ARCHITECTURE

THE AIA JOURNAL SEPTEMBER 1983

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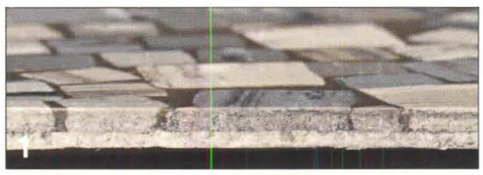

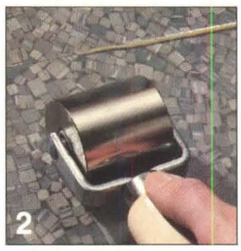

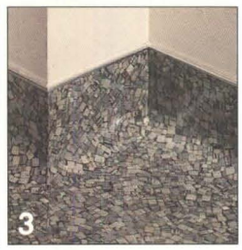

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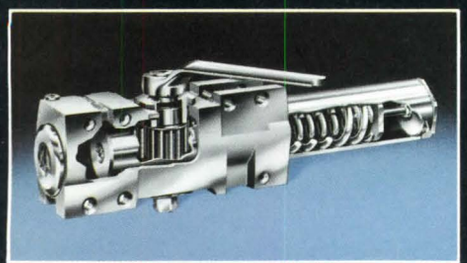

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CONTENTS

Cover: Photograph© Marc Ribaud of an overview of I. M. Pei & Partners' Fragrant Hill Hotel near Beijing, China (see page 34).

ARCHITECTURE: The AIA Journal, publication number; ISSN0746-0554, official magazine of The American Institute of Architects, is published 12 times yearly at 1735 New York Ave. N.W., Washington, D.C. 20006. **Individual subscriptions:** U.S. and its possessions: $26 for one year, $42 for two years, $58 for three years. Canada: $32 for one year, $50 for two years, $68 for three years. Foreign: $50 for one year, $90 for two years. For special library/institutional rates, please contact Circulation Department. Single copies, $5 each (except for May and August issues, which are $10). Publisher reserves the right to refuse unqualified subscriptions. For subscriptions: write Circulation Department; for change of address: send Circulation Department both old and new addresses; allow eight weeks. Quotations on reprints of articles available. Microfilm copies available from University Microfilm, 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Referenced in *The Architectural Index, Architectural Periodicals Index, Art Index, Avery Index to Architectural Periodicals.* Second class postage paid at Washington, D.C., and additional mailing offices.

VOL. 72, NO. 9.

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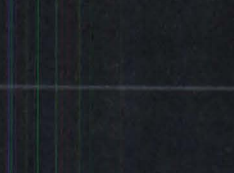

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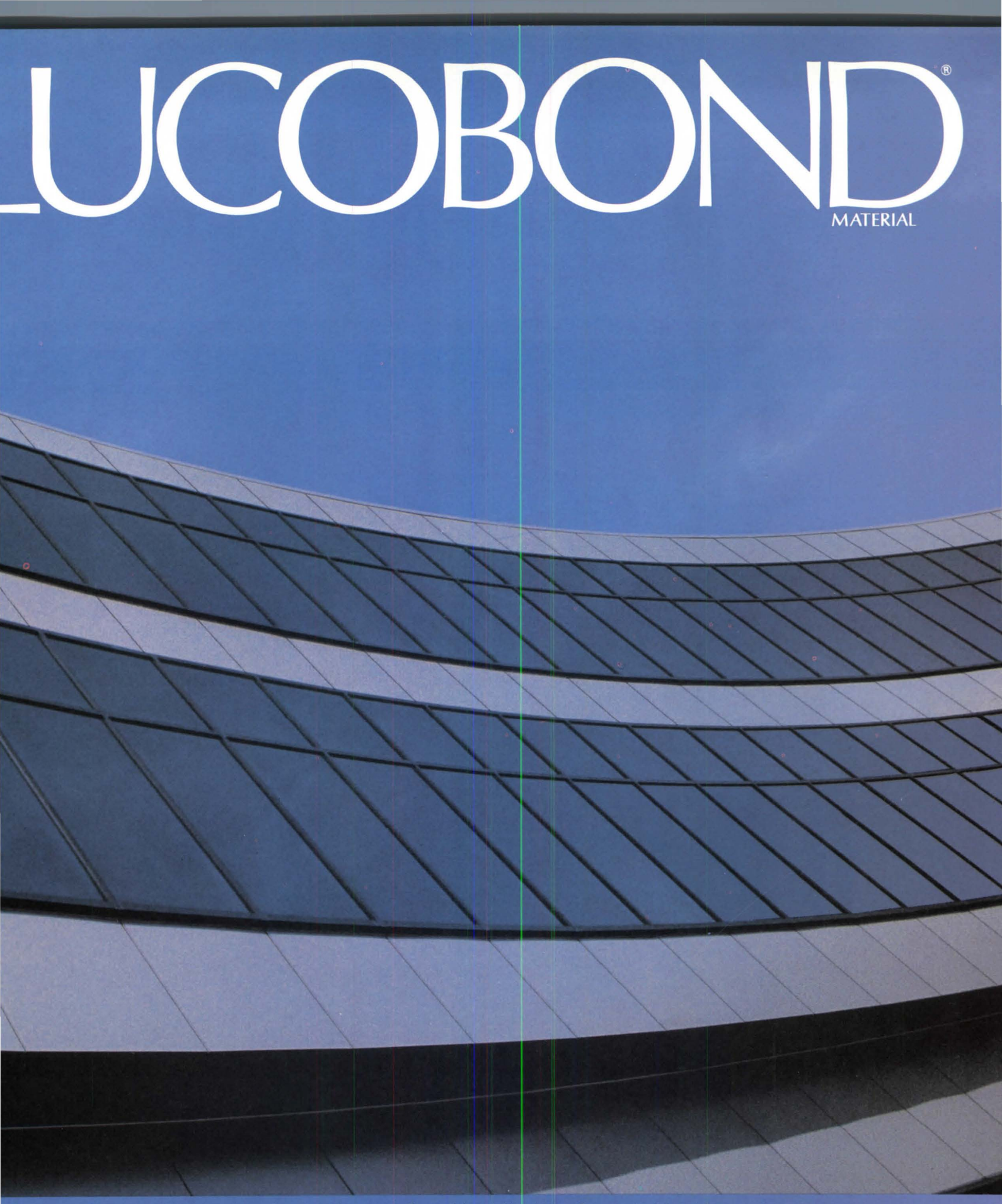

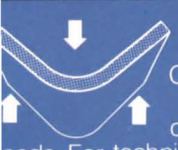

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EVENTS

Oct. 3-6: Training Program on Revitalizing Downtown: Understanding Real Estate Development, Louisville, Ky. (Repeat program Nov. 7-10, Washington, D.C.) Contact: National Main Street Center, National Trust for Historic Preservation, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.

Oct. 4-5: Conference on Marinas: Planning, Construction, and Operations, Ft. Lauderdale, Fla. Contact: Christopher P. Jones, Coastal Engineering Specialist, 336 Weil Hall, University of Florida, Gainesville, Fla. 32611.

Oct. 7: '83 AIA Codes and Standards Conference, Chicago. Contact: Henry Lawrence at Institute headquarters, (202) 626-7456.

Oct. 7: Panel on Solar Thermosyphon Air, Comstock Park, Mich. Contact: Jordan College Energy Institute, 155 Seven Mile Road, Comstock Park, Mich. 4321.

Oct. 7-8: AIA Energy in Design: Practice Workshop, Cheyenne, Wyo. (Repeat workshop Oct. 21-22, Dallas.) Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.

Oct. 11-12: Conference on the International Experience in the Development of Subsurface Space, Minneapolis, Minn. Contact: John S. Vollum, Room 222, 315 Pillsbury Drive S.E., Minneapolis, Minn. 55455.

Oct. 12-13: Conference on the U.S. Urban Infrastructure and the Development of Subsurface Space, Minneapolis, Minn. Contact: John S. Vollum, Room 222, 315 Pillsbury Drive S.E., Minneapolis, Minn. 55455.

Oct. 13-14: Seminar on Energy Auditing for Buildings and Industry, Cincinnati. (Repeat seminar Dec. 8-9, Orlando, Fla.) Contact: Registrar, Association of Energy Engineers, 4025 Pleasantdale Road N.E., Suite 340, Atlanta, Ga. 30340.

Oct. 15-18: American Home Lighting Institute Annual Convention, San Diego. Contact: AHLI, 435 N. Michigan Ave., Chicago, Ill. 60611.

Oct. 17-18: AIA Design Conference, Turning Points: Pursuing Design Excellence in a World of Change, Houston. Contact: John Gaillard at Institute headquarters, (202) 626-7363.

Oct. 17-18: Conference on Design/Building: Contracts, Cases, Control, Boston. (Repeat conferences Oct. 19-20, Philadelphia; Oct. 21-22, St. Louis.) Contact: William Hooper at Institute headquarters, (202) 626-7532.

Oct. 17-21: Workshop on Using Automation in Working Drawing Production, Department of Engineering, University of Wisconsin, Madison.

Oct. 19-22: Architectural Woodwork Institute Annual Convention, Nashville. Contact: AWI, 2310 S. Walter Reed Drive, Arlington, Va. 22206.

Oct. 20-22: Conference and Exhibition on Energy-Efficient Construction Practices, West Dover, Vt. Contact: Alex Wilson, New England Solar Energy Association, P.O. Box 778, Brattleboro, Vt. 05301.

Oct. 20-22: Conexion '83 (contract and design exposition), Atlanta. Contact: Atlanta Market Center, Suite 220, 240 Peachtree St. N.W., Atlanta, Ga. 30043.

Oct. 21: Design and Specifications Seminar, Washington, D.C. Contact: Susan Mathews, Roofing Industry Educational Institute, 6851 S. Holly Circle, Suite 250, Englewood, Colo. 80112.

Oct. 24-25: Second Annual Pacific Northwest Computer Graphics Conference, University of Oregon, Eugene.

Oct. 25-27: AIA Conference on Architectural Masterplanning in the Corporate Environment, San Jose, Calif. Contact: Beverly Sanchez at Institute headquarters, (202) 626-7434.

Oct. 26-29: Fifth International Conference on Urban Design—City Building: At Home and Abroad, Washington, D.C. Contact: Urban Design, Main P.O. Box 105, Purchase, N.Y. 10577.

Oct. 27-28: AIA Third Architectural Management Conference—Post Survival Management, Kansas City, Mo. Contact: William Hopper at Institute headquarters, (202) 626-7532.

May 6-19, 1984: AIA Annual Convention, Phoenix, Ariz.

LETTERS

Daylighting: I would like to reply to Robert Campbell's article, "Daylighting Research and Design," (see June, page 54).

As always, Bob has some pithy remarks. He also asks some pithy questions. He hits some nails on the head quite accurately. But then he yanks out the nails and leaves us with a board full of holes.

His basic question is, "To what extent does a scientific model of research have anything at all to do with designing buildings?" Although his implied answer is "nothing," later in the article he comments, "What seems most needed now is not more research but better bridges to practice." If research has nothing to do with designing buildings, why bother with bridges from it? He goes on to quote Doug Kelbaugh as saying "Research isn't done when it's done; there isn't enough meaning to all the information." Campbell says that he has "always thought this was endemic to architecture, this problem of converting information and experience into useful wisdom that can be absorbed by designers so that it becomes part of an accrediting tradition." Well said. This is the crux of the problem.

It really doesn't matter whether or not designers use the "Great Slide" (whatever that is). Sometimes computer programs are helpful, sometimes large-scale models, sometimes trial and error (I hope on something less than the final building). Aalto didn't have computers, or even the "Great Slide," and neither did Frank Lloyd Wright, but they must have made some studies and observations in addition to relying on existing information. Harvey Bryan says, "I don't use my tools because I have internalized all they can do." That doesn't deny the tools.

Intuition results from internalized information. As Harvey Bryan is quoted as saying, "The architect's design process integrates all kinds of inputs into a meaningful whole." Why do we have to make a choice between the inputs and the integration of the inputs? We seem to be divided into two kinds of people—those who think that the inputs *are* the solution, and those who dream of producing full-blown ideas out of nowhere, like Athena bursting forth from the head of Zeus.

Bob's resounding "no" to his own question, "Can architectural methods of handling daylight produce any important energy cost savings in buildings?" is sensational, but silly. Answers are almost never that simple. Take atria, for example. They're very popular nowadays, and for good reason; who doesn't enjoy a garden in winter, or a view of the sky, or a central meeting place? But they can be energy extravagant or energy efficient, all the way from being a minus to a plus, depending on their design and that of the rest of the building. They're like windows, which have many reasons for being. In all of architectural design there's almost never one overriding reason for any one decision; when three or more reasons lead to a solution, the design seems to fall into place. Making buildings "pleasanter or handsomer" is certainly a special province of architects, but it is as foolish to deny energy studies and research as it would be to deny exploration of structure or program. Harvey Bryan was right when he talked about architecture as a meaningful whole.

Lastly, I think we've sobered up a bit on technological fixes. For a great many years reliance on technological fixes such as climate control was very heavy indeed. Not only did this become uneconomical when the cost of fuel went up, but design often suffered as buildings became so artificially separated from their environments. We're looking at the new kinds of glass with interest, but let's not forget again where the sun is. The real point of Bob Campbell's article should be not which is "right"—technology or regionalism, research or design, or pleasantness or energy efficiency—but, to use his own expression, how to make the cowboy and the farmer become friends.

Sarah P. Harkness, FAIA, Chairperson,
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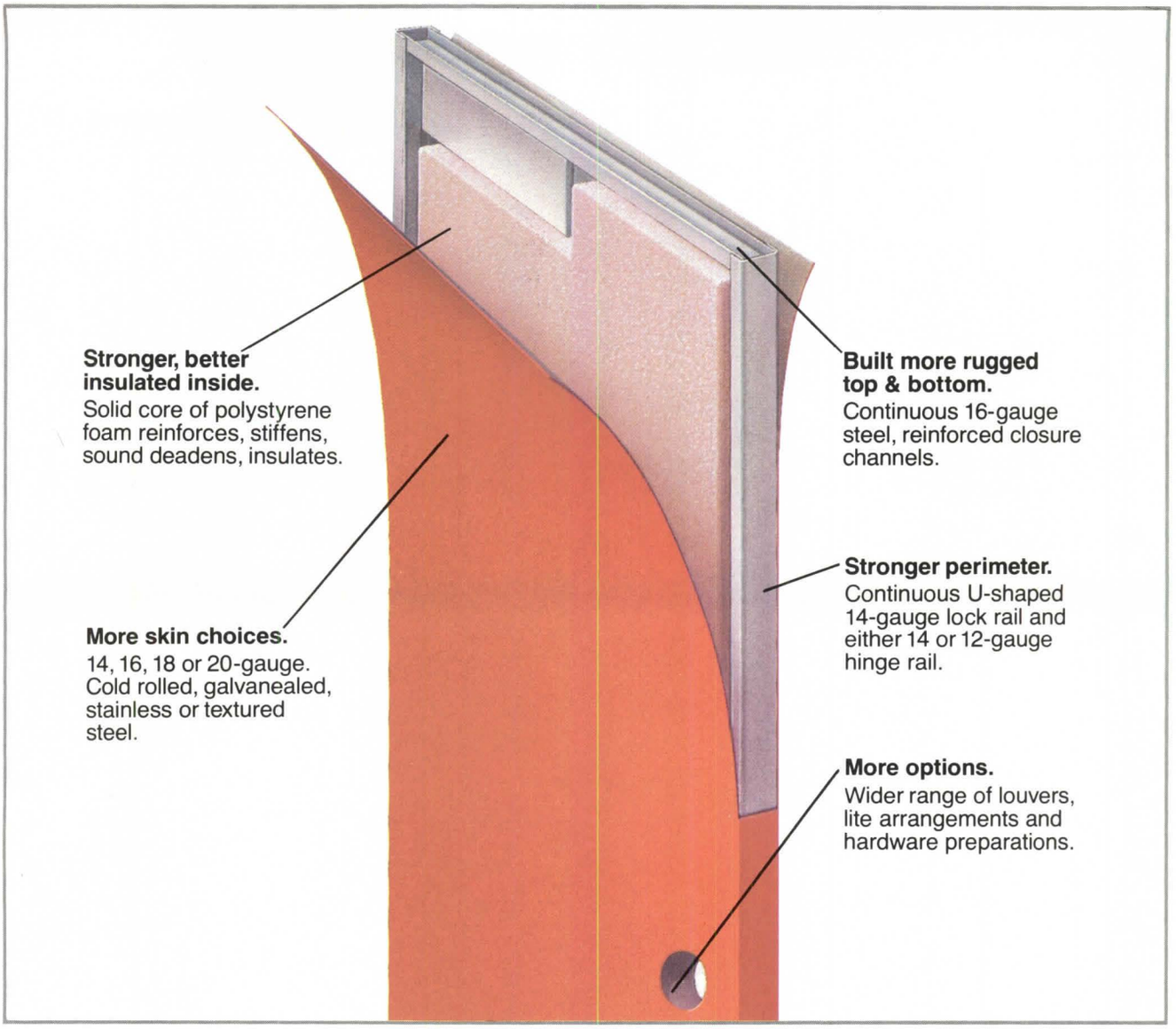

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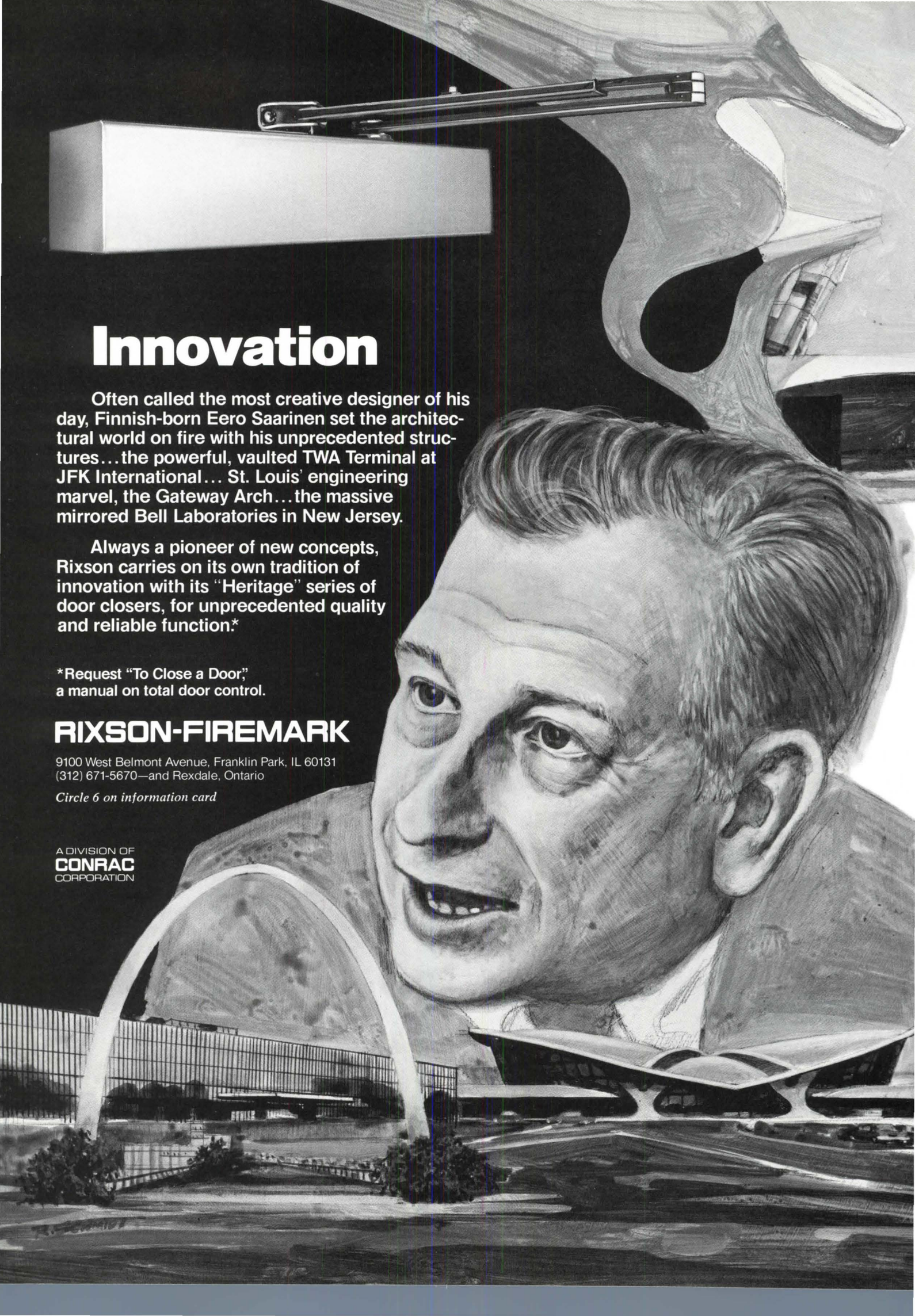

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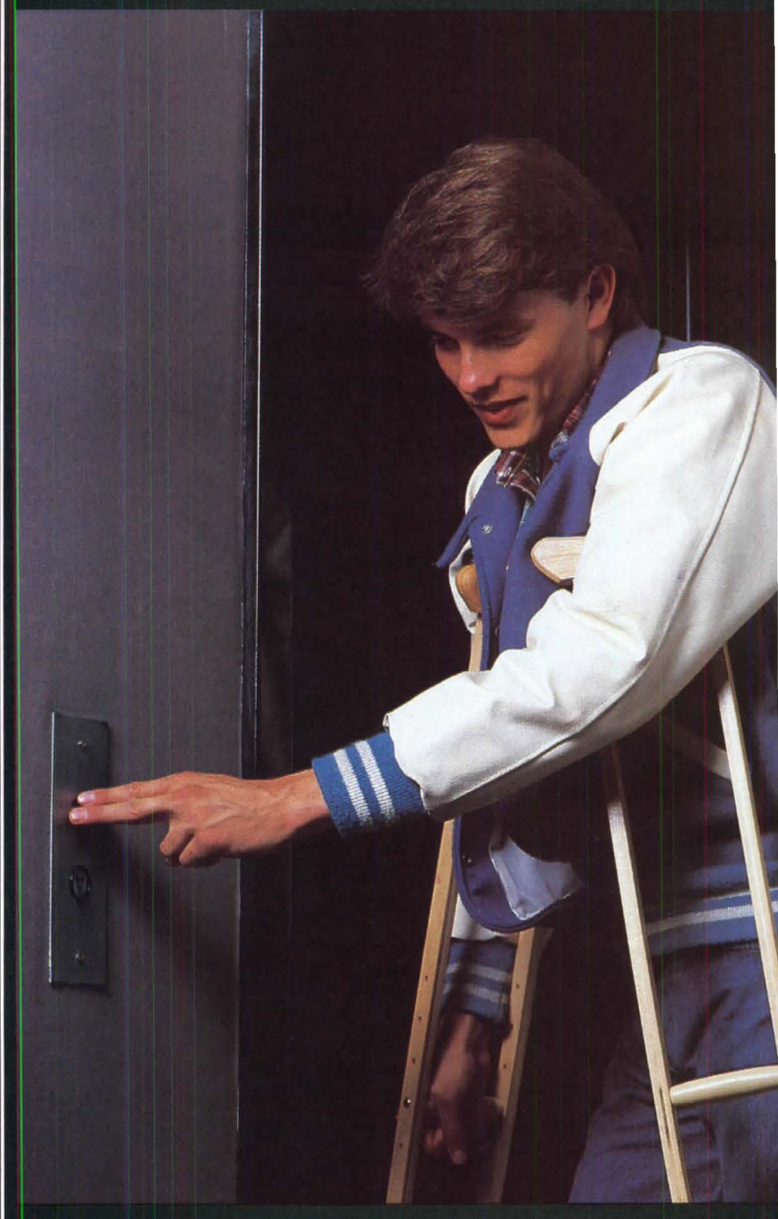

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NEWS

Government

Slayton Replaced as Director of Foreign Buildings Operation

The State Department has replaced William L. Slayton, Hon. AIA, as director of the Office of Foreign Buildings Operations (FBO), the agency that oversees the construction of embassies, consulates, and residences for Americans in foreign posts (see Feb., page 36). Slayton, a former executive vice president of the American Institute of Architects, will be succeeded by career foreign service officer Harvey Buffalo, a veteran administrator who has held key posts in Washington and abroad.

Like most of his predecessors, Slayton drew heavily on the recommendations of a three-member architectural review panel, which carries out a process for selecting architects for U.S. buildings abroad and overseeing the development of their designs. During Slayton's five-and-a-half-year tenure the involvement of this panel in the formulation of design was intensified. The panel, which formerly met annually, now convenes four or five times a year and reviews each project at least three times.

Slayton has long shown commitment to design quality, not only at AIA but as director of the federal urban renewal program and as a representative of a major developer. Some architects have expressed concern that his departure from the $63,115 post might be viewed as an opportunity to erode the State Department's widely acclaimed selection and review process. Neither Slayton nor the acting head of that office believes this is likely.

Concerning the future of the review panel Slayton said, "The process was there before I came and I expect it to continue when I leave. I can't imagine the State Department turning its back on a process for which it has received such a tremendous amount of praise. At the request of Assistant Secretary for Administration Thomas Tracy, we codified the selection and review process to clarify it and to preclude potential political or personal interference."

Acting FBO Director Martin F. Smith reaffirmed FBO's review policies. "The Office of Foreign Buildings Operations' policy in selecting architects will remain essentially the same as it has been for almost 30 years," he said. "The three-member rotating advisory panel will continue to make recommendations to the Department of State, where the selection decision will be made. We want our embassy office buildings to continue to be a proper representation of the United States and appropriate for the city in which they will be built."

Pietro Belluschi, FAIA, one of three advisers to the State Department and the draftsman of the architectural policy for foreign buildings, which the department accepted in 1954, said, "The best thing AIA could do is support Slayton's successor. We should keep our eye on the agency, but we should assume that it will uphold the tradition for excellence."

Writing in 1954 for himself and fellow advisers Ralph T. Walker and Henry R. Shepley, Belluschi called on the State Department to adopt an architectural style that would reflect "dignity, strength, and neighborly sympathy. . . . Ostentation will be avoided." These admonitions, particularly the dictum to avoid ostentation, had special significance during Slayton's period as director. It was during this period that the State Department undertook construction of embassies and residences in many capitals of third world countries, many of them former colonies that proclaimed their nationalism during the 1960s. Of the more than 50 FBO projects in some phase of design or construction are embassies in Colombo, Sri Lanka, Doha, Qatar, Abu Dhabi, United Arab Emirates, and Kuala Lumpur, Malaysia; chanceries in Djibouti and La Paz, Bolivia; and housing units in Jakarta, Indonesia, Bissau, Guinea-Bissau, Lagos, Nigeria, Libreville, Gabon, and Kinshasa, Zaire.

Slayton's tenure also spanned a period in which terrorism left its mark on U.S. properties overseas, requiring extensive rebuilding of some of them, including the sacked chancery and housing units in Islamabad, Pakistan. The prevalence of terrorism also forced architects to incorporate provisions for security into their designs for U.S. outposts.

Under Slayton's supervision, important buildings were designed, started or completed in industrialized nations. The U.S. embassy in Moscow is under construction; restoration of the historic Tallyrand Hotel is nearing completion; an office building has been completed in Geneva; the chancery in Bonn has been rehabilitated, as have 400 housing units in the Pleitersdorf section of Berlin, to name a few.

Slayton estimates that work valued at $1 billion needs to be done, including a new embassy in Peking and consulates in other Chinese cities—projects delayed, in part, because of the difficulty of obtaining sites in China. These projects are part of a long-range, capital-budget program that was computerized just before Slayton's departure. SIMPSON LAWSON

Mr. Lawson is a Washington, D.C., writer.

NEWS CONTENTS

Unless otherwise indicated, the news is written by Allen Freeman, Nora Richter Greer, and Michael J. Crosbie.

Dallas Votes Rail/Bus System; Houston Rejects Rail Plan

Houston and Dallas came of age with the automobile and have suffered through more internal combustion woes than most American cities. For a long time the prevailing attitude in both places was "Sure, we've got a traffic problem, but let's wait until it's really bad before we do anything about it."

By 1979 the problem had become so severe in Houston that the Metropolitan Transit Authority (MTA) was established to come up with a mass transit plan. On June 11, 1983, MTA presented voters with a $2.35 billion bond proposal to finance 18.5 miles of heavy rail, the first phase of a 94-mile regional transportation system. The bonds were to be backed by revenue from a 1 percent transit sales tax. Houstonians rejected the proposal by a vote of 69,534 to 41,931, and shortly thereafter the city lost more than $100 million in federal transit grants.

Two months later, Aug. 13, the Dallas

continued on page 12

Government *from page 11*
Area Rapid Transit system (DART) proposed a 160-mile light rail and bus system to be completed by the year 2000. The tab was $8.9 billion, to be raised solely through fares and a 1 percent increase in the city sales tax. No federal subsidies would be requested. Dallas passed DART 59,523 to 47,904. Thirteen of 20 suburbs also approved the plan.

The MTA defeat shocked observers because the plan had the backing of key business and community leaders and most city officials. Professional pollsters had predicted an easy victory. The MTA was so confident of public support that it spent $44 million on preliminary engineering and planning studies and placed orders for $139 million in new Japanese rail cars.

In retrospect, it appears that the $2.35 billion price tag frightened voters, especially since it would finance only the first phase of the system. Also, the new expanded transit system would be managed by the same body that has given Houston some of the worst bus service in the country. It is not uncommon for 40 percent of the city's buses to be out of commission on any day; cost per mile is approximately $4.25, nearly double that for systems of comparable size in other cities. Finally, the MTA made several major tactical blunders, most notably proposing initially to build 2.3 miles of elevated track down the middle of Houston's Main Street. This proposal called up images of the noisy, antiquated subway systems of older Northeastern cities.

The DART plan, on the other hand, seemed an extremely dicey proposition at best. It was opposed by the city's black community, who felt it was unbalanced and racist; by neighborhood groups, who feared it would slice up residential areas; and by influential public figures such as former U.S. Congressman Jim Collins, who argued that it was an example of government interference in public affairs.

In the end DART passed because supporters were able to focus on the one issue that everyone agreed on—the need to alleviate Dallas' monstrous traffic problems, brought on by runaway development—and downplay specifics of the plan, about which voters were divided.

Adlene Harrison, chairman of the DART board, said during the campaign: "Any survey you do shows 85 to 90 percent of the people are saying, 'Yes, we need to do something about traffic.' I don't see another proposal coming along any time soon. If we depended on the people who are opposing this plan, we'd still be a little hole in a dried-up prairie."

The DART campaign was aided by strong media backing, approximately $1 million in campaign contributions (opponents were able to raise approximately $60,000), and by a large volunteer staff familiar with the golden rule of Dallas bond elections: target the white, affluent North Dallas precincts and everything else will take care of itself.

DART passed overwhelmingly in the city's northern precincts, where traffic congestion is worst, and was overwhelmingly rejected in the southern, mostly black precincts.

Both cities are now getting ready for Round II. Houston transit officials have pledged to come up with a more saleable mass transit proposal by fall, probably one featuring more light rail and bus service. "It's not our intention to dress up the old girl in different clothes and try to sell her," said MTA General Manager Alan Kiepper. Dallas officials, in the meantime, will begin fleshing out the specifics of the DART plan and trying to coordinate them with the city's long-range planning objectives. In the process they will also have to heal some of the social wounds that the DART campaign opened. DAVID DILLON

New York's Landmarks Head Reflects Broadened Constituency

The new chairman of New York City's Landmarks Preservation Commission is a resident of the Bronx who most recently was executive vice president of the Harlem Urban Development Corporation. As such, Gene Norman, an architect, brings to the job credentials that reflect a broadening constituency for landmarks preservation and a shift of attention from midtown Manhattan to other areas of the city.

The Landmarks Commission, an 18-year-old agency of the city government, has been criticized in the past as a "club" of New York's polite people and the cognoscenti. And Kent Barwick, Norman's immediate predecessor at the commission, notes the city's dichotomy—wealthy people in Manhattan who frequently travel abroad while never seeing Staten Island and Staten Islanders who are "sensitive to the fact that when they read in the papers about New York City, they are reading about Manhattan." But Barwick notes a "fascinating change" of "genuine interest of people all over the city—including elected officials—reusing New York's best buildings and revitalizing the finest neighborhoods." He adds: "Some people who could have been appointed to head Landmarks would have needed a *Fielding's Guide to the Bronx*. Gene doesn't."

Eugene A. Norman, 48, has lived in Harlem, Manhattan's lower east side, and the Bronx. He graduated from Hunter College and studied architecture at Pratt Institute. After a decade of practice he joined the New York State Urban Development Corporation staff in 1972, and headed UDC's Harlem subsidiary from 1975 until last month.

continued on page 16

Stratford Condominiums, Palm Beach, Florida. Architect/Schwab and Twitty Architects, Inc.

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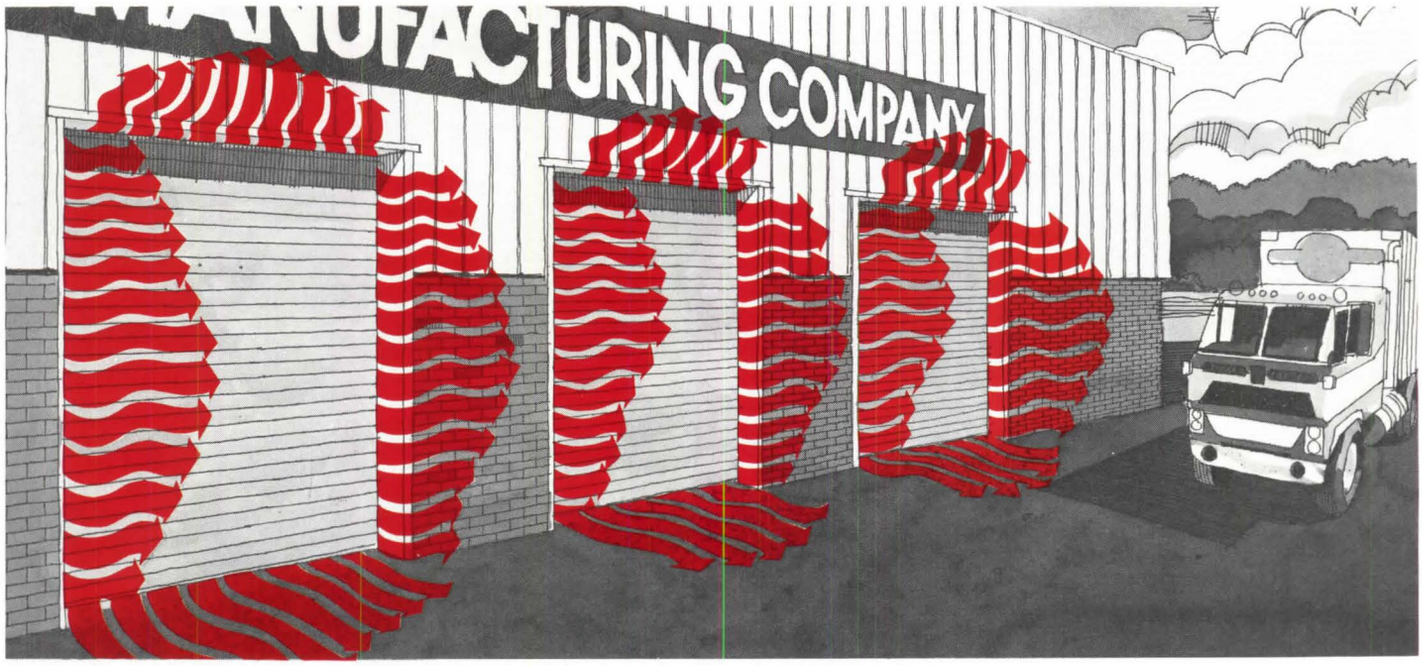
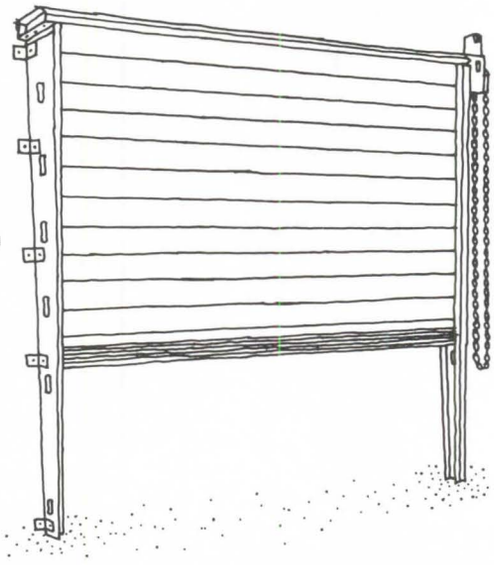
Don't let drafty doors waste energy dollars



The Inryco® Telescoping Door reduces air leakage for long range savings!

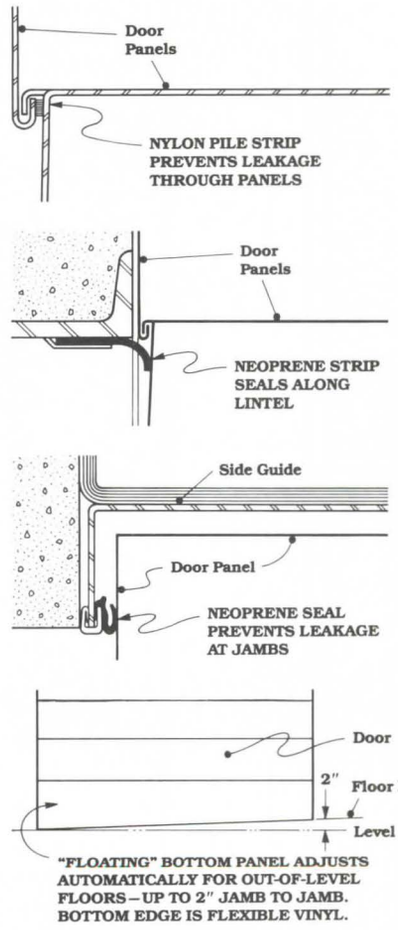


Air infiltration through vehicle door perimeters wastes energy—can add hundreds of dollars per door per year to a building's operating costs.

The Inryco Telescoping Door reduces such waste dramatically. Tested at 1.56psf air pressure (25mph wind) it achieved an infiltration rate of only 0.93cfm per foot of perimeter. Calculated rates for most other doors are at least three to six times higher. That translates into substantial life cycle savings.

Check the Inryco Telescoping Door before you specify. In addition to energy conservation, its unique design provides high cycle usage, offers long term maintenance savings, reduces down time and curtails noise.

For full details, see our Catalog 36-1 in Sweet's, section 8.8/In, or write for a copy: Special Products Group—Milcor Division; INRYCO, Inc.; Dept. J-4039; P.O. Box 393; Milwaukee, WI 53201.



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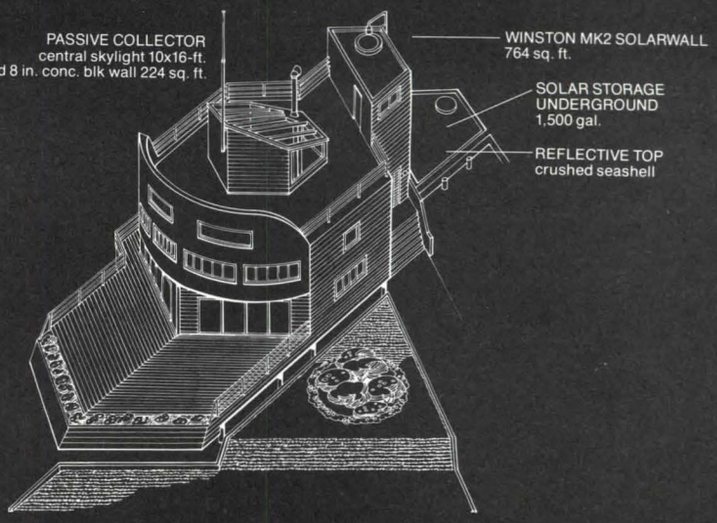
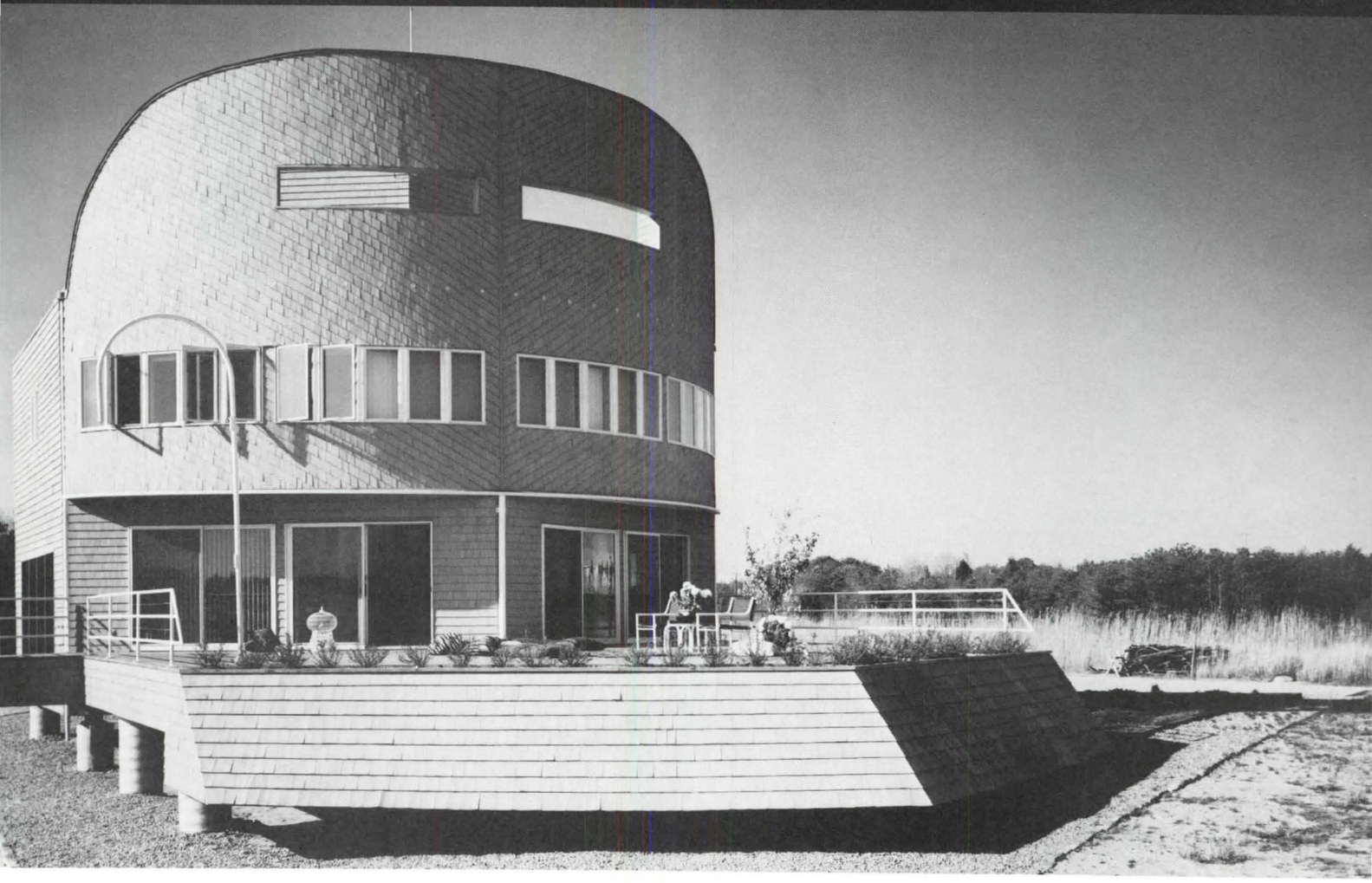


Solar Vessel: Heated by the sun, warmed by the cedar.



"Liteship," a private beach house. North Falmouth, MA. Architect: Thomas N. Larson F.A.A.R.

The problem/opportunity: Design a year-ound solar-heated beach house.

Facing north.

On overflow land.

In Massachusetts.

Solution by Thomas Larson: "The beach ouse 'Liteship' is a hybrid passive/active solar essel and a nautical architectural sculpture.

"The primary structure is a 2-bedroom, -bunkroom hexagon with a windshield above ne roof deck to block the northerlies.

"It's clad with red cedar shingles because ney have ideal weathering characteristics, a eel of warmth, excellent insulative qualities and re indigenous to the surrounding houses."

For our color brochure "27 New Commercial Ideas in Cedar (and a few old nes)," write Suite 275, 515 - 116th Avenue N.E., Bellevue, WA 98004. (In Canada: Suite 1500, 055 West Hastings Street, Vancouver, B.C. 6E 2H1.)

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Tlingit cedar canoe paddle painted with a blackberry juice and ash mixture.
Cedar. To touch the earth.

Red Cedar Shingle & Handsplit Shake Bureau

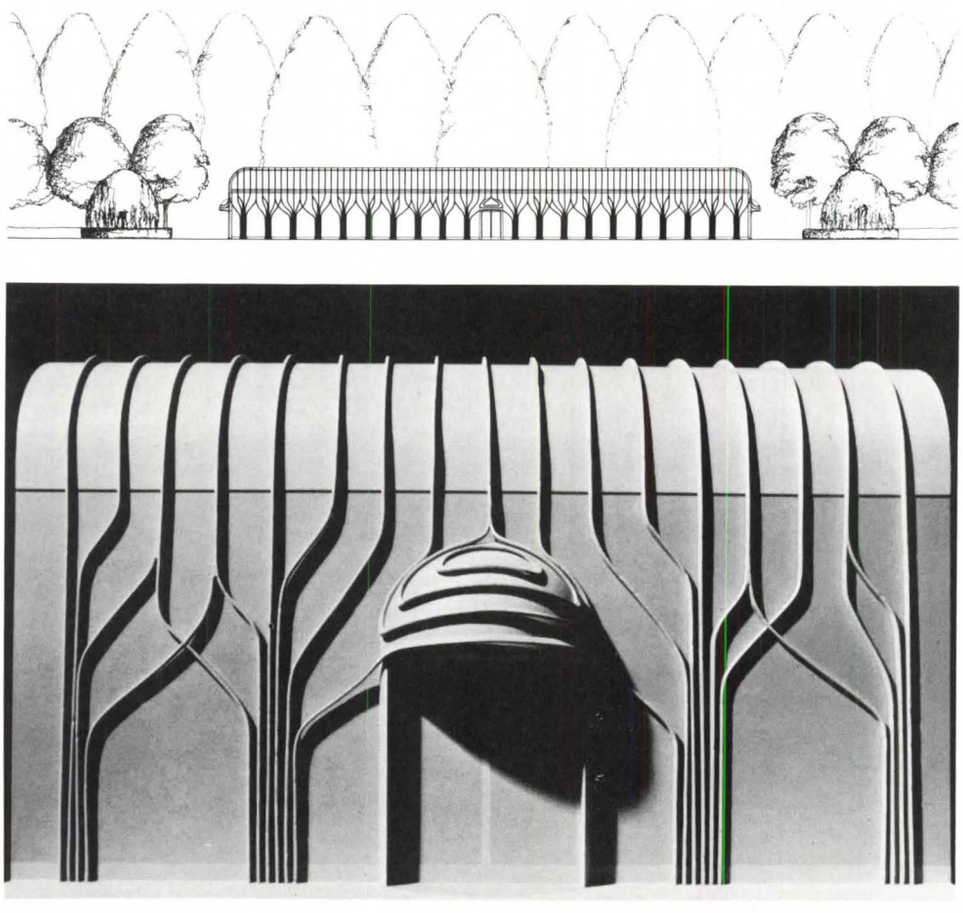
Government *from page 12*

Norman moves to the Landmarks Commission highly recommended. "He can calm a very volatile situation with his personality," observes Lloyd A. Williams, president of the Uptown Chamber of Commerce. "He is sensitive to the burden that the [landmarks designation] process represents to the other guy," says Barwick, who adds, "I'm not talking about some sort of fraudulent public relations thing. His is a genuine concern." Says George Lewis, FAIA, executive vice president of the New York Chapter/AIA, "He is clearly sophisticated about New York City. That is saying a lot."

Norman's first big challenge promises to require such qualities. A bill introduced in the last session of the New York state legislature would exempt houses of worship and property owned by religious organizations from the jurisdiction of about 100 local landmarks procedures in the state unless the organizations voluntarily elect to be covered. The churches and synagogues then could withdraw their participation at any time. No action was taken in the legislature earlier this year, but the bill is expected to be reintroduced this fall. Such a measure would benefit St. Bartholomew's Episcopal Church, which wants to erect a 59-story office building on the site of one of its Park Avenue buildings, and another Manhattan congregation, the St. Paul and St. Andrew United Methodist Church on West 86th Street, which would replace its church with an apartment house containing a new church.

Preservationists see the bill as a major threat to landmarks law in the city; supporters contend that landmark designation can cause dire financial hardships on congregations. Among those petitioning legislators against the bill was Jacqueline Kennedy Onassis, who wrote that it is "hard to accept" that society "should at this moment consciously destroy the heritage that our parents and grandparents have passed on to us." On the other side, a statement of purpose for the proposed legislation declares that "the preservation of the Constitutional right to the free exercise of religion without governmental interference is a value of greater importance than the otherwise laudable goal of preservation of objects and buildings of 'special character.'"

Reluctant to comment on issues relevant to his new job until he gets "up to speed," Norman has said only that "the city would be tremendously disadvantaged in losing these fine church structures as landmarks." He is more at home talking about the benefits of landmark designations in the "outer boroughs," including Manhattan north of 96th Street. Such designation "increases a community's sense of pride," he says, and "gets people working together in new ways."



'Art Nouveau' Addition to the Mall—The Fine Arts Commission has approved the design of a one-story glass pavilion restaurant to be located on the Mall in Washington, D.C. Reminiscent of 19th-century French park architecture, the 200-seat restaurant will be 126 feet long, 54 feet wide, 17 feet high. Its glass walls will be covered with armatures of steel framing bent into tree-like art nouveau forms. It will have green metal trim and a dark green roof. Originally designed by E. Charles Bassett, FAIA, and Sidney Hoover, AIA, of Skidmore, Owings & Merrill (San Francisco), the concept was shelved for financial reasons and a temporary ice skate rental structure was constructed on its place. The design was recently revived when a restaurant operator agreed to finance its construction. Final approval by the National Capital Planning Commission is pending at this writing.

Preservation Plans Set for Statue of Liberty, Ellis Island

Two national landmarks in New York City Harbor—the Statue of Liberty and Ellis Island—are slated for some sprucing up for the centennial celebration of the dedication of the statue in 1886. The Statue of Liberty-Ellis Island Centennial Commission was organized in May 1982 through the U.S. Department of the Interior to coordinate the restoration of the two sites. The commission was presidentially appointed and is chaired by Chrysler Chairman Lee A. Iacocca.

A two-year study of the condition of the Statue of Liberty was submitted in July to the National Park Service. The study was conducted by a team of French and American architects and engineers, working under the auspices of the French-American Committee for Restoration of the Statue of Liberty. Swanke Hayden Connell of New York City served as consulting architect.

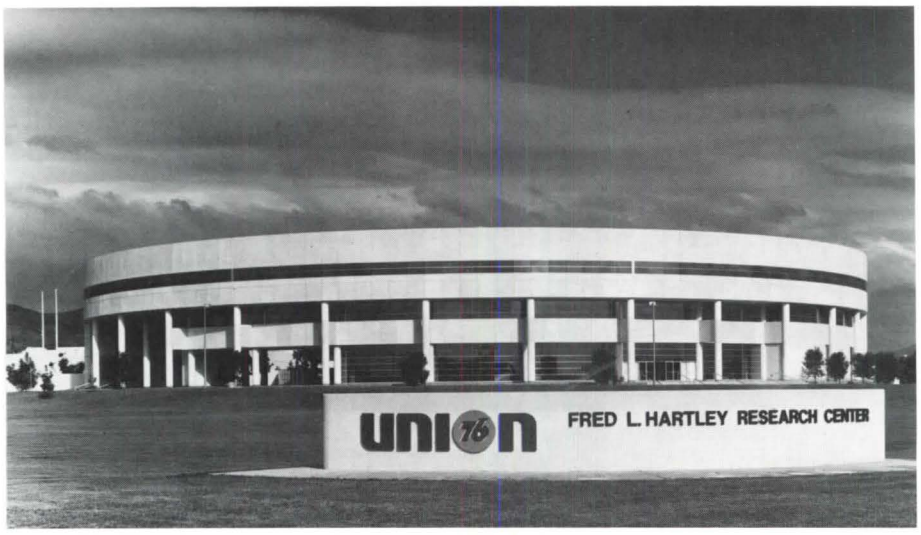
The 36-page report concludes that the statue, a gift from France in celebration of Franco-American friendship, has undergone serious deterioration, especially to its structure, and is in need of a thorough cleaning and restoration. The figure was the work of sculptor Auguste Barthaldi; Alexandre Gustave Eiffel designed its iron skeleton. Completed in 1884 in Paris, the statue was disassembled, packed in 210 wooden crates, and reassembled on the little island, where it has stood for almost 100 years. The report outlines a number of areas where attention is now needed: the statue's skin, the armature that supports the skin, the frame that supports the armature, the central pylon structure, and the stairway and platforms for visitors.

The report cites problems with the skin

continued on page 17

ENERGY MANAGEMENT

CASE STUDY #28*



A Million Pounds of Ice Melt Energy Costs At Union Oil Research Facility.

Brea, California. The small animal looked much like a tiny horse with toes, as it raised its head warily from the clear pool where it had been drinking. Around it, the fields of long amber grass rolled in gentle waves over the hills toward the great ocean itself, barely visible to the west.

A great roar ripped through the scene, as a snarling catlike beast with huge bared fangs landed where the small mammal had been standing. The little horselike creature, sensing its danger, had fled for the safety of the pond. The escape of its meal enraged the saber-toothed cat, and it rushed after its prey into the shallow water.

Suddenly both hunter and hunted found themselves sinking, trapped victims of a deadlier menace–a thick and viscous reservoir of tar lying just below the innocent surface of the pool. Inexorably the tar drew predator and prey deeper and deeper until soon only the quiet surface of the water remained to tempt its next victims.

Union Oil has brought a new ice age to an area where prehistoric mammals once roamed among surface tar deposits.

This scene took place thousands of years ago at the La Brea tar pits in Los Angeles, California. Brea means "tar" in Spanish, and in the nearby city of Brea, surface tar seeps also occur. The prehistoric mammals in this scene were pushed to extinction by the ice age which rolled down across the North American continent.

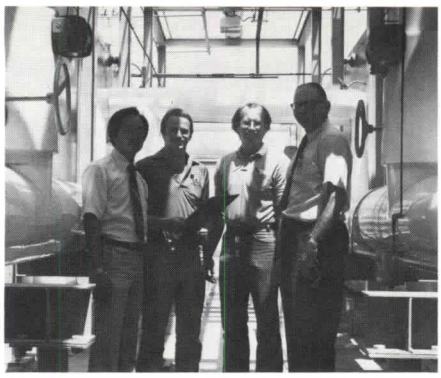
Today, those ice age glaciers have receded, but Union Oil has brought a new ice age to the area where prehistoric mammals once roamed among surface tar deposits. Brea is the site of Union Oil Company of California's Fred L. Hartley Research Center. Located about 25 miles southeast of Los Angeles, this 31-building complex of administration, office, laboratory, warehouse and support facility encloses 420,000 square feet of conditioned space. Its cooling is handled by what may be the world's largest latent storage system, with a capacity for making over 1.1 million pounds of ice in a 12- to 14-hour period.

The Fred L. Hartley Research Center was created in 1951, building upon Union Oil's long history of carrying on research in the Southern California area. In 1982, the company completed a $32-million expansion program, adding 156,000 sq. ft. of conditioned space, including three new 23,000 sq. ft. laboratories. The complex occupies 50 acres of a 125-acre parcel of land, and houses nearly 1,000 research scientists, technicians, administrators and support personnel.

The expansion project required preparation of a master plan which would allow for growth into the 21st century. An additional requirement for the expanded facilities was to express a fresh image at the location, one that would not be associated with any particular period or style. The architectural firm selected to develop the expansion was William L. Pereira Associates, an organization best known for design of the Transamerica Building in San Francisco.

Small building, big image. In organizing the expansion, it was determined to utilize three major zones–an administrative zone, a zone for basic research and a zone for specialized research, according to Robert B. Stockton, Principal-in-Charge and Pereira Project Manager for the Union Oil expansion.

"The administrative zone is closest to the public side of the property, and it was there that a focal point was needed. While the requirement was for a fairly small three-story administrative building, that building had to project a very large image," Stockton explained. "We needed to project the feeling of a corporation of size and stability, yet one which remains deeply committed to creative research and innovation."



HUGH HAVEN AND OPERATING STAFF. Senior research engineer Hugh Haven (R) sees ice bank-based cooling system as an innovative concept which is well-integrated with the overall expansion program for the Union Oil research center.

To express this concept and to anchor the most visible corner of the entire complex, the Pereira team chose a design utilizing a curved structure with large areas carved out within the curve to create the feeling of openness and to avoid the linear feeling of a wall preventing the public from seeing into the project.

"As a result," Stockton noted, "we have a building which appears to be at least twice the size it really is." The administration building joins with the stepped facade of the employees' cafeteria, forming a central outdoor garden area. The building is clad with fiberglass-reinforced concrete panels weighing about one-tenth as much as precast concrete. The lightened weight reduces seismic loads. The warmth of wood is used in the interior to help bring some of the very large public spaces (some walls 28 feet high) into human perspective.

Reflective glass is used for energy reduction, and on the west side the floors are stepped back from the top to create an overhang to shade the glass areas. Less glass is used on the west and south than on the east and north exposures. The landscaped vistas of the complex create a pleasant meadow-like exterior environment. Overall, the design provides an atmosphere for creative contemplation and productive innovation by Union's scientific personnel and support staff.

More than aesthetics was involved in the design for the expansion of the research center. Some very pragmatic concerns had to be addressed by the project, as well. Before the additions, most of the existing buildings in the complex were cooled by water from a central chilled water plant. Six buildings employed separate or supplemental refrigeration systems.

Before the expansion, the central plant had a 492-ton capacity, consisting of a 182-ton centrifugal chiller and five reciprocating compressors of 62 tons each. A 40-hp pump circulated chilled water through coils in individual air-handling units at each building.

Rates force alternative assessment. Going into the expansion project, both the owner and the architect knew energy costs would be a significant factor. The Union Oil research complex is in an area served by Southern California Edison (SCE) Company, and billing for large customers is based on time-of-day rates. (A large customer is any that has a monthly maximum demand of more than 500 kW for any three months during the preceding year.) Summer rates for large power customers of SCE are highest during the afternoon and early evening peak. Rates drop for use during morning and evening "mid-peak" hours. During the night and early morning hours, the rates are lowest, running less than two-thirds the peak period charges. In addition, steep demand charges are added during the peak hours, with a much smaller demand charge levied during mid-peak times.

This rate structure, along with the knowledge that the building program would add another 1200 tons to the existing cooling load, provided Union Oil with an urgent incentive to explore alternative approaches for fulfilling its HVAC requirements. The first step was meeting with Southern California Edison. It was during these discussions that the possibility of using latent storage was first explored.

Edison had been encouraging large commercial and industrial customers to consider thermal storage since the mid-1970s. They outlined to Union Oil how such an approach could reduce peak demand. It was to their benefit to have Union Oil develop a latent storage system, since it could help reduce peak demand and the necessity to build plant capacity to meet infrequent peaks. According to Hugh Haven of Union Oil Co., "The utility rate structure provided Union with a strong economic rationale for considering a thermal storage installation."

Southern California Edison recommended that Union Oil representatives contact the Commercial Refrigeration Company of Los Angeles for more information on latent storage systems. Since the central air-conditioning refrigeration system at the Research Center was due for replacement, and since the existing chilled water distribution system is compatible with latent storage systems, Commercial Refrigeration recommended that one massive ice-storage system be considered, to provide cooling for the additions and the existing buildings as well.

Ice system melts resistance. Union Oil retained F.T. Andrews, Inc. of Fullerton, California, a consulting engineering firm, to undertake a comprehensive feasibility study of this innovative thermal energy storage concept.

ARCHITECT AND CONSULTING ENGINEER REVIEWING PLANS. Architect Robert B. Stockton and consulting engineer I. Ray Cranston are convinced that ice storage meets the need for economic cooling and a fresh corporate image.

The Andrews team looked at three alternative systems: first, a conventional refrigeration system using centrifugal compressors; second, a latent storage system; and third, a chilled water storage system. Based on the existing electric utility rate structure, and considering operating costs as well as initial costs, latent storage appeared the most economical approach.

According to I. Ray Cranston, President of F.T. Andrews, Inc., "the latent storage system would cost about $300,000 more initially than a conventional chilled water system without storage, but would save about $106,700 annually in electric energy and demand charges over the conventional system. This produces a simple payback in less than three years.

"Most of that additional expenditure is for the steel tanks, with a ice-making and storage capacity of 1.1 million pounds (100,000 pounds per tank)," Cranston added. "The water storage system was not recommended because it would have required 1.2 million gallons to provide the same thermal storage capacity as the ice. This would have meant that the system would have needed volume about eight times that required by the ice."

Design Teamwork. After reviewing the recommendations of its engineering firm, Union Oil elected to proceed with installation of the latent storage system. Both the economics and the technology appeared favorable. Commercial Refrigeration Company was selected to work in a cooperative effort with the F.T. Andrews's team in design and building the system.

The thermal system at the Union Oil research complex is based on a type of system used in the dairy industry for over a century. It has advantages of design simplicity and ease of maintenance, and remains efficient through changes in the scale of its application.

Ammonia was chosen as the most economic cooling medium. According to Jack Carney, President of Commercial Refrigeration Co., "Ammonia was selected because of its higher efficiency and lower cost than other possible refrigerants."

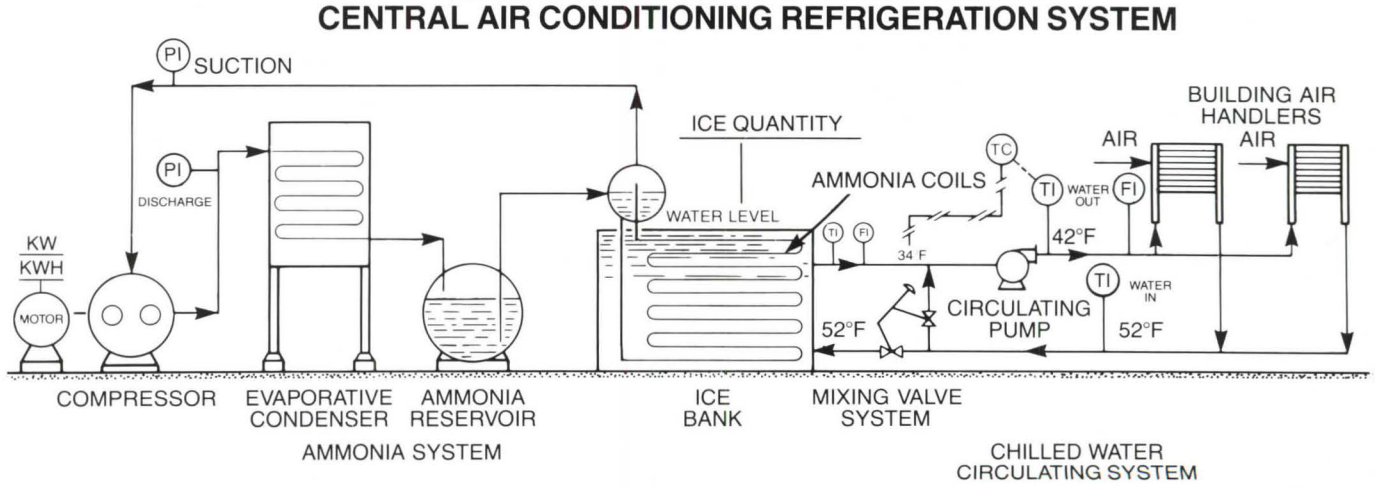
The efficient use of energy remained important throughout planning, in an effort to minimize cooling system energy use. Motors were sized for peak efficiency at design load, since the ice-making process allows for efficient, continuous full-load operation. An overall reduction in horsepower requirements results from this efficient energy utilization. In fact, the latent storage system for the research complex was designed with about half the horsepower requirements that would have been needed in a conventional installation.

The utility rate structure provided Union with a strong economic rationale for considering a thermal storage installation.

The Union facility utilizes two 600-hp compressors housed in a tilt-up concrete structure designed to reduce compressor noise levels outside the building. The ice bank has a design capability to produce 1,900 tons of refrigeration. Should an emergency condition require the shutdown of one of the compressors, the other can meet the cooling requirements of the entire complex by continuing operations into the on-peak hours.

A million pounds of ice. A flood-coil, gravity system circulates the ammonia refrigerant through 1¼-inch steel icemaking heat transfer pipe coils. Two 40 ft. x 60 ft. x 11 ft. water tanks each have the capacity to contain six Chester-

FRED L. HARTLEY RESEARCH CENTER
CENTRAL AIR CONDITIONING REFRIGERATION SYSTEM



OPERATION OF ICE STORAGE PLANT

The operation of the refrigeration plant and the HVAC system is completely automatic, with manual override control. In the summer, the two compressors operate in a predetermined sequence for approximately 12 to 14 hours per day, primarily during off-peak hours and sometimes during mid-peak hours. Ice is formed around the coils in a thickness which varies from one to two-and-one-half inches. As cooling needs require, ice melts off four coils at a time, two in each tank.

Three 100-hp pumps circulate the chilled water to the air handlers. Each pump is capable of pumping 1,500 gpm for a total 4,500 gpm flow. Staging allows the pumps to operate individually or together, depending upon the cooling requirements. They are the only equipment in addition to the air handlers operating during peak demand hours.

During months requiring reduced cooling, compressors continue to operate on a night schedule only, and ice build-up is based upon anticipated needs. Ice thickness controllers cycle the compressors as required.

INTERIOR LOBBY. Interior of the Fred L. Hartley Research Center greets visitors with dramatic design, the warmth of wood paneling and coolness from stored ice.

Jensen serpentine ice-building coils around which the ice forms. Eleven of the twelve planned coils are in place and operating. The twelfth will be installed when needed to meet expanded cooling needs.

Each ice-building coil has the capacity to produce 100,000 lbs. of ice in about 14 hours. When maximum thickness has been reached on all 11 coils, about 14,000 ton-hours of cooling is available.

The tanks are located above-ground, making them more accessible for maintenance and reducing concerns about possible earthquake damage. The location above-grade also avoided the need for installation of drainage tile in the event of seepage.

As the ice melts, 42°F water is supplied to the separate air-handling units in each building. After use, the water is returned at 52°F.

Success breeds further interest. After one year of operating the latent storage system, results have met design expectations. Maintenance has been no more difficult or extensive than for a conventional system.

Under a conventional system, and based on Union's previous experience, annual energy and peak demand charges could have been expected to run about $170,000 according to Cranston. The cost using the latent storage system has been approximately $67,300.

The net result is that Union Oil Company is very satisfied with the new system and the way it is working. Foreman Dan Vidal and operating engineers for the central plant, Mike Brewer and Robert James, say: "The system is quite simple and very easy to operate. It is as easy to handle as a conventional plant."

Hugh Haven states that "this ice storage HVAC system exemplifies Union's commitment to innovation and creativity. It has been made possible through more than 40,000 man-hours of labor from the personnel of the architectural, engineering and contracting firms involved firms which have the vision to help Union meet its goals for this important research complex for now and for the future. This latent ice storage system, as well as the design of the complex itself, projects the image of Union Oil as a corporate leader in creative innovation."

In order to operate the system even more efficiently, Union has plans to add an energy management and control system with routines that will reduce energy consumption in the central refrigeration plant and in the individual air-handling units.

The commitment of the Union Oil Company to continued innovation in the field of energy management remains strongly in evidence through such continued planning. Its ties to the community are expressed through such commitment to the future.

DESIGN SUMMARY

GENERAL DESCRIPTION:
Area: 420,000 sq. ft.
Volume: 5,730,000 cu. ft.
Number of Floors: Typically one.
Types of Areas: Private and general offices, research laboratories, auditorium, dining rooms, cafeteria, library, mechanical rooms, storage
CONSTRUCTION DETAILS:
Glass: ¼" reflective
Exterior Walls: ⅝" thick glass fiber reinforced concrete panels; U value: 0.08
Roof and Ceiling: Built-up asphalt roof over composite insulating concrete and urethane insulation; U value: 0.045
Floor: Concrete
Gross Exposed Wall Area: 243,500 sq. ft.
Glass Area: 48,400 sq. ft.
ENVIRONMENTAL DESIGN CONDITIONS:
Heating: (New Construction)
Heat Loss Btuh: 10,198,000 Btuh
Normal Degree Days: 1490
Ventilation Requirements: 242,460 cfm
Design Conditions: 34°F outdoors, 72°F indoors
Cooling: (New Construction)
Heat Gain Btuh: 12,340,200 Btuh
Ventilation Requirements: 242,460 cfm
Design Conditions: 101 dbt, 73 wbt outdoors; 75°F, 50% rh indoors
LIGHTING:
Levels in Footcandles: 30-75
Levels in Watts/Square Foot: 2.5 over office tasks; 0.8 in general areas, 15 in special use areas
Type: Fluorescent, incandescent and mercury vapor
CONNECTED LOADS:

Heating and Cooling (1824 tons):	995 KW
Air Handling:	369 KW
Pumps:	334 KW
Other:	270 KW

PERSONNEL:
Owner: Union Oil Company of California
Architect: William L. Pereira Associates
Consulting Engineers: F.T. Andrews, Inc.
General Contractor: Pozzo Construction Company
Mechanical Contractor: Commercial Refrigeration Company
Utility: Southern California Edison Company

**One of a series of reports giving recognition to the efforts of architects and engineers on behalf of resource conservation.*

Edison Electric Institute
The association of electric companies
1111 19th Street, N.W., Washington, D.C. 20036

Government *from page 16*
resulting from the chemical interaction between the varying compositions of the red copper plates (300 in all), which are distinguished by their green patina. Dirt has collected in the seams, and the skin has suffered the ravages of acid rain. The pedestal has also been marred by a soluable copper sulfate that has washed down from the statue. The report concludes that 20,000 to 25,000 rivets that hold the skin together need replacement.

Inside, the skin is supported by an armature consisting of 600 vertical and 750 horizontal ribs of "puddled" iron, a material noted for its impurities. The skin is connected to the armature by 1,500 copper saddles. Deterioration of insulation between the ribs and the skin has caused iron to contact copper, resulting in rust. Thus, the report estimates, 600 saddles have come loose, leaving holes in the skin while the ribs have corroded.

Concerning the frame, which transmits the load of the armature to the central pylon, the report says that many of the frame bars were incorrectly installed, and thus have been bearing more weight than they were originally designed for. Most of them have warped or buckled.

The study also found that the head and the right arm were improperly assembled and both are two feet off center, putting additional stress on the structure. Four iron columns make up the pylon, which is braced by cross beams. The pylon is bolted to the anchorage. Strain has caused the pylon columns to warp or crack.

The stairway and platforms for visitors —whose numbers have increased 70 percent in the past decade—have suffered from wear, and the study found them in "questionable" condition.

The report recommends "cleaning of all structural components . . . both to verify their present condition and to permit further inspection." The right arm, which holds aloft the torch, will need to be disassembled so its plates can be rebuilt and replaced. Leaks through the glass "flame" have caused a "definite risk of structural failure," says the report.

The report also made suggestions for a new stairway and/or elevator that would accommodate the growing number of visitors. It is estimated that the restoration will cost $20 million and will take two-and-one-half years.

Meanwhile, nearby Ellis Island will be restored to accommodate visitors to its main building by 1986. The island was the site of immigrant processing on the East Coast from 1892 until it was closed in 1954, during which time it was the first stop for 17 million immigrants to America.

The New York City firm of Beyer-Blinder-Belle is currently planning a use program for the main building. The building is approximately 190,000 square feet—the largest of the island's 30-plus buildings —and is currently being considered as the facility that will house an exhibit and museum on immigration in the U.S., the history of Ellis Island, and the nature of America's "pluralistic" society. There are also plans for the island to be used for a conference center.

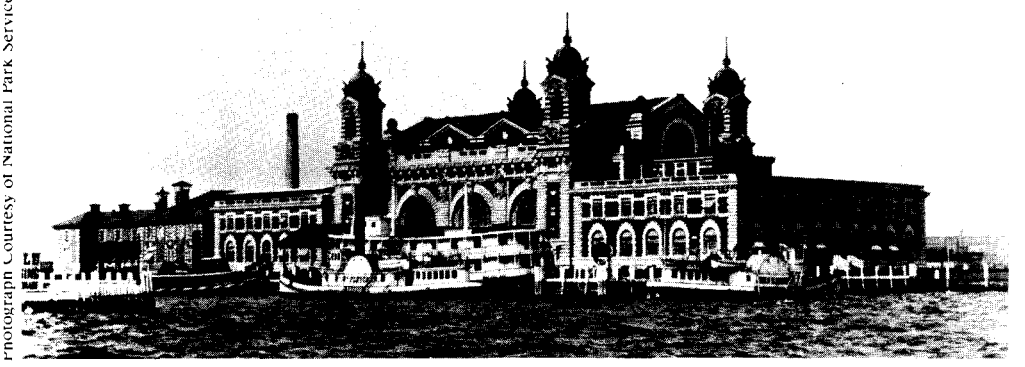
James Rhodes, AIA, project director for the restoration, says the main building was completed in 1900. It replaced one constructed in 1892—the year that the island first opened—which burned down in 1897.

Rhodes characterized the building as being in relatively good shape. Windows have been replaced, although the roof still leaks and plaster has fallen down in many if not most of the rooms. Other rooms, however, are remarkably well preserved, says Rhodes, "like people have walked out of them 30 years ago and haven't been back." He says the by-word for the restoration is "minimum intervention." Construction should commence by spring 1984.

Work will also be conducted on the site's other facilities, among them a hospital, baggage dormitory, ferry building, and recreation building. Three islands actually make up the site. The largest, which includes the main building, is 27-and-one-half acres, which was built up from a three-acre sand bar with fill from the New York City subway. The smaller island to the south was actually two at one time, joined together with fill.

Rhodes notes that work on the entire complex should be completed by 1992, which will be the centennial of the first immigration station on the island and the 500th anniversary of Columbus' voyage to America. *News continued on page 19*

Main building, Ellis Island, circa 1900.



Photograph Courtesy of National Park Service

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Practice

NCARB Convention Reaffirms Professional Degree Requirement

Delegates to the National Council of Architectural Registration Boards' annual meeting in late June reaffirmed the boards' requirement that all candidates for NCARB certification hold a professional degree from an accredited architectural program as of July 1984. At the same time, the delegates voted to establish a committee that will develop educational criteria for certification candidates who do not hold accredited degrees in architecture.

Reaffirmation of the degree requirement came from 44 of the 51 boards represented at the meeting. NCARB Executive Director Samuel T. Balen, FAIA, suggests that this vote effectively signals the end of the three-year debate over the degree requirement within the organization. Balen added that the education criteria will be developed by NCARB during the next year.

The vote for an "alternative route" to certification establishes an NCARB education evaluation committee, with an advisory panel consisting of representatives from AIA, the Association of Collegiate Schools of Architecture, the National Architectural Accrediting Board, and "other educators not representing any collateral organization." The committee will develop "educational criteria" for approval by NCARB that will be used to assess each candidate.

The delegates also voted to withhold the NCARB registration examination from any state not complying with NCARB requirements covering grading, administration of the exams, and reference materials that can be used during the exam. Although each state has sovereignty over its architectural registration exam, compliance with NCARB procedures provides a basis for candidates to gain NCARB certification (along with performance history and recommendations), which in turn is used by many states to grant reciprocity to out-of-state architects.

In passing this resolution the delegates singled out the state of California as violating NCARB's requirements. The California board was cited as not complying with NCARB's grading requirements since 1978. In addition, the California board has allegedly released more information to candidates than NCARB permits prior to the examination and has allowed additional reference materials to be used during the examination that also violates NCARB's requirements. NCARB's board of directors has invited California to submit to the board what remedies it proposes for future examinations, according to NCARB President Ballard H. T. Kirk, AIA. Hal Levin, president of the California board, said that he hopes the problem will be satisfactorily resolved before the next examination.

In other action the delegates:

- voted to allow candidates who have obtained the five education credits currently required by July 1984 to be certified at any time after that date, despite their not having earned an accredited degree. (This action removes the retroactivity created by the previously passed degree requirement.)
- approved the termination of the senior oral examination as of June 30, 1984. (At that time oral examinations of United Kingdom and Australian architects coming to NCARB for certification will be administered by the international relations committee.)
- agreed that for the purposes of NCARB certification all divisions of the registration examination need not be taken by an applicant at the initial sitting nor that all previously failed divisions be taken at the same subsequent sitting.
- adopted a new rule that allows for revocation of an architect's NCARB certification for legal or ethical violations. This action provides for such revocation in instances where a state registration was allowed to lapse because of a threatened or pending revocation of a state registration.

Public Education Given Top Priority in AIA Survey

The ultimate challenge facing architects today is to educate the public about design while "instilling confidence and respect" for the profession, according to AIA's 1983 survey of registered architects.

Conducted by AIA's member/component affairs division, the survey was an attempt to "determine the demographic and professional characteristics as well as the attitudes" of registered architects that are not AIA members. This information will be used to "better direct membership expansion efforts." Survey results include responses from 10,150 nonmembers and, for comparison, from a random sampling of 1,500 AIA members.

As for educating the public about design, the respondents expressed concern about "educating the public and potential clients about what constitutes good design, what services architects offer, why hiring an architect makes a difference,

continued on page 21

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Practice *from page 19*
what an architect's responsibilities and liabilities are, and how architects contribute in a positive way to the total environment," according to a staff analysis of the results.

The next most important challenges to the profession, the survey found, are design issues—how to create a "responsible architecture" that is "humane, functional, esthetically pleasing, relevant, in harmony with the environment, utilizing appropriate and cost-effective technology, and responding to the client's needs."

Other identified "challenges" are "surviving the current economic conditions" and "adapting to new technology without losing sight of the humanistic element in design."

The survey also shows that the majority of the respondents do not feel adequately compensated for their services compared to other professions and do not feel adequately compensated by their employers. A majority of the respondents also believe that a professional degree from an accredited program should be a prerequisite for registration and that participation in a structured intern development program should be a mandatory requirement to qualify for licensure. Coverage of the profession by major national publications and electronic media was perceived by the majority as a way of creating greater public awareness and appreciation of architecture. Most respondents are also in favor of the "architectural profession as a whole" initiating, monitoring, and influencing national legislation and regulatory activities relating to the architectural profession, and, not surprisingly, a majority of the respondents also feel that their work has been affected by legislation or regulatory activities.

As for the demographics of the profession, the survey indicates that the "overwhelming" majority of registered architects are white males, aged 25 to 45. Women are estimated to comprise 3.3 percent of non-AIA member registered architects and 2.6 percent of AIA's membership; minorities (other than women) are an estimated 5 percent of the nonmembers, 3.4 percent of AIA members. Most of the respondents are engaged in private practice or employed by A/E firms (89.4 percent of the AIA members; 78.3 percent of the nonmembers). A higher percentage of nonmembers is employed in "nontraditional" areas—government, industry, and education.

Information services and professional development programs are ranked as the most important services offered by a national professional association, with periodicals, government affairs, business management programs/services seen as of lesser importance. The main reasons cited by nonmembers for not joining AIA are that they feel dues are too expensive at both the national and state levels and that services are not geared to their needs.

Awards and Competitions

Robert Venturi Receives '83 Louis Sullivan Award

Robert Venturi, FAIA, next month will receive the 1983 Louis Sullivan award, sponsored by the International Union of Bricklayers and Allied Craftsmen and AIA, for his "rich and varied use of masonry materials" and his success in dealing with "ordinary buildings in a serious and sensitive way."

The Sullivan jury selects the winner based on a body of work over a period of time. Venturi submitted five buildings: the Brant House, Greenwich, Conn., a 1970 design; the Guild House (1961) and the Institute for Scientific Information (1979), both in Philadelphia; Fire House Number 4 in Columbus, Ind. (1968); and Allen Memorial Art Museum, Oberlin College, Ohio (1973).

The jury wrote of Venturi and his Philadelphia firm, Venturi, Rauch & Scott Brown: "These architects ... attempt the difficult task of giving dignity to commonplace and repetitive architecture. Their work reflects its place and purpose at a time when mass media and widespread product information are changing the reassuring scale and helpful anchors of local traditions."

The Sullivan award and a $5,000 prize are given every other year to a practicing U.S. or Canadian architect whose work is judged to best exemplify the ideas and accomplishments of Louis Sullivan. Venturi is the seventh winner. Previously recognized were Henry Klein, FAIA; Ulrich Franzen, FAIA; Hartman-Cox Architects; Philip Johnson, FAIA; Edward Larrabee Barnes, FAIA; and Louis I. Kahn, FAIA (posthumously recognized in 1979).

Jurors for the 1983 award were Klein; William Caudill, FAIA, who died subsequent to the jury's selection; A. J. Diamond, RAIC, RIBA; Ben Weese, FAIA; Marshall D. Meyers, AIA; Mark Tilden, associate member, AIA; and Darrel Babuk, a student at Montana State University. *News continued on page 25*

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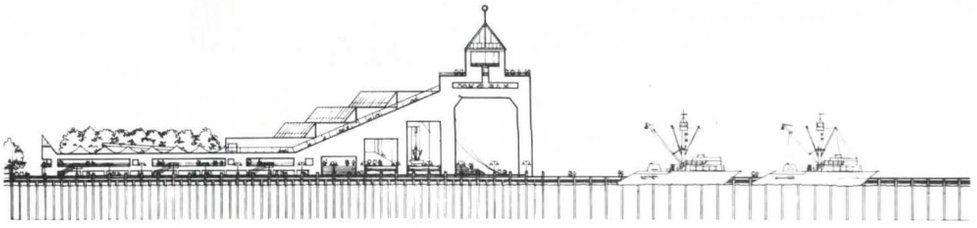
Massachusetts Team Wins California Design Competition

A two-stage design competition for a university art museum in Santa Barbara, Calif., has been won by Michael Dennis/Jeffrey Clark Architects of Newton, Mass., with Greg Conyngham and Gary Lapera. The winning scheme, a one-story solution with a forecourt and enclosed courtyard for outdoor exhibitions, was considered the most functional and energy-efficient of the five entries judged in the competition's second stage. The five participated in a three-day, on-site charrette.

The program is for a $5.3 million, 18,270-square-foot museum that will double campus gallery space at the University of California at Santa Barbara and provide a 100-seat lecture hall.

Other final-stage participants were Antony Unruh and David Seeley of Los Angeles, with Ken Saylor and Don Nutty; Mark Cigolle, Katherine Coleman, Gregory Lombardi, and Boo Wong Kim of Inglewood, Calif.; William Palmore, Gavin Bromell, W. E. Kuykendall, Martina Perez, and Marcia McInnely of New York and El Paso, Tex.; and Vladimir Arsene, James Lambros, Abby Suckle, David Hu, and Anthony Z. Panu of New York City.



Sasaki Associates Winner of San Diego Bay Competition

Sasaki Associates, Inc., of Watertown, Mass., has been awarded first prize in a limited design competition for a San Diego waterfront development. Known as the G Street Mole property, the area is the pivotal point in San Diego Bay between the city's Embarcadero district and its marina.

Sasaki Associates' concept (above) is to create physical and visual links between Broadway Pier and Harbor Seafood Mart. The main features of their design—called "SeaWorks"—are a four-acre waterfront park and a structure containing an observation tower, commercial fishing museum, and an urban retail plaza. A public promenade along the water's edge will define the three sides of the G Street Mole and pier. The main building is a stepped form leading to a 160-foot-tall observation tower, whose form is reminiscent of the towers of the local "tuna seiner" boats. A 200-foot-long, open air escalator will rise to the tower.

Runner-up in the competition was Rob Wellington Quigley, AIA, of San Diego. Other finalists were Architectonica International Corporation, Coral Gables, Fla.; Buss, Silvers, Hughes & Associates, San Diego; Pegasus Architecture & Design, La Jolla, Calif.; and Martinez/Wong & Associates, Inc., San Diego.

Island Design Transforms Dump

Rolando Llanes and Rafael Portuondo of Orlando, Fla., are the winners of the Spectacle Island design competition. Sponsored by the Massachusetts Executive Office of Environmental Affairs and the National Endowment of Arts design arts program, the competition's program called for designs to transform the Boston Harbor island—used as a refuse dump for nearly a century—into a recreational and educa-

continued on page 84

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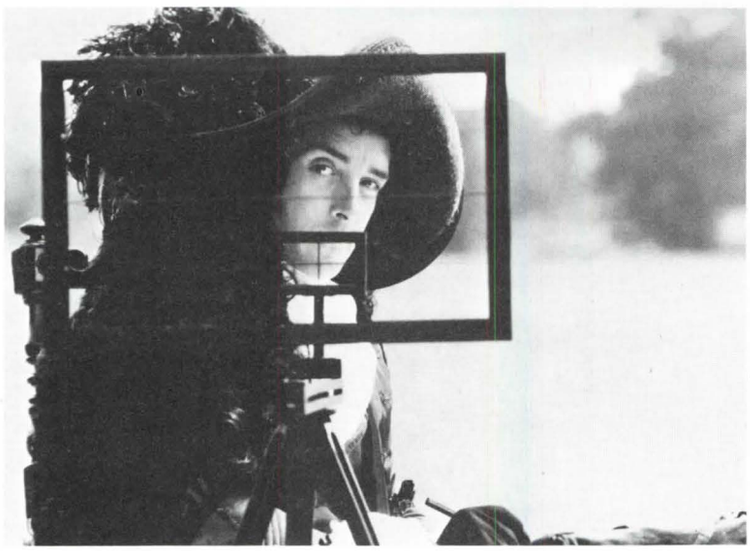

The Arts

Film: Baroque Draftsman at Work

"The Draughtsman's Contract," a British film now showing in the U.S., is a murder mystery, a study of class consciousness, and theater of the absurd rolled into one.

The year is 1694 and the setting is the English country estate of Mr. Herbert, whose house, gardens, livestock, and servants identify him and his family as landed gentry. The film opens with the Herberts and their guests at a sumptuous party. Their candlelit, beautymarked, overpowdered faces are set against darkness, and the party chatter sets a tone of genteel viciousness.

In attendance is Mr. Neville, a young, ambitious, and arrogant draftsman. Mrs. Herbert and her daughter parley with Neville in hopes of commissioning him to produce 12 architectural drawings of the estate as a present for Mr. Herbert who will be away for a fortnight. Neville resists (apparently disdaining his role in the artist/patron relationship), but Mrs. Herbert finally wins him over by allowing him to name the conditions under which he will work. An elaborate contract is prepared that provides Neville with room and board and, for every day he works on the drawings, the sexual favors of Mrs. Herbert.

The draftsman is a tyrant who tries to beat these baroque bombasts at their own game. He works on different views of the estate at two-hour intervals each day, assuring that the light is always the same, and orders the Herberts and their myriad guests to stay out of the way. No daily activity will be tolerated in the view through his gridded frame.

He works diligently but is distracted often, and small changes, unnoticed at first, begin to creep into each view—a coat tossed on a bush, a ladder placed at a second-story window, a blouse drapped in a tree. Neville begrudgingly includes these seemingly random details.

The plot thickens when Mr. Herbert, overdue from his trip, is dredged up from the bottom of a moat on the estate, the victim of foul play. Neville's lecherous contract demands and his meticulous renderings of what others perceive as allegorical clues of his complicity in the crime mark him as the prime suspect, and the draftsman soon appears not as the eager manipulator but as a pawn in the gentry's power play.

The film was written and directed by Peter Greenaway, whose background as a writer and painter is evident in the film's conception and composure. The camera remains fixed for each shot, producing a picture-frame effect, and the painterly scenes of the lush countryside and interiors are like canvases that the characters have wandered into. There are skillful extremes: The characters wear too much makeup in their brocaded, stiff clothing, and use absolutely correct, literary speech. But the makeup and clothes only reveal the vileness hidden beneath, and there is ruthless jousting with verbal pitchforks.

Greenaway brings images together in a milieu of pompous decadence, leaving enough unshown and unsaid to invite the viewers to draw their own conclusions.

MICHAEL J. CROSBIE

Top and right, the draftsman, played by Anthony Higgins, middle; with his patroness, played by Janet Suzman.

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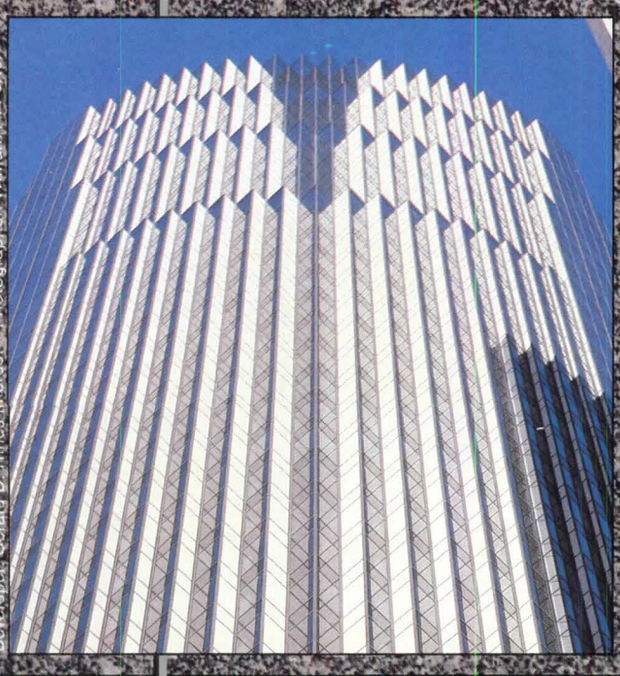

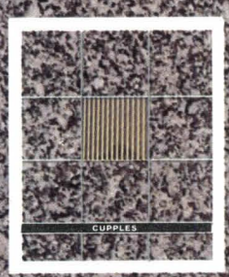

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ARCHITECTURE

This is to announce ARCHITECTURE magazine's first design contest. The subject is interior architecture.

The contest is open to anyone: architects, interior designers, artists, and lay persons. But the emphasis will be architectural. That is, stress will be placed on such basic concerns of architecture as space, light, and suitability to use more than on surface and appointments. The jury will consist of two architects (to be named) versed in interior design and three members of the editorial staff.

Interiors of any kind are eligible but must be completed, not projects. Interiors of new and pre-existing buildings will be judged separately.

Entries are due in our offices by Dec. 1. They can take any form that communicates the design to the jury but none of the materials should be larger than 9x12 inches. And only two entries will be accepted from any one individual or firm. Winners will be announced and shown in the February issue. *D.C.*

C.C. Pei, AIA

Exploring a New Vernacular

I. M. Pei & Partners' Fragrant Hill Hotel near Beijing. By Christopher Owen, AIA

Christopher Owen, AIA

Above, the main garden pool, terrace, and southern facade. Left, entrance and forecourt beyond the 'P'ai lou' commemorative gate.

To fully understand and appreciate the Xian shau or Fragrant Hill Hotel would require an in-depth study of Chinese architecture going back to the second millennium B.C.

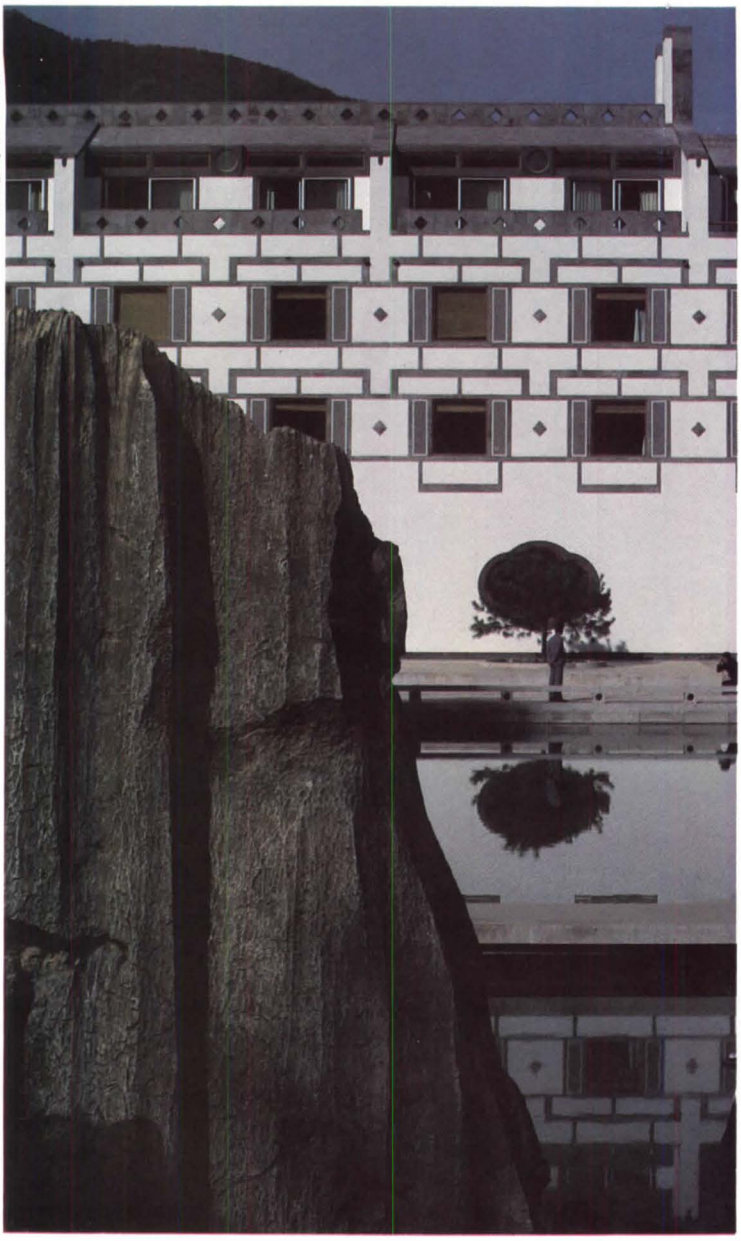
No small task, yet having accepted this commission from the Chinese government, that is essentially what I.M. Pei and his associates embarked upon. Pei realized that should he succeed "to find some sort of building type that the Chinese can afford to construct" . . . that would still "respect their culture," the end result could have a powerful impact on the future of Chinese architecture. It was a formidable task.

On the surface the search for an appropriate architectural vernacular, "a national style created from China's roots," might seem relatively simple until one realizes that Chinese architecture, unlike its Western counterpart, cannot be viewed as a succession of historical styles seen in individual buildings. In fact the closest one might come to the succession of anything would be in the development and decline of the bracket order between the T'ang and Ch'ing dynasties (9th to 18th centuries).

The unification of China during the Ch'ing period (221 B.C.) saw the awakening of architectural achievements as necessary to a stable government, and for the next four centures through the Han and Three Kingdoms period grandly scaled and richly embellished palaces were built. These were to become the precursors of so-called Imperial architecture that would last through the 18th century. They were constructed in timber with tiled roofs supported on a system of brackets and columns.

Mr. Owen, who practices in New York City, wrote about the ancient stone city of Petra in the June 1983 issue.

Photographs ©Marc Riboud



Patterned walls around pools and courtyards.

With the exception of the T'ang dynasty from the Three Kingdom's period, architecture remained relatively unchanged. There were periods of refinement to detail, reduction or expansion in scale, increase or decrease in the use of color, but the elements that were to become the hallmark of Imperial architecture prevailed. The isolation of China contributed significantly to the subtle evolution of architecture. The most outstanding example of the Imperial style remaining today is the Forbidden City (now the Palace Museum) in Bejiing, with its capacity to reduce any outsider to a state of supplicatory awe.

The early-20th century brought to China an heterogeneous Western style politely labeled "eclectic" or "Chinese renaissance." It was signified by superficial Chinese features grafted onto buildings which remained inflexibly Western. Some 30 years later, postwar Soviet classic architecture married to the International Style in the form of modern multistory buildings in Shanghai and the Yangtze ports was un-Chinese and certainly no source for a national style.

"The architecture of the Communist regime was simply terrible," says Pei. The notion of architecture as a cultural value had been ignored by the government, and fortunately for China today the subservient spirit and intellectual poverty evident in such buildings is quite dead.

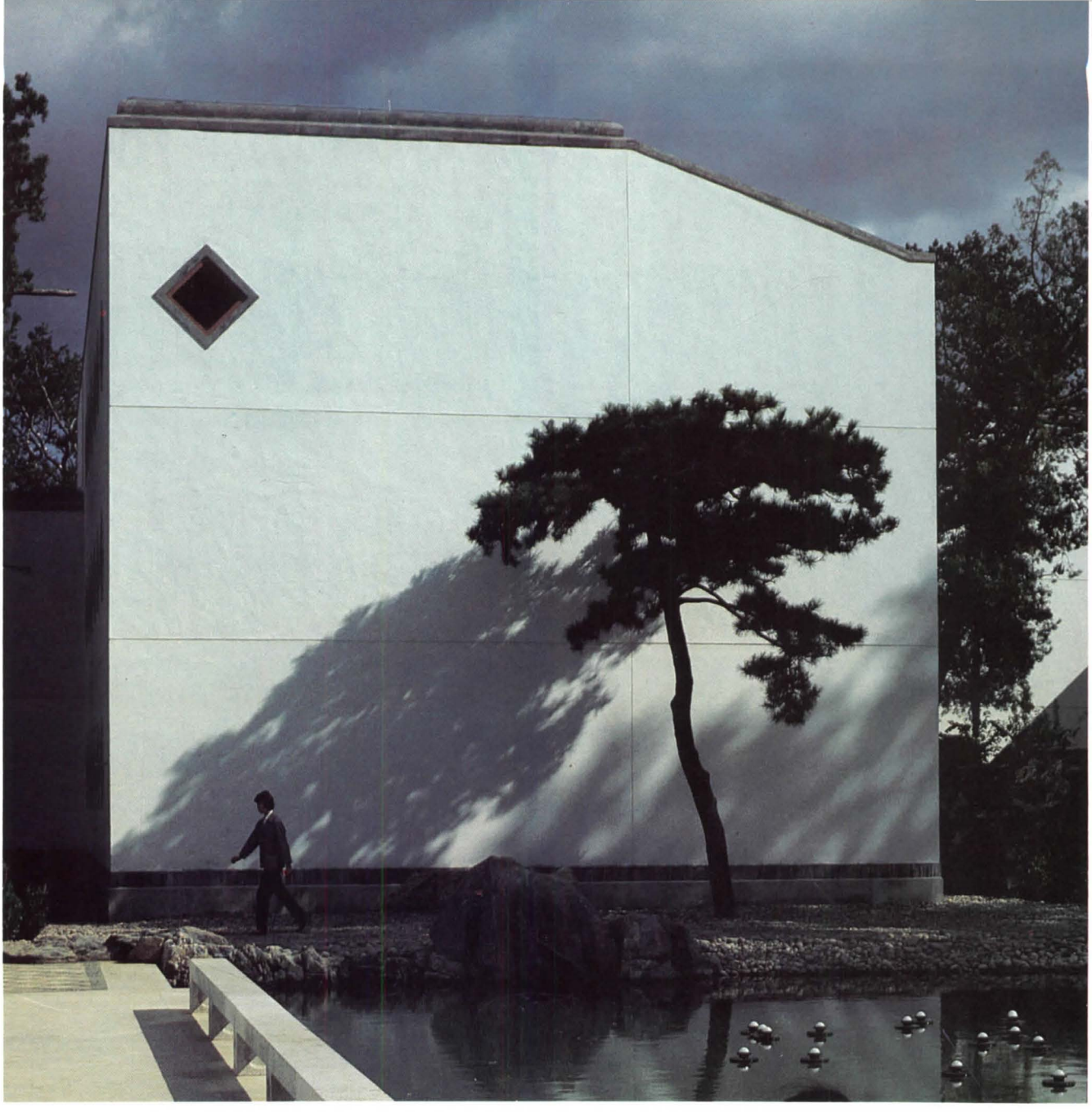
In accepting the hotel commission, Pei asserted the importance of human scale and refused to consider highrise construction. As one source of the vernacular that he sought he turned to the town of Suzhou, where he had spent part of his childhood.

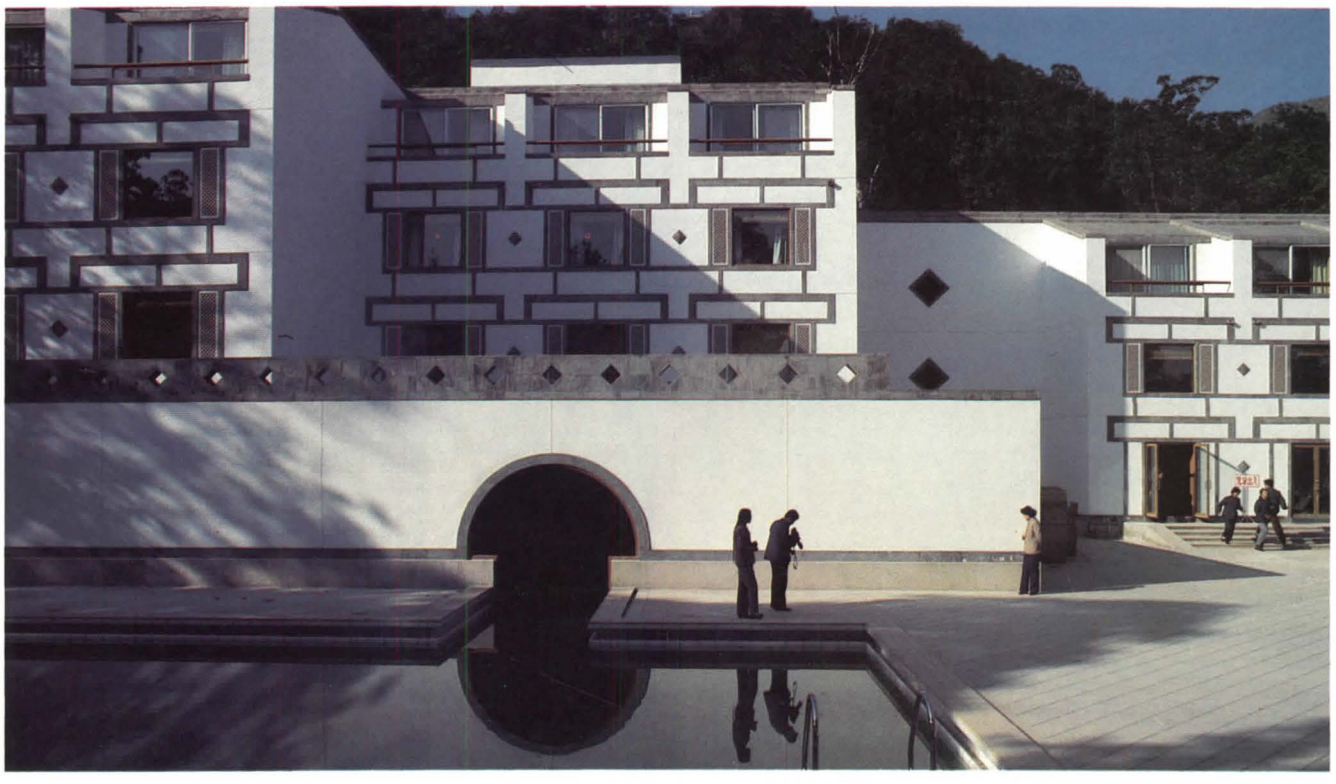
Suzhou is in the small province of Jian-su in southeast China, a seat of early Chinese culture. In the vast estates of the province pavilions for living and entertaining were surrounded by walls and set into man-made landscapes in such a way that the transition from indoors to outdoors was virtually indistinguishable. To a town nothing was so important as its walls. "They are its cathedral," wrote Chinese historian E. A. Gutkind, and the man-made landscapes contained within these walls were wholly delectible. Ingenuity was exercised in transforming the captured space into a series of dramatically scenic effects. Sculpted forms were created from rocks hauled from distant quarries or nearby lakes and rivers. Two of many outstanding gardens in Suzhou are the Master of Nets Garden and the Lion Grove Garden, which are noteworthy for their white stuccoed and gray tiled pavilions set within walls interspersed with a variety of lattice and open tile framed apertures.

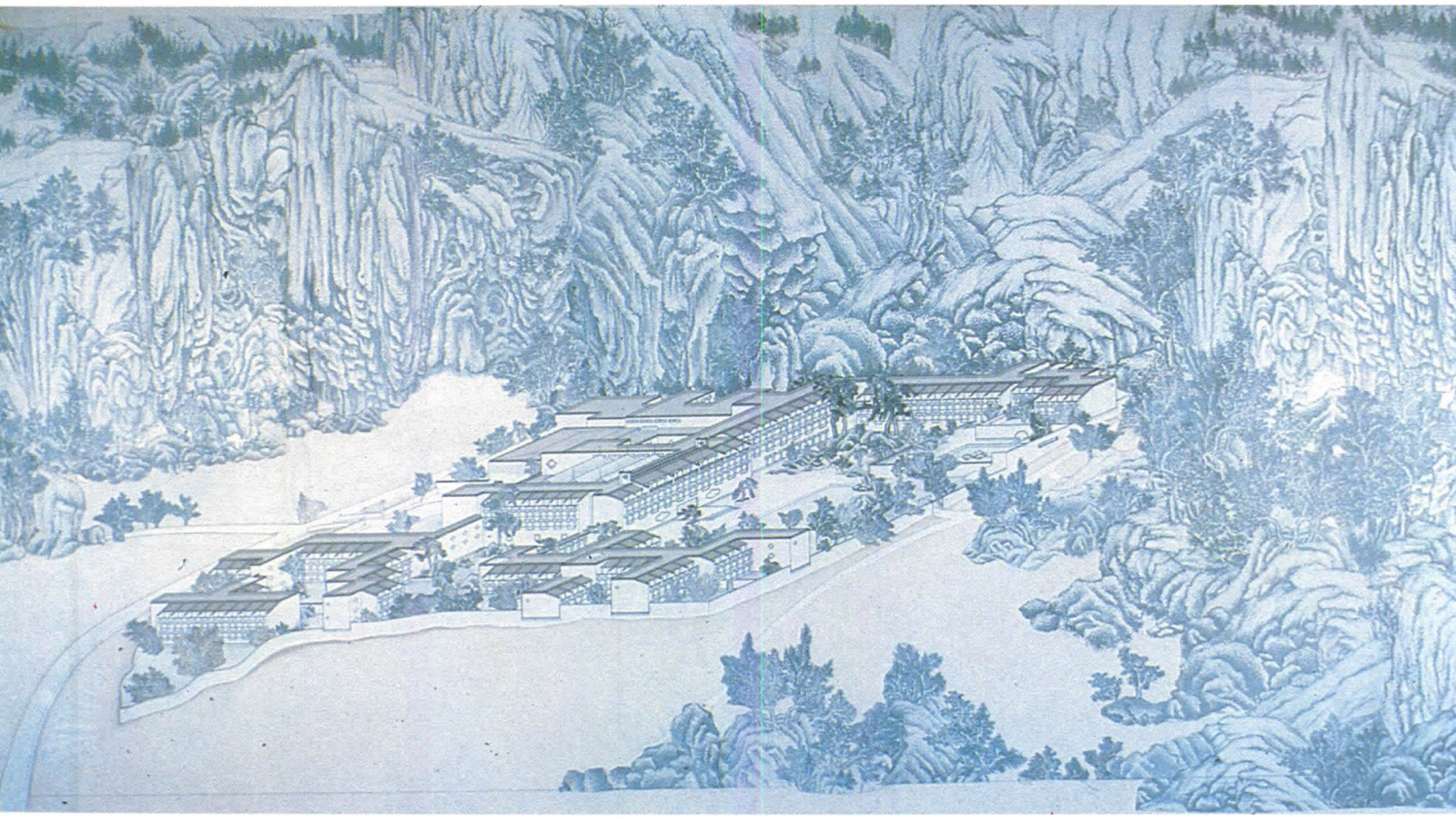
The site of the hotel is 20 miles to the north of Beijing. Close to the Summer Palace and within a former imperial hunting preserve, it is in a public park with low forested hills, clear air, and unspoiled distant views. For Pei it was perfect. Occupying the site itself was a deteriorating hotel worthy only of demolition. After various studies the former hotel's property walls and carefully selected cypress, chestnut, willow, ginkyos and smoke trees were left standing.

What has emerged after Pei's long search into China's architectural history was described in *Remnin Ribao,* Beijing's newspaper, as a low, rambling, "severe," and even "strange" edifice. The hotel's construction is stuccoed concrete and masonry bearing walls that are organized around a series of courtyards, a reflection back to the Three Kingdoms period (A.D. 221-265), and its placement is essentially dictated by those carefully selected trees that, says Pei, "led to the building twisting and turning." The plan, however, is not entirely dictated by nature. Consistent with classic Chinese architecture, there is a strong axial delineation, north to south.

Left, one of the many naturally sculpted rocks transported 1,500 miles from the Yunnan province and placed in the main garden. Top right, a pine tree relieves the stark white facade. Right, the hotel's swimming pool, which can be entered from behind the glass moon doorway.







Juxtaposing symmetry and asymmetry in plan.

The entry on the north side of the property is through a commemorative gate or P'ai-lou, a predecessor of which can be seen near Suzhou. The hotel is highly simplified, devoid of the characteristic ornamental brackets, curved roof, and buttress slabs. A rather austere and formal walled forecourt separates the P'ai-lou from a magnificent and virtually opaque four-story, bone white facade. On the ground level is a single portal flanked by two plum blossom windows with latticework in a cracked-ice motif. The decorative use of gray tile, originally inspired by early Chinese half timber and cantilever framing, surrounds six diamond-shaped windows above the entrance.

Entering the building and having passed reception, one becomes more fully aware of the axial plan, at the same time sensing the building and its various wings juxtaposing symmetry and asymmetry. Directly on axis within the skylit atrium lobby stands a modern depiction of a Chinese spirit screen. Its symbolic origin is tied to folklore with its denial of entry to evil spirits. In this instance it acts to define reception from lobby, simultaneously providing framed views through a circular aperture. The creation of such views is characteristic of Chinese garden design. In this case, the visual access through the circular aperture and the traversed access around the spirit screen are clearly defined.

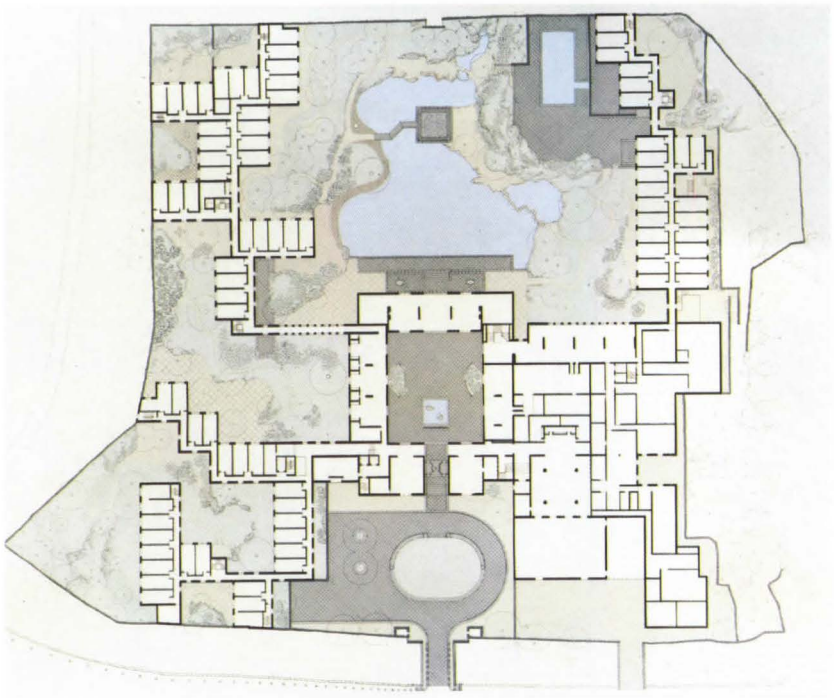
The atrium itself, a four-story, 11,000-square-foot area paved in granite and of concrete bearing wall construction, is conceived as an outdoor space yet possesses a glazed roof, perhaps the one concession to Western technology. It is noble without being overwhelming. The decorative use of gray tile in the characteristic half timber motif is generously repeated on all but the north wall, and again surrounds diamond-shaped windows set into square lattice frames. These overlook the atrium from two levels of public corridors. Tall stands of bamboo and naturally sculpted rocks, carefully selected and transported from Yunnan Province 1,500 miles to the southwest, complete the space. Two such rocks sit in studied asymmetry within a reflecting pool adjoining the spirit screen. From the atrium lobby one has direct access to all major public areas, including the single-loaded corridors leading to the Western style guest rooms.

On entering a low-ceilinged lounge divided into a bar and billiards room by means of a pair of screens painted by the French-Chinese artist Zao-you-yin, framed views of the garden are visible through a second pair of plum blossom windows.

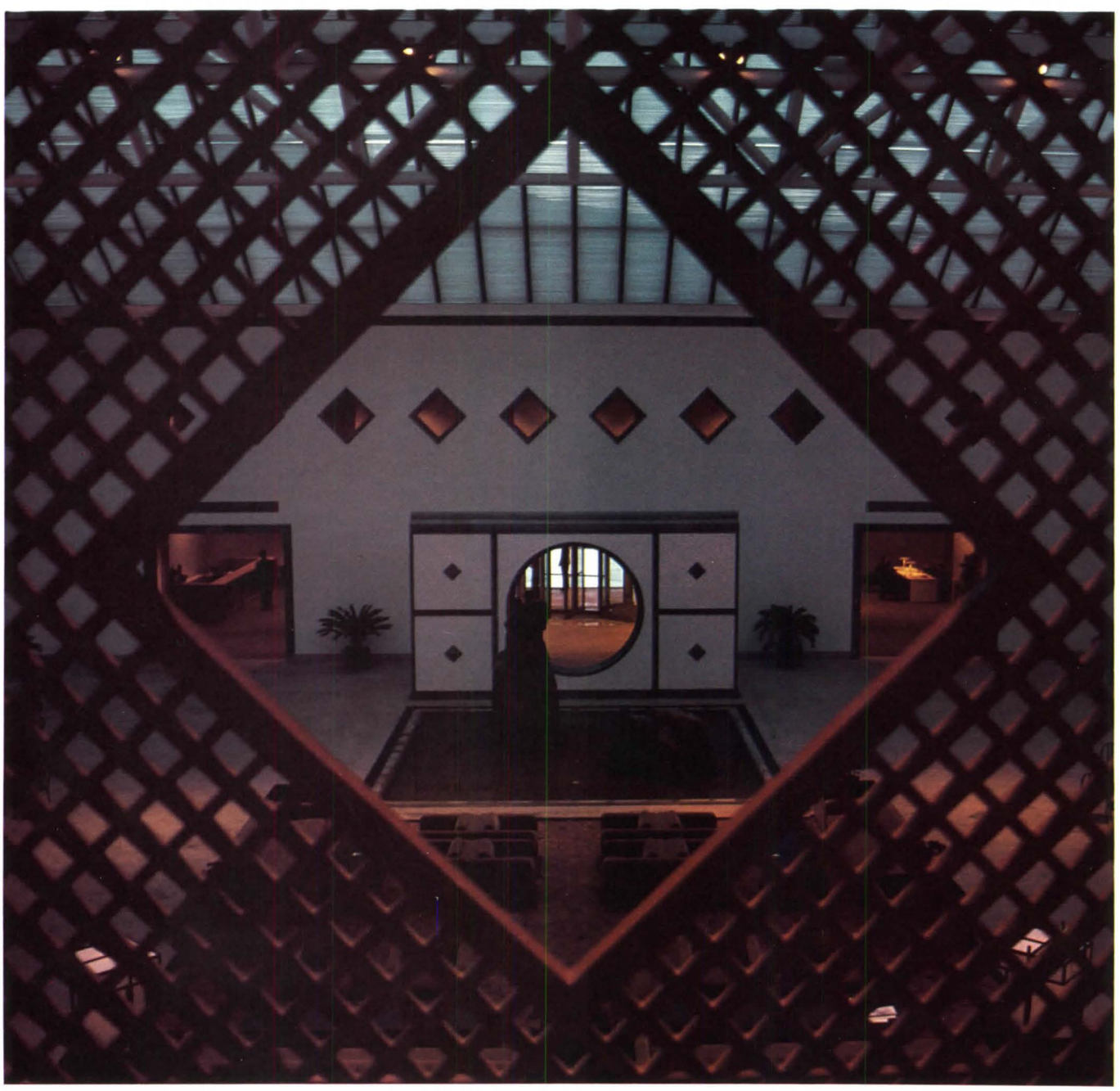
The Chinese garden, designed in collaboration with Professor Cong-Zhou, China's foremost authority on the subject, is first seen from a granite and hand-set pebble terrace. The terrace overlooks a contoured landscape and randomly shaped pool partially surrounding the liu-shiu-yin, or water maze carved into a square marble platform. According to legend, poets of ancient time floated wine in the slow-moving current. The wine was theirs to drink if and only if they could complete a poem before the glass reached the end of the course. The liu-shui-yin at the Fragrant Hill Hotel replaces one fallen into ruin in the same garden. There being only five known in all of China, it was of symbolic importance and its replacement has been reset on axis and has consequently become the garden's focal point.

The plan is random, and the topography undulates and flows into a series of courts defined by the three asymmetrical bedroom wings. In some cases these wings or their connecting passageways divide garden and court, yet there exists a unifying relaxed intimacy. The white walls, with their now familiar deco-

Above, a Chinese style drawing with the hotel nestled among the trees and natural terrain of Fragrant Hill. Right, looking down onto the main atrium space through one of the diamond-shaped windows set into square lattice frames.



David Martin, AIA



Frank Rogers

I. M. Pei, FAIA

An 'appropriate Chineseness' inside and out.

rative tile, act as a perfect foil for the trees within and as a barrier to the larger, uncontrolled landscape beyond. "I want to remind the Chinese of the intimate connection between gardens and architecture," says Pei, and what he accomplished at the Fragrant Hill Hotel is largely an interpretation of what he rediscovered in the Jaing-su Province.

Pei is curious as to how the younger Chinese architects will react. He says they initially anticipated something far more spectacular. Nevertheless there has been little adverse reaction to the hotel's design since its completion. Though somewhat alien to the northern Chinese, who are more familiar with the awesomeness of Imperial architecture, both official and professional opinion of the hotel indicates acceptance of its "appropriate Chineseness." Pei and his associates hope that the style will not be copied but rather accepted and adapted. What have been criticized about the hotel by the Chinese are such factors as its location (too remote) and its cost (too high). No official figures are available on the latter, but we can assume this was largely due to location, the necessary expansion of roads, the landscaping, and of course the infrastructure itself.

Scarcely two years elapsed from groundbreaking to completion, and considering an extraordinary array of bureaucratic and other problems, not the least of which was communication, credit must be extended to the construction crews themselves, who for the most part worked with stamina, diligence, and enthusiasm.

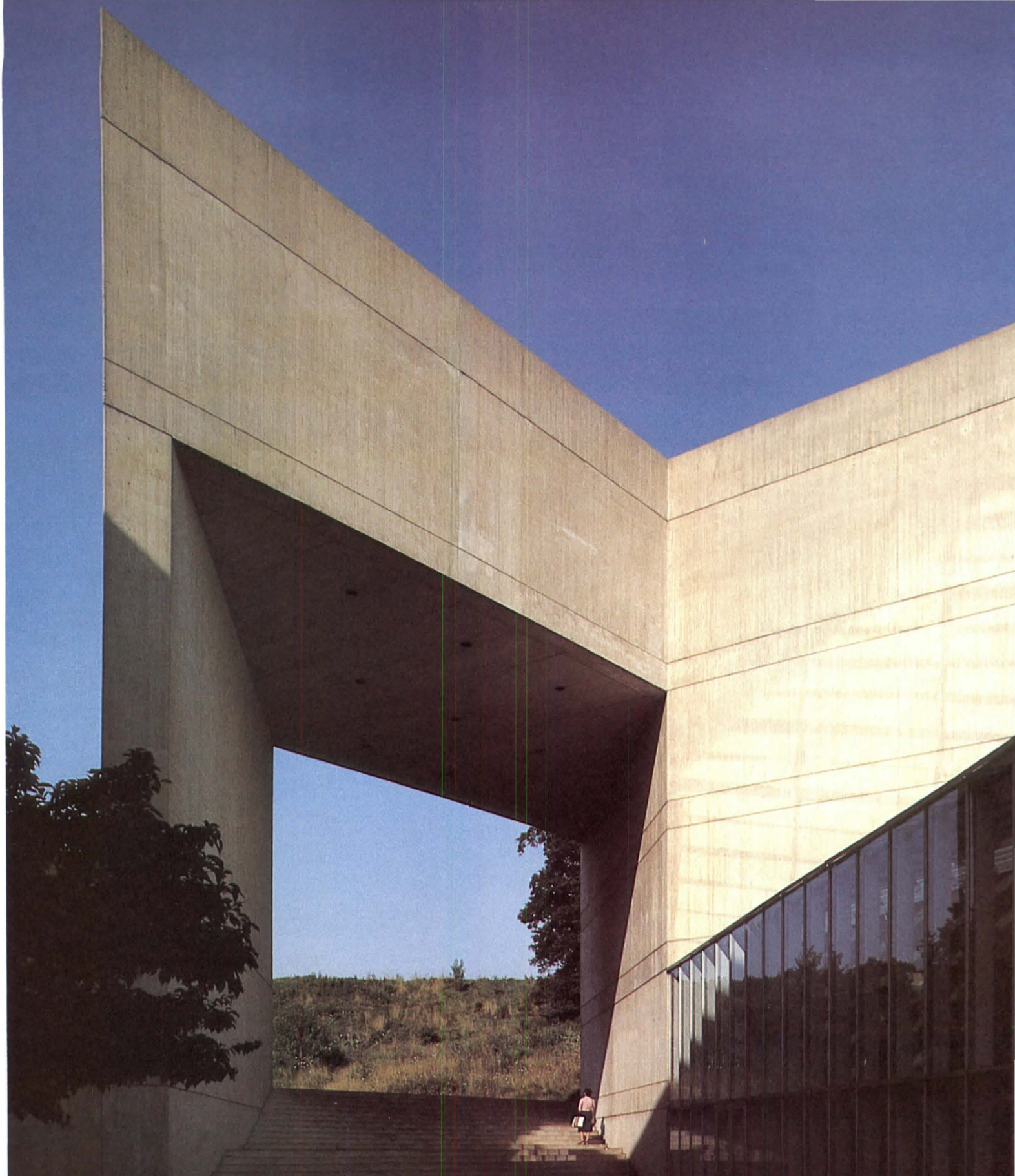
Above, Pei's interpretation of a Chinese spirit screen serves as a divider between the reception area and the lobby. Left, the Chinese restaurant. Right, the glazed, four-story atrium space with walls of granite and ornamental gray tiles.

©Marc Riboud

Blending in both regionalism and classicism.

It would seem that Pei, in his search for a Chinese vernacular, has done a feat that J.B. Jackson, the New Mexico writer and critic, said has not been accomplished in this country. During a recent symposium on American architecture at Columbia University, Jackson saw the need for an "unsentimental study of the vernacular environment . . . in the United States." In doing just that for China, Pei as a late-modernist has uncharacteristically revived regional traditions and adapted a classic vocabulary for the Fragrant Hill Hotel and China itself. In so doing he has not only created an architecture of solid pedigree, but also one that may in fact come to be "accepted and adapted." □

Below, looking through a diamond-shaped window to the lui shui yin, the marble water maze, in the main garden pool.



Allen Freeman

Refining a Familiar Vernacular

I. M. Pei & Partners' Mellon Arts Center, Wallingford, Conn.
By Andrea Oppenheimer Dean

Whither I. M. Pei? Superficially, at least, his newest work, the Fragrant Hill Hotel outside of Peking, appears as a sharp deviation in direction from Pei's lifelong path of modernism. Shaped by, even subordinated to, a site resembling a Sung landscape painting, the hotel relies on vernacular forms and historical traditions, on decoration and use of local materials. It fits R. A. M. Stern's shorthand profile of postmodernism in emphasizing history, decoration, and context. (Yet Pei talks about the 11-year-old Mellon Arts Center, shown on these and following pages, as "conceptually sound" and "altogether all right.") When asked whether Fragrant Hill is a departure, Pei answers "Not at all.

A very different kind of contextualism.

I am still on the same highway as 20 years ago. Modernism has not run out of steam, not at all. Of course it has changed, for the better. It's much freer now."

The difference between Fragrant Hill and his American work, says Pei, lies not in *how* he approached the problem but in the *problem itself.* The overriding problem in Peking, as described in the previous article, was to develop a suitable vernacular style for today's China. Pei explains, "They're going to do a lot of building in the next 25 years. If they don't have a vocabulary in building whole cities and towns, I despair. They're already ruining Peking with modern buildings copied from Eastern Europe." By contrast, he says, "the modern vernacular is established in the U.S., whether we like it or not, and it will continue to be used, because it is what we do best."

Why is that? Pei answers, "Because we are a technological society, and for that reason I can't imagine doing a Fragrant Hill in the U.S. China, on the other hand, has not emerged out of the crafts society. There's been no industrial revolution. They don't roll steel; they don't make sheetrock."

Pei felt constrained at Fragrant Hill not only by this crafts tradition, but by two other traditions as well, both quite foreign to the West. The first is an Eastern concept of how a building should relate to its surroundings, "far more intimately than in the West," Pei explains. "In China the building is really a room in a garden, not a building in the middle of a landscape, like Versailles or Blenheim Palace. Therefore the scale is different." Second, there is the Eastern concept of space—meandering, sequential, private—so different from Western notions of space with their emphasis on strong geometries, openness, and a close bond between indoors and outdoors.

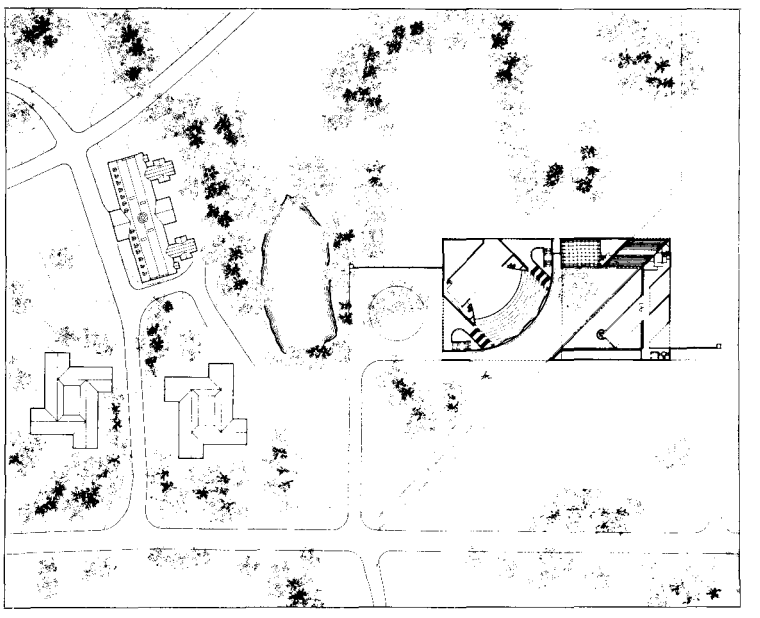
Pei's abiding concerns when working in the West are apparent in the Mellon Arts Center in Wallingford, Conn., completed before but designed after the National Gallery's East Building in Washington. It is a gem, certainly one of Pei's most pleasing and least dated buildings. Why then has it received such scant attention? Perhaps, the out-of-the-way location? Its small size? The fact that it belongs to a preparatory school—though a most prestigious one—rather than a major university or urban institution? Whatever the reasons, the building underscores the differences between Pei's approach to problems of East and West and makes some points that may indicate future directions for the architect, as do his comments about it.

Unlike Fragrant Hill, the Mellon center is a modern sculptural icon of geometric solids and voids. It stands alone on an open meadow ringed by woods, à la Versailles or Blenheim Palace. "It comes directly out of a Western tradition of art based on relationships between solids and voids you can trace to Picasso," says Pei. It also exemplifies modern ideas about space. "You can look right through the building and out again," says Pei. "Fragrant Hill is all hidden inside. You walk in and see things you don't expect. It's a place you get lost in. Not the Mellon center. There, a glimpse gives you the excitement, and walking through it just confirms that excitement."

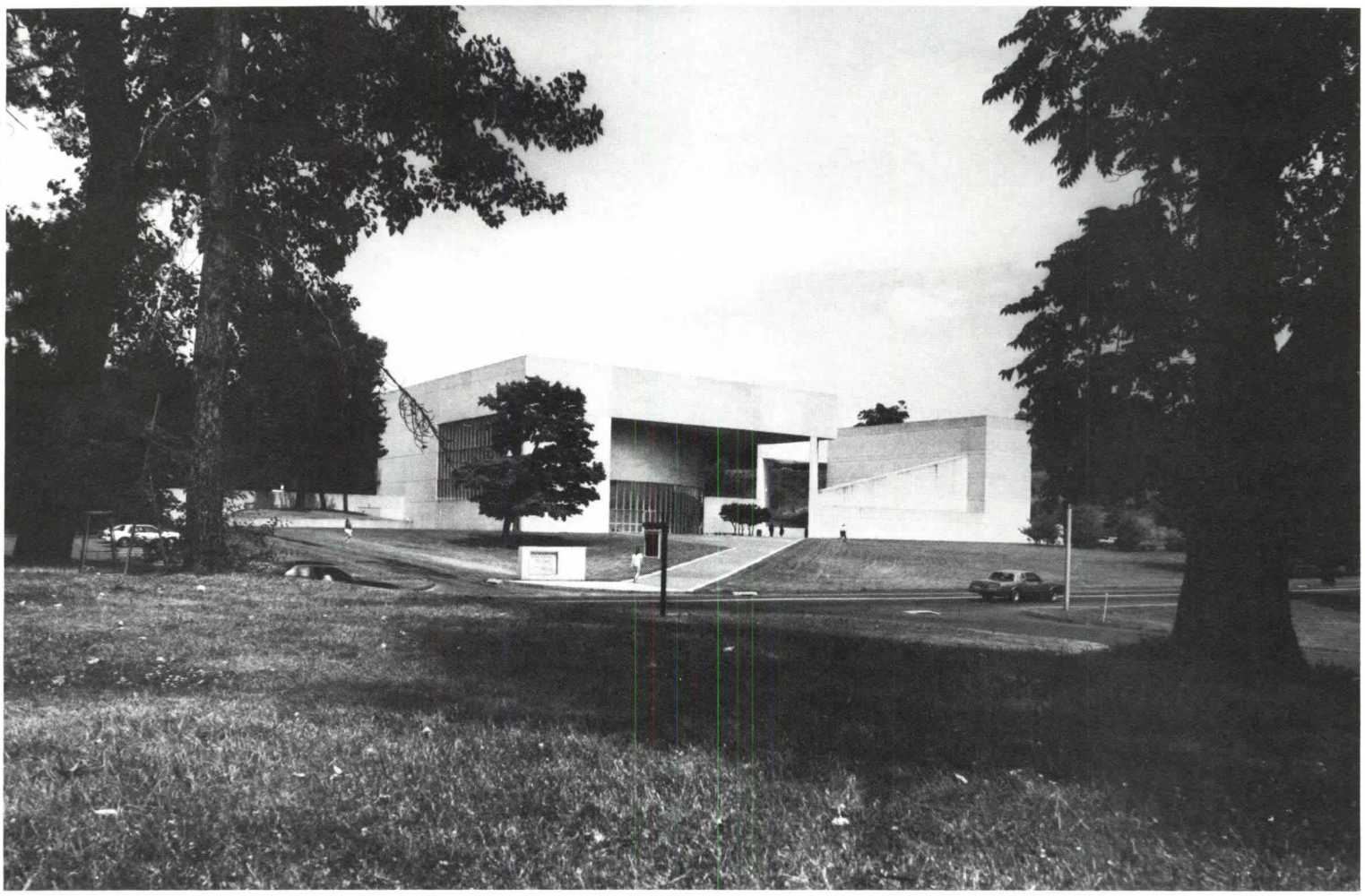
Though the center hardly looks like a contextual building, Pei insists that even here context and site "were the beginning."

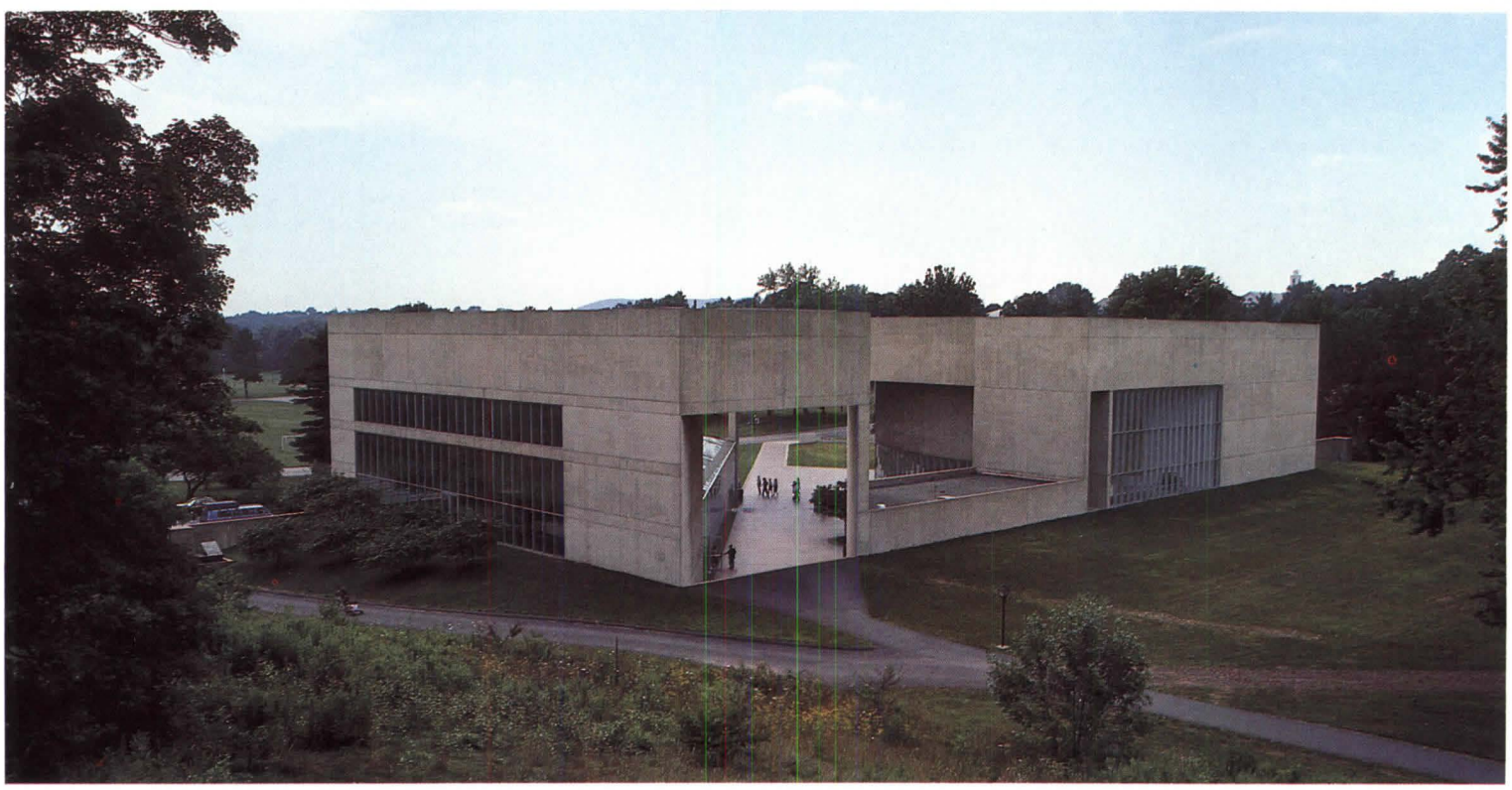
The site is a flat, nondescript meadow between the preparatory school campuses of Choate and its sister institution, Rosemary Hall. The center was intended as a connecting link and gateway between the two. They are very different in style. Choate's buildings, southeast of the center and separated from it by a main thoroughfare—Christian Street—are Georgian. Rosemary Hall's campus, up the hill north of the center, was designed after the center by James Stewart Polshek, FAIA, and consists of institutional-looking, tinkertoy-modular, one- and

Previous page: the courtyard/path bisecting the center leads to Rosemary Hall via stair and portal. Across page: top, the center from Choate playing fields; below, approach from Rosemary Hall. This page, at Choate, typical Georgian buildings adjacent to the center (at left in site plan) are visually isolated from it.

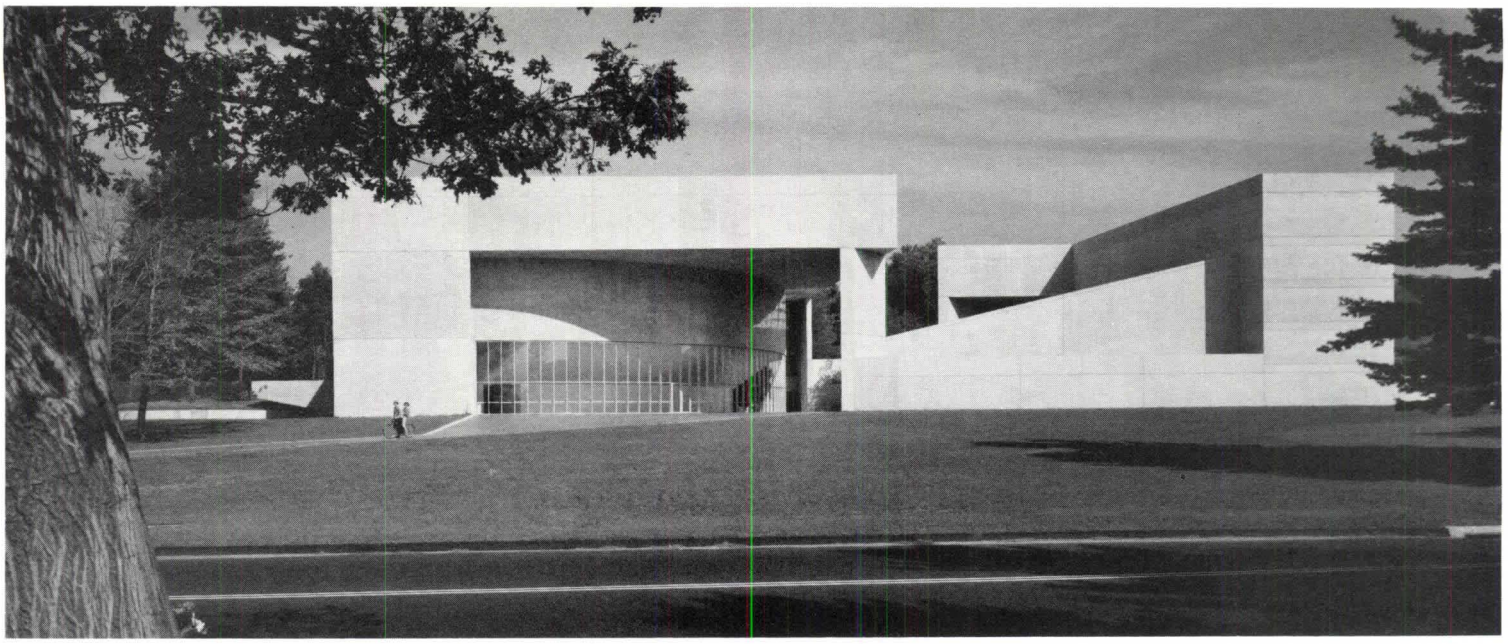


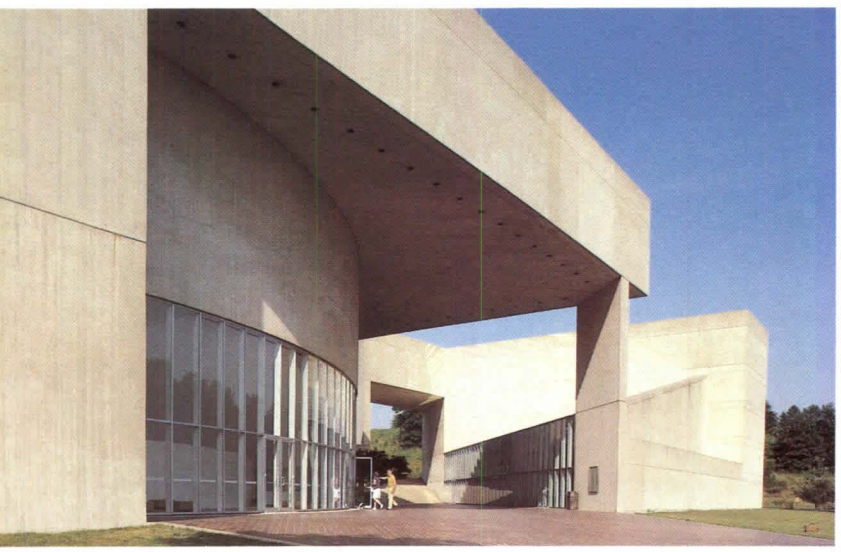
Photographs by Allen Freeman





Joseph W. Molitor





Allen Freeman

Allen Freeman

The formative idea was building as gateway.

two-story, dark brick and concrete courtyard buildings. The arts center is visible from neither campus, and its other neighbors, mostly Victorian and postwar suburban tract houses, are also physically remote. Pei is thus justified in saying, "We had no buildings to relate to."

The idea of building as gateway determined both the center's form and geometries and the fact that "its voids are as important, if not more so, than the solid forms," in Pei's words.

The Mellon center is essentially two buildings. One, shaped as a quarter circle, houses the theater; the other, a 45-degree triangle, contains art studios and music practice rooms. The two wings are bisected by a broad, curved courtyard/path framed by two portals. The portal on the Christian Street side projects over the circular form of the theater; the other, extending from the visual arts and music wing, frames the stairway that leads up to Rosemary Hall.

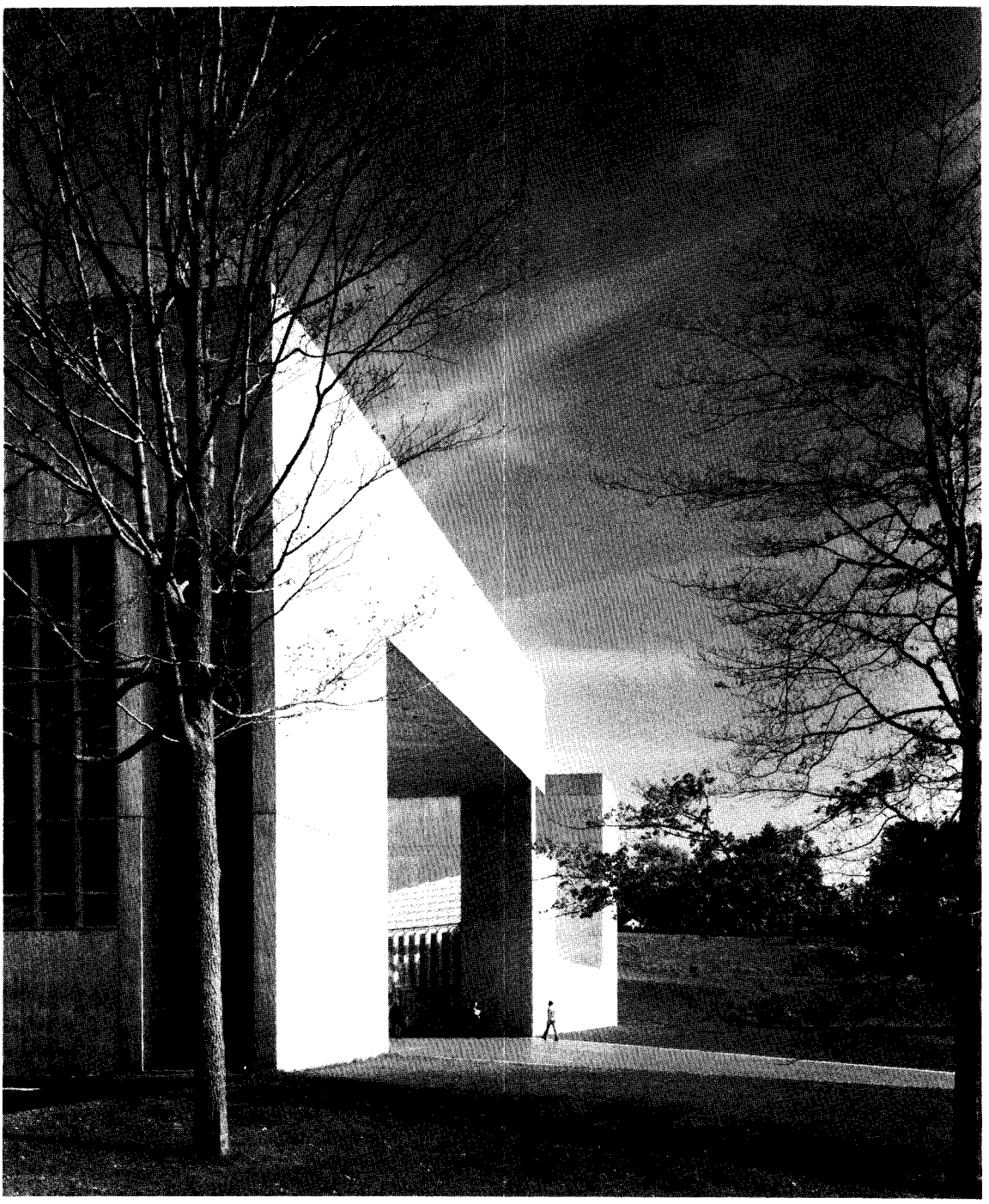
On approach from the low, dense, and choppy-looking buildings of the girls' school, the center doesn't come into view until one is all but on top of it, and then its continuous, clean-lined and open shapes come as a wonderful surprise. From the Christian Street side the building stands as a modern geometric sculpture more precisely and pleasingly composed than any work of art on display within.

There are obvious resemblances to the East Building, aside from its debt to the generosity of Paul Mellon. There are similar juxtapositions of symmetries and asymmetries, there is the familiar diagonal axis resulting in knife-like angles and odd-shaped spaces, the counterpoint of solids to glazing and glazing to voids. But the building at Wallingford is far more friendly and serene-looking, largely because of its more comfortable scale, its greater airiness and openness, its curves wrapped around straight edges, its taut, continuous flow. No unwelcoming voids scooped out to make entrances here, as in the Washington museum or the newer west wing of the Boston Museum of Fine Arts. Entrance is through the portals, then through glazed openings to each component from the courtyard/path. The wings are internally connected only at the basement level.

The interiors, in good modernist fashion, are all of a piece with the exterior. There is the same juxtaposition of simple shapes to create intricate, intriguing spaces as the diagonal axis

Top and center, from Choate side and Christian Street, glazed curve of the theater and open court funnel in passersby. Theater lobby, bottom, is mostly curves, with glazed window wall and rounded ceiling. Across page: three-story, skylit art studio from court, bottom; through portal, above.

Joseph W. Molitor



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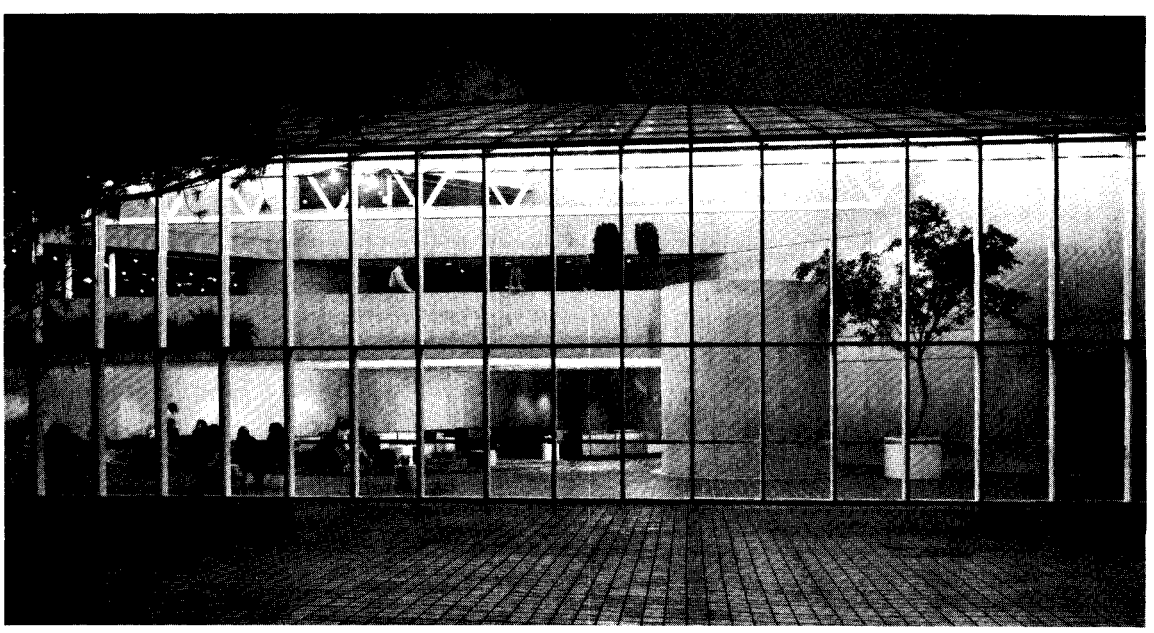

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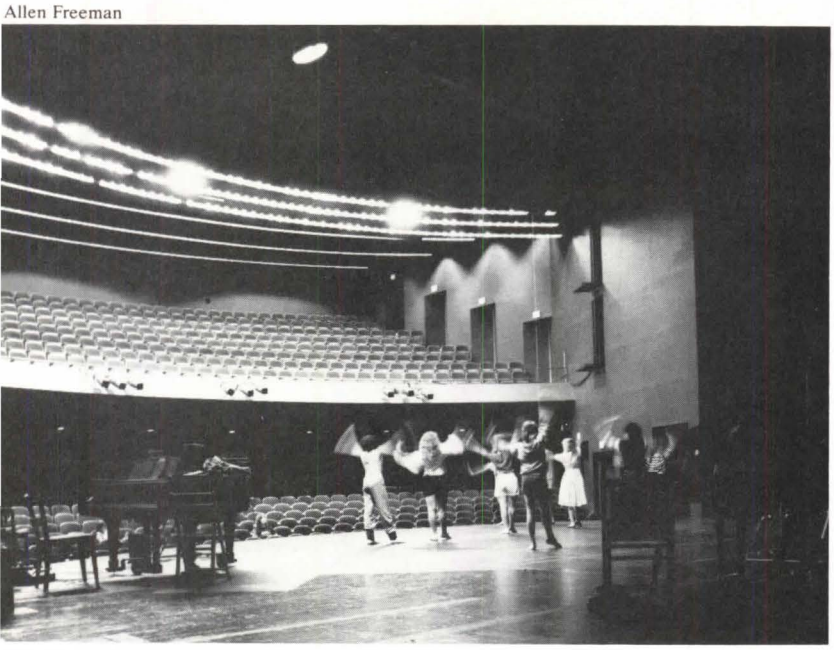


Allen Freeman

Stanley Abercrombie, AIA

Top, interior of theater; across page, one of two identical second story lobbies with window wall and elegant stair. Above, first of two art studio mezzanines; right, concrete drum-enclosed circular stair connecting ground floor and first mezzanine.

Curves and corners along 'the modernist highway.'

serves to form odd-shaped rooms and crannies. The board-formed concrete work is carried within as is the heather brown Welsh quarry tile of the courtyard, at least on the ground level. The interiors are as open as they appear from without, especially the three-story art studio with its north-facing skylight, southeast-facing three-story window walls, and two mezzanines overlooking the large ground level lounge/gallery with potted trees. Art students say they love it for its wide open feeling and views of the outside. A good place to work.

Pei intended the building not only as a gateway, but "as a trap designed to lure the boys and girls to each other and to art." They've fallen for the bait, as the building overflows with students, though the schools haven't noticeably expanded. Complaints about the art and music wing seem restricted to the heating, which apparently bypasses the second floor, where it's too cold, and collects on the third floor, where it's too hot, and the dreary feeling of the windowless fourth floor music practice rooms.

The theater wing, shaped like a quarter of a pie, capitalizes on rounded forms nestled into rectangular ones. The perimeter glazed lobby facing the court follows the curve of the building; another curve, the underbelly of the balcony, forms the lobby ceiling. At each end of the space an elegantly shaped stair leads to second story vestibules, each with window walls overlooking meadows and trees.

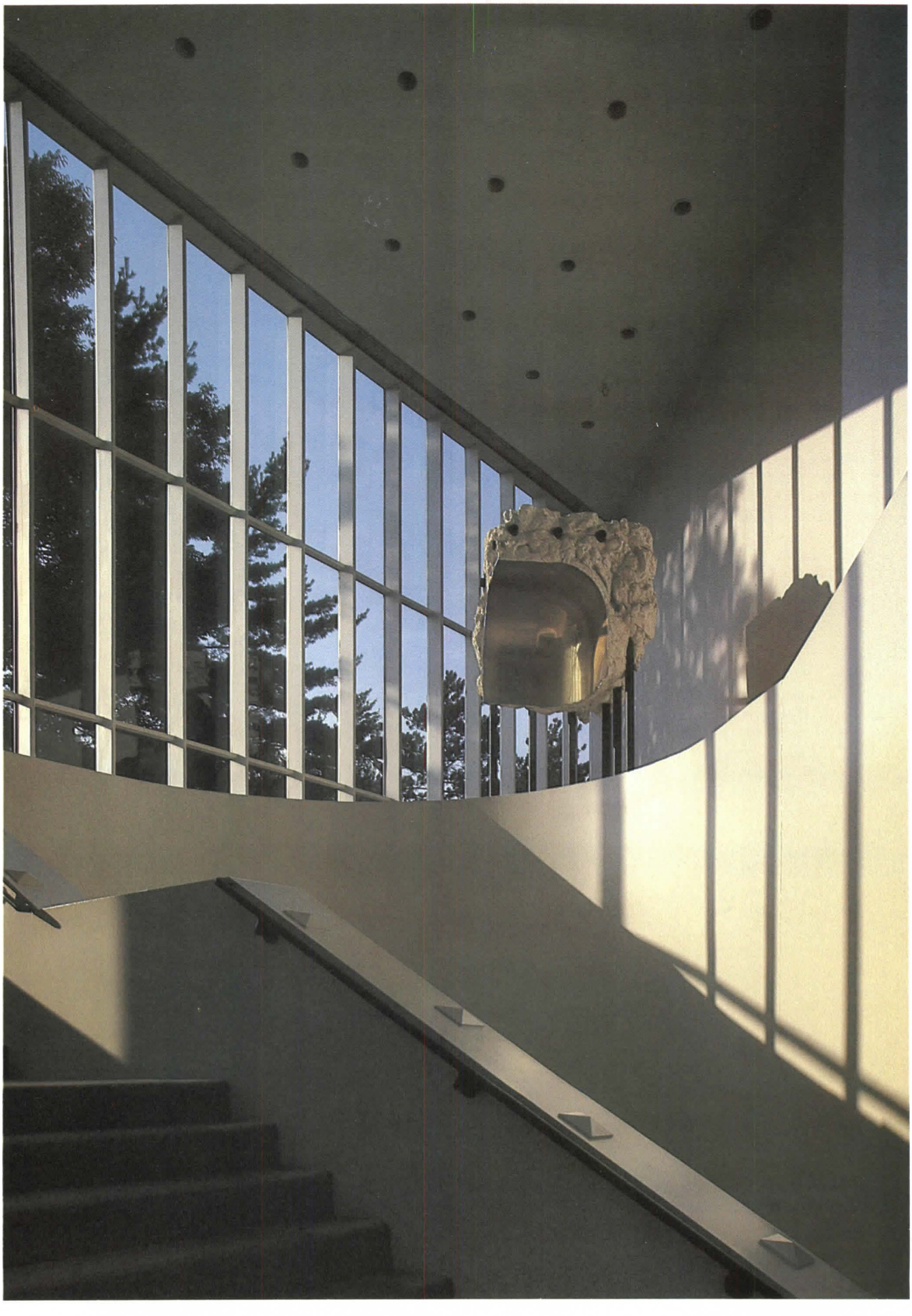
The theater itself is like a curved, dark cave with brown walls (the original color was blue) and curved bands of lighting floating below a virtually invisible black ceiling. The 840-seat space is almost equally divided between balcony and orchestra space that can be transformed into a more intimate performance hall by dropping retractable drapes from the ceiling. Also retractable is the thrust stage.

Although this was theater designer George Izenour's first work in acoustics, there seem to be no complaints about sound transmission. But there are other problems. Among them is the absence of a grid above the stage, insufficient wing space, and poor balcony sightlines. Such deficits notwithstanding, the Mellon center's theater is known as the best among prep schools and is better than those of many colleges. It has, by the way, become the major link between the town and the two schools. The center is now the home of the Wallingford Symphony and serves as a community theater with $30,000 in annual subscriptions.

Completing the building are two performance spaces in the basement level, an experimental theater called the Black Box, painted black and windowless, and a small recital hall.

In the end, the Mellon center and Fragrant Hill, despite their great differences, do share a finer scale and skeleton than some of Pei's larger American institutional buildings. The muscular treatment of a Dallas City Hall, even of the East Building, has given way in both to a lighter touch, subtler textures and detailing, and greater use of curved forms, which are further elaborated in Pei's Dallas Concert Hall, whose space Pei calls "more baroque." It is scheduled for completion in 1987. There is in the newer work, including the Mellon center, a greater complexity, more variety and richness, and the expression is more relaxed.

And though Pei will surely "remain on the modernist highway," as he puts it, it is hard to believe that some of the attitudes that have filled his mind during the years he was absorbed by his mission in Peking won't spill over, in some manner, into future American work. It is most unlikely, however, that Pei's attitude toward postmodernism will change. He holds it in deepest contempt. □



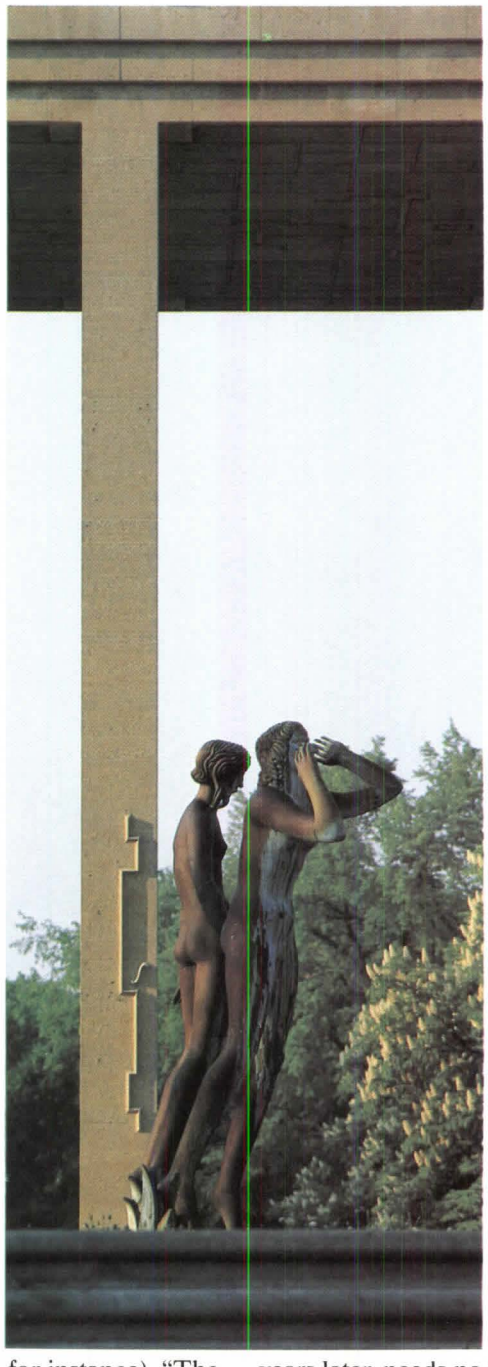
Allen Freeman

Cranbrook's Glorious First Half Century

A uniquely influential institution celebrates an anniversary. By Wolf Von Eckardt, Hon. AIA

In its first two or three decades, the Cranbrook Academy of Art, officially established in June 1932, had probably as much influence on design in America as the Bauhaus. In the 1960s and '70s, it slid into listless mediocrity and was all but forgotten, despite graduates that include such luminaries as Eero Saarinen, Harry Weese, Fumihiko Maki, Charles and Ray Eames, Harry Bertoia, Florence Schust Knoll, and Edmund Bacon. But now, Cranbrook celebrates its 50th anniversary in vigorous health, due mainly to an infusion of crackling energy. The energy comes with a black-and-white mottled beard and a glass-shattering laugh in the person of the Welsh painter Roy Slade.

When Slade was appointed the school's president in 1977, he concentrated on restoring Cranbrook's enchanting setting as designed by Eliel Saarinen and his friends and on re-introducing Cranbrook to the world and the world to Cranbrook, as he put it. The magazine articles celebrating the anniversary rightly and often lavishly praised Cranbrook's rehabilitated charms and did, indeed, reintroduce the elder Saarinen's genius to the world. But as George Nelson wrote in his tribute in the July issue of *Signature* magazine, "Cranbrook is not so much recollection of a nostalgic past as a suggestion that perhaps here is contemporary architecture before it was derailed by the technocrats." We may be able better to judge Cranbrook's "relevance," as the '60s buzz word had it, to the architecture and design we are struggling for, when the Detroit Institute of Arts, on Dec. 16, 1983, opens its extensive exhibition: "Design in America: The Cranbrook Vision 1925-1950." It will sum up all that Cranbrook accomplished in the period in architecture, interiors, woodwork, ceramics, textiles, metalwork, painting, and sculpture. And it may well be that, like other design retrospectives before it (the Museum of Modern Art's "Ecole des Beaux-Arts" show comes to mind, for instance), "The Cranbrook Vision" will prove to be a much needed inspiration. The show will travel from Detroit to New York's Metropolitan Museum of Art, which helped organize it, and to Helsinki, London, and Paris.



Cranbrook Academy of Art is part of the Cranbrook Educational Community in Bloomfield Hills, Mich., one of U.S. capitalism's most admirable exercises of idealistic largesse. The other parts are a school for boys, the Kingswood School for Girls, an Institute of Science, and Christ Church. There is also an open-air Greek theater. All this, located on 350 beautifully landscaped acres, was founded and endowed by George Gough Booth and Ellen Scripps Booth, Detroit newspaper magnates and philanthropists. The Booths fervently believed in the redemptive powers of art, which they, like William Morris and his followers in England, saw as inseparable from traditional handicraft.

Early in their effort of building the Cranbrook community, their son, Henry, who was studying architecture at the University of Michigan, told his parents about this great arts-and-crafts minded architect from Finland who had come to Ann Arbor as visiting professor. "Father immediately rushed over and, following a pageant about architecture being the mother of the arts, which some other students and I performed, gave Saarinen a rousing welcome speech," recalled Henry S. Booth, now 86. "After that we all became friends."

Eliel Saarinen was 50 at the time and Finland's leading architect. He came with his wife, Loja, a noted weaver, his daughter, Pipsan (who became an interior designer and married Saarinen's later partner, J. Robert Swanson), and his son, Eero.

Henry Booth remembers that Saarinen at first designed all of the envisioned Cranbrook institutions in one grandiose scheme. George Booth, says Henry, kept the model in his office for four or five years and then burned it. "Father said he didn't want to be titillated by such a grandiose scheme," Henry explained. Instead, more in keeping with George Booth's good sense and Eliel Saarinen's urbanistic philosophy, Cranbrook was built almost building by building. It grew naturally, intuitively, in the way Saarinen believed communities should grow.

First came the boys' school, begun in 1925. George Booth originally wanted his old farm buildings converted into a campus. But that proved too expensive, so Saarinen replaced the barns and stables with stately and very romantic brick structures that looked overgrown with ivy even before they were. The Kingswood School for Girls campus, designed four years later, needs no ivy to charm. With incredible inventiveness, Saarinen enriched essentially simple brick structures with a variety of subordinate forms—columns, chimneys, window and roof patterns, porches, terraces, passages—that make these buildings sing. The whole Saarinen family joined the jubilation: Loja wove rugs and tapestries, Pipsan designed the interiors, and Eero designed the furniture.

The Institute of Science was designed in 1935 and makes its architectural concession to modernity with simpler lines and fewer ornaments. The art academy developed over a period of 10 years, from 1925 to '35, as workshops and artist houses were needed. The art campus is built along a kind of main street, Academy Way, where potters and architects, painters and designers, students and masters would constantly run into each other.

Cranbrook's crescendo is the classic grand peristyle, designed

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Mr. Von Eckardt is design critic for *Time* magazine.

Left, sculptures in the Orpheus Fountain by Carl Milles with the Saarinen signature on a column. Above, sculptures in the arcade.

A warm and gentle 'community of artists.'

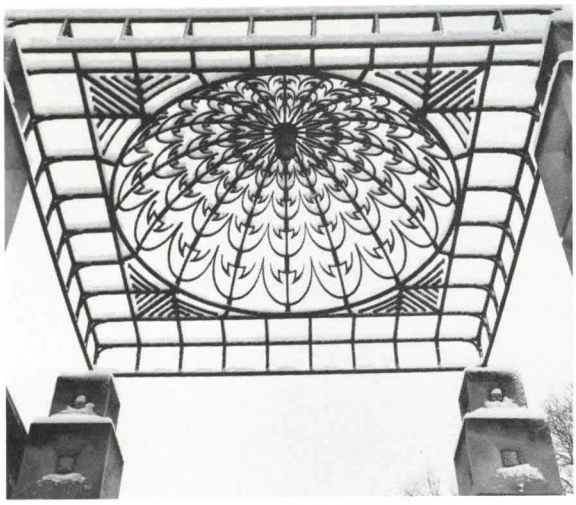
in 1940, that connects the art museum and art library. There are fountains both in front and in back, splashing Swedish sculptor Carl Milles' sensuous bronzes. The crescendo is fortissimo.

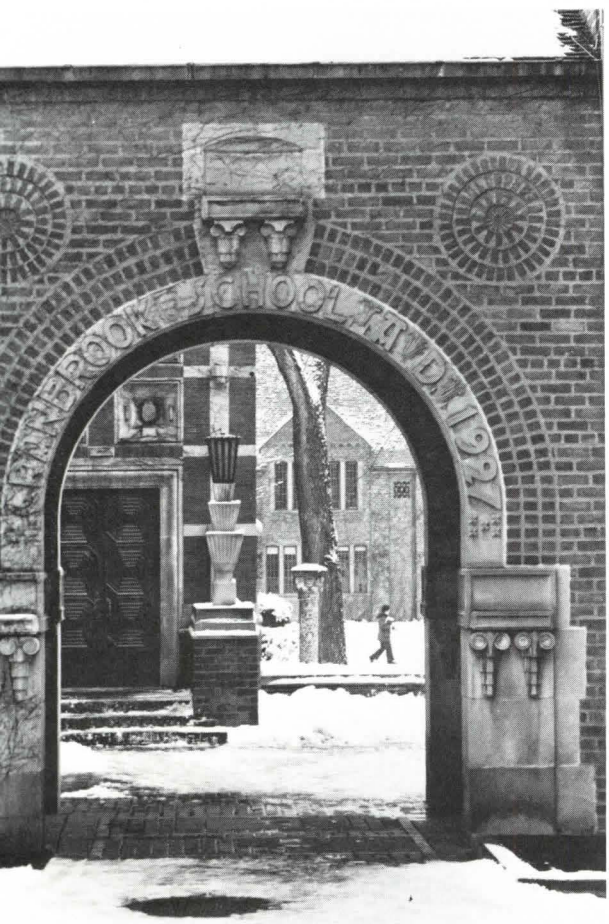
Milles, who, like Saarinen, became a U.S. citizen in 1945, created playful public sculptures for important cities all over Western Europe and the U.S. He joined Cranbrook in 1931 and adorned it with more than 70 pieces. Other prominent artists working with the Saarinens were weaver Marianne Strengel, potter Maija Grotell, both from Finland, and painter Zoltan Sepeshy, who was from Hungary.

As in Gothic cathedrals, embellishments by all these artists are one with the architecture and unify Saarinen's subtle changes in style from the boys' school's medieval romantic to the peristyle's modern classic. Like bricks that add up to a building, the buildings add up to a place. It is a place to which not only its creators but also generations of students, teachers, and visitors have given meaning. Cranbrook gives that meaning back to us.

Saarinen achieved unity by linking the buildings in a web of walkways, passages, courts, terraces, stairs, and walls. He invites us to stroll in this compact, intricate, almost medieval townscape. At the end of each vista, a sculpture or other point of interest draws us from one place to the next. Saarinen makes sure we are never bored in-between. We keep discovering, for instance, that two seemingly identical columns or friezes have slightly different designs. A small carved head suddenly pokes out from an expanse of brick. The pattern and texture of the pavement keep changing. So does the design of ornaments, downspouts, chimneys, and other details. *Eliel Saarinen*, by all accounts, was a witty man with a twinkling eye. His architecture has that twinkle.

The art academy is small. This year, 145 graduate students, including a dozen from overseas, are enrolled in a two-year masters program. The limit is 150 students. They work in nine workshops—architecture, industrial and graphic design, painting, printmaking, sculpture, fibers, metalsmithing, ceramics, and photography—each headed by an artist-in-residence. "Cranbrook is not a school or academy in the ordinary sense," Eliel Saarinen said when he became its first president. "It is a community of artists." Saarinen strongly believed that art cannot be taught. It





must be learned. "He would never criticize the work of his students," recalls city planner Carl Feiss, who was one of his first. "He would not tell you what to do. In a friendly, encouraging way he would only tell you that your work was good, but that you know it could be better." Saarinen's educational program was not to impose a style, but to provide the setting, the stimulation, and the opportunities for good artists to become better artists. "It is the opportunity," says Roy Slade, "to work, to think, to see, to talk, to listen, to criticize, to contemplate, to inquire, to create, to innovate, to share, to learn, to grow, to celebrate."

Today, Cranbrook seems as departmentalized as other art schools. But in the early years painting students would "float" into sculpture and ceramics workshops. Sculptors would work in design. City planner Edmund Bacon would work with sculptor Carl Milles. Architect Harry Weese spent enough time in the textile (now fiber) workshop, to weave material for a coat. Nowhere else did students have as easy access to busy, experienced artists for advice and sympathy.

"We worked and we worked," recalls Florence Schust Knoll. "We worked from early mornings until noon, then we'd break for lunch, go back to work, go off at 4 o'clock and have a touch football game out in the fields or walk or something, then back to work until dinner, and then after dinner we'd all go back to work and work until 10 o'clock, when we'd have hamburgers at a local diner."

"We also made time for skiing, for trips to Detroit, for fun and mischief," says Harry Weese. "The big deal was to spend a night in the girls' dormitory."

"My experience at Cranbrook was totally fulfilling. Indeed, all my perceptions were twice as sharp as they ever have been, before or since," says Bacon.

Eliel Saarinen died at 77 in 1950. For a while, particularly at the General Motors Technical Center at Warren, Mich., Eero flirted with the Miesian style. But he soon came to believe, he

Opposite page, snow-covered courtyard of the Cranbrook School for Boys. Top left, the symmetrical wrought iron dome by Saarinen. Above, brick archway leading into the boys school. Right, column detail in the arcade of the Kingswood School for Girls.

Left, the Cranbrook Institute of Science. Top right, restored dining room of the Saarinen house with Eliel's fluted beechwood and ebony chairs. Bottom right, living room interior with handmade furniture designed by Eero. Far right, main arcade entrance to library.

Decline followed by arrival of 'a fireball.'

said, "that we must explore and expand the horizons of our architecture." His small interdenominational chapel for the Massachusetts Institute of Technology, with the gold altar screen by Harry Bertoia, is one of the architectural gems of this century. The Dulles International Airport Terminal near Washington matches the majesty of his father's Helsinki railway station.

Eero Saarinen died in 1962, only 51 years old, two years before his airport masterpiece was completed. But his influence is much alive and acknowledged by a number of prominent architects known as the "Saarinen spawn." Foremost among them are Harry Weese, Cesar Pelli, Kevin Roche, Ralph Rapson, Gunnar Birkerts, and E. Charles Bassett.

Bacon directed one of the few successful downtown urban renewal programs in the country. Much as Baron Georges Haussmann rebuilt Paris under Napoleon II, Bacon rebuilt the center of Philadelphia but under the more difficult circumstances of democratic government. But he believes that "the multiplicity of wills that constitute the democratic process can coalesce into unified action if there is a clear design and a vision." Bacon says Eliel Saarinen's design idea is just beginning to be understood.

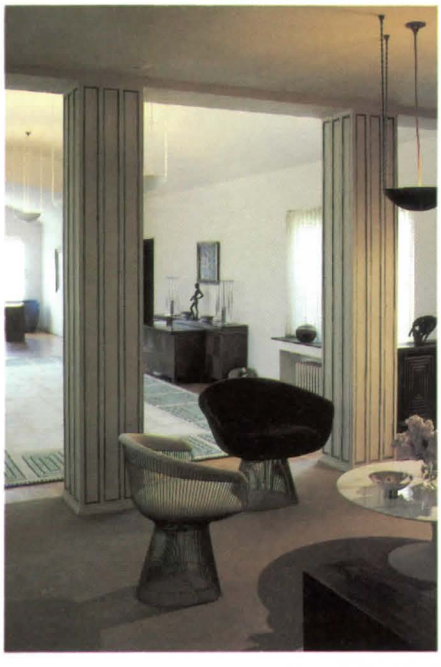
Carl Feiss agrees. A teacher and planning consultant, he applied Saarinen's ideas in many community development plans. He is one of the pioneers of the historic preservation legislation that saved large parts of our cities from the bulldozers. Feiss also helped work out the plans for restoring the historic charm of Savannah, Ga., and Charleston, S.C.

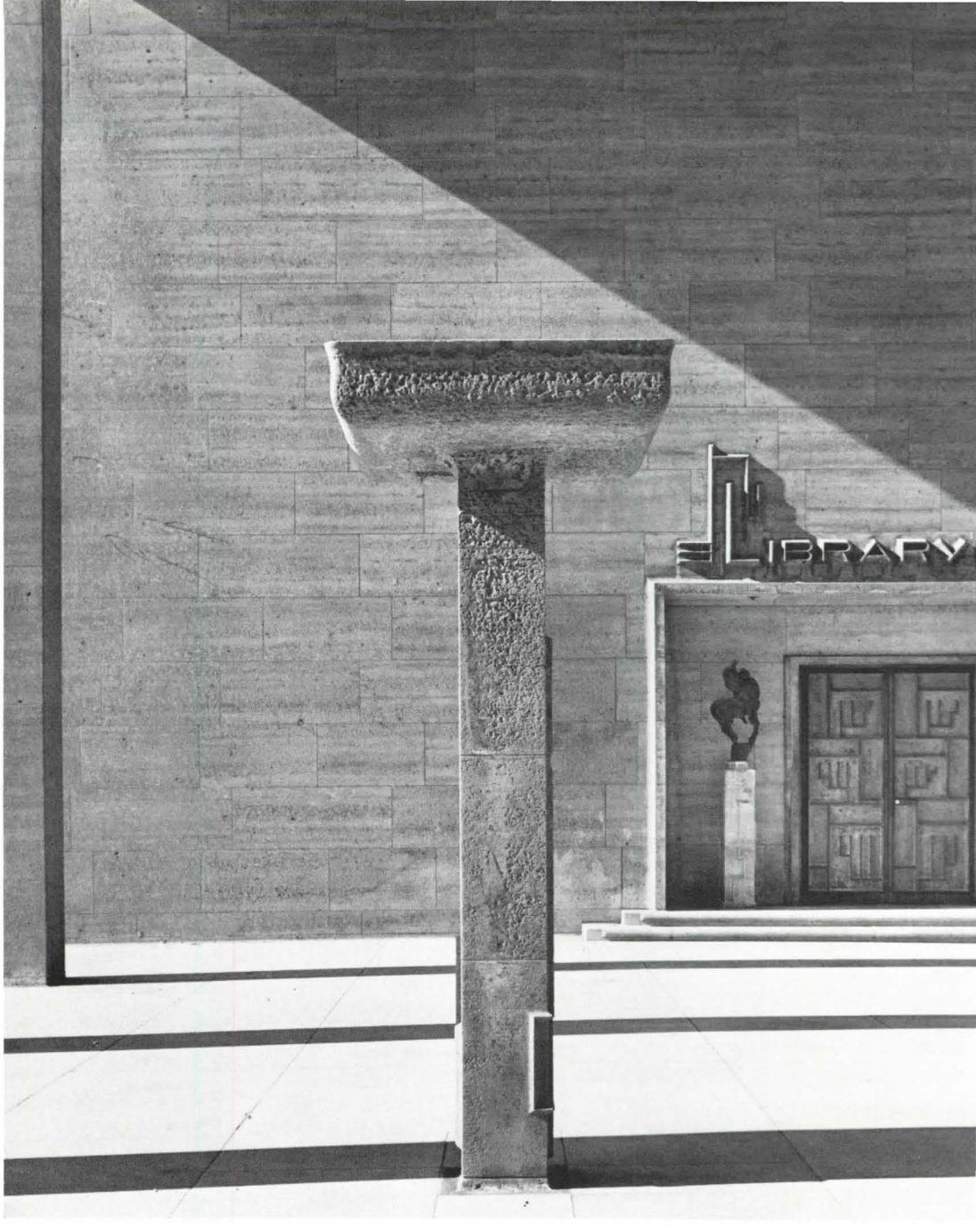
Cranbrook had one further, important impact on American culture. A large number of its graduates went into art education and started crafts workshops in colleges and universities all over the country. "Cranbrook made the U.S. a leader in modern craftsmanship," says Lloyd Herman, director of the Smithsonian's Renwick Gallery.

At the academy "the vintage years," as Eames called them, seemed over when Eliel Saarinen died. The next president was Sepeshy, followed by painters Glen Paulsen and Wallace Mitchell. Art and architecture in the '60s and '70s was dominated by abstract expressionism. Cranbrook forgot itself and followed the permanent avant-garde into its abstractions. There was no architect around to remember what Saarinen's buildings stood for.

Roy Slade is also an abstract painter. But when he came to Cranbrook as president he started to paint abstracted details of Saarinen ornaments. He came to this country 16 years ago to teach art. In 1972, he became director of the Corcoran Gallery in Washington, D.C., and resurrected its 19th century American collection. His first act in Cranbrook was to restore the Eliel Saarinen House with the help of his wife, Susan.

It is a modest house, no bigger than those of other faculty members. But its interior was the showcase of Eliel and Loja Saarinen's art and genius. Every detail, down to windowpanes, tapestries, doorknobs, lamps, tableware, and bathroom fixtures,





had been designed by the Saarinens and made by hand. The Slades found it neglected, needlessly modernized, and vandalized.

While workmen pulled down false walls and reconstructed the right ones, Susan Slade hunted for original artifacts. Saarinen's fireplace andirons had been found in a trash dump. They were repaired by metalsmith Richard Thomas. After cleaning, the sooted, black tiles around the fireplace revealed their glowing brown hue edged in platinum, a rare work of the Pewabic Pottery in Detroit. Other treasures were scattered in Cranbrook's attics and basements. When word of the restoration got around, people brought original items from afar. Other items had to be replaced or reproduced. The success of the effort made it easier for Slade to raise money for the cleaning and repair of buildings and grounds in all of Cranbrook.

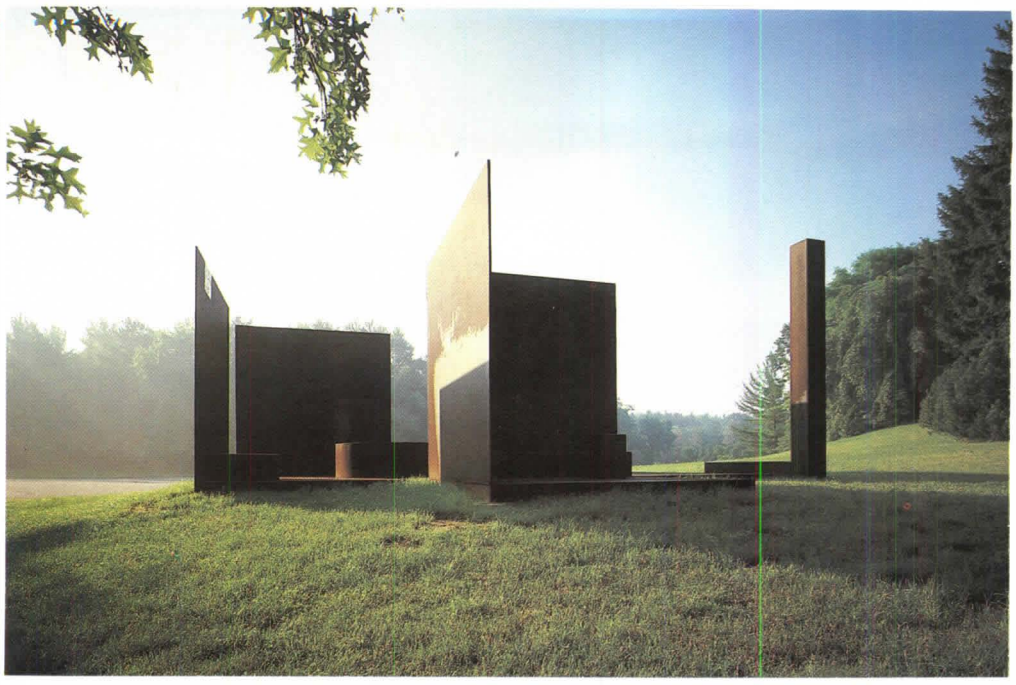
"That fireball," as some of his artists-in-residence call Slade, installed a dean to run the day-to-day business of the school, but made few other administrative changes. He devotes his restless energy to restoring Cranbrook's image, its plant, and its coffer, with special emphasis on the Cranbrook Museum. It collects and displays not only the work of the academy and its illustrious alumni, but also such outsiders as Louise Nevelson and Sam Gilliam. As Ben Shahn said: "The best thing an art school can do is have a good museum on the way to it." The Cranbrook Museum and its lecture program would do any sophisticated small town proud.

One indication of Cranbrook's renewed significance in the design world is the growing list of its prominent visitors, many of whom come time and again just to be there, and to give and take. Among them are Niels Diffrient, Bruce Burdick, and Aldo Rossi. International corporations with a stake in good product design, such as Philips and Sony, are providing new scholarships.

Slade's new dean is Beatrice Rivas Sanchez. His only new faculty appointment is architect Daniel Libeskind, 36, an endearing enigma. Polish-born, he was a child prodigy on the accordion ("in our anti-Semitic town it wasn't wise for Jews to own a piano"). At New York's Cooper Union, he turned to architecture as a subject of abstract drawings and philosophizing. He has never built a thing. "Neither did Piranesi," quips Slade.

Libeskind's class of a dozen young architects builds weird, esoteric dada sculptures with meticulous precision. The students explain them with poetic gobbledegook. Says student Hal Laessig: "I am building the city where Giovanni Battista Piranesi and the General Pulaski Skyway come to stand together." Student Raoul Bunschoten says: "We are learning to think with our hands." A European admirer—and Libeskind, who has lectured and exhibited abroad, has many—claims it will all lead "to a new, multidimensional space-time experience." Libeskind himself says he is searching "not for new forms but new inspiration." He and his students proudly and clearly praise the environment Saarinen and his artists have created for them.

So does Michael Hall, the sculptor-in-residence. He admits to dislike of Carl Milles' voluptuous realism but gilds his latest



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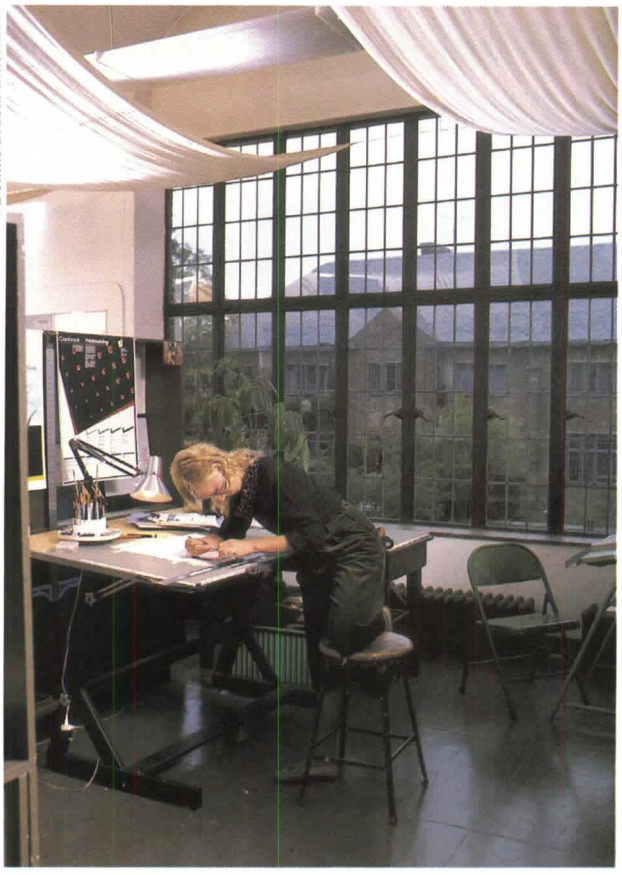
Left, recent sculpture addition on the grounds of Cranbrook by Tony Rosenthal. Below left, a student in art studio with framed windows reminiscent of Bauhaus. Below, sculpture by Carl Milles. Right, the main arcade of the Cranbrook Academy of Art.



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'No inclination for an Old Cranbrook Revival.'

large metal constructions on a Cranbrook meadow to harmonize with Milles' bronze. His foremost inspiration, however, is his extensive American folk art collection, which he considers not primitive but full of meaning and symbolism. Modernist Hall considers "modernism just an interlude."

Cranbrook painter George Ortman, 56, says he has abandoned Rohrschach painting because "art must come out of art." His latest work is an analysis of a Georges Seurat painting in a series of panels ranging from a photo-realist drawing to geometric abstraction.

Jun Kaneko's ceramics, Steve Murakishi's printmaking, and Carl Toth's photography studios live up to the expected. The busy metal workshop of Richard Thomas, 65, rises high above it. Thomas is known as "the father of metalsmithing in America." He is also the keeper of the flame of Cranbrook's exacting crafts tradition. There is not much else you can do with metal.

Now that Roy Slade is restoring Cranbrook, the sense of the place, the spirit, the intensity, and the urge for tradition are beginning to show and glow again much like the platinum edged tiles on the Saarinen house fireplace. Down at the basement students' bar, along Academy Way, talk derives from the accomplishments of the Saarinens, the Eameses, Bertoia, and all the others. The workshops are used 24 hours a day, seven days a week. Cranbrook is working, intensely working, on a future that lives up to its past.

Yet, blessedly, there is no inclination for an Old Cranbrook Revival. The fiber work of Gerhardt Knodel's shop, for instance, is as different from Loja Saarinen's work as mylar is from wool. Knodel himself weaves huge fabrics of gold, silver, and cotton in muted colors, some of them depicting dream-like but realis-

tic images of people, trees, or architectural fantasies. Knodel hangs them dramatically, "like waterfalls of textile," in atriums of hotels and office buildings. One of his latest bales of fabric "colors the air" in Skidmore, Owings & Merrill's Ohio Bell building in Cincinnati.

The design department focuses on electronic communication, office machinery and furniture, and interior design. The department is jointly headed by Michael McCoy, who designs furniture and other industrial products, and by his wife, Katherine McCoy, who specializes in graphics. McCoy & McCoy is also a design firm, with clients like Philips, Litton, and Knoll International. Most of their students are trained professionals on leave.

The McCoys keep referring to "the Cranbrook idea." "Most everything we try to do comes from Saarinen's original catalog," says Katherine. "His philosophy is built into the walls."

When Slade tried to move some of the student workspaces around, he learned the unwritten rule that every workbench or drafting table must have a view. Every student can watch squirrels play and the leaves turn color. "In order to understand both art and life," Eliel Saarinen once said, "one must go to the source of all things: to nature."

This is the hope for American architecture and product design as they grope for expressions that advance from orthodox modernism in more convincing ways than playing games with ornament and style, any old style, for style's sake.

A young Chicago designer who had just visited Cranbrook told me recently: "I was trained in the International Style and taught to find universal solutions to all design problems, an architecture that works equally well anywhere, like automobiles. In Cranbrook I learned that there can be no universal, international style. . . . They don't kill artistic intuition with theories. I learned that design must grow." □

O'Neil Ford's 'Caring Campus'

His work for Trinity University spanned a quarter century. By Lawrence W. Speck

If you blur your eyes slightly it is easy to imagine the Trinity University campus in San Antonio as an inherited relic of marching time—a sensitive, piecemeal aggregation of buildings and spaces collected over several centuries by a rich, culturally eclectic city.

Clearing our vision, this almost plausible myth is dispelled by brickwork that is all too crisp to have weathered two centuries or by sophisticated mechanical systems integrated with other building elements much too conveniently to have been the product of retrofitting. The campus is, of course, not old at all. It is, in fact, quite new, having been built from scratch in various phases from 1951 to 1976.

But the phenomenon of the Trinity campus lies precisely in its ability to elude the restrictions of time—its capacity to incorporate multifarious architectural forms, techniques, issues, and approaches into a rich, vital, satisfying expression.

Trinity is not pure, clear, or singular. It is not polemical or didactic. It eschews the restrictive single-mindedness of its era in favor of a responsive catholicism. It is, like the life that inhabits it, a diverse polyglot assemblage of events, woven together by threads of circumstance. It is charming, endearing, meaningful, and clearly treasured by its inhabitants. One gets the feeling it will endure.

In these regards Trinity distinguishes itself strikingly from its contemporaries—the spate of new campuses that sprouted across the country in the 1950s and '60s. It has none of the "instant campus" feeling that is so common among those campuses. It is, in fact, even more successful in avoiding a placeless homogeneity than many campuses whose administrations reacted in the 1970s by compulsively hiring many different architects to avoid an "all cut from the same cloth" image.

Trinity bespeaks not so much the interests of its own era as a collective memory of all eras. It ranges backward and forward in time spinning a web of discrete allusions that seldom rise to open quotation. It is, in sum, a rich urban place of the sort we are accustomed to cherishing—old *and* new, cohesive *and* diverse, monumental *and* intimate, common *and* idiosyncratic.

The Trinity campus is also distinctive because it is the work of a single design team. Forty-six separate building projects constructed over a quarter of a century were all directed by a joint venture between two local San Antonio firms—the office of O'Neil Ford (O'Neil Ford & Associates for the first 17 years; later Ford, Powell & Carson) and the office of Bartlett Cocke.

The story of this long-lived, though often rocky architect/architect/client relationship began in the summer of 1944 when Cocke was hired by the Trinity University building committee to assess the feasibility of constructing a new campus on an abandoned limestone quarry that the university was considering for purchase. Cocke's report was less than glowing. He noted that the very irregular shape of the property as well as the 70-foot slope difference between low and high points did not lend themselves to the formal arrangement of buildings that the committee seemed to have in mind.

Cocke did not, however, advocate rejection of the site. Instead, he suggested a reassessment of the notion that the campus would be composed of conventional buildings grouped in a formal pattern. If the quarry property was to be used, he recommended that "the arrangement of buildings should be informal, irregular in shape, designed to fit the site."

But the committee, and especially a single outspoken prospective donor on the committee, had in mind the popular colonial campus model that had been recently employed in other prominent church-related schools in Texas—Baylor, Southern Methodist, and Texas Christian universities. It seemed *the* appropriate style.

Cocke was hired in 1945, along with Harvey P. Smith, a local historian, to do a preliminary scheme for the campus on the quarry site in a "general colonial type of architecture." The Boston firm of Perry, Shaw & Hepburn, well-known at the time for its work at Harvard and for the reconstruction of Williamsburg, was brought in as consulting architect. The resulting scheme was an odd blend of East Coast academic colonial and early Texas Greek revival. It located a chapel at the high point of the site with academic buildings linking a triangular (trinity?) open space below. Fundraising was begun based on the scheme, and by 1947 resources were available to begin construction.

But in the ensuing two years some fundamental shifts of perspective had occurred on the Trinity board of trustees. Frank Murchison, a prominent Dallas businessman, had recently moved to San Antonio, joined the board, and become chairman of the building committee. His colleague on the board, Tom Slick, a young inventor and entrepreneur, had begun to advocate "functional buildings to be in keeping with modern ... thinking in designing school and college campuses." Aware that the previous design work for the campus had created expectations of a more traditional and elaborate style of architecture than they had in mind, Slick and Murchison made the point that a more functional design would make "limited funds go just as far as possible."

Enter O'Neil Ford. Ford was a relative newcomer to San Antonio in the late-'40s with a reputation of being bright but something of a firebrand. He had first worked in San Antonio in 1939 when he did the restoration plan for La Villita. More recently, he had done mammoth houses there for both Frank Murchison and his brother, John, which incorporated a distinctive blend of Texas tradition and modernism. He was young, outspoken, energetic, and full of ideas, but he had done no significant commercial or large-scale work.

Ford fed ideas to Slick and Murchison who, in turn, conveyed them to the Trinity board. By late-1948 the university decided to realign its architectural team, placing the risky O'Neil Ford as joint architect with the more proven Bartlett Cocke and enlisting the services of William Wurster, then dean at MIT, as consultant. The stage was set for a far more innovative and imaginative design approach than had been previously envisioned—one that would be, in Ford's words, "in harmony with the site, preserving its beauty, utilizing its unique topography—not altering it except where absolutely necessary."

Ford and Cocke were an odd couple. Theirs was an "arranged" marriage. Cocke soon found that "the way to get along with Ford was to let him have his way on design." On the early buildings Ford's office did all of the design; Cocke's office did all of the working drawings and supervision. In later buildings Ford's office took a larger share of documentation, but never relinquished control of design decisions. The result, in Cocke's estimation, was "an awful lot of good design."

In the early days economy was *the* controlling parameter in building design. Trinity University had built four different campuses in its 80-year history—all of them characterized by phased construction, temporary facilities, and limited budgets. The realignment of architectural direction had been largely precipitated by Slick's argument that a "modern" approach would be more economical. Now it was up to the architects to prove his point.

The first Trinity buildings were elemental, almost prosaic essays in economy. The magic came in their siting, which was dramatic

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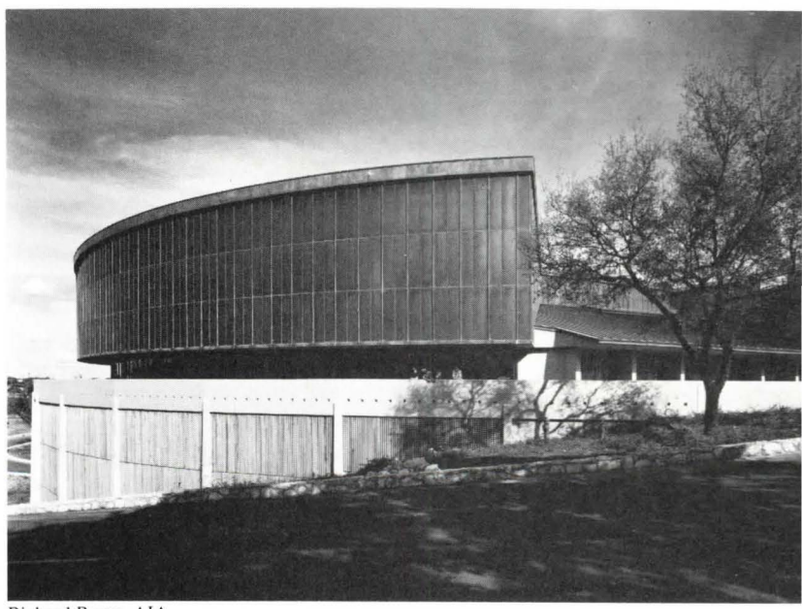
Michael Riehm

Above, northwest entrance and facade of Northrup Hall, one of the early buildings to use the 'lift-slab' method of construction; right, the curvilinear form of Laurie Auditorium.



Richard Payne, AIA

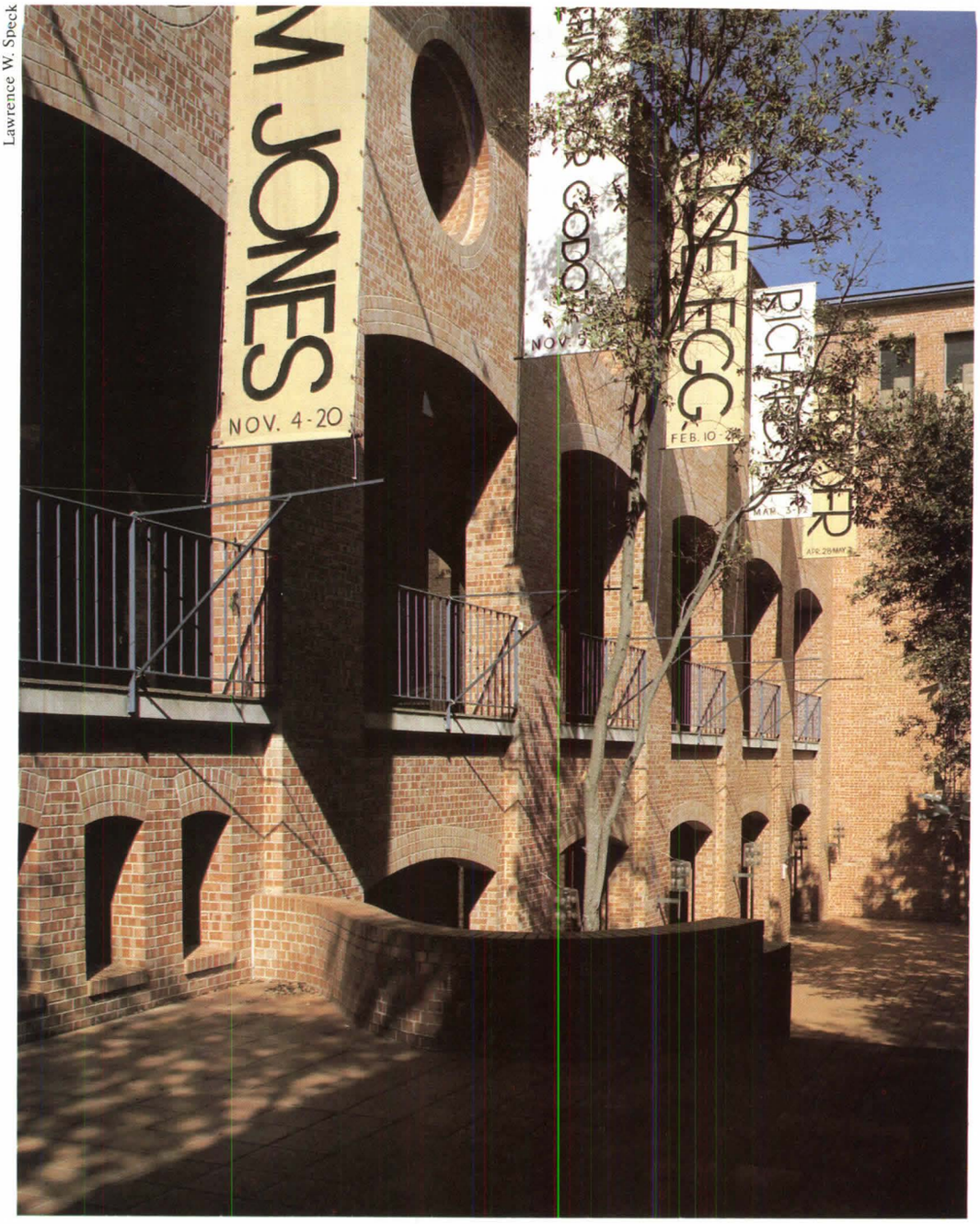
without overpowering the drama of the site itself. Simple rectilinear forms were nestled among trees, tucked up against a quarry ledge, or perched prominently along the crest of a ridge.

Trustee Slick donated the use of his patent and hydraulic jacks to enable the early buildings to be erected by the innovative Youtz-Slick "lift-slab" method. Up to 165-ton floor slabs were poured one on top of the other on the ground, jacked to appropriate floor heights after curing, and welded into place on steel columns. Largely because of Slick's subsidy, the method proved very economical, but also very nerve-racking for both architects and university officials.

Ford liked to tell the story of the morning the first slab was raised when then Trinity President Monroe G. Everett insisted the two of them rush to stand under the slab as soon as it got six feet up. "If this thing falls," Monroe reasoned, "we'll both be better off there."

Technical innovations called much attention to the early Trinity buildings in the architectural press. Not only the structural technique but also its careful expression in architectural form won rave reviews. Structure, skin, and joints were immaculately detailed. Steel sash, for example, were hung on clips stud-bolted directly to the slabs above with no interrupting walls or columns in order to expose the slabs as clearly as possible. *Architectural Forum* noted in an early article on Trinity in August 1951, "There have been modern 'horizontal' buildings before, but none whose

Lawrence W. Speck



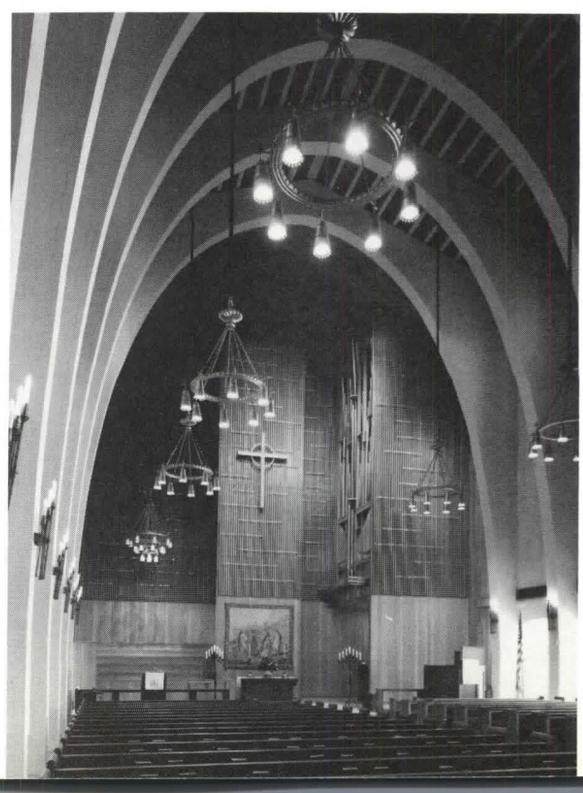
Left, courtyard facade of the Ruth Taylor Theatre; below, the brick parabolic arched interior of the Margarite B. Parker Chapel. Across Page, winding staircase connects the upper and lower campuses, with the T. Frank Murchison Tower in the distance, and Coates Center at right.

Caring about the site, economy—and people.

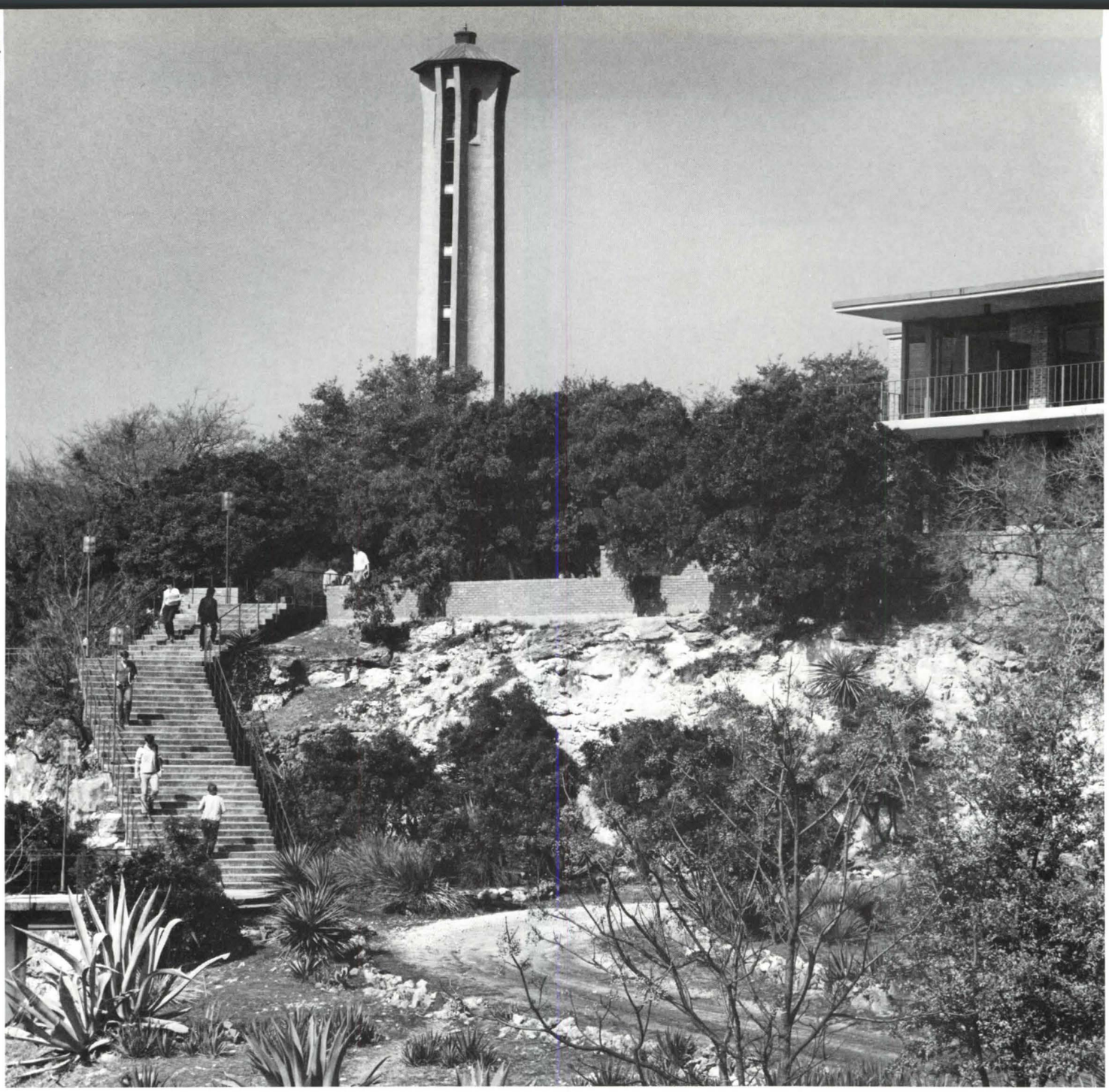
sheltering slabs sweep for such 'miles' without apparent support—at once so widely overhanging, so smoothly unencumbered by any sign of a beam, so saucily thin. There have been continuous glass walls but none being so expressively hung from above like a glass curtain—which this literally is."

The clean, well crafted buildings acted as a counterpoint to the topography and vegetation. Their neat order gave discipline to the lacerating crags and gullies of the land. Under the guidance of landscape architects Arthur and Marie Berger, carefully preserved scrub oaks on the site were revived with the addition of soil and water. These were supplemented by other hardy indigenous trees donated by local ranches to reinforce the romance and appeal of the site. The rugged landscape became civilized, domesticated, but not violated.

By the early-'60s, with the new campus already established, Trinity found it somewhat easier to raise funds for new construction and began to be able to build more than "cheap, ugly" buildings as Ford was fond of referring to the first phase boxes. The Northrup Hall Addition (1963), Ruth Taylor Art Building (1963), the T. Frank Murchison Tower (1964), Chapman Graduate Center (1964), and Moody Engineering Building (1964) took



Richard Payne, AIA



Lawrence W. Speck

the simple massing, evocative siting, and careful detail of their predecessors and amplified them with a new expressiveness.

The apex of this new expressiveness came in 1966 with the completion of the Margarite B. Parker Chapel at the physical as well as spiritual heart of the campus. Here Ford drew stylistic inspirations from such diverse sources as local Spanish missions, German expressionism, the work of Erik Bryggman, and postwar Presbyterian parsimony.

The chapel, along with the later Ruth Taylor Theatre (1966) and Laurie Auditorium (1971), are perhaps the best individual buildings on the campus. They are distinguished by their use of the ever-present slope, their interweaving to create pleasantly scaled, habitable outdoor spaces, and their exquisite use of warm, humane materials.

They are sometimes quiet, sometimes lively. They mix curved, angular, and orthogonal plan forms under flat, shed, and gabled roofs. Their variability and responsiveness is their great strength. They join copper, bronze, wood, concrete, stone, and ceramics with an ubiquitous glue of frosted "Bridgeport pink" bricks. The bricks themselves form piers, walls, towers, and skins. They make arches, occuli, grilles, buttresses, columns, curbs, and caps.

The power of environment in the shaping of an institution is nowhere more clear than at Trinity. Current President Ronald Calgaard attributes much of the character of the school currently to directions set in those embryonic years of new construction. The spirit of the campus and the spirit of the institution are inseparable. A relaxed, congenial attitude pervades both.

The Trinity curriculum emphasizes individuality and personal development. It seeks an intimate relationship between student and student and between student and mentor. This attitude is alive in the casual paths, the generous corridors, the inviting patios, the reflective courtyards of the campus. Learning here is a part of living—a collection, recognition, and celebration of everyday life.

President Calgaard praises Trinity's architects, not so much for their formal acumen or for their abilities to get the job done on time and within the budget, but for their total involvement with the university. "This was more than a job they did," he notes. "They had a feeling for the life of the institution." And it shows.

There is a powerful caring evident in the building of Trinity University—caring about a rugged piece of land, caring about making the most of meager means in hard times, caring about the sensual pleasures available from sensitive use of light, texture, scale, and materials, and caring about the everyday interactions of people inhabiting a place. □

Evaluation: Beaubourg Already Shows Its Years

It is more successful as civic spectacle than as architecture. By Stanley Abercrombie, AIA

Paris' Centre Pompidou (originally and still popularly called Beaubourg) opened to the public in February 1977, its design the result of a much publicized international competition. There had been over 700 entries from all over the world, and the jury of nine (including Philip Johnson, FAIA, Oscar Niemeyer, Jean Prouvé, and Jørn Utzon) was widely praised for its choice, the work of architects Renzo Piano and Richard Rogers in collaboration with Ove Arup & Associates. After more than six years of use, has Beaubourg proved to be a success?

Yes, definitely, resoundingly, more than anticipated: This is the immediate response of almost anyone you could ask. Yet it is a response based on—or at least greatly influenced by—the center's success as a public spectacle: almost 50 million visitors so far, one million of them within the first seven weeks and 1.35 million for one exhibition alone, the 1979-80 Dali retrospective. It is a place for Parisians to meet (especially young Parisians: over half its visitors are under 25), and, along with Notre Dame and the Eiffel tower (and outdistancing the Louvre) it is a place for tourists not to miss, an essential part of present-day Paris.

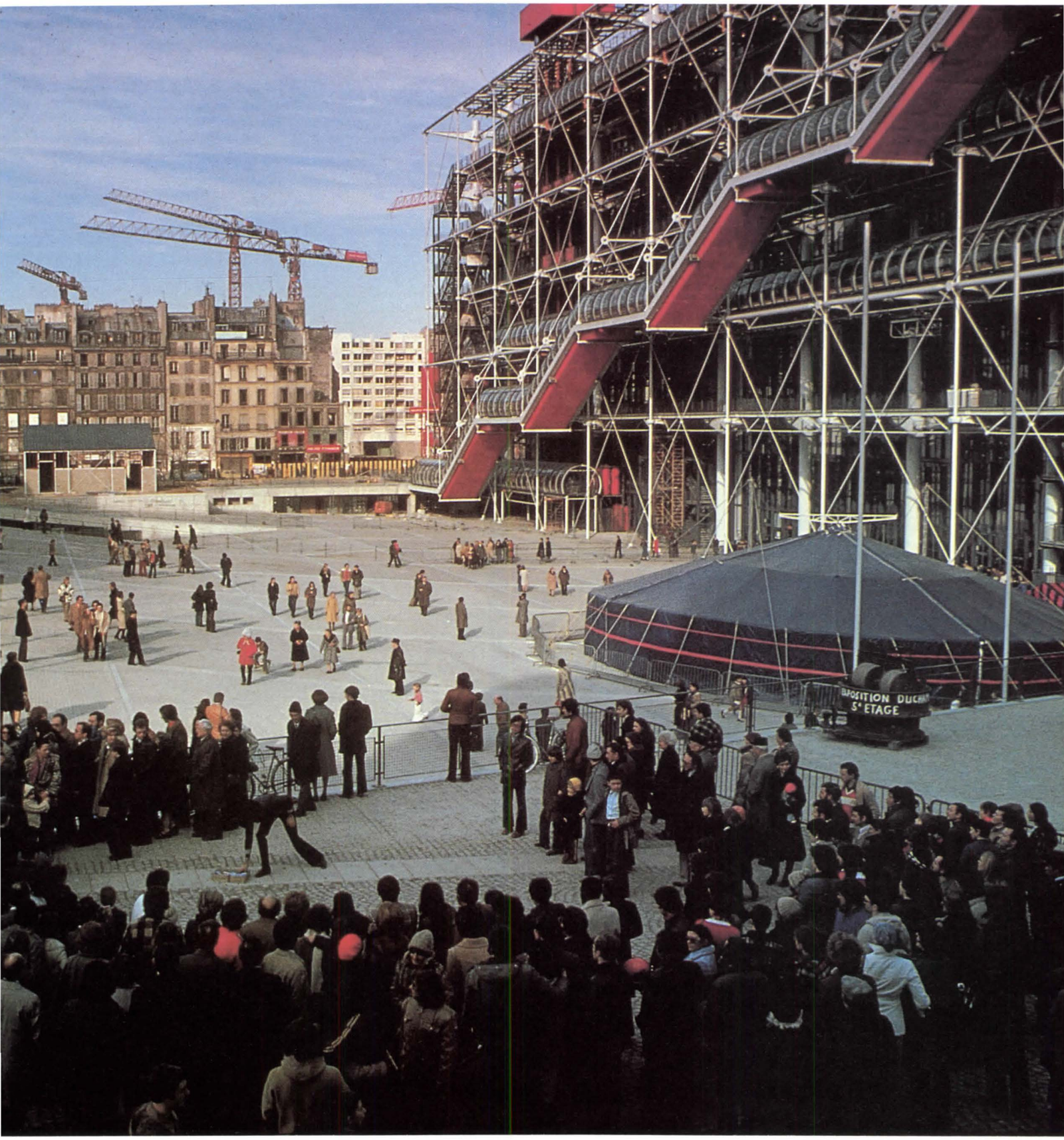
But if the question of Beaubourg's success is asked more specifically, there may be different answers. First, is the phenomenon inherent to the building and therefore lasting? Second, is the building successful not just as a civic spectacle but also as a functioning cultural center? Third, is it successful as architecture? Each aspect impinges on the others but not so much that it will preclude our giving three separate answers, and, to some extent, the answers must be No, No, and No.

Approaching the center through the streets of Paris, however, especially approaching the multicolored east facade along the Rue de Renard, one discovers the spectacle intact and impressive. Among the elegant and consistent buildings of the world's most beautiful city, Beaubourg vibrates as an unexpected and delightful apparition, yet one not wholly out of character. Defiantly independent in form and color, it still manages to be Parisian, largely due to the elaborate complexity of its exterior. Its details are different as can be from those of its neighbors, but the degree of richness of detail is remarkably similar. The other long facade of the building, facing a large plaza, is a bit less colorful and less spectacular, but, thanks to the famous escalator snaking up the wall, still offers visual excitement.

But as we approach the building the excitement fades. Literally. The paint is peeling from some parts, covered with grime on

Right, the west plaza, a popular gathering place defined by the center's celebrated escalators and exposed structural and mechanical systems and the contrasting buildings of the West Bank.

Tim Street-Porter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Mark Held

Shabbiness as the price of huge popularity.

others. The stainless steel casings of some structural members are badly tarnished. Glass and plexiglass are dirty. Some heating grilles are inoperable because they are packed with cigarette butts and gum wrappers. Carpets are fuzzy and shredded. This sorry state is probably unavoidable, for difficult and expensive maintenance (cleaning the windows five years ago reportedly cost the equivalent of $60,000) is built into the design: To put the bones and intestines outside the skin is to invite health problems.

One excuse for Beaubourg's condition might be that it is more popular than anyone dreamed. Designed for an expected maximum of 7,000 or 8,000 visitors a day, it has often been invaded by three times that number. But the excuse of popularity is insufficient, for there is squalor not only in public spaces but also in areas where no public (and few window washers) can ever reach. It is almost as if Beaubourg, like a Tinguely sculpture, has been designed to self-destruct.

Even if the dirt is disregarded, the colors underneath, on inspection, disappoint. They are admirably well chosen—bright, saucy, and slightly eccentric—but their application is without rigor or consistency. At first glance their use seems clear: Red indicates vertical circulation, green means water, blue means air, yellow means electricity, white means structure. But the system is overwhelmed by exceptions: In the toilets, exposed

plumbing is not green but black; some electrical and video cables are not yellow but green; others, creeping along structural elements, are "painted out" white; red is the color not just of circulation but also, understandably, of fire equipment; green the color not just of water lines but also of bookshelves and the architect-designed open plan office partitions. The result is that what had promised to be a language is really jabber; what seemed to be a discipline is only décor.

The plaza itself is an important feature of the Piano & Rogers design, one found in very few of the other competition entries (the entry by Japan's Kisho Kurokawa, a runner-up, was one of the few). It is generously sized but at the moment rather bare, and it slopes down toward the building's below-grade entrance. A central portion is depressed to give access to a proposed flower market, but its spaces have never been occupied, and it remains a dreary dead end. The rest of the plaza, however, is very much alive with crowds and ad hoc entertainment. But, in evaluating the center, it is important to remember that the magicians, fire-eaters, and folksingers in the plaza are part of Beaubourg in the same way that caricaturists are part of the Piazza Navona or drug pushers and three-card monte dealers part of Times Square. They are momentary habitués, not inte-

Left, the west facade bisected diagonally by the zig-zag molded plexiglass tube that covers the external escalator. Above, the rooftops of Paris looking west from the center.

Stanley Abercrombie, AIA

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Tim Street-Porter

'New neighbors threaten to engulf it in vulgarity.'

gral to the architecture, and the nature of such crowds is subject to change.

An example very nearby is the small area between Beaubourg and the former site of Baltard's beautiful Les Halles markets. A decade ago the area housed modest shops and some working-class wine bars. When the markets were demolished and Beaubourg was built, the same buildings developed new chic and housed, for a while, smart restaurants, art galleries, and bookshops. Recently, with part of the Les Halles site developed as an unredeemably vulgar underground shopping center, another change has come, and the same buildings now house fast food outlets and porno shops.

The future of Beaubourg as spectacle is therefore far from secure. As a social phenomenon, its new neighbors threaten to engulf it with vulgarity, and as an object only a vast outpouring of maintenance funds can reclaim its original luster. Its strength for the future must come from within, from its utility as a working cultural center.

The premise of the center is an apparently sound one, a multidisciplinary organization with four main components: the museum of modern art, the CCI (center for industrial art), the IRCAM (center for acoustic and music research), and the library. These are supplemented by a bookstore, a cinema, a restaurant, and spaces for temporary exhibits. As Françoise Jollant, a conference and exhibition organizer and head of documentation for the CCI, puts it, "Beaubourg has done a lot for Paris just by furnishing a model showing that culture is a single whole, rather than consisting of art, music, literature, and design as separate things in separate places."

How well does the building serve this overall ideal? In respect to spatial opportunities for cooperation and also in respect to flexibility for alterations in departmental sizes, the design could hardly be improved upon. The IRCAM is rather a world to itself, between the south side of the building and the church of St. Merri, primarily underground and with a separate entrance. But within the main building, it would be remarkably easy, for example, to increase the size of the library and decrease the size of the museum.

And how well does the building serve the component functions? Not so well. The library, perhaps, is the best served, in plain but pleasant accommodations on parts of the second, third, and fourth floors, and it also happens to be the most admirable feature of the whole center. (Other libraries in Paris are closed, except for periodical rooms, to all but authorized

Above left, flaking paint on the ventilation ducts at Rue de Renard entrance. Left, movable partitions in a corner exhibition space. Above, an installation in the museum of modern art.

A secondary role for the modern art museum.

scholars, teachers, and researchers. The Beaubourg library is both truly public and comprehensive, with books not only on art but also on economics, philosophy, social science, technology, etc.)

Also well served is the IRCAM, with a technically spectacular series of studios, laboratories, anechoic chambers, and an experimental concert hall in which the reverberation time can be varied from half a second (a "dry" sound) to 4.5 seconds (similar to the nave of Notre Dame). The IRCAM lacks some of the long-range flexibility of the main building, but has extraordinary flexibility in the details of its wall and ceiling elements.

The offices, using space on the second and third floors that is similar to the space of the library, fare less well, for here the work stations are used all day, and their often great distances from outside views and light (inevitable in floors 180 feet wide, 500 feet long) become more disturbing than in the library, where readers come and go and are free to move about.

Surprisingly, it is the exhibition spaces that fare the worst, at least as currently designed. The museum of modern art, on the fourth and fifth floors, is in the last place anyone might look for it. The exposed vertical circulation is one of the most obvious features of the building, but where it leads (except to the restaurant at the top of the escalator) is not obvious at all. Partly, this is the result of placing the entrance to the museum at a point invisible from the nearest escalator landing; partly it is a result of a rather timid graphics program. (Many of the originally installed graphics, however, have been replaced. Shortly after the center opened, then-curator Gilles de Bure characterized them as "indecipherable to the public.") In any case, inattentive visitors can ride to the top, enjoy the view and a snack, and ride back down, without ever suspecting the presence of the museum.

If they find their way inside, they discover a huge hall subdivided by movable partitions that meander out of sight in an incomprehensible plan. Most areas are open to the ceiling 23 feet above; some others have been roofed with translucent white fabric that lowers the ceiling height to 11 or 12 feet. Lighting above these false ceilings focuses attention not on the art but on the amount of dust and debris that the fabric has accumulated. In these areas of the building, the air handling ducts exposed under the real ceiling are painted white rather than the typical blue; this further dilution of the building's color coding is obviously meant to minimize visual competition for the art, but many of the paintings and sculptures would be more comfortable with a bold splash of blue overhead than they are at present, swimming along in a pale, nebulous void.

Perhaps because of the generality and sameness of the lighting, certainly because of the generality and sameness of the interior design, most of the art here seems strangely dispirited. This impression is strengthened by the fact that, despite teeming mobs in the plaza, in the lobby, and on the escalator, the museum is empty. On two recent visits (a Sunday and a Wednesday, the two days each week when admission to the

Tim Street-Porter

The cavernous public hall that serves as the main entrance to the center includes a mezzanine for the Center of Industrial Design and a sunken forum for exhibitions and assemblies.

museum is free), the counter at the foot of the escalator recorded each time that approximately 4,000 people were in the building; less than one in a hundred seemed to have found the museum (although figures published by Beaubourg claim an average of about one in eight).

One place where the art seems to spring to life in this environment is a small cluster of Russian constructivist sculptures; here is a vivid and unexpected "shock of recognition," for they are so clearly related to the philosophy of the building that surrounds them. Another such place is a room filled with Matisse paper cutouts, a well-proportioned room with a draped fabric ceiling and with lights below the fabric so that they point toward the art rather than toward dust or in the visitors' eyes, a room that is one of the few genuinely beautiful spaces in the center. To be here is a delightful and potentially significant experience; to be 50 feet away, out of sight of Matisse, chugging up an escalator inside a tube of filthy acrylic, is another sort of experience altogether. These thousands are being moved by art only in the sense of being propelled past it.

But perhaps they are being moved by the art of architecture. Considering the exterior of Beaubourg at the right distance—close enough to contemplate the intricacies of the exposed structure and equipment, yet *not close enough* to see the dirt—this may be the case. However well or poorly the building houses smaller art, it is itself a giant art work that, from the outside, interests us and even thrills us.

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The temporary joy of a 'great mechanical toy.'

Inside, it is another story. To step from the sunken plaza into the cavernous reception area, the center's largest space (as the building is currently used) is to have a textbook-perfect example of the fact that volume alone cannot produce a space of esthetic significance, that the character of a space comes from the solid elements that bound it, not from the air within the boundaries. When those boundaries are organizationally chaotic and visually trivial, as they are at Beaubourg, the space within is doomed to insignificance, no matter how many cubic feet it contains, or how few columns.

It is even tempting to wonder if columns might have been an asset, or the interruption of circulation or fixed service cores—anything to impose some architectural discipline in the vast interior. This is ungrateful, certainly; for one of the most astonishing aspects of the building is the thoroughness with which the competition-winning *parti* was executed. Yet it does seem that Piano & Rogers have played all their good cards on the highly expressive exterior of the building, leaving themselves not much with which to win our admiration inside. This, too, derives directly from the *parti,* of course, and the assumption that exhibition designs could substitute for architecture. It was a miscalculation, for exhibitions are unequal to the task. The spaces are too big, therefore generally too compartmentalized, to be perceived as wholes, and when not compartmentalized, as at the entrance level, they are too vague and too ugly to have any importance.

To contrast this aspect of Beaubourg with a building of similar concept, it is clear that Mies' Crown Hall at IIT promises, by means of its exposed girders running over the roof, that it is sheltering a serenely uninterrupted interior volume; the richly articulated skeleton of Beaubourg promises the same. But Crown Hall, partly because of its fine proportions and comprehensible size, but most crucially because of the elegant surfaces that define the interior, delivers what it promises; Beaubourg does not. It constitutes a warning that the offer of interior flexibility does not justify architectural laissez-faire.

The design is by no means a complete failure. It is of interest to us now, obviously, because it was such a bold attempt and seemed so close to being a stunning success. But it has succeeded only as a bright mechanical toy succeeds: great fun for a season, but not expected to last. □

Above, criss-crossed vertical bracing system and rooftop air carriers. Right, east elevation along Rue de Renard.

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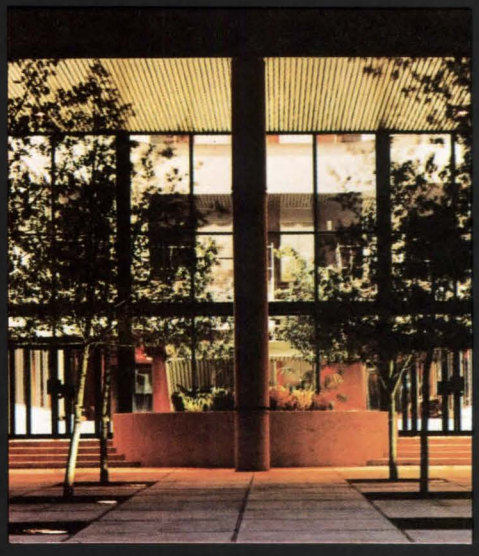

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Rolling with The Punch of Earthquakes

Base isolation is used in two New Zealand office buildings. By Christopher Arnold, AIA

Ray Tyler/Arnold Heine

Two newly completed office buildings in New Zealand, while quite different in size and shape, have some significant things in common.

The William Clayton Building in Wellington, for government workers in the nation's capital, is a long, four-story structure whose offices open to decks (above right). It was designed by government architects.

Union House in Auckland (right) is a 12-story private office building on the harbor. The building's glass walls, welcoming the water views, are set back some two feet from precast concrete edge beams. It was designed by Miles Warren.

The two buildings share a sensitive and sensible attitude to their surroundings and their occupants and a keen sense of consciousness of energy conservation.

But the most extraordinary trait they share is that in one important characteristic they vie with one another for being the most innovative building in the world.

This characteristic is the way in which they are designed to resist earthquakes, which are a problem in New Zealand approximately equivalent to that of California in the U.S.

These buildings employ innovative antiseismic systems that are currently unique in the English-speaking world: Their structures do not resist earthquakes by sheer strength, but, through a combination of ingenious concepts and new materials, they are designed to ride detached from the ground in such a way that earthquake ground motions are dissipated before being allowed to work their way into the building. How is this done?

To understand the significance of these new approaches it is necessary to understand our present methods of achieving seismic resistance. Since the advent of seismic design as a science and an art in the 20th century, the normal approach to providing seismic resistance has been that of attaching the structure firmly to the ground—so that all ground movements are transferred to the structure—and then to design a very strong structure to survive the inertial forces created by ground motion acting on the mass of the building.

Christopher Arnold, AIA

Because in large buildings these forces may considerably exceed the capacity of any economic structural system, the actual strategy employed—for economic reasons—is to design structures that have a lot of energy absorption capacity. This is achieved by structures with high ductility; that is, they can deform greatly (and in doing this absorb energy) without collapse. Steel structures are especially good in this, and special reinforced concrete structures, which use large quantities of steel reinforcing and special detailing, are also effective.

This strategy is designed to ensure that the building does not collapse, with consequent death and injury, but has a major disadvantage in that, in deforming, such structures will cause excessive damage to architectural elements such as ceilings, partitions, and curtain walls. In addition, damage will occur to contents, such as filing cabinets, computers, and X-ray machines, and utilities and equipment will cease to operate. A second disadvantage is that, particularly in tall structures, even though components will not deform, there will be considerable movement; although there is no danger of collapse, highrise occupants will become seasick.

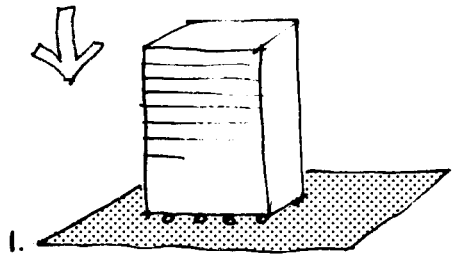
Smaller structures, and certain building types such as apartment houses and hotels that have short spans and many walls, can be made so stiff and strong that deformation will not occur. But, for many buildings, the use of walls to provide resistance is not possible, either because planning requirements preclude their use or, in the case of tall buildings, the walls become so tall and slender that they are ineffective. Japan has continued to insist that large structures be very stiff, but the Japanese use structural methods that are very expensive compared to our own. They are prepared to pay this extra cost.

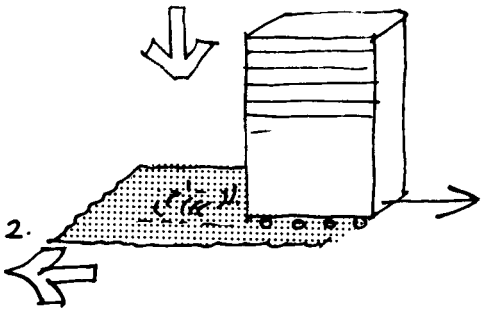
The approach used in the William Clayton and Union House buildings is quite different and is generally termed "base isolation." It has been developed almost entirely outside the U.S. and shows promise of revolutionizing our conventional approaches, rendering obsolete most of our seismic codes, and incidentially, relieving the architect of many of the constraints that our present approach imposes on architects and clients (even if they are not aware of them).

The idea is simple and obvious: If it is so difficult to deal with the inertial forces that ground motion introduces, and we cannot, in fact, devise economical structures that will resist them without damage, why not devise a method that detaches the building from the ground in such a way that ground motion is not fully transmitted into the building?

In the development of the automobile it was soon found that it was necessary to isolate the car body, and occupants, from ground vibrations, introduced through the wheels; hence the combination of air-inflated tires and springs that keep our spines comfortable. Yet in our buildings we resolutely continue to transmit every earth tremor through our buildings, and even use design methods that

Mr. Arnold is president of Building Systems Development, Inc., in San Mateo, Calif.





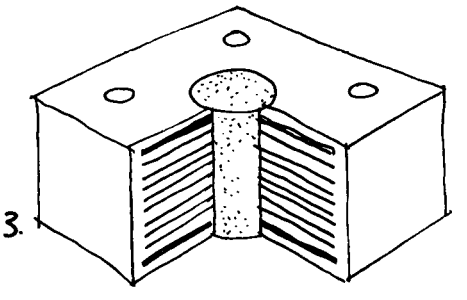
amplify these movements several times beyond their initial size. This occurs when the natural period of vibration of the building, dependent on its mass, weight, and proportions, coincides with the natural period of the ground motion.

Since the major problem in seismic design is to deal with horizontal movement rather than vertical, the solution of isolation would not appear too difficult. Why not put the building on roller bearings (1), so that as the earth moves, the building remains stationary? The problem is, however, that even roller bearings will transmit some force—because of the heavy compressive weight of the building above—and once the building starts moving it will not stop (2). This phenomenon was observed in the San Fernando, Calif., earthquake, in which hospital beds made long rolling excursions across wards.

But Japanese experiments with computers—which resemble models of tall rectangular buildings—on shaking tables, showed that computers that could slide did not topple over, and their heavy cables could restrain them from sliding too far. The need was to devise a system that permitted horizontal movement independent of the ground, combined with some way in which this movement could be restrained and the vibration damped, or subdued, so that as the ground vibrated sharply the building above would move slowly.

The real breakthroughs in base isolation design came through a combination of conceptual thinking and materials research over the last 15 years. Many researchers and inventors in a number of countries, working simultaneously, have been involved. The thinking involved ways of separating the requirements for load bearing and those for movement, and understanding the needs for damping and energy dissipation in such a way that they could be achieved through controlled nondestructive methods rather than by using the building itself and its contents to achieve them. The materials research consisted in the development of special materials that could allow considerable lateral movement—similar to a spring—but would simultaneously support the weight of the building, which a spring finds difficult to do. Various alternative ways of achieving the requirements are possible, of which these two buildings illustrate most clearly the typical characteristics of such systems.

The Clayton Building rests on 80 lead-rubber bearings that detach the building superstructure from its foundations. These bearings (3) are extremely sophisticated, and consist of a laminated assembly of leaves of natural rubber and steel. The bearings allow up to eight-inch movement in the horizontal direction without fracture, but are also stiff enough in the vertical direction to support the building



weight. A cylindrical lead plug is installed in the center of each bearing, the purpose of which is to prevent the build-up of oscillations—to provide damping. They have a similar function to that of the shock absorbers in a car—to enable the building to ride the bumps. The lead plugs absorb the earthquake's energy, rather than relying on building distortion and damage.

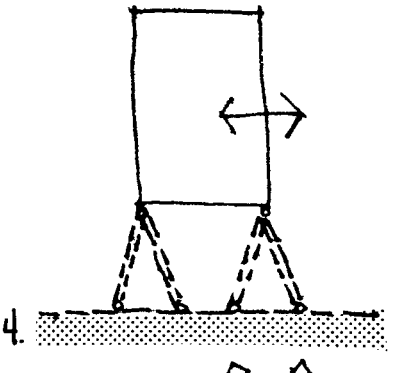
The lead plugs also act as "seismic fuses," in that they do not deform in small earthquakes or high winds. Without them the building might suffer continual small vibrations that would be irritating to its occupants. A peculiarity of lead is that almost immediately after each deformation—caused by to and fro movement—the material recovers almost all its original mechanical properties. In fact the material is being "hot worked."

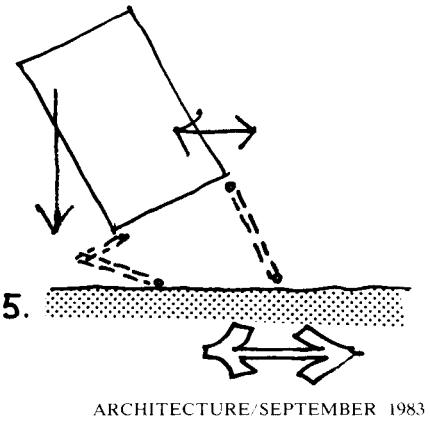
The effect of this assembly is to allow the ground to move quite rapidly under the building, while the building itself moves comparatively slowly and sedately. In numerical terms, designing for an earthquake somewhat more severe than the 1971 event in San Fernando, the accelerations, interstory deflections, and maximum base shear forces are approximately halved. To do this, approximately six inches of lateral movement must be permitted, entailing a similar sized slot around the perimeter between the building and the adjoining ground. (The slot is covered by a replaceable metal grating.)

The net result of this system is that the reduction in earthquake force greatly reduces the total movement of the building and, most important, the ductility of the structure will never be required so that permanent distortions will be nonexistent. Damage to architectural and mechanical components will be dramatically reduced and costly repairs, let alone the possibility of injury or death, virtually eliminated.

Since the Clayton Building is the first use of this system in a New Zealand building, full advantage has not been taken of its possibilities. The building uses a "belt and suspenders" approach in that a full ductile concrete frame is also provided "just in case." As a result the isolation is estimated to add approximately 5 percent to the cost of the building. This conservative attitude is the subject of friendly criticism by the designers of Union House, who use a method of base isolation that is quite different in detail from that of Clayton, and originated primarily in differences in the form of the building and of the site ground conditions.

An appealing conceptual way of providing base isolation is to design a first story that is much more flexible than the remainder of the building (4). This flexible first story will then not transmit the full extent of ground motion up through the superstructure. In other words, the whole first story performs the function of the lead and rubber bearings in the Clayton Building. The problem in this approach is to restrain the first floor movement in such a way that the building will not collapse (5). Indeed, the flexible, or soft, first story concept has more often been created inadvertently,

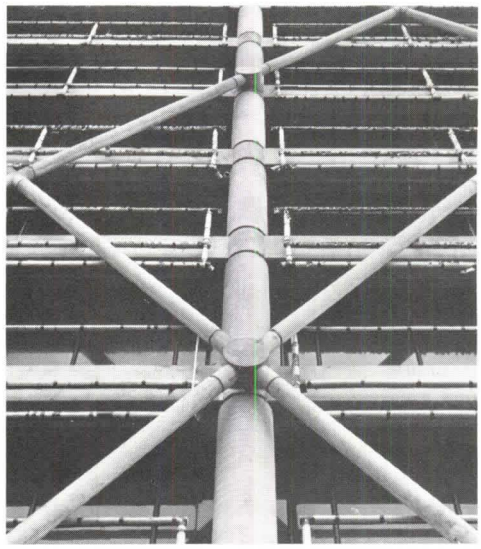




and many building failures have resulted from its use in the U.S. and abroad.

The structural system for Union House (6), devised by engineer Brian Wood, is an ingenious application of a flexible first story.

Union House is built on reclaimed land, which necessitated that it be built on piles some 30 to 40 feet long, which reach down to bedrock. Each pile is designed in such a way—with weakened sections at the top and bottom—so that it will allow the superstructure to move laterally (6). It acts as a flexible "first story." But the top of this story approximates ground level, and here are installed "energy dissipators" that prevent the superstructure from moving too far, and dissipate the energy of ground motion before it enters the building proper (7). These energy dissipators, which are steel and concrete assemblies, form a highly visible part of the first-floor plaza. In the event of severe ground motion its energy will bend the steel bars in the energy dissipators (9). After the earthquake these may each be replaced.



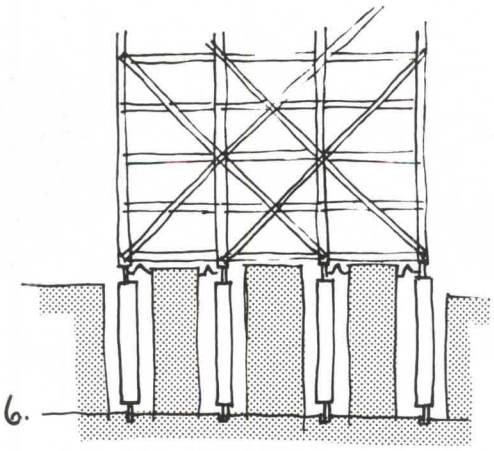
8.

The superstructure, from first floor up, is an economically braced, non-ductile concrete frame, requiring no internal shear walls (8). Even the elevator shaft is a nonload-bearing, fireproofed, wood frame structure. The exterior cross-bracing, of steel plates encased in concrete, is both efficient and elegant. The entire building structure is isolated from the surrounding ground down to bedrock. Columns run in tubes, allowing for relative movement between the columns and the adjoining ground. The elevators for the 12-story building are carried on a steel space frame that cantilevers down from the second floor into the elevator pits.

The system allows for approximately six inches of second floor movement relative to the first floor and basement, and anything passing through this space must allow for this degree of displacement. Services that pass between these floors are confined to water supply and waste disposal, and are designed to bend. First floor glazing hangs from the second floor since it must penetrate the first-floor ceiling. A sacrificial flashing at the base keeps the weather out.

These separations are carried out—in design and in the field—with meticulous care. As in the Clayton Building, the result of all this is that movement of the superstructure is greatly reduced—maximum deflections are of the order of a quarter-inch, which can easily be handled without damage.

The bottom line on this building is that, even with all the specialized detailing of the foundation and first floor, the system results in a cost saving of approximately $250,000 (on a total contract of about $6.5 million). This saving is due to the greater simplicity and nonductility of the superstructure, which permits the use of economical precast floors and beams. Incidentally, this also permitted a reduction of around two months in construction time compared with a conventional design. And, in the event of an earthquake, damage should be negligible. So here we have that dream of the innovator: An elegant solution that is lower in first cost, and also lower in long term owning costs. Rara avis indeed! □



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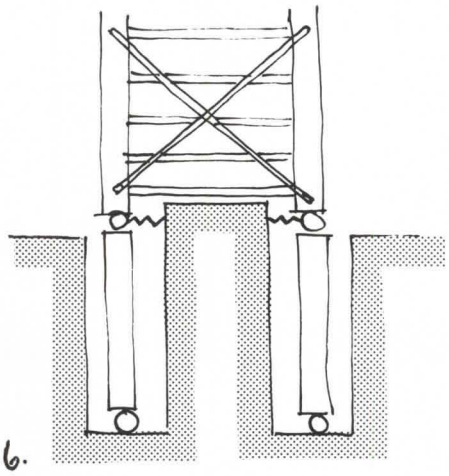

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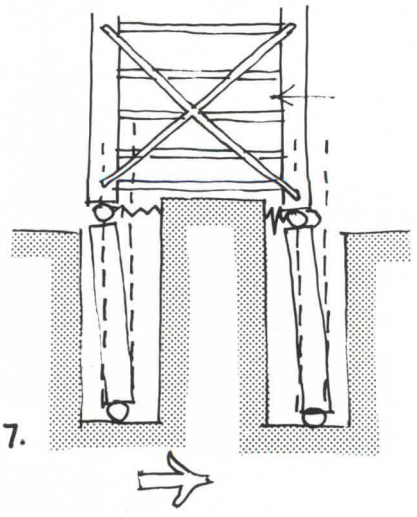

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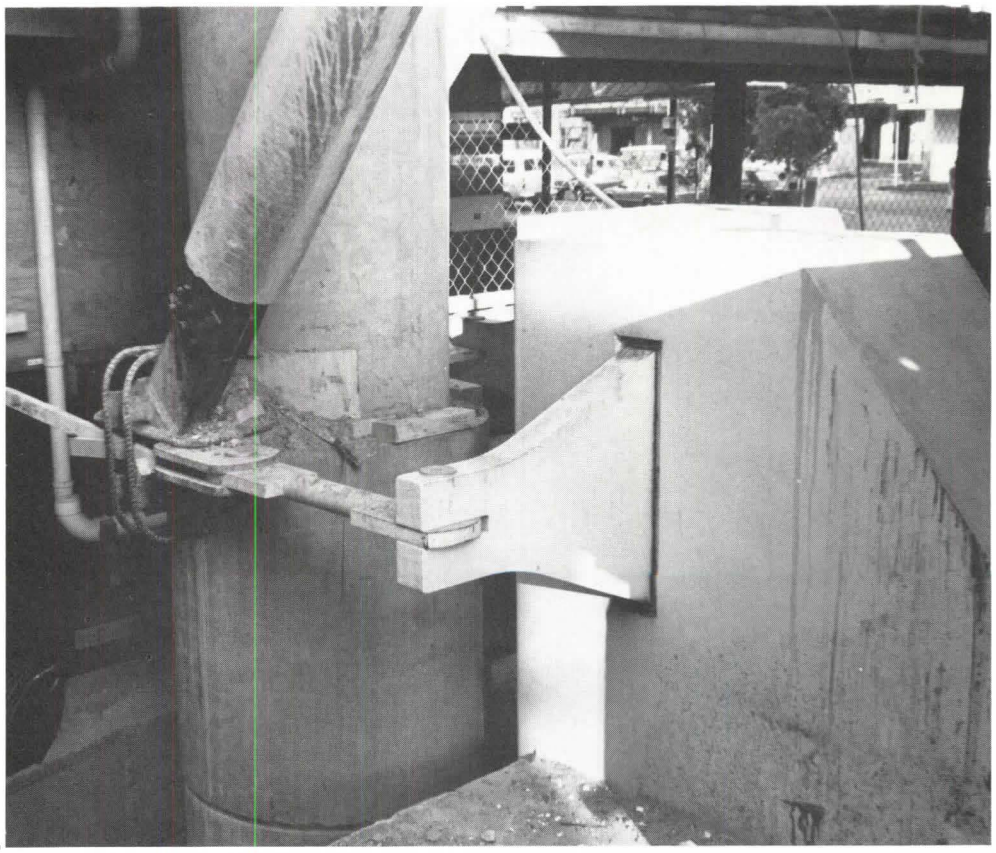

9.

Some Cautions On Computers

They are useful (and expensive) tools, not practice panaceas.
By Ronald W. Wendle, AIA

Within most architectural circles there is a fundamental and pervading attitude that can be expressed in a simple equation: Computers plus architecture equals successful practice.

Whether the sources are professional journals, promotional literature, seminars, or informal discussions, they all convey the message that computers are the stuff upon which future professional practice will be based.

Indeed, a typical view of a future design office conjures up an image of skilled young "computer types" tapping instructions into their personal desktop units, manipulating colored displays on their CRTs, and relaying the data through a central processing unit to another terminal to be manipulated by someone else. Operations are clean, quiet, and very efficient. The old drafting tools, graphite, and parallel bars will have gone the way of the slide rule.

This vision also contains a grim outlook for "noncomputerized" offices that, because they were not quick to buy into CAD, CAM, and WP, have become an anachronism of architectural practice. Of course they will be doomed to inevitable failure simply because they cannot operate at a data processor clip.

Despite the wide acceptance of this scenario, the current financial condition of most firms makes the decision of when and how to get into computers difficult, and for some, it borders on dilemma. In a typical dialogue over the prospect of a computer investment, the question is usually asked, "Can we afford to own a computer system?" and the typical response is, "Can you afford not to?" My answer to the second question is, "Perhaps yes."

Architects are certainly not alone in their desire to embrace computer technology. Over the last decade businesses ranging from accounting to zoology have bought computers at an unprecedented rate, and the consensus among our profession seems to be that we are lagging behind and need to catch up with the rest of the world. Computer advocates note that virtually every successful organization uses computers. No doubt this is true, but there is more to the truth: Many unsuccessful organizations (including architectural firms) also invest in computers. The assumed cause and effect link between computers and success is questionable.

It is important to be aware that much of the enthusiasm concerning capital investment and emerging technologies tends to obscure the more fundamental issues of computer investments. Certainly for many architects, the rewards garnered from a move into computers are unquestioned; but those anticipating such a move should carefully question the implications of an investment in computer technology. To do so, one must come to grips with the unadorned realities of computers, including the nature of computer investments, the realities of computer applications, and the opportunity costs of a computer purchase.

First and foremost, a firm investing in a computer system (hardware and software) is usually purchasing what it considers a high technology, high cost capital investment with the promise of high returns that are usually the result of increased productivity. Those involved in the promotion of these systems are quick to point out the high returns, but not the other side of the coin: that typically such investments provide high returns only for high risk. Generally the measure of risk is a function of the high cost and fixed nature of the investment relative to the volatile nature of architectural practice. Nevertheless, a fundamental premise of investment theory states that in open markets, there will exist a general equilibrium between the level of risk and the level of returns. Do not expect a capital investment in a computer system to be an exception to that rule.

Many architects are particularly attracted to computers because they promise relief from the grind of everyday practice. Drawn by the notion that once the system is on line, they will then have more time to devote to the more interesting and rewarding aspects of architecture, the architect is buying into a dangerous assumption. A computer is an investment in change, and the costs to undergo the transition to a high technology capital investment will extend far beyond the outlays for terminals, tapes, and training. Be prepared for the cost in dollars, time, and energy to facilitate the changeover from old processes, habits, and attitudes to new concepts, skills, and procedures.

Above all else, an investment in computer technology should be viewed as a hard-nosed capital investment, and at a minimum such investments demand careful planning and the continuing attention of management.

A computer's exceptional capacity to process data with speed and consistency and its ability to follow complex instructions are valuable only to the extent that the system is applied to the larger context of architectural practice. No matter how suited a computer may be to a particular situation, improvement is not automatic. For instance, a computerized door and hardware scheduling system that is poorly implemented will simply record, tabulate, coordinate, and print the wrong information faster, more consistently, and more efficiently than the human it replaced. To effectively implement a computer system some degree of follow-through is required.

Another difficulty confronting computer users, and particularly those interested in architectural graphics applications, is the problem of discerning between precision and accuracy. Computers are incredibly precise and will present information in a well organized and detailed format on screen or paper. Unfortunately, this precise information is accorded a certain "legitimacy" that is often unquestioned for accuracy. Keep in mind that errors are endemic to any computer system no matter how neatly they may be presented. Though many programs have a capacity for self correction, the best approach to mitigating the problems of computer error is to maintain a genuine skepticism of the quality of the computer's output.

The value of extraordinary precision should also be questioned when the results will be used by a construction industry whose standards for field work may not be computer precise. In this respect, one is reminded of the analogy of a "diamond in the rough." Once again, the priority should be accuracy more than precision.

Not all of the challenges of architectural practice are suited to the computer processes because they may be too complex, dynamic, ill-defined, or unimportant to be successfully programed. Even the advantages of off-the-shelf programs are offset by the time (occasionally weeks or months) to make them fully operational. The difficulty arises with the tendency, once the investment is made, to computerize anything that comes up. And the problem is exacerbated by the piecemeal nature of the computer applications. Certainly computers can reduce paperwork, clear bottlenecks, and improve decision channels. But management must always be attuned to alternative approaches to problem solving.

Even when a computer is suited to a problem or situation, improvement is not guaranteed. For example, the increased productivity generated by a fully integrated computer graphics system may eliminate the need for half of a firm's drafting personnel, but where is the advantage if the computer and all its accessories cost as much as the foregone employees? Moreover, when confronted with a work slowdown, how does one cut back on a $500,000, fully amortized computer?

Another salient problem with overreliance on computer systems can be illus-

Mr. Wendle's architectural and management consulting firm, R. W. Wendle & Associates, is in Spokane, Wash.

trated by an example from the automobile industry. American companies had ordering and inventory control problems with expensive components such as starters and alternators. They responded by bringing in their computer whizzes who developed exceptionally sophisticated (and expensive) computer programs that eventually managed the inventory problem. The Japanese, on the other hand, simply built their starters adjacent to the auto assembly lines and thereby eliminated the need for inventories. Japanese management did not use elaborate computer systems to solve the problem—they eliminated the problem! In other words, a computer system is an excellent tool that can contribute to your thought and decision processes, but be careful that its very presence does not limit your ability to think and respond creatively.

At the heart of all financial management decisions is the concept of opportunity cost that can be defined as the rate of return, adjusted for risk, of the best alternative investment available. The ability to evaluate alternatives, however, is dependent upon how clearly one defines the objective.

If the firm's goal is to buy a computer, then by all means buy the best system available. If, however, the priority is to enhance productivity, then invest in productivity. Undoubtedly, a computer system is a good tool for making a firm more productive, as are proven management techniques such as MBO (management by objectives), quality circles, appropriate wages, systems drafting, and simply an acknowledging "thanks" for work well done. Don't let the decision to invest in computers close your mind to the potential returns from an investment in sound management.

Conversely, when a changeover to computers is made without re-evaluating the nature of the firm—its organization and operations—the results are likely to only reinforce the fragmentation of the existing information and decision channels. The bright new machine, which holds so much promise, may only serve to intrench all of the wrong procedures and attitudes.

Alternatives to investing in a new computer system can include renting computer services or simply taking a wait-and-see position. Though computer vendors are under extreme pressure to sell their products and services now, deferring an investment in hardware and software has its advantages for potential buyers. As most of us know, the computer industry is quite dynamic and unsettled, and as time passes the industry will continue to "shake out" and the better products and firms will tend to emerge. In addition, one can learn from the mistakes and successes of others by waiting and watching. The choice is to forego the immediate opportunities and risks of computer ownership for the certainty of a more proven system. Moreover, as present computer owners move through successive generations of technology, there is the potential to either buy a used computer at a bargain price or to leapfrog to a more advanced system.

As one can see, computers are not—in and of themselves—the key to ultimate success. When stripped of the salesperson's hype, a computer system should be evaluated as a hard-nosed capital investment. Like any investment, its introduction will require careful study, consistent follow-through, and diligent management. Its true value must be compared with the costs and benefits of alternative approaches.

Certainly future architectural practice will embrace computer technology (as has contemporary practice), and the applications for the hardware and software will be imaginative and far reaching. Despite their capabilities, however, computers are only a complement to, not a substitute for, good management. The successful offices of the future, like those of past and present, will be founded on skill, quality management, and sound professional judgment. □

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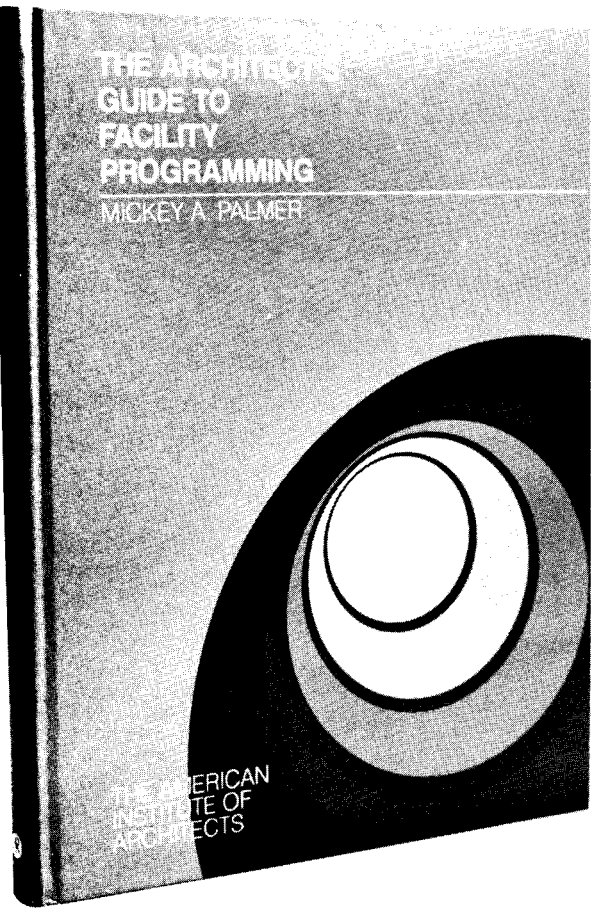

The Architect's Guide to Facility Programming

by Mickey A. Palmer

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BOOKS

Two 'Reassessments of an Underestimated Architect'

Richard Neutra and the Search for Modern Architecture: A Biography and History. Thomas S. Hines. (Oxford University Press, $49.95 hardbound, $29.95 paperbound.) **The Architecture of Richard Neutra: From International Style to California Modern.** Arthur Drexler and Thomas S. Hines. (Museum of Modern Art.)

Richard Neutra is an altogether fascinating architect, and the complexity of his character and the occasional magnificence of his work are revealed in Thomas Hines' biography and the catalog of last year's retrospective at New York City's Museum of Modern Art. Neutra's career is of particular interest as it relates to the appearance of the modern movement in America. While the history of the modern movement is almost always recounted from a European perspective—from that of the Bauhaus and the three leading European architects, Gropius, Mies, and Le Corbusier—Hines examines concurrent developments in America. The result of this fresh approach is a new appreciation for Neutra's pioneering work in this country, with the somewhat startling realization that his famous Lovell house of 1929 is strictly contemporary with Mies' Barcelona Pavilion and Le Corbusier's Villa Savoie. The International Style existed in America before the arrival of the famous Europeans, and Neutra created several of its first important manifestations of this continent.

Hines argues that Neutra's Lovell house was "the first mature example of the International Style in America," and demonstrated what the new architecture could be. Its freely expressed steel skeletal frame that supports flowing planes of glass and stucco carefully arranged in an asymmetrical balance mark the house today as a classic example of the International Style. Indeed, if one follows the tenets set forth in Henry-Russell Hitchcock and Philip Johnson's prescriptive little volume on the International Style, one comes to realize, as Hines observes, "that more than any other architect's [Neutra's work] reified the theories of what the International Style was *supposed* to be."

Hines' observation that Neutra bridged the gap between Bauhaus and Taliesin is borne out in many of the excellent photographs attractively reproduced in both books: Rough stone, Wrightian fireplaces appear in elegant Miesian rooms while

Above, Neutra's pencil, gold paint, and watercolor painting, 'Horse and Serpent.'

Corbusian bands of stucco and ribbon windows form parts of the facades. Neutra synthesized all that he saw around him and in so doing captured the essence of the movement.

The Museum of Modern Art catalog combines many of the best photographs from the exhibition with a short, insightful essay. In comparing simularities between Neutra's work and traditional Japanese architecture, Arthur Drexler examines an important influence on both Neutra and his brief mentor, Frank Lloyd Wright, but appropriately does not belabor the point. Hines' chronology is especially useful in placing Neutra in a historical perspective.

Neutra's best work was designed on a small scale, usually for private homes and apartments, most of which were built in the earlier part of his career, and Hines suggests that the architect's temperament was particulary suited for these commissions, and notes that Neutra's later, larger works are often disappointing in their mediocrity.

Hines brings to his book the personal insight gained from his friendship with the architect, the experience of living in one of his structures, and his tenure as faculty adviser to the Neutra Archive at the University of California at Los Angeles. His re-evaluation of Neutra's work comes at a time when much of what Neutra stood for is coming under increasing attack from the so-called postmodernists. Yet, with discerning eye and a sympathetic heart, Hines properly lauds Neutra's remarkable achievements and accurately judges his lesser works, producing a worthy reassessment of an underestimated architect.

WILLIAM H. SCHALLENBERG

Mr. Schallenberg, an art and architectural critic, lives in Washington, D.C.

The Architecture of Wren. Kerry Downes. (Granada, distributed in this country by Universe Books, $37.50.)

As with so many other acknowledged geniuses, Sir Christopher Wren has been lauded, analyzed, scrutinized, and accused—often with justification and on other occasions without cause. Downes unequivocally states his intentions for this

continued on page 82

Books *from page 81*

volume in the preface; his wish is to discuss Wren's architecture, not to establish an exhaustive study on the architect nor to defend him. The book does not concentrate on every work either attributed to Wren or documented as his. More simply, Downes relates, "Not every building is equally discussed or illustrated, and some are not represented at all, and in general I have concentrated on those that interest, move, or puzzle me."

Downes is true to his thesis. The major portion of the text deals with specific buildings in which the author has an interest for one reason or another. It is not surprising that he concentrates on the most "important" buildings of the architect, i.e., St. Paul's, Trinity Library, Sheldonian Theater, and the many parish churches of London. Discussions concerning Wren's personal life are brief and, for the most part, factual. Most of this biographical information is taken from *Parentalia,* a study of the Wren family compiled by the architect's son. Many statements on architecture attributed to Wren and interspersed within the text were extracted from the same document. The lush illustrations in both black and white and color were taken by the author specifically for this publication. (This mention of illustrations should not mislead the reader, for this volume is in no way reminiscent of the coffee table variety.)

A vital concern in integrating the man and his buildings is the consideration that Downes affords Wren's other interests. He sees in these architectural works Wren's mathematical and scientific educational background that was supplemented by Wren's tour of France. This tour provided him with an awareness of surface articulation that enabled him to balance the severity of his basic forms. The author believes that Wren developed his architectural education through an inherent talent, a disciplined mind, and a beneficient monarch. Wren's was a disciplined mind, and he was certainly one of the prototypical Renaissance men. He was aided in his search for knowledge not only by his formal education, but also by the proliferation of architectural publishing and the use of reproductive engraving to illustrate texts, prevalent in his day. It was from such texts that Wren borrowed Italian and French elements to modify and incorporate into his own architectural vocabulary.

Downes is certainly no novice when it comes to the work of Wren, and he has had the foresight to retain from his text a decade ago those sections that were concise and well documented. The present volume emerges as a supplemental report of current research on Wren; as such it is aimed at the keen scholar. The precision of the photography included makes the book attractive to all who are interested in the tangible designs of Wren's conceptions. LAMIA DOUMATO

Ms. Doumato is associated with the National Gallery of Art in Washington, D.C.

Guide to Baroque Rome. Anthony Blunt. (Harper & Row, $35.)

Rome, as everyone knows, is several extraordinary cities all built on top of, around, and inside each other. No way to see it all can be without its frustration, but one reasonable approach, given enough time, is to see it chronologically, a city at a time. For exploring baroque Rome, it is hard to imagine a better aid than Anthony Blunt's new guide.

One might balk at a price of $35 for a smallish book with no color (and, as Alice would complain, no conversations), but this is an exceptionally fine book, both in content and in form. It is tightly and handsomely designed and packed with information. The main body of the book is ordered by building type: churches, palaces, villas, fountains, and miscellaneous. There is a special section on the Vatican and one on the Alban Hills (Castel Gan-

dolfo, Frascati, Grottaferrata, etc.). For each of the hundreds of entries, there is a bibliography, an architectural history including information about additions and alterations, and a description of significant features such as murals, sculpture, and decorative details. The introduction and even the general bibliographical notes for the baroque period make good reading, and there is a useful index of artists.

Only a scholar of Blunt's eminence should dare quibble about any of the myriad facts, but, in the description of Borromini's San Carlo alle Quattro Fontane, the street directions seem to have been rotated clockwise, and one wonders why Michelangelo's Porta Pia is not included. Amid so much erudition, though, this is a welcome reminder (in case we don't read the newspaper) that the author is only human.

Another attraction is that this really is a guidebook, not too bulky to carry. If you're going to Rome, this book should go with you. STANLEY ABERCROMBIE, AIA

The Aesthetic Townscape. Yoshinobu Ashihara. Translated by Lynne E. Riggs. (MIT Press, $20.)

While Ashihara's main concern is with the evolution of the Western town in Japan (part of the larger question of Westernization of Japan), his ideas are responsive to those of the principal writers on urban design in Europe and America. This notably well-read author, who earlier produced *Exterior Design in Architecture* (1970), has also visited and studied the architectural landmarks of the Western world and is surprisingly strong in reference to remote places like Australia and seldom-appreciated classical cities like Isfahan.

But more than scholarship, here is a well-grounded work that charms and delights with its civility, whether in its literary or its visual elements, a relief in a field where turgidity often prevails.

Ashihara is a leading architect in Japan's second postwar generation, the one after Kenzo Tange. He studied at Harvard's graduate school of design and teaches at the University of Tokyo. He has designed such major Japanese buildings as the Dai-ichi Kangyo bank in Tokyo, with its sunken garden, and the head office of Fuji Film, whose ingenious spandrels produced an all-glass facade. His viewpoint is practical and aimed at architectural applications. The central concern is with perception and vision, and in this he appears more indebted to Kevin Lynch and Philip Thiel, but also to Gaston Bachelard and others. Regrettably less accessible to most readers are important Japanese philosophers of the townscape: Tetsuro Watsuji, Atsushi Ueda, Hideo Suzuki. In certain fields such as climate, this is a critical gap, but one that Ashihara's references help to fill.

Ashihara does not consider how "the esthetic township" can be designed, but he does regard it as the product of design, particularly the design of the individual buildings that compose its streets and public spaces. Close as this is to the ideas that Venturi, Scott Brown, and Izenour first introduced in *Learning from Las Vegas* (a work surprisingly absent from Ashihara's references), it appears convincingly rooted in the traditional townscapes of Japan and in the outdoor advertising and other ephemera of the commercial streetscape. The esthetic townscape, in short, is a vernacular townscape. It is the product of conservation and of a respect for the past. These pragmatic ideas are seldom advocated, much less embraced, by architects and planners (not to mention advocates of livability and revitalization) in today's overregulated world.

One welcomes this strong and persuasive voice as a contributor to the ongoing debate about the appearance of our cities. FREDERICK GUTHEIM, HON. AIA □

Mr. Gutheim is a Washington, D.C. author, educator, and critic.

Awards and Competitions *from page 25*
tional area. The Boston Harbor Islands have been one of Massachusetts' most poorly utilized resources. Over the years pollution, landfill, military, and private uses have pre-empted the public's access to these islands.

The 300 entrants were required to develop a new design for the island to include a 150-slip marina, one or more picnic areas, swimming beaches, a campsite, visitor center, restaurant, an overall landscape plan, and an arboretum. The winning design by Llanes and Portuondo calls for a lighthouse to mark the main entrance to an island harbor. The harbor would also contain the marina, employee housing, and the ferry dock. The remainder of the island would be divided into three parts: the campgrounds, the town, and the arboretum. The town would be organized around a public space consisting of the visitor center, restaurant, administrative offices, and general store, and would act as a plateau between the campgrounds and the arboretum. The architecture would be derived from vernacular New England structures.

Competition runners-up were Dyer/Brown & Associates, Inc., Boston (second place); Kevin A. Kemp, Mark F. Peters, and John W. Thompson, Milwaukee, (third place); Sasaki Associates, Watertown, Mass. (fourth place); and Shirley Fujikawa, Joseph DePace, and Vinay Kappor, Brooklyn, N.Y. (fifth place). Jurors were landscape architects Kenneth E. Bassett, Roger C. Erickson, and Andrés T. Rojas; Eugenie Beal, former director of Boston's environment department; Douglas W. Bridges, director, parks and recreation, Pomona, Calif.; Betsy Shure Gross of the National Association for Olmsted Parks; Laurie D. Olin, chairman, dertment of landscape architecture, Harvard graduate school of design; developer Anthony Pangaro; and architects Bernard P. Spring, FAIA, and Peter E. Walker.

Red Cedar Awards to 19

Nineteen projects are winners in the 1983 Red Cedar Shingle and Handsplit Shake Bureau/AIA awards program.

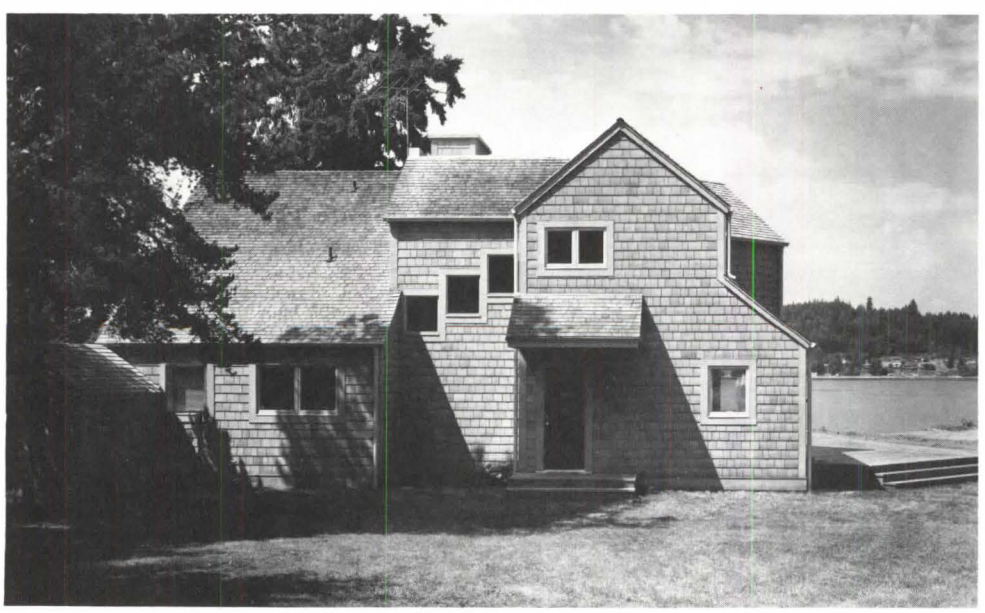
The "first award" winners are: a house in Dade County, Fla., by George F. Reed, FAIA; Reed residence, Hogeye, Ark., by Fay Jones & Associates; Deer Run condominium complex, Santa Rosa, Calif., by Robert Zinkhan, AIA, and Gary A. Tobey; Springfield Square condominiums, Charlotte, N.C., by David Furman/Architecture; Fox Chase of Almaden condominiums, San Jose, Calif., by Fisher-Friedman Associates; a house on Cape Cod, Mass., by Crissman & Solomon Architects, Inc.; the Lake Mendocino Interpretive/Cultural Center, Mendocino County, Calif., by The Promontory Partnership; Fairfax Regional Library, Fairfax, Calif., by Bull Volkmann Stockwell; and restoration of the College Preparatory School, Oakland, Calif., by Dutcher & Hanf.

Merit awards were presented to Huygens & DiMella for the Crowley residence, Nantucket, Mass.; Robert Jacklin, for the Jacklin cabin, Greenwater, Wash.; Alan Liddle for the Bingham Beach House, Fox Island, Wash.; Canatsey Weinstein Architects for the Pedersen residence, Belfair, Wash.; and James Culter for the Bennett residence Seattle.

Other merit award projects are the Lake Clubhouse, Charlotte, N.C., by Reg Narmour/The Architectural Group; the Evergreen Office Center, Pasadena, Calif., by Louise E. Rodwell; Lake Bellevue Condominiums, Bellevue, Wash., by Johnson Braund Design Group; The Village Condominiums, Kirkland, Wash., by the Mithun Associates; and a Martha's Vineyard, Mass., vacation house by Short & Ford Architects.

Of the 19 winning projects, six were from California and six from Washington state, bringing a "decided Pacific Coast dominance" to the competition, in the jury's words. The jury consisted of Norman Jaffe of New York City; Bennie Gonzales, FAIA, Scottsdale, Ariz.; and Curtis Finch, Portland, Ore.

Bingham beach house, by Alan Liddle.



BRIEFS

AIA Awards Programs Deadlines.
The Institute has set Sept. 26 as the deadline for entry fees and binder requests in the 1984 honor awards program. Completed submissions must be returned by Nov. 1. Deadlines for other awards programs are: ACSA/AIA award for excellence in architectural education, Oct. 7; honorary membership, Oct. 14; Institute honors, Oct. 21; R.S. Reynolds memorial award, Nov. 23 (completed submissions, Dec. 21); Reynolds Aluminum prize for architectural students, Feb. 9. For more information, contact Maria Murray, Hon. AIA, at Institute headquarters.

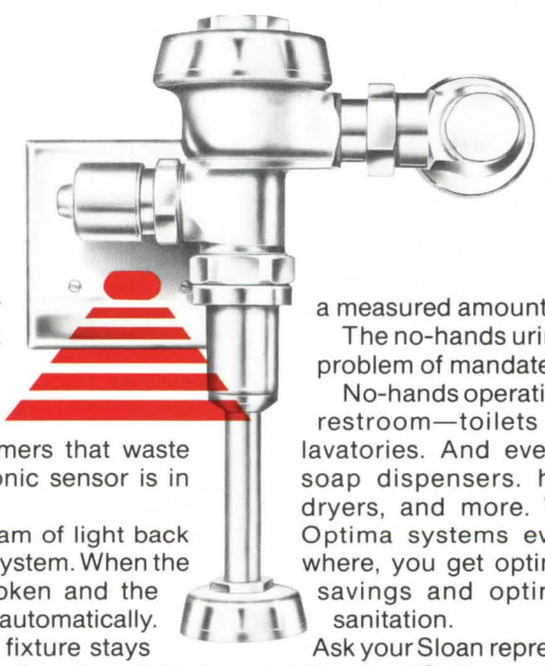
Chinese Study Program.
The Committee on Scholarly Communication with the People's Republic of China announces a national program for advanced study, research, and scholarly exchange for graduate students and postdoctoral scholars in architecture, engineering, social sciences, and the humanities. The program provides for long-term study and research, or lecturing at Chinese universities. Applications must by postmarked by Nov. 7. Contact CSCPRC, National Academy of Sciences, 2101 Constitution Ave. N.W., Washington, D.C. 20418.

National Standards Catalog.
The American National Standards Institute has published its 1983 edition of the *Catalog of American National Standards.* The 192-page catalog is available for $10 from the ANSI, 1430 Broadway, New York, N.Y. 10018.

International Design Competition.
The Local Authority of the community of Campione d'Italia in cooperation with the UIA is sponsoring a two-stage design competition for the restructuring of its town center. The registration fee is 300 Swiss francs and must be received before Nov. 4. For more information, contact Competition Secretariat, UCAL SA, Via Brentani 9, CH 6900 Lugano, Switzerland.

Deadline for Stone Awards.
The Building Stone Institute has set Nov. 1 as the deadline for its eighth annual Tucker architectural award program. The program is open to all architects, designers, and contractors; entries will fall into five categories that utilize natural stone. For more information, contact Building Stone Institute, 420 Lexington Ave. New York, N.Y. 10170. □

Sloan presents the no-hands urinal.



Take the operation of the urinal *out* of people's hands, and it becomes a cleaner, more cost-efficient fixture.

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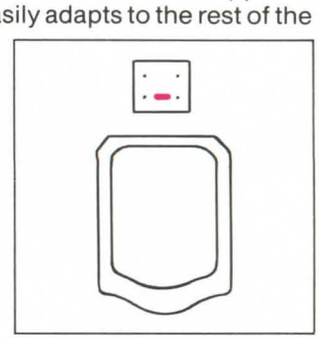

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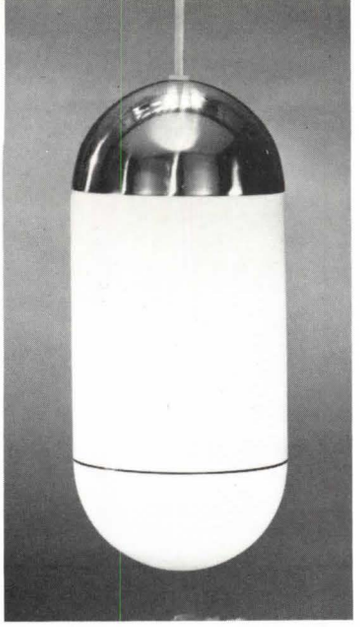

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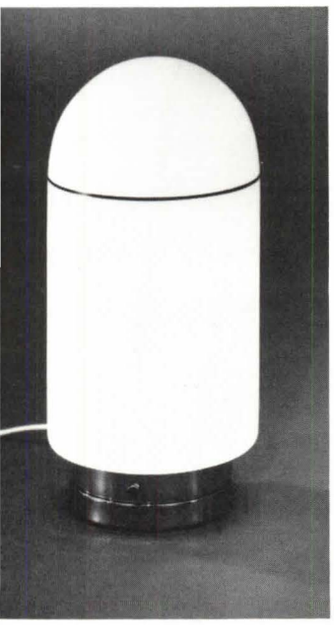
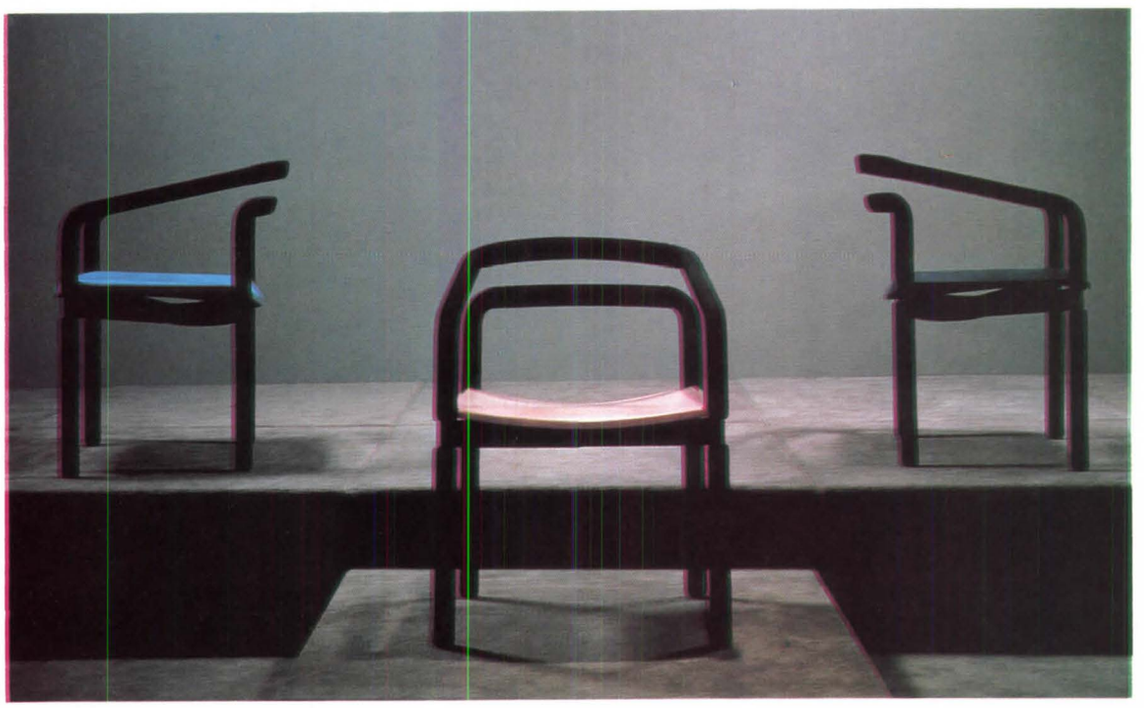


Furnishings

As resources for design and objects of design.
By Nora Richter Greer



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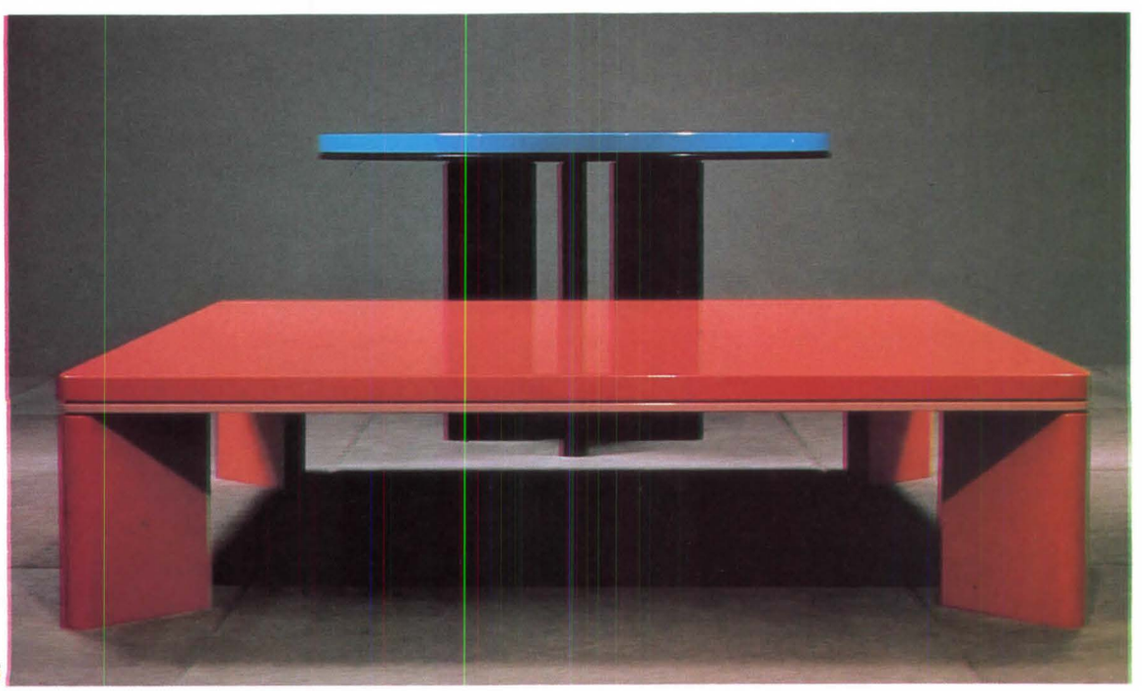

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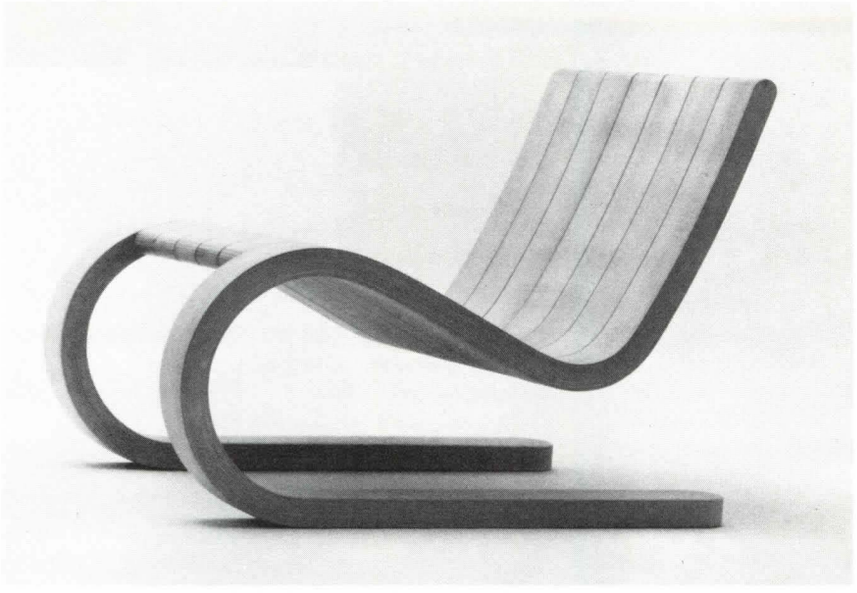
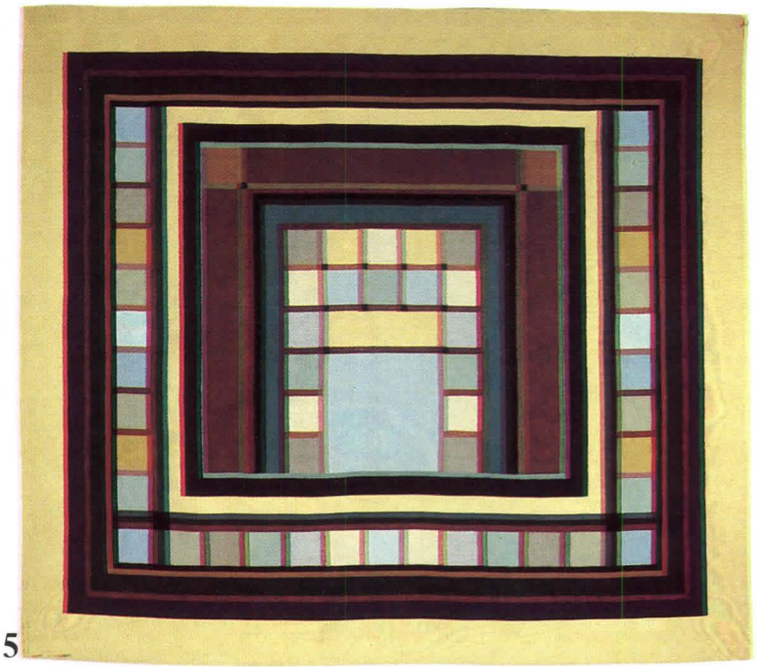


4

Elongated globe table lamps and ceiling fixtures (1) are available from Koch + Lowy. Imported from Europe, the Signal lamps are of polished brass or polished chrome with white glass and black trim. The ceiling fixtures can be hung at varying heights. From Metropolitan Furniture Corporation come two new offerings. The rubber chair (2), designed by Brian Kane, has tubular steel frames covered with a slip-on neoprene cover. The frames' skeletal appearance is complemented with a thin seat of stained wood, black plastic crinkle coat over wood, or upholstered cushion. For variety yet continuity the Belschner tables (3) come in 20 sizes, four shapes, and two heights. Although bulky in appearance the tables are lightweight, made of particleboard with a cast polyester resin finish.

For the design of a lounge chair (4) Danish architect Roald Steen Hansen gently bent laminated beech. Chicagoan Stephen D. Thurston specializes in handwoven tapestries—the one seen here is for the Elmhurst, Ill., National Bank (5). It is 7x8 feet, wool and linen. Thurston develops the designs after reviewing the dimensions of the space, and samples of interior colors and product materials. Litton Business Furniture's Information Management Modules (6) are designed for sophisticated electronic equipment. The modules have adjustable shelves and work surfaces, which can be raised or lowered up to 10 degrees. □



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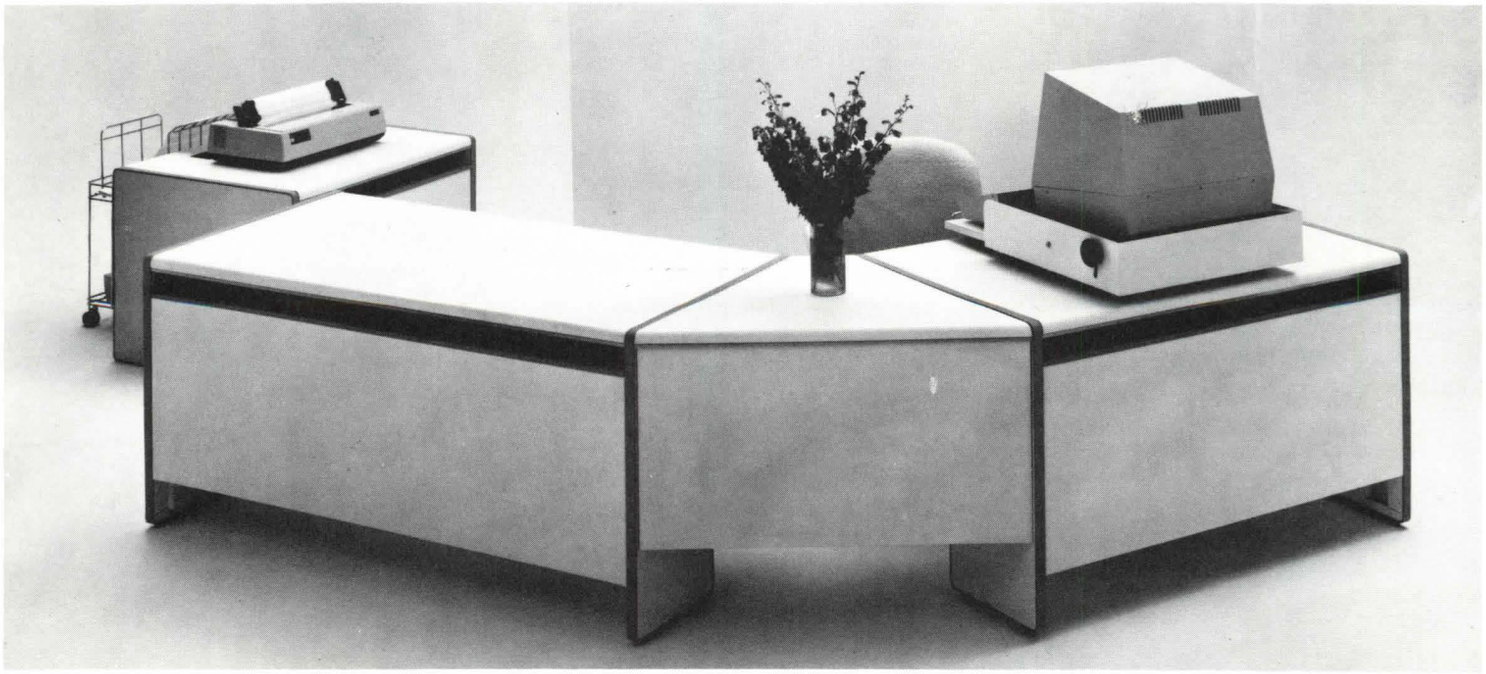

6

"The Briefing" One sculpture of a four piece installation at the Richard J. Hughes Justice Complex in Trenton, New Jersey

Lifesize Bronze Sculpture

J. Seward Johnson, Jr.

For information contact:
Sculpture Placement Suite 304 2828 Pennsylvania Ave NW Wash. DC 202-362-9310

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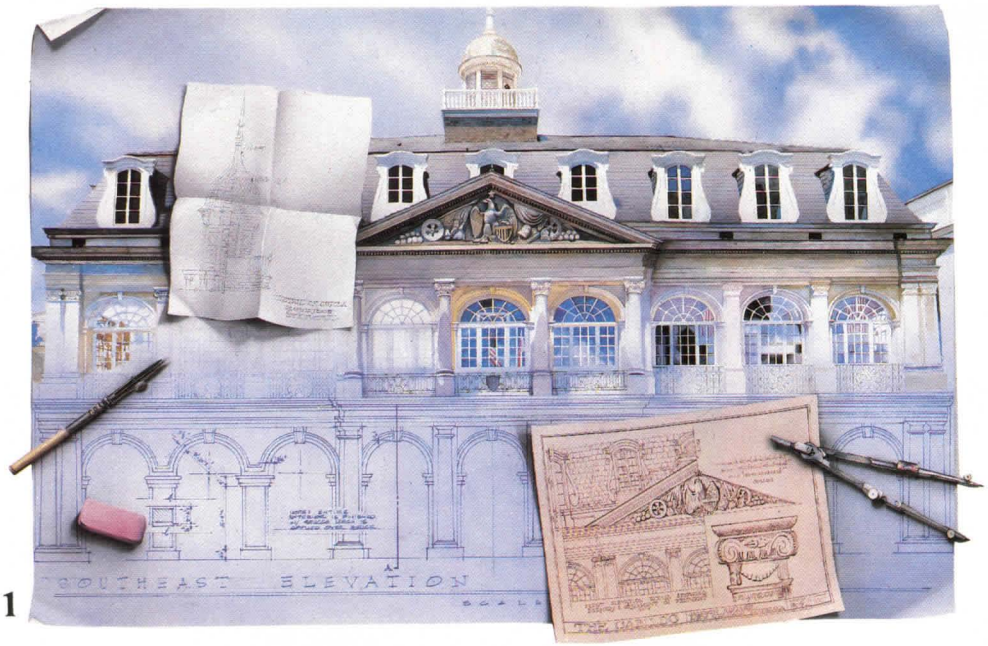


1

Products

A selection of notable offerings and applications.
By Lynn Nesmith

An original poster (1) by Georgia Ross to commemorate AIA's national convention in New Orleans was published by Geo. Steiner Productions in cooperation with the Institute. The artist used air brush and prismacolor media in a *trompe L'oeil* illustration depicting her impressions of the origianl design of the 200-year-old Cabildo. The poster is available from Geo. Steiner Productions, P.O. Box 5983, Metairie, La. 70008. (Circle 161 on information card.)

Allmilmo kitchens feature white cabinet fronts and counters of malamine coated chipboard with matt textured surfaces and colored vertical lines, shaped edges, recessed walls, and accessories in red, green, brown, yellow, and blue finishes. This bright yellow L-shaped design (2) has a central cooking block with a breakfast bar. Their Zeiloset series of stools, chairs, and tables is designed to match the colored vertical lines. (Circle 162.)

Single-fired Italian tiles (3) in the Interni collection by Ceramica Vogue are available in 22 solid colors ranging from pastel colors to bold tones, including blue, green, burgundy, and orange. The frostproof tiles, designed for wall and floor applications, measure 12x12 and 6x9 inches. (Circle 163.)

Products continued on page 90

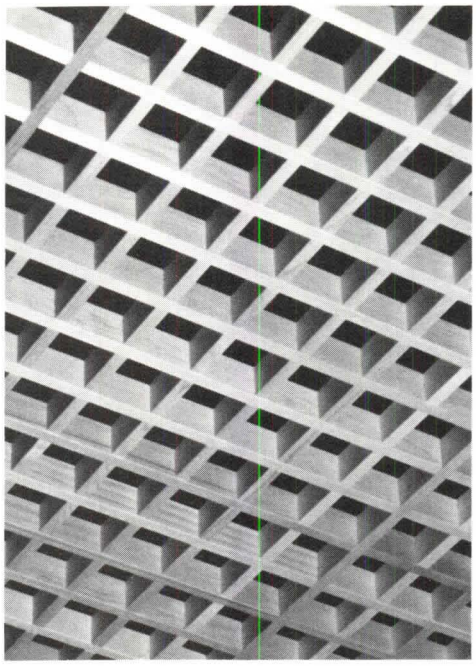
2

3

Hard Surface Floorcovering.
Custom vinyl, resilient flooring features cobble, matte, gloss, or lizard finishes and incorporates a variety of custom patterns, including geometrics, detailed florals, textures, and wallcovering or fabric patterns. The flooring designs can be combined with matching carpets and rugs by Stark for a double textured floor. (Stark Carpet Corporation, New York. Circle 190 on information card.)

Surface Coating Material.
The Therma-Plex process creates an invisible insulated weatherwall designed to protect outdoor sculpture, building exteriors, bridges, and roadways from moisture and pollutants such as acid rain. A high speed, air injection machine drives an invisible "glass-like" coating two inches into concrete block. (Therma-Plex Corporation, Long Island City, N.Y. Circle 147 on information card.)

Security Door System.
Glass and metal security doors are designed for commercial buildings, including banks and retail stores. The doors have security laminated or tempered safety glass with a roll formed metal frame of stainless steel or brass with polished or satin finishes. (Armour World Wide Glass Co., Santa Fe Springs, Calif. Circle 191 on information card.)



Wood Grid Ceilings.
Forms + Surfaces lightweight wooden grid ceilings (above) feature a concealed integral suspension system designed to provide uniform nonmodular appearance. Individual units are removable for access to lighting, acoustical treatment, air vents, and sprinkler systems. A variety of woods, finishes, and cell dimensions is available. (Forms + Surfaces, Santa Barbara, Calif. Circle 192 on information card.)

Portable Graphics Projector.
Color data/graphics projection monitor from Electrohome Limited projects high-resolution data and graphics from either a full-color computer terminal, a video camera, or a video cassette recorder. It weighs 75 pounds and is fully operable with one cable connection. (Electrohome Limited, Kitchener, Ontario. Circle 189 on information card.)

Wood Product.
Dymondwood is an engineered wood product made of hardwood veneers vacuum impregnated with resins and dyes and bonded under pressure at high temperatures. The resin impregnation eliminates the need for lacquer, stains, and liquid finishes. Applications include furniture, lighting fixtures, and architectural hardware. (Wood Dynamics Corporation, Woodstock, Vt. Circle 185 on information card.)

Insulation.
Exterior wall insulation finishing system featuring Styrofoam brand insulation and polymer modified cementitious coatings is designed for new and retrofit commercial projects. It provides positive attachment through components to the substrate by the use of mechanical fasteners. (Dow Chemical, Midland, Mich. Circle 187 on information card.) □

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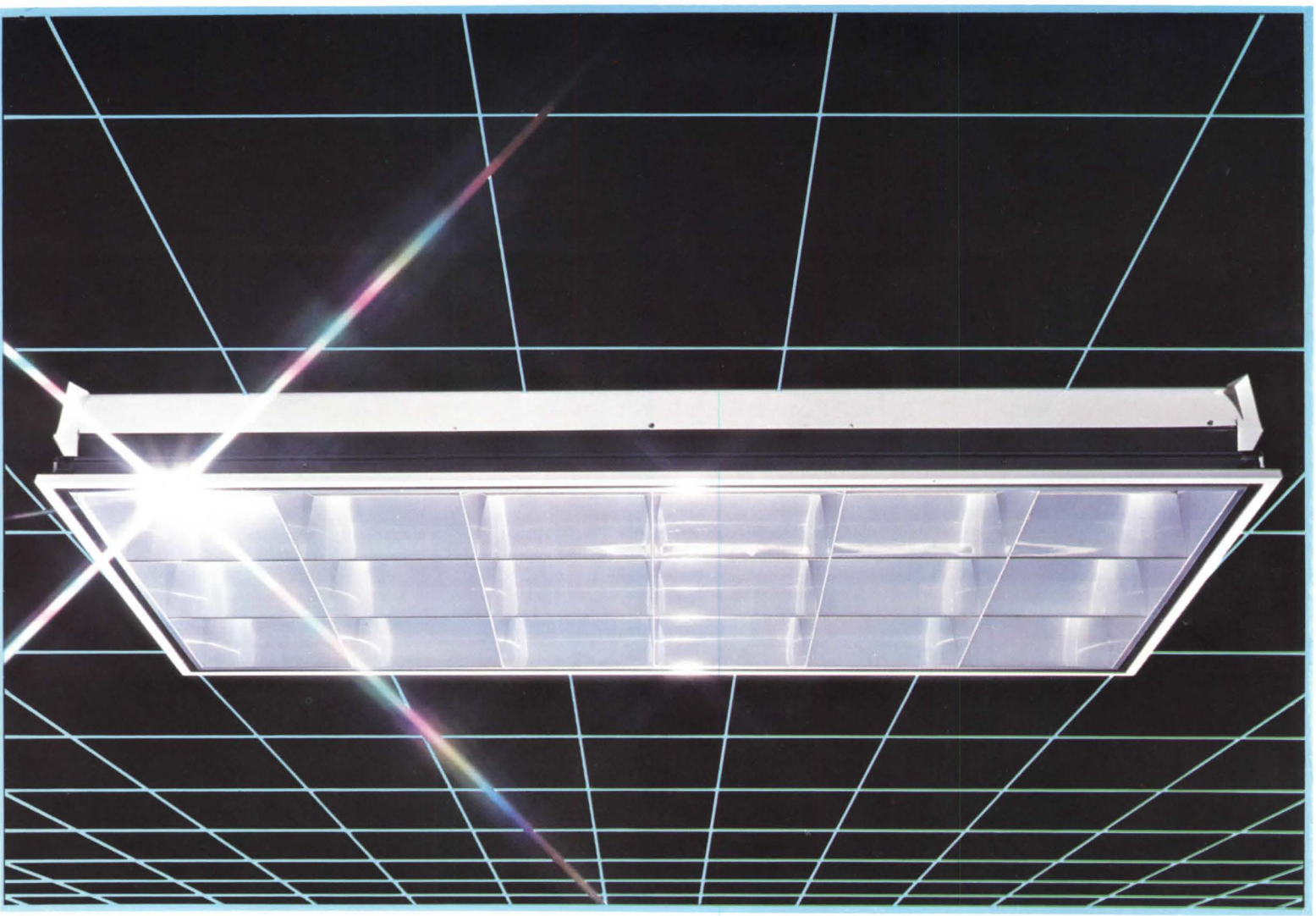

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