two different finishes on the same Armstone floor tile—for example, a mitered edge in a textured finish could surround a polished center. Floor patterns, made with tiles of the same size (either 12-, 16-, or 24-in. squares), achieve a subtle, softer-edged effect, with finer grout lines. The two-finish option comes in three styles (Monticello and Octagon, above) and 18 standard (and any



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custom) stone colors. PermaGrain Products, Inc. Media, Pa.

302. Tile palazzo

Pritzker-winner Aldo Rossi has created his first trade-show exhibit, for Assopiastrelle and the Italian Tile Center. A showcase for Italian ceramics in hot, tropical colors, the 3,500-sq ft space will have towers, house-like information booths, a central fountain, and a cafe with a Florentine facade. The Tile Center offers a number of free architectural services, including an on-line database sourcing Italian ceramics available in the U. S. Italian Tile Center, New York City.

303. Arts and Crafts redux

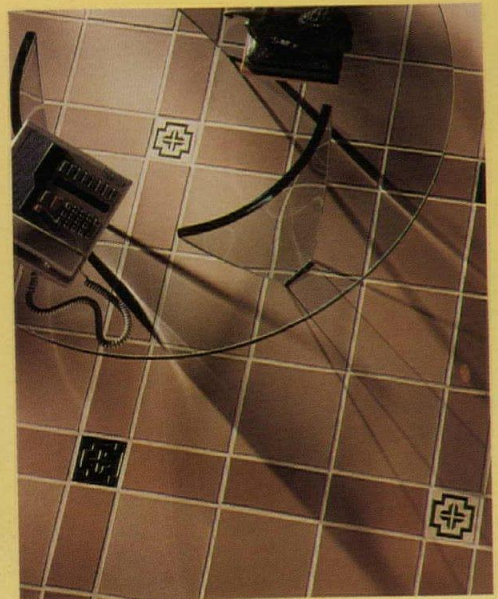
The husband-and-wife team of Michael Pratt and Reta Larson works with the ceramic elements that originally made handmade

New tile and stone products focus attention on the decorative potential of one of the oldest architectural materials.

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



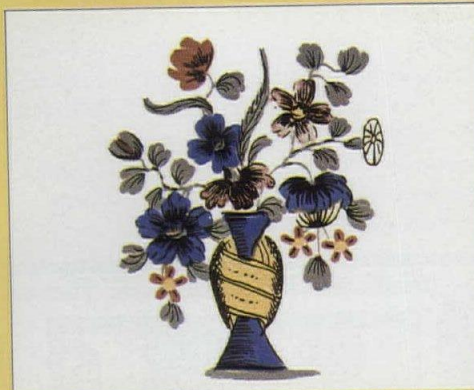
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American art tile so popular before the turn of the century: designs drawn from nature interpreted in bold colors and simple, strong shapes. Molded branch, twig, pinecone, and bear tiles are from a series of decorative friezes and borders that incorporate the flora and fauna of the artists' Pacific Northwest. Country Floors, New York City.

304. Italo-Santa Fe

Italian-made but Southwestern in feeling, Mission glazed tile combines a rustic appearance with Class 4 traffic performance. The 12- by 12-in. tiles come in white, light terracotta, burnt orange, and dusty mauve colorations. Saltillo-effect listelli and 4- by 4-in. inserts, available in two stylized motifs, can be used to add pattern interest to residential floors. American Marazzi Tile, Sunnyvale, Texas.

305. Decorative elements

MetroAccents are 3 5/8- or 1 5/8-in. squares that come in three styles: solid bright colors (blue, green, pink, white, and black); inlaid patterns, and a full-glazed pattern. Designed to add punch to both Ironrock and Metro commercial-tile lines, accent pieces are suitable for the heaviest traffic, indoors and out. Metropolitan Ceramics, Canton, Ohio.

306. Marble-pattern ceramic

Dal-Marmol, a new 12- by 12-in. residential floor and wall tile that recreates the subtle veining of natural stone in a low-maintenance ceramic, is available in three soft-toned colorations of frost, almond, and rose. Dal-Tile Corp., Dallas.

307. Colonial

An addition to an already extensive collection

of decorative tiles and trim, floral-bouquet designs based on antique English polychrome Delftware patterns have been recreated under license from the Colonial Williamsburg Foundation. There are 13 different Colonial-era florals (Bellflowers and Pinks is shown), as well as whimsical birds, blue and white Delft subjects, and humorous pre-Revolutionary caricatures. Summitville Tiles, Inc., Summitville, Ohio.

308. Travertine glazed

Color-matched Traviata stone-look tile comes in large-scale 12- and 16-in. squares for residential floors, and an 8- by 10-in. rectangle for vertical surfaces. Accent elements look like metallic-glass mosaics, with the decorative motif appearing centered on an 8- by 10-in. tile or as 8- by 2-in. strips or listelli. American Olean Tile Co., Lansdale, Pa. ■

3-D Modeling: Test Before You Draft

By Steven S. Ross

The age of the electronic tissue has matured nicely, thank you. You can now "sketch" a design on-screen, in 3-D, and you don't have to spend much time getting used to arcane commands to master the technique.

Macintosh users have long enjoyed a choice of numerous modeling packages; we've reviewed many good ones, including form-Z, ModelShop, and Virtus WalkThrough. And some Macintosh CAD packages (ArchiCAD, ArchiTrion) have strong 3-D modeling capabilities. Now there are two Windows-based packages meant specifically for 3-D modeling as well—for roughing out a design in three dimensions, even before you do the hard-line drafting.

The field was pioneered by Alias, which converted its popular Macintosh modeler to Windows more than a year ago. This early package has now been enhanced considerably. Autodesk joined the fray late in 1992, with a modeling package based on an earlier one that ran in DOS, without Windows.

You might do well to take a look at both. Alias Upfront 1.1 is faster. And we found it easier to draw with, except when sculpting complex 3-D solid objects. There's also "real world" sun shadowing. On the other hand, 3D Concepts from Autodesk comes with hundreds of prefab symbols. Once a model is drawn, it is easier to rotate and "walk around" (although not through) with 3D Concepts. And exchange with Generic CADD file formats is easier, too.

In other words, Upfront is better at the "upfront" tasks (overcoming the key barrier when it comes to getting design professionals to use software), and 3D Concepts has a slight edge over it once the model is done (great for mulling over a design, and for client interaction). You can exchange files between the two via the 3-D DXF file format.

Autodesk has aggressively priced 3D Concepts at \$249, only a fourth the price of Alias Upfront. ■

Autodesk 3D Concepts

Autodesk, the maker of AutoCAD, has gone after the Windows 3-D modeling market that had been Alias's alone, with this adaptation of Generic's original DOS-based 3D Concepts software. Generic was renamed Autodesk Retail Products about a year ago.

The "rotation cube" is particularly clever. It is surrounded by three bars, one for each axis. As you slide the bars, the cube rotates to match. Accept the result and the drawing itself is rotated as well. This makes it easy to visualize the effect of a move before you make it.

Autodesk 3D Concepts summary

Equipment required: IBM PC or compatible, 1 MB of RAM (4 MB is highly recommended), Windows 3.0 or better, EGA or VGA monitor. Math coprocessor highly recommended.

Vendor: Autodesk Retail Products Division, 11911 North Creek Parkway South, Bothell, Wash. 98011, 800/228-3601, 206/487-2233, fax 206/483-6969. \$249.

Manuals: There are two, one a user manual with small tutorial, the other a command reference. Both are fine.

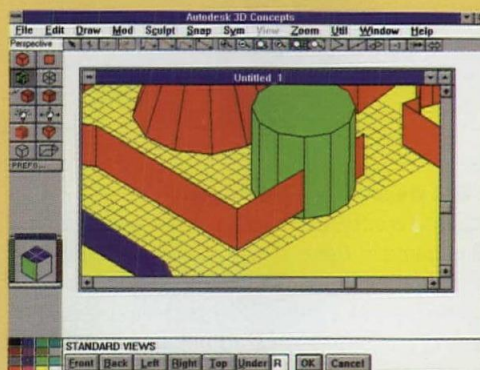
Handling of symbols is particularly easy and satisfying. These symbols are previewed in a dialog box that can be placed anywhere on the screen, allowing you to pull multiple symbols and place them into your model at will.

Models can be imported or saved in the 3-DD format (3D Concepts' native format), or as DWG (not AutoCAD, but Generic CADD 2-D, versions prior to 6.0), DXF (AutoCAD 3-D version), or GCD (Generic CADD 2-D, version 6.0 or later) files.

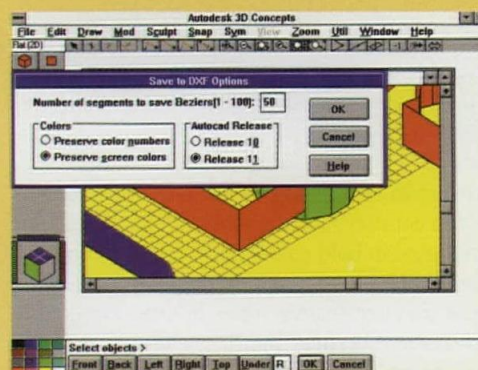
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Ease-of-use: Great at manipulating 3-D objects on a 2-D screen.

Error-trapping: You can merge one drawing into itself. This doubles each object, although they occupy the same "space" in the drawing—a confusing situation. There's an undo command that can retrieve the last object deleted, but only if you don't issue another command first. Saving with objects selected in the model will save only the parts that are selected, but there is a way you can disable this. ■



Notice the Views bar that can be opened at the bottom of the screen. There are many features for moving around the model.



Importing and saving Autodesk 3D Concepts as a DXF file can be done in AutoCAD 3-D version only; note options.

QuickBooks

We get many requests for easy-to-use bookkeeping software for small practices. We've never found one that's totally satisfactory. Some firms use project-management-software output for billing. That can be cumbersome, and the audit trail easily obscured. Some use standard packages such as DAC Easy. But that requires some basic knowledge of bookkeeping.

QuickBooks, from the same company that makes Quicken, the personal-financial manager, sidesteps many of the problems. Although not meant specifically for architects, it offers a prefabricated template chart of accounts for professional practices that you can modify.

There's also a good help system that explains not only the software, but also the fundamentals of bookkeeping.

The package keeps track of client lists, prints invoices, tracks your checking account, reports on overdue payments, makes routine payroll deductions (with the QuickPay option), calculates sales taxes due, and handles routine charges (monthly rent, for instance).

QuickBooks even forecasts cash flow, tracks assets and depreciation, and allows partial payment of invoices.

Circle number 310

QuickBooks summary

Equipment required: IBM PC or compatible, 640K random-access memory, 2 MB of disk space.

Vendor: Intuit, PO Box 3014, Menlo Park, Calif. 94026, 800/433-8810, 415/322-0573. \$139.95 (\$169.95 with QuickPay option).

Manuals: Separate for QuickBooks and QuickPay. Large, detailed paperbacks.

Ease-of-use: Excellent.

Error-trapping: Good. It is difficult to destroy data. You can hide some entries by overwriting them; that's not as safe as standard accounting software. ■

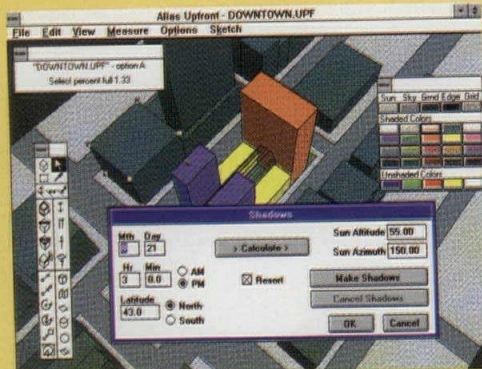
Alias Upfront 1.1

This new version of the 3-D modeling package for Windows has a number of little features that add up to big productivity improvements. Most importantly, it can now import 3-D DXF. This makes it easier to use with CAD software. You can also print from any display mode. The on-screen performance is better, too, with fewer screen refreshes as you adjust views.

Upfront pioneered the idea of conceptual modeling in 3-D, on both the Macintosh and DOS computers. You block out the design and examine it in detail before ever committing to hard-line drafting. This obviously requires that you be able to move files from Upfront to the CAD package you might be using. Less obviously, it also demands that you be able to move files back from CAD to Upfront, either for client presentations or to

Alias Upfront 1.1 Summary

Equipment required: DOS computer equipped with 80386SX or higher CPU (486 highly recommended), 2 MB random-access memory (4 MB or more highly recommended), Windows 3.0 or 3.1. Math coprocessor highly recommended (so long as you are not using a CPU with the coprocessor built in). Alias Upfront 1.1 is also available for the Macintosh; 2 MB random-access memory minimum (5 MB recommended for System 7).



Calculating shadows for a given date, time, and latitude. Notice the color box that has been opened in the upper right; it stays on screen until you close it.

check refinements in the design.

Upfront, unlike 3D Concepts, allows you to scan in backgrounds, surface patterns, or images of a site, to make your 3-D model more realistic. This ability is also great for designing additions to existing structures, or for interior renovation work—you scan in an image of the existing structure, and sketch on top of it.

Files can be imported in DXF, WMF (Windows Metafiles), BMP, PCX, or PIX formats. They can be exported in CSV, TXT, DXF, WMF, BMP, TIFF, PCX, and PIX. TXT or CSV formats are raw data describing the objects in the model—good for analyzing things like surface area, if you know what you are doing.

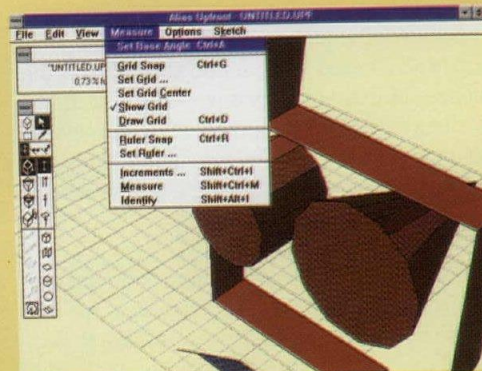
Circle number 311

Vendor: Alias Research, 110 Richmond Street East, Toronto, Canada M5C 1P1, 800/447-2542, 416/362-9181, fax 416/362-0630. U. S. \$995 (free to owners of version 1.0).

Manuals: The one 213-page manual is complete and easy to use. There's a good tutorial. The manual has a spiral binding that allows pages to lie flat on a desk.

Ease-of-use: Good.

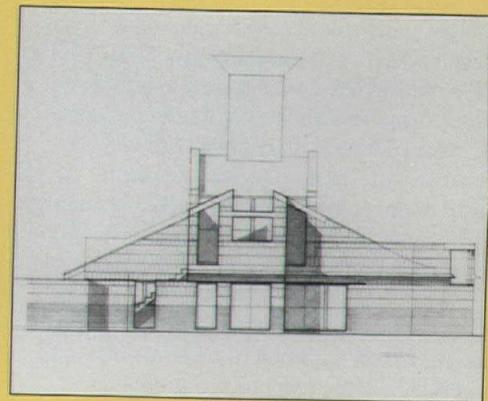
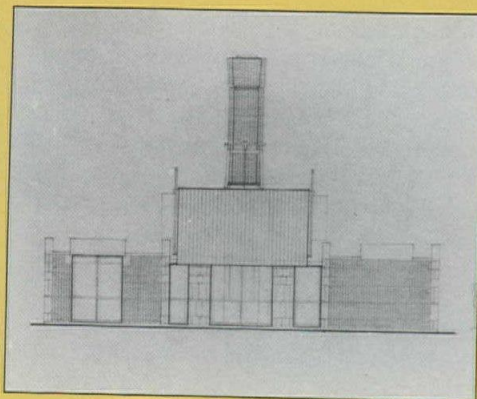
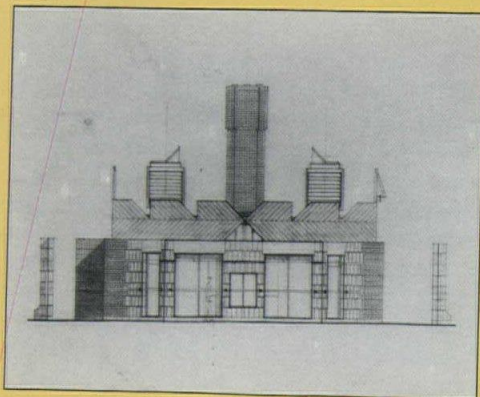
Error-trapping: Good. Some types of cuts and deletes cannot be undone. ■



File imported from 3D Concepts, via 3-D DXF. All entities import correctly; color has to be corrected.

Going Home

The evolution of an icon: Three different early schemes for the Vanna Venturi House (below) show a tall chimney that became less dominant in the final design.



Mother's House, The Evolution of Vanna Venturi's House in Chestnut Hill, by Frederic Schwartz. New York: Rizzoli, 1992, 224 pages, \$60 (hard), \$35 (paper).

Reviewed by Thomas Hine

In 1962, at just about the time Robert Venturi was completing his design for a house for his mother Vanna, my mother, Vera, installed a chair rail in her dining room. Vanna's house had a chair rail too.

There was a big difference between the two. Vera's chair rail was naive, an attempt by a chronic remodeler to give her house a bit of cozy elegance. An architect at the time would have told her not to do chair rails, but she would never have consulted an architect. Vanna's chair rail was, by contrast, knowing. Because it was higher than any chair, it was part of a sophisticated game of small size and exalted scale found throughout the house. Moreover, Vanna was allowing her brilliant architect son, then 37, to knowingly transgress many of the prevailing rules of serious architecture and build a little house that helped change the world.

Vera's and Vanna's constructions do not really inhabit the same architectural universe except for a quality—some call it Pop, but I think it has more to do with Mom—that tempers the intellectuality of Venturi's design. The Vanna Venturi House may contain echoes of Palladio and Aalto, Lutyens and Le Corbusier. But it is most endearing in the way in which it fuses those erudite refer-

Thomas Hine is the architecture critic for The Philadelphia Inquirer.

ences with symbols broadly identified with the pretensions and insecurities of mid-20th-century middle-class American life.

This dimension of the house is epitomized by Rollin LaFrance's famous photograph reproduced on the cover of *Mother's House*. It shows the house's front facade with Vanna Venturi sitting almost at the center of its oversized squarish opening, a pot of none-too-robust geraniums at her side. The split pediment over her head shows us how sons like to pull things apart, but mother and the rent are that embodies her domestic aura somehow keep things together.

Mother's House reproduces nearly all of the drawings, made over a period of more than four years, that culminated in the 1,800-square-foot shrubless, green, iconoclastic icon we know so well today. What these drawings show is not the evolution of the house we know, but the exploration and discarding of several other houses until the right one emerged.

The rest of the book consists of interpretations, two by Robert Venturi—one first published in *Complexity and Contradiction in Architecture* and the other written for this volume—and others by Frederic Schwartz, Vincent Scully, and Aldo Rossi. Venturi's 1966 essay, with its account of the interplay between chimney and stairway, remains the most persuasive exposition of the ideas that animate the design. But the heart of the book is Scully's analysis of the emergence of the design.

Scully argues that the house is provocative, in part, because it is a feminist building. He notes that the LaFrance photo is a version of

the Vitruvian diagram relating the human figure to square and circle with the reaching man replaced by a seated woman.

Most of the earlier versions of the building were dominated by an immense chimney, a feature whose role in the family romance would have been all too clear. In plan and section, the designs are closely related to those of Louis Kahn. Scully analyzes the evolution of the design as an architect's struggle with his master and argues that others who were influenced by Kahn but less strong (he mentions Romaldo Giurgola and Mario Botta) stopped struggling sooner.

Scully writes, "It is as if Venturi had worked his way through all the inessential *Sturm und Drang* of late Modernism to come out at least into a reasonable, peaceful pool of space and symbol, spiritually simple, certain and strong, needing to pump no iron."

That's a wonderful sentence, one that recognizes the hominess of a house that, two years into its design, promised to be aggressively uncomfortable. But it doesn't seem likely that Scully's myth of overcoming influence through symbolic patricide tells the whole story. If this building is about an architect overcoming the hollow machismo of early 1960s architecture to embrace a feminine principle, mightn't his client—his mother—have had something to do with it?

Mother's House is an important, even exciting book that reminds us of the strangeness and difficulty of a building that has become familiar and easy to take for granted. It would have been better, though, if mother had been home. ■

Possible Palladian Villas (Plus a Few Instructively Impossible Ones), by George Hersey and Richard Freedman. Cambridge: MIT, 1992, 198 pages, \$33 (hard), \$18 (paper), \$15 (disk).

Reviewed by John Belle

Starting with his *Four Books on Architecture* and the 153 buildings he designed himself and continuing to the generations of architects his work inspired, Andrea Palladio has influenced the course of architecture for more than 400 years. Now George Hersey and Richard Freedman are trying to extend that influence to the electronic age.

The first part of this new book is a brief introduction to the ideas and influences that helped shape Palladio's own vision of architecture: Vitruvius, Renaissance symmetry, geometry, and musical intervals as a source of proportion. Then the authors say they "have decided to teach a computer to design Palladian villas. . . ." To do this, they have written two computer programs—one called Planmaker, for generating Palladian plans, the other called Facademaker, for creating Palladian elevations.

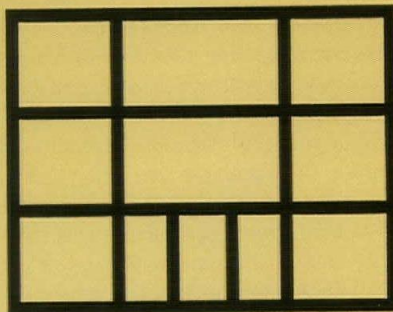
Readers are assured by the authors that "notwithstanding our reliance on a computer, the method we use is itself one that Palladio advocated." I wasn't sure about that at first. And as I examined the plans generated by the computer, numerous differences with Palladio's own plans emerged. For reasons not adequately explained, the computer program could not generate plans with circular or elliptical shapes. As a result, there is no computer-designed equivalent to Palladio's masterpiece, the Villa Rotonda. Also Planmaker is unable to design "T," "I," and Greek-cross-shaped rooms, all of which often appear in the master's own work.

What Planmaker does (and does very well) is generate innumerable plans by dividing and re-dividing a rectangle into a great variety of room layouts, all in the manner of a Palladio original. Similarly, Facademaker creates elevations for these plans by adding the indi-

John Belle is a partner with Beyer Blinder Belle Architects.

vidual elements—doors, windows, roofs, entablatures, pediments, bases, steps, and colonnades—to a basic set of "blocks." So far, so good. Readers are then offered the option of popping a disk (available with the book for an additional \$15) into their Macintosh computer and generating their own plans and facades in the Palladian style. I can vouch for this being great fun. My own effort at a Palladian villa is shown here for all to see and criticize. But is it Palladio? I think not. In fact, after an enjoyable afternoon reading this book, I realized it was incorrectly titled. *Possible Palladian-esque Villas* would be a more accurate title.

The essential lesson of this book is that there is more to Palladio's architecture than the application of geometry, mathematics, and rotational symmetry. After reading *Possible Palladian Villas*, I took up my dog-eared copy of Rudolph Wittkower's *Architectural Principles in the Age of Humanism*, which is still my personal bible on Palladio. Compared with Wittkower's work, Hersey and Freedman's new book is more akin to a video game than a gathering of fresh insights into a great architect's mind. The authors' claim that their book "removes architectural connoisseurship from the realm of instinct and sets it within that of the verifiable" seems to dismiss the wonderful complexities of Palladio that Wittkower's book lovingly explained to me 40 years ago. ■



The See-Through Years: Creation and Destruction in Texas Architecture and Real Estate, 1981-1991, by Joel Warren Barna. Houston: Rice University Press, 1992, 288 pages, \$28.

Texas has long had the reputation for doing things in a big way and the real-estate boom and bust of the 1970s and '80s was no exception. Land was developed and buildings were built for the simple reason that money was available, not because the developers were responding to a market need.

Joel Barna, editor of *Texas Architect*, chronicles this boisterous period with clear, critical judgment. Barna weaves his tale of shady developers, indicted bankers, old-money patrons, accommodating architects, and other compromised players in with discussions of various building types—middle-class houses, public housing, schools, medical facilities, high-rise office buildings. The fabric is held together by the common threads of the economics and psychology of the real-estate business.

Although the book focuses on Texas, the same financial institutions, economic attitudes, and greed swept through the U. S. in the 1980s with similarly disastrous results. Texas was merely left with more "see-through" (empty) buildings and a longer, deeper recession than most other places.

Much of the architectural theory of the Postmodern era has centered on meaning—the conveyance by architecture of societal symbols through association with historical styles. Barna dismisses this theoretical pretext by clarifying the real function of buildings placed on the land. "Real estate is an engine," says Barna, "powered by money, that generates and consumes vast wealth." Buildings are put up not so much to fulfill functional needs as to enhance the value of the land, to become real-estate commodities. This is not what architects like to hear. But evidence is abundant in our era that the message of the medium is simply to call attention to itself. Any particular style used for a bank, a house, or an office tower—regardless of its historical meaning—just says "look at me."
Gerald Moorhead

Andres Duany and Elizabeth Plater-Zyberk: *Towns and Town-Making Principles*, edited by Alex Krieger with William Lennertz. New York: Rizzoli, 1991, 120 pages, \$25 (paper).

Seaside: Making a Town in America, edited by David Mohny and Keller Easterling. New York: Princeton Architectural Press, 1991, 270 pages, \$40 (cloth), \$25 (paper).

Over the course of the last half-dozen years, the work of Andres Duany and Elizabeth Plater-Zyberk—especially their town plan for Seaside, Fla.—has been widely discussed in both professional and popular journals. Now come two books, one a catalog of Duany and Plater-Zyberk's town plans and the other a look at Seaside itself.

Towns and Town-Making Principles, which originated at Harvard's Graduate School of Design, is a taut and elegant volume that contains a series of short essays, almost tributes (not necessarily undeserved) from Vincent Scully, Patrick Pinnell, Leon Krier, and the two editors, Krieger and Lennertz.

Seaside sprawls a bit more, including photographs, drawings, essays, and interviews. It is a working document, a reference book about Seaside with all the information one might seek. It traces the evolution of the town's plan, looks at the essential elements of its design code, and displays images of both built and unbuilt houses and civic structures.

Of all the writings in both books, Neil Levine's essay in *Seaside*, "Questioning the View: Seaside's Critique of the Gaze of Modern Architecture," is the one that stands out. Drawing on history, art criticism, psychoanalytic theory, and philosophy, Levine looks at the evolution of the picture window, the great innovation of the suburban ranch house. The essay discusses the degradation of the street as a place, the intrusion of the private on once-public space, and the substitution of marketing ideas for less commercial design principles. The book also includes two interviews by Mohny with Duany and Plater-Zyberk that show the breadth and depth of the duo's approach to design and planning.

In *Towns and Town-making Principles*, Scully's essay has a good-natured way of putting things in perspective. For example, in explaining the urban and design codes Duany and Plater-Zyberk espouse, he states, "It is not conformity but decent behavior and intelligent conversation that are required. . . an architecture in the truest sense rationalized."

Ironically, both books are somewhat flawed in their own designs. *Towns and Town-Making Principles* is exquisite looking, almost precious, but is virtually unreadable because the print is so small. Meanwhile, *Seaside* starts off with no fewer than 32 pages of photographs before reaching the Table of Contents, giving the impression they have been stuck there like so many snapshots in a family album. The second half of the book, showing the works of various architects in Seaside, seems to be organized more by whimsy than logic: neither alphabetical nor chronological nor geographical order reigns here. Both books, though, are essential reading for anyone engaged in urban/suburban/town planning. *Beth Dunlop*

Briefly Noted

Emerging Japanese Architects of the 1990s, edited by Jackie Kestenbaum. New York: Columbia University Press, 1991, 132 pages, \$50.

This book introduces some of the leading members of the fourth generation of post-war Japanese architects (the first generation being represented by Kenzo Tange, the second by Fumihiko Maki, Arata Isozaki, and Kisho Kurokawa, and the third by the likes of Tadao Ando and Toyo Ito). As selected by Kestenbaum, the latest crop of Japanese talent, most of whom are in their 30s, includes: Norihiko Dan, Hiroyuki Wakabayashi, Kiyoshi Sey Takeyama/AMORPHE, Hisashi Hara, WORKSHOP, and Atsushi Kitagawara. An essay by Kestenbaum outlines the contemporary commercial environment in which these architects work and some of their common concerns.

Tadao Ando: Dormant Lines, edited by Darell Wayne Fields. New York: Rizzoli, 1991, 65 pages, \$30 (paper).

This book focuses on the relationship between Tadao Ando's drawings and his buildings. Using fold-out pages with construction drawings and photographs on one side and sketches on the other, the book explores the architect's design process.

Harry Seidler: Four Decades of Architecture, by Kenneth Frampton and Philip Drew. New York: Thames and Hudson, 1992, 430 pages, \$80.

After studying with Gropius, Breuer, and Niemeyer, the Viennese-born Harry Seidler moved to Australia, where he has carried the flame of Modernism ever since. This thick tome gives the full treatment to an architect not well known in the U. S.

The Architecture of Malaysia, by Ken Yeang. Amsterdam: The Pepin Press, 1992, 352 pages, \$50.

A comprehensive history of Malaysian architecture, this book runs from the first centuries A.D., through the various colonial periods, and into the 1990s. The author, one of the country's leading architects, also traces the development of an independent Malaysian architecture in the 20th century.

Team Zoo: Buildings and Projects 1971-1990, edited by Manfred Speidel. New York: Rizzoli, 1991, 152 pages, \$35 (paper). A loosely organized group of independent Japanese ateliers, each humorously named after a different animal, Team Zoo has pursued a diverse and quirky vision of architecture for 20 years. Some 35 projects are shown in this well-written monograph. ■

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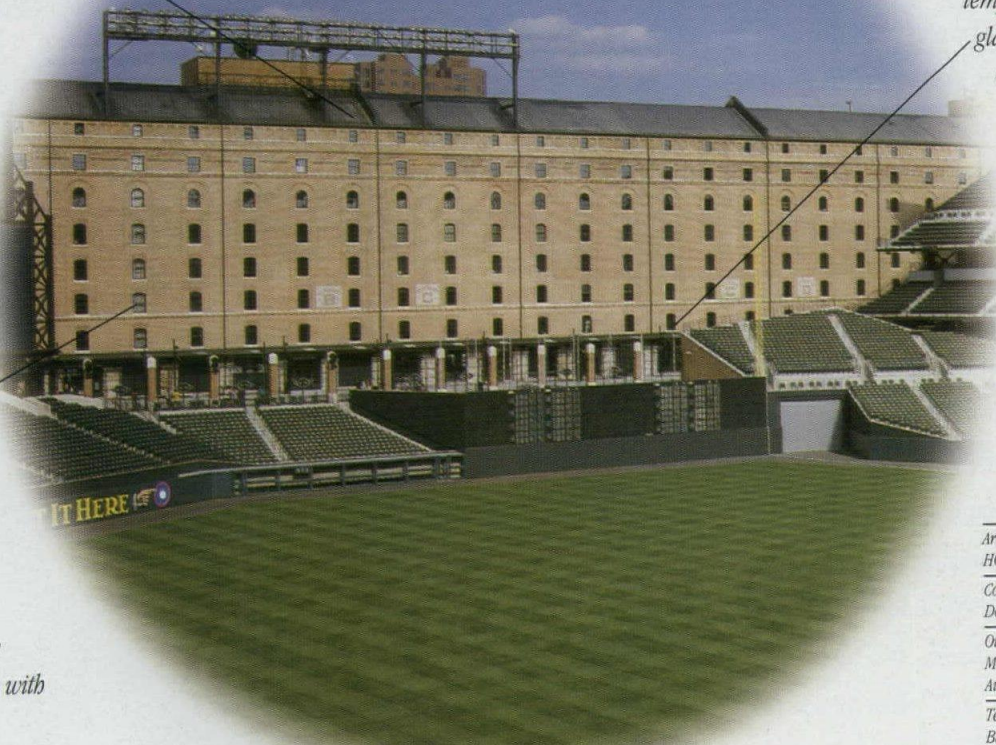
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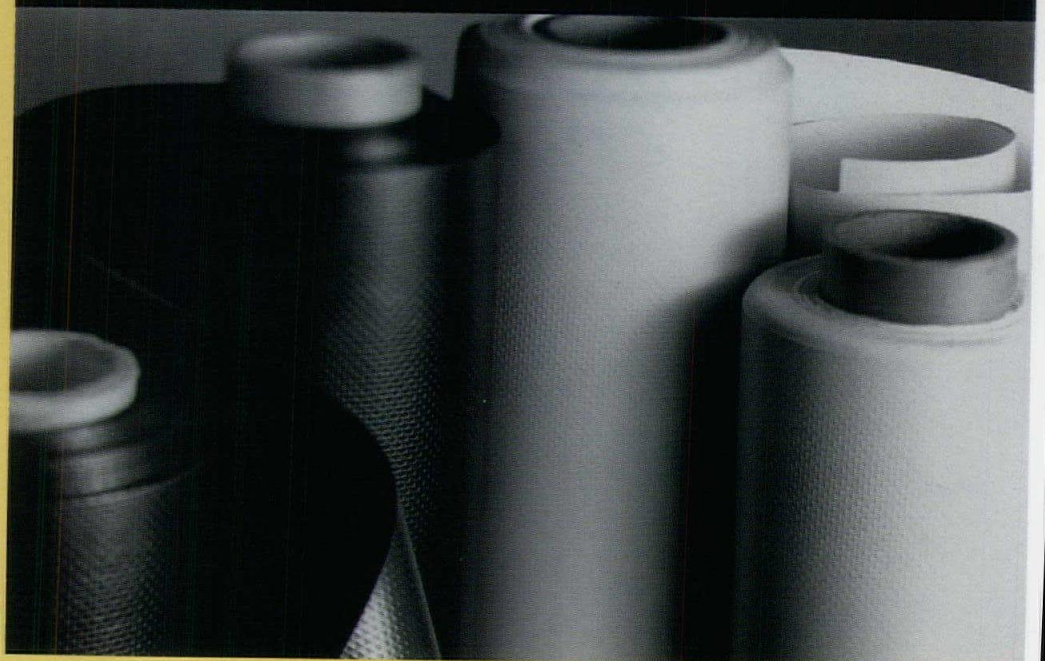
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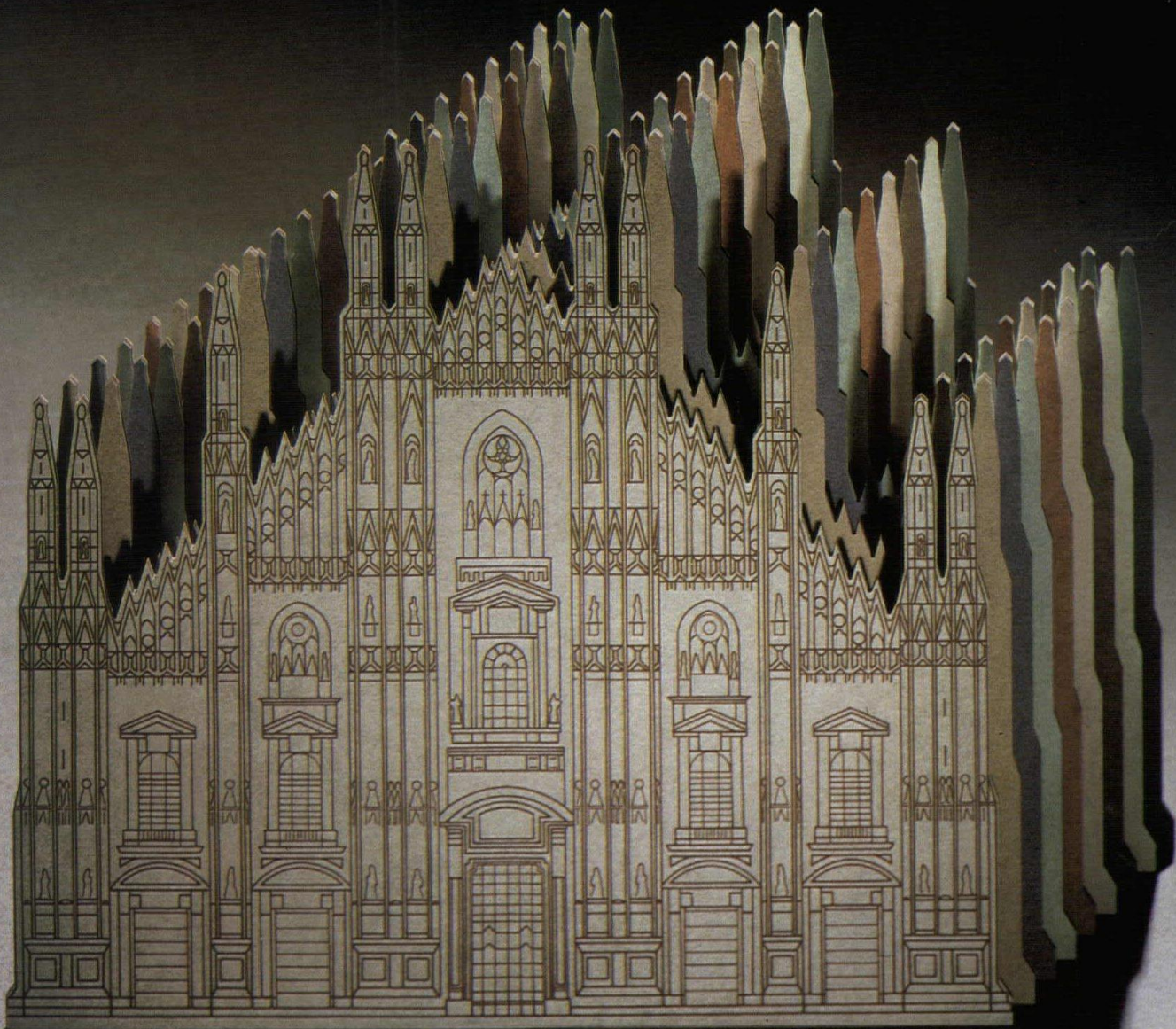
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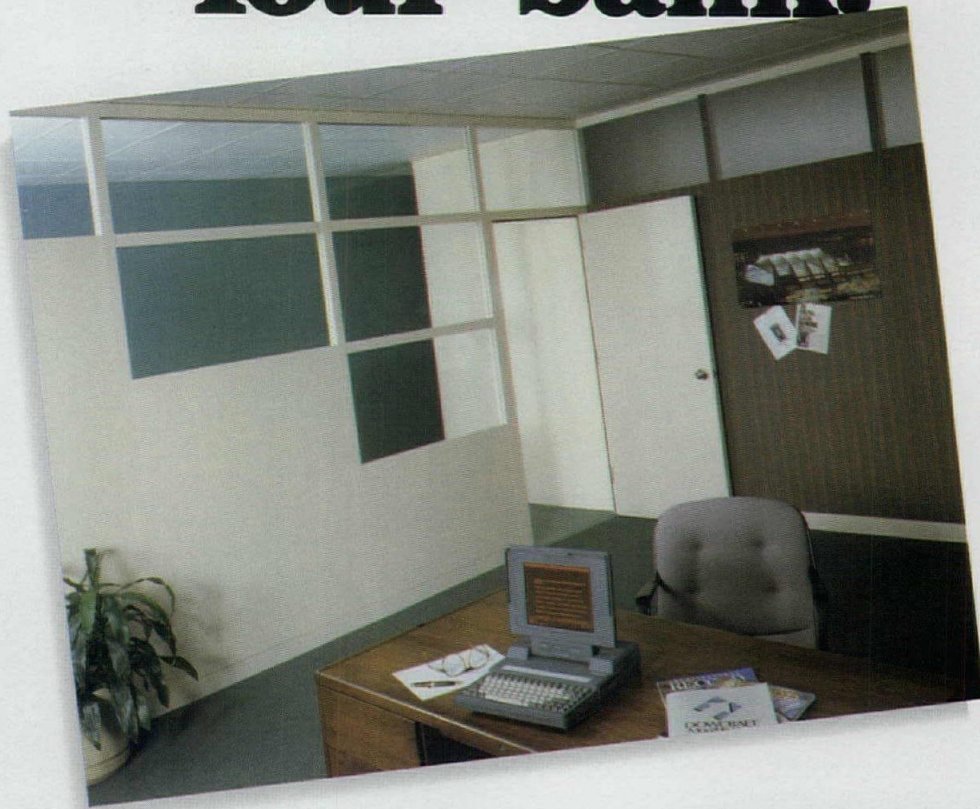
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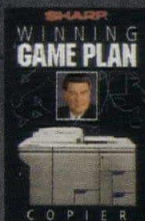
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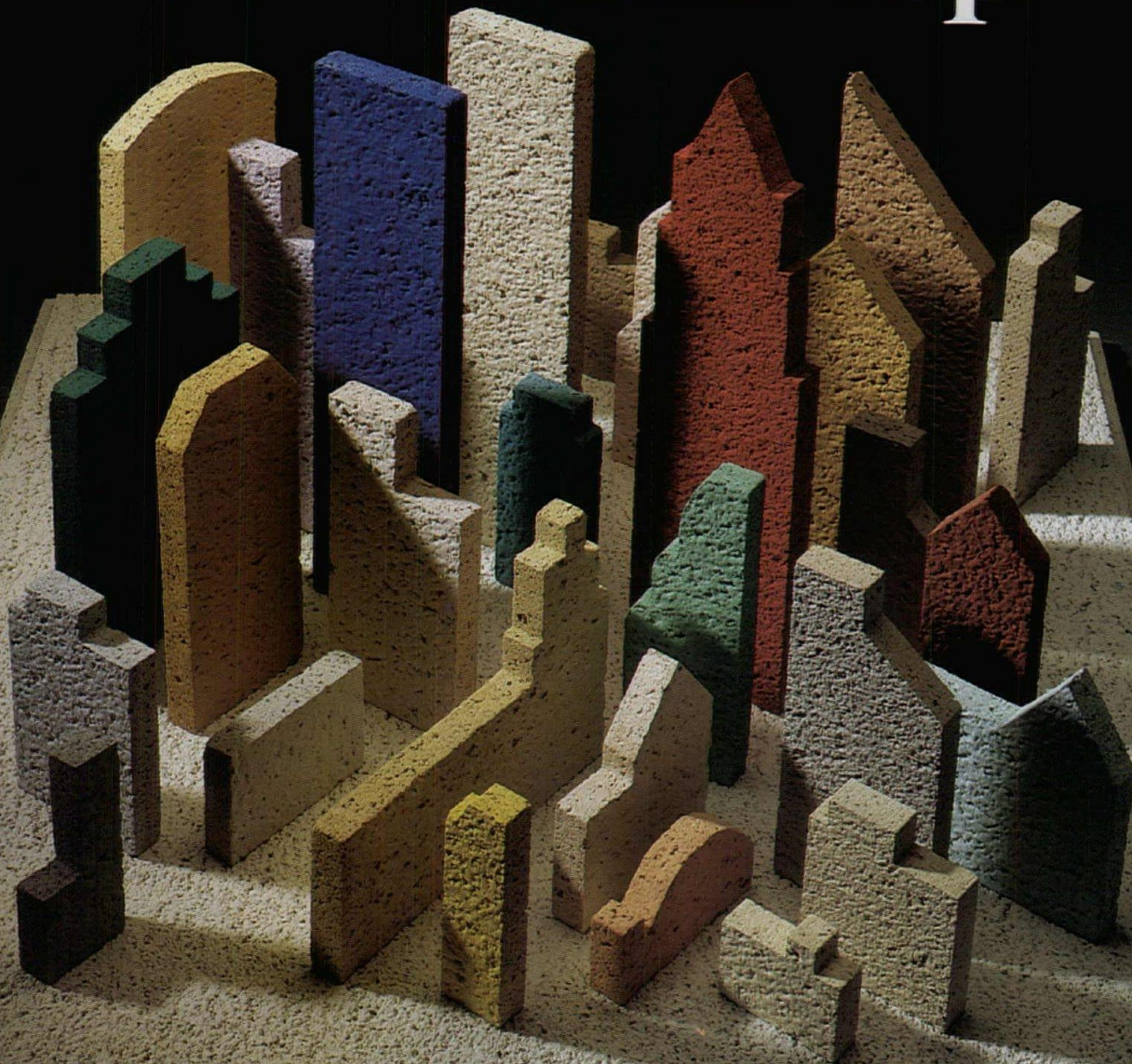
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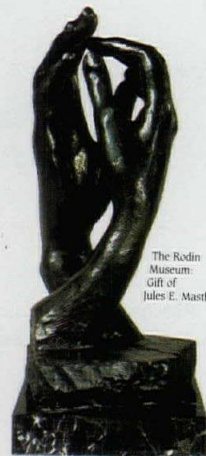
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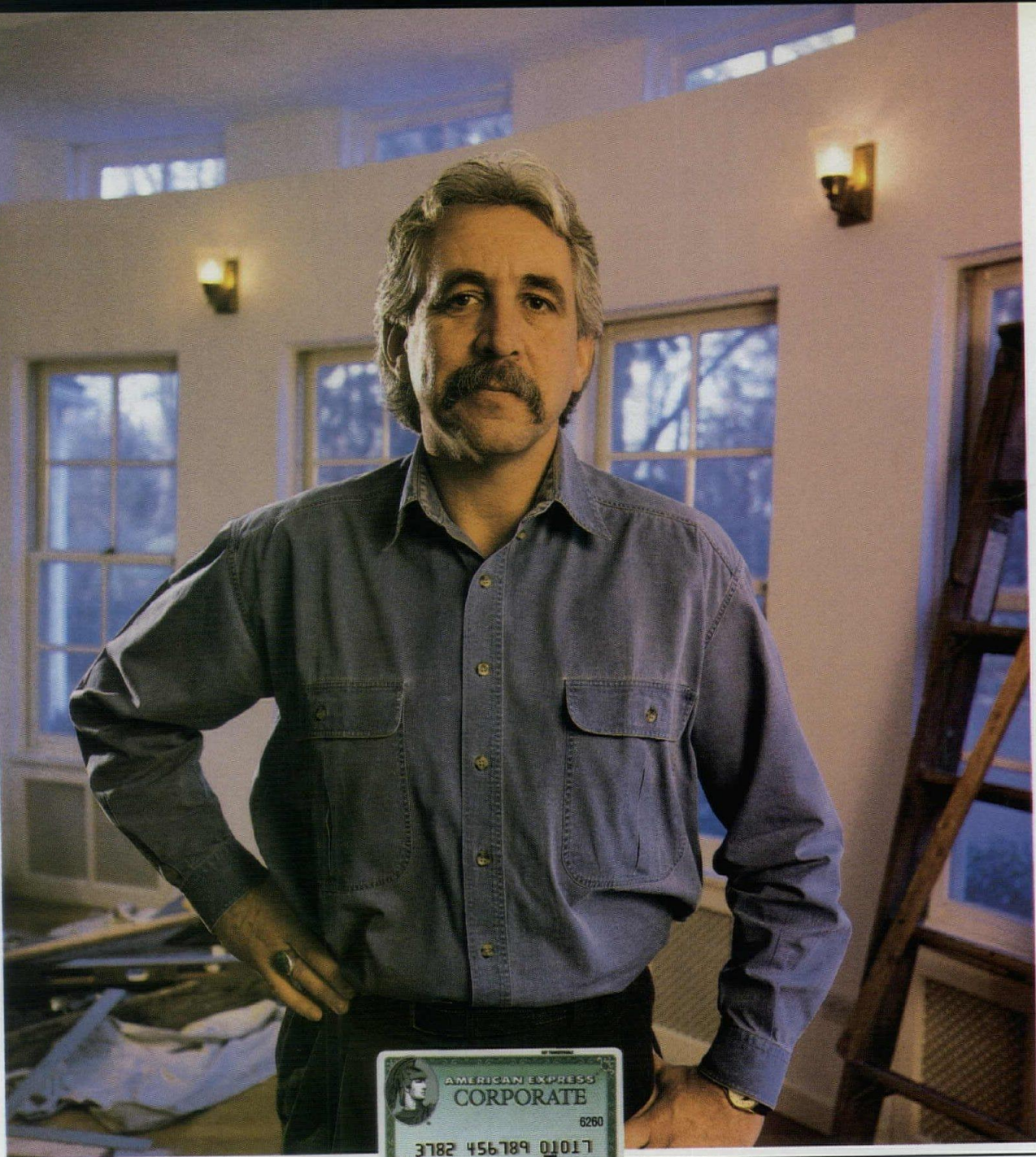
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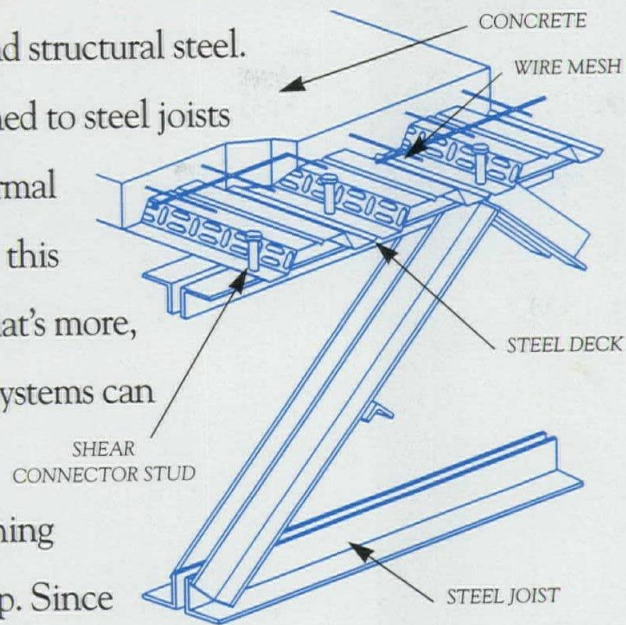
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In This Issue

“Lyrical and not bureaucratic” is how Rem Koolhaas describes the pattern of neon fixtures on a gallery ceiling in his “art hall” in Rotterdam (page 66). This play between exuberance and formalism distinguishes the projects featured in this issue. Although Richard Meier’s designs have been criticized as variations on the same theme, an office building in The Netherlands proves that his familiar vocabulary still yields fresh results (page 52). By contrast, Venturi, Scott Brown’s jokey reputation at times overshadows the firm’s planning rigor—but light-heartedness is combined with budget-driven simplicity in the Houston Children’s Museum (page 78). Booth/Hansen’s tiny golf clubhouse in New Buffalo, Michigan, is a tongue-in-cheek mix of golf imagery and what Laurence Booth calls “rigorous functionalism” (page 62), while Boucher Mouchka Larson imbues the stringent program requirements of a food-processing plant with a sense of adventure (page 74). Hodgetts and Fung successfully combine imagination and technological know-how in the “Towell,” a temporary annex to the University of California, Los Angeles’s Powell Library, which is at once a circus tent for books and a “catalog of off-the-shelf ingenuity” (page 94). And nowhere is the delicate balance between artistic expression and methodical problem-solving more apparent—especially in a sluggish economy—than in giving new life to old shopping malls, the subject of this month’s *Building Types Study 703/Retail Facilities* (page 84). K. D. S.

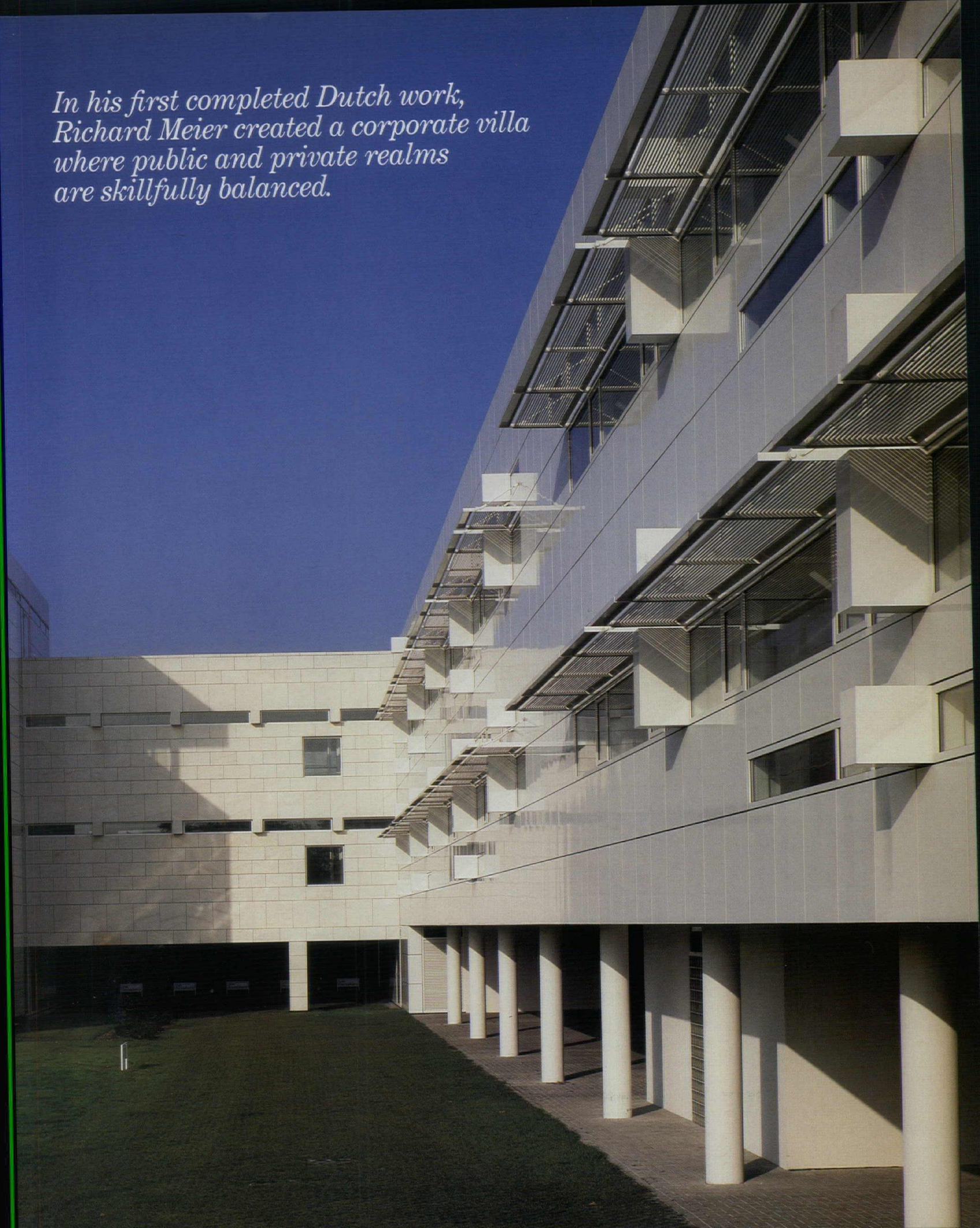
Manufacturers’ Sources listed on page 115

Working Couple

*Royal Dutch Papermills Headquarters
Hilversum, The Netherlands
Richard Meier & Partners Architects*



*In his first completed Dutch work,
Richard Meier created a corporate villa
where public and private realms
are skillfully balanced.*



Richard Meier & Partners' decision to treat the Royal Dutch Papermills headquarters as two buildings connected by an enclosed bridge might seem extravagant, considering that only 45 people work there and that the company wanted to encourage communication between employees. But the buildings—one for reception and shared activities, the other for offices—function as a smart working couple, dividing responsibilities in a clear, if nontraditional, manner.

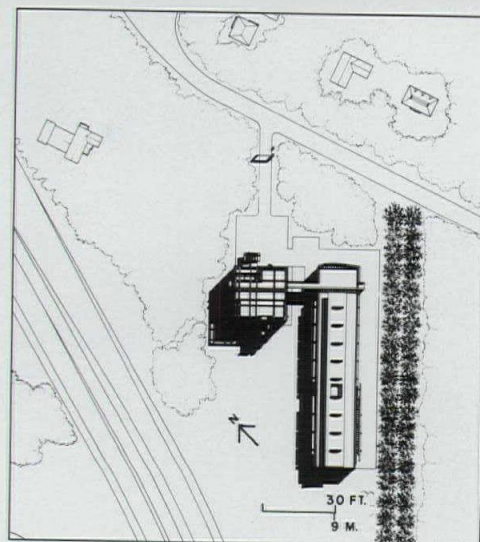
"I saw this project as a big house," says Meier, "with the reception building being the living room and the office block being the bedroom wing." While the reception building has a three-story lobby and dining facilities, it also includes the conference and board rooms you would expect to find in the office block. Placing meeting rooms in the more public structure, though, encourages movement between the two buildings and allows all employees to use such shared spaces equally.

Wedged between a highway to the west, woods to the southeast, and a residential neighborhood to the northeast, the headquarters changes character with each direction. To the highway, the building offers its most imposing facade—an extruded office block attached to a cubic pavilion (right). Seen from the neighborhood (whose affluent residents strongly opposed the project), the building is more domestic in scale—a pair of modest structures connected by a glass bridge (opposite, below left and right).

Like much of Meier's work, the facility is clad in white metal and relates to its setting by establishing a nearly immaculate contrast between the natural and the artificial. But the building also reflects emerging forces in the Meier office—voices pushing the firm's designs away from an emphasis on architecture as sculpture and toward a stronger focus on assembling buildings as sets of crisply defined planes. To that end, the architects specified flat, sharply edged aluminum plates for the building's skin (instead of the rounded-edged panels found on Meier's earlier work) and separated them with deeper reveals. The building also recognizes Meier's admiration for such Dutch pioneers of Modernism as Gerrit Rietveld, J. J. P. Oud, and W. M. Dudok; glass corners refer to Rietveld's Schröder House in Utrecht, while the carefully balanced horizontal and vertical elements recall Dudok's Town Hall here in Hilversum.

Slicing through the all-white reception cube and connecting it with the parallel office block is a two-foot-thick Spanish-limestone-clad wall that separates the open lobby from the more private meeting and dining rooms. Forming one side of the connecting bridge and then running through the office wing, the stone wall again separates public from private spaces—this time establishing the threshold between a three-story-high stair hall at one end of the block and the offices on the other end.

A winglike concrete roof on the office block allows natural light to stream in from either side, while office partitions made of glass block and clear panes let the sun filter throughout the floor. As a result, the double-loaded office corridor is an unusually sunny place. To bring extra sun to the lower level of offices and encourage communication between floors, light wells cut through one side of the upper story and are crossed by short bridges connecting the corridor to pairs of offices. So instead of simply laying out two floors of offices, one on top of the other, Meier has created an integrated office environment that happens to be on two floors—in much the same way he designed a unified headquarters that happens to be in two buildings. *Clifford A. Pearson*



Guided by a tree-cutting restriction and a nature conservancy on the southeast side of the site, the architects designed the office block as a long horizontal element along an existing allée of trees. This plan created an imposing public facade seen from a highway (top) and a pair of residentially scaled structures connected by a bridge (opposite, below left and right) seen from a nearby neighborhood.

The entry facade of the reception building (opposite, below left) balances vertical and horizontal elements, as well as opaque and transparent materials. Bands of glass at the bottom of the elevation create the illusion of the reception building floating above the ground, while pilotis supporting the office block (previous pages) do the same for that building. Extensive glazing on the southeast facade of the reception building brings sun into meeting rooms and dining areas, while a roof terrace and balconies provide a variety of outdoor spaces (opposite, top).

© Scott Frances/Esto photos except as noted.



Bureau Sybolt Voten, Michel Kieivits

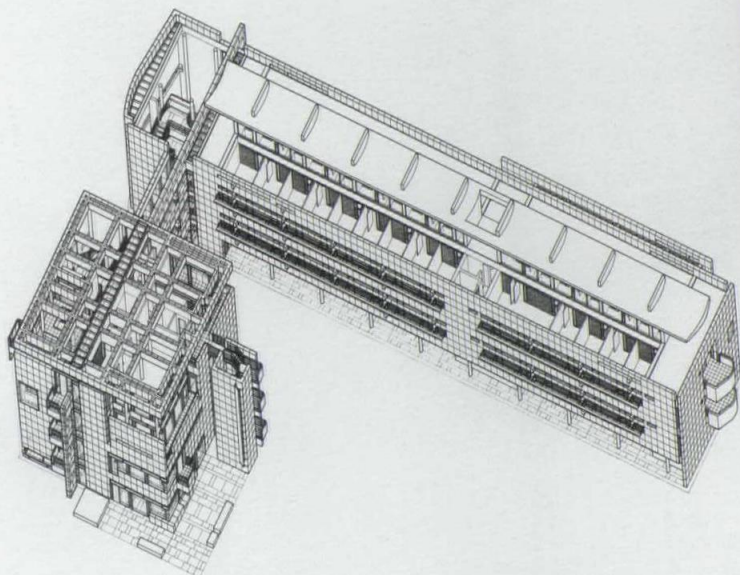
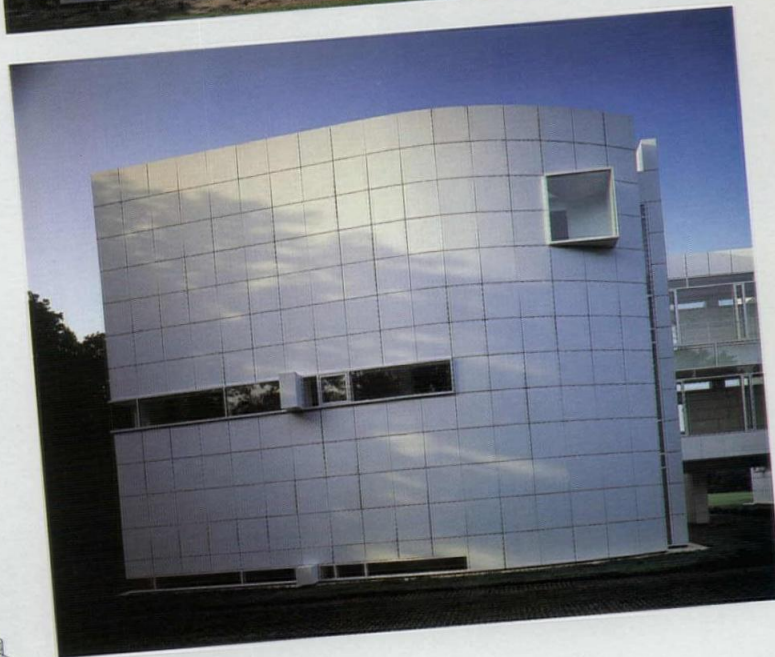
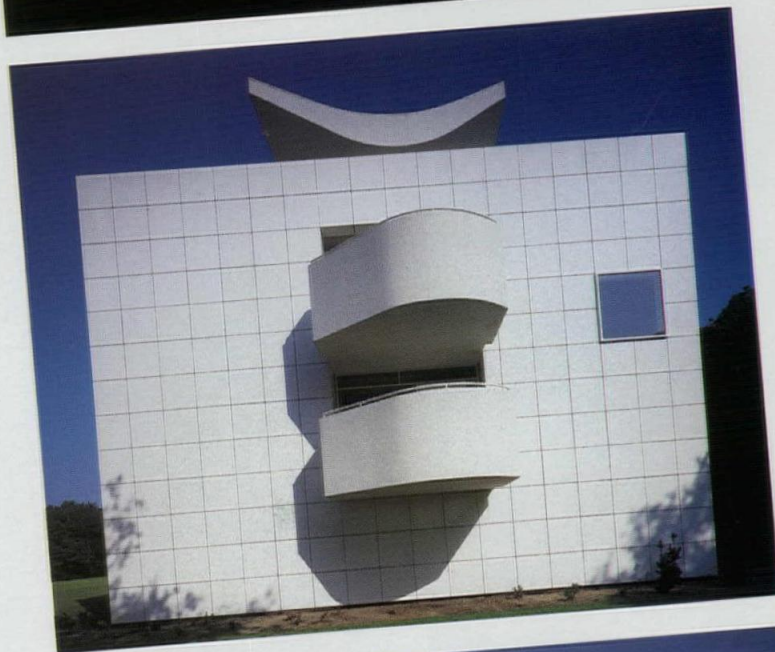




The office block is a poured-in-place concrete structure using two systems on separate grids: columns set 24 feet on-center support floors and roofs, while cross beams set 15 or 9 feet apart support walls. The two grids are seen at work on the northwest elevation (top).

Cross beams extend past the building's skin (opposite) to become sun-blocking elements. Columns on the ground level serve as pilotis, raising the building up one floor so 40 cars can park beneath (top). A curved concrete roof running the length of the office block (middle) allows sunlight to come in under its winglike form. A bulging facade on the northeast end of the office block (bottom) echoes the curving balconies on the opposite end.

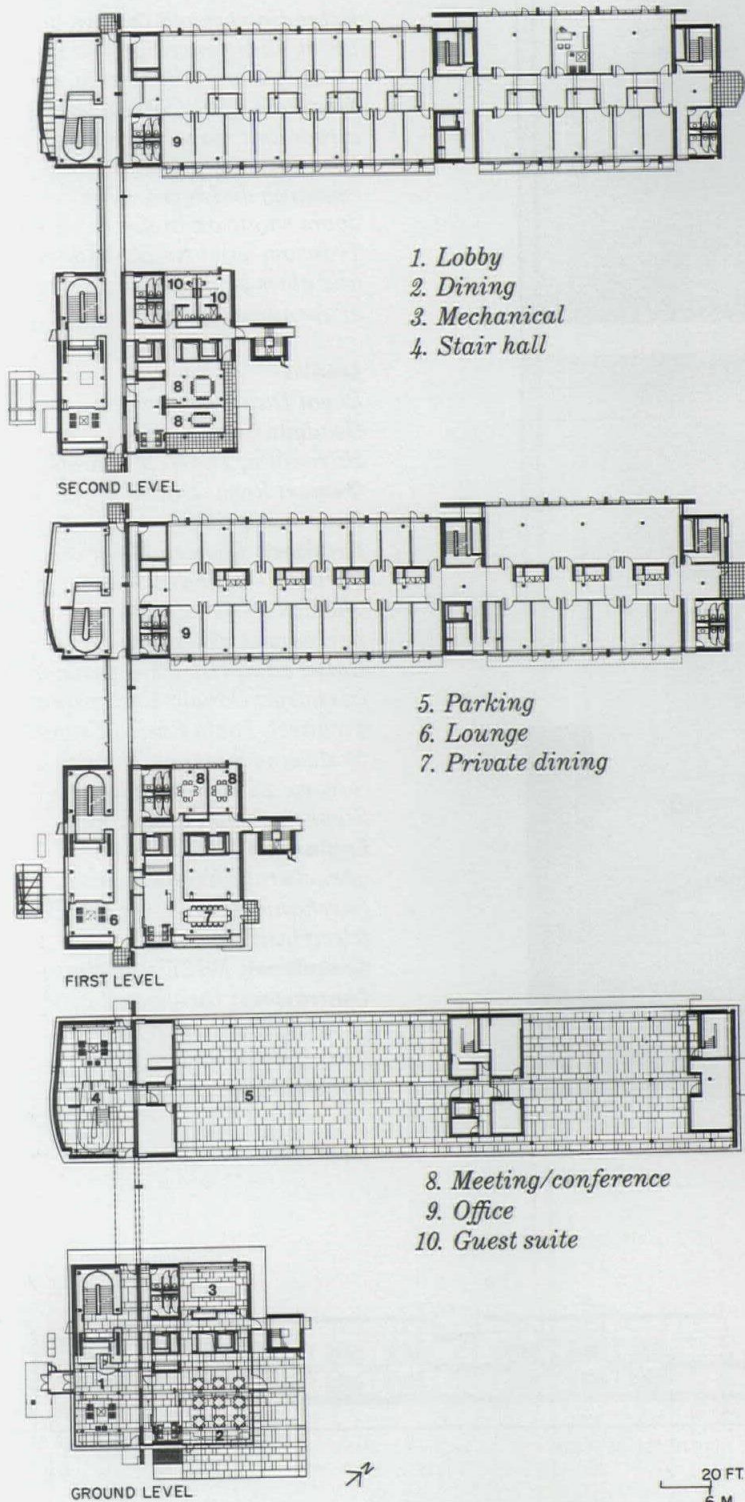
The mostly opaque facade of white-aluminum plates on the northeast end of the building hides cars and a stair hall from nearby houses. The narrow strip glazing and angled window on this elevation are supplemented by a generous skylight (not visible in photo) in bringing natural light into the stair hall.





The three-story lobby atrium is the most public space in the reception building (opposite). A limestone-clad wall running through both the reception building and the office block separates public spaces from more private ones. Short bridges on each floor puncture the stone wall, span a narrow skylit space rising the full height of the building, and provide access to meeting and

dining areas (top). The top floor of the reception building gives on to a roof terrace as well as meeting rooms (middle). The stair hall in the office block is washed in light from a skylight (bottom) and separated from offices by the limestone wall (left in photo, bottom). A gas-fired forced-air system heats the building, with air ducts hidden in plenum space between floors.



1. Lobby
2. Dining
3. Mechanical
4. Stair hall

5. Parking
6. Lounge
7. Private dining

8. Meeting/conference
9. Office
10. Guest suite





Most double-loaded corridors are unattractive places, but office floors here are flooded with natural light from clerestory windows beneath the winglike roof (top left). Precast-concrete piers support the poured concrete roof. The architects specified American-made glass block for the interiors as it is more clear than the greenish block found in Europe.

Extending beyond the rest of the building envelope and including a long skylit area, a director's office (bottom left) is larger and more impressive than the others. Instead of swinging on hinges, office doors rotate on invisible pivots. Transom windows above doors and glass block add to a sense of openness (opposite).



Credits

Royal Dutch Papermills
Headquarters
Hilversum, The Netherlands

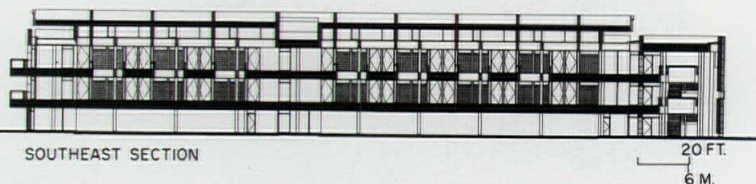
Owner: Royal Dutch
Papermills

Architect: Richard Meier & Partners—Richard Meier, Thomas Phifer, design partners-in-charge; Robert F. Gatje, administrative partner-in-charge; Donald Cox, project architect; Pablo Castro-Estevez, Madeleine Sanchez, Thomas Savory, Kimberly Smith, Stephen Tobler, design team

Engineers: Van Rossum (structural); Kersbergen (mechanical); Gijs van den Pol (electrical)

Consultant: ERCO (lighting)

Contractors: Burginvest B. V. (construction manager); Altink Bouwadviseurs (construction adviser)

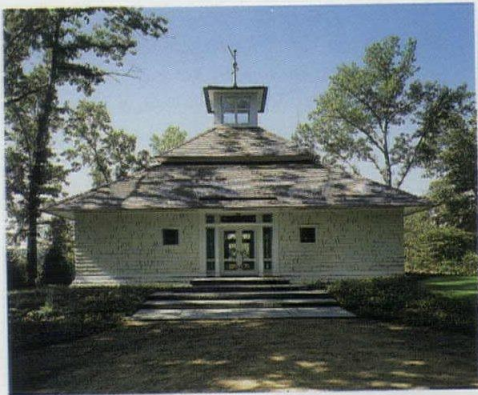




On Course

*Golf Cottage for
the Dunes Club
New Buffalo, Michigan
Booth/Hansen & Associates,
Architect*





© George Lambros Photography

The Dunes Club is an example of "rigorous functionalism with some depth," according to Lawrence Booth, who sought to eliminate all excess from the program while preserving its historical references. A double pitched roof helps the transition from rectangular structure to square lantern. Booth's early sketches for the clubhouse (below) reveal a band of windows that were ultimately deleted.

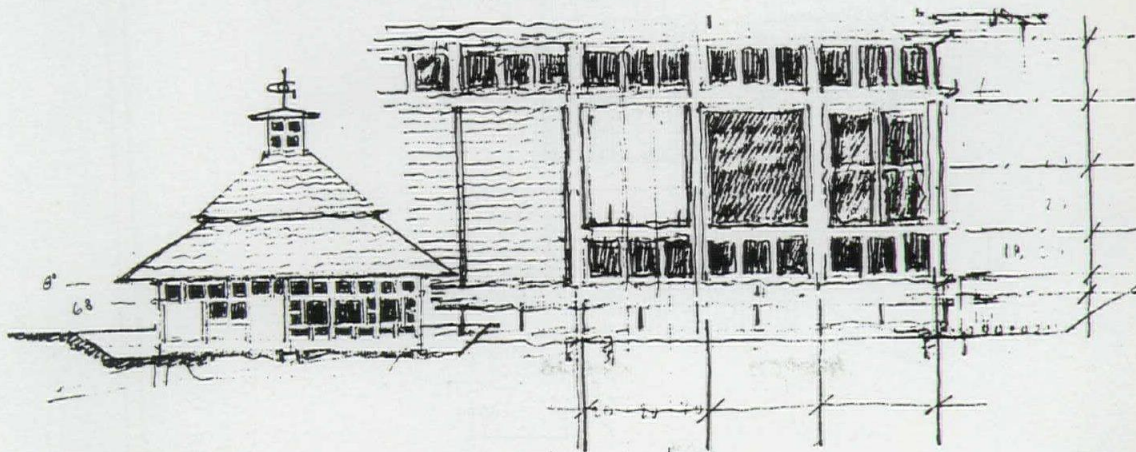
In designing the clubhouse for a private nine-hole golf course in New Buffalo, Michigan, Lawrence Booth of Chicago's Booth/Hansen distilled plans of a grander structure. "I sought the essence of a golf club," Booth says. The 1,400-square-foot result may be diminutive in size, but not in distinction, condensing the amenities of larger clubs into a single story. While the dignified main facade resembles a church, subtle clues to the structure's *raison d'être* abound: not only was the overall form inspired by vintage rain shelters dotting America's older golf courses, but a pair of bent golf-clubs-cum-door handles and a similarly styled weather vane are more overt symbols of the program.

Situated on 90 acres of wooded dunes, the shingle-clad Dunes Club appears tentlike in silhouette, its pitched roof stepping up at two different degrees to a crowning lantern. Deep sheltering eaves enhance the welcoming ambience and eliminate the need for gutters, funneling water into a rock-lined recessed moat around the building. "Golf is a game in nature, and we wanted every aspect of the program to be as natural and as fundamental as possible," explains Booth, who conceived of the structure as "a marker or beacon" in the landscape to be glimpsed from various points along the course.

A sand parking lot and bluestone steps lead to the club's square entry and flanking windows, the start of a processional "gateway" that leads members through the building, onto a stone terrace, and out to the first tee. In profile, the structure's two halves are clearly expressed, with windows surrounding the dining area like a traditional screened porch, opening the room to light and nature. Nestled into the club's other half are the locker rooms, bathrooms, kitchen, shop, and office, partitioned into wood-paneled cubicles with battened joints that line the structure. A pair of cherry wood posts, discreetly chamfered, support the inverted bracketed truss, roof, and lantern above. The sense of a tented space is further underscored by painted pale green stripes that mimic canvas. "Tents are the simplest and most sporting of all architectural forms," claims Booth.

Designed so that it could be closed for months at a time, Booth eliminated potential moisture problems by using fir plywood throughout, which doesn't decompose and also contributes to the crafted feeling. Booth-designed cherry wood furniture also helps fulfill the client's only prerequisites. "I wanted it to be simple and informal," says Mike Keiser, who owns Recycled Paper Products and developed the golf club for summering Chicagoans. "Here, no one has to wear a necktie for dinner." *Victoria S. Lautman*

Victoria S. Lautman, a writer and radio host, has joined RECORD as its Chicago correspondent.





The club's no-nonsense interior is tentlike in structure, with attention to simple craftsmanship. Steel-bracketed inverted trusses support the light-yielding lantern and continue the gateway procession toward the all-important first tee (left and opposite). Fir paneling with batted joints enhances the crafted feel, while Booth's cherry hutches, tables, and still-to-come chairs pick up the "creaky-floor, vintage look" sought by the client. An 800-square-foot bluestone patio, seen in the plan (below), complements the entry path and extends the dining area outside into the landscape.

Credits

*Golf Cottage for the
Dunes Club*

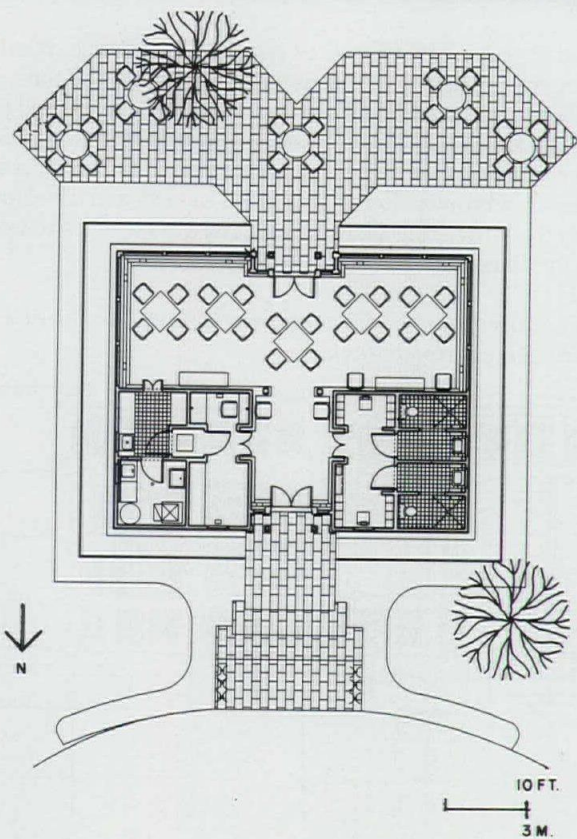
New Buffalo, Michigan

Architect: Booth/Hansen & Associates—Laurence Booth, design principal-in-charge; Paul Hansen, managing principal-in-charge; Paul Duffy, project architect; Kevin Rotheroe and Robert Jakubik, project team

Engineers: Robert L. Miller Associates (structural); Wayne Kryz (mechanical)

Consultant: ServiScape (landscape)

General contractor: Wetland Construction Corp.





Show Piece



*KunstHal
Rotterdam, The Netherlands
Office for Metropolitan
Architecture, Architect*

*With the completion of an
"art hall" for temporary
exhibitions, Rem Koolhaas
makes a permanent addition
to Rotterdam's cultural life.*



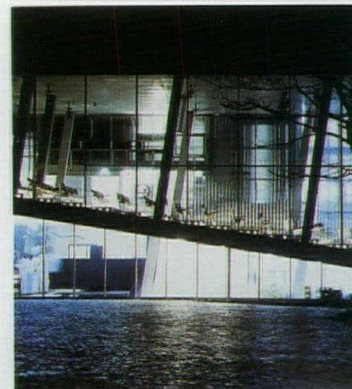
Rem Koolhaas has enriched Rotterdam's cultural life with one of his most complex and exceptional buildings to date. The KunstHal, or "art hall," is the first of its kind in The Netherlands; unlike a museum, it has no permanent collection. Rather, it serves as a warehouse-like venue for a diverse lineup of temporary exhibitions, ranging in subject matter from car design to avant-garde jewelry, from modern painting to the traditions of Indonesian royalty. As an antidote to the program's apparent lack of focus, Koolhaas and his Office for Metropolitan Architecture have created a bold structure—one that may at times overwhelm the work presented inside.

The site is bounded to the south by a basalt sea dike that supports a major traffic artery, and to the north by a new Museum Park (site plan right). "I like the brashness and ambiguity of the location," says Koolhaas of the setting between downtown and park. To resolve a 15-foot difference in height, Koolhaas introduced a "ramp-street" leading from the dike through the heart of the building and down to the park. A service road along the dike's base also crosses the 39,000-square-foot KunstHal. As a new type of urban node, the KunstHal incorporates city thoroughfares and technology into both its concept and structure: the entrance is at the intersection of the "ramp-street" and the auditorium's sloping floor.

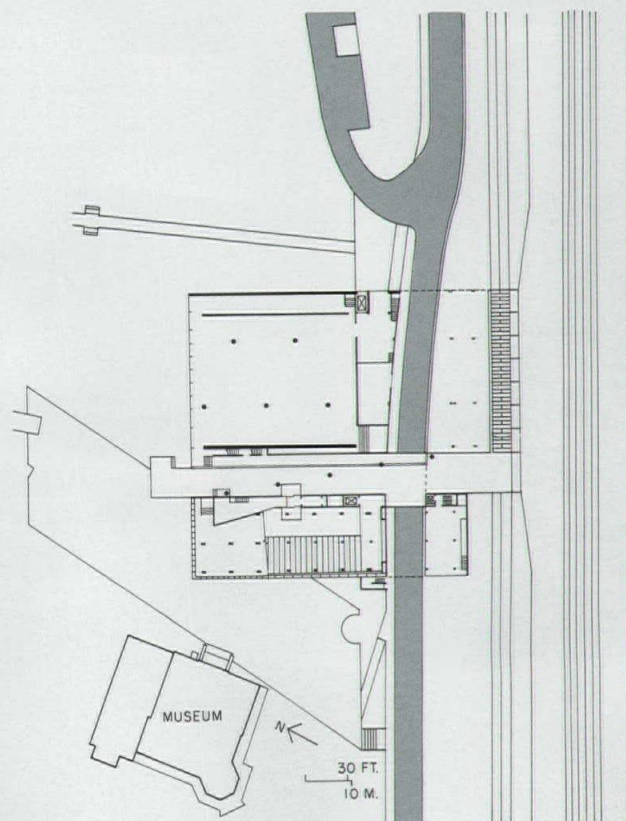
Koolhaas and collaborator Fuminori Hoshino's scheme contrasts metropolitan congestion with the serenity of nature. The park facade is tranquil, with a broad band of Spanish travertine marble supported by the matte glazing of the galleries and slanted concrete pillars of the restaurant (opposite top). The road facade has a terrace of industrial-metal grid and, in an oblique reference to the park behind, a giant stripped tree trunk as a handrail (opposite bottom). The glazed west facade (previous pages and right) reveals the auditorium with its sloping floor and the restaurant with its sloping ceiling, stacked like wedges. A sloping garden planted with pear trees leads to the roof's rectangular billboard tower, which hides condensers, and bright orange steel H-beams.

Overall, the exterior is a horizontal Modernist composition reminiscent of Mies van der Rohe's Neue Nationalgalerie in Berlin. The interior is completely different. Koolhaas himself likens it to a Möbius strip, perpetually winding and curving in upon itself. The first-time visitor, confronted with three separate outdoor and indoor ramps, may see it more as a Rubik cube. The circulation route is in fact tautly organized and ingenious, leading visitors down through the auditorium to Hall 1 at park level. Here a black ceiling sports neon tubes in an erratic pattern; the most striking feature, however, is the columns of oak and chestnut tree trunks, which hide security transmitters and wiring. Upstairs, at dike level, are Hall 2 (following pages), with a translucent undulating ceiling pierced by structural orange girders and a small side gallery with a floor of open metal grid panels, and Hall 3, a serene, neon-lit space that serves as a more restrained background for exhibitions.

Koolhaas and Hoshino have placed inexpensive industrial materials such as corrugated plastic sheeting and light-metal framing next to the elegance of travertine and broad expanses of glass, thus varying solidity and transparency. As daylight fades, the KunstHal becomes a translucent box perched over Museum Park, which was landscaped by Koolhaas and his recently deceased French collaborator Yves Brunier. When the nearby Dutch Architecture Institute is completed this fall, the park will connect it with the KunstHal and the 1930s Museum Boymans-van Beuningen, forming a giant cultural triangle. *Tracy Metz*



The KunstHal's glazed west facade (previous pages and above), where services and circulation are concentrated, most reveals the structure's complex anatomy. The structure spans a 15-foot height difference between the sea dike to the south and the new Museum Park to the north (plan below) with a sloping internal "ramp-street." The building is also bisected east to west by a service road that runs along the bottom of the dike. To the northwest of the site is Rotterdam's Natural History Museum, visually joined to Koolhaas's KunstHal by a terrace of blue-enameled brick.

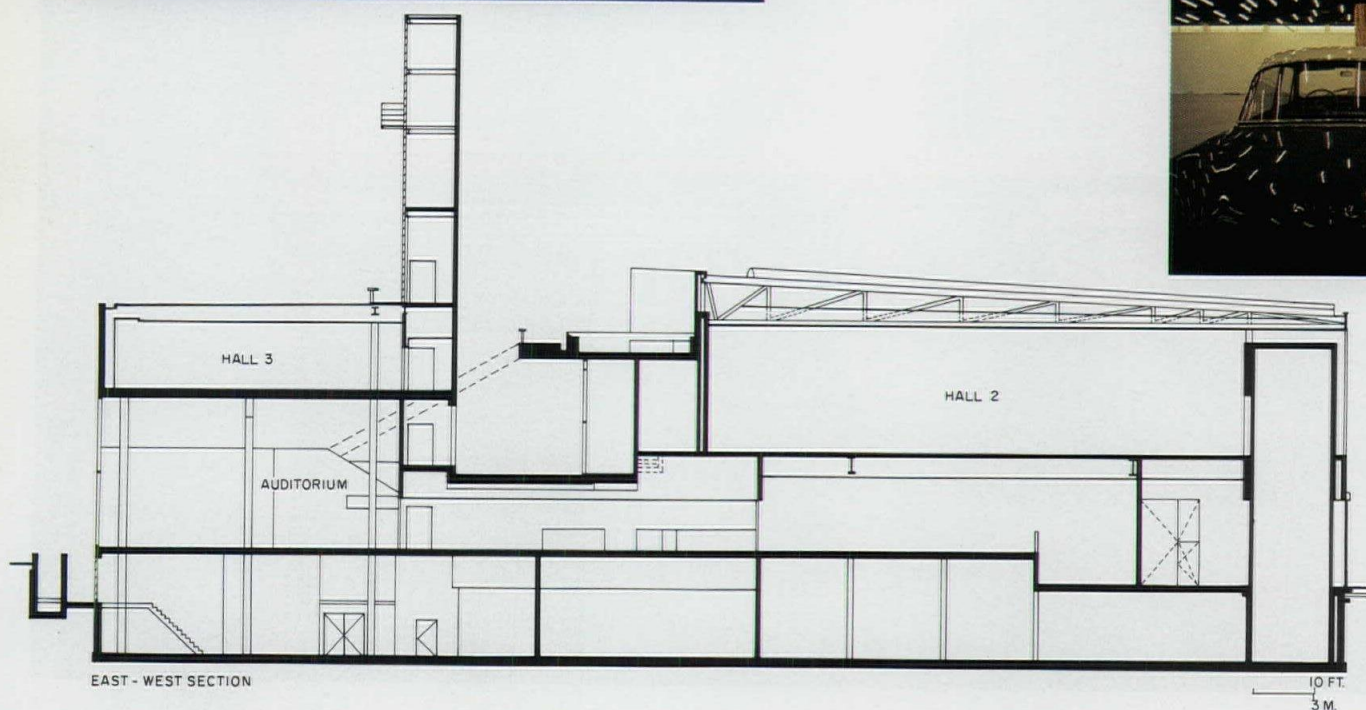
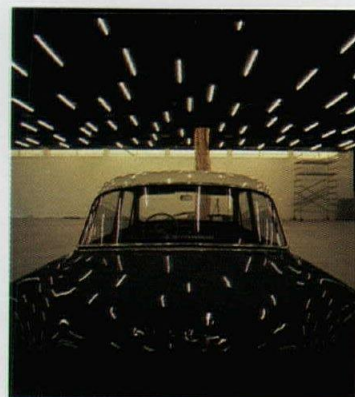




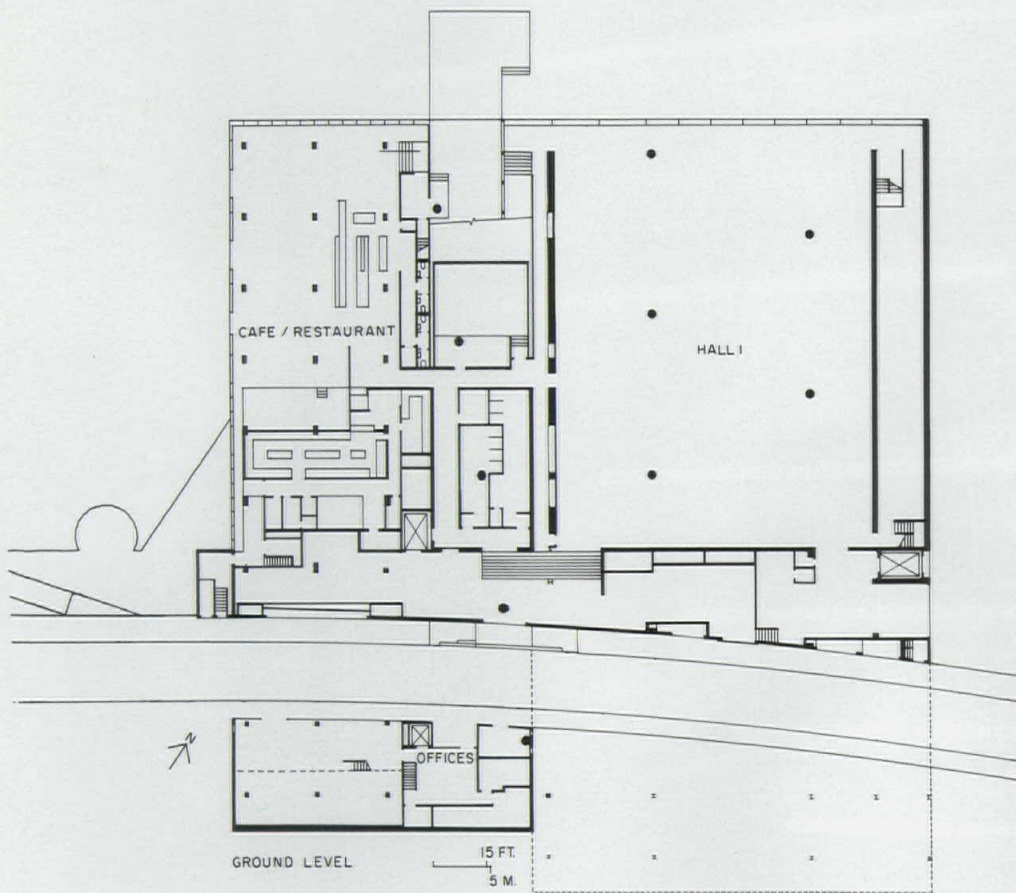
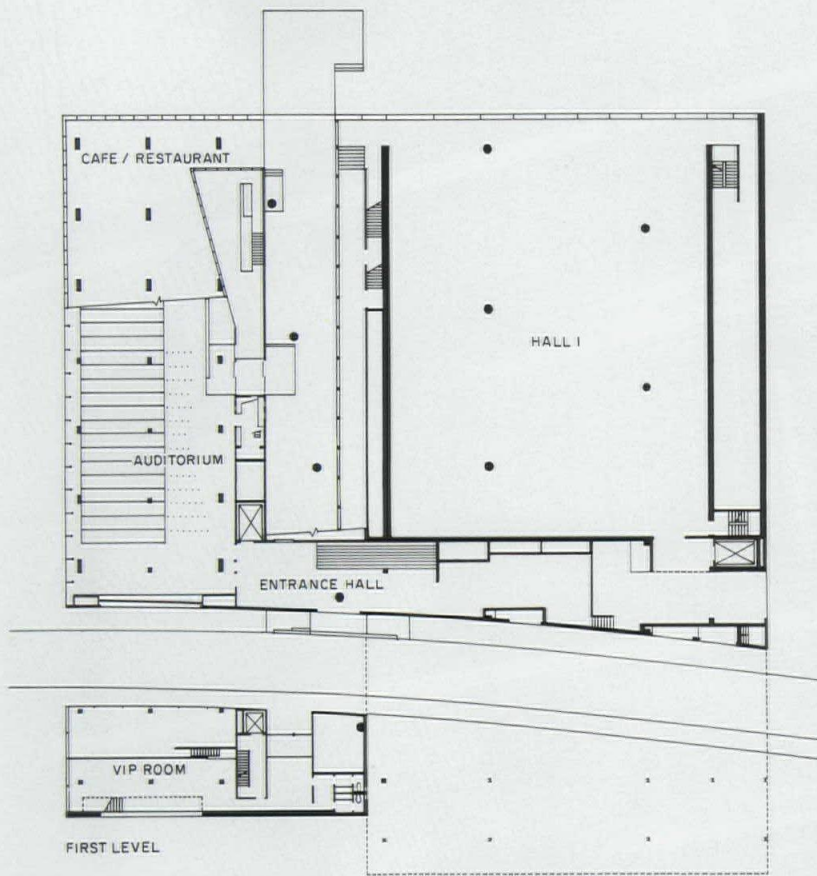


On the exterior (previous pages), Koolhaas has enriched the typical Modernist glass-and-steel material palette with Spanish travertine marble, stripped tree trunks, and, on the roof, bright orange girders and a translucent billboard tower clad in polycarbonate. Orange beams reappear inside, piercing the torsioned plastic panels of partially daylight Hall 2's ceiling (bottom left). The panels hide ventilation equipment and modulate additional light from neon fixtures.

The complex circulation route includes a passage around the auditorium to a gallery balcony dramatically cantilevered inside 13,500-square-foot Hall 2 (top left). The erratic pattern of neon tubes in 11,000-square-foot Hall 1 (below)—an unorthodox system for museum lighting meant to be "lyrical, not bureaucratic," according to Koolhaas—can be supplemented by halogen spots. The east side of Hall 2 has a metal-grid floor (opposite) that allows views to the gallery below (opposite).







Both the auditorium (opposite middle and bottom) and the restaurant (opposite top), designed by German painter Gunther Förg, can be used independently from exhibition spaces. The restaurant has delicate neon circles on the ceiling, a concrete wall sponged purple, a bar of glass and scrap wood, and a padded sofa that closes off the narrow end of the wedge-shaped space. Tilted concrete columns line the auditorium, which seats approximately 300 people. Lighting is encased in transparent corrugated plastic sheeting. The auditorium's metal-framed plastic door folds to allow access to adjacent galleries; the curtain is hung from a groove in the concrete ceiling and spirals in upon itself when not in use.

Credits

KunstHal
 Rotterdam, The Netherlands
Architect: Office for Metropolitan Architecture—Rem Koolhaas and Fuminori Hoshino, principals-in-charge; Toni Adam, Isaac Batenburg, Leo van Immerzeel, Herman Jacobs, Jo Schippers, Ron Steiner, team
Engineers: Ove Arup & Partners—Cecil Balmond, project engineer; Gemmentewerken Rotterdam
Consultants: Centrum Bouwonderzoek and TNO-TUE (acoustics); Petra Blaisse (roof garden, curtain); Gunther Förg (restaurant); Yves Brunier (Museum Park)



*GranPac Foods
Portland, Oregon
Boucher Mouchka Larson Architects*



Perfect Presentation

*A Japanese food processor's
first U. S. plant is designed
to make a balanced, harmonious
first impression.*

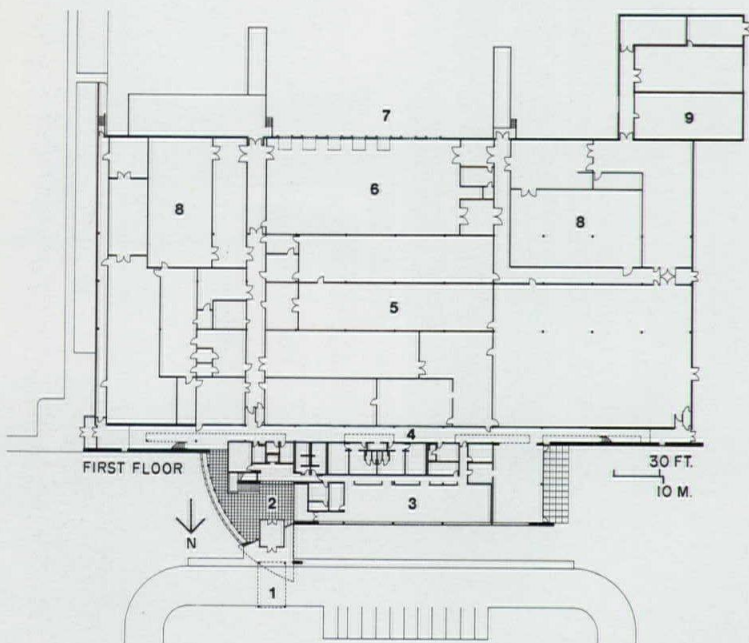


According to architect Gary Larson, the Japanese word *chōwa* is used to describe the harmonious presentation of food. "Chōwa combines all things in good proportion: from the design of the plate, the appearance and color of the food and the way it is arranged on the plate, to the way different items of food smell and taste together." Boucher Mouchka Larson's design for the GranPac Foods attempts to bring the same sort of harmony and balance to GranPac's food-processing facility using materials and colors—even a magnificent view of Oregon's Mount Hood—to create a composition of layers and zones. Because this is the first U. S. food-processing plant for GranPac's parent company, Showa Sangyo, it is a destination for many Japanese and American visitors. "They were anxious for us to create something that would really be a showplace for their visitors and customers," says Ray Boucher.

The plant is divided into three zones. An administration zone, which includes reception, offices, and a research and demonstration kitchen, is linked to the larger production, storage, shipping, and mechanical zone by a pleasant daylight zone running the entire width of the building. This gallery permits groups of visitors to observe some of the food-processing operations, and connects the building functions to parking areas. In the future all zones can be expanded by extending them to the west.

The reception area is given special attention through the repetition of layering and curves and the judicious use of materials: cherry and granite flooring; aluminum curtain wall backed by painted structural steel; a sculpted plaster ceiling. These hard but extravagantly assorted surfaces yield to softer carpeting and painted walls in the less-adorned administrative areas and gallery, and go to full industrial finishes in the plant. The building's exterior brick walls have red, black, green and gold bricks scattered through them, creating a whimsical tweed pattern that is a striking counterpoint for the painted tilt-up concrete walls that make up the rest of the plant.

Charles Linn



1. Porte-cochère
2. Lobby
3. Administration
4. Gallery
5. Food processing
6. Shipping/receiving
7. Loading dock
8. Freezers
9. Central plant

Strode Eckert Photographic photos



Gentle curves and layers of colors and materials and spectacular views of Mount Hood (above and opposite 1, 2) greet this food-processing plant's many visitors. The daylight gallery (opposite 3) allows visitors to view plant operations, and acts as a circulation zone between administration and production areas. Ordinary gas and electric airhandlers are used to heat and cool the building. Hot and cold air is transferred from the plant to the administrative wing via pipes visible in the gallery photo. Waste is removed from process water on-site through a sedimentation process before being discharged to the sewer.

Credits

GranPac Foods, Inc.
Food Processing Plant and Offices
Portland, Oregon

Owner: GranPac Foods/Showa Sangyo

Architect: Boucher Mouchka Larson
Architects—Raymond Boucher, partner-in-charge; Gary Larson, project designer; Roger Herndon, project architect; David Morey, designer

Project Manager: Nissho Iwai American Corporation

Engineers: KPFF Consulting Engineers (structural); PAE Consulting Engineers (mechanical/electrical); Thomas/Wright (civil); Fujitani Hilts (geotechnical)

Consultants: Mayer/Reed (landscape); Covert Engineering (food process); Marvin J. Byer (FDA regulatory)

Contractor: Hoffman Construction



2

3

Caryakids At Play



Venturi, Scott Brown's latest museum is a playful primer on the application of their epoch-making principles.

*The Children's Museum of Houston, Texas
Jackson and Ryan, Architects,
and Venturi, Scott Brown and
Associates, Design Architects*



Approached from Houston's nearby museum district, the big yellow columns and pediment of the Children's Museum are like a pop-up book surprise, standing up on the flat site and detached from the building behind. The freestanding temple front, flat stucco walls, and cutout "caryakids" are fragmentary symbols from the Robert Venturi vocabulary first spoken nearly 30 years ago. As little kids scramble between the legs of the caryakids, architectural kids can play a game of matching the fragments with the ideas behind them.

The real building is a simple, economical steel structure with applied ornament, a "decorated shed": shallow stucco pilaster orders on the north wall, the temple front, the caryakid porch, floating transverse arches in the Kids' Hall, and patterns applied like zip-a-tone. There is even a real shed, undecorated, at the back of the site, sheathed in classic Venturi two-tone-green.

The exaggerated temple front is the "duck," channeling the whole image of "museum" into this one strong symbolic form. The classical portico alludes to the role of the museum as temple of culture, but the cartoonlike distortion of the form is a parody on the elitism of such an institution. It contrasts sharply with the bowed front of Houston's Museum of Fine Arts (the real museum) by Mies, a few blocks away. The whole building is a sign, a "building board," using large words and caricatures (bold, road-speed architecture and cut-out children/columns/statues) to call attention to itself.

The message projected by the Children's Museum is ambiguous. Whom is the building speaking to, kids or cognoscenti? Who designed it, kids or adults? Is it trying to be a child's simplistic drawing of a museum, or is it commenting on the cultural establishment by mutilating the architectural language of power? Or is it simply what a world-wise architect thinks a child would like?

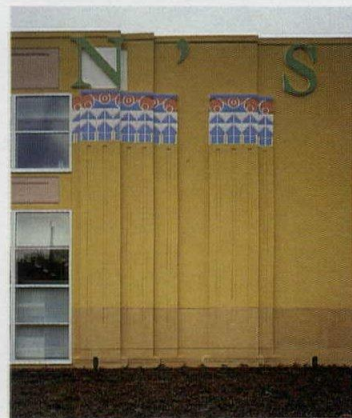
Curiously, the Children's Museum is not a museum at all in the conventional sense of a place where art or artifacts are on public display. The 43,000-square-foot edifice is really a didactic playhouse where kids can touch and learn through supervised activities. A sequence of stage sets (designed by museum staff) depicts a Mexican town, a Chinese village, a farm, an auto mechanic's shop, and an aquatic habitat, leaving little to the young imagination and no space to romp. The empty gray walls of the Kid's Hall are not even intended for exhibition. The courtyard, with its playhouse, pirate ship, greenhouse, and waterworks, may better stimulate spontaneous fun.

The Children's Museum bears a striking family resemblance to other museum designs by Venturi, Scott Brown: Papa Bear in London, Mama Bear in Seattle. The family even has a skeleton in its closet, the aborted Laguna Gloria Museum in Austin. All are similarly organized, with a prominent corner entry leading to a linear interior processional gallery.

There are other recollections of earlier Venturi designs. The model for the temple front appears both in the Scranton Mural project of 1976 and the Eclectic House Series of 1978. The enfilade of flat pilasters and the flat detailing of the capitals recalls another Houston project, the Jazz Club/Museum of 1976.

The Houston Press's architectural commentator Barry Moore took a sensible approach in his review of the museum. He borrowed several children from relatives, bought them ice cream, and asked them what they thought. Their responses were largely non-verbal, but they had fun and liked it. Isn't that enough? *Gerald Moorhead*

Gerald Moorhead photos



The detached temple front, with its Baroque bow, overscaled columns, and big acroteria (opposite page and above, top), lures visitors with its Hapsburg Imperial Yellow glowing in the strong Gulf Coast sun. The flat pilasters of the north wall (above, middle, and bottom) face a busy street and extend the image and name of the museum down the entire length of the city block.

The temple porch also screens the meeting of several masses and materials where the glass intrusion of the Kids' Hall intersects the north and west fronts.





The clerestory-lit Kids' Hall (opposite page) runs the length of the site and separates services (store, toilets, offices) from the exhibition spaces. The floating arches, painted in a rainbow sequence of color, reflect light and animate the space. The building can accommodate 800 children at a time, so the hall is usually a riot of noise, activity, and color. Weary parents can rest, or hide, in seating nooks behind the colonnade (left, below).

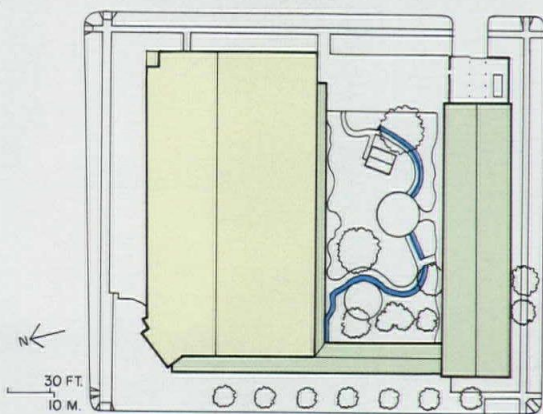
The museum fills a city block, shielding a protected play yard inside (site plan). The east end of the court is reserved for expansion.

Seng, project architect; and Venturi, Scott Brown & Associates, Inc. (Design Architects)—Robert Venturi, Denise Scott Brown, Steven Izenour, principal designers; Dave Schaaf and Nancy Trainer, project designers.
Engineers: Haynes Whaley Associates, Inc. (structural); CHP & Associates (mechanical, electrical, plumbing); R.A. Peyton & Associates (civil)
Consultants: The SWA Group (landscape architect)
General Contractor: H.A. Lott, Inc.

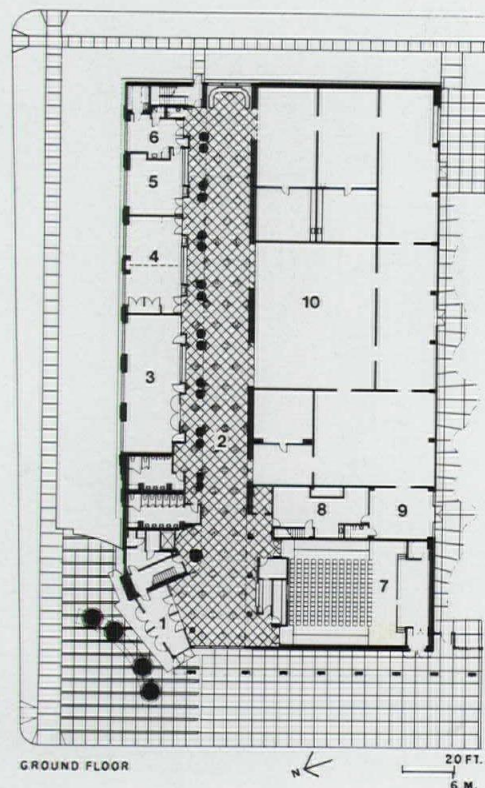
Credits

The Children's Museum of Houston
 Houston, Texas

Architects: Jackson & Ryan, Architects, Inc.—Jeff Ryan, principal-in-charge; Martha



1. Lobby
2. Kid's hall
3. Gift shop
4. Classroom
5. Celebrations
6. Work room
7. Auditorium
8. Family resource
9. Toddler
10. Gallery





Reworking the Mall



They don't make shopping centers the way they used to. After four decades of nearly nonstop expansion into every demographically massaged market in the nation, shopping-center developers are taking their feet off the gas pedal. As they catch their breath and look around at the physical and retail landscape they have helped shape, developers are focusing their attention on older projects they can expand, remodel, renovate, or even rethink.

Over the last two years, construction of new shopping centers has dropped 80 percent, reports Keith Foxe, manager of public relations at the International Council of Shopping Centers (ICSC). A number of factors are behind the industry's slamming on the development brakes. The recent recession has taken a heavy toll on retailers—especially the department-store chains that usually anchor large shopping centers. Major chains such as Federated Department Stores went into bankruptcy and some stores disappeared altogether. As a result, 620,000 jobs in retailing were lost between June 1990 and November 1992. A second reason for the current slowdown is less cyclical—after building 23,500 malls throughout North America, developers just can't find that many new sites. "Most of the good suburban sites have already been developed," says Foxe. "It's tough to assemble 75- or 80-acre sites today," he adds. Not only are such parcels in growing markets hard to find, but new environmental regulations covering wetlands and storm-water run-off often make it difficult to develop the few that exist. And on top of all this, a credit crunch has made financing difficult even for developers with proven track records.

Data compiled by F. W. Dodge paint a rosier picture for retail facilities other than shopping centers, but confirm a dramatic drop in new shopping-center construction. According to Dodge, the value of new store building (excluding shopping centers) has stayed relatively stable over the last several years, peaking at \$5.15 billion in 1990 and then dipping down a mere 3 percent to \$4.98 billion in 1991. On the other hand, *new* shopping-center construction dropped 55 percent from a peak of \$5.51 billion in 1987 to just \$2.46 billion in 1991.

New development is down, but renovation is up

While new shopping-center development dropped sharply, alterations of existing centers actually rose 14 percent from \$435 million in 1987 to \$496 million in 1991. "One of the bright spots is renovation," states Foxe. In terms of square feet, renovation work grew by 37 percent over the last two years, say ICSC figures. Looking to the future, Dodge sees slow but steady growth in the value of all retail construction (including additions, renovations, and new building for both shopping centers and other stores), rising 6 percent to \$11.9 billion in 1993, then 9 percent to \$13 billion in 1994. In square footage,

building will pick up during the next few years, but will remain significantly below peak figures from the 1980s.

Much of what is being built reflects deep changes in the retail industry and consumer shopping patterns. The strongest retailers these days are the so-called "category killers," chains such as Toys 'R' Us and Circuit City that specialize in a single type of merchandise and typically build warehouse-type stores of about 60,000 to 70,000 square feet outside of regional malls. And the latest trend among category killers is for four or five to band together in what they call "power centers." To encourage "cross shopping" between separate retail destinations, category killers and power centers are often located near regional malls. In some instances, entire retail cities of power centers, strip centers, individual category killers, and other retail satellites are forming around regional malls. Architecturally, these new retail outlets are rarely more than plain-vanilla boxes and their location outside of malls only furthers the splintering of activities within the suburban landscape.

As patterns change and competition increases, developers realize they must upgrade older facilities. "All developers are going back to old centers and reworking them," says Billie Scott, director of public relations for Melvin Simon & Associates, one of the two biggest shopping-center developers in the U. S. In 1992 Melvin Simon renovated seven of its centers, usually expanding them while also improving entrances, the mix of stores, and the overall design. The company also opened the 4.2-million-square-foot Mall of America outside Minneapolis [RECORD, October 1992, page 27].

Changing role for the shopping center

By changing the mix of uses in their projects, developers are changing the role of the mall. In the 1980s, food courts sprouted in malls around the country; today the push is toward expanding "entertainment"—a term that usually means a multiplex cinema or a bar with live music, but can refer to a 7-acre indoor amusement park, as in the case of Mall of America. The idea is to stretch operating hours and make the mall a place where people can socialize as well as shop.

A few developers are adding a civic dimension to their centers by including post offices, government agencies (such as driver's license bureaus and police substations), and even schools. Mall of America, for example, has a preschool and hopes to open an elementary school within a few years. When David Slovic Associates renovated the Beaver Valley Mall (opposite, center) outside Pittsburgh, it took difficult-to-rent space near the food court and designed it as a community room that could be used for parties or town meetings. "We're over-shopped, over-retailed," says Slovic. "We have to give

With new sites scarce and financing difficult, developers are returning to existing shopping centers to rework old formulas.

people other reasons to come to the mall." No one understands this better than retailers. "During the 1980s, there was 50 percent growth in gross leasable area in shopping centers in the U. S., but only 10 percent growth in population," reports David Lindsey, an architect and vice president of store planning and architecture for Nordstrom's Department Stores. "Shoppers are overwhelmed with choices," says Lindsey. "They're more frustrated with the shopping experience."

Converting empty stores into housing

With some malls losing anchor tenants, John Field of Field Paoli Architects has devised an intriguing solution to the problem: convert empty department stores into townhouses (axonometric, right). Treating empty retail space as he might a 19th-century warehouse, Field figures he can insert residences. And by peeling away part of the old roof, the architect can create backyard gardens and an outdoor serviceway. Since many malls are in suburban areas that lack multifamily housing, Field's plan could address this shortage without frightening residents of existing single-family neighborhoods.

At the Beaver Valley Mall, David Slovic took a dull, inward-looking mall and opened it up. A new entrance with a wide swath of glass and an angled canopy gives the building a clearly marked front that lets people see what's inside. Instead of tucking the food court in the middle of the mall, Slovic put it right at the entrance so it almost feels like a sidewalk café. Stripping away stucco and acoustical tiles, the architect exposed steel trusses and beams to give interiors more volume but also to focus on a material long identified with the local economy. Another goal was to create a sequence of spaces with different characters. "I see it as indoor urban planning," says the architect. "After all, it's the equivalent of four city blocks."

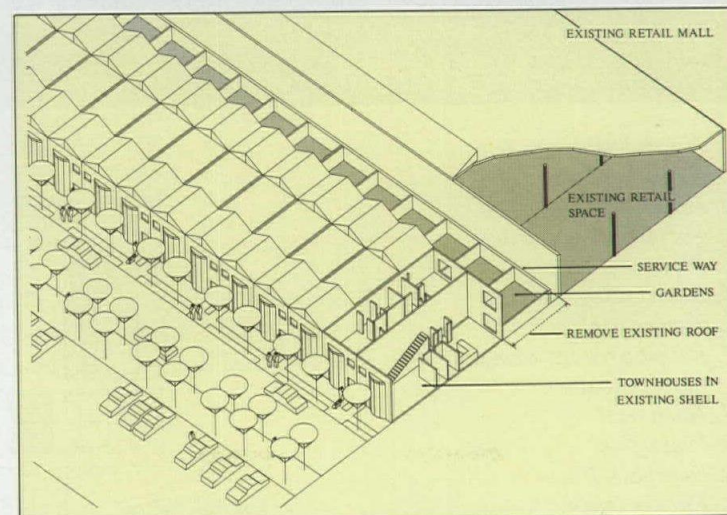
In Los Angeles, the Jerde Partnership transformed another aging shopping center (opposite) into the Westside Pavilion (right, top), a multistory mall with streetlevel restaurants and a variety of indoor and outdoor spaces. As Slovic did with Beaver Valley, Jerde opened a giant retail box to its surroundings. Dealing with a more urban setting, Jerde brought the building directly to the street, creating an animated sidewalk arcade that links mall to city.

No discussion of malls is complete without addressing the issue of parking. Built in places where land was once cheap, many malls now find themselves in the thick of suburban development, with more parking than they truly need. By converting this underutilized asset into dirt for new development, mall owners might find a new source of revenue while creating denser, more urban environments. Some solutions to the challenge of parking can be seen in the four projects profiled in this month's Building Types Study. *Clifford A. Pearson*

Stephen Smith



Frank Kakos, David Slovic Associates



Renovation of Market Square

Lake Forest, Illinois
Office of John Vinci, Architect

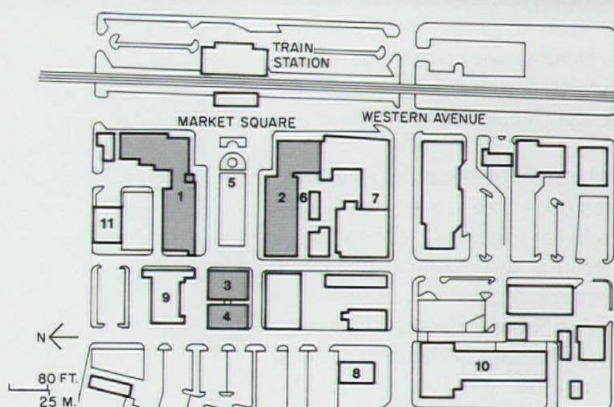


Designed by Howard Van Doren Shaw in a picturesque Arts-and-Crafts style and opened in 1916, Market Square is listed in the National Register of Historic Places as the country's first planned shopping center. With a landscaped plaza at its center, stores set behind an arcaded walkway, apartments on the second floor, and a commuter train station across the street, this

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1. North building
2. South building
3. Marshall Field store
4. Former men's club
5. Plaza
6. Retail alley/former service lane
7. Retail arcade/former movie theater
8. Town hall
9. Post office
10. Deerpath Plaza
11. Future bank

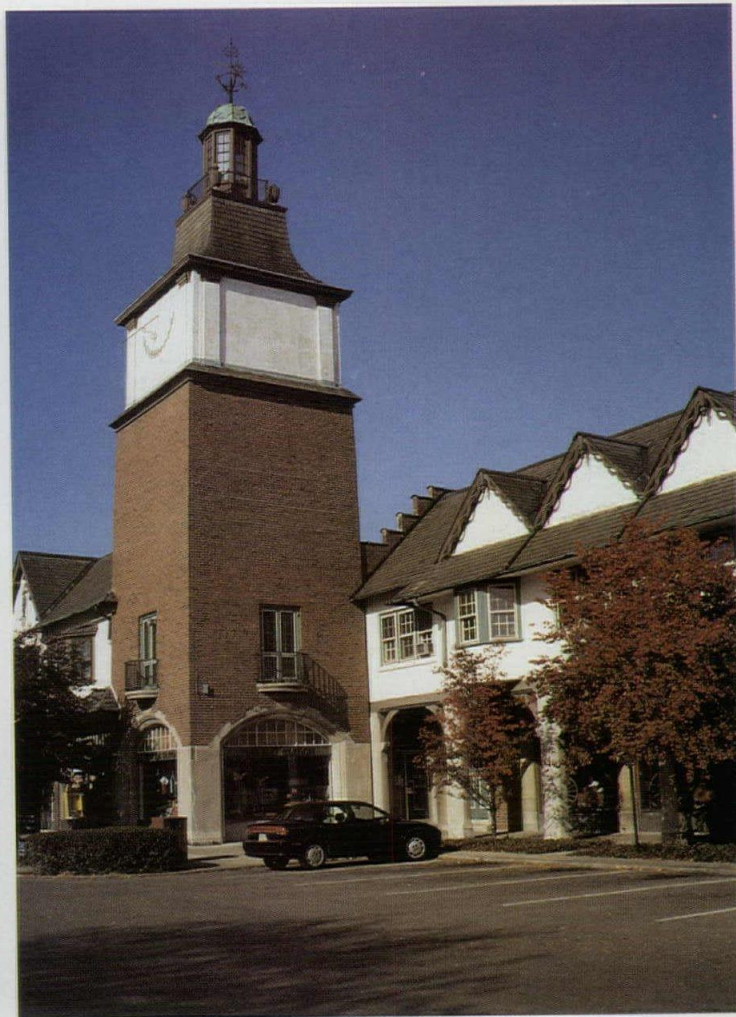
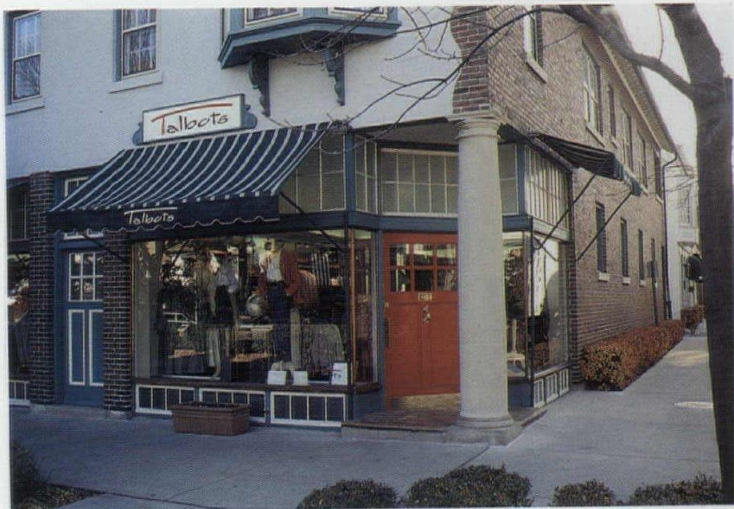


early retail complex provides a number of lessons in how to plan a successful, mixed-use development. Over the years, though, many of its architectural details were removed and unsympathetic changes were made in the name of modernization. New owners in the 1980s launched a decade-long renovation that involved restoring storefronts to their former glory and convert-

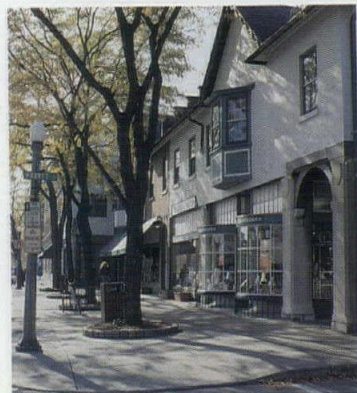
ing second-floor apartments into office space. Under the direction of John Vinci, transom windows above storefronts and original colors were restored, while the ground floor of a former men's club was converted to retail and an old service lane transformed into a charming retail alley. To connect the alley to the rest of Market Square, the architects cut an arched passageway

through an old stair hall where the two components of the South Building join. Vinci's office also added new storefronts to the back of the South Building so stores look onto both the alley and the main plaza. By dispersing parking in several small lots around the site, the original planners and subsequent developers kept cars from overwhelming the architecture. In

recent years a number of developers have added small buildings around the original complex, but retained the successful formula of placing retail on the ground floor with offices or apartments above. Hanno Weber & Associates has designed several of these buildings, as well as the new office space on the second floor of the original buildings.



James Russell photos this page



The clock tower and South Building look onto the central landscaped plaza (opposite, middle). Although almost symmetrical in plan, the North and South Buildings vary in elevation, giving the shopping center a picturesque quality. Placed directly across the plaza from the clock tower, the North Tower (old photograph, opposite, top, and above) has its own character. Storefronts with

bay windows (old photograph, opposite, bottom) were "modernized" in the 1930s. Recent work has restored storefronts to their original designs (top left and bottom left). New storefronts have turned an old service lane into a retail alley (middle left).

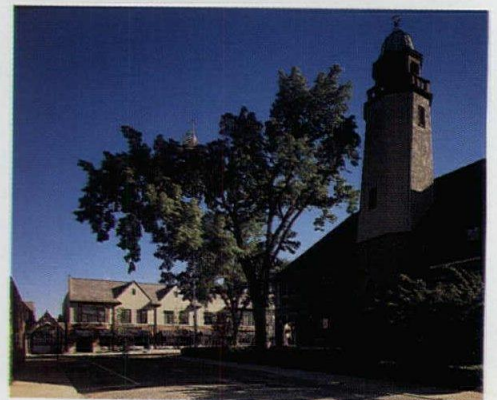
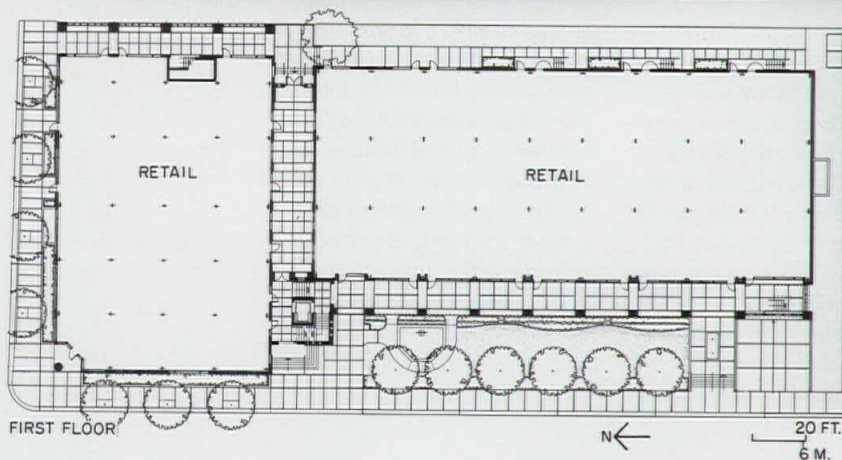
Deerpath Plaza

Lake Forest, Illinois
Nagle, Hartray & Associates, Architect

Located two blocks from Market Square (site plan, previous pages) on what had long been a car dealership, this new 47,000-square-foot development echoes many of the features found in its historic neighbor: steeply pitched roofs, projecting bays, a pedestrian arcade lining an outdoor plaza, ornamental metalwork, brick-and-stucco walls with wood trim, and a

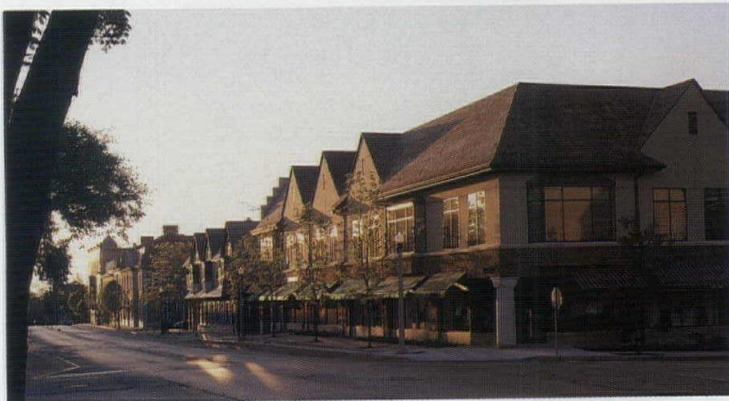
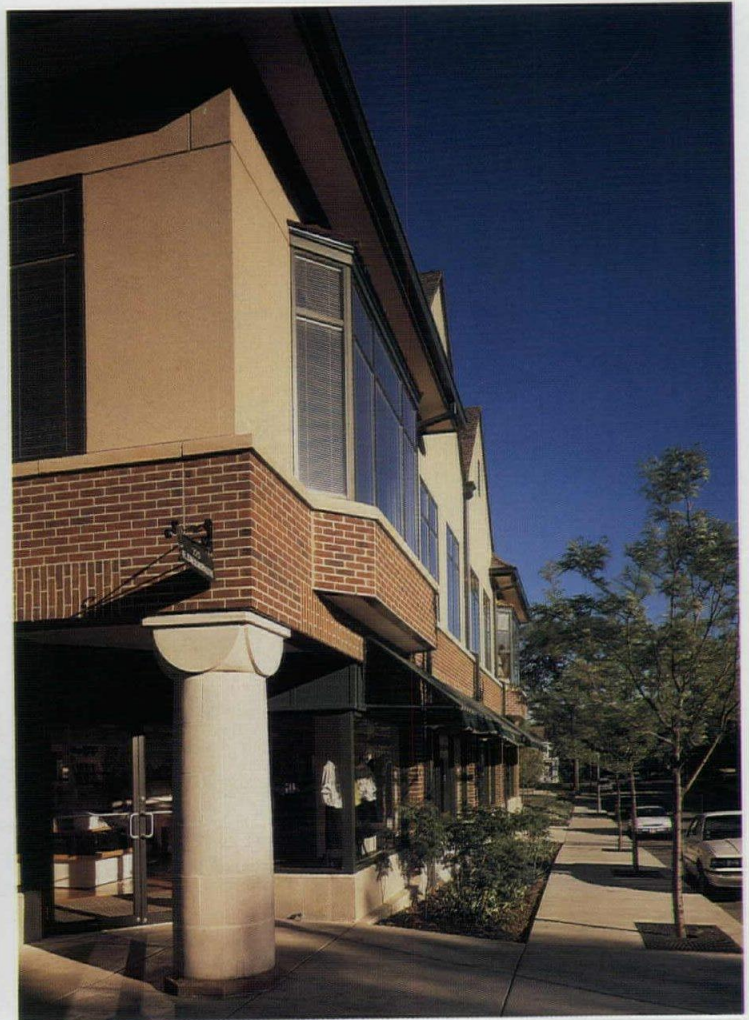
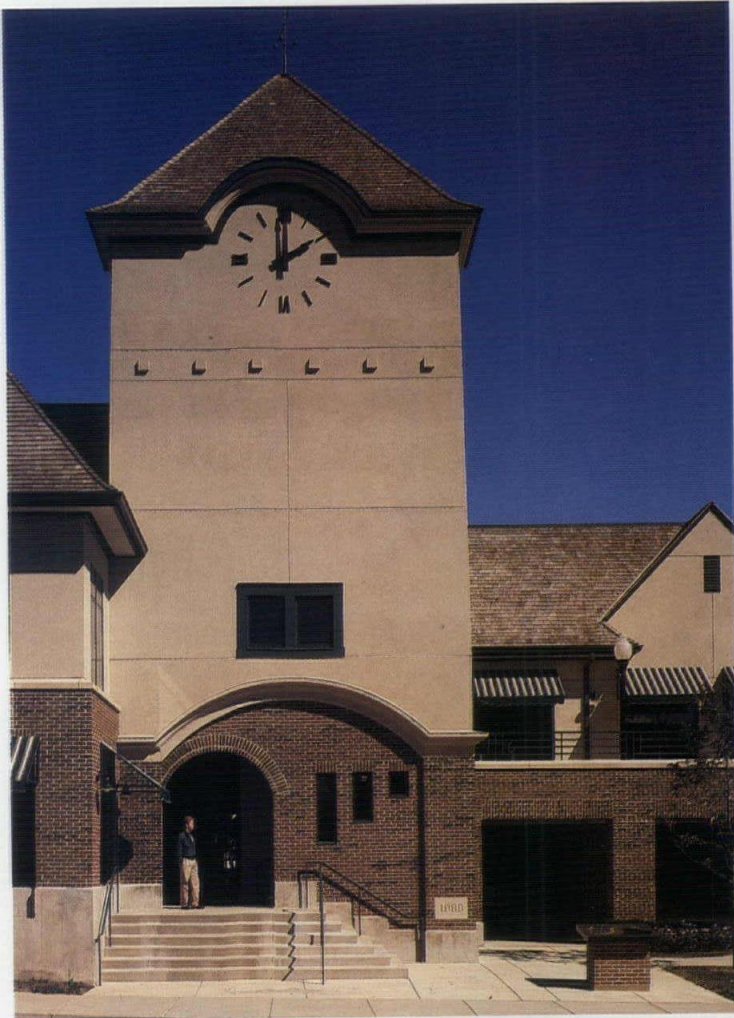
clock tower. Although built by a different team of owners and architects than that of Market Square, Deerpath Plaza extends the fabric of low-scale, mixed-use buildings and small dispersed parking lots first established by the older development. The project includes two buildings—one to the north with retail on the ground level and office space above, the other on

© Steve Hall, Hedrich-Blessing photos



the south with retail on both levels. Tying the two buildings together are an indoor atrium spine and a masonry clock tower that helps negotiate the change in level from the western side of the site to the eastern side. To keep cars out of the way and dispel the traditional image of shopping centers surrounded by oceans of automobiles, the architects tucked parking below

grade and provided an access ramp on the south end of the landscaped plaza. Like Market Square, Deerpath Plaza uses streetlevel arcades to encourage pedestrian activity and an imposing tower to break the length of its buildings.



Deerpath Plaza's western elevation (opposite, top) features stores set behind a brick arcade fronting on a landscaped plaza. Without copying the historicist style of Market Square, Nagle, Hartray & Associates used many of its elements, including canvas awnings, projecting bays, and an imposing clock tower. Mechanical equipment is hidden behind steeply pitched roofs.

Mizner Park

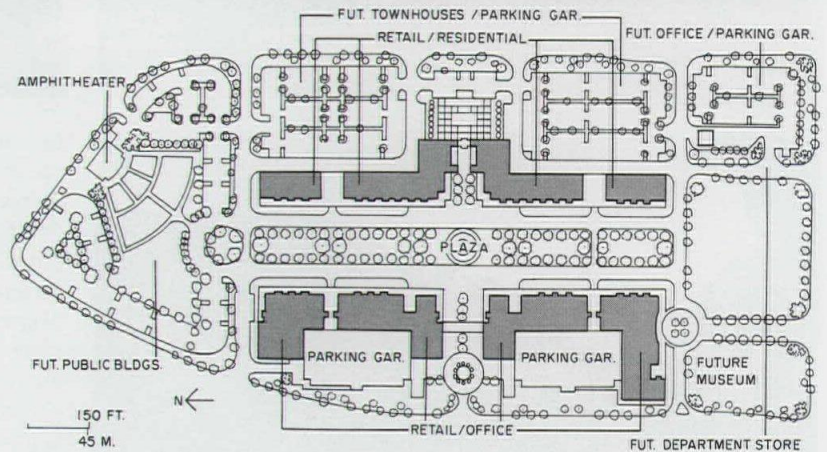
Boca Raton, Florida
Cooper Carry & Associates



Steve Traves



All stores and restaurants in the project are located on the ground floor and look onto either local streets or a new linear park (opposite left and right). Buildings on the east side of the site have five stories of apartments above retail (above and opposite top). Buildings on the west side have two stories of office space above retail. The project's first phase included two public parking structures attached to the retail/office buildings and on-street parking on either side of the new linear park.



Designed as a neotraditional downtown, Mizner Park replaces a failing shopping center in a blighted area (opposite, top) with a 28.7-acre, mixed-use development organized around a new public park. Phase I of the project includes four buildings containing 156,000 square feet of specialty retailing, six restaurants, a multiplex cinema, 106,000 square feet of office

Tom Knibbs

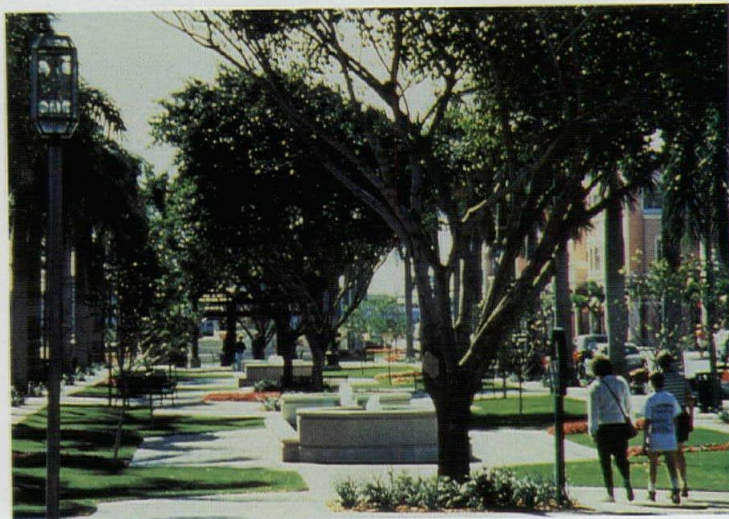
space, and 136 rental apartments. Phase II, which will begin this spring, will include 24 two-story townhouses and a nine-story apartment tower, while future phases will eventually add more retail and office space, as well as public facilities such as a performing arts center and the International Museum of Cartoon Art. A public-private venture that required extensive

citizen participation in the planning and design process, Mizner Park has become a catalyst for further downtown renewal; Cooper Carry and SWA Associates are now set to develop a masterplan for a 350-acre area downtown. A key to the project's success, says principal-in-charge Richard E. Heapes, is its orientation around a new linear park instead of a somewhat tawdry

commercial strip called Federal Highway. By turning away from Federal Highway, Mizner Park has established a new model for downtown development—one that combines architecture inspired by the Spanish-Revival work of Addison Mizner with extension of the existing grid of local streets. In fact, future development downtown may include extending the linear park.



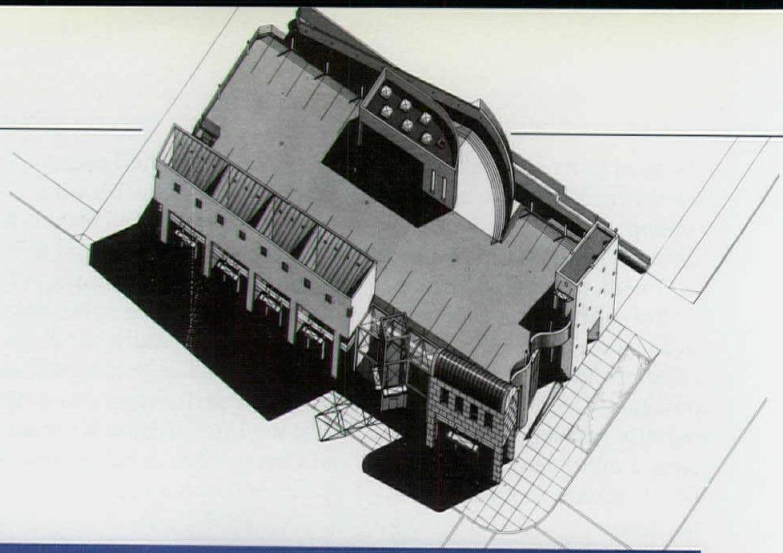
Steve Traves



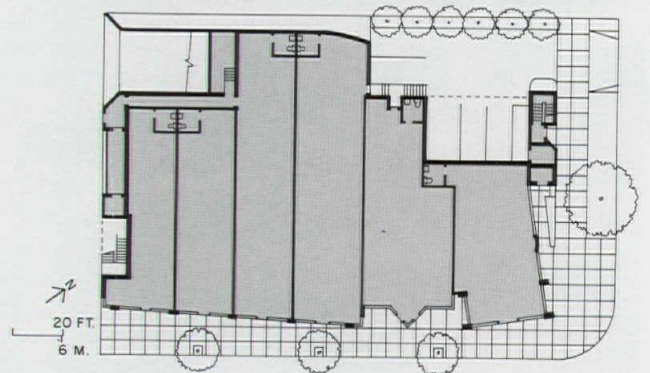
Richard E. Heapes

Montana Collection

*Santa Monica, California
Kanner Architects*



Dana Barbera

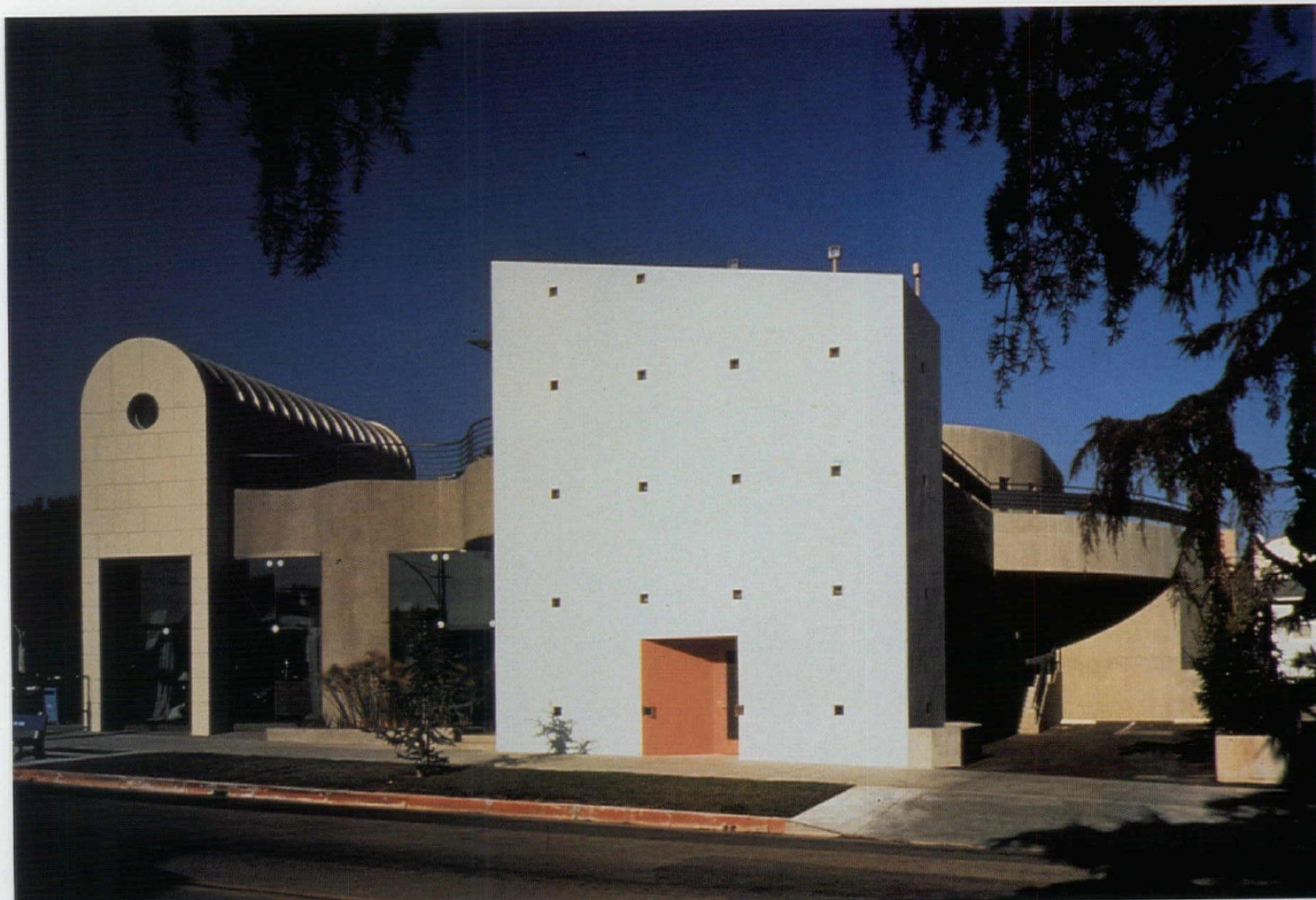


Located on Santa Monica's Montana Avenue, a busy commercial strip undergoing rapid change, this small shopping center breaks away from the formula-driven designs too often found on such streets. Strict regulations limited the building to 75 percent of its site and to two stories in height. Other planning and zoning rules required store frontage on the sidewalk edge of

the property and prohibited underground parking. To handle the tricky parking problem, the architects used the roof of the building for parking and built an access ramp along the rear edge of the site. This solution maximized the project's leasable selling space on-grade and minimized the impact of cars on the building's street frontage. By dividing the Montana Avenue

elevation into a series of pavilions—each with its own parapet, fenestration, and orientation to the street—the architects reduced the scale of building and gave it a sense of playfulness. The various parapets also help hide cars parked on top of the building. Extensive glazing on Montana Avenue opens up the building to the street and provides a degree of connection

with the city rare in an infill shopping center. While many retail centers write off the design of their side elevations, the Montana Collection maintains its sense of animation all around the site—varying trim color, texture, and line.



Ronald Pollard photos except as noted



The project's main facade on Montana Avenue (opposite) is broken into a series of pavilions that reduce its scale and help it fit in with nearby residences. The architects dealt with the difficult problem of parking by turning the roof of the building into a lot and hiding cars behind fanciful parapets (axonometric, opposite). The southwest elevation (above) is anchored by a solid

stair tower that contrasts with the more heavily glazed retail fronts. By engaging the street with a sequence of simple geometric forms, the project is able to create an identity separate from the cookie-cutter strip centers found on many commercial streets.

TECHNOLOGY FOCUS:

Under the Big Top

Built in just six months, this temporary circus tent for books is a catalog of off-the-shelf ingenuity.



*Temporary Powell Library
University of California
Los Angeles
Hodgetts and Fung
Design Associates, Architect*



A commission where the operative words are “quick,” “inexpensive,” and “temporary” does not usually warm the heart of an architect. Out of these unpromising directives, however, has come the Temporary Powell, a “quickie shed,” as one campus worker called it (costing just \$3.5-million), that is an amazing piece of architecture.

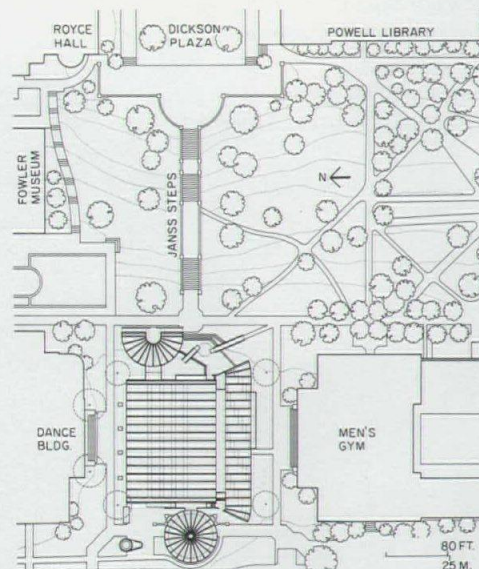
The Temporary Powell is a solution to a problem faced by many large institutions: where do you put important functions when valuable existing structures require significant upgrading? In this case, Powell Library, UCLA’s existing undergraduate library (a landmark designed by Allison & Allison) is undergoing a five-year seismic upgrading. The campus administration decided to house stacks and reading rooms in a tent structure on a tight site in the middle of the campus. “I immediately thought: what better firm to design a tent than Hodgetts and Fung?” remembers campus architect Duke Oakley, referring to the firm’s other idiosyncratic temporary work, such as the installation for the popular “Blueprints for Modern Living” show at Los Angeles’ Museum of Contemporary Art.

According to Craig Hodgetts, the structure deliberately “creates the impression that it is only a temporary invader of this red brick campus. When we designed it, we knew that it couldn’t look rooted or people would scream about its placement in precious open space.” The university and the architects researched available tent technologies, and settled on a system designed by Rubb Systems of Maine (similar to that used to cover waste disposal sites, tennis courts, or lavish weddings). The tent fabric is a woven polyester substrate covered on both sides with a vinyl compound. The outside surface is coated with urethane for weathering, abrasion resistance, and cleanability. A separate inner skin supports insulation. The material was wrapped over extruded-aluminum ribs. (The company says the main tent can support 1,500 students.) To form the curved sections, the West Coast’s largest “stretch forming” device was used. The sections were elongated as they were bent around a curved surface to prevent buckling at the inner flange.

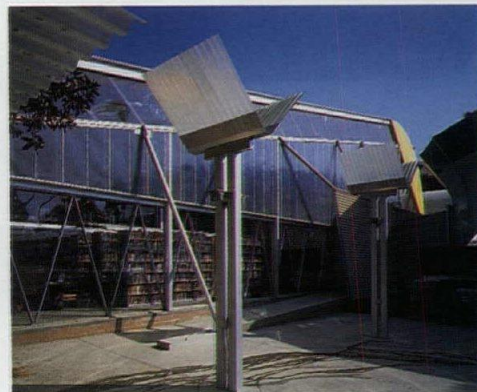
The tent structure’s versatility made the expressive forms possible; this “slug” worms its way between UCLA’s men’s and women’s gymnasium (site plan right). From masonry walls enclosing fixed services like toilet rooms, an aircraft wing-shaped tent spans the main stacks. A narrower, cylindrical section encloses support functions. To the east and west, Hodgetts and Fung have designed two reading rooms, one circular and one semicircular.

The architects have inserted a book-stack mezzanine within the 34-foot-high volume of the main tent. From its steel column supports spring T-shaped sections holding industrial uplights and Y-shaped struts providing intermediate support for the roof ribs. These struts are engineered so that the structure can undulate during an earthquake, “like a slinky” (as associate Lynn Batsch puts it), without collapsing. A fretwork of tension cables, sprinkler pipes, and cantilevered fluorescent downlights filters sunlight from translucent segments of the roof fabric. Hodgetts calls the effect “rough tech,” reflecting a kind of Miesian faith in the saving grace of technology that does not eschew the messiness of everyday use.

Hodgetts and Fung wanted the “Towell”—as it’s now known—to look raw and antimonumental. Users and staff have embraced its offbeat spirit that combines the celebratory bravura of a circus tent with the didactic grandeur of a Gothic cathedral (it tells you how it was made). Stand in the main space and, as one librarian put it, “you hear your heart sing.” *Aaron Betsky*

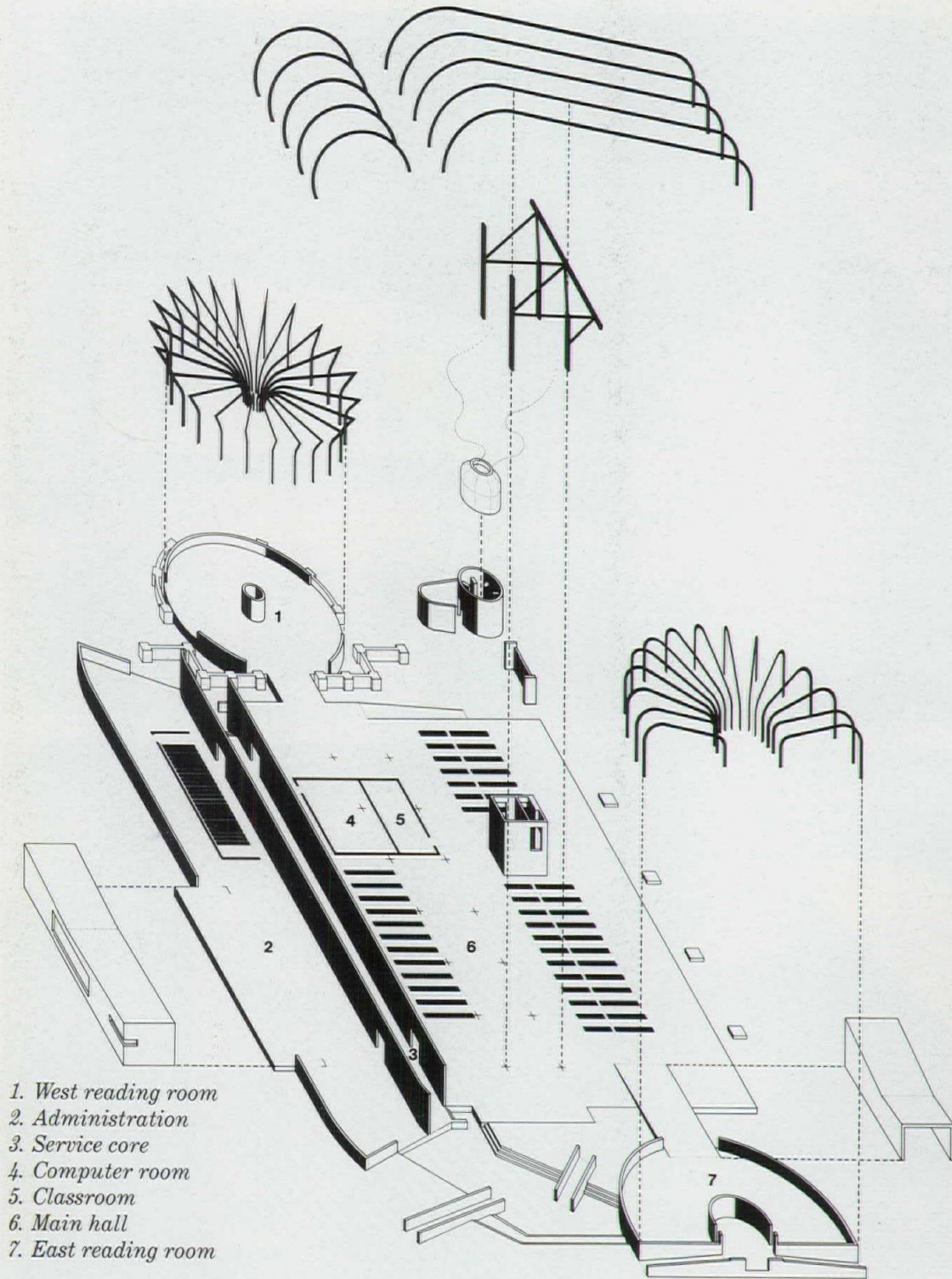
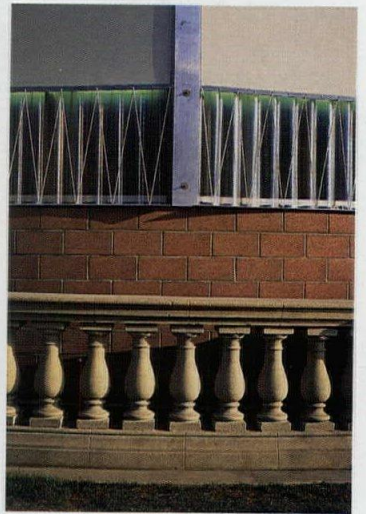


The Temporary Powell fills a plaza at the base of a monumental flight of stairs, where new ramps complete campus pathways (site plan). A hemispherical reading room and a cylindrical tube (containing offices) gather around a large sloping shed sheltering stacks and reading space (opposite). These primary spaces are linked by connecting structures glazed with overlapping sheets of corrugated and clear polycarbonate sheets. They not only convey a visual sense of instability, the surfaces (since not anchored to foundations) slide across each other in case of an earthquake.





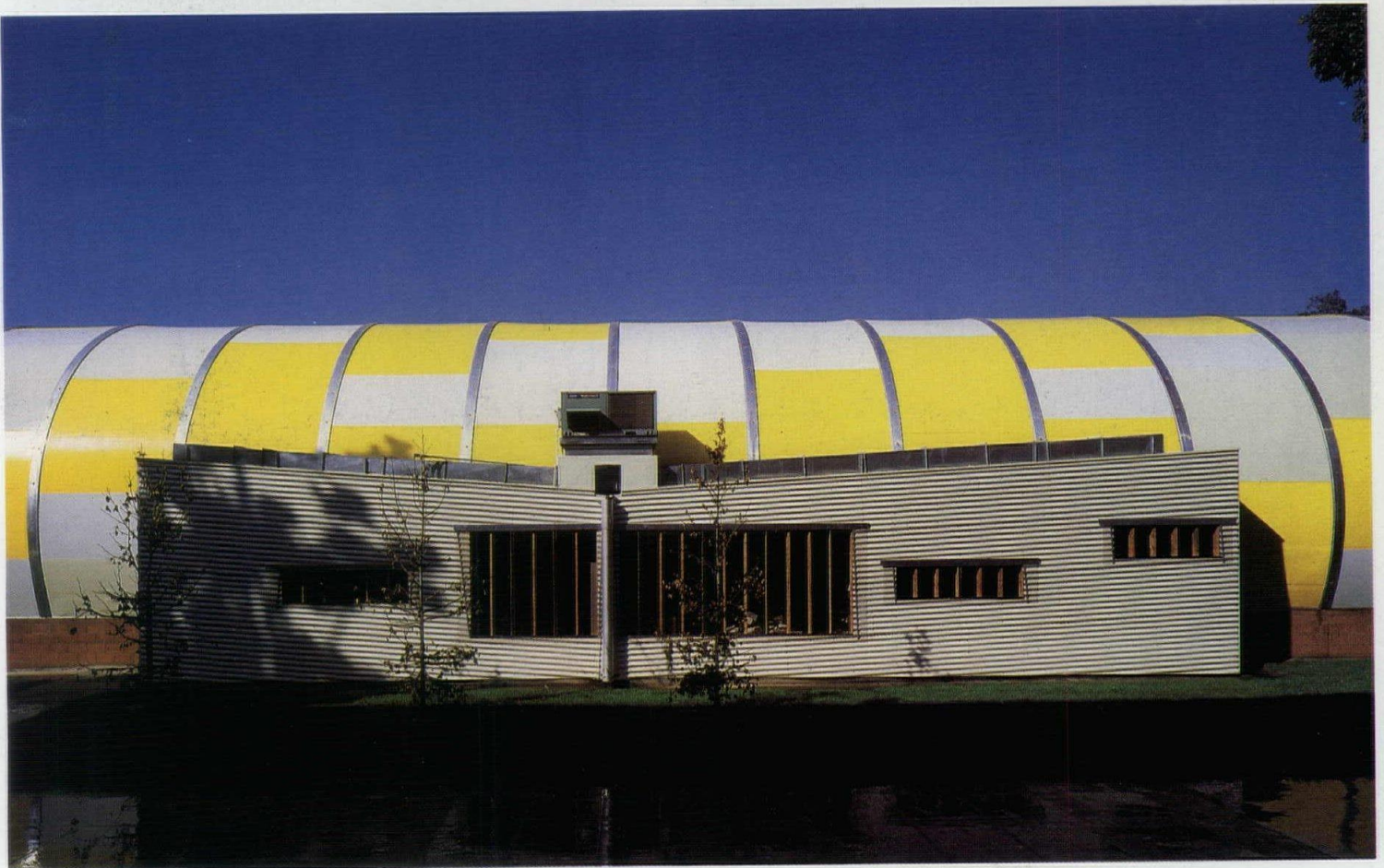
The yellow fabric superstructure (a school color) and its ribbed supports are anchored to low, brick-colored concrete-masonry walls (drawing left). End walls and nonbearing structures linking the primary spaces are framed with metal studs. Offices, framed in wood and clad in corrugated metal, open out of the CMU walls (opposite bottom). They're meant to look, according to Hodgetts, "like construction trailers pulled up under the skirt of the building." Though most of the floors are concrete slab-on-grade, part of the west reading room, which sits within the curve of an existing balustrade (below and opposite top), is framed—for easy removal—to short columns aligned with the paving pattern of the existing plaza. Much of the rest of the building can be reused as well, including the fabric, the metal ribs, and the 21 water-source heat pumps tied to the central university plant.

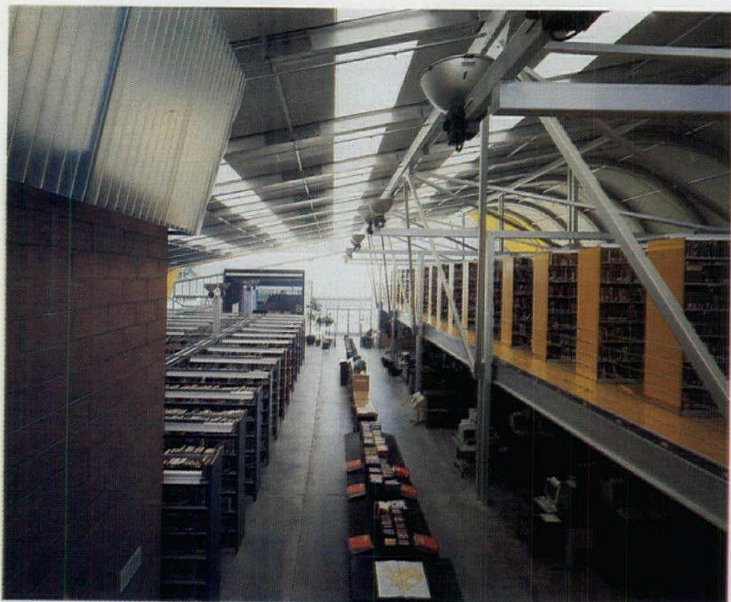


1. West reading room
2. Administration
3. Service core
4. Computer room
5. Classroom
6. Main hall
7. East reading room

SECTION LOOKING NORTH

20 FT.
6 M.





Because the tent material is fire-rated, nothing has been covered over (opposite). Steel columns supporting a mezzanine become roof braces (top left), similar to the exterior-wall bracing (drawing). A glazed ramp (middle) leads to the east reading room. Bottom: the west reading room.

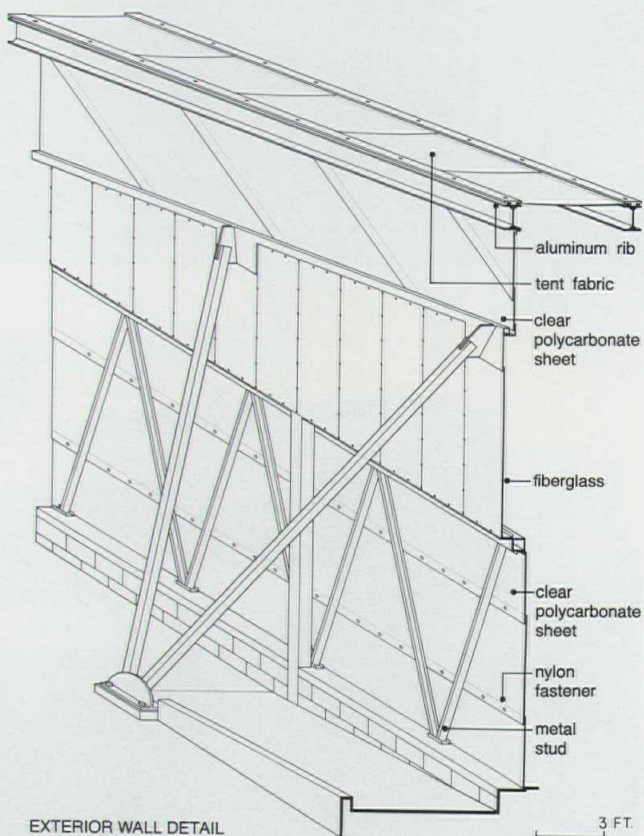
Credits

*Temporary Powell Library
University of California
Los Angeles*

Architect: Hodgetts and Fung Design Associates, Architect—Craig Hodgetts, Ming Fung, partners-in-charge; Lynn Batsch, Robert Flock, project architects; William Martin, Jr., Peter Noble, Bryan Coopersmith, Michael Swischuk, project team

Engineers: Robert Englekirk (structural); The Sullivan Partnership (mechanical); Patrick Byrne & Associates (electrical)

Contractor: American Constructors California, Inc.



EXTERIOR WALL DETAIL

3 FT.
1 M.



CALL FOR ENTRIES

RECORD INTERIORS 1993

The editors of ARCHITECTURAL RECORD announce the 24th annual RECORD INTERIORS issue. Architects and interior designers are invited to submit recently completed interior design projects in all categories; work previously published in other national design magazines is disqualified. There are no entry forms or fees, although submissions must include photographs (transparencies, slides, or prints), floor plans, and a project description—bound firmly in an 8½ by 11-in. folder—and be post-marked no later than April 30, 1993. Winning entries will be featured in the September 1993 RECORD INTERIORS. Other submissions will either be returned or scheduled for a future issue. If you would like your entry returned, please include a self-addressed envelope with appropriate postage.

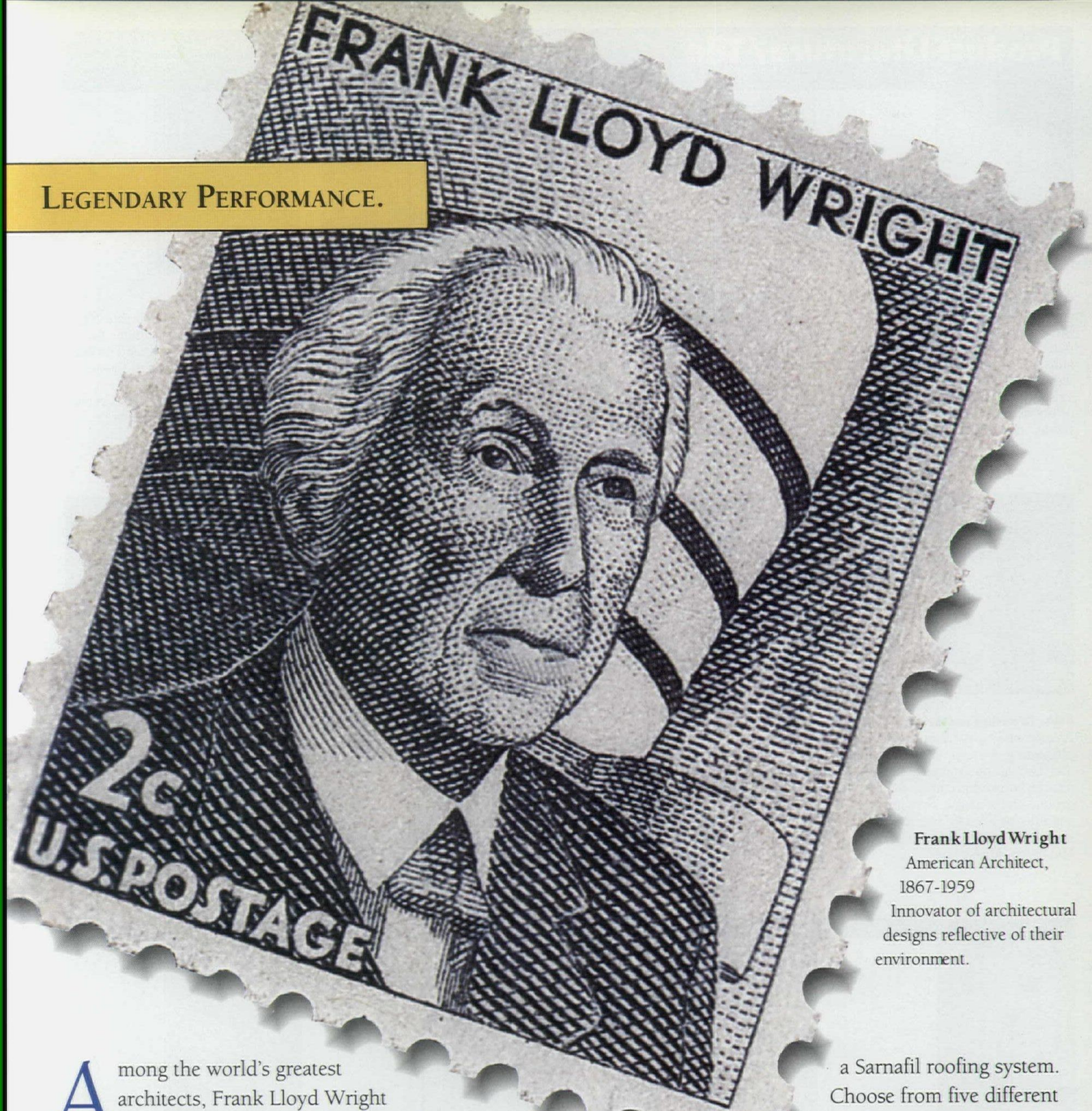
Submissions should be mailed to:

Karen D. Stein

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Architectural Record March 1993 103

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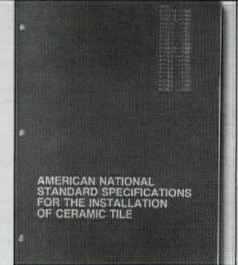
400. Tile and stone installation
A color catalog explains how the Laticrete setting system can prevent uneven, cracked, or poorly prepared subsurface conditions from damaging tile and stone flooring, even over existing vinyl, laminate, wood strip, or tile flooring. Laticrete International, Inc., Bethany, Conn.



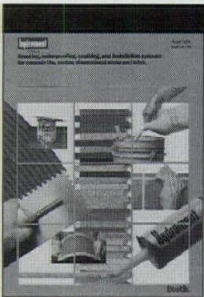
401. Waterproofing membrane
Composeal Gold is described as a 4-ply bonded-direct isolation membrane that is said to prevent shrinkage cracks and water damage in installations of thin-set ceramic tile, marble, brick, and stone. Will not delaminate; preformed corners available. Compotite Corporation, Los Angeles.



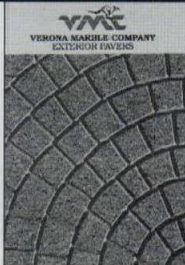
402. Tile file
A 3-ring architectural binder contains brochures, technical articles, performance data, and specifications for 10 tile-product categories, including thick-glaze tile, facade systems and panel-format tile, pool ceramics, and porcelain pavers. Buchta USA, Roswell, Ga.



403. ANSI Standards
The 1992 revision of American National Standard Specifications for the Installation of Ceramic Tile has 62 pages on recommended tile-setting methods and materials, including four new standards covering tile on cured mortar beds. Individual copies: \$10. Tile Council of America, Princeton, N. J.



404. Grouting materials
A color catalog gives an overview of tile-setting, waterproofing, caulking, and installation products, including mastics, latex admixtures, colored grouts, and sealants. Systems are suitable for ceramic tile, marble, dimensional stone, and brick. Bostik, Middleton, Mass.



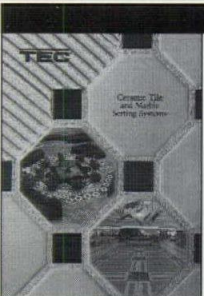
405. Exterior pavers
Large-format (16-in.-sq) pavers are made using granite, marble, and porfido in a cement matrix, in five styles and honed, rustic, and scolpiti finishes. Pavers can be set in a sand or mud bed, or dry laid on plastic support disks. Verona Marble Co., Inc., Dallas.



406. Tile-setting products
A comprehensive catalog covers grouts, mortars, adhesives, concrete backer-board, additives, and specialty products. Material is directed to architects and specifiers as well as installers, and ANSI standards and setting recommendations are included. W. R. Bonsal Co., Charlotte, N. C.



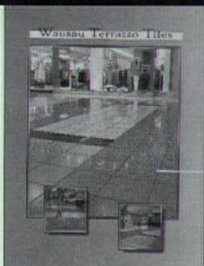
407. Sampling program
A Master Panel on Legacy clip-corner tile displays the 12 available "dot" colors along with the field-tile options; a chart references tile colorways with compatible colors in major kitchen appliances and bath fittings. United States Ceramic Tile Co., East Sparta, Ohio.



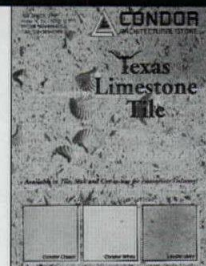
408. Tile and stone adhesives
A capabilities brochure highlights a setting-product line that meets every ANSI strength and traffic rating. Includes surface-preparation and underlayment systems, mortars for both thin-set and heavy-stone installations, and stain-resistant grouts. TEC Incorporated, an H. B. Fuller Co., Palatine, Ill.



409. Dimension stone
A 10-page booklet, "A Celebration of Our Life with Stone," shows granite, marble, travertine, limestone, slate, soapstone, and onyx in commercial and residential settings; a guide to stone identification is included. Marble Institute of America, Farmington, Mich.



410. Terrazzo tiles
Large color photos illustrate the stone texture and wide color range offered by natural-aggregate terrazzo tiles, a 12-in.-sq format said to achieve superior compressive and flexural test results; water absorption is under 6 1/2 percent. Tiles come in shot-blasted or polished finishes. Terra-Paving Division of Wausau Tile, Inc., Wausau, Wis.



411. Texas limestone
A traditional stone heavily laced with marine shells, Texas Limestone is offered in a 1/2-in.-thick tile gauged to industry standard tolerances, as well as in slabs and cut-to-size. Color flyer shows the texture close-up, along with cream, white, and gray colorations. Condor Architectural Stone, Austin, Texas.
continued on page 116

Problem:

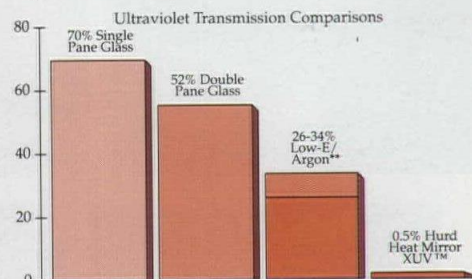
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Hurd windows look good in line print and even better up close. See for yourself. *Calculations based on center of glass values for Hurd InSol-e windows with Superglass System with Heat Mirror Film in a 1" thickness. R4al and R value is 5.5 for commercial size units; 4.6 for residential size units. All data were collected using the standard ASHRAE 1989 calculation method and standard winter conditions of 97045. Calculations made using LBL Window 1.1 Computer Modeling Software. **The range of ultraviolet transmission comparison performance is based on published figures. Heat Mirror™ and Heat Mirror Film are trademarks of Southwall Technologies. ©1992 Hurd Millwork Company, Medford, Wisconsin 54451.

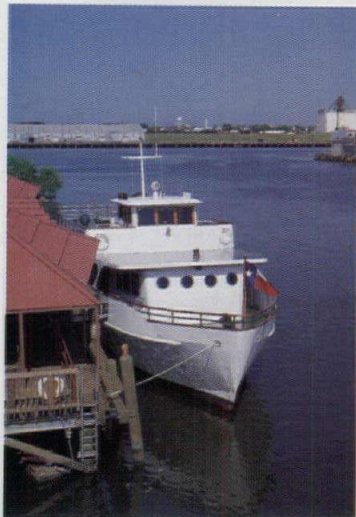
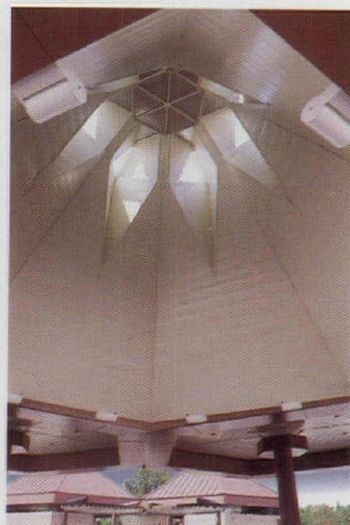
METAL SETS YOU FREE!

The Port of Houston wanted a new Visitor Pavilion for passengers embarking on the M/V Sam Houston for a trip down the Houston Ship Channel. Requirements included multi-purpose use, low maintenance, closed-in undersides to keep birds from nesting, covered walkways and, above all, a dramatic welcome to one of the largest ports in the world.

MCCM Architects met the challenge with metal. This light, airy structure is awash with hips and valleys and unexpected angles. Its hexagon motif is echoed in benches, pavements and planters. Ancillary buildings for crew quarters, rest rooms and paint storage meld smoothly into the scene.

Translating design into reality required extraordinary excellence in materials and workmanship. MBCI supplied the metal roofing systems along with shop drawings and guidelines. R.W. Honea Sheetmetal supplied the experience and craftsmanship including press breaking flat stock panels for the main structure.

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Dallas 214/988-3300 Indianapolis 317/398-4400

Project: Visitor Pavilion, Port of Houston / Client: Port of Houston Authority / Architect: MCCM Architects
General Contractor: Hill Constructors, Inc. / Roofing Contractor: R.W. Honea Sheetmetal (all of Houston)
MBCI Metal Roofing Systems: Craftsman Series™ SB16.5, 24 gauge (Colonial Red) with MBCI
LiteFrame™ System / Artisan I Series™, 24 gauge (Almond).

Circle 23 on inquiry card

Delay claims *Continued from page 23*

it, and mechanisms for anticipating and resolving disputes. The owner should expect a reasonable number of RFIs and understand arguments often used by the contractor in challenging the adequacy of the project documents. The design professional should address any anticipated conditions specific to the project that may pose problems.

- *The need to resolve issues immediately.*

The owner should understand the impact slow decisions have on cost, schedule, and construction progress. On public projects, the owner should be encouraged to air political conflicts that might slow down decisions in order to find ways around them.

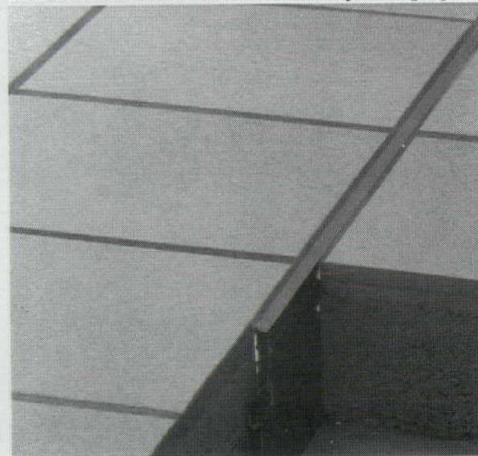
- The owner must understand its important right to refuse certification of payment to the contractor without an updated schedule, which is all-important in reducing exposure to delay claims. While owners' should exercise this option, they seldom do without the architect's prodding.

- The owner must understand the architect's right to collect payment from the owner for review of an unreasonable number of RFI's and submittals. The owner *can* force the contractor to make them whenever the contractor has made an unreasonable number of requests, but it is often difficult to get the owner to do so.

When project and construction managers step in

While project managers and construction managers often are, in theory, responsible for keeping schedules on track and hence defending the owner against delay claims, their actual duties are generally so loosely defined that the architect can't be sure that the owner is defended whenever they are involved. The majority of architects feel they must continue to do tasks described as the agents' responsibility, including being on top of potential delay-claims. ■

New Products *continued from page 27*



312. Expansion joint for tile

A new profile designed to accommodate movement in mortar-bed installations, the Dilex-MP is one of an expanded range of setting products said to insure performance and enhance appearance of tile walls and floors in any location. Exposed portion of the narrow joint comes in four colors. Snap-on extensions permit use at depths of up to 2 3/8-in. Schlüter-Systems, Inc., Plattsburgh, N. Y.

Continued on page 109

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

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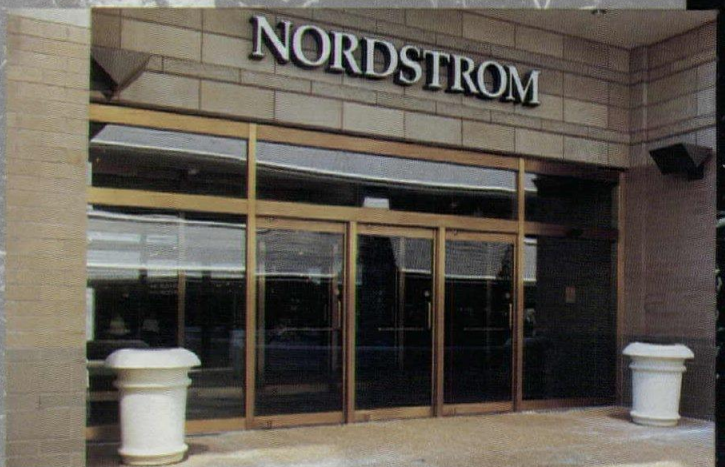
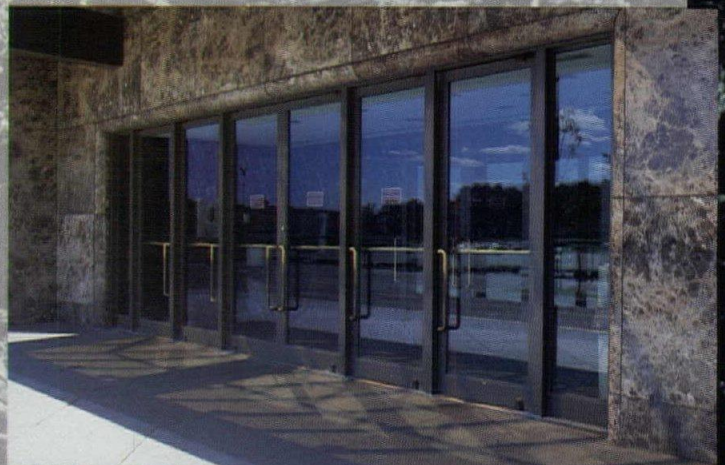
Add new METRO® Accents decorative inserts to Metropolitan Ceramics' IRONROCK® and METRO® TILE unglazed ceramic tile floors for a dramatic transformation that can make the best even better. Even when used sparingly, METRO Accents create a striking atmosphere in any environment—indoors or out. Available in a variety of colors, patterns and sizes. Call or write today.

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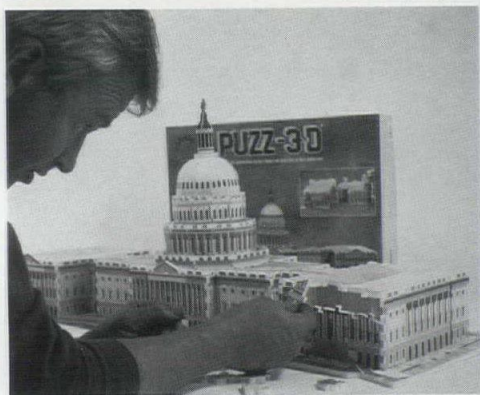


No retailer in his right mind wants to see customers tugging on heavy, hard to open entrance doors. That's why so many department stores and shopping centers have turned to Ellison Balanced Doors. Their unique hardware produces a mechanical advantage that makes the heaviest bronze or stainless door incredibly easy to open. And for designers not concerned with mechanical advantage there is the other kind of Ellison advantage. Craftsmanship. Plenty of architects specify Ellison because they simply want the best bronze, stainless steel or aluminum custom made door they can get. Ellison doors are renowned for handling heavy traffic and withstanding tremendous abuse while requiring minimal maintenance. Give us a call or drop us a note and we'll send you a brochure and video that show how Ellison doors work and how they're made.



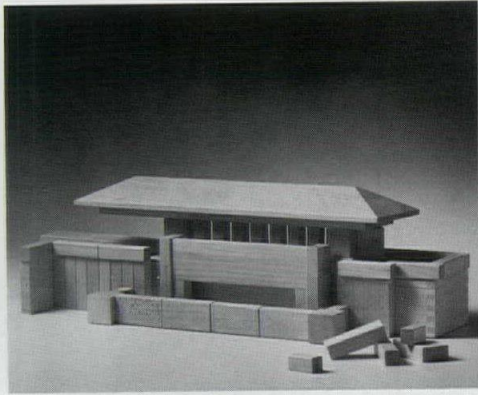
ellison
Ellison Bronze

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313. Three-dimensional jigsaws

Fully detailed self-standing architectural structures, ranging from a simple 19th-century Canadian home (426 pieces) to one of Mad King Ludwig's castles (917 pieces), come as you-put-it-together puzzles. Pieces are printed 1/4-in.-thick foam, laminated to withstand repeated assembly and disassembly. Prices: to \$50. 800/678-6789. Wreabbit, Inc., Montréal, Que.



314. FLW building blocks

From the makers of Archiblocks (for children of all ages): solid-maple blocks, lock-cornered storage box, and hip-roof lid are scaled to construct many different buildings in Wright's Prairie style. Price: \$69. FAX: 802/877-3631. Bower Studios Corp., Vergennes, Vt.



315. Bird SROs

Unusual birdhouses are made by hand from recycled construction scraps, and individually painted as the primitive "building style" suggests. To-scale custom houses can be ordered to match historic buildings or residences. The BirdHouse, Somers, Mont. *Continued on page 110*

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316. Beveled-edge tile

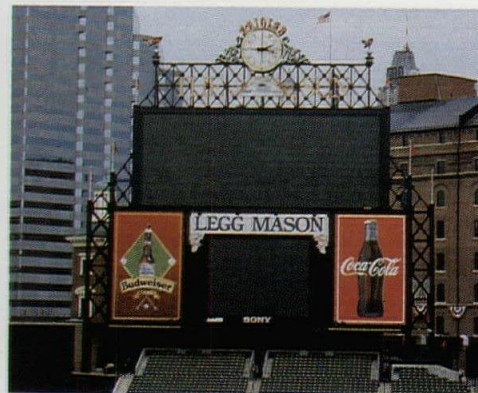
An 8- by 10-in. wall tile with a three-dimensional quality, Callas comes in a clear-white, high-gloss glaze that matches floor products. It is shown installed with a 4- by 8-in. green-marble-pattern insert. Laufen International, Tulsa, Okla.



317. Gypsum coffers-in-a-box

Made of fiberglass-reinforced gypsum with a natural wood-grained finish, the Cadre ceiling comes in 2- by 2-ft panels as well as specialty sizes and shapes that permit a range of design options. Grid is completely hidden. USG Interiors, Inc., Chicago.

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

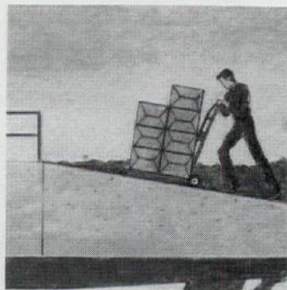


318. Large-scale custom graphics

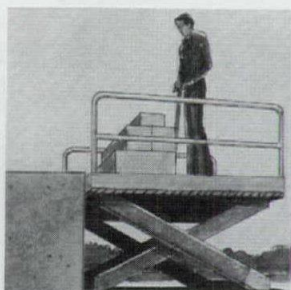
The nostalgic Coca-Cola ads at Baltimore's Camden Yards stadium were generated by a new Scotchprint electronic-graphics system, which works like a giant color-copying machine. Economical to use on small-volume jobs, the equipment produces vividly colored, weather-resistant images on panels 34-in. wide and as long as 26 ft, which are matched like wallpaper to create graphics of over 400 sq ft. 3M, St. Paul.

Continued on page 113

"THE DISAPPEARING DOCK"
Replaces dangerous concrete ramps



The hard way



The safe way

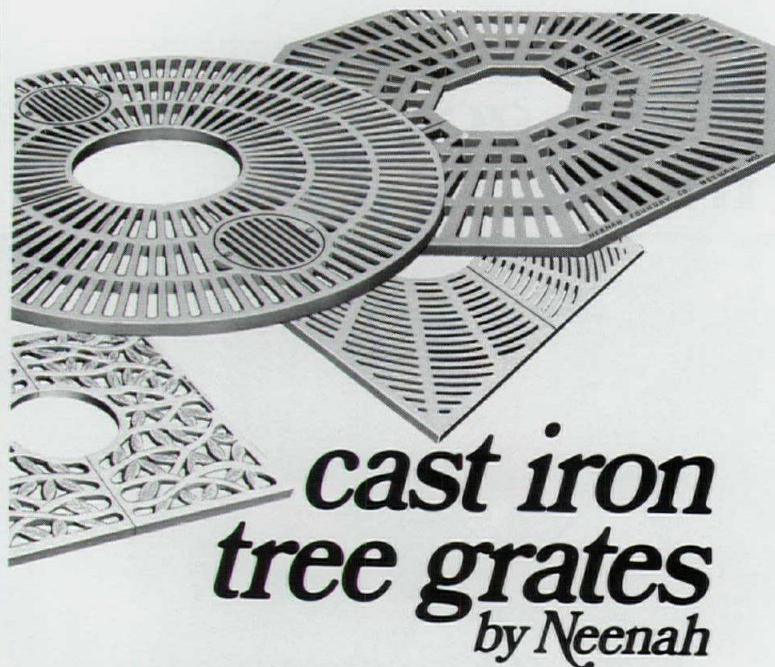


You can avoid accidents and the high cost of ramps by using a versatile Advance Superdok. Call 1-800-THE DOCK for FREE information. We're here to help.



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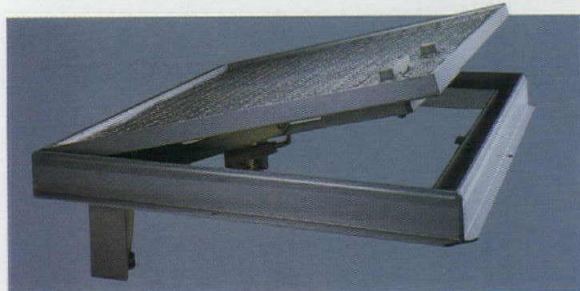


**Bilco...
part of
your
overall
design**

The Pan-Type Floor Door

Award-winning architecture doesn't just happen. Balancing aesthetics and function is quite a challenge. Dynamic environments require machinery, plumbing, wiring, and other equipment to make them work. All of which must be conveniently located, easily accessible and most of all... out of sight.

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The Bilco single leaf pan-type door shown without flooring material. Anodized finish optional.

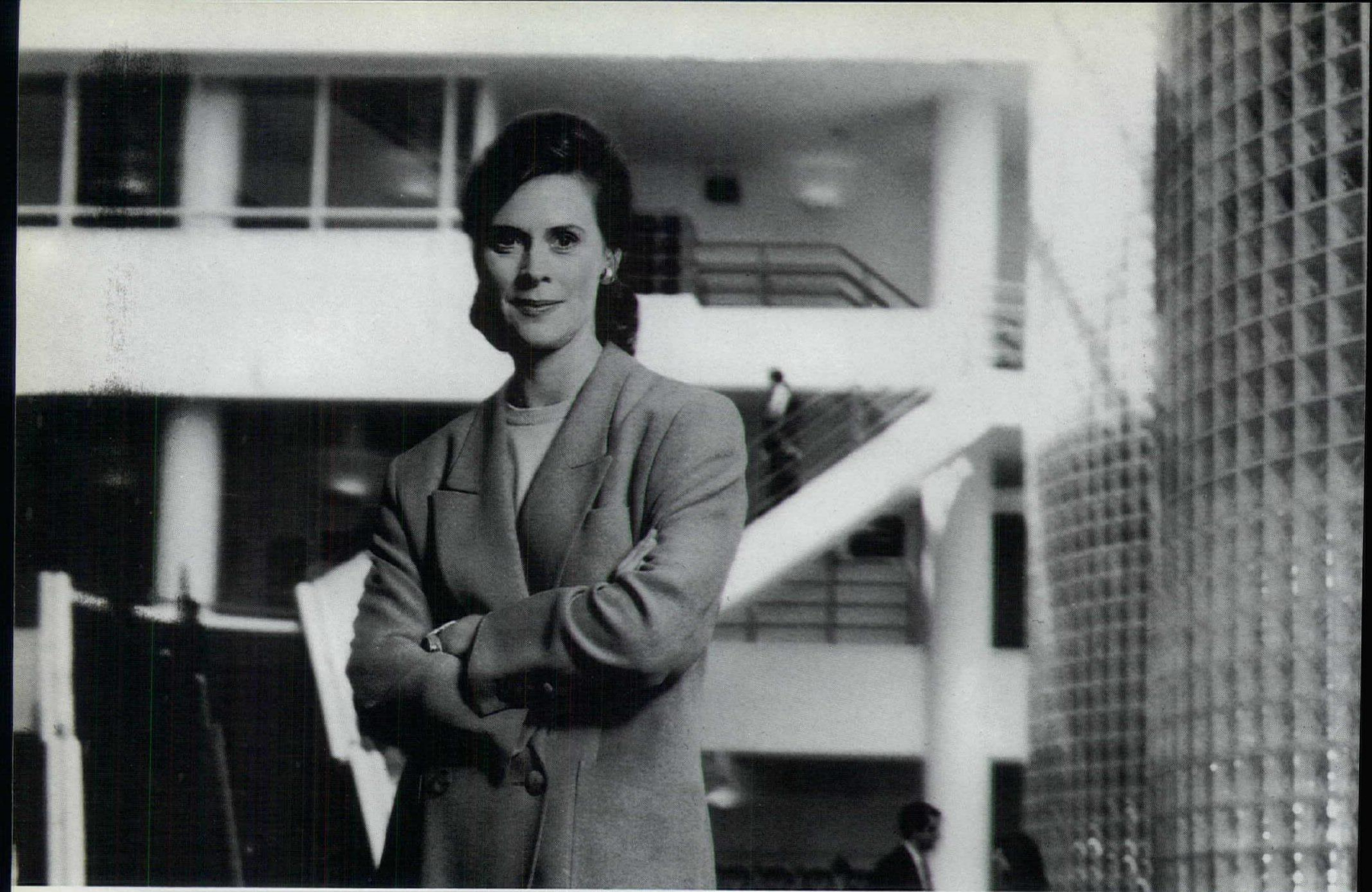
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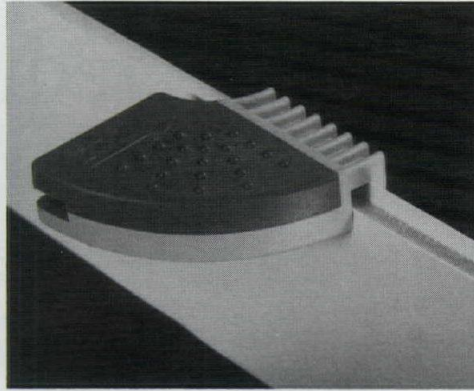
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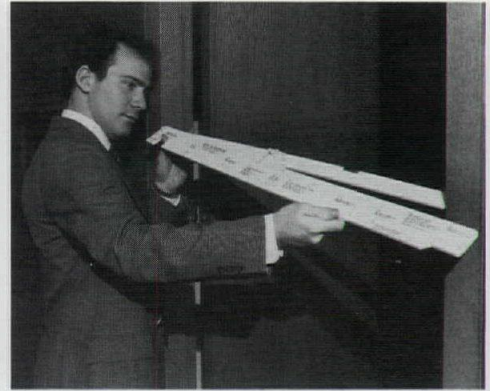
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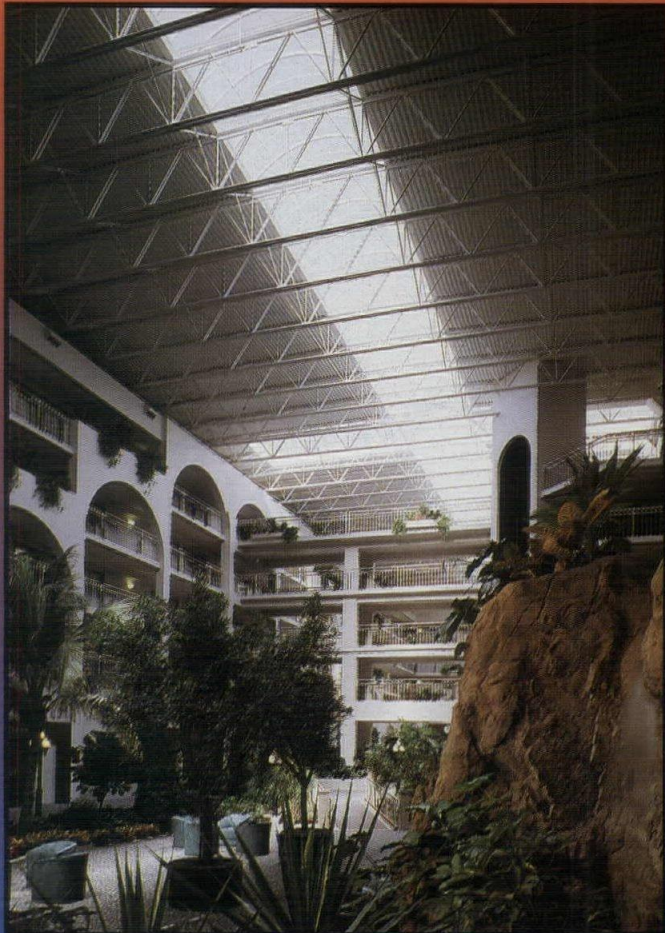
320. Model-making aid

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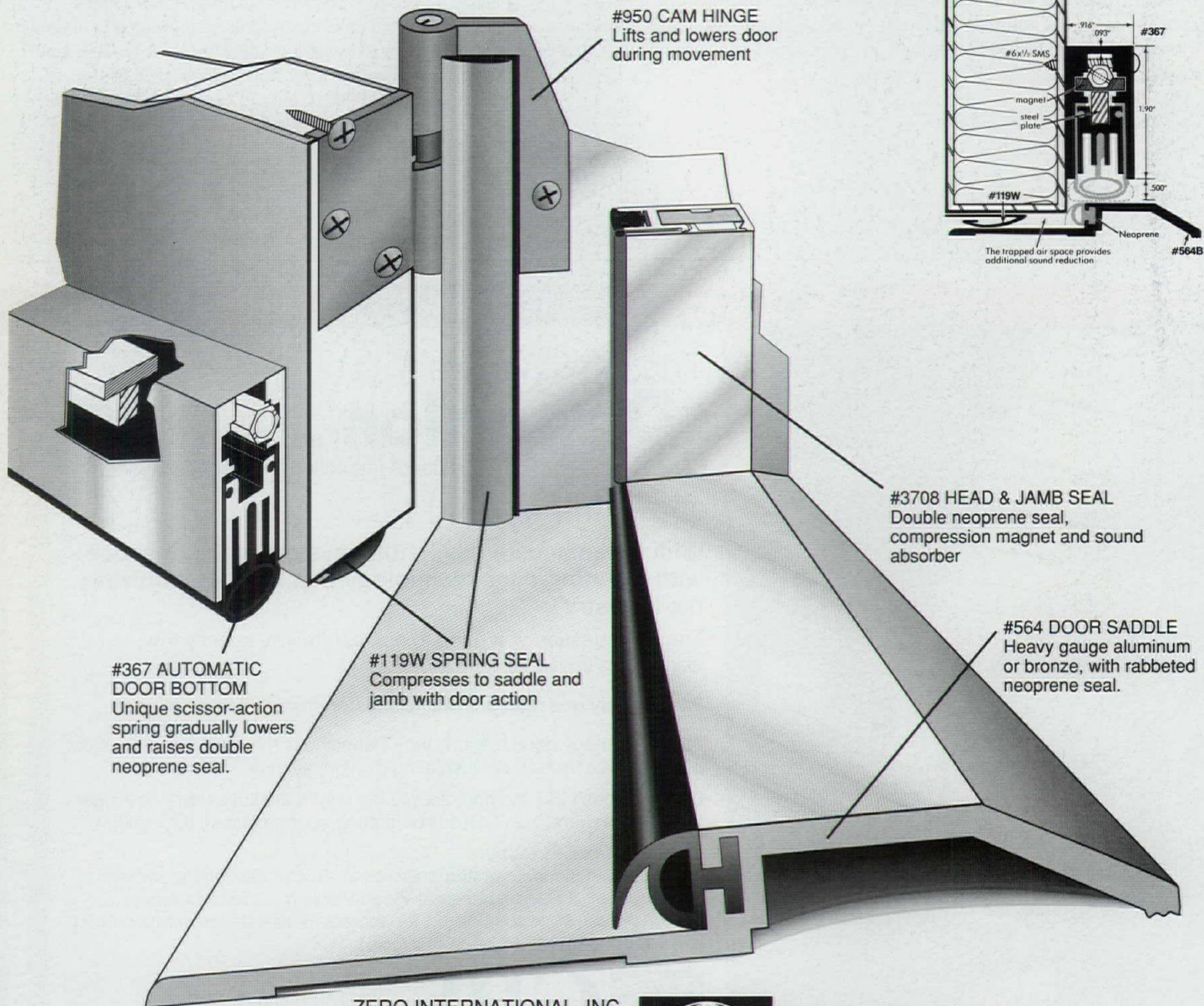
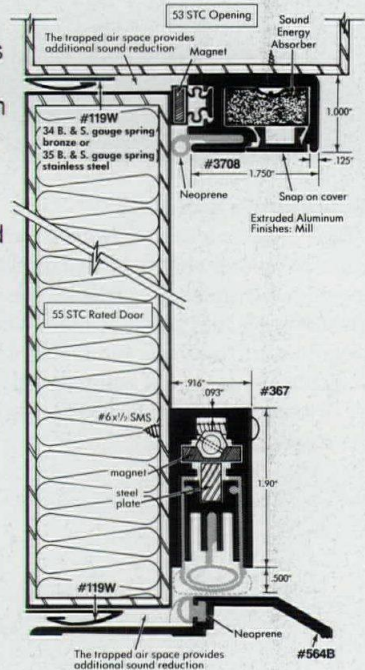
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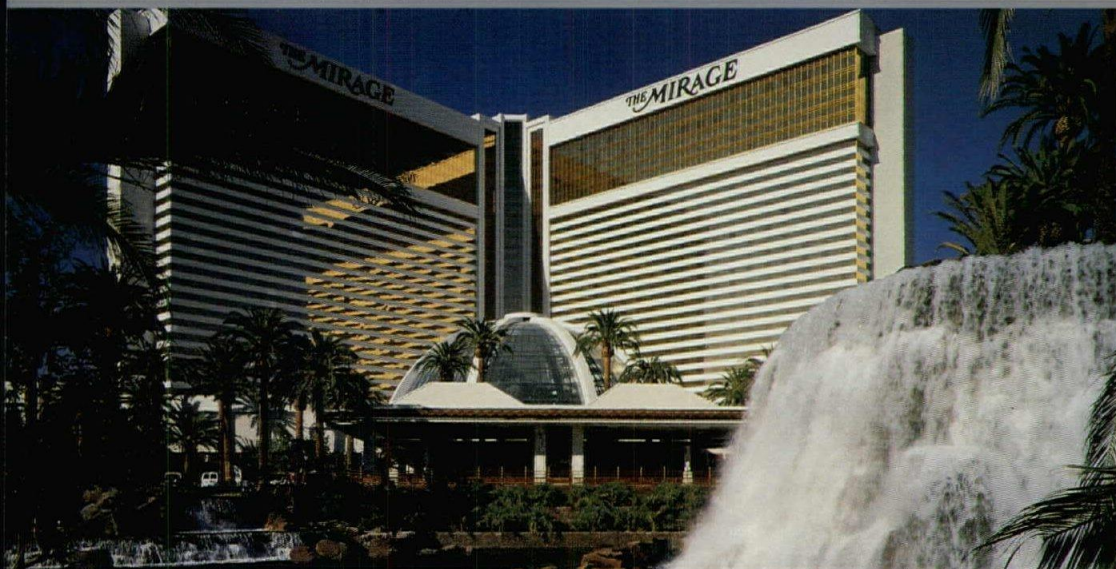
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Going Global

Now that Japan's "bubble economy" has burst and much of the air is out of its building sector, why should American architects bother looking across the Pacific Ocean? The Nikkei Index of Japanese stocks has lost more than half its value in the last two years, constricting a major source of funding for new construction. As one prominent American architect who has worked in Japan for several years said recently, "The faucet has been turned off." Why would ARCHITECTURAL RECORD publish a special Pacific Rim section now? Some answers: 1. Because the Pacific Rim is much bigger than Japan. A primary goal of this special section is to show the breadth and quality of architecture throughout the region. Not only are foreign architects still busy working in countries like Indonesia, Malaysia, Thailand, and Korea, but a new generation of local architects is beginning to prove it's ready for prime-time coverage. RECORD is proud to be the first American magazine to feature some of these talented designers. 2. Because the globalization of architecture continues. Hong Kong money, Japanese contractors, Thai construction workers, Korean-American architects, and North-American building products are turning up at job sites from Selangor to Seoul. 3. Because the Japanese recession is likely to be much shorter and less severe than the one the U. S. has had to endure. With an enormous trade surplus and no central-government budget deficit, the Japanese economy is still on solid footings. Architects who aren't establishing contacts in the Pacific Rim right now will find themselves out in the cold when the next boom begins.

C. A. P.

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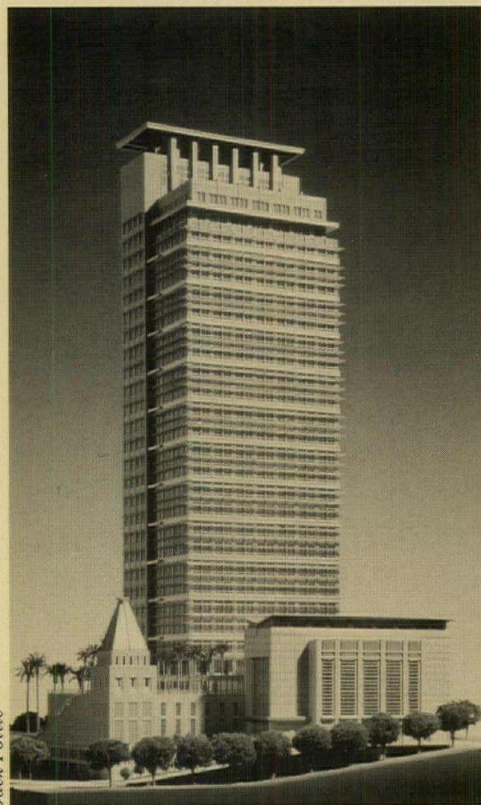
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Indonesia

KPF Bank Complex Rises in Jakarta

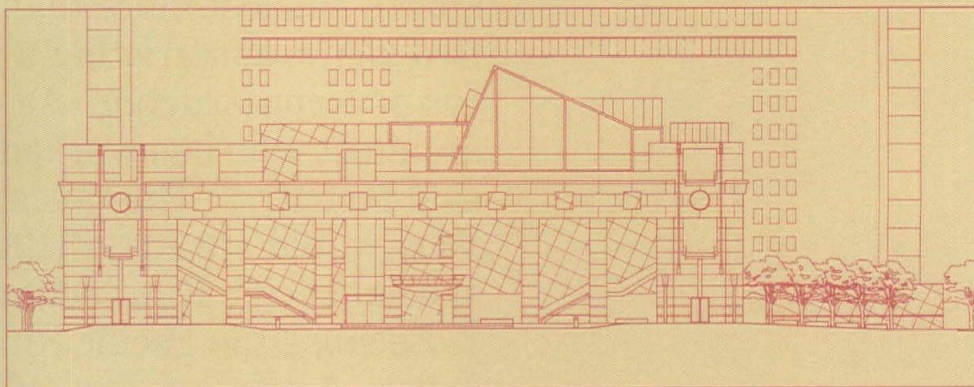


Jack Pottle

The Jakarta headquarters of Bank Niaga, designed by New York architects Kohn Pedersen Fox in association with PT Wiratman Associates of Jakarta, is nearing completion in the city's downtown business hub. The 620,000-sq-ft (57,500-sq-m) complex for one of Indonesia's largest commercial banks is expected to be completed this spring. Faced with a program of many parts, the architects divided the plot into quadrants and filled each with a different element: a 27-story office tower, a triple-height banking hall, a garden, and a mosque for bank employees. Inspired by North African minarets, the mosque sits amid a roof-top garden above a 900-car garage. Clad in Italian granite-and-glass curtain wall, the office tower commands views of the city but is shielded from the equatorial sun by coated-aluminum brise-soleil. *Naomi R. Pollock*

Japan

Caliandro Associates Designs Public Galleria in Kyushu

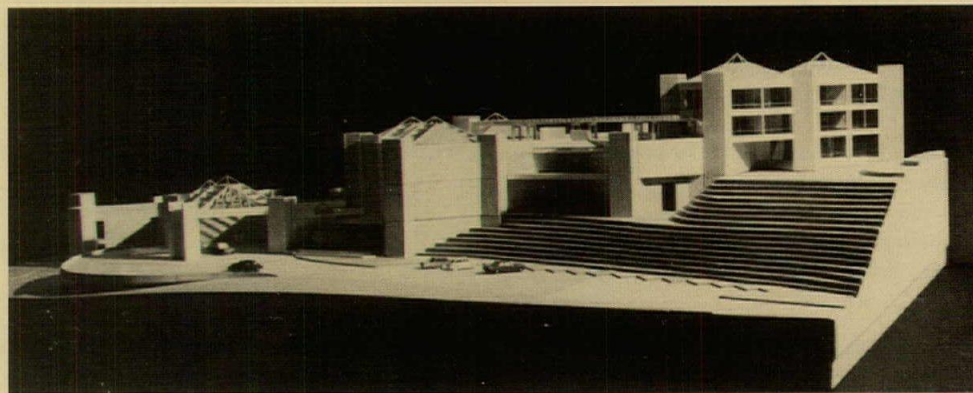


"Our work in Japan tries to bring an awareness of the public values of architecture and civic space to large-scale urban projects," says New York architect Victor Caliandro, who designed the Tenjin Galleria for the Fukuoka Municipal Government in associa-

tion with Fukuoka-based ANS Consultants Inc. Sandwiched between large-scale buildings in the heart of the city's government and commercial center, the Galleria will be used for public concerts and ceremonies when it is completed in 1994. ■

Malaysia

New Museum for Langkawi Island



Ooi Bok Kim

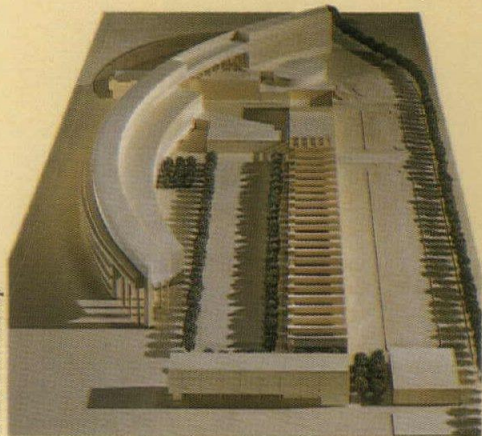
Commissioned by Ibrahim Hussein, one of Malaysia's foremost artists, a 48,000-sq-ft (4,400-sq-m) cultural facility will furnish local and international artists with exhibition and studio space in a forested setting. Taking full advantage of the dramatic site, the

architects, Jurubena Bertiga International Sdn. of Kuala Lumpur, staggered the museum over six levels and landscaped the site with trees and tropical plants indigenous to the island. The new building will be faced with Langkawi marble and metal panels. ■

Korea

Taejon Lab Goes High-Tech

James Steinkamp

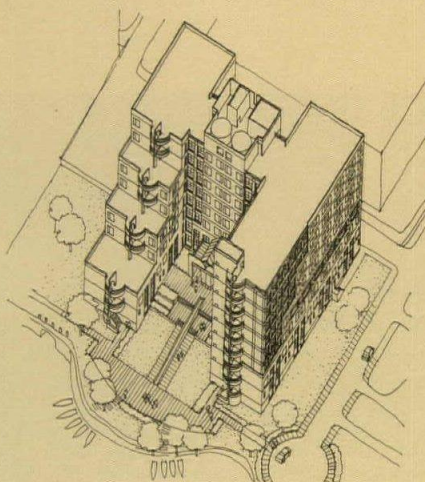


Distinguishing the Dongbu Central Research Laboratory from the 49 other research centers planned for Dae Duck Research Park in Taejon was no mean feat. So Perkins & Will and their associates Yesung Architects & Engineers of Seoul designed a sweeping curved building clad in metal panels and reflective glass that contains laboratories and offices for the manufacturing conglomerate Dongbu Group Ltd. Facing this structure is a bar building where product prototypes will be developed. Completion is expected in 1993. ■

Taiwan

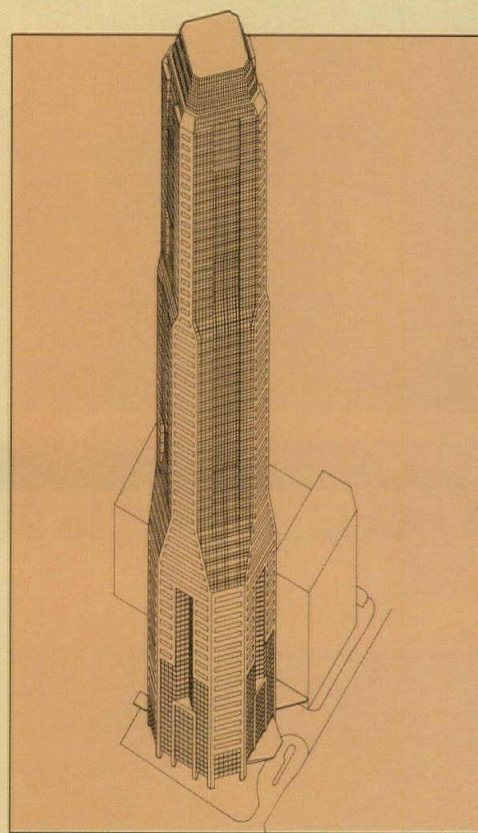
Separate but Equal

Uniting two academic departments under one roof was the main goal of Taipei architects J. J. Pan & Partners in their design for the 8-story Information Science and Electrical Engineering Building at National Ching Hwa University. Hemmed in on three sides by existing buildings, the H-shaped scheme provides the two departments with separate wings embracing a courtyard where students can congregate between classes and enjoy a view of one of the campus' two lakes. Completion of the \$12,550,000 facility is expected later this year. ■



Singapore

Republic Plaza on the Rise

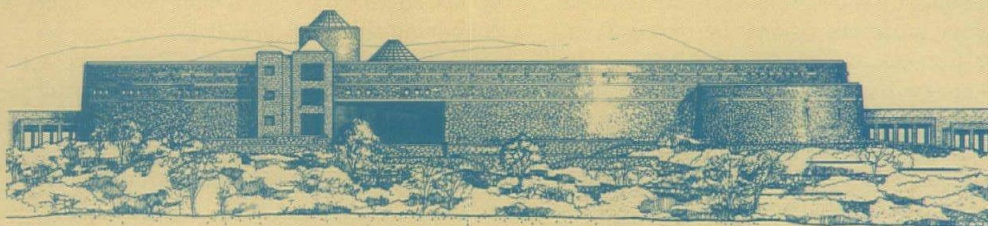


A 66-story skyscraper designed by Tokyo architect Kisho Kurokawa is scheduled to be completed in 1995. Located in Singapore's business district, the office tower will feature ocean views, while restaurants and shops bustle with activity below grade. ■

Korea

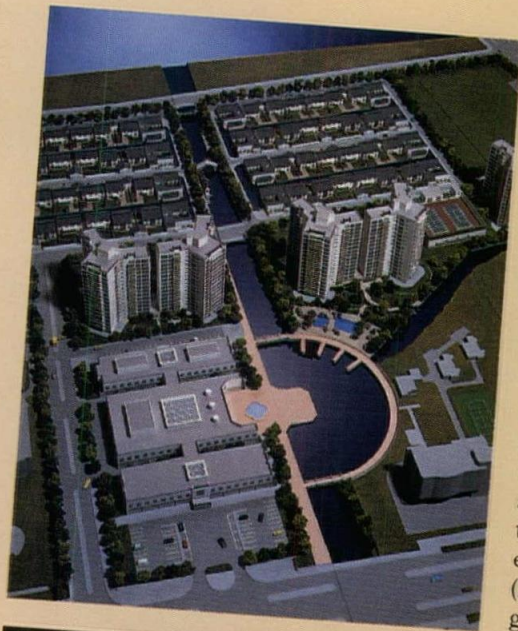
Space Group of Korea Designs Museum for Kyung-gi Province

Linking past and present, the architects took their cues for this competition-winning scheme from traditional Korean castles. The 106,000-sq-ft (10,000-sq-m) complex consists of an exterior courtyard enclosed by an office block and curved exhibition wing. ■



China

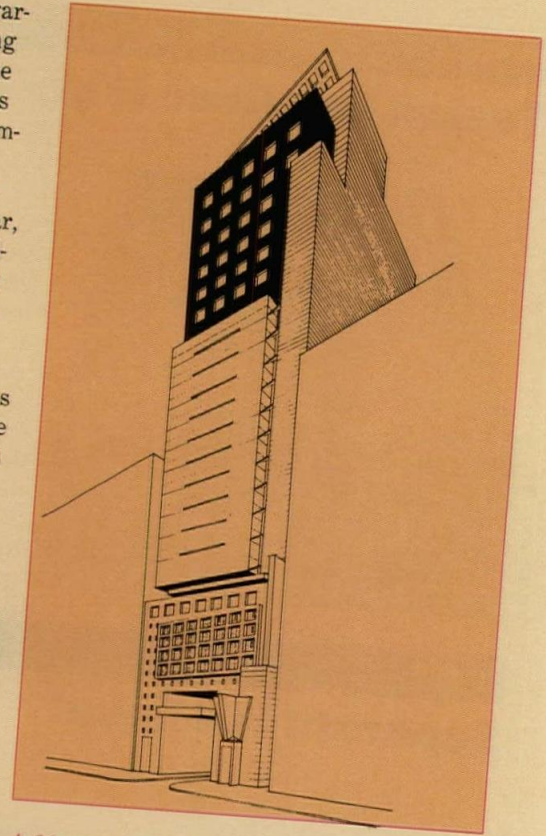
Suzhou Garden Blossoms In Jiangsu Province



Drawing on the picturesque canals and gardens of the city of Suzhou, the Hong Kong firm Wong Chen Associates along with the Suzhou Architectural Design Institute has designed Suzhou Garden, a \$50-million community with extensive waterways and landscaping. The 1.3-million-sq-ft (120,000-sq-m) project, which broke ground last year, is being developed by New Heritage Development of Hong Kong and Suzhou Garden Villas Development Management of China. The focus of the community will be a commercial/recreational center where the new canal system culminates in a marina. Just as traditional Chinese dwellings face south, the architects designed the Y-shaped apartment towers to ensure a southern exposure for each unit. Houses of about 2500 sq ft (225 sq m), serviced by private gardens and garages, line the edge of the site. ■

Hong Kong

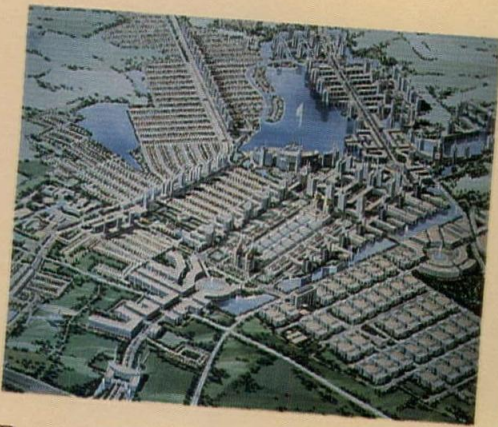
Queen's Road Central Gets Tower



A 26-story office building designed by Ho & Partners is being built for the Land Development Corporation. As the building emerges from its densely developed surroundings, its granite base changes into curtain wall crowned by a roof-top steel structure. ■

Thailand

A "Golden City" in 2010



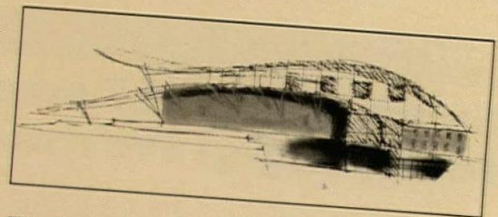
Forty years ago, when the Kanjanapas family began buying up rice paddies 12 miles from Bangkok, no one dreamed the land would be transformed one day into Muang Thong Thani, "The Golden City." But today, as Bangkok emerges as an Asian financial center, a utopian vision is becoming a reality. Commissioned by the Kanjanapas family company, Bangkok Land, the Australian firm Nation Fender Architects has masterplanned the 108-million-sq-ft (10-million-sq-m) development and designed the individual buildings. Organized around



an existing lake and major arterial roads, the new town, with a projected population of 500,000, will integrate residential, leisure, and commercial facilities. Factories, offices, and housing, as well as the 611,110-sq-ft (57,000-sq-m) Park Lane Center (above right) containing shopping and offices, are now being built by French contractor Bouygues-Thai. Looking for appropriate architectural expression, the designers adopted a contemporary language devoid of token cultural references but suited for mass production within a tight budget. ■

Taiwan

Pacific Crossing for S. F. Architects



Hired by Taiwan's Ministry of Education, Esherick Homsey Dodge and Davis of San Francisco is designing the Institute for Marine Biology in Kenting National Park. The 312,000-sq-ft (29,000-sq-m) project includes an aquarium and a research facility. ■

Singapore

New Campus for the Military

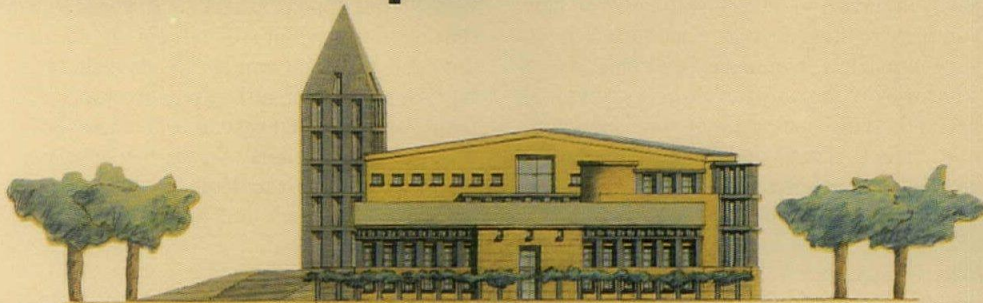


Singapore's Ministry of Defense wasn't afraid of thinking big when it commissioned Mitchell/Giurgola & Thorp (MGT) of Canberra and local firm DP Architects Pte. to design a new 30-building Armed Forces Training Institute. Integrating architectural form, materials, landscaping, and siting, the ambitious scheme strikes a balance between the intimacy of a residential community and the formality of a military installation—all against the backdrop of undulating hills and luxuriant vegetation. In addition to accommodations for officers and cadets, the 210-

acre (85-hectare) institute includes academic and athletic facilities, as well as military training fields, mustering/parade grounds, and a public exhibition hall. The driving force behind the building design was a recognition of Singapore's vernacular architecture and the tropical climatic extremes that affect comfort, building longevity, and maintenance. A separate commission for interiors was also awarded to MGT. Completion of the estimated \$175 million project now under construction is scheduled for the second half of 1994. ■

Japan

A Graves for Onjuku



"The town of Onjuku was looking for a high-profile Western architect to design a town hall to attract tourists and create a symbol for the city," explains Michael Graves's project architect Lorissa Kimm. Perched on a hilltop above the main street, the town hall

combines 42,000 sq ft (3,900 sq m) of government functions with a 6000-sq-ft (560-sq-m) health-care facility in a series of discrete structures set around a courtyard. Designed with Enomoto Architects, the \$13-million facility will be completed this spring. ■

Malaysia

New Tower Has Foreign Appeal

With multinational corporations courting Malaysia, the time was right for International Marine Carriers, a Hong Kong shipping company turned real-estate firm, to develop property in Kuala Lumpur. To attract international tenants, the client hired New York architects Tsao & McKown, well versed in Western office standards, to team up with local associates Daya Bina Akitek in designing a flagship project, the 660,000-sq-ft (61,000-sq-m) office complex, Menara IMC. Situated on an L-shaped plot in the city's commercial "Golden Triangle," the 30-story office tower has a curved facade that overlooks a nearby park. Complying with a government mandate, an 11-story parking structure abutting the main building will keep 500 cars off Kuala Lumpur's already congested streets. To maximize its marketing potential, the building can accommodate large anchor tenants as well as short-term leases for professionals who now camp out in hotel suites. From ground-floor retail spaces to roof-top supper club and sushi bar, the building is packed with modern amenities. Completion of the \$40 million development is expected this year. ■



Marketing: Building on the Accidental Client

A first client may drop from the sky, but marketing savvy and a few songs at the karaoke bar can lead to networks of opportunity.

By Judith Davidsen

Most U. S. architects who have cracked the Pacific Rim market seem to have had a stroke of luck. "The first-chance jobs are always bizarre," says Calvin Tsao of Tsao & McKown Architects in New York. "You can't think, 'Hmm, Asia Pacific, how can I market myself there?'"

RTKL Associates began working in Asia five years ago with a request for qualifications from a mystery client in Japan. (It turned out to be Seibu Saison Group—owner of hotels, retail chains, Jaguar agencies, and a credit-card company.) Only after landing the job did RTKL discover it wasn't the only architecture firm approached; it was just the only one curious enough to respond. Seibu Saison had been scouring the U. S. and Europe for mixed-use and retail architects, visiting sites, and researching magazines. Even before acknowledging RTKL's response, a company representative toured the firm's projects and interviewed clients.

Kohn Pedersen Fox breached the Pacific Rim with work for Japanese clients on an unbuilt U. S. project. That initial contact led to a job designing a Japan Rail mixed-use complex now under construction in Nagoya.

The route to the Pacific Rim appears equally circuitous for small firms. Adèle Naudé Santos and Associates, a firm with a core of four architects in San Diego and another four in Philadelphia, broke into the market through an invitation to collaborate on a mixed-use building in Japan.

"In Japan, if something is really pleasing," says Santos, "it ricochets off and becomes other things." Through this one job, she met other clients, built two buildings that prospective clients visited, and engaged in a grueling competition charette; the combination spun off networks of clients and building teams that led to invitations from Singapore to India.

Even Perkins & Will, which entered Hong Kong in the late 1960s and early 1970s, did not make the first approach. Now the firm is on its sixth contract in two years in Korea, where, according to president and chief operating officer James Stevenson, the

economy may be growing faster than in any other Asian nation.

Tsao & McKown started seven years ago by uttering the phrase "real estate" to Tsao's father when his investment group was looking for opportunities in Singapore. The firm accepted a vacation as payment for a property search and wound up offering to build and run an unsubsidized convention center on one-third of a perfect piece of government land in exchange for the right to invest in building hotels, five office buildings, and a shopping center on the rest of the parcel. The New York firm was a year old at the time and had hoped for nothing more than some small local projects.

"In Singapore, it's important to have a big name," says Tsao, who, on very cold feet, approached his old boss, I. M. Pei. "Pei said he was burnt out by the Bank of China," Tsao recalls. "He said, 'Calvin, you're a young man, you have to put in your time. Why don't you do all the legwork and the coordination and client relations, and we'll work together on design.' He did me a *great* favor." Shortly afterward, around the time Pei Cobb Freed & Partners was formed, I. M. Pei pulled out, but the investment consortium and the government kept Tsao & McKown.

"It's not the most professional story," Tsao concedes. "I can't say we started out slowly or built up great contacts. Other architects always ask for the secret and all I can say is, 'Go there and sit,' but you can't do that unless you have a job. Once you have the job, you have to stick around. Face-to-face is very important. Familiarity and trust are what they're looking for. So you open an office and other clients call on you. Then you take them to dinner and go to the karaoke bar and sing a few songs. The marketing thing is personal touch."

Where Japan has a long history of defining projects before the design process begins, development is a relatively new activity in the rest of Asia. "We offer lateral thinking," Tsao says. "In Singapore, we worked with the client to figure out the program and the fallback positions and the reasoning on rentals. One by one, you suggest valet parking,

health clubs, plazas, addresses with cachet for office buildings, standards for lobbies, and finishes. They don't know how to allot budget, so you nurse and coax. If you put them on the spot, they'll be totally contrary and in the end pull rank."

Barry Berkus, founder and president of the Berkus Group, an architecture firm based in Santa Barbara, Calif., says lecturing abroad has played a very strong role in attracting overseas developers. "You don't hear back for a year, and then boom!" Getting published in magazines and nurturing relationships with contractors and clients are also important marketing tools, says Berkus.

In the 1970s, the Berkus Group wrote the 2-by-4 framing code for Japan, and in the 1980s designed prototype houses for Japanese builders such as the Daiho Corporation. More recently, it was introduced into Malaysia by a large New Zealand general contractor, and has been solicited for projects in Indonesia and Sri Lanka. The firm is represented by a full-time staff architect in its Kuala Lumpur office and in Japan by LEX Associates, a client's agent (see sidebar).

Still bullish

Despite a shifting recession in some parts of the Pacific Rim, RTKL vice president for development Laurin McCracken reports that the rebalancing of the world economy is fostering a society of consumers and travelers. The region is filling up with towns and cities that did not appear in atlases 10 years ago or that have vastly outgrown their tiny location dots and fine-print names. Needs include high-rise offices; health care, education, transportation, and research facilities; hotels; and a particularly Western specialty, mixed-use complexes. Many architects find master-planning a valuable skill in attracting business.

Noriko Yamamoto, president of Global Link, an owner's representative in Marina del Rey, Calif., reports, "a huge shortage of housing in Thailand and a lack of know-how." She sees a demand for housing and elderly-care facilities in Japan, where an aging population is not only more affluent, but also more

interested in privacy and independence than previous generations.

"Relationships are very important to Koreans," says Perkins & Will's Stevenson. "We've been cultivating relationships more than specific projects. There's a long courtship, including visits from the prospective client, before you get to the presentation point. Once they trust you, all sorts of doors start to open. But up to then you're facing a very high wall." Where Japan treasures consensus, Koreans leave decision-making solely to the corporate chairman, a patriarchal figure who insures that a facility will convey a proper image and be comfortable for employees.

Cultural differences

Gene Kohn, a principal with Kohn Pedersen Fox, explains that the need to speak slowly and wait for translation can double or triple the time for presentations and conferences. Because presentations are made to larger groups than in the U. S., drawings and models must be at a larger scale. The American habit of churning out renderings and models may also strike an Asian client as a lack of concern for money.

As challenging as different customs and languages can be, the real culture shock occurs in countries like Indonesia and Malaysia, former Dutch and British colonies where the prevalence of English-speakers can lull Americans into ignoring enduring cultural differences. Even U. S. architects of Asian descent run into misunderstandings. Chinese-American Calvin Tsao says, "They look at me and assume I'm one of them and when I don't behave like them, they're in shock. That's why my Scots-Irish, all-American partner is in Singapore and I'm here in New York."

Asia values U. S. architects as problem-solvers, says Berkus. But he cautions: "Technology is blurring things. It bothers me horribly to get off airplanes and see glass boxes you could see anywhere." One of the challenges facing American architects working in Asia is balancing the need to provide foreign design services and expertise with respect for local building traditions and cultural differences. ■

Although the practice is not well publicized in the U. S., Asian—usually Japanese—companies often retain agents to find appropriate overseas designers.

Rich Hirayama, founder and co-owner of LEX Associates in Los Angeles, is an architect as well as an agent for Asian clients seeking U. S. architects. He translates not only language and business culture but also "how people feel about things." An enthusiastic promoter of California design, Hirayama makes adjustments for different building codes and climates. "Japan has six times more rain than California," he notes. "People worry about leaks."

For the 1998 winter Olympics in Nagano, Japan, Hirayama sees a demand for designers who practice in northern climes. He also reports that Japanese investment has been moving to China, for hotels and amusement parks. Vietnam is showing interest in resorts but not—yet—high-rise offices.

Representing owners only, he has one contract with the client and another with the architect. He bills the client for the architect's costs plus his firm's hourly fee, which ranges from 20 to 30 percent of the design fee. In flush times with big-city projects, representation accounts for 50 percent of LEX's income, but some clients recently eliminated the firm as a middleman and instead retained it directly for design.

Noriko Yamamoto, president of Global Link, Inc., in Marina del Rey, Calif., has spent 20 years finding U. S. and European architects, interior designers, and landscape architects for Japanese builders and developers, some of whom are now expanding into Southeast Asia. Playing matchmaker and coordinator serving both sides, Yamamoto and her staff spend 10 days a month overseas. Like LEX, Global Link bills only the client—10 to 25 percent of the design fee, depending on the degree of the firm's involvement.

Global Link has a Japanese licensed architect on staff to hurdle not only language but also technical and industry barriers. Yamamoto says an increasing number of Japanese architects are representing Americans with whom they attended school. *J. D.*

RTKL Associates, 1992 recipient of the President's "E" Award for Excellence in Exporting, bases its Pacific Rim marketing efforts on the three portfolios that it is best known for in the U. S.—retail, retail-driven mixed use, and hospitality. It then identifies countries where local architects lack experience in these building types. Once commissioned, the firm uses quality performance to allay client qualms; then, says vice president for development Laurin McCracken, "If you do it well, the assumption is you do everything well." This strategy quickly took RTKL beyond its U. S. reputation and into Pacific Rim residential, corporate headquarters, and train-station projects. Over the past five years, RTKL has seen its export revenues increase 15-fold and earned close to \$30 for every marketing dollar spent overseas.

Tactics employed by the firm include:

- Using CADD and faxes to create two working shifts, one in the U. S., one local.
- Indicating trust by letting the client provide the translator.
- Maintaining relationships with more than 40 architectural affiliates worldwide; with industry affiliates who have foreign ties; with international trade organizations; with advisers in brokerage and banking.
- Participating in professional organizations and trade shows worldwide.
- Offering seminars to foreign visitors in areas of the firm's expertise.
- Joining with an international law firm and an international real-estate broker in contributing to seminars for U. S. corporate real-estate executives.
- Translating promotional materials, magazines, and business cards into foreign languages; creating bilingual videos.
- Participating in information exchanges and relationship building that take place in bars after working hours, while keeping barroom informality out of formal meetings.
- Sending personally addressed cover letters with all marketing mailings.
- Utilizing services of the U. S. Department of Commerce both in the U. S. and throughout the Pacific Rim for statistical, cultural, and political information. Also using the agency to evaluate approaches from prospective clients and to help with introductions. *J. D.*

Specifying Products in the Pacific Rim

By Nancy Levinson

How do specification practices in Pacific Rim countries differ from such practices in the United States? To answer this question, RECORD recently interviewed some two dozen U. S. architects whose firms have worked in the Far East; we also spoke with architects in the region. While it is difficult to generalize about so large and diverse a group of countries, most interviewees agreed on the following points about specifications across the Pacific.

For their Pacific Rim projects, U. S. architects rely on local affiliates to write specifications. Specifications are always part of a larger process, and the first thing to note is that U. S. architects working in Asia are rarely hired to provide a full range of design services. Typically, they work as "design consultants" and produce a limited set of drawings (e. g., through design development) and an even more limited set of specifications (e. g., ranging from outline specs to information about particular products and assemblies). These documents are then used by an associated local firm which, as the architect of record, develops working drawings and final specifications.

U. S. architects working in the Far East stress the importance of close collaboration with local architects. "It's an essential part of the process," says Ryszard Szczypek, a partner with Tai Soo Kim Partners in Hartford, Conn., which has designed several institutional and commercial buildings in Korea. "How else could you manage, given the barriers of language and all the inevitable differences of practice?" For Chicago architect Jordan Mozer, who recently designed a restaurant in Japan, "the differences, not just professionally but culturally, are so enormous that I can't imagine handling a job without a local associate." In effect, joint venturing allows American architects to build in Asia without mastering all the intricacies of foreign process—of unfamiliar building methods, measurement systems, codes, and standards. And in most cases, it relieves them of the responsibility of writing full project specifications.

In many Pacific Rim countries, specifications are considerably briefer and less

detailed than in the U. S. The most striking difference, to those used to the hefty, multisection volumes produced here in the U. S., is the comparative brevity of Asian specifications. Asian architects prepare shorter specs largely because both they and contractors depend more on drawing than specifying. In many countries, in fact, the briefness of specifications is offset by the complexity of drawings. "They tend to draw more pieces of the building than we do and to do so in much greater detail," says San Francisco architect Burton Miller of ROMA Design Group, who in the mid-1980s worked on several of Skidmore, Owings & Merrill's Pacific Rim projects. "I've seen local working drawings that look like shop drawings."

Less formal bidding processes

Other differences in design and construction practices affect specifications. In some countries, for instance, bidding processes are less formal, and thus specs less important. "For one of our Jakarta projects [the Bank Niaga Headquarters], parts of the job were not bid, but negotiated," says William C. Louie, a principal with Kohn Pedersen Fox in New York. "Basically, they used what we would consider an outline spec, and supplemented it with contracts with individual subcontractors."

In many Pacific Rim nations, architects rely on widely accepted and understood building technologies and on intensive field supervision. It isn't unusual for Asian offices to be represented full-time in the field during construction, or for architects and contractors together to design building details. In Japan, for example, "contractors will draw details with excruciating preciseness," says Mitchell Green, director of Kaplan McLaughlin Diaz's international division.

Understanding local practices allows U. S. architects to modify their own specifications in useful ways. Although, as noted above, U. S. firms rarely write full specs for their Asian projects, they do usually prepare an abbreviated spec; and most have tailored these documents to accord with local technologies, expertise, standards, and products. In Indonesia, for instance, where labor is cheaper than materials, interior partitions of high-rise buildings are constructed not of

Although each country has its own practices, specifications in Asia tend to be briefer than those in the U. S. but supported by more drawings.

gypsum wallboard and metal studs, which would have to be imported, but of local brick and plaster. For their Jakarta projects, then, KPF knew that to supply a spec for partition walls would be pointless. "It wouldn't have made sense to write our usual spec for sheetrock and studs," notes Louie. On the other hand, since local contractors were not familiar with curtain-wall design, KPF wrote full specs for the building's facade.

Two kinds of specs

Many U. S. firms, in fact, take a similarly "strategic" approach, writing complete specs for those parts of a project they consider especially important and partial specs for back-of-the-building areas.

Specifying products for Pacific Rim projects is complicated by a variety of factors. Some countries prohibit importing locally available products, some impose high tariffs on foreign products, and most, in one way or another, encourage the use of local goods. Also, more often than not, researching local products is not easy.

Although general product catalogs are available in some Asian countries—e. g., Japan's two-volume Architects' Material catalog, and the British-produced Asian Building Products Catalogue—none is as comprehensive as Sweet's Catalogs, and, in any case, U. S. architects rarely use them. Indeed, most were unaware of them—an indication of both language barriers and reliance on local associates. (Increasingly, U. S. manufacturers are represented in the Pacific Rim by distributors and agents, which makes product selection somewhat more straightforward.)

Another complicating factor is the difficulty of comparing local with U. S. product standards. "Typically, we'd specify the use of the strictest standard, whether U. S. or local," says Peter Aaron of Pei Cobb Freed & Partners, who worked on the firm's Raffles City project in Singapore. "But it isn't easy to compare our standards, like ASTM or UL, to local ones because the methodologies of the testing agencies are often very different." Aaron noted that, in the end, local standards and products usually prevailed. "In Singapore, we tried to get UL-rated hol-

Specification Practices by Country

low-metal fire doors, but the code authorities required us to use doors that met local standards."

Like Pei Cobb Freed, U. S. architects usually find they have limited control over product selection for their overseas projects and try to accommodate this in various ways. Some offices write specs that combine prescriptive and performance criteria, using the former for products they consider crucial, the latter for more generic components. (Local codes also generally use both kinds of standards.)

Some U. S. firms specify both local and foreign products. When working in Taiwan, for example, Hellmuth Obata Kassabaum was concerned about the quality of local glass. "At the time, it didn't seem up to international standards, so we used it only for the interior," says Hans Hecker, project manager in the firm's St. Louis office. "On the other hand, for the building's exterior and for skylights, we specified foreign glass."

Using performance specs

For a project in Indonesia, SOM wrote specs that took into account the firm's unfamiliarity with local products. "We approached the job expecting there would be many substitutions of local for foreign products," says Miller. "However, rather than trying to educate ourselves about local industries, which would have been a formidable task, we structured a detailed performance spec as a standard—we listed products we were familiar with as criteria for equivalent local products."

If differences in construction practices affect specifications, so too does a significant *cultural* difference between the U. S. and Asia. Plainly put, Asian societies do not share our zeal for litigation. In much of the region, architects neither carry nor need liability insurance, and construction lawyers are almost unknown. "Lawsuits involving construction are very, very rare in Asia," says Tai Soo Kim, who then offers a historical perspective on U. S. specs. "Forty or 50 years ago, American offices didn't have to worry so much about lawsuits, so we didn't produce such long specs. Today we do because we know we have to protect ourselves." ■

Japan

Japanese specifications differ substantially from U. S. specs largely because construction practices in general differ. Japan's sophisticated construction industry is dominated by design/build firms, some of which have staffs of thousands that include architects, engineers, and construction crews. Typically, building owners and developers have close and long-standing relationships with one or several of these general contracting companies.

With design and construction often the job of a single firm—and with architects and contractors sharing, in San Francisco architect Piero Patri's words, "a mutual understanding about how you build"—Japanese specifications are notably succinct. According to KMD's Green, "Where we will describe a product in detail—methods of attachment, installation, and so on—they might simply say, for example, 'built-up roofing,' and leave it at that." Green added, however, that Japanese construction drawings are not brief. "Much of what we put in the spec, they put in the drawing."

Architect Rafael Pelli of Cesar Pelli & Associates, which is currently working on a hotel in Japan, notes another difference between U. S. and Japanese practice. "Japanese specs don't have to include every intention and alternative, because they do more design in the construction phase than we do."

Hong Kong, Singapore, Malaysia, Australia, Indonesia

Specification practices in these nations—except for Indonesia, all are members of the British Commonwealth—are made more complex by the use of the British system of quantity surveying. A quantity surveyor is an independent specialist who, working from architects' drawings, produces what is called a bill of quantities—a complete list, by system and product, of all quantities of materials required for a project. (In Green's apt description, a QS is "part accountant, part spec writer, and part cost estimator.") The bill of quantities complements the spec, which is prepared jointly by the QS and architect; and like the spec it is prepared at various project phases, becoming more precise as the design develops.

Beyond the unifying factor of the QS system, specification practices do vary among these nations. In Australia, Hong Kong, and Singapore, they resemble those of the West. "Very detailed and precise" is how Seattle architect William Karst, of The Callison Partnership, describes drawings and documents in Hong Kong and Singapore. And Romaldo Giurgola, now based in Canberra with Mitchell/Giurgola & Thorp Architects, has found "no major differences" between the U. S. and Australia in either the role or content of specs. In contrast, practices in Indonesia and Malaysia have been less influenced by Western ways.

Taiwan

U. S. architects describe specification practice in Taiwan as "evolving." "A decade ago, Taiwanese specs were very brief," says HOK's Hecker. As elsewhere in the region, the Taiwanese relied more on drawings and field supervision.

Today, after a decade of government policy encouraging technological exchange with the West, Taiwanese practices have changed. As Hecker notes, "Specs in Taiwan are becoming more elaborate than they used to be. Taiwanese practice in general is becoming more like U. S. practice."

Korea

Like Taiwan, Korea shares more similarities with U. S. practice than with either the Japanese design/build tradition or the British QS system. "Korean specs are not all that different from American specs, but they are briefer," says Donald Han, a Korean-born architect working for Perkins & Will. According to Tai Soo Kim, "Korean specs are less detailed—somewhat like an expanded general conditions document."

U. S. offices have found that local rather than foreign products are more apt to be used. "You can't spec an American product and be sure of getting it." Kim notes that Koreans favor custom-made over mass-manufactured products, and that they consult Sweet's for details. "Korean architects are very eager to get Sweet's, because there's no local version. But they don't usually spec the products themselves; they use them as a model for custom products." *N. L.*

Spanning the Region

Japan

Nation Wrestles with Recession

Population: 123.6 million

Gross national product: \$3.3 trillion

Registered architects: 240,000 (includes architectural engineers and inactive registrants)

Economic outlook: The Japanese economy and the construction sector in particular have cooled tremendously from the overheated pace of the late 1980s. Currently, private-sector construction is declining from last year's level and the bottom is still not in sight. But the government is pushing public-works spending as a means of restarting the economy and has lowered interest rates to encourage more spending in the private sector. The projected annual growth for the fiscal year ending March 31 is 1.6 percent and the official forecast for the next year's growth is 3.3 percent. Private analysts consider the latter figure to be optimistic and predict growth for fiscal year 1993 will be between 2.7 and 2.8 percent, much below the 1991 rate of 4.5 percent. Optimists see a recovery beginning this summer, while pessimists say it won't happen until winter. The Ministry of Construction projects the value of building construction in the current fiscal year to be \$410 billion, with \$199 billion of that going for housing and \$211 in other building work. According to the ministry, the total construction market for this year will be \$662 billion. These figures were published before the severity of the current slowdown became clear, but the ministry claims that increased public-works spending will make up for drops in private-building activity. Private analysts doubt this will prove true. Actual domestic orders received by the 57 members of the Japan Federation of Construction Contractors in the April-through-November 1992 period fell 14.5 percent from the same period the previous year; the drop in nonresidential private-sector contracts was 26.4 percent. In 1991 housing starts totaled 1.3 million, a drastic change after four consecutive years of more than 1.6 million starts. Housing, though, has picked up in 1992 due to lower interest rates and starts

are expected to rise to 1.43 million. The Housing Loan Corporation is predicting a 1 percent increase in housing starts to 1.44 million, while a separate government-affiliated body forecasts a 1.2 percent decline. In the Structural Impediment Initiative talks with the U. S. government, the Japanese government agreed to target \$3.3 trillion for public-works spending in the 1990s. The Japanese also promised to open the construction market to American companies, including architecture firms. A total of 30 major public works and public-private projects have been earmarked for special procedures to ease the entry of foreign firms.

Language: Although bilingual architects and secretaries can be found and larger clients usually have competent English speakers in their organizations, Japanese is used for negotiations and contracts.

Licensing: Licensing is broken down into three categories: first-class, second-class, and wooden-building architects. In simple terms, work on anything larger than a single-family house or small commercial building requires a first-class license. Applicants for a first-class license must pass an examination given by the Ministry of Construction. Tests may be waived for architects registered abroad, but this is usually done only for internationally recognized practitioners. (For registration information, contact the Building Guidance Division of the Housing Bureau, the Ministry of Construction.) Foreign architects usually sidestep registration requirements by associating with a local firm. But foreign firms or individuals offering consulting services of any kind related to construction must register with the ministry of construction; this merely involves filing the proper documents giving the firm's background. (For this registration, contact the Construction Promotion Division of the Economics Affairs Bureau, Ministry of Construction.)

Special business practices: Virtually all construction documents use metric units. The small exception is in housing, where a

few builders have adopted feet and inches because they import 4-foot sections of plywood from the U. S. Typically, though, residential construction dimensions are based on the traditional tatami mat. Most construction is done by large design-build companies that have their own in-house architects, interior designers, and engineers.

Technical sophistication/workmanship: In brief, local construction and expertise is equal to the best U. S. practices.

Architectural publications: *JA (The Japan Architect)*, a quarterly magazine written in both English and Japanese that is taken from *Shinkenchiku*, the major monthly architectural publication in Japan. *A+U (Architecture + Urbanism)*, a bilingual monthly magazine that focuses on work by foreign architects. *SD (Space Design)*, a monthly journal in both English and Japanese. *GA (Global Architecture)*, a series of bilingual journals and monographs.

Major construction projects: 1. New Chitose Airport Expansion, one of 30 projects designated for special procedures to encourage foreign participation. 2. Second National Diet Library in Kansai, another project targeted for foreign participation. 3. Rinku Town in Osaka Prefecture, a new city on reclaimed land near Kansai International Airport. 4. Nagano 1998 Winter Olympics, a \$1-billion set of buildings with \$2 billion of infrastructure work.

Key contacts: Japan Institute of Architects, Kenchikuka Kaikan, 3-16 Jingumae 2-chome, Shibuya-ku, Tokyo 150, Tel: 81/3/3408-7125, Fax: 81/3/3408-7129. Architectural Association of Japan, Osaka Eki-mae Bldg. No. 3, 1-3-2100 Umeda 1-chome, Kita-ku, Osaka 530, Tel: 81/6/348-0635. Office of International Major Projects, Japan Desk, U. S. Department of Commerce, 14th & Constitution Ave., N. W., Washington, D. C. 20230, Tel: 202/377-4877. Japan External Trade Organization, 1221 Avenue of the Americas, New York, N.Y. 10020, Tel: 212/997-0400. *Dennis Normile, Japan correspondent for Engineering News-Record*

Because economic conditions and business practices vary greatly, RECORD has assembled profiles of eleven Pacific Rim nations. These reports offer vital information on building activity and architectural practice in this part of the world.

Korea

Moderate Growth Maintained

Population: 43.7 million

Gross national product: \$280.8 billion (1991)

Registered architects: 3,943

Economic outlook: After five years of growing at nearly 10 percent annually, the economy expanded by a more moderate 6 percent in 1992. With the basic structure of the economy remaining healthy, most forecasters predict a period of 5 or 6 percent growth for the next couple of years. One positive aspect of this less hectic expansion is a reduction of inflation to 4 or 5 percent a year. The government is very active in construction and has been busy sponsoring residential development through design/build projects. With the government spending \$16 billion a year on building housing, though, demand for new residential construction will probably slow down soon. The

new thrust will probably be in infrastructure development, including the world's largest airport near Seoul and a new high-speed rail line from Seoul to Pusan.

Language: Although executives and professionals often attend American universities and speak some English, knowing Korean is a big advantage.

Licensing: Legally, foreign firms are not allowed to open offices in Korea. But they can be hired as design associates by Korean firms, who must be the architects of record.

Special business practices: Standard contract forms, such as those written by the AIA, do not exist in Korea, causing problems for foreign firms. While most Korean architectural firms are small, the 15 largest industrial conglomerates are all affiliated with large A/E firms, who design most projects for these huge companies.

Technical sophistication/workmanship:

Although in general well-trained, Korean architecture firms lack expertise in building types such as hospitals, R&D, and airports. Local construction companies have much experience doing work in Southeast Asia and the Middle East and are known for their high-level of workmanship.

Architectural publications: *A&E* (architecture and environment); *Plus* (architecture and interior design); *Magazine for Architectural Culture*; *Space*

Major construction projects: 1. Yung Chung Dong International Airport near Seoul. 2. High-speed rail line from Seoul to Pusan. 3. Seoul City Hall, which will probably be an international design competition.

Key contact: Korean Institute of Registered Architects, 1603-55, Seocho-Dong, Seocho-Gu, Seoul. *In Seuk Kim, architect*

Taiwan

Economy Remains Strong

Population: 20.7 million

Gross national product: \$210.5 billion

Registered architects: 2,020

Economic outlook: While Japan and some other Asian countries are beginning to feel the effects of the recession that has gripped America and Europe for several years, Taiwan's economy is still robust. According to government statistics, economic growth for the first half of 1992 reached 6.7 percent and is expected to be between 6.4 and 6.7 percent for the year as a whole. Inflation remains stable at 4 percent a year and unemployment is less than 2 percent. Such figures reflect the country's success in transforming itself from a farm economy to a world export powerhouse in just a few decades. To maintain growth while much of the West and Japan wrestle with recession, the Taiwan government has initiated a \$303-billion Six-Year

National Development Plan that will upgrade the island's infrastructure and public facilities. Begun in 1991, the massive public-works program includes 775 projects, including rapid-transit, highway, and housing construction. American architects in Taiwan say getting commissions is still difficult and requires patience.

Language: The official language is Mandarin Chinese. Although it is possible to do business without speaking Mandarin, knowing the language can be a big advantage.

Registration: For information on registration, contact: Ministry of Examination, Examination Yuan, 1 Shihyuan Rd., Wenshan, Taipei. Tel: 886/2/937-1342.

Special business practices: Almost all foreign architects working in Taiwan associate with local firms. Some local architects like to bring in well-known designers from abroad

to help them win jobs and some of the big government-sponsored projects require foreign expertise and consultants. Because personal contacts and relationships are so important, many architects have agents.

Major construction projects: 1. Taipei rapid transit system, a 55-mile system being built over 10 years. 2. High-speed rail line linking the capital, Taipei, in the north to Kaohsiung, 215 miles to the south. 3. Rapid transit system in Kaohsiung.

Key contacts: Architectural Institute of the Republic of China, 9th floor, No. 396, Keelung Rd., Section 1, Taipei. Tel: 886/2/758-9959, Fax: 886/2/729-4311. American Institute in Taiwan, Commercial Section, Rm. 3207, 32nd floor, 333 Keelung Rd., Sec. 1, Taipei. Tel: 886/2/720-1550. Fax: 886/2/757-7162. *Russell Flannery, Taipei correspondent for Bloomberg Business News*

Indonesia

Housing Seen as Bright Spot

Population: 178 million

Gross domestic product: \$125.6 billion

Registered architects: 12,000

Economic outlook: Since deregulation policies were enacted by the government in 1983, Indonesia has diversified its economy away from a reliance on petroleum exports and has experienced GDP growth of 6 percent or more a year. As a result, the country is poised to join the ranks of newly industrialized nations in Asia. With a large population, freely convertible currency, stable government, and a wealth of natural resources, Indonesia is attractive to foreign investors. Problems, though, include high domestic interest rates and needed infrastructure improvements in telecommunications, transportation, and power. In 1992 the government adopted a tight monetary policy to reduce foreign borrowing. This move effectively ended the short real-estate boom of 1989-1990. As in the U. S., a number of private banks are close to insolvency due to bad real-estate loans. The brightest spot in the construction market is the residential sector, especially high-rise apartments in the capital city of Jakarta (10 million people) and the nation's second largest city, Surabaya (4.5 million). With high interest rates making single-family houses too expensive for many people, demand is growing for multifamily housing. On the other hand, the office market is currently glutted and occupancy rates have fallen to 85 percent this year from 98 percent in 1990. The institutional sector is also facing leaner times, as the government has shelved plans for a number of major construction projects in the face of high debt loads. The outlook for hotel development, though, is good—particularly in Surabaya, which has tripled its office space since 1989 and has become the commercial gateway to eastern parts of the country. Tourist hotels are also planned for the islands of Java, Sumatra, and Sulawesi. Large Indonesian developers are now concentrating on ambitious mixed-use projects in suburban areas outside Jakarta that have

been opened up by new toll roads, bringing town planning to Indonesia for the first time.

Language: English is the international language of business and government and is widely spoken by educated Indonesians as a second language. Some basic knowledge of the national language—bahasa Indonesia—is helpful when traveling outside the major metropolitan areas. Although 85 percent of the population is Muslim, Indonesia is a secular state that officially recognizes the freedom of religion and ethnic diversity.

Licensing: Although foreign firms cannot establish wholly owned subsidiaries in Indonesia, various types of joint ventures with local partners are common. Foreign architects may open representative offices to promote their firms and work on particular projects. The American Indonesian Chamber of Commerce in New York City is a good source of information on setting up business in the country.

Workmanship: Local expertise in the construction industry has been positively affected by the entry of several Japanese and Korean firms. The Engineering Institute in Bandung, established during Dutch colonial rule, has an international faculty and an excellent reputation.

Architectural publications: *Arsitektur Indonesia*, published by the Indonesian Institute of Architects, Jakarta. Fax: 62/21 799-4648.

Key contacts: Indonesian Architects Association, Jl. Raya Pasar Minggu, Km. 16 Jakarta Selatan. Tel: 62/21/799-4648. American Indonesian Chamber of Commerce, 711 Third Ave., 17th floor, New York, N. Y. 10017. Tel: 212/687-4505, Fax: 212/867-9882. 3. Association of Indonesian Real Estate Companies, Jl. Pejambon 7, Jakarta Pusat. Tel: 62/21/380-5040/5041. Association of Indonesian National Construction Companies, PPIA Bld., Gr. Fl., Jl. Letjen M. T. Haryono 49, Jakarta Selatan. Tel: 62/21/799-4866.

Wayne Forrest, director of the American Indonesian Chamber of Commerce

Philippines

Reforms Made

Population: 62 million

Gross domestic product: \$44.35 billion

Registered architects: 11,265

Economic outlook: New president Fidel Ramos inherits an economy on its way to recovery. Inflation has been moderate (9.5 percent in first quarter of 1992). Structural reforms dating from the end of President Aquino's term have yet to pay off, but could do so, provided the new administration pushes them through. Reforms aimed at attracting foreign investors include a foreign-investment law, passed in 1991, tariff cuts, greater privatization, and moves to amend foreign-exchange regulations to ease repatriation of foreign companies' profits. The new law allows foreigners to own up to 100 percent of export-oriented enterprises, up from 40 percent.

Language: English is the language of legal and commercial transactions, including all architectural documents.

Licensing: Filipino citizens are licensed by the Board of Examination. A professional degree is required, plus a two-year apprenticeship. Foreign architects may not practice without passing the Board's examination. To start a branch office, principals must be licensed in the Philippines. Foreign architectural firms must have a local representative who is a citizen. A Filipino architect must sign all documents.

Workmanship: Quality varies, but contractors generally seek to live up to internationally accepted standards.

Architectural publications: United Architects of the Philippines (UAP) *Post and Journal*.

Key contacts: United Architects of the Philippines, Upper 59 Basement, Cultural Center of the Philippines, Roxas Boulevard, Metro Manila, Tel: 63/2/832-3711 or 63/2/832-1125, ext. 267. Contact: Richeto C. Alcorido, 63/2/722-4088. College of Architecture, University of Philippines. Contact: Dean Honardo Fernandez, 63/2/98-24-71, ext. 5161. *Teresa Albor, Philippine correspondent for Business Week.*

Malaysia

Building Keeps Economy Hot

Population: 18.6 million

Gross national product: \$51.492 billion

Registered architects: 732

Economic outlook: The Malaysian economy is the fastest growing in the Asia Pacific region. Since surging out of recession in 1988, the economy has grown at an average annual rate of over 8 percent. Growth in 1992 was 8.5 percent and is expected to moderate somewhat in 1993 and 1994. The government, though, is confident that expansion will continue through 1995 at an annual rate of 7.5 percent or more. Leading this economic explosion is the construction sector, which grew 15 percent in 1991 and 1992. Construction is expected to grow at a double-digit rate in 1993 for the fourth year in a row. A negative side-effect of this rapid development is shortages of many building materials and construction workers. With

one of the most open economies in the developing world, Malaysia remains attractive to foreign corporations. A stable political situation has helped the same party remain in power since independence in 1957.

Language: English is officially the second language, but is spoken so widely that few foreigners learn Malay, Chinese, or Tamil.

Licensing: Foreign architects can only work as partners in projects where local firms are the architects-of-record.

Special business practices: Malaysia is a former British colony, so it's not surprising that most local architects are trained in the U. K. or Australia and work with quantity surveyors. Designs are usually submitted in both metric and Imperial measures.

Technical sophistication/workmanship: Most large architectural firms are computerized and the leading building companies can

handle sophisticated designs. Foreign construction companies are also available to take on projects requiring special expertise.

Architectural publications: *Majalah Arkitek*, published by the Malaysian Institute of Architects.

Major construction projects: 1. Kuala Lumpur City Center, a large downtown redevelopment with \$3-billion worth of office and commercial space. 2. Kuala Lumpur New International Airport, an \$8-billion project that should begin construction in 1994 and be completed in 1997.

Key contacts: Malaysian Institute of Architects, 4-6 Jalan Tangsi, 50480 Kuala Lumpur, Malaysia. Tel: 603/293-4182. U. S. Embassy, Paul Walters, Commercial Consul, 376 Jalan Tun Razak, 50400 Kuala Lumpur, Malaysia. Tel: 603/248-9011, Fax: 603/243-2450.

Sid Astbury, freelance journalist

Thailand

Fundamentals Remain Strong

Population: 58.1 million

Gross national product: \$93.25 billion

Registered architects: 4,000

Economic outlook: GNP is expected to grow by 7 percent in 1992. Following a construction boom in the late 1980s, the commercial and industrial sectors of the real estate market are now entering a period of oversupply that may last until 1995-96. A military coup in February 1991 and political violence in May 1992 reduced the flow of foreign investment. The economy as a whole, though, is seen as having strong fundamentals. Bright spots include golf-course and middle-income residential construction. Commercial building is estimated to reach \$330.4 million in 1992 and increase by 10 percent annually for the next three years. Hotel construction should grow only 5 percent a year for the next three years.

Language: English is generally spoken in government and business circles, but among the general population and construction workers only Thai is spoken.

Licensing: Thai architects are registered by the Office of the Board of Control of the Engineering and Architectural Professions. Foreign architects are not allowed to practice in Thailand except as consultants in joint-venture projects with local firms, on Thai-government projects in which foreign expertise is needed, and on projects financed by foreign governments.

Workmanship: Although technical expertise still lags behind the West, it is improving. Workmanship standards, on the other hand, are very high.

Architectural publications: *Warasan Asaa*, a quarterly Thai-language journal of the Association of Siamese Architects.

Major construction projects: 1. Muang Thong Thani, a \$3.1-billion new town being developed by Bangkok Land outside of Bangkok. 2. The Second Bangkok International Airport at Nong Ngu Hao, estimated to cost \$2.6 billion.

Key contacts: Herbert A. Cochran, counselor for commercial affairs, American Embassy, Diethelm Towers, Tower A 3rd Floor, 93/1 Wireless Rd, Bangkok 10330. Tel: 662/255-4365-7. Fax: 662/255-2915. Association of Siamese Architects, 248/1 Soi Japanese School, Rama 9 Rd., Bangkok, 10310. Tel: 662/319-6555. Fax: 662/319-6419. Office of the Board of Control of the Engineering and Architectural Profession, Office of the Permanent Secretary, Ministry of Interior, Adsang Rd., Bangkok, 10200. Tel: 662/281-1421 and 281-1466. *Tomas Larsson, freelance journalist*

Australia/New Zealand

Housing Helps Weak Economies

Population: 16.5 million/3.4 million

Gross domestic product: \$197 billion/\$41.2 billion (1990)

Registered architects: 9,000/NA

Economic outlook: Australia's economy was expected to grow by a modest 3 percent this year as the nation recovers from a deep recession. The only bright light is housing construction, which is benefiting from mortgage rates of 8 percent, down from 16 percent two years ago. New Zealand's construction industry, which has likewise been hit by recession, is not expected to recover much for another four years, with the residential sector doing better than the commercial and even institutional sectors. At its peak, these two types accounted for 70 percent of the market; they are now about 30 percent.

Language: English is the official language

in both countries, with Maori a not widely used secondary official language in New Zealand.

Licensing: In Australia, if an overseas applicant's qualifications are approved by the RAlA, he/she can sit for the licensing exam after one year of local experience. Persons can work without meeting these requirements but may not call themselves architects. To establish an office, at least a third of the partners must be registered in Australia. In New Zealand similar rules apply. New Zealand recognizes qualification by other Commonwealth countries, but not automatically the NCARB certificate. There is no restriction on opening an office, other than use of the title "architect."

Special business practices: Both nations use quantity surveyors who make up bills of materials before bidding. Design/build is on

the rise, as is fee bidding, especially in the public sector. Reform is underway in Australia to undo wasteful construction practices. New Zealand's seismic regulations are among the world's toughest.

Architectural publications: Australia: *Architect*, *Architectural Review*, *Architecture Australia*, *Architectural Sciences Review*. New Zealand: *Architecture New Zealand*.

Contacts: Royal Australian Institute of Architects (RAIA), 3 Manning Street, Potts Point, NSW 2011. Tel: 61/2/356-2955. Fax: 61/2/368-1164. Foreign Investment Review Board, The Treasury, Canberra ACT 2600. Tel: 61/6/263-3866. Fax: 61/6/273/2614. New Zealand Institute of Architects, P. O. Box 438, Wellington, NZ. New Zealand Trade Development Board, P. O. Box 10-341, Wellington, NZ. *Stephen Hutcheon (Australia) and David Barber (New Zealand)*

Singapore

Office Glut Slows Economy

Population: 3.1 million

Gross national product: \$42.16 billion

Registered architects: 940 (local and foreign)

Economic outlook: The economy was targeted to grow at a 4.5 percent rate during 1992. In the construction industry, a record \$6.2 billion in contracts was to be awarded. Local developers feel there will be a glut of office space over the next two years. In 1992, 15 new office blocks were completed but leasing activity has been slow. On the residential scene, the Housing & Development Board expects to build some 90,000 units through 1996, and the government plans to spend an annual \$9.1 to \$12.2 billion over the next 15 years to upgrade older satellite towns. There's also an urgent need to upgrade educational and healthcare facilities, with approximately \$609 million to be

spent in the current year, mostly by the public sector. Some 5 to 6 million square feet of retail space will come on line by 1996.

Language: Singapore is peopled by Chinese (78 percent of the population), Malays (14 percent), Indians (7 percent), and mixed ethnic groups (1 percent). English is the official language.

Licensing: To be registered, an architect must possess an architectural degree from the local university or any other degree approved by the minister in charge, after consultation with the Board of Architects. In all other cases, candidates must satisfy the board that he/she is otherwise qualified, and must pass an exam. In addition, architects in practice must obtain a "practicing certificate" from the board.

Workmanship: Workmanship standards are at the level of Japan, the United States,

and Europe, according to Chia Kok Leong, immediate past president of the Singapore Institute of Architects.

Major construction projects: 1. Upgrading of Changi Airport Terminal One, a 10-year-old facility. 2. Expansion of Terminal Two. 3. Jurong Town, a new development just being started, which will be built on land reclaimed from the sea.

Contacts: Singapore Institute of Architects, 20 Orchard Road #02-100, Singapore 0923. Tel: 65/338-8977. Fax: 65/336-8707. Real Estate Developers Association of Singapore, 190 Clemenceau Avenue, #07-01, Singapore 0923. Tel: 65/336-6655. Fax: 65/337-0518. Singapore Contractors Association, 1 Bukit Merah Lane 2, Singapore 0315, Tel: 65/278-9577, Fax: 65/273-3977.

Joanna How, freelance writer in Singapore specializing in building.

Investors Play Wait-and-See

Population: 5.8 million

Gross domestic product: \$84,762 billion (1992 est.)

Registered architects: 900

Economic outlook: The economy has been hit by the global downturn and high (12 percent) inflation. There's a surplus of commercial space, but demand continues for small-to-medium-sized housing units, with some 70,000 units built per year, one half private, one half subsidized. High land values in urban areas make land costs two-thirds of project costs. All land is owned by the government, which sells or grants leasehold interests. In line with the Sino-British agreement for the 1997 transfer of power to China, new land granted cannot exceed 124 acres (50 hectares) per year, nor a 2047 expiration date. Government auctions leases to the highest acceptable bidder. Land use is controlled by a document known as HKPSG (Hong Kong Planning Standards and Guidelines). Professionals and business people play wait-and-see as they look to 1997; they prefer to stay, but they retain their overseas passports. Official democratization policy is offset by the desire of business not to offend the incoming masters; these now seek to approve all new pre-1997 government contracts. Vast development is under way in Shen Zhen, a new city on the Chinese side of the border. Some 10,000 new businesses are said to have sprung up there in recent years, with a Chinese workforce but foreign, mostly Hong Kong, ownership. A similar scale of development is also underway in the South Chinese province of Guang Dong, where there is a high level of Hong Kong investment and ownership. Hong Kong and China are now each other's largest trading partner. Total value of so-called visible trade between the two countries came to \$65 billion in 1991, a jump of 27 percent over the previous year.

Language: Cantonese and English. Professional and business people speak English; otherwise English is less used than tourist brochures tell you.

Licensing: Licensing is by an architectural registration board which requires "approved professional qualifications," residence, and one year's professional experience in Hong Kong. The Hong Kong Institute of Architects had an ordinance passed that precludes anyone from using the title "architect" without a license. On the other hand, owners are permitted to hire engineers to design buildings.

Special business practices: Every firm is advised, but not required, to retain an Authorized Person when guiding projects through the building department. About half the AP's—individuals knowledgeable about codes, standards, and government regulations—are architects. As in most Commonwealth countries, quantity surveyors are required to prepare bills of materials and labor on which bids are based. Architect fees typically are a low 2.5 to 3 percent of construction cost. This includes consultant fees. Some foreign firms have arranged to be paid on a fee-per-square-foot basis. Big developers use their own architect agreements. The Architectural Services Department is the official government client as well as Hong Kong's largest employer of architects (120), followed by the housing department with 70. Ten firms employ 50 or more architects. ASD has an Architect and Associate Consultant Selection Board that approves selection after names are submitted by its units. There's a movement to go to design-build. Architect agreements typically call for post-occupancy services. Cost indexes are published by ASD and by Levett & Bailey.

Workmanship: The general quality of workmanship is average, due to the recent glut of construction and the volume of untrained imported labor. One exception is the carpentry trades.

Architectural publications: *Building Journal*, monthly. Trend Publishing Ltd., Hong Kong. Fax: 852/832-9298. *Pace Interior Architecture*, monthly. Pace Publishing Ltd., Hong Kong.

Major construction projects: 1. Chek Lap Kok airport, an intermodal facility to be built on reclaimed land west of Hong Kong island. \$4.4 billion (1991 prices) in two phases, to be completed in 1997 and 2040. Designed by Foster/British Airport Authority/Mott McDonald consortium. 2. United Kingdom Consulate, \$30 million (est.). Terry Farrell, architect. 3. Various mixed-use projects by Swire Properties, the largest and oldest developer in the territory. 4. Tin Shui Wai, residential development for 60,000 in 58 tower blocks.

Key contacts: Hong Kong Trade Development Council, 112 38th Floor, Office Tower, Convention Plaza, 1 Harbour Road, Wanchai, Hong Kong. Tel: 852/584-4333. Fax: 852/824-0249. Trade Inquiry Section. Tel: 852/584-4261.


Hong Kong Institute of Architects, 15th floor, Success Commercial Building, 245-251 Hennessy Road, Wanchai, Hong Kong. Tel: 852/511-6323. Contact registrar Ms. Rita Cheung.

Hong Kong Economic and Trade offices: New York: 680 Fifth Avenue, 22nd floor, New York, N. Y. 10019. Tel: 212/265-7232. Fax: 212/974-3209.

San Francisco: 222 Kearny Street, Suite 402, San Francisco, Calif. 94108. Tel: 415/956-4560. Fax: 415/421-0646.

Chicago: 333 North Michigan Ave., Suite 2028, Chicago, Ill. 60601. Tel: 312/776-4515. Fax: 312/726-2441.

Los Angeles: Los Angeles World Trade Center, 350 South Figueroa Street, Suite 282, Los Angeles, Calif. 90071-1386. Tel: 213/622-3194. Fax: 213/613-1490. *Stephen Kliment*



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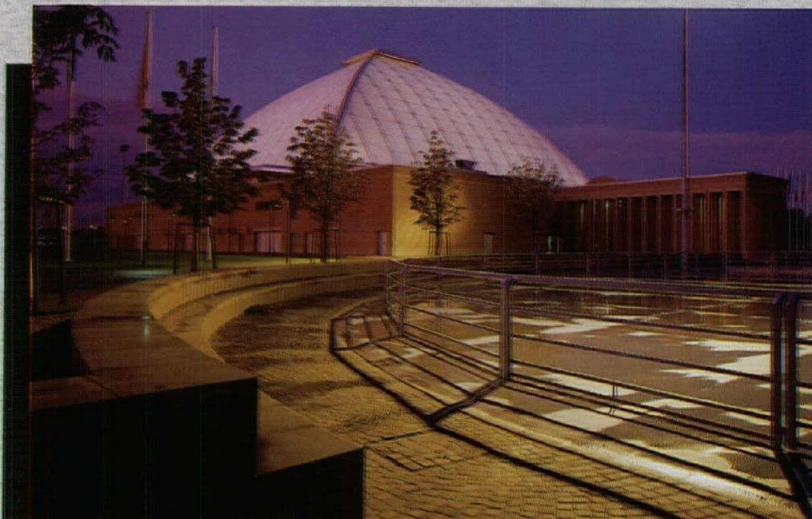
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Top: Olympic Stadium, Rome, Italy. Architect: Italprogetti S.r.l.
Roof Consultant: Studio Technico Majowiecki. Middle: Florida Suncoast Dome, St. Petersburg, Florida. Architect: Hellmuth, Obata & Kassabaum, Inc. Engineer: Geiger/KKBNA. Bottom: Ravenna Sports Palace, Ravenna, Italy. General Contractor: Flammini Engineering. Roof Consultant: Studio Technico Majowiecki.

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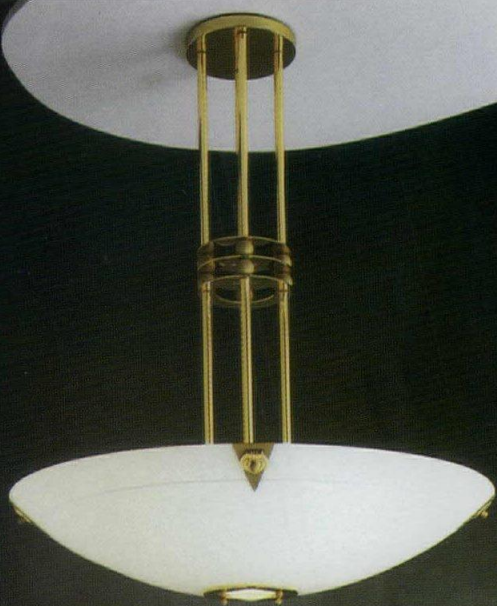


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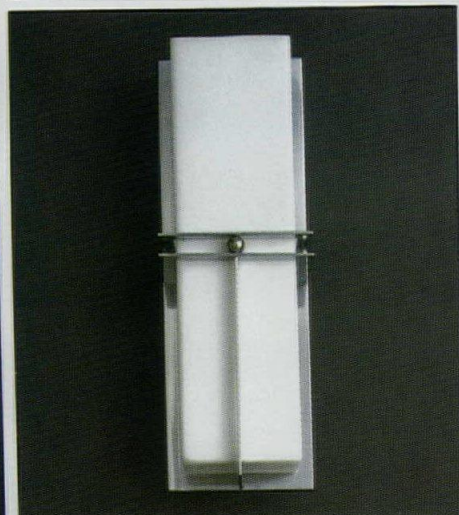
Ashley Uplight with Downlight 22", 32" & 48" wide



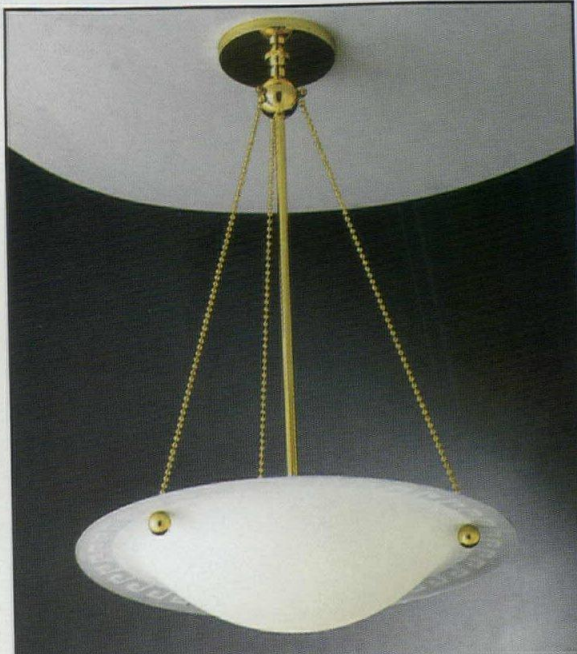
Astor Flush Mount 11"Hx13"W & 16"Hx20"W



Jeffrey C. Lantern 25"H x 6"W



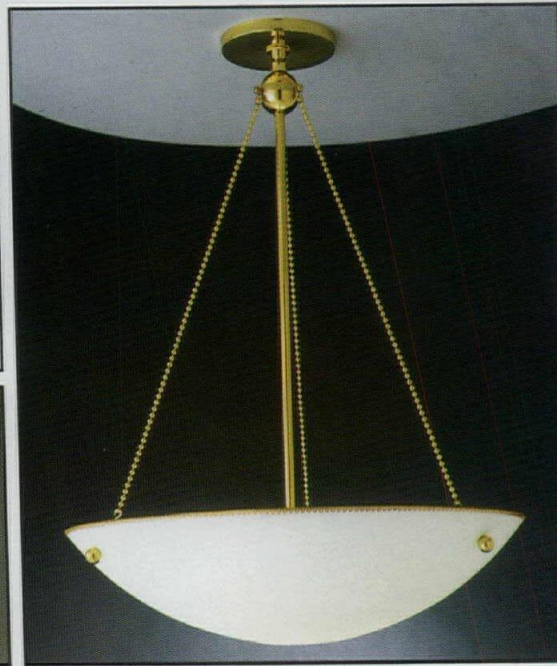
Theodora Sconce 15"H x 5"W



Lara Uplight 20" & 30" wide



B.W. Pita Sconce 14" & 18" wide

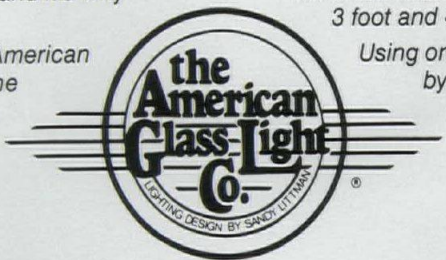


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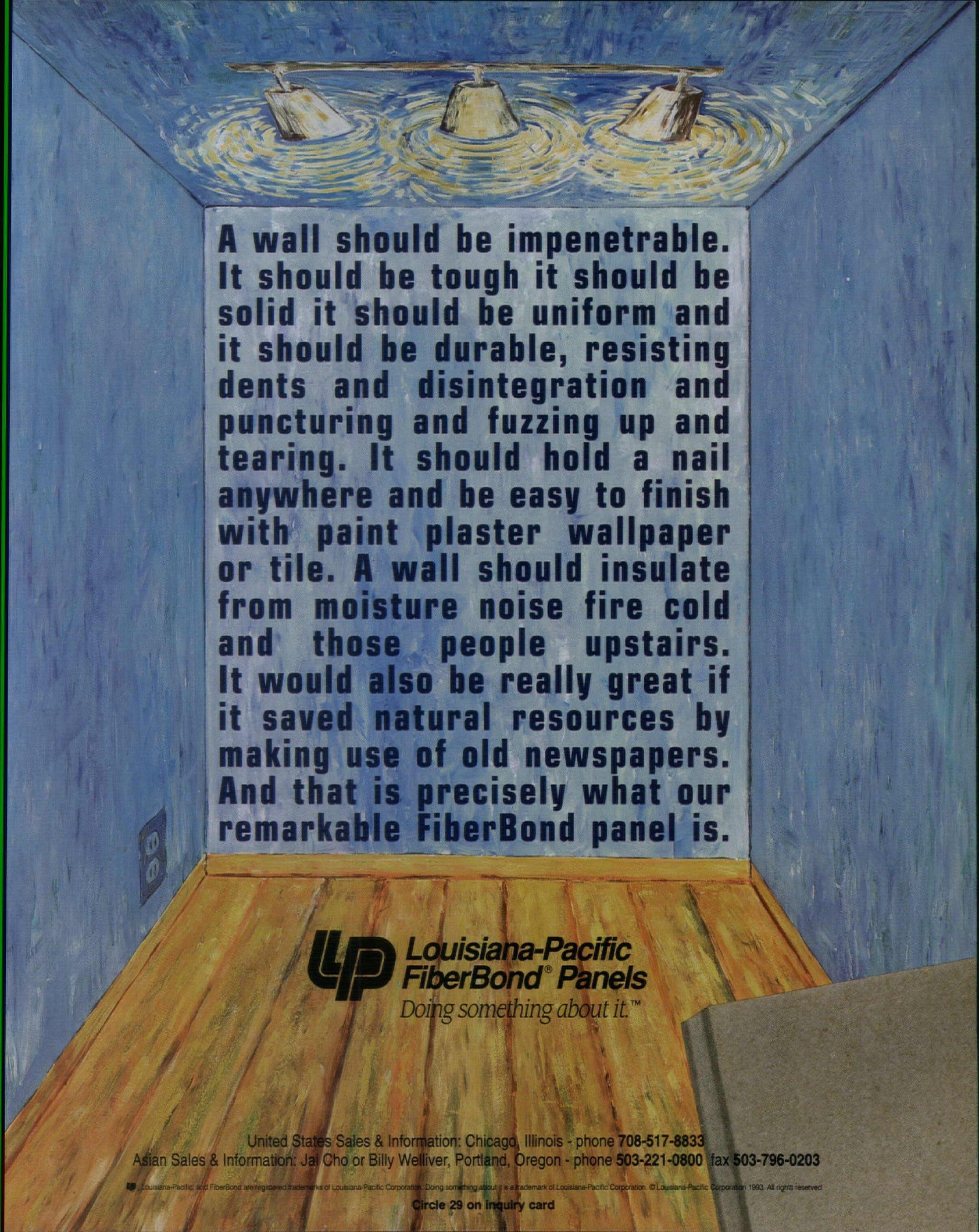
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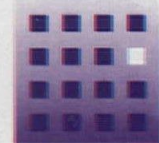
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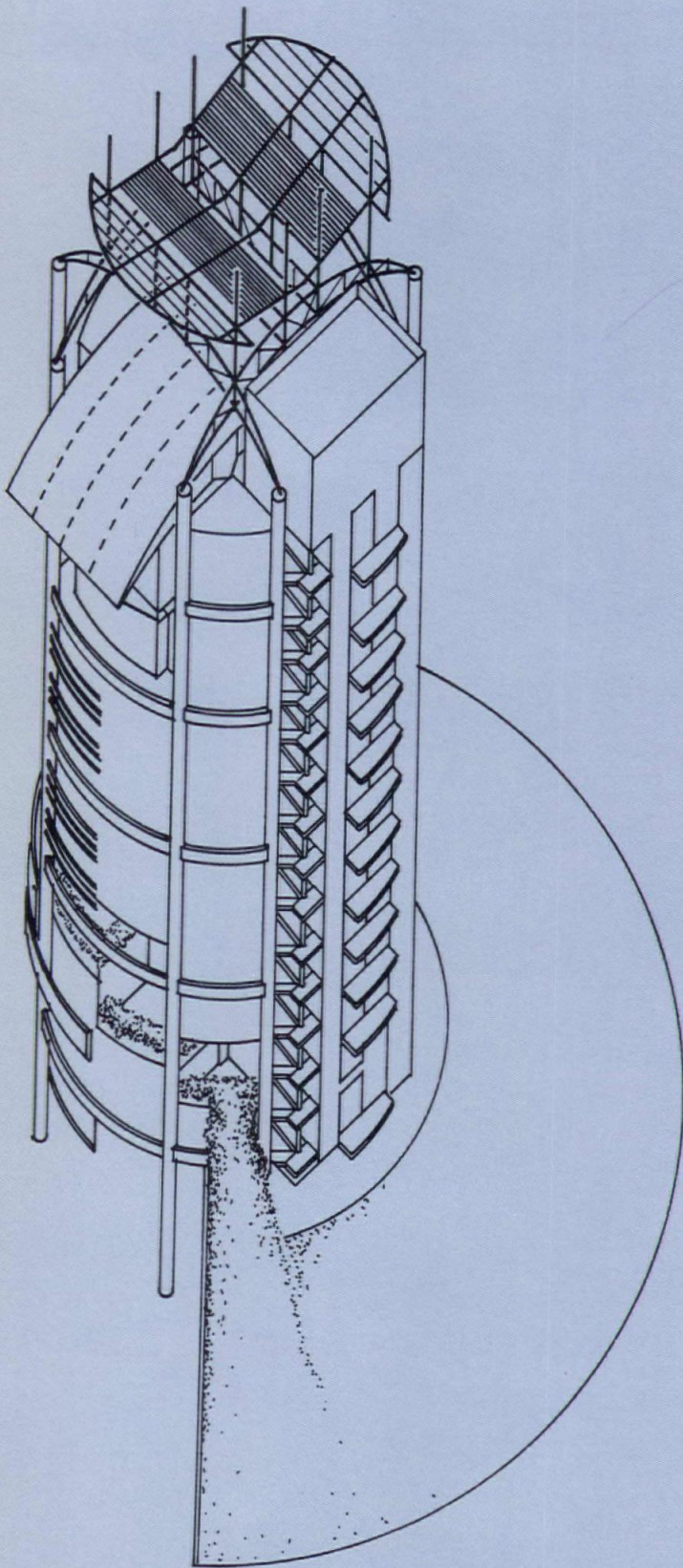
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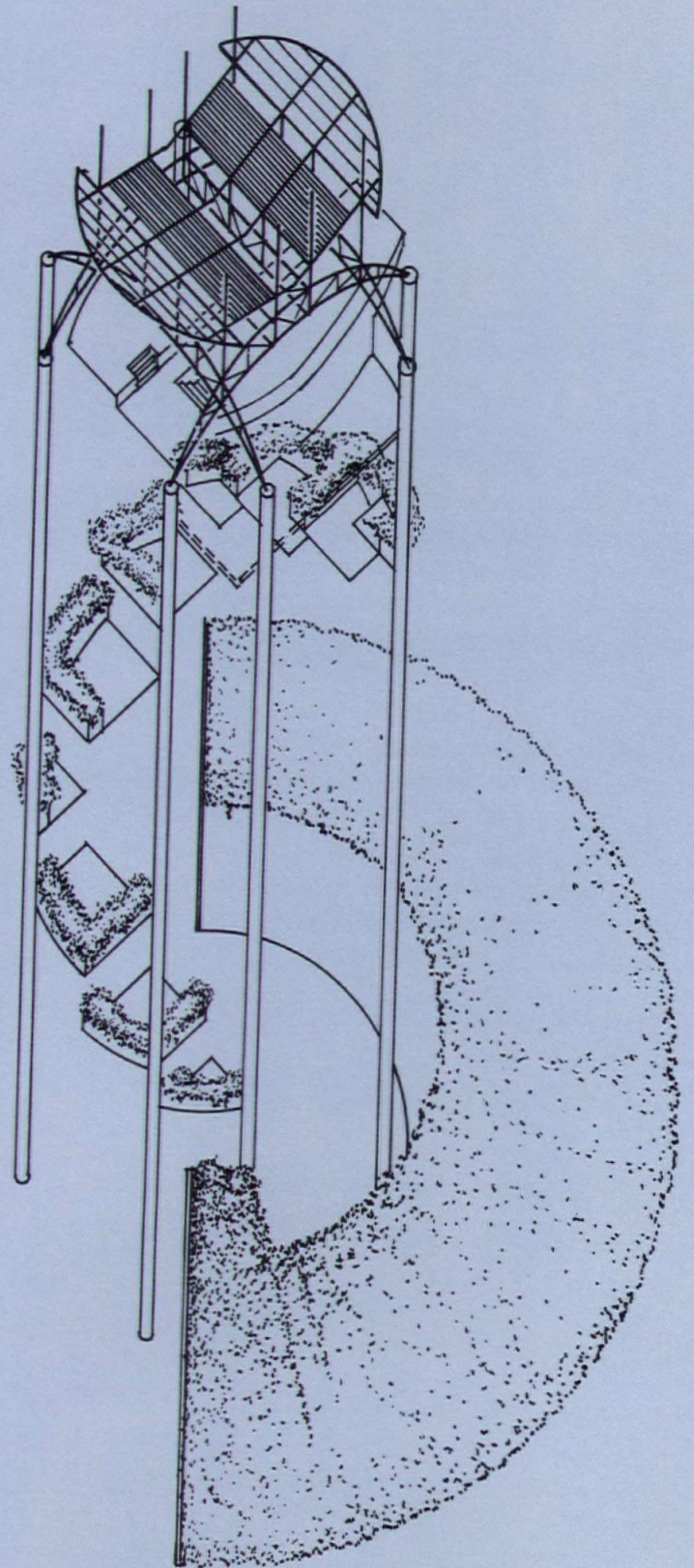
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Tropical Modern



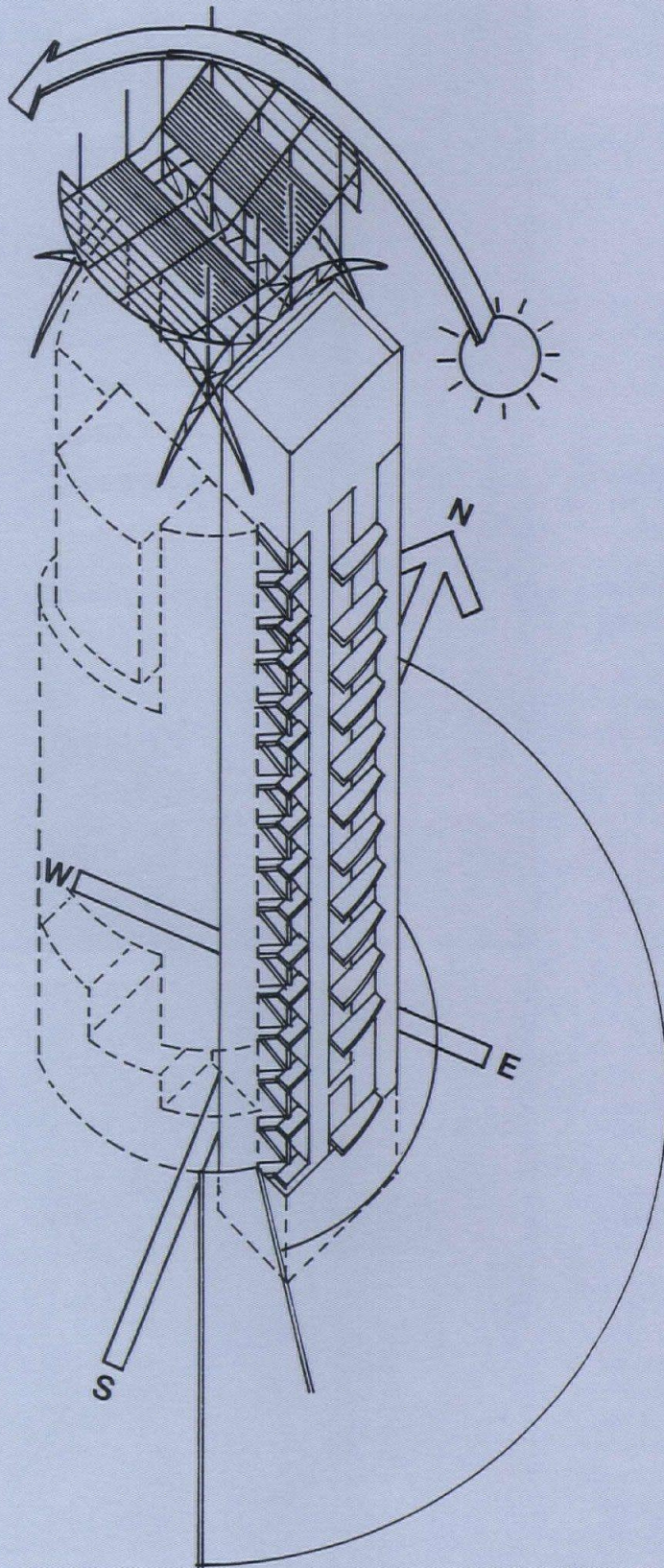
BUILDING ENVELOPE



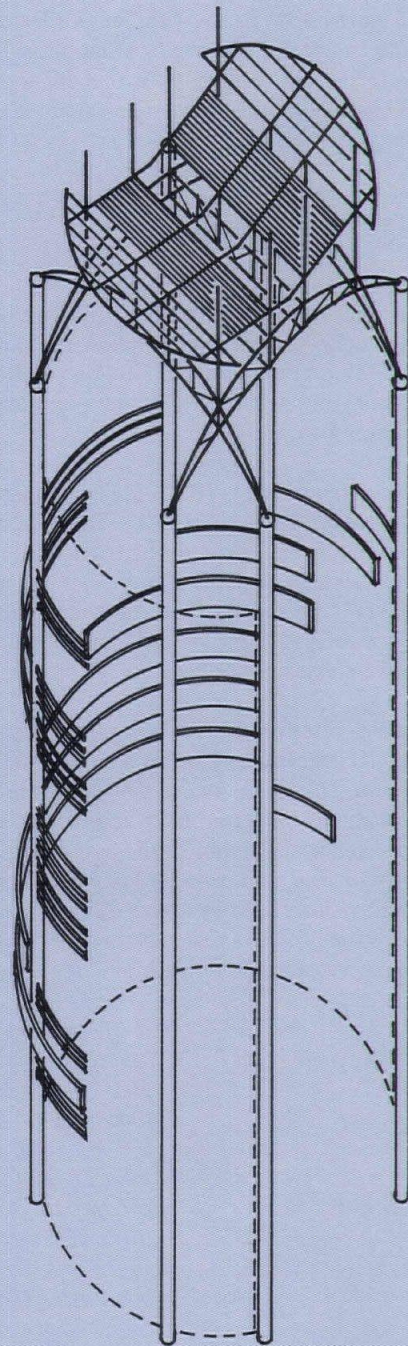
PLANTING AND TERRACES

*Malaysian architect Ken Yeang
has adapted the tall building to a
tropical climate.*

*Menara Mesiniaga (IBM Tower)
Selangor, Malaysia
T. R. Hamzah & Yeang, Architect*



ORIENTATION



GLAZING AND SHADING

Born in Malaysia and trained in London, Ken Yeang comes from two worlds that at first glance seem to have little in common: the tropics where a casual splendor thrives in the moist, hot environment and the Architectural Association where a rigorously intellectual avant-garde rules the jungle. But Yeang has made it his mission to apply the high-tech principles he learned in London to the design of buildings—especially tall ones—in a tropical climate.

Since establishing his own firm with Tengku Dato Robert Hamzah in 1976, Yeang has designed a series of high-rise buildings that combine Modern forms and technology with a climate-responsive approach. While the architectural expression for each project has varied—from the masonry-dominated exterior of his 24-story Plaza Atrium in Kuala Lumpur completed in 1986 to the glass-and-metal assemblage of the Menara Mesiniaga completed this summer—the design ethos remains the same.

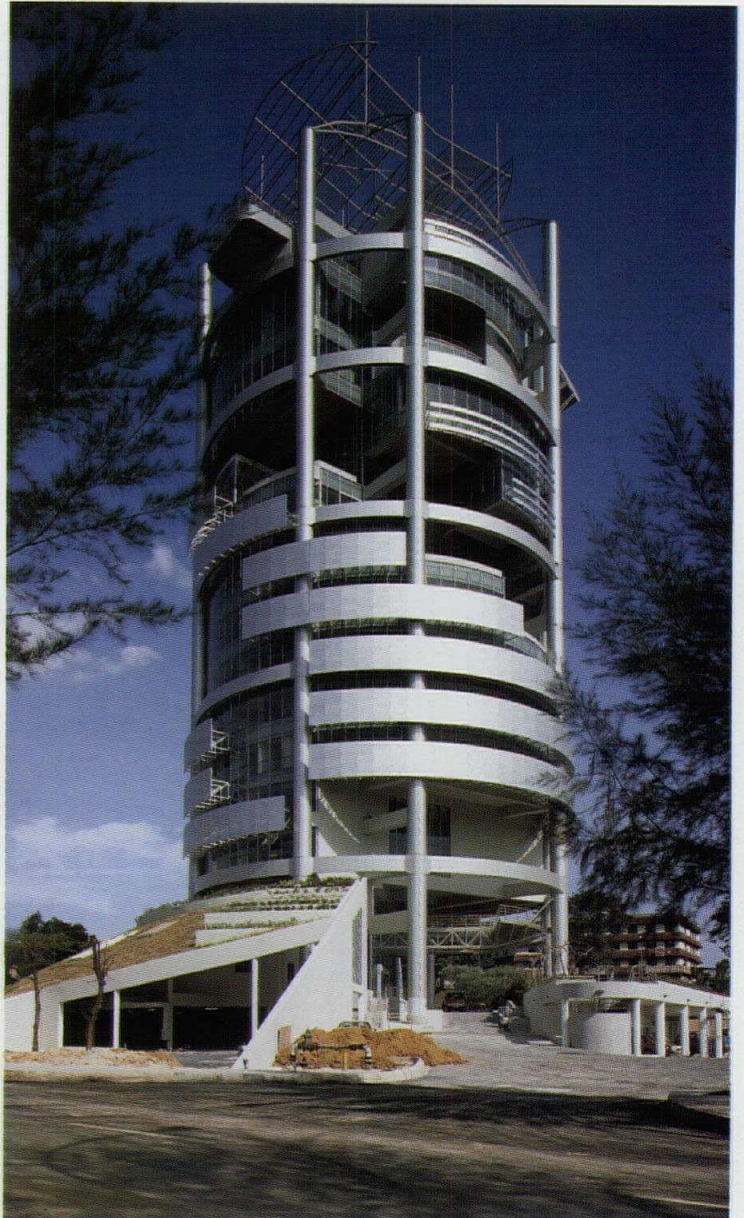
“Tall buildings are more exposed to the full impact of the sun and heat than low-rise structures,” says Yeang. But throughout the world, modern office towers tend to follow the same basic formula. Instead of adapting to the local climate, they fight it with the 20th century’s arsenal of mechanical systems—air conditioning, heating, and artificial lighting.

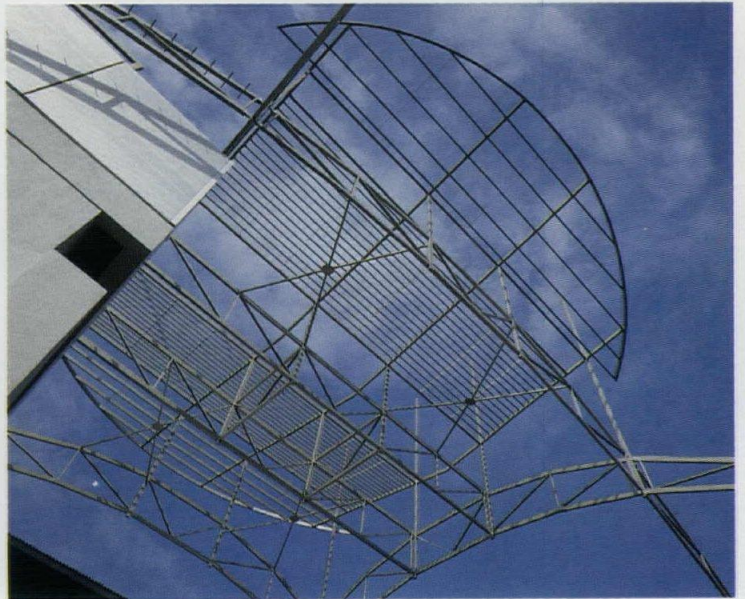
Built for the company that is IBM’s Malaysian agency, the 15-story Menara Mesiniaga in the state capital of Selangor employs a series of approaches that break through the traditional office building’s sealed environment. Instead of relying solely on mechanical systems to condition, circulate, and ventilate air, the building supplements such systems with operable windows, natural ventilation, shaded outdoor spaces, and proper orientation to the sun.

A reinforced-concrete-frame structure resting on eight columns, the building places its service core on its east side to block direct rays of the morning sun. This position also allows the elevator lobbies, stairs, and restrooms to be naturally lit and ventilated. Because services aren’t tucked in the center of the building, enclosed stairs don’t have to be pressurized, and elevator lobbies can offer outside views that help orient visitors as they arrive on each floor. The most dramatic aspect of the project’s response to its tropical climate are the multistory terraces carved into the building’s cylindrical mass.

Responding to different solar demands, the Menara Mesiniaga varies its exterior treatment with each point on the compass. On the west (above), the tower minimizes the impact of the sun with aluminum screens and shaded skycourts. On the north (opposite, top left), it shows the most amount of curtain-wall glazing. On the east (opposite, top right), it blocks the sun with its service core. A metal canopy helps shade the deeply recessed main entrance (right). A rooftop pool (opposite left) sits under a metal shade (opposite right) that may someday be equipped with solar panels.

K. L. Ng photos





These “skycourts,” as Yeang calls them, spiral around the perimeter of the tower (see floor plans, following pages), offering shaded outdoor retreats for office workers and absorbing some of the sun’s heat with plantings. Sliding glass doors provide direct access from each floor to the skycourts and offer another source of natural ventilation. If the tenant’s needs change, these outdoor spaces can be enclosed and used as extra office space, conference rooms, or kitchenettes. As built, the project has 112,000 square feet (10,400 sq m) of gross space, but only 70,000 square feet (6,500 sq m) once the skycourts and service areas are excluded.

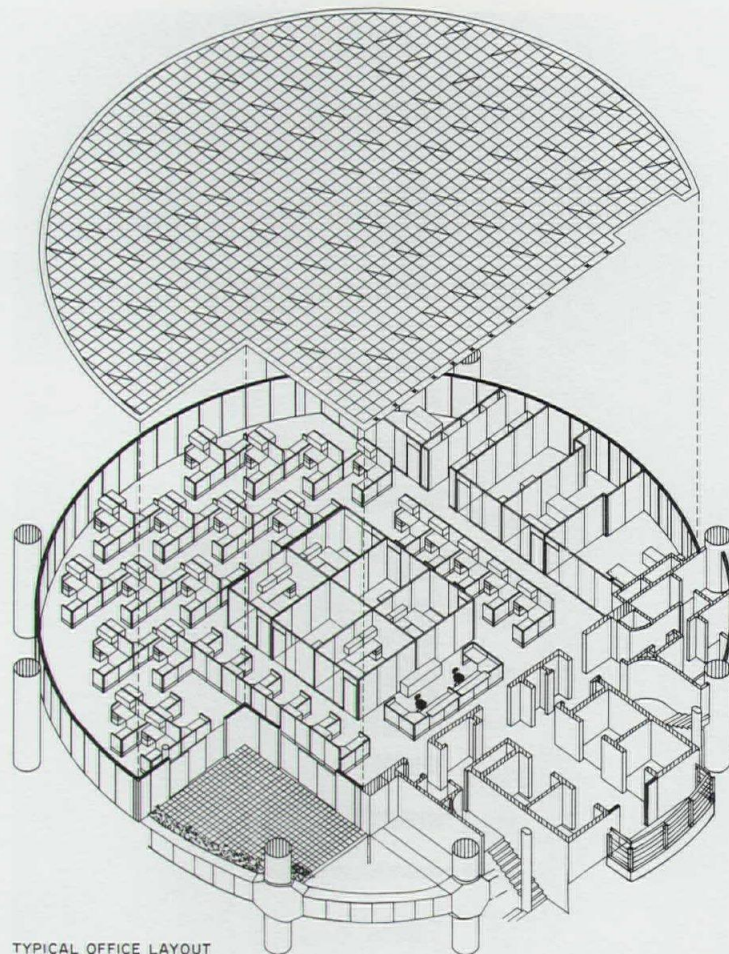
To protect lower floors from the sun the architects bermed earth around half of the building’s base and landscaped the 35-degree slope. A curving skylight and windows punched through the berm bring natural light into demonstration rooms on the ground floor.

The exposed portion of the building’s base serves as a recessed entrance shaded by a metal canopy and the upper stories of the structure. By pulling the main entrance in toward the center of the tower, the architects created a covered transition space and allowed cooling breezes to flow under the upper floors.

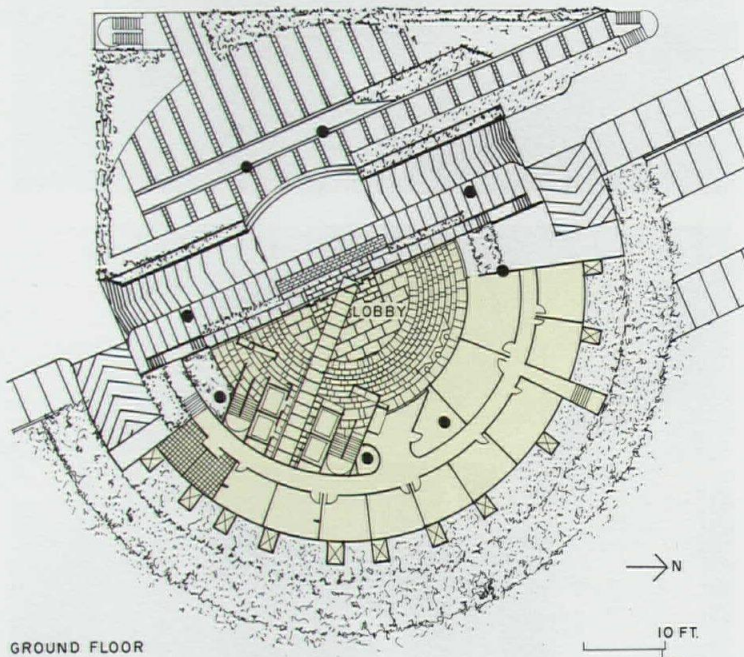
The building’s skin is a combination of curtain-wall glazing on the north and south and sun-protected windows on the west. Because the building’s orientation changes along a 360-degree curve, the architects designed two kinds of solar protection: the first is a screen made of closely placed aluminum strips that blocks most of the sun, the second is a sun breaker of aluminum strips set farther apart that allows more light to penetrate.

The Menara Mesiniaga breaks with tradition inside as well as outside. Instead of placing private offices along the curtain wall and giving executives all the views, the architects put workstations on the perimeter so views and sunlight are shared by everyone. Private offices enclosed by glass partitions occupy the center of the floor, in place of the traditional service core. A rooftop swimming pool and top-floor dining room are two other employee amenities.

By responding to local conditions without resorting to traditional forms, the Menara Mesiniaga serves as a model for an environmentally responsible tropical Modernism. *Clifford A. Pearson*



TYPICAL OFFICE LAYOUT



GROUND FLOOR

The architects of the Menara Mesiniaga broke with several traditions of office-tower design by pulling the service core out from the center of the structure, creating outdoor spaces on every floor, and placing workstations—not private offices—along the curtain wall (floor plans, opposite, and typical office layout, above). Floor plans also show how skycourts spiral around the perimeter of the tower. Other amenities include an auditorium on the third floor, a gym on the 12th floor, and a rooftop swimming pool.

Credits

Menara Mesiniaga (IBM Tower) Selangor, Malaysia

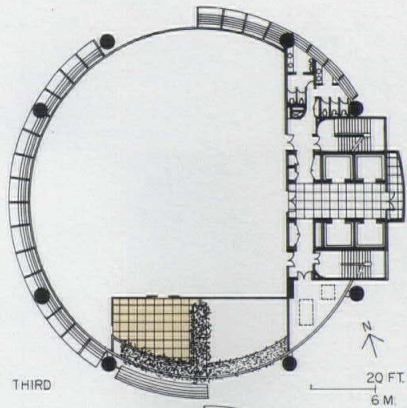
Owner: Mesiniaga Sdn. Bhd.

Architect: T. R. Hamzah & Yeang—Ken Yeang, partner-in-charge; Too Ka Hoe, project architect; Seow Ji Nee, design architect

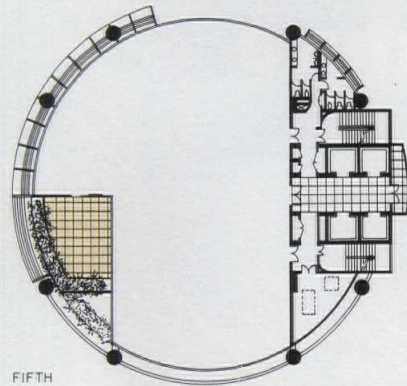
Engineers: Reka Perunding (civil/structural); Norman Disney & Young (mechanical/electrical)

Consultants: Baharuddin, Ali & Low (quantity surveyor)

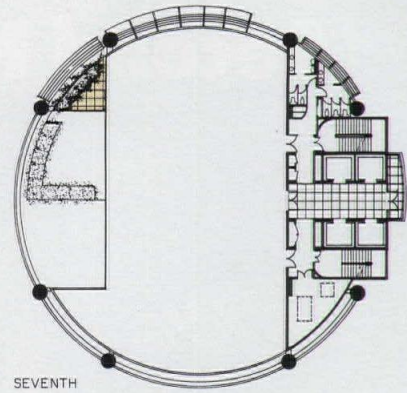
General Contractor: Siah Brothers



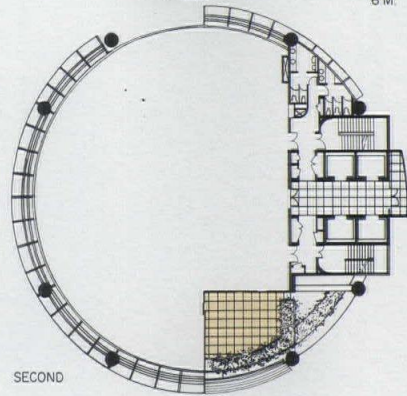
THIRD



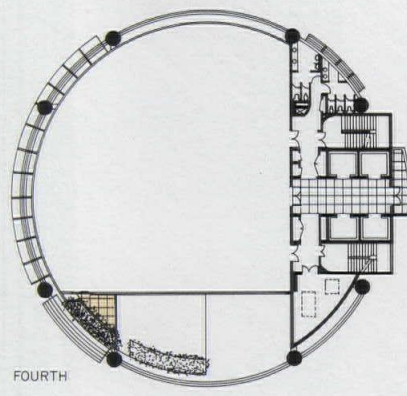
FIFTH



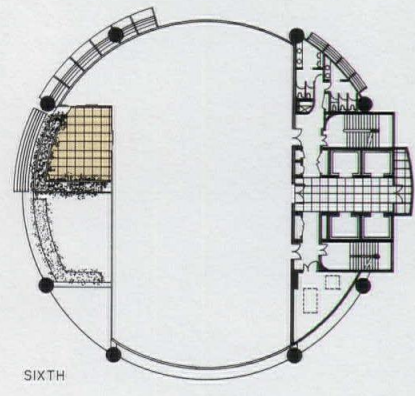
SEVENTH



SECOND



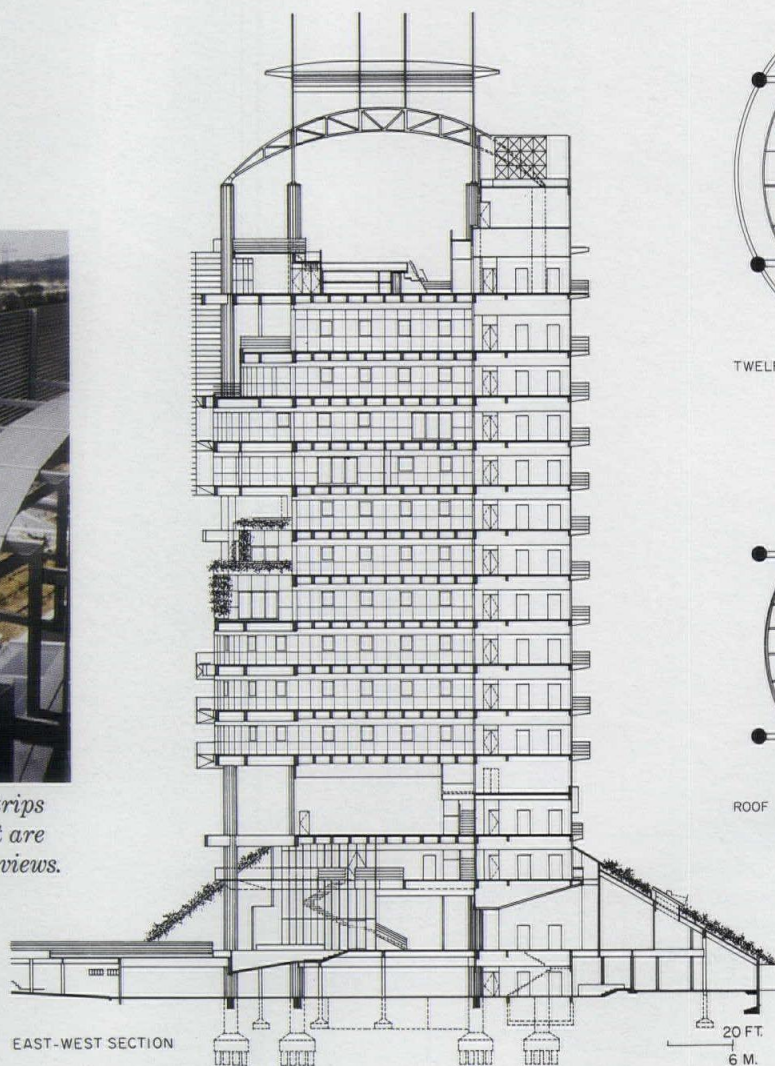
FOURTH



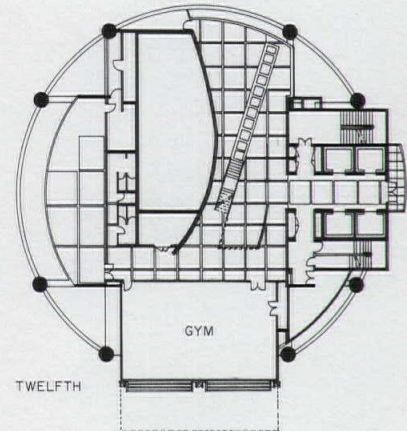
SIXTH



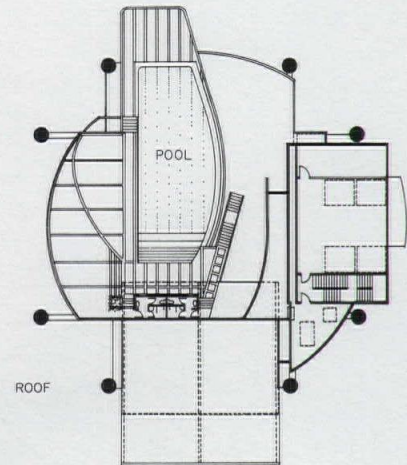
Screens made of metal strips block direct sunlight, but are low enough to maintain views.



EAST-WEST SECTION



TWELFTH

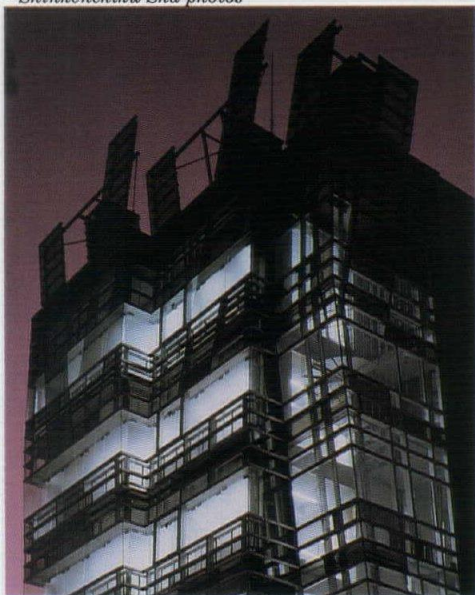


ROOF

Second Nature

*STM House
Tokyo, Japan
Itsuko Hasegawa Atelier,
Architect*





By day, STM House's multi-colored glass-and-aluminum curtain wall facade shimmers in sunlight (opposite and above). Envisioned as rainbows reaching into the Tokyo sky, the elevation is divided into three vertical segments that undulate slightly as they ascend. By night, the spectrum of color is replaced by a sense of transparency (top).

Buildings should introduce a new nature to replace the one that used to be there, says Itsuko Hasegawa, Japan's leading woman architect. Nowhere is this more imperative than in Tokyo where the "bubble economy" of the 1980s spawned a frenzied building boom at the expense of trees and greenery. For Hasegawa, compensating for this loss has become a focus of her "architecture as another nature." Acknowledging that Mother Nature knows best, the designer tries less to replicate natural elements than to create built forms that call attention to them. STM House, a recently completed seven-story office building, does just that.

STM House's multicolored facade presides over a heavily trafficked boulevard lined with small commercial and residential buildings within Tokyo's Shibuya Ward, where the young and fashionable frequent boutiques and coffee shops. Inspired by rainbows as a "phenomenon magically synthesized in the atmosphere," Hasegawa says she attempted "to create an architecture with an ephemeral, natural quality." As if reaching up into the sky, vertical bands of glass in four brilliant shades—green, blue, violet, and pink—run the height of the building and jut out above its roof, their hues evolving as light conditions change over the course of the day. Like neon signs that tout corporate logos and vie for attention atop many Tokyo buildings, this glass facade advertises the sun's daily cycle.

On the interior, the ever-changing daylight floods in through floor-to-ceiling glass, alerting even the hardest-working employee to the passing of the hours. Hasegawa's signature punched-metal panels soften the impact of the sunlight and help visually anchor the curtain wall. The light is further diffused by movable frosted-glass panels that slide along tracks in the same way as traditional shoji screens. Like their paper antecedents, the panels can be shut to preserve some semblance of privacy, while allowing muted light to permeate. Though shoji often frame tranquil garden views, these panels edit cacophonous city scenes. And at night, the panels project a luminescent white glow that replaces the facade's dazzling daytime colors.

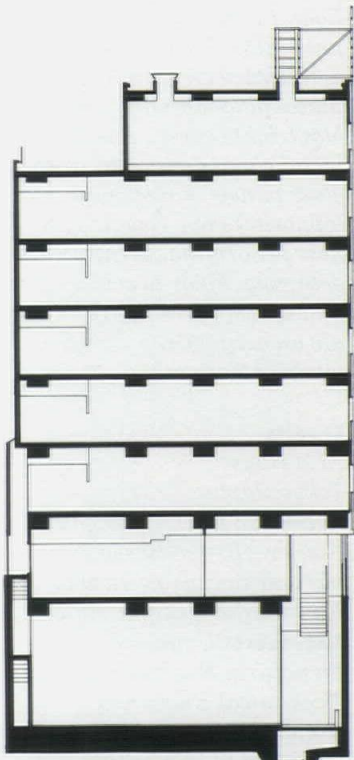
Designed as headquarters for a small fashion company, the concrete-frame STM House contains mostly open-office space. The ground floor holds the main entrance hall, parking, and a small office area linked by an internal stair to a basement work space that opens onto a "sunken garden." Devoid of plants and enclosed by concrete walls, the "garden" hardly looks the part. But exposed to the outdoors above, it acts as a conduit drawing daylight down into the building's depths. A stair descending from street level through the garden secures a literal connection to the natural environment.

Upstairs, Hasegawa not only kept office floors column-free, but created an airy setting for every "salaryman" and "office lady" by pulling service elements (such as stair, elevator, washrooms, and kitchenette) to the perimeter. A top-floor "atelier," envisioned as the exclusive domain of the company president, has its own zenlike roof garden that divides the space into a free-flowing suite of rooms.

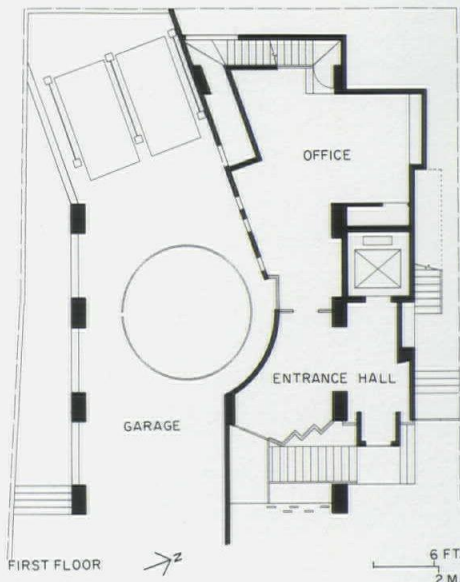
The design of STM House recalls an earlier Hasegawa project, the Shonandai Cultural Center, where the architect placed 70 percent of the program underground to free above-grade property for a park furnished with treelike metal sculptures and an artificial stream instead of real bushes and manicured lawns. In a country where stratospheric land values and breakneck schedules often drive design, an architecture that alludes to nature is like a breath of fresh air. *Naomi R. Pollock*



Recessed from the street, the building's entrance is crowned by a punched-metal canopy (opposite). A staircase (below, left) leads from the first floor through a sunken garden to the basement. A curving stair encased in glass (below, right) connects the sixth floor to the seventh-floor "atelier." Following the rainbow theme, each elevator lobby (right) is a different color.



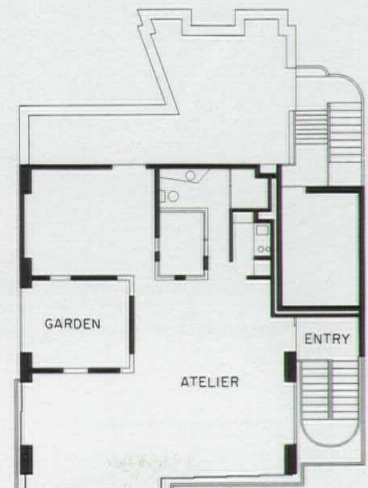
EAST - WEST SECTION



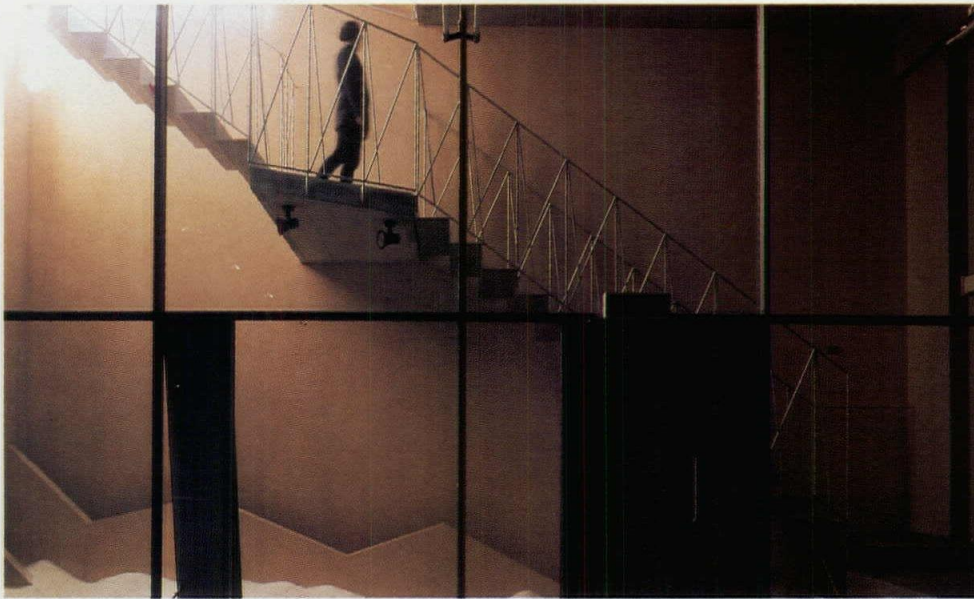
FIRST FLOOR



THIRD AND FIFTH FLOORS



SEVENTH FLOOR



Neutral finishes such as ceramic-tile floors, concrete walls, and plaster ceilings form the ideal backdrop for Hasegawa's meticulous details. A free-floating stair (top left) links the basement sunken "garden" to the street level. Punched-metal screens and frosted-glass panels control the flow of light into the top-floor atelier (left center). Thanks to a small footprint and the presence of the roof garden, the penthouse suite is flooded with light. In the garden itself, the natural is side-by-side with the artificial, with stainless-steel plates placed among white pebbles (right center). Punched-metal closet doors and frosted-glass panels in one office (opposite) show Hasegawa's flair for original architectural detailing. Floor-to-ceiling glass and column-free interiors create an airy setting for office workers (bottom).

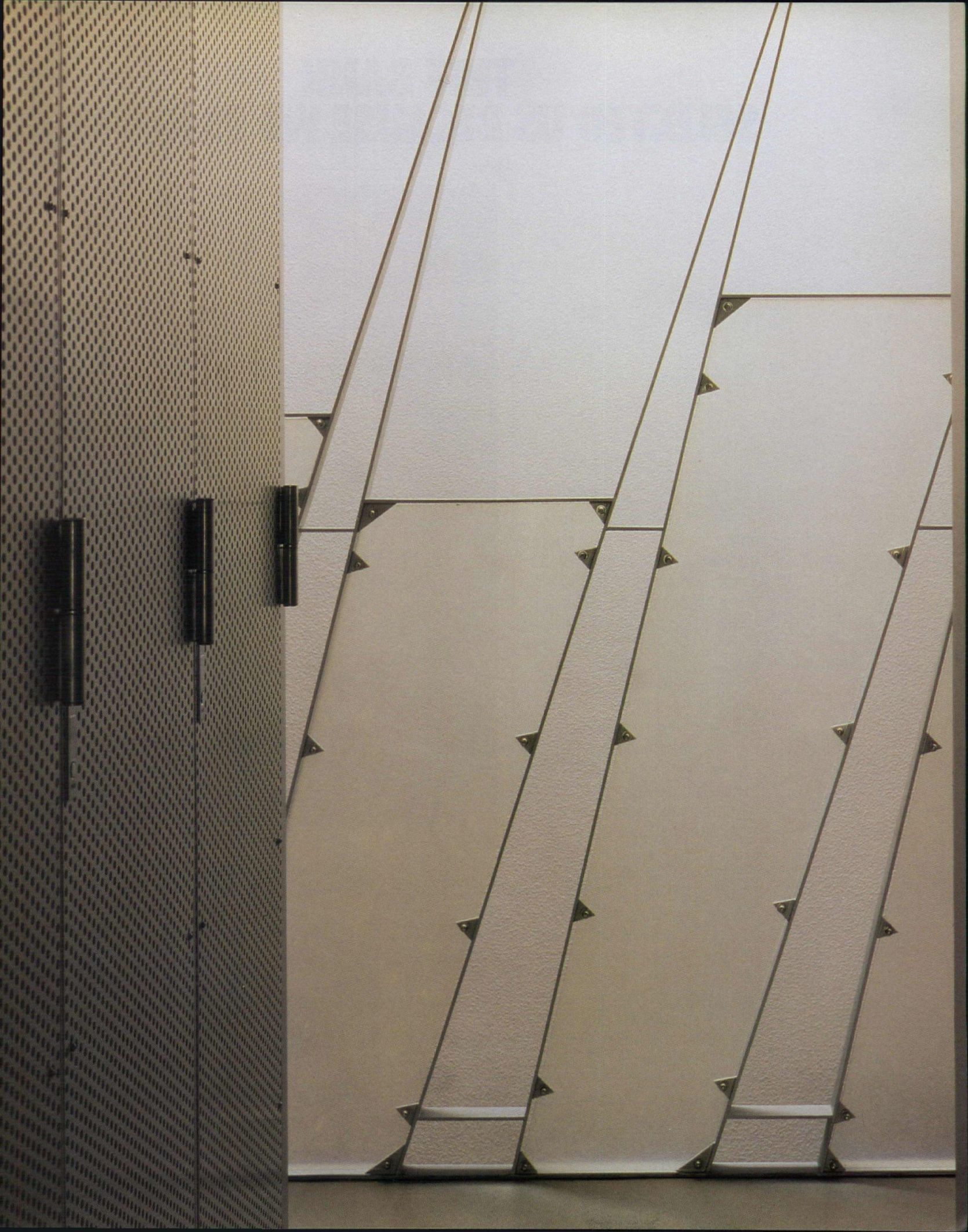
Credits

STM House
Tokyo, Japan

Architect: Itsuko Hasegawa
Atelier—Itsuko Hasegawa,
partner-in-charge; Yasuko
Kawaharada, staff architect

Engineers: Umezawa
Structural Engineers; Dan
Mechanical Engineers

General Contractor:
Ohbayashi Corporation

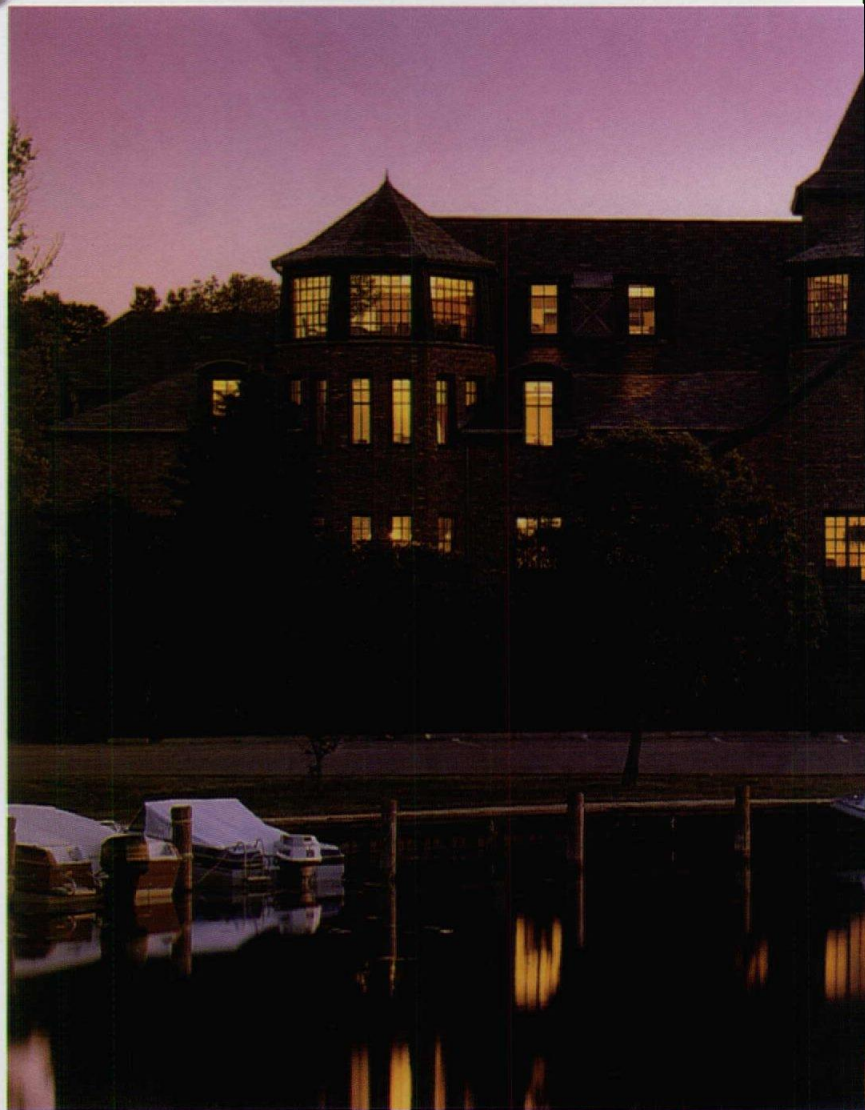


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For one thing, fast-track construction scheduling was necessary due to constantly evolving design constraints. For another, it wasn't until thermal efficiency, condensation resistance and aesthetics were factored in that wood was chosen over aluminum. Consequently, Marvin wasn't selected for the job until construction was underway, making manufacturing and delivery deadlines extremely tight.

But Marvin's biggest challenge proved to be the building's three massive window and door assemblies, the largest of which measures 28 feet wide by 30 feet high. Using a combination of sturdy Magnum Double-Hungs and French Doors, Marvin not only built them on schedule, but also engineered them prior to delivery to guarantee they would withstand the strong, prevailing winds off the lake. And, like all 177 of the bank's other made-to-fit windows and doors, they were built with features designed specifically for the project. Features such as authentic divided lites, interior windows and doors glazed to match those on the exterior and a durable, factory applied finish in two complementary colors; Midnight Teal for the sash



INTEREST.



and Graphite Grey for the frames. Shortly after its completion, Investors Savings Bank was named the NAIOP Build To Suit Building of the Year. Which just goes to show that paying extra interest can result in some handsome dividends.

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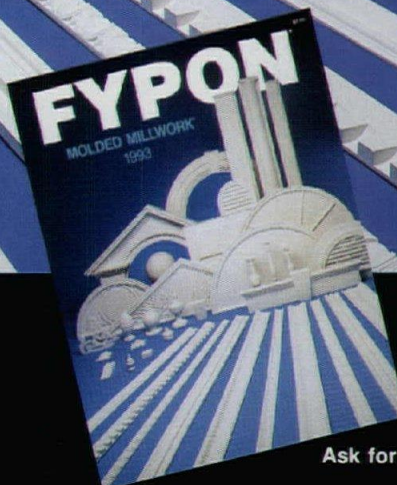
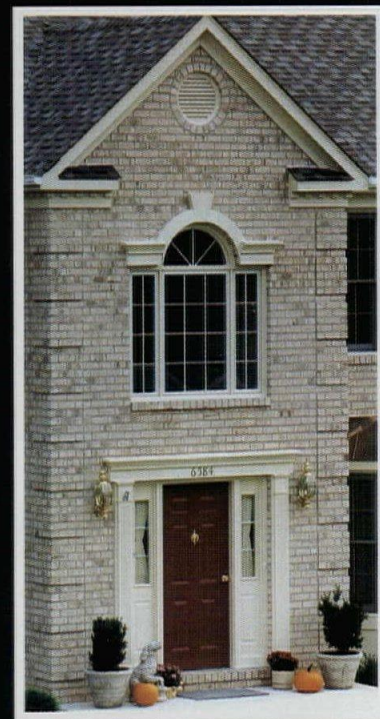
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Manufacturer Sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified.

Pages 52-61

Royal Dutch Papermills Headquarters
Hilversum, The Netherlands
Richard Meier & Partners Architects
Carpet: Dimension Carpet. Red Chairs: Gelderland. Aluminum-plate panels: Alurgae. Glass block: Pittsburgh Corning. Chrome plated lever handles and pivot hinges: Rixon. Furniture: Knoll. Eames aluminum group: Vitra. Indoor lighting: Ercol.

Pages 62-65

Golf Cottage for the Dunes Club
New Buffalo, Michigan
Booth/Hansen & Associates
Paints/stain on shingles: MAB. Awning/case-ment/fixed windows: Pozzi Windows. Swinging/stile and rail doors: The Door Shop. Stainless-steel locksets and closers: Sargent. Door pulls: custom by architects, fabricated by Kevin Firme. Lockers: The Door Shop. Special coatings: Tnemec. Plastic-laminate surfacing: Nevamar. Slate: Vermont Structural Slate Co. Carpet: Florplan International of Chicago. Cherry tables and chairs: fabricated by Dunbar and The Door Shop. Trophy Case: fabricated by The Door Shop. Weathervane:

custom by architects, fabricated by Kevin Firme. Sconces: Arroyo Craftsman; Halo. Ceiling-hung fixtures: Arroyo Craftsman.

Pages 74-77

GranPac Foods, Inc.
Food Processing Plant and Offices
Portland, Oregon
Boucher Mouchka Larson Architects
Curtain wall: Kawneer/Harmon Contract Glazing. Painted metal panels: Ray E. Becker Co. Roofs (single ply): Firestone. Sheet metal: ECI Building Components. Tinted glass: Hartung Agalite Glass Co. (Solargray). Aluminum storefronts and entrances: Kawneer. Interior doors: Cenco. Labeled doors: Openings (Total Door). Locksets: Schlage. Hinges: Stanley. Closers: LCN. Exit devices: Tice. Acoustical ceilings: U.S. Gypsum. Suspension system: Donn. Paneling, cabinetwork, and custom woodwork: Market Contractors. Paints and stains: Rodda, Miller Paints. Granite lobby: Cold Spring Granite. Tile: Dal-Tile. Vinyl flooring: Armstrong. Carpet: Shaw; Monterey. Office furniture and files: Steelcase, Inc. Reception furniture: Kimball. Outdoor lighting: Kim. Elevators: Montgomery.

Pages 84-87

Renovation of Market Square
Lake Forest, Illinois
Original Architect: Howard Van Doren Shaw
Restoration Architect: Office of John Vinci, Inc.
Outdoor lighting: Wilmer S. Snow Co.

Pages 88-89

Deerpath Plaza
Lake Forest, Illinois
Nagle, Hartray & Associates
Stucco: Dryvit. Pole lamps: BEGA Lighting. Clock: Custom by architects. Windows and entrances: Kawneer.

Pages 90-91

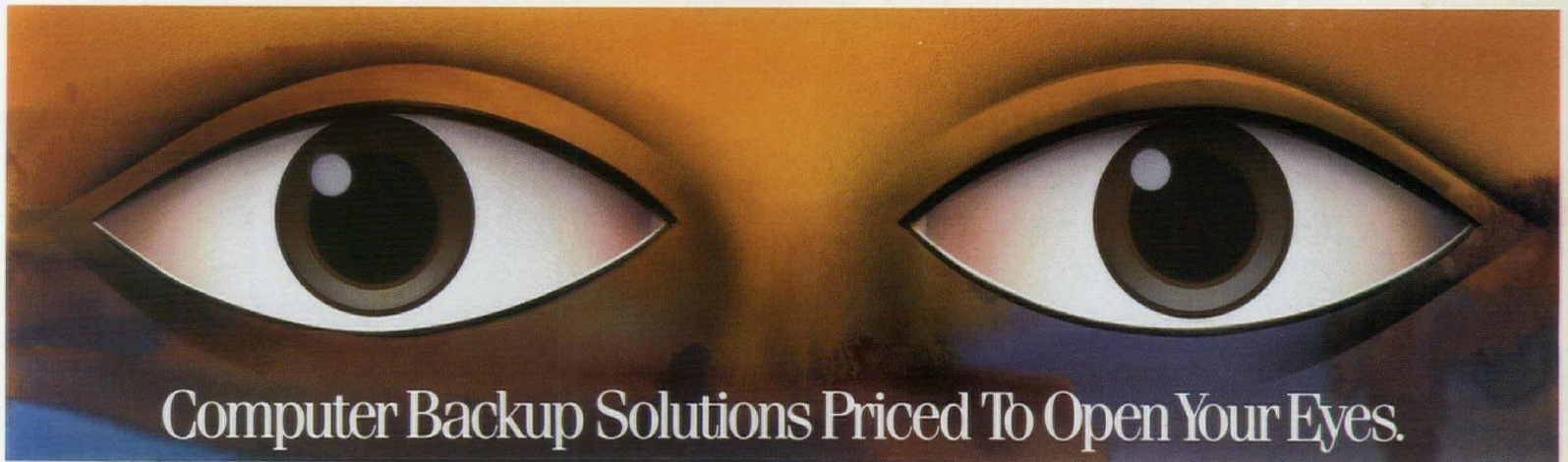
Mizner Park
Boca Raton, Florida
Cooper Carry & Associates, Inc.
Cast-stone fountains: Herpel Stone. Lighting: Sterner Lighting. Paving system: Paver Systems. EIFS: STO, Inc. Roof tiles: Bender Tile Ind.

Pages 92-93

Montana Collection
Santa Monica, California
Kanner Architects
Curtain wall: designed by architects, fabricated by Cottrell Glass. Glass: AFG. Stucco: Portland Cement Plaster. Curved metal: Weiss Sheet Metal. Glass block: Pittsburgh-Corning.

Pages 94-101

Temporary Powell Library
University of California, Los Angeles
Hodgetts and Fung Design
Vinyl-coated polyester fabric: Seaman Corp. Flooring: Marmoleum. Indoor lighting: Stonco; Lithonia; Day Brite; Benjamin. Elevators: Dover. East/West Reading room carrels/microfiche counters: Custom by architects. Paints and stains: Frazee.



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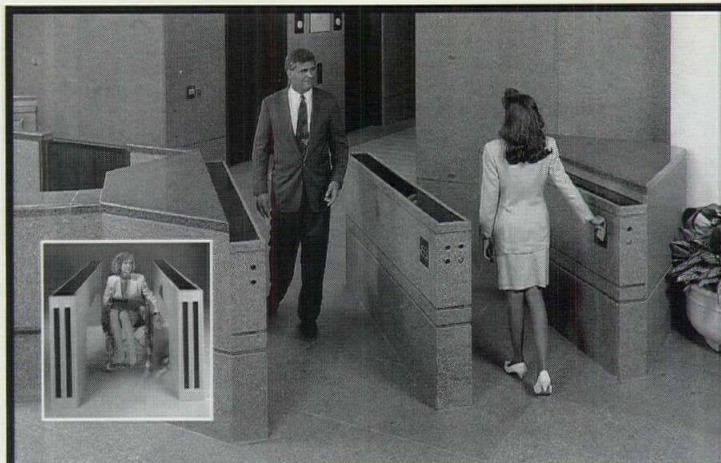


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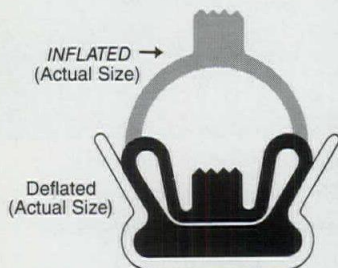


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Product Literature / Tile & Stone



412. Floor tile

An eight-page catalog covers all of this maker's white-body commercial/residential floor tiles, including the Enviro, Designer, Traditions, Pastel, and DaVinci product lines. Complete dimensional, trim, technical, and color data given. KPT USA, Inc., Bloomfield, Ind.



413. Canadian granites

A view-book illustrates eight standard stones, ranging from Gris de Stanstead, through several roses, to Noir Nordic, offered as tile, slabs, and job-cut to size. Finishes include polished, flamed, honed, and a new waterjet-produced surface. Tulinor USA, Inc., Garfield, N. J.



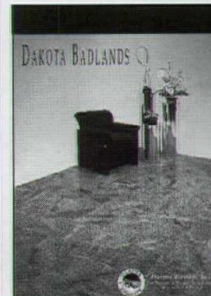
414. Grout-color guide

A new architectural sample program includes a folder with chips of each grout in a 32-color palette. Coverage-estimation charts list sanded, unsanded, and epoxy formulations. A boxed kit contains grouted sticks in the same system. MAPEI Corp., Elk Grove Village, Ill.*



415. Residential tile

Gold Seal ceramics, a new flooring line from Congoleum, are introduced in a four-page brochure. All color offerings are shown; dimensional, trim, and performance data is listed. Congoleum Corp., Trenton, N. J.



416. Mahogany granites

Large color photos give a good idea of the variegated colors and tile-finish options offered in Rushmore Mahogany, Crazy Horse Mahogany, and Badlands Mahogany granite. Stone comes in flamed, honed, sanded, or polished finishes in standard 12- and 18-in. tile sizes. Dakota Granite, Milbank, S. D.

*Product data on CAD disk



417. Tile-installation guide

The 1993 edition of the Handbook for Ceramic Tile Installation is a quick-reference guide for architects in clarifying and standardizing specifications. Detail drawings call out all recommended components of correct tile setting. Price: \$2. Tile Council of America, Princeton, N. J. ■

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

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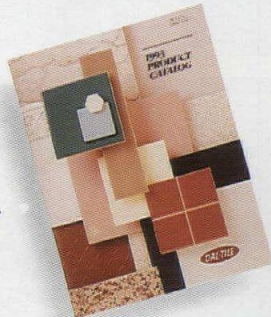
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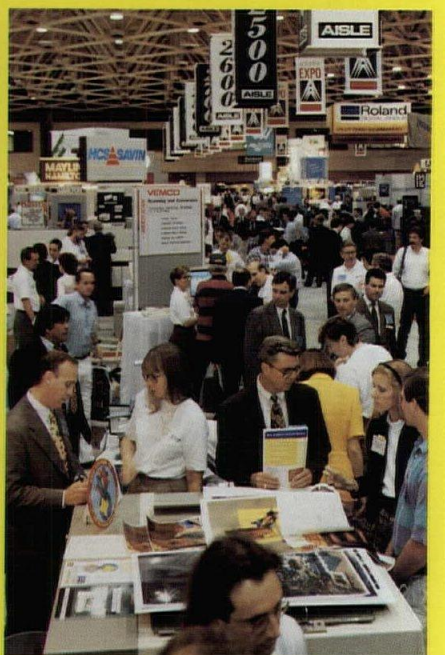
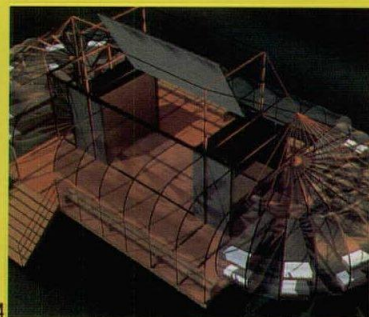
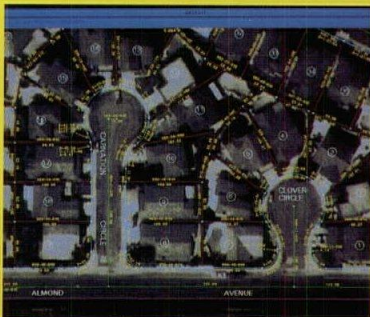
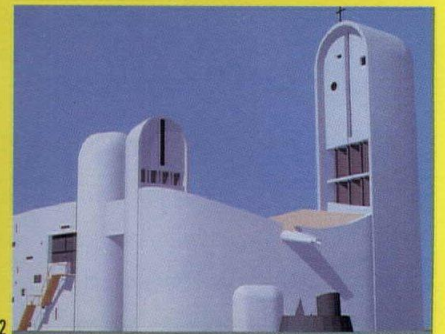
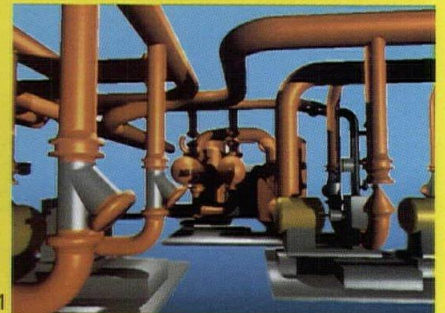
*Designer: V&R Designs.
McDonald's Restaurant, Akron Ohio.
Floor: Dal-Keystone Custom Pattern.*

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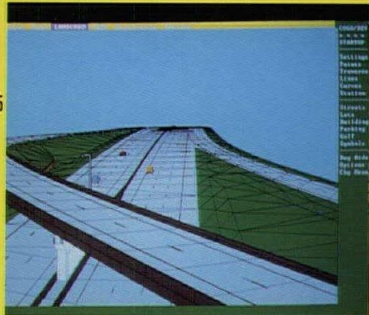


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Letters

Continued from page 4

held as justification for discrimination—black, brown, yellow, or white. It is clear this type of reverse discrimination is clouding the issue of equal rights. We as “the people” must quit organizing into ethnic groups, therefore creating the very barriers we work so hard to break down.

Brad Miller
Dallas, Texas

Any organization, whether made up of AIA members, or African American architects, or women practitioners, or the City Club of New York, or aluminum fabricators, has a right to run its design awards program. When it picks winners, that's news, and one of RECORD's key roles is to bring the news to its readers, including reader Miller.—Ed.

Leave a Legacy

I received the final issue of my student subscription to RECORD, January 1993, and as usual turned to the “yellow” section. As yet another student soon to be on the job market, I am always interested in the views and opinions of practicing professionals. The section on practice (page 30) finally enraged me enough to write. Yes, the economy is tight. Yes, many firms are going under. Yes, it is getting harder and harder to find entry-level positions in the profession.

Every student I have met is in a state of panic over their future in the profession. Every professional I have met is deeply worried about their ability to “hang on.” My concern, however, is deeper than one for my own future, although that is certainly a topic that keeps me awake nights. I am worried about the future of architecture.

In reading the January issue and many previous issues, I am struck with how much whining is going on among “professionals” and how little collective creative energy is being focused on resolving the problems that beset the profession. I believe the larger issue is how we view our responsibility to the profession, collectively, and whether or not we are willing to work together to make it better, for practitioners and clients alike, in the future.

Jo Walker
Graduate Student
Department of Architecture
California State
Polytechnic University
Pomona, California

Correction

The article on renovation [RECORD, January 1993, page 70] identified Ellen Lipsey incorrectly. She is executive director of the Boston Landmarks Commission, not of the Boston Preservation Alliance.

Calendar

Continued from page 4

Toronto architect, and Jonathan Barnett, CUNY School of Urban Design. Cooper-Hewitt Museum, New York City, 212/860-6894.

June 14-17

NeoCon at The Merchandise Mart, and National Commercial Buildings Exposition and Conference at the Mart's ExpoCenter, Chicago. Contact Laura Mercier, 312/527-7555.

June 7-10

A/E/C Systems '93 trade show, Anaheim Convention Center, Anaheim, Calif. Contact Sharon Price, 800/451-1196.

June 18-21

American Institute of Architects 125th annual convention in conjunction with World Congress of Architects, Chicago. Contact Lynne Lewicki, 202/626-7467.

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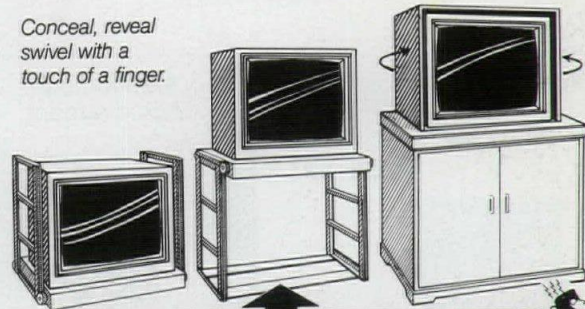
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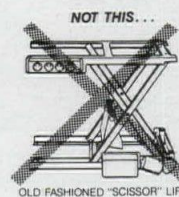
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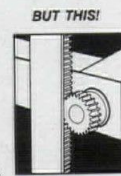


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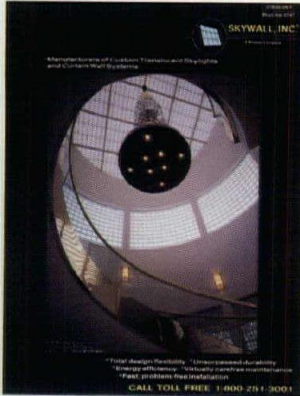


PROJECTOR POP DOWN

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Showcase Focus

Engineered Skylights And Curtainwall

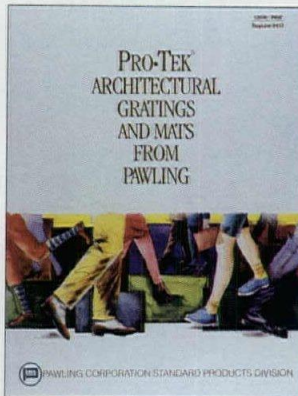


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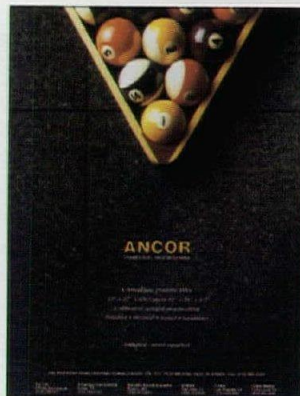


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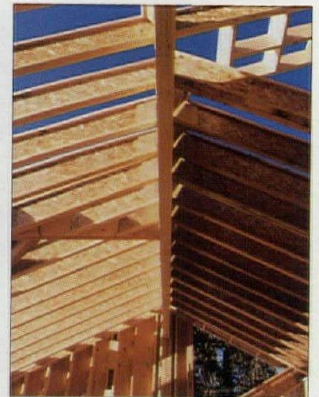


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Ancor Granite Tile

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Engineered Wood Products

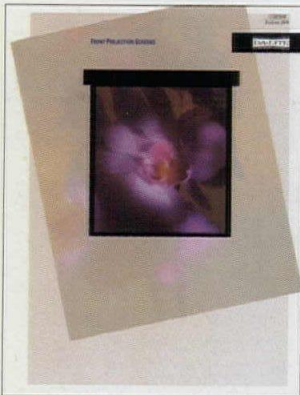


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Louisiana Pacific

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Front Projection Screens

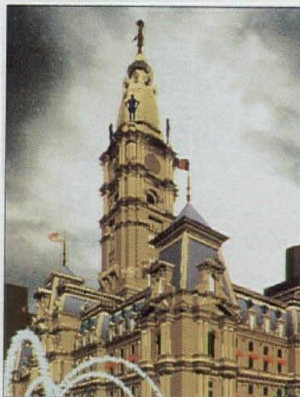


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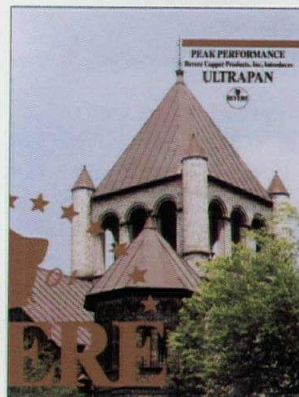


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Revere Copper Roofing - Ultrapan

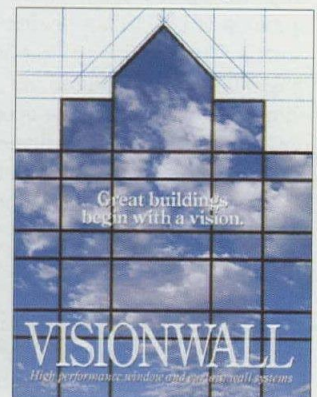


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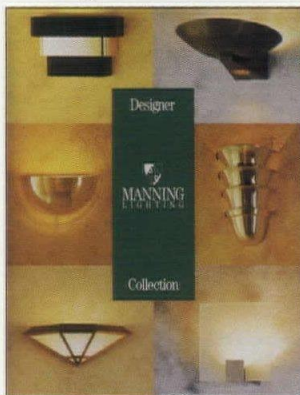


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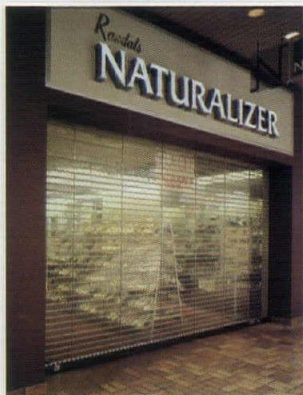


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R. A. Manning Co.

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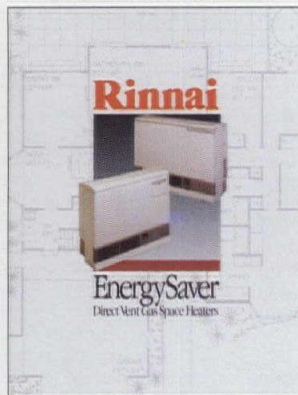


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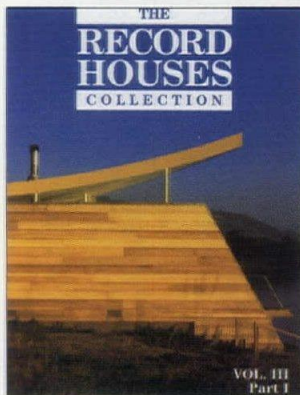


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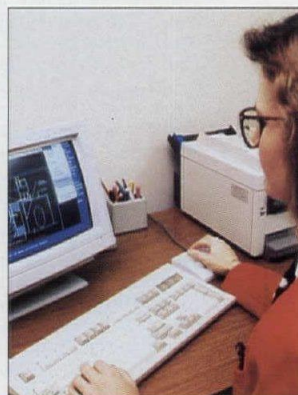


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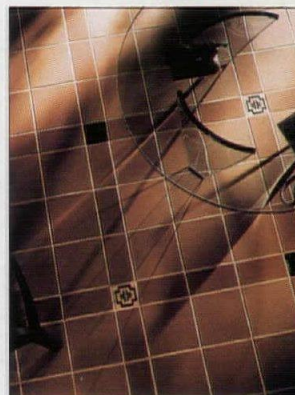


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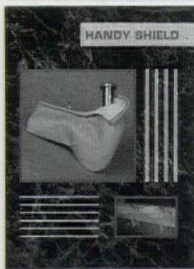
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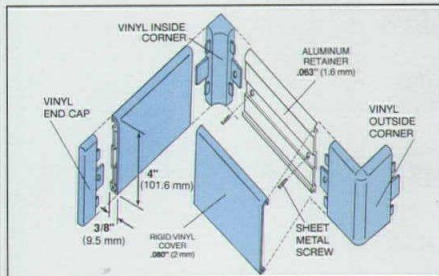
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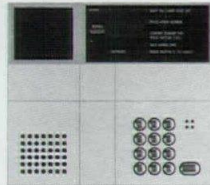
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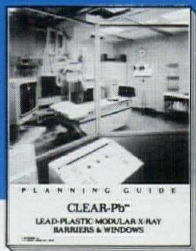
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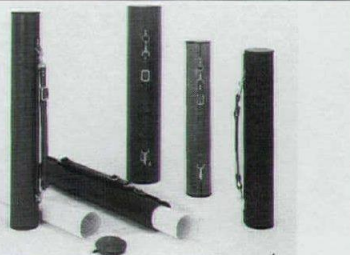
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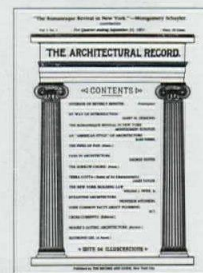
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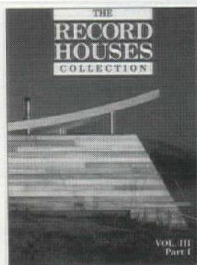
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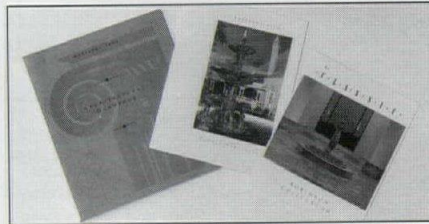
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