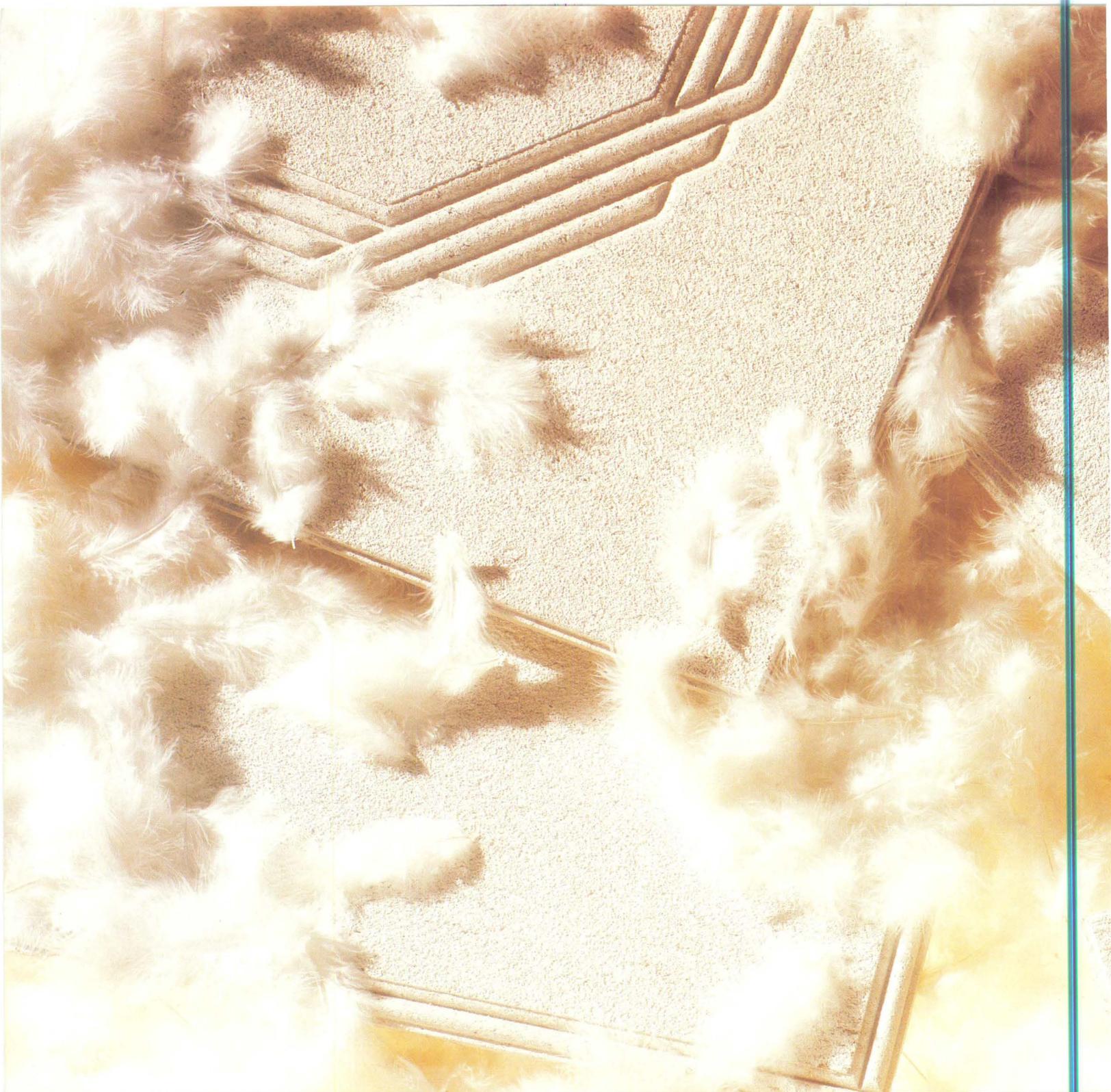


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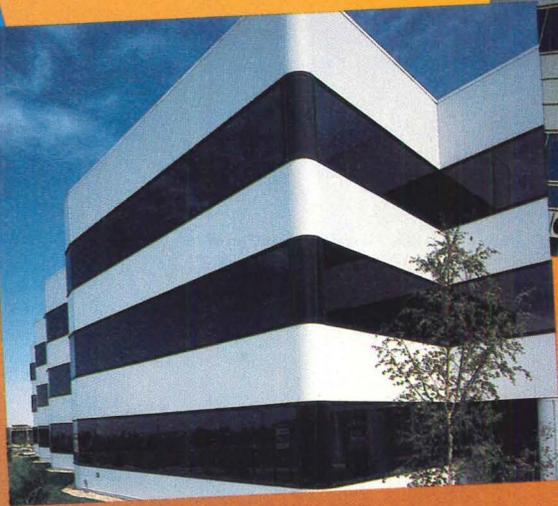
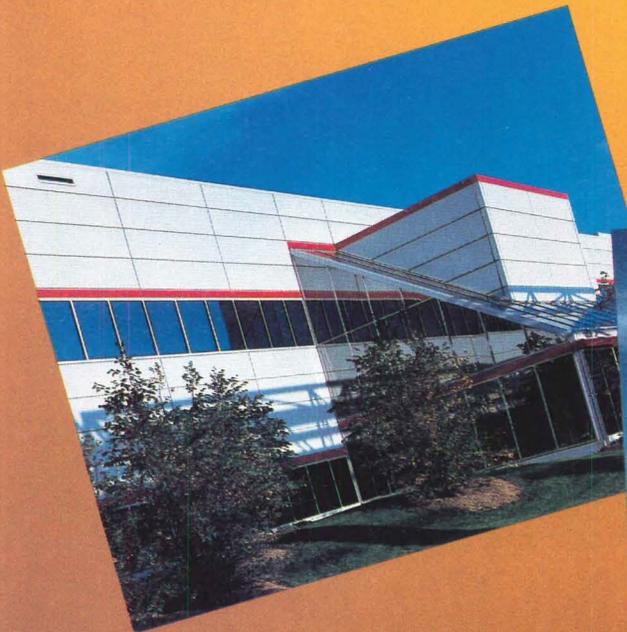
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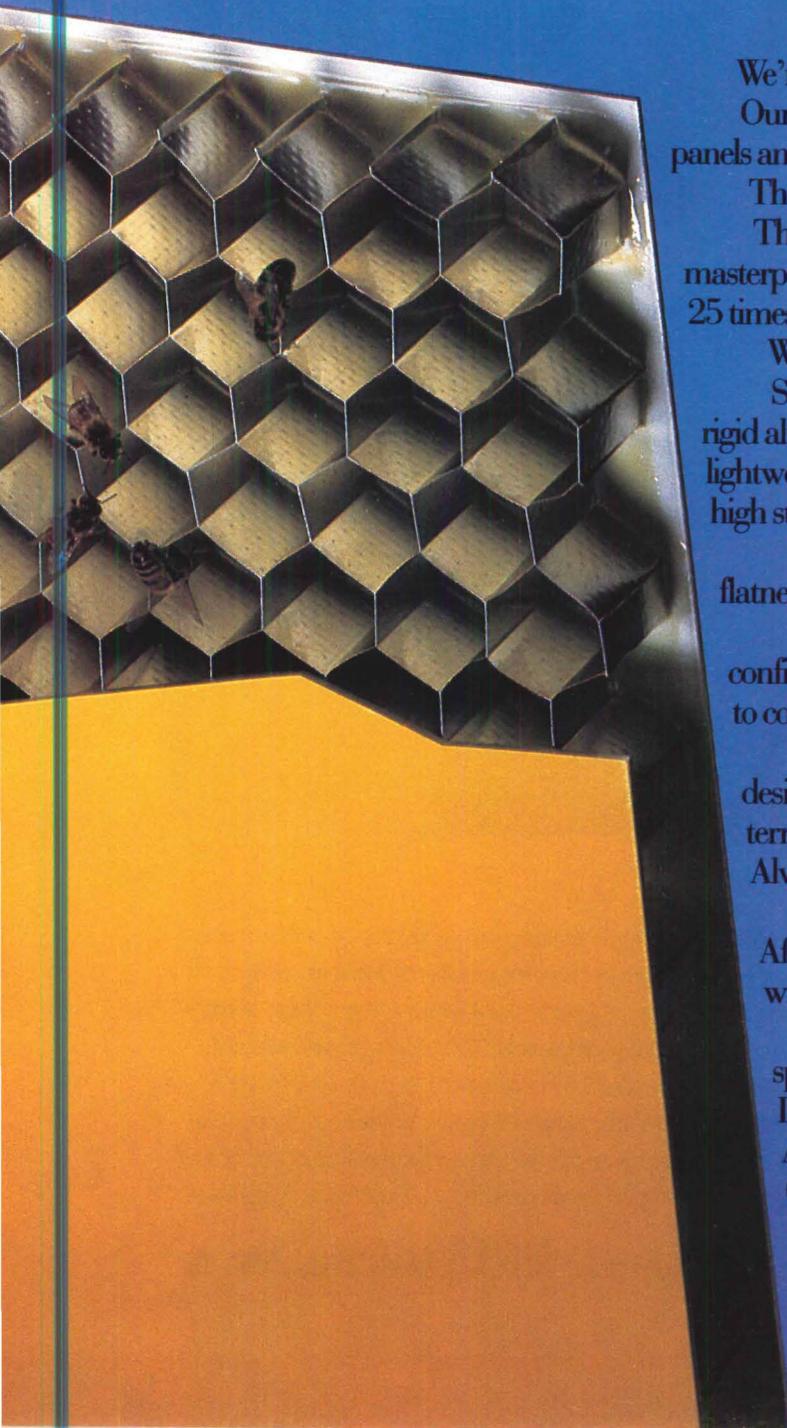
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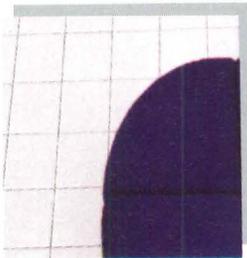
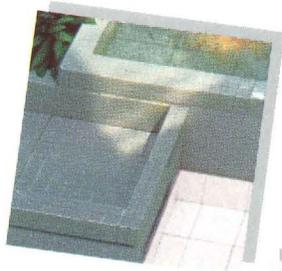
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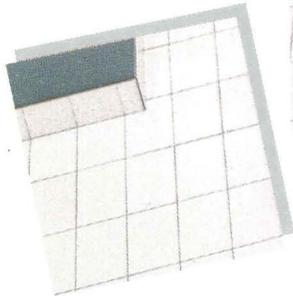
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Editorial: Justice Served?

AIA's consent decree with the Justice Department ends a dispute that was costly and unnecessary – but should teach a valuable lesson.

.....
Since 1986, drug-related crime has exploded across our cities and saving-and-loan shenanigans have piled up a debt of over \$500 billion that we taxpayers will have to pay off. Over these same four years, while these problems festered, our Justice Department crime-fighters have been pursuing a case against the American Institute of Architects for alleged conspiracy to restrain competition.

In 1987, the Justice Department convened a grand jury to hear criminal complaints against the AIA. Testimony was taken from national officers and staff, along with members of the 1984 board of the Chicago chapter, which had issued the offending policy statement (see Washington Report, page 23.) The subpoenaed architects knew, as we know, that an AIA chapter's chance of restraining competition in the area of fees is just about nil. And some of them understandably felt vindicated when the grand jury did not hand down an indictment.

But the threat of criminal indictment had not actually been withdrawn; action had merely been suspended while the investigation continued. And the effect, if any, of the Chicago chapter's ill-considered policy statement was not, strictly speaking, an issue. AIA's associate general counsel, David Perdue, points out that the anti-trust laws make the intent to restrain competition punishable, regardless of its effect. With a view toward winning its case in a real courtroom, however, the Justice Department claimed there had been substantial effects, and AIA denied that there had.

Until late 1989, the matter hung like a cloud over the AIA leadership. Perdue estimates AIA's legal defense costs over the four years have been "in excess of two million dollars," most of it in fees to outside attorneys. Actual and potential legal burdens were said to influence AIA's decision to sell *Architecture* magazine, thus trading the publication's unpredictable annual balances for over \$12 million of cash in the bank, which produces a steady income of about \$1 million a year.

The Justice Department's costs – while they do not have to pay at private rates – could hardly have been less than \$1 million. In this light, the \$50,000 that AIA is now to pay to partially defray the government's costs is a mere token – the remainder presumably to be added to the Federal deficit.

Under the agreement finally worked out this summer, there is no guilt ascribed to AIA or any of its members. But AIA and its components are enjoined from any statements that would discourage competition on the basis of fees or free services. And national AIA promises to set up a monitoring and education process covering all of its components, which is bound to involve new costs. The effect of this action by the Justice Department's lawyers is very likely to be an increase in AIA's staff. (Do Justice Department lawyers see any conflict of interest in thus generating more legal work?)

For AIA members, it is important to know what is still permitted under this consent decree. For one thing, it applies only to the institute and its components; individual members can follow or advocate any policy they wish with regard to fees. And the AIA, at national and component levels, is still free to offer guidance to members on fee negotiation and profitable practice, to make surveys on fees, and to lobby governments at all levels for qualification-based selection of architects. In all these efforts, however, no AIA spokesman is to state or imply that competition on the basis of fees is unethical.

To architects who feel that this profession has been unfairly persecuted, Perdue points out that there is a long history of Justice Department action against medical and bar associations. Real estate agents, widely perceived to be fixing fees, have been the target of dozens of anti-trust suits in recent years.

While you and I may feel that the AIA case shows a poor sense of priorities in Washington, such anti-trust suits are clearly a fact of life. While it is unfortunate that this investigation has demanded so much of AIA's time and money over the past four years, the way to prevent further troubles of this kind is plainly spelled out in the consent decree. As part of its obligation under this agreement, AIA will soon be explaining its provisions to every member, telling them what their organizations can and cannot do under the watchful eyes of Justice. ■

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Views

P/A Appreciation

In my opinion, of all the current publications devoted to architecture, I find P/A to be the most enjoyable, partly because there seems to be an honest representation of a broad variety of subject matter. One particular perspective, Sylvia Lavin's analysis and evaluation of the current theory boom, was most interesting. Thank you for a fine magazine.

*Hugh Jay Gershon, Architect, AIA
Glen Head, New York*

Photography Assessment

Your article on architectural photography was excellent. Clearly written, it covered all the issues involved and demonstrated the range of photographers and types of work. I was especially pleased to see Judith Turner because she is often overlooked.

I was surprised that Hedrich-Blessing was not covered. Maybe your next article could be on documentary photographers such as Kidder Smith, William Pierson, Wayne Andrews, early Cervin Robinson, Bill Barrett, and a few others.

*William Lebovich
Photographer and Historian
Chevy Chase, Maryland*

Photography Lesson

Thank you for your recent article on architectural photography. To establish a mutual working dialogue with architects often involves educating architects in the complexities of the medium. Your article serves this function in a very straightforward and eloquent manner.

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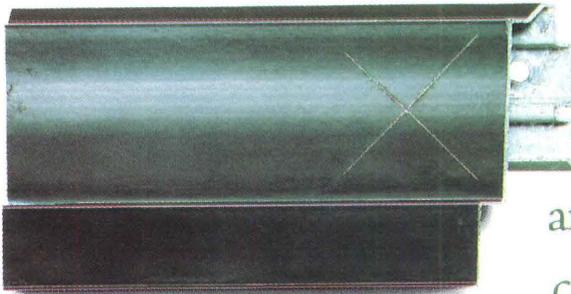
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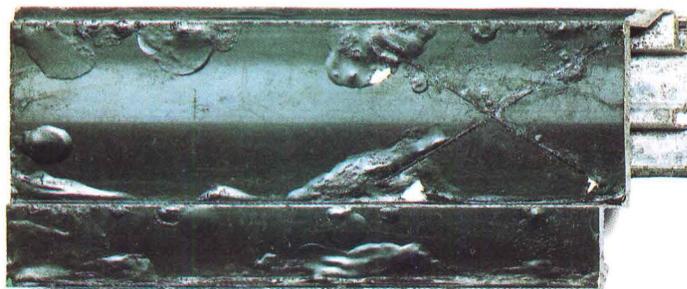
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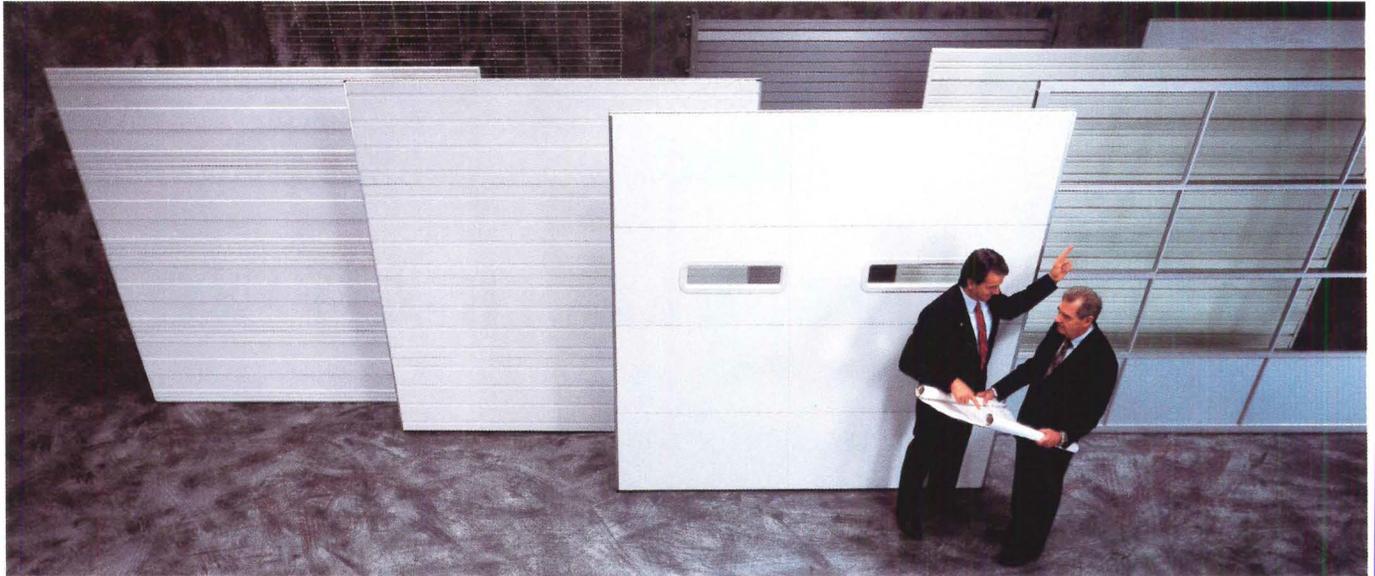
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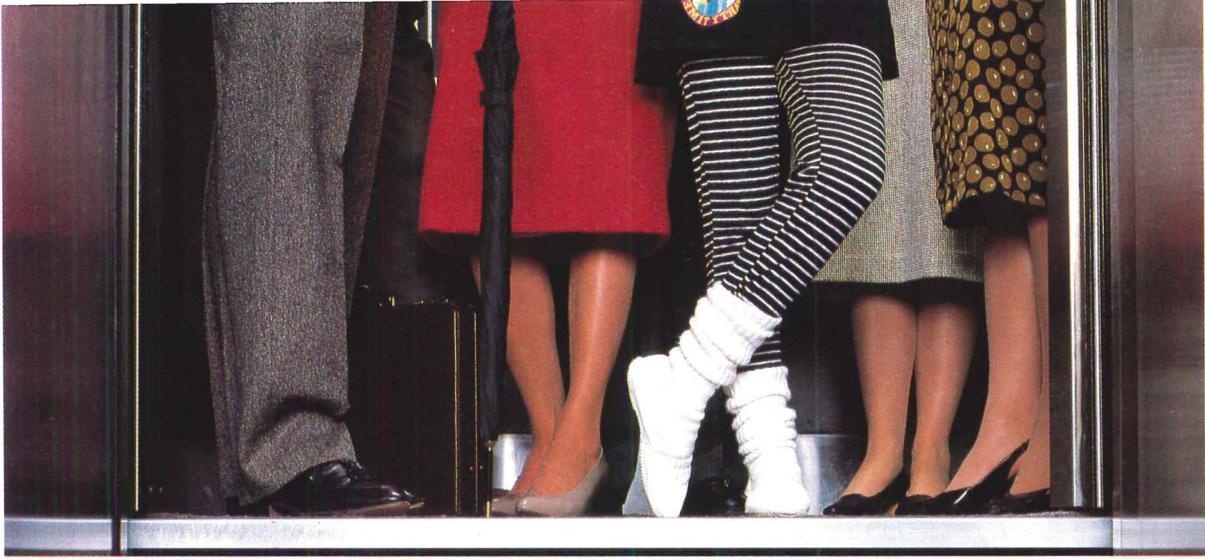
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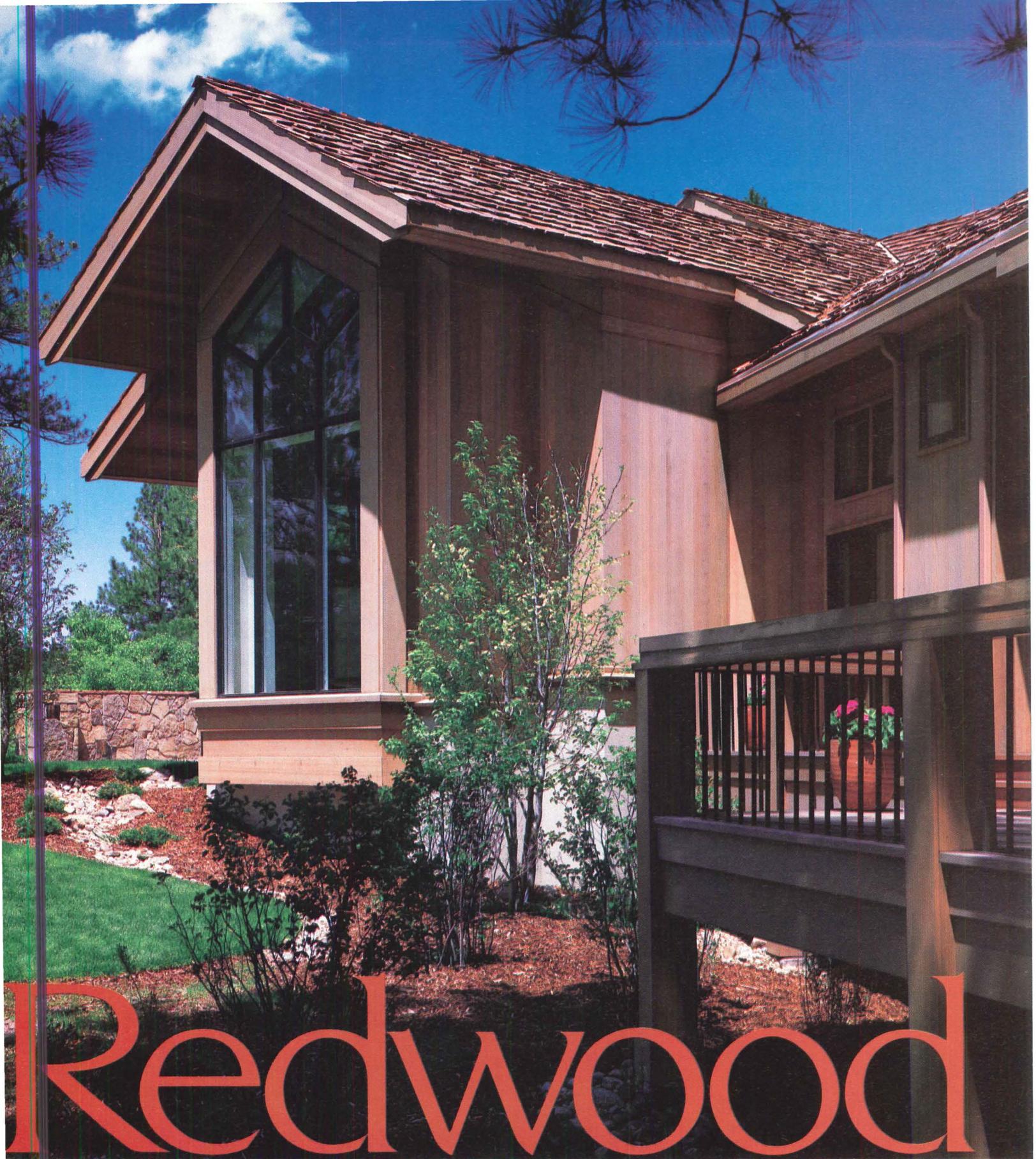


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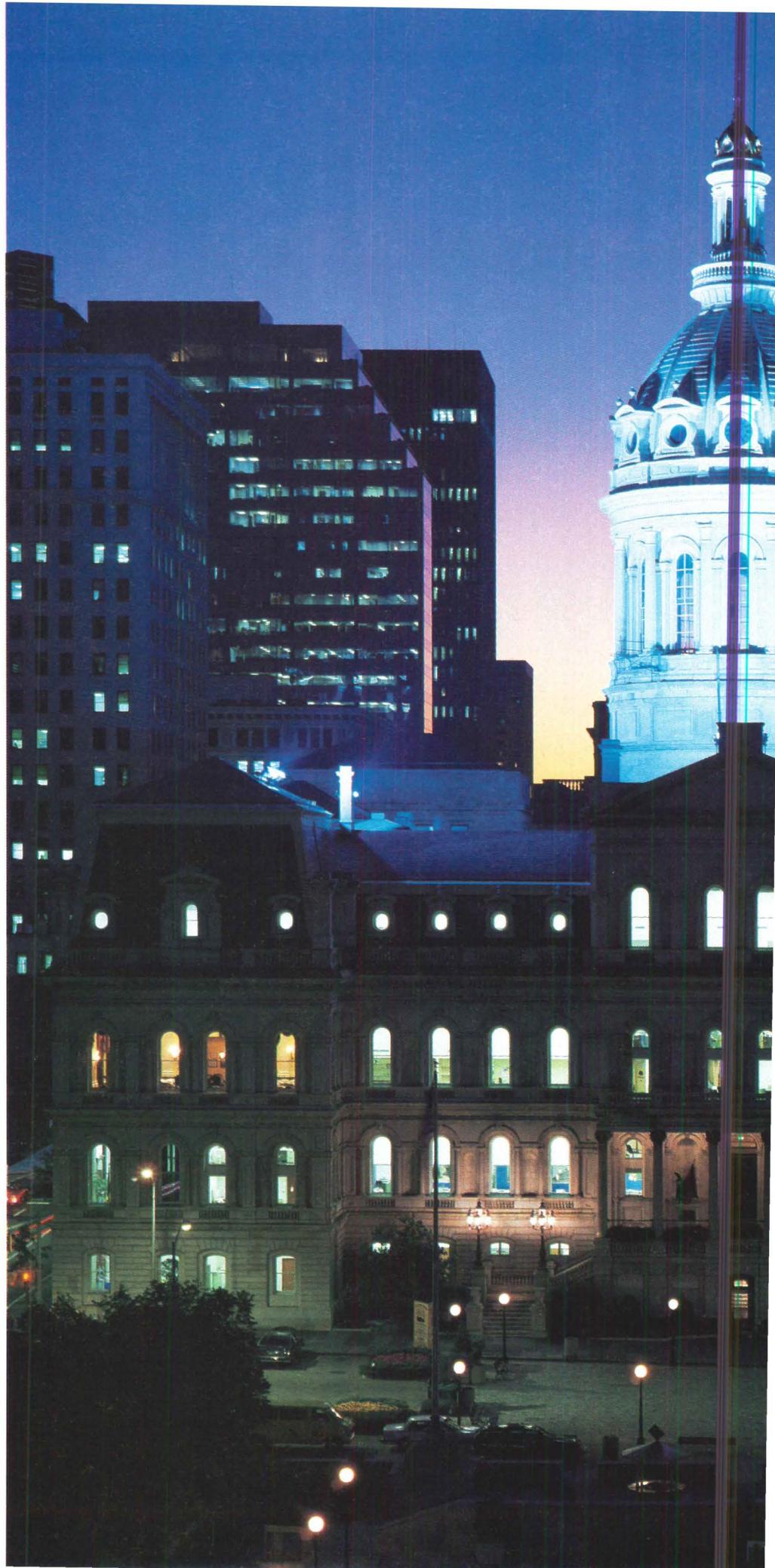
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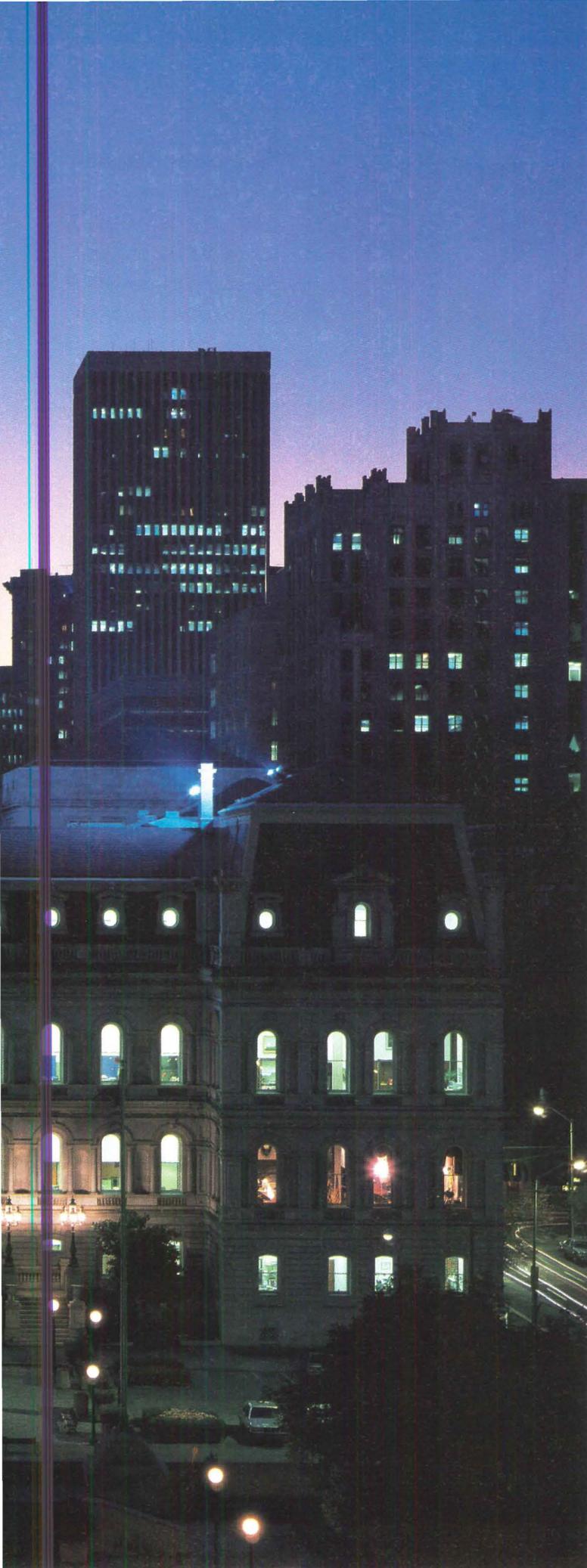
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Foster's Japanese Needle

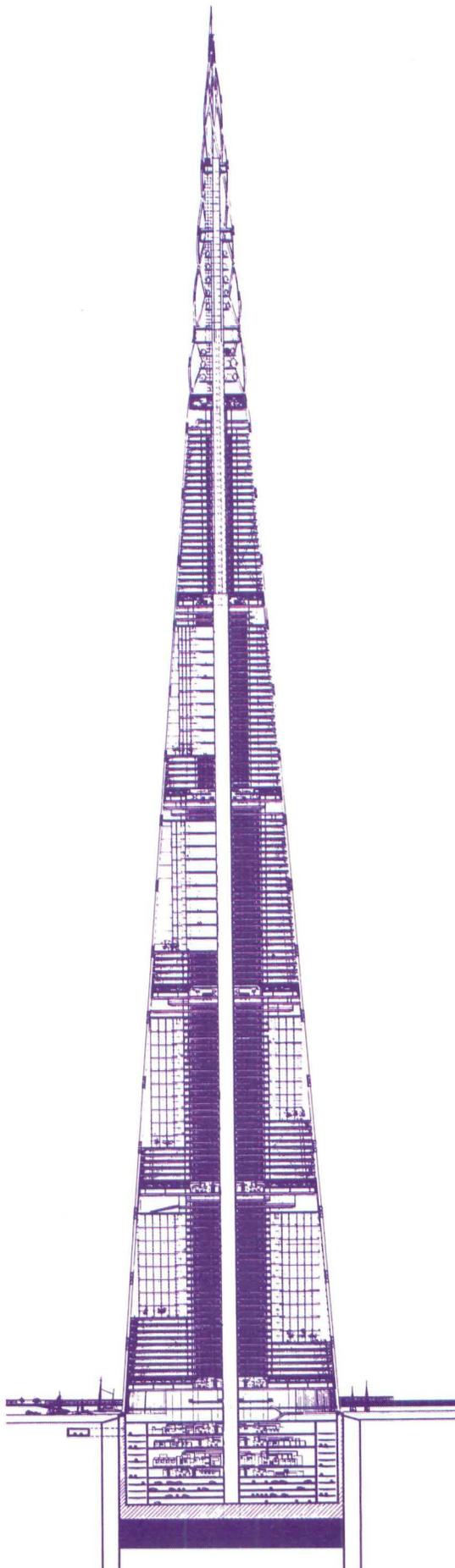
If there is one Japanese export that has not sold well in the West, it is the Metabolists' vision of cities built in the air and often over water. One group who did buy the idea was Archigram in Britain, who in turn influenced such architects as Richard Rogers and Norman Foster. It is fitting, then, that the Japanese company, Ohbayashi, has commissioned Foster Associates of London to design an off-shore megastructure in Tokyo.

The proposed circular structure, called the Millennium Tower, is big: Over 2600 feet tall, housing 50,000 people and containing both commercial and residential space, the tower stands in a round lagoon and rises needle-like within an external, helical steel frame. There is a sense of déjà vu in the final design. Foster's HongkongBank is recalled in the use of skylobbies and his Humana competition entry in the use of a helical structure. The building's form also recalls John Portman's recent needle tower for Genoa.

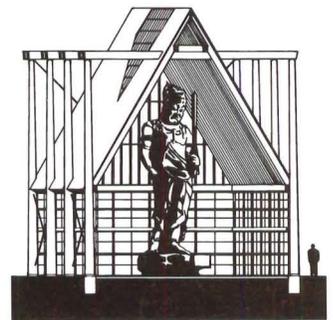
Formal similarities aside, Foster has the right motives here in seeking an alternative to the wasteful, alienating sprawl of our cities by returning "to a multifunctional existence" that reduces "environmental pollution" and "resources depletion." But his solution is anachronistic. Healthy cities depend not only on a dense mix of uses, but on visual contact and chance meetings among people, something that happens on sidewalks much more readily than in elevators. (Foster himself seemed to recognize this in Hong Kong when he used escalators rather than elevators for much of the vertical circulation.) And a healthy environment depends not only on the efficient use of resources, but on the number of alternatives available to us. People in a tower this tall have few reasons to walk rather than ride the elevator, no ability to plant a garden rather than buy vegetables, little incentive to open a window rather than turn on the air conditioning.

Foster and Ohbayashi should be praised for tackling environmental and urbanistic issues. With so many architects and clients seemingly preoccupied with imagery, such forward thinking is needed and welcome. But one can't help feeling that the height and scale of the Millennium Tower has as much to do with finding a symbol for Japan's new economic might as it does with finding a real solution to our urban problems.

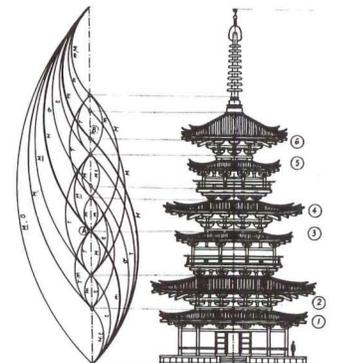
Thomas Fisher



■ Foster's tower would soar 2600 feet above Tokyo.



In Baltimore, a graceful studio for assembling a gift Buddha (see next page).



Perspectives: A pair of essays considers the lessons for architecture in chaos theory (page 100).

Pencil Points

An addition to Louis Kahn's Salk Institute in La Jolla, California is in the design stage. Former Kahn associate Jack MacAllister of Anshen & Allen, Los Angeles, is project architect for the 80,000-square-foot meeting hall, which will sit east of the Institute's courtyard, detached from Kahn's buildings.

Le Corbusier's *Unité d'Habitation* (1957) in Briey, in northeast France is the site for a new architectural center in the spirit of the Bauhaus: The building is to be transformed into a headquarters for an international, interdisciplinary group of Modern Movement advocates, *La Première Rue*, and for a new school of architecture, the *Laboratory of Primary Studies in Architecture*.

Three architects have been selected to participate in the final stage of an invited competition for the development of the Palm Bay seafront and convention center in Morocco. Rem Koolhaas (The Netherlands), Antoine Predock (USA), and Roland Simounet (France) have been asked to submit models for final review by Morocco's King Hassan II.

The Purcell-Cutts House, a model example of Prairie School architecture designed by William Gray Purcell and George Grant Elmslie in 1913 in Minneapolis, has been restored and opened to the public by the Minneapolis Institute of Arts. The house was bequeathed to the Institute in 1985. MacDonald & Mack of Minneapolis executed the restoration.

HOK/Tampa has been commissioned by NASA and the Astronauts Memorial Foundation to design the Center for Space Education, an 89,500-square-foot multidisciplinary learning center to be located next to the Astronauts Memorial (P/A Award winner, Jan. 1989, p. 68) at the John F. Kennedy Space Center in Florida.



Lance Bird



Katherine Diamond

Blue Line rail stations by La Canada in Long Beach (left) and Siegel Diamond in Los Angeles (right).

First Leg of LA Rail System

Los Angeles County, a region that has lacked commuter rail for 30 years, is finally getting a taste of a new train system. The 21-mile Blue Line from downtown to Long Beach, the first leg of a \$5-billion system expected to crisscross the vast county, started carrying passengers in July. For architects, the system has created work in rail stations, a long-forgotten building type locally.

Chronic smog and traffic congestion have given political impetus to commuter rail. Already under construction is the ambitious Metro Rail subway system, which will connect with the Blue Line in downtown Los Angeles and eventually run to the west and the San Fernando Valley to the north.

Despite its legendary status as the city of the automobile, Los Angeles was a railroad town until at least the 1940s. At the turn of the century, the area enjoyed a well-developed rail network; the late Reyner Banham observed that the far reaches of rail helped create Los Angeles's low-lying urban form. Significantly, some new routes are envisioned on rights-of-way that have survived from the era of the old Red Car trolley lines.

Spartan budgets, and even more spartan design programs, constrained architects to strict functionality in station designs. The Los Angeles County Transportation Commission "really saw the platforms as little more than lightweight shade struc-

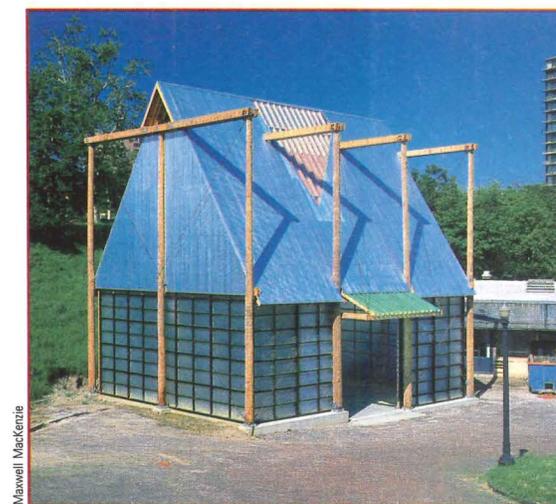
tures to keep the rain out," said one architect.

But constraints did not entirely inhibit design: Siegel Diamond's barrel-vaulted canopy, undergirded with trusses, is intended to convey "a little bit of the structural feel of an old Victorian station," said Katherine Diamond, principal of the firm that designed four elevated stations.

Long Beach, the city on the southern end of the Blue Line, provided bigger budgets for stations inside its city limits. The Pacific Coast Highway-Long Beach Boulevard Station by La Canada Design Group of Pasadena has a logo-like form that principal Lance Bird says reflects the Art Deco heritage of the city. Architects for other stations included Edward C. Barker Associates and The Tanzmann Associates. Consulting in the design of the eight Long Beach stations were James Goodell & Associates; Parsons, Brinkerhoff, Quade & Douglas; and Miralles Associates.

If the Blue Line has a shortcoming, it is the lack of a supporting land-use plan. Noticeably absent are incentives to create housing within walking distance of stations. The lack of coordination between land use and mass transit could be viewed as a lost opportunity; wisely located housing and office buildings could encourage commuters to avoid their cars altogether. **Morris Newman**

The author, a former real estate editor of the Los Angeles Business Journal, is a freelance writer in Los Angeles.



Maxwell MacKenzie

Studio for assembling a Buddha at Maryland Institute.

Studio for Baltimore's Buddha

The generosity of an anonymous Japanese businessman will bring an exceptional, not to mention unexpected, piece of sculpture to Baltimore—a 33-foot wooden Buddha. As a reciprocal gesture, the city has built a new studio in which the Buddha will be carved and assembled. It is a felicitous conjunction of Oriental and Western traditions; rarely does a work of architecture complement a cultural exchange so succinctly.

The building, designed by Keith Mehner when he was at RTKL (He is now an architect with Kerns Group Architects in Washington, D.C.), has the structural expediency of a workplace and the spirit of repose typical of a temple. In fact, it is intended to serve both functions: At present, it is occupied by four Japanese master carvers who are in residence at the Maryland Institute's College of Art,

where the pavilion stands. When they depart, the structure may be disassembled and rebuilt in a city park as an open-air pavilion for the statue.

The exposed columns (actually telephone poles) and beams support a track that runs beneath the roof ridge, where pulleys can be hung to move pieces of the statue. This structural configuration optimizes the floor-to-beam dimension with minimal expense and also reveals how the sculptural program drove the design of the studio. The walls and roof were relatively simple to re-

solve: They are essentially a protective enclosure from the elements and, secondarily, a brace for the columns. In Mehner's words, "the structure is the architecture."

If Baltimore decides to keep the pavilion, it will be a gracious response to their Japanese benefactor as well as a validation of functionalism. We've often heard that the workplace can be as beautiful as a sacred structure. In Mehner's pavilion, the two are one. **Philip Arcidi** ■

Skin Graft for Amoco Building

Perhaps the best recent additions to the Chicago skyline in the course of this city's ebbing building boom are the hoists – like enormous campanili – animating the normally staid countenance of the 80-story Amoco Building. The building, which was designed by Edward Durell Stone with Perkins & Will and was completed in 1974, is being entirely re clad with granite because of warping in its marble skin.

Specially designed hoists carrying workers up and down the building have been erected at the tower's four corners and anchored at 40-foot intervals along the shaft. Monorails placed on the roof convey the stone from the hoists across the face of the building to their precise installation points. Workers, who are removing and replacing the stone panels, stand on custom-made swing stages suspended from the roof of the building. The entire system, which was designed and is being overseen by Schal Associates, permits simultaneous work on all four faces of the building without encasing it in scaffolding.

The problem in the cladding is rooted in the fact that marble is sensitive to extremes in temperature; it expands faster in heat than it contracts in cold. When the stone is thin, the resulting deformation can cause the stone to break from its anchorings. In some places, Amoco's white Carrara marble had warped as much as 1-1/2 inches and had lost as much as 40 percent of its original strength. As an interim precaution before beginning the replacement, the stone was strapped to

Americans with Disabilities Act Signed

Late this summer President Bush signed the Americans with Disabilities Act of 1990. Hailed by various sponsoring groups as a landmark civil rights action, the law provides that all commercial and public accommodations, including stores, hotels, office buildings, and transportation facilities, be readily accessible and usable by persons with disabilities.

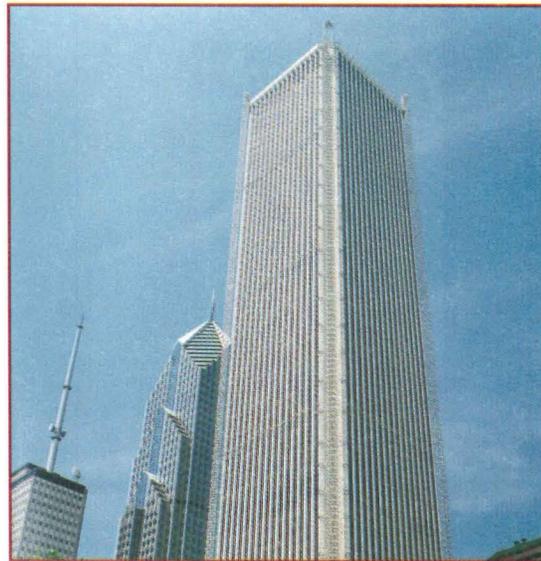
A statement issued by the American Institute of Architects, a leading proponent of the act, said that the law will not require total accessibility throughout all facilities. Instead, it will require "a high degree of convenient accessibility" for such areas as entrances, circulation corridors, and lavatories. "Failure to so design," said Elizabeth Laz-

arus Wainger of the AIA staff, "could constitute discrimination."

Federal law already requires accessibility for U.S. government facilities and other buildings in which public funds are involved. The new law is aimed at bringing state and local building codes into line with the usually stronger federal rules.

It can't yet be said precisely what the new law will require; detailed implementing guidelines remain to be drafted by the U.S. Architectural and Transportation Barriers Compliance Board, and final federal regulations won't be ready for at least another year. In general, though, business will have to review employment policies and physical environments. Barriers that can reasonably and

(continued on next page)



McShane Fleming Studios

Scaffolding hoists temporarily enliven the Amoco Building.

Washington Report

Editor's Note: This is the first edition of a new bimonthly report on events in official Washington by P/A's Thomas Vonier.

When Sylvester Damianos, national president of the AIA, proclaimed here recently that "the practice of architecture is highly competitive, and is likely to become more so," one could reasonably have assumed that he was talking about the tightening market for services that has nearly every large and medium-sized firm in Washington reducing ranks.

Not quite. Damianos was responding to the latest (and possibly final) development in the U.S. Justice Department's 20-year pursuit of the AIA for alleged antitrust violations. After a four-year investigation, the Department proposed to settle its differences with the AIA by means of a consent decree, the product of six months of negotiations with the Institute. The decree would resolve issues raised in a newly filed Justice Department lawsuit that claims the AIA had conspired to violate the Sherman Antitrust Act.

The Department alleged that policies and statements of the AIA served to restrain trade and deprive the public of the benefits of competition, by prohibiting or characterizing as unprofessional certain practices related to professional fees.

A prior consent decree was issued in 1972 as a result of earlier federal investigations. It bound the AIA to remove offending provisions from its code of ethics and to refrain from activities that could prohibit members from competitive bidding, fee discounting, or offering free services.

The Department's recent lawsuit cited a policy statement, adopted for a short time in 1984 by the AIA's Chicago chapter, discouraging price competition. The complaint argued that the national AIA and its officers should be held responsible for the actions of its local chapters.

"The Chicago policy statement was never intended to violate the antitrust act," says AIA associate general counsel David K. Perdue, pointing out also that it was rescinded shortly after

(continued on next page)

Washington Report

(continued from previous page)

adoption. The document, bearing the names of the Chicago chapter's 19 directors and signed by its president, Thomas J. Eyerman, was issued as a "statement of principles." Following a preface characterizing architectural fees as generally insufficient, it said "architects shall not participate in any client request for a proposal where fee is the sole basis for selection" and "architects shall not lead clients to believe that price is the dominant factor in the architectural selection process." The Justice Department claimed that these statements, among others quoted in its complaint, violated antitrust laws.

Under terms of the proposed consent decree, binding for a period of ten years, the AIA would agree (without admitting any wrongdoing) not to engage in a range of practices that the Justice Department contends are illegal. The AIA and its components must purge their manuals, codes of ethics, and policy statements of any prohibitions against competitive price bidding, fee discounting or providing free services. Any new policy statements, guidelines, or canons of professional practice must be submitted for review by a decree committee, which is to include at least two Institute attorneys, before dissemination to members. The AIA will establish a ten-year program to ensure compliance with the decree.

Perdue said that the decree represented a final agreement between the AIA and the Justice Department, but must be accepted by a Federal judge before it becomes law. He expected a favorable ruling this fall.

The prospect of settlement was greeted mainly with relief by several longtime AIA members. One who has been involved in Institute policy matters since Richard Nixon was in the White House, called it "the first evidence of reason I've seen at the Justice Department in years."

"It's hard to believe," said a local architect who once held national AIA office, "that anyone who really knows the Institute thinks it could 'conspire' to do much of anything, let alone control the business practices of 55,000 members."

Thomas Vonier ■

Disabilities (continued from previous page)

readily be removed, at relatively little expense or difficulty, will have to go. If architectural changes prove not to be feasible, business policies could be adjusted to satisfy the law's intent. (For example, a retail store might designate personnel to help the disabled retrieve out-of-reach merchandise).



George James

Gordon Bunshaft

Gordon Bunshaft 1909–1990

Gordon Bunshaft, retired partner of Skidmore, Owings & Merrill, died at his home in Manhattan on August 6. It was Bunshaft's virtuoso application of Modern design to corporate commissions that first made SOM famous, and his contributions to the firm's reputation extended years beyond his retirement in 1979.

Honored in almost every possible way, Bunshaft was a winner of the Pritzker Prize (shared with Oscar Niemeyer, 1988) and the Gold Medal of the American Academy of Arts and Letters (1984). The 12 Bunshaft buildings that received AIA Honor Awards range from the Lever House, New York, of 1952 to the National Commercial Bank in Jeddah of 1983; his Manufacturers' Trust building in New York (1954) and Haj Terminal at Jeddah airport (1981) won P/A Awards as well as AIA honors. The one honor that eluded Bunshaft was the Gold Medal of the AIA, and a major obstacle there was undoubtedly his opposition, as a member of Washington's Commission of Fine Arts, to the 1965 competition-winning design for the AIA Headquarters – an intransigence that caused Romaldo Giurgola to resign the commission, at great pain and long-term loss to the AIA.

The AIA Headquarters struggle was just one instance of Bunshaft's unshakable design convictions. A man of few gruff words, he was clearly design czar over all of SOM's increasingly far-flung offices during the 1950s and well into the

The new law could help to advance the practice of "universal design," which is intended to minimize architectural distinctions in spaces intended for access to the disabled, while broadening the range of persons – including the elderly and very young – who find facilities safe and comfortable to use. **Thomas Vonier** ■

1960s, until younger designers were advanced to partnership.

Born in Buffalo and educated at M.I.T., Bunshaft joined S.O.M. when the firm opened its New York office in 1937 and was senior designer for the Venezuelan Pavilion at the New York World's Fair of 1939. According to his biographer, Carol Herselle Krinsky, (*Gordon Bunshaft of Skidmore, Owings & Merrill*, 1988, The Architectural History Foundation), he already understood his low aptitude for hobnobbing with clients and decided to apply his recognized design skills within the framework of a large partnership.

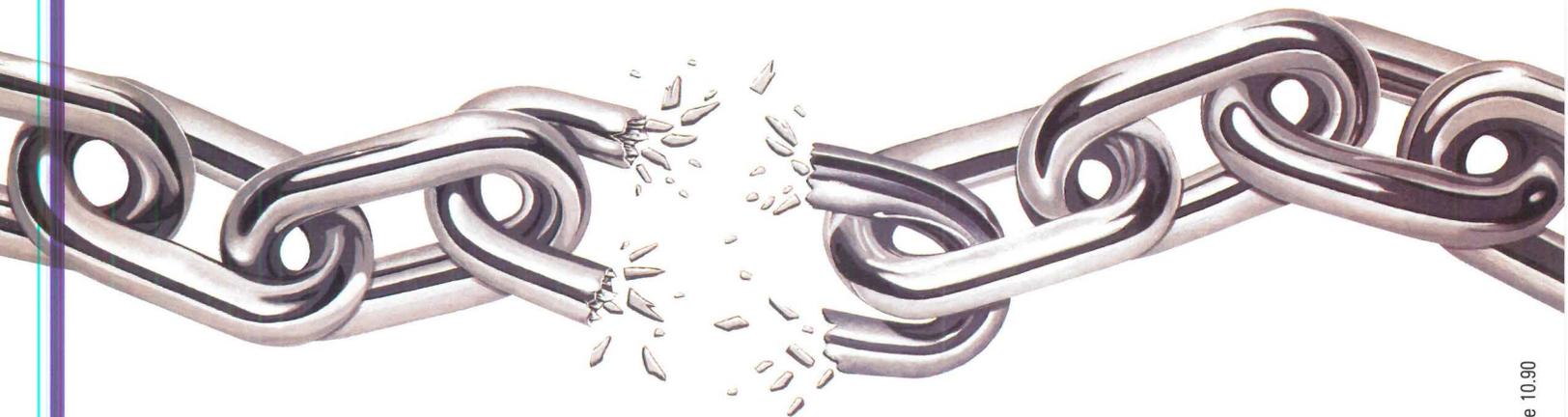
In his decades of work with SOM, Bunshaft was clearly most successful with corporate headquarters: Lever House, Pepsi-Cola (1960), Union Carbide (1960), Chase Manhattan (1961), and Marine Midland (1967) in New York and American Republic Life (1965) in Des Moines. A new pattern for suburban corporate campuses was set by his Connecticut General headquarters (1957), near Hartford (also a P/A Award winner) and followed in his nearby Emhart headquarters (1963), Reynolds Metals (1958) in Richmond, Virginia, IBM Headquarters (1964) at Armonk, New York, and American Can (1970) in Greenwich, Connecticut.

Institutional commissions came along in the 1960s, heralded by his coolly elegant addition to the Albright-Knox Gallery in Buffalo (1962). A tendency toward overbearing monumentality – probably encouraged by princely budgets – appeared in his Beinecke Library at Yale University (1963) and Lyndon B. Johnson Library at the University of Texas, Austin (1971). His Hirshhorn Museum in Washington (1974), while not so opulent, has much of the same forbidding character. His commercial office buildings of the 1970s, particularly two New York towers with ski-slope profiles, did little to enhance his reputation. But his airport terminal and bank tower in Jeddah, both completed after his retirement (and neither ever visited by him) crowned his career with totally unprecedented designs that won much richly deserved praise.

Sadly for Bunshaft, the recognition of his contributions probably hit a low point around the time of his retirement. Even the incontrovertibly successful Haj Terminal tended to be attributed solely to the late engineer Fazlur Khan of SOM, who rightly shared credit. His work could never, however, be dismissed; honors and recognition never stopped coming in. In the coming years, as his scores of buildings become historic landmarks, Bunshaft's reputation is only likely to rise.

John Morris Dixon ■

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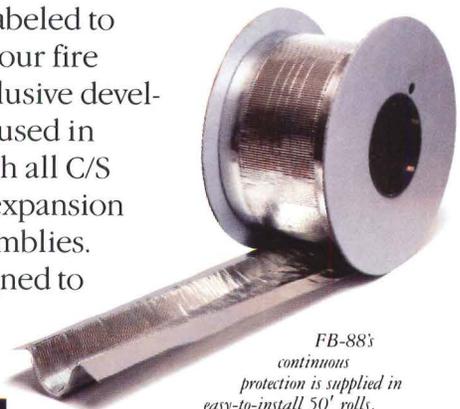
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Calendar

Exhibitions

Futurist Architecture
Through October 27

New York. More than half a century after first making its mark, the work of Futurist architects continues to evoke the future. Drawings and watercolors by Antonio Sant'Elia, Fortunato Depero, and others are exhibited. Philippe Daverio Gallery.

Architects' Education
Through November 3

New York. Gwendolyn Wright and Janet Parks are curators of "History of History In American Schools of Architecture, 1865-1975" - an unusual investigation into how "students have been taught history - and how they in turn have interpreted both historic buildings and the process of change." Arthur Ross Architecture Gallery, Buell Hall, Columbia University.

Erik Gunnar Asplund
Through November 3

New York. The serene minimalism espoused by Asplund is documented in several projects including the Woodland Crematorium in Stockholm (1940). Max Protetch Gallery.

100 For 100 at Penn
Through November 4

Philadelphia. In celebration of its centennial, the Graduate School of Fine Arts at the University of Pennsylvania has organized "100 For 100" - an exhibition of work by alumni and faculty. Louis Kahn, Joseph Esherick, Robert Venturi, and Denise Scott Brown are among this prestigious group. Arthur Ross Gallery and Meyerson Hall Galleries, University of Pennsylvania.

Communicating Ideas Artfully
October 4-31

New York. A collection of presentation drawings and models documents methods and media used to depict architectural projects. This traveling exhibition was curated by P/A Executive Editor Thomas Fisher. Steelcase Design Partnership.

Competitions

Bearings: Faculty Architecture
Submission deadline October 31

New York. Faculty at undergraduate or graduate schools of architecture and design in North America are invited to submit theoretical or built projects (produced in the last three years) for the second "Bearings" biennial at Parsons School of Design. The juried exhibition, scheduled to open January 23, 1991 at the Parsons Exhibition Center, is "an opportunity to examine the relationship of regional influences and pedagogical philosophy on personal work. . . ." Contact Department of Environmental Design, Parsons School of Design, 66 Fifth Avenue, New York 10011 (212) 741-8955.

Vietnam Women's Memorial
Entry deadline October 31

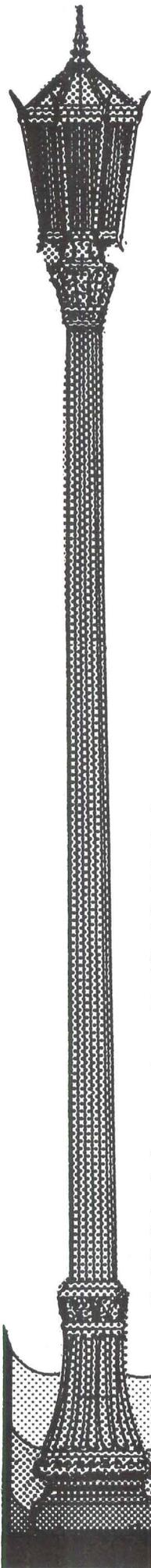
Washington, D.C. A memorial, to be sited on the Mall just south of the Vietnam Veterans Memorial, is the subject of a design competition sponsored by the Vietnam Women's Memorial Project. Competitors must be American and over 18 years old. Contact Michael John Pittas, Competition Advisor, Vietnam Memorial Project, Inc., 2001 S Street, N.W., Suite 302, Washington, D.C. 20009.

Visual AIDS
Entry deadline November 1

New York. Architects, designers, and artists are invited to propose a work of art related to AIDS for a public site in New York. A public plaza, corporate lobby, billboard, newspaper, or public service announcement are among possible "sites." The Public Art Fund will select one

(continued on page 28)

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The submission date is April 1, 1991. The jury deliberations will be held on April 8, 9, and 10 and the Winner(s) contacted on April 25, 1991. Requests for additional information will be available at the above address or by telephoning (708) 866-0300.

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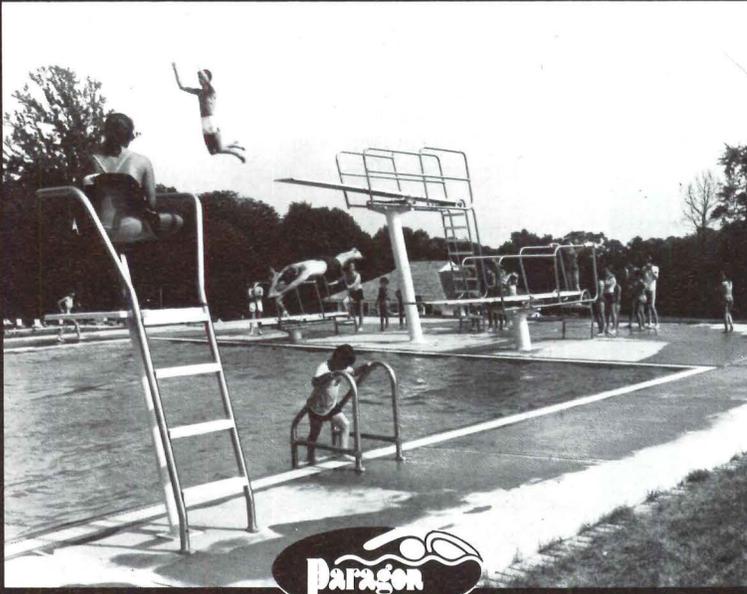
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Kanaka Cultural Center
Registration deadline November 9

Ecology Building
Qualifications Statement
deadline November 12

R.S. Reynolds Award
Nomination deadline November
12, submission deadline
December 17

Rancho Mirage
Entry deadline January 4

Designer's Saturday
October 11-13

**National Preservation
Conference**
October 17-21

Lighting World Los Angeles
October 18-20

Calendar (continued from page 27)

entry and commission a public work in spring 1991. Proposals will be exhibited at several locations around the city. Contact Visual AIDS, 108 Leonard Street, 13th Floor, New York, New York 10013 (212) 513-0303.

Noumea, New Caledonia. An international ideas competition for the Jean-Marie Tjibaou Cultural Center in Noumea, New Caledonia is being sponsored by the Agency for the Development of Kanaka Culture in an effort to "develop and promote" the Kanaka culture. A limited number of competitors will be selected from the registrants. Contact Mrs. Claudie Georges-Francois, Secretariat d'Etat des Grands Travaux, 23-25 avenue Franklin Roosevelt, 75008 Paris, France or Agence de developement de la culture canaque, B.P. 378, Noumea, New Caledonia FAX (687) 28 21 78.

Lacey, Washington. The State of Washington has announced a design-build competition for a \$30-million Department of Ecology headquarters. Contact The Ecology Building Project, P.O. Box 8090, Lacey, Washington 98503 FAX (206) 493-2687.

Washington, D.C. Entries for the annual R.S. Reynolds Memorial Award must use aluminum in a substantial way. Projects must have been completed before January 1, 1991. Contact Frimmel Smith, American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006 (202) 626-7390.

Rancho Mirage, California. The City of Rancho Mirage is holding an open, two-stage competition to develop a master plan for a proposed \$20-million Civic Center. The center will house government and community facilities. A program will be distributed beginning November 1. Contact William H. Liskamm, Competition Advisor, Civic Center Design Competition, c/o Rancho Mirage City Hall, 825 Highway 111, Rancho Mirage, Cal.

Conferences

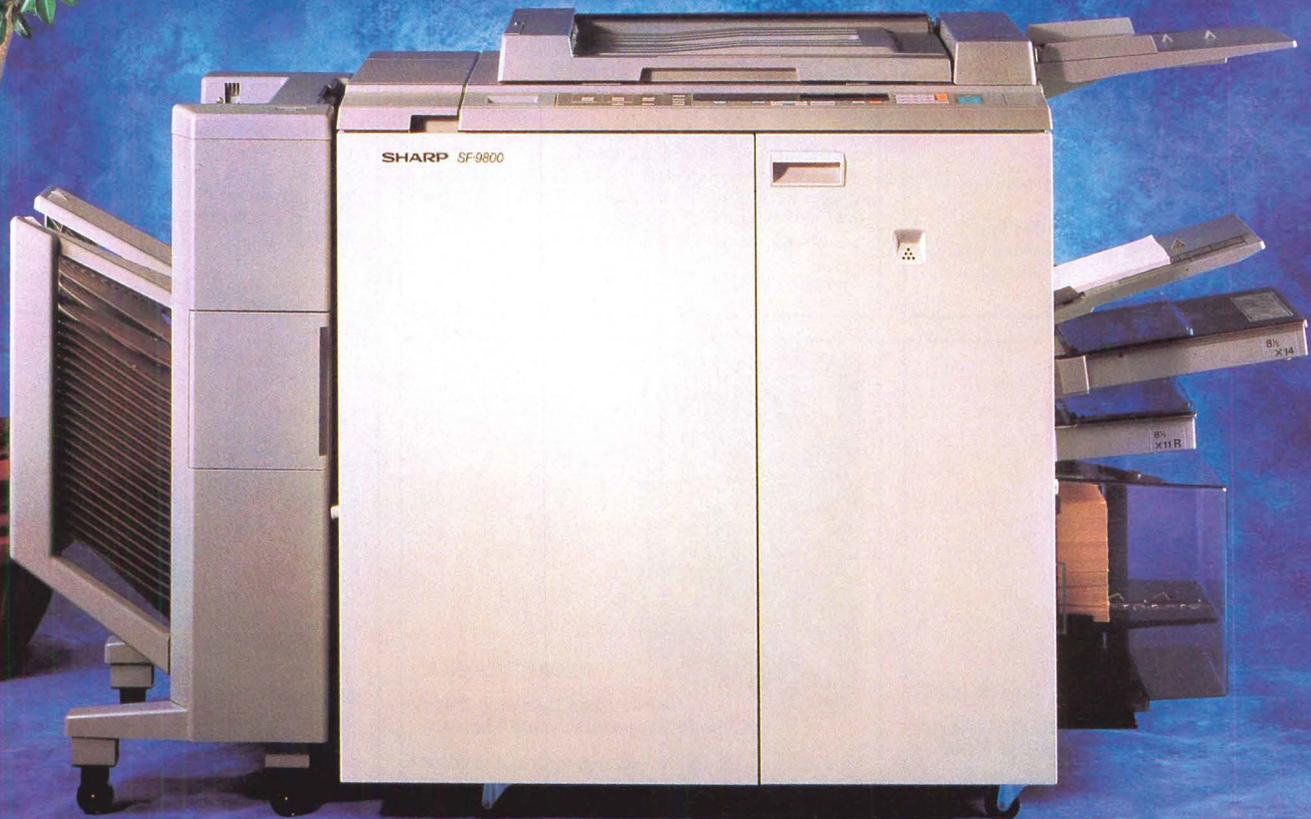
New York. This year's market has been given international emphasis with two seminar programs - at IDCNY in Long Island City ("Crosscurrents") and the A&D Building in Manhattan ("The Globalization of Design"). Product introductions and presentations will take place at several locations throughout the city. (P/A, September 1990, p. 164.) Contact IDCNY, Executive Offices, 29-10 Thomson Avenue, Long Island City, New York 11101 (718) 937-7474 or A&D Building, 150 East 8th Street, New York 10155 (212) 644-6555.

Charleston, South Carolina. The 44th National Preservation Conference, sponsored by the National Trust for Historic Preservation, has the theme "Keeping America's Heritage Alive" and will be held in Charleston at the Omni Hotel. Four sessions on "Disaster Preparedness and Recovery," Honor Awards presentations, and a trade show are among the events planned. Contact National Trust for Historic Preservation, 1785 Massachusetts Avenue, N.W., Washington, D.C. 20036 (202) 673-4141.

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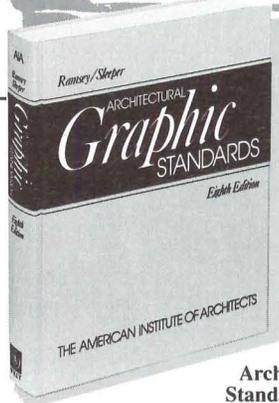
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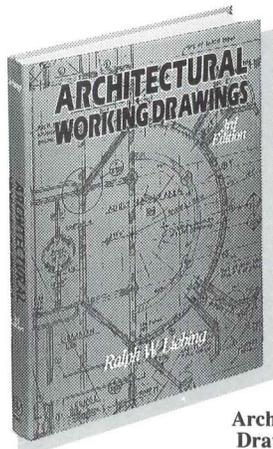
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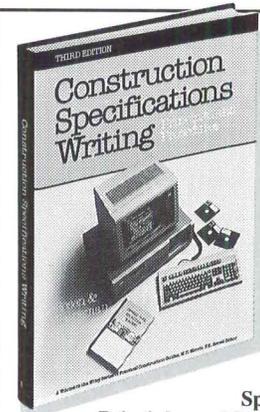


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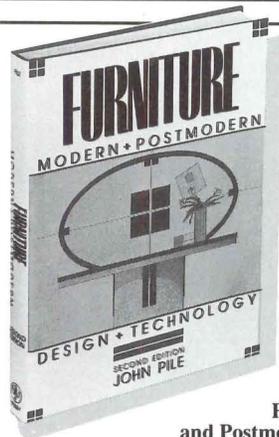


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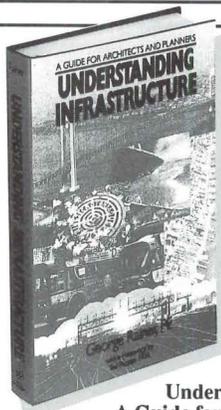


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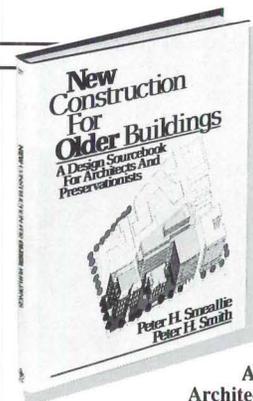


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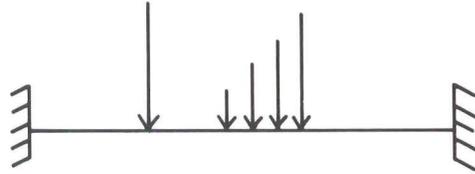
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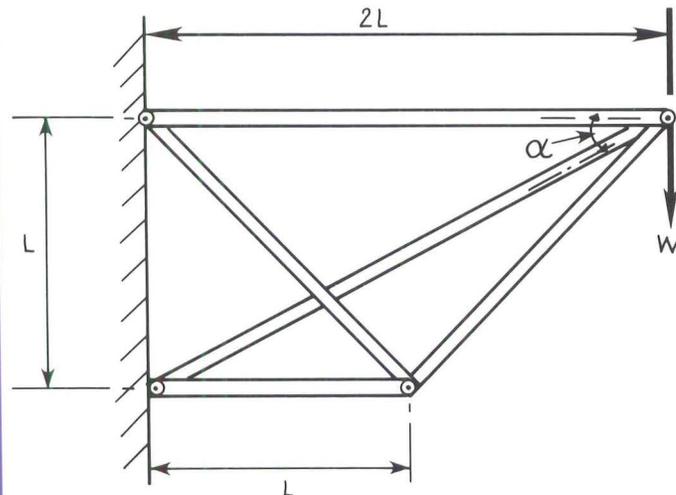
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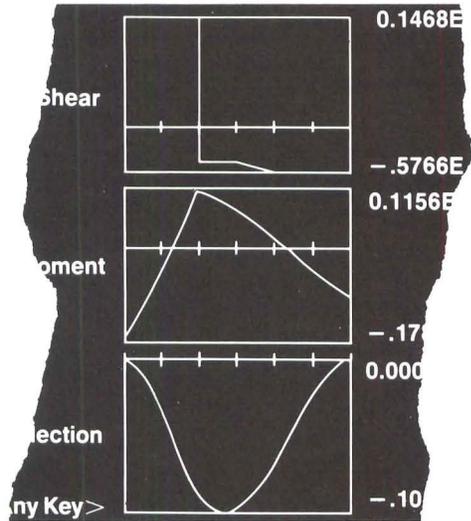
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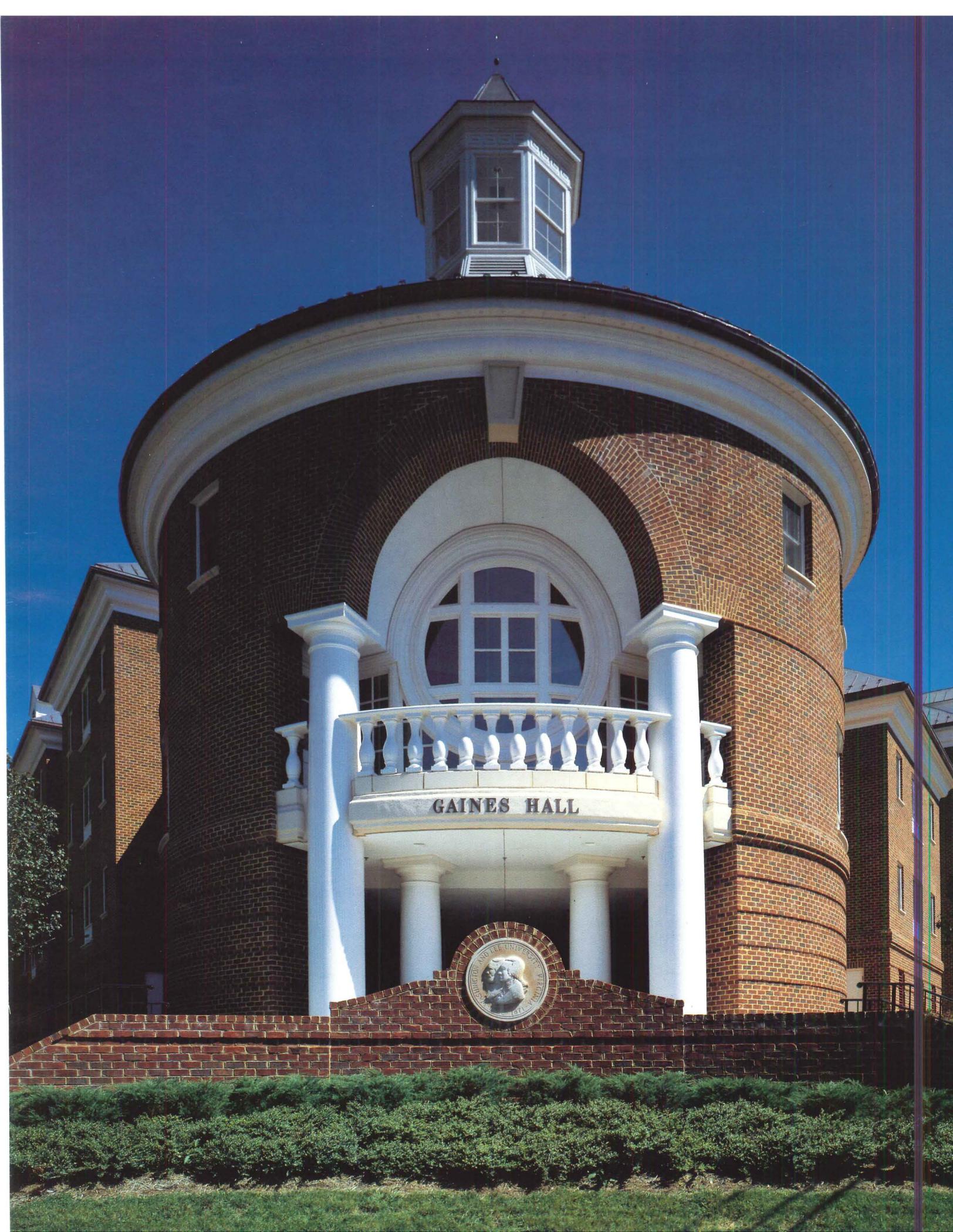
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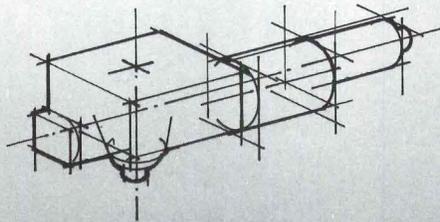
✓ Must be power-open spring closed with good smooth manual action - automatic in case of power failure.

✓ Need two spring tensions - Medium and heavy.

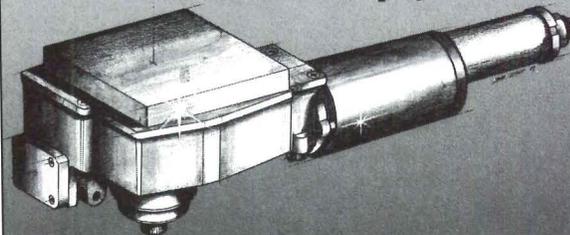
✓ Have power assist close option available.

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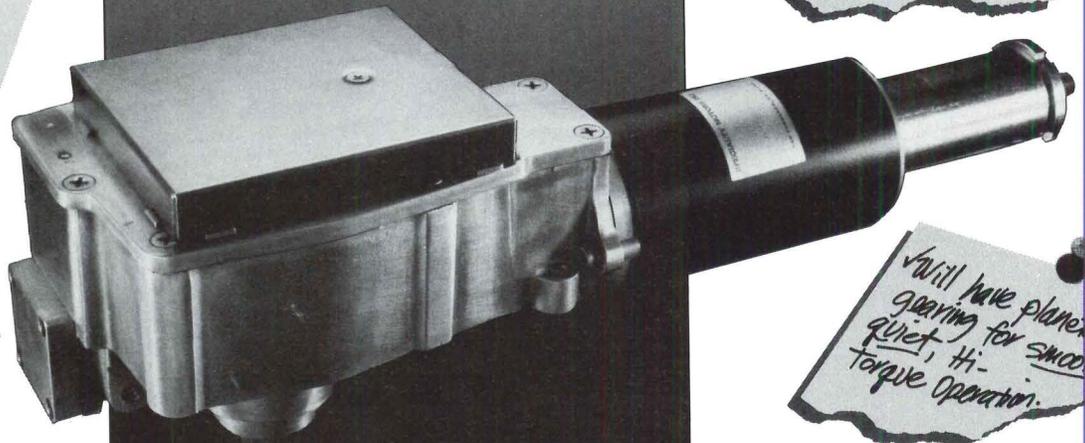
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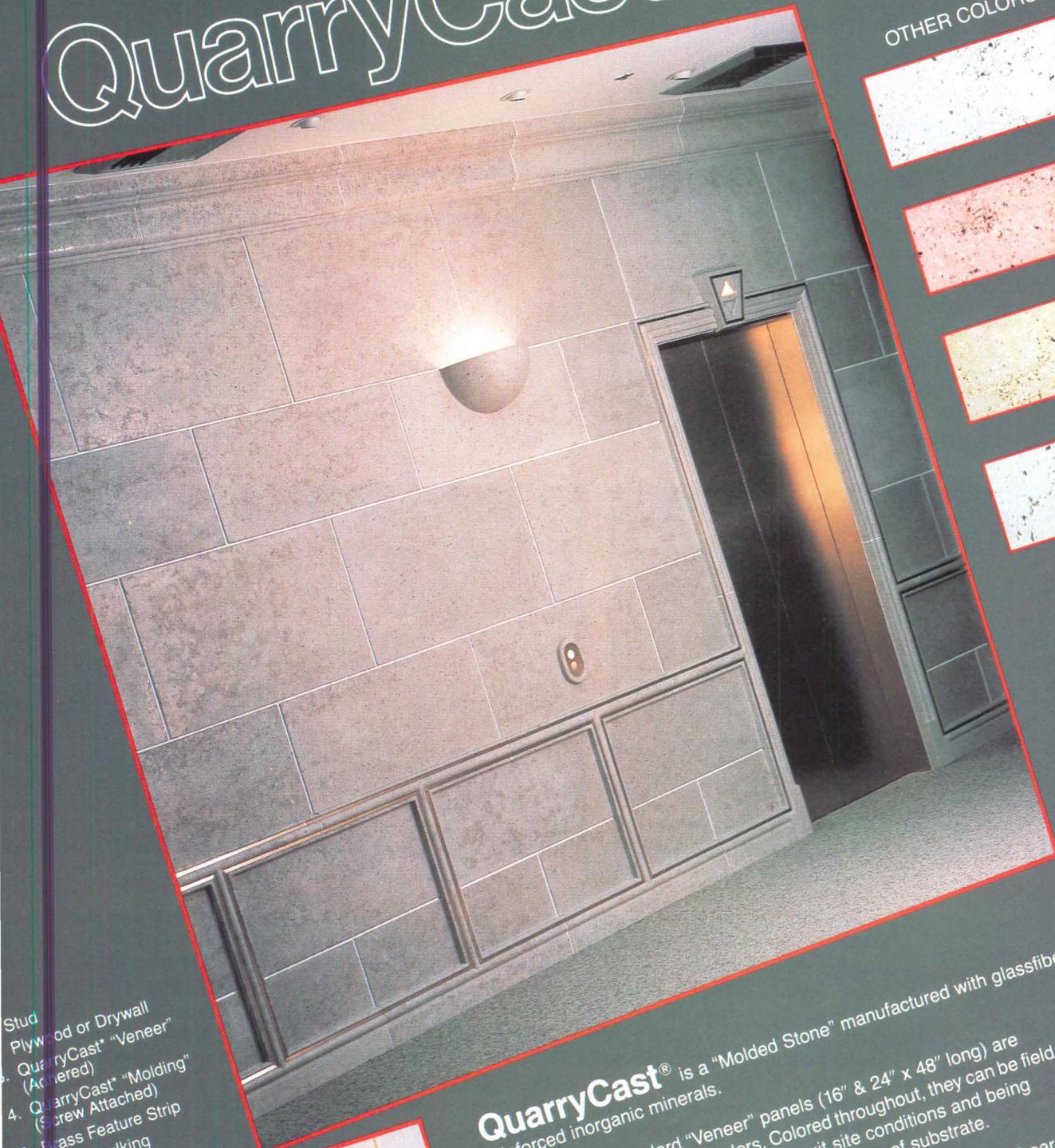
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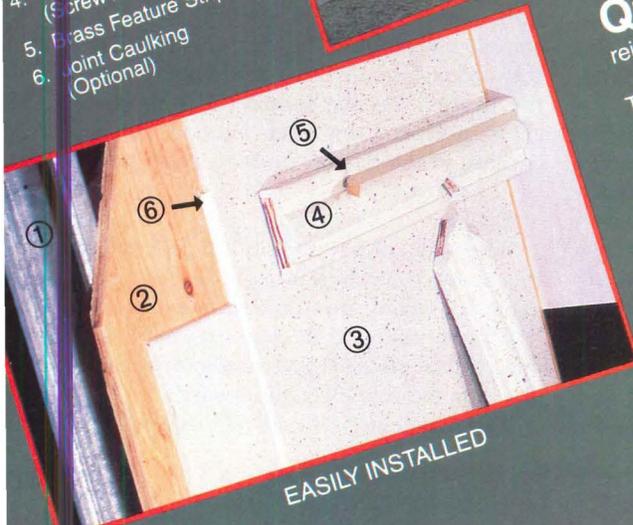
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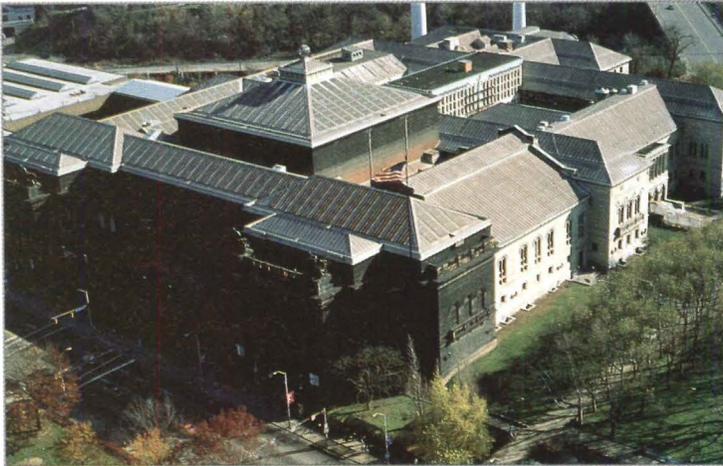
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Technics: Cleaning The Carnegie

Architect **John Dencler** of Williams Trebilcock Whitehead and consultant **Dr. Judith Selwyn** of

Preservation Technology Associates describe the first steps

in the care and restoration of a Pittsburgh landmark.



1



2

1 Aerial view of *The Carnegie*.

2 Cleaned west façade of the building that has been exposed to industrial pollution since 1895.

3 Library entrance partially cleaned. The facility was kept open and operational throughout the cleaning project. Public and staff were protected with temporary enclosures.

Cleaning masonry often produces such dramatic changes in the appearance of old buildings that many professionals – as well as the public at large – assume that restoring the original look is an end in itself. In fact, the aesthetic value of the cleaned building is really a bonus. The more important point is that the removal of the soil from the stone is in itself a preservation measure. The dirt-encrusted stone tends to hold water that contributes to continuing chemical change and damage from the freeze-thaw cycle. The cleaning also reveals physical damage such as spalling, cracking, and deteriorated mortar joints.

The Carnegie, one of Pittsburgh's great architectural landmarks, comprises a museum of art, a museum of natural history, a music hall, and a library. The Italian Renaissance sandstone structure designed by Longfellow, Alden and Harlow was originally completed in 1895, and shortly thereafter expanded – still in sandstone but in the Beaux-Arts style – to a building four times its original size. The expanded structure, covering more than five acres, was dedicated in 1907 and served until 1974, when a contemporary granite

and glass wing was added that now houses the Museum of Art.

The cleaning of the building is a project of The Carnegie's Second Century Fund. The cleaning is a first step in the restoration of the originally buff-colored sandstone façade, blackened and damaged by many years of exposure to Pittsburgh's heavily polluted industrial atmosphere. The goal for the selection of the cleaning procedure was to find the gentlest possible way to completely remove the dirt encrustation so that the tooled stone surfaces would not be damaged in the process. As the sandstone is so porous, the chemical-free water soak method was not used because of the danger of deep water penetration.

Testing

The initial task was to understand the nature of the masonry and how it might best be cleaned. An extensive testing program was developed to analyze the condition of the stone, try various cleaning procedures, and serve as a basis for recommendations for the actual cleaning work.

The Carnegie is faced in a tooled-finish buff



Photos: Robert F. Ruschak

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Technics

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3

sandstone from the Cleveland Quarries in Amherst, Ohio. As is typical of this stone in the Pittsburgh environment, it has weathered over the years to produce a generally dark gray to black overall color resulting from atmospheric particulate soiling. This soiling masks many stains, including those from rust and mastics.

A 24-foot-wide full height sample area was prepared for the review and approval of the owner and architect. Cleaning tests were performed using a variety of proprietary materials intended for the purpose of masonry cleaning. All of the cleaning materials were brush-applied to the walls with care to provide even and complete application. Dwell times varied, depending on the type of material; all dwell times were within the range recommended by the manufacturers.

Many of the test areas were cleaned by using a sequence of materials applied to the surfaces with pressurized water rinsing of one material prior to application of the next. In some instances, the wall was carefully pressure-rinsed or rewetted prior to the application of the chemical cleaning procedures. Water rinsing was accomplished using a

pump fitted with a 15-degree fan tip and set to a pressure of approximately 1000 psi at three to four gallons per minute, as measured by a gauge mounted on the machine. The pressure cleaning wand was held a minimum of 8 inches from the wall, with a few exceptions.

Cleaning Systems Tested

Two principal types of cleaners, representing distinct chemical types, were used singly or in combination. Although all of the materials used are mixtures of several active chemicals, as well as wetting agents and detergents, the cleaners tested can be divided into alkaline and acid types. The alkaline cleaners were used before the acid cleaners as part of a two-step cleaning process. Although silicate-based binder stones, such as sandstone, are frequently cleaned with a single-step, acid-type cleaning, in some cases, a two-step alkaline/acid process proves more effective and allows the use of much lower acid concentrations.

The first series was an initial set of tests to determine the effectiveness of both one- and two-step cleaning procedures. The areas that received



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4 Bronze sculptures protected with plastic sheet. Plastic was heat shrunk at the base to prevent tape from touching the metal.

5 Test sections of the building for the evaluation of various cleaning procedures.

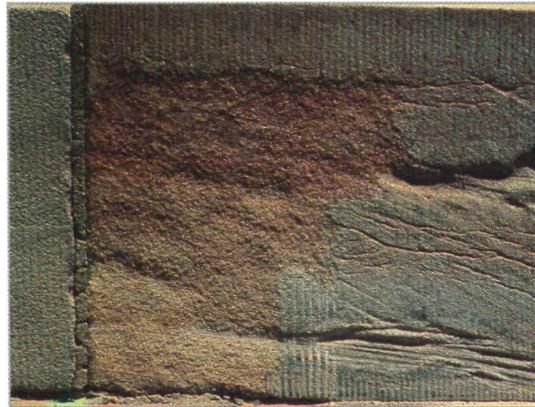
6 In a few prominent areas, the surface of the stone is retooled to remove deeply set stains and restore original texture.

7 Below the surface of the stone, an oxidized layer has been exposed. This "orange" color is natural to the stone and exists below the tooled surface. When exposed, it can be bleached with cleaning chemicals to restore it to the original surface color.

8 A pneumatic bush hammer removes the friable outer layer of this deteriorated stone. The eroded area is feathered for a gradual transition to the adjacent tooled textured face of sound stone.



5



7



6



8

the alkaline cleaner prior to the acid afterwash sometimes showed a yellow coloration. The alkalines react with the iron oxides in the stone to produce yellow products; this reaction is temporary and is reversed by materials contained in the second treatment. The second series of tests focused on refining the two-step alkaline/acid cleaning process.

The purpose of the third series was to refine the two cleaning systems that were judged most effective in prior testing. The additional tests allowed a better determination whether the systems would be universally successful on the building's sandstone. This system of testing indicated that an alkaline prewash and acid wash system is far superior to an acid wash system alone for cleaning the buff-colored sandstone.

Construction Documents

The entire building was photographed with a camera that produced a corrected image so that the façade surfaces could be reproduced on sheets as building elevations. The "photo-drawings" provided the bidders with an accurate scope of the project and would later serve as a basis for the detailed documentation of the repair and restoration phase of the project.

It was assumed that one application of the two-step process would satisfactorily clean the building. However, the specifications provided for a second application on an as-required basis in the base bid. The possible need for alternative cleaning procedures was anticipated because of variation in the weathering of the different sides of the building and variations in the sandstone itself. Unit prices were included in the specification for additional cleaning.

Cleaning Work Problems

In a few prominent areas of the building, some deeply set stains were removed by retooling the stone. The retooling, however, revealed an orange oxidized layer that could be returned to its original color by the application of full-strength acidic cleaning chemical.

On the north elevation in the areas that have received prolonged water saturation as a result of long term defects in the building's skin and drainage, a black encrustation on the stone was encountered. The initial chemical cleaning of these areas proved ineffective. Up to this point, which was about two-thirds through the project, the chemical procedure had worked satisfactorily. In keeping with the philosophy of using the gentlest possible



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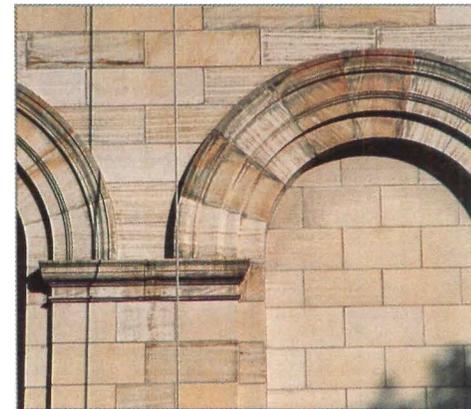
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cleaning techniques, no abrasive cleaning had been considered until this time. Both corncob and walnut shell water/grit processes were tested but did not yield satisfactory results. A Number 1 silica sand water/grit procedure was tested, and it was found that when very carefully controlled, the black encrustation could be removed without damaging the tooled surfaces. This water/grit cleaning step was performed on the affected areas by prequalified operators to ensure that the existing tooled surface of the stone was not damaged when removing the crust. After the black encrustation was removed, the chemical cleaning process was used on the affected areas.

Conclusion

Cleaning is only the first step in the exterior restoration program for The Carnegie, and it will help in identifying subsequent work needed, including repair of cracks and damage that may have internal causes (such as leaks through the roof edges, rain leaders, and flashings). Areas where spalling has occurred will be individually assessed and patched to match the existing stone.

Because of the highly porous nature of the sandstone and its susceptibility to spalling from freeze-thaw action, a clear water repellent will be

applied to reduce surface absorption water. A number of different products are currently being tested on cleaned areas of the stone, and a performance specification for long-term reduction of absorption rates is being written.

The years have clearly left their mark on The Carnegie, but fortunately, the atmosphere of Pittsburgh is now less damaging than it was for the building's first 50 years, when it was filled with particulates and rained sulphuric acid as a result of emissions from the mills. While the cleaning of The Carnegie may be the most visible aspect of the restoration, it is only a first step and one that extends far beyond a symbolic gesture.

John Dencler and **Judith E. Selwyn**

Acknowledgements

Architects for the restoration are Williams Trebilcock Whitehead, Pittsburgh: Paul Whitehead, principal in charge; John Dencler, project director; and Roy Penner, project manager. Preservation Technology Associates, Boston, Judith E. Selwyn, president, are preservation consultants. The contractor is Lori Preservation Systems, Greensburg, Pennsylvania.

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 9 For most areas of the building, the two-step chemical cleaning process was sufficient to remove the century of atmospheric pollutants that had accumulated.

10 On the north elevation in the areas that have received prolonged water saturation, a black encrustation on the stone was encountered. The chemical cleaning of these areas was ineffective.

11 An abrasive step was incorporated to remove the encrustation. This water/grit cleaning step was performed by prequalified operators to ensure that the surface of the stone was not damaged when removing the crust. After the black encrustation was removed, the chemical cleaning process continued.

12 Cleaned inscribed panel. Inscriptions were practically invisible on the soiled building.

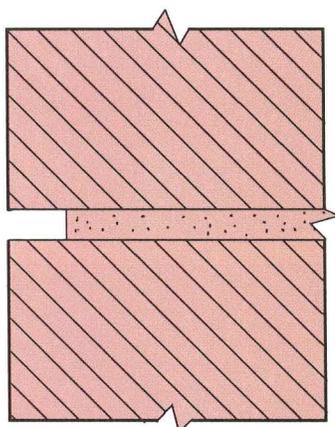
13 Wall after cleaning.

Photos: Robert P. Ruschak

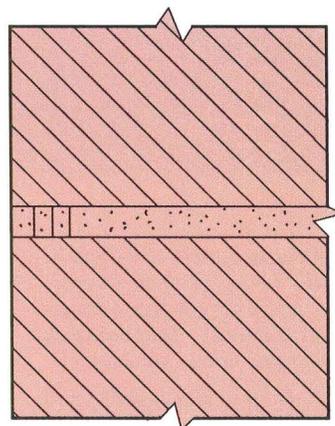
Technics: Repointing Mortar Joints

Restoration and rehabilitation architect **Theodore Babbitt** describes

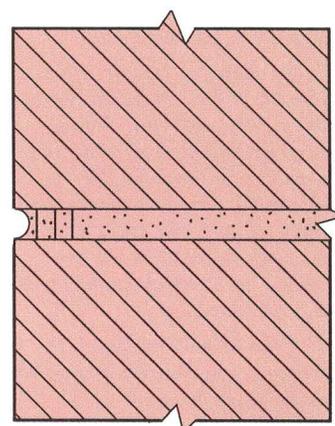
do's and don'ts of brick cleaning and tuck pointing.



Cut mortar back to a uniform depth.



Place tuck-pointing mortar in thin layers.



Tool joint to match original profile.

Do you have a client who's just bought an old masonry building? One of your first jobs should be to check the mortar joints for cracks and crumbling mortar. Although loose or missing mortar means repairs, it will cost a lot less to repair today than tomorrow. *Repointing*, *tuck-pointing*, and *pointing* are all terms for removing deteriorating mortar from joints and filling the space with fresh mortar. The process, which is usually complex, labor-intensive, and expensive, is undertaken to protect the building from further deterioration by preventing water from infiltrating the structure.

Mortar joints deteriorate for many reasons, including excess moisture penetration at joints, successive freeze-thaw cycles, exposure to severe weather conditions and pollution, uneven settlement of the foundation of the building, thermal movement of masonry, and unequal expansion/contraction of the face masonry with the backup.

Besides cracked or crumbling mortar, other signs of deterioration include cracked brick or stone, efflorescence, loose bricks, missing/clogged weep holes, plant growth, spalled bricks and exfoliation on stone, water stains, and water penetration into the building.

Hairline cracks in the mortar, where it has lost adhesion to the masonry, are an obvious and often early sign of trouble. When this happens, the joint may no longer be watertight, and once water gets in behind the mortar, the destructive freeze-thaw cycle begins. With each cycle the mortar deteriorates further and allows more water to come in. As more water enters, the problem is compounded until the mortar crumbles and ultimately falls out.

Identifying the Problem

In checking the building's mortar joints, it should be noted that the actual visible decay may not be the underlying problem. That is, the symptom may be crumbling mortar and loose bricks, but the cause may be faulty parapets or flashing or a leaky roof that is allowing water to enter the wall system. Unless the underlying cause is corrected before the repointing process is undertaken, the building's owner could be faced with another expensive repointing job in the near future.

A thorough inspection of the building is required to discover all underlying problems. It is best to start at the top of the building and work down. If there are leaks on the first floor of a

40-story structure, this exercise may be academic, but the roof, flashing, and parapet still need to be checked. Because the coping stones of parapets, for example, are subject to excessive thermal movement and suffer the most damage from weather, they need to be carefully inspected.

At the ground, rising capillary moisture may be the culprit. Repointing this area may not provide a long-term solution, however, if the moisture problem is not corrected. Extensive settling of the building could also contribute to cracks in both the mortar and masonry.

Alternatives to Repointing

Grouting the brick can sometimes substitute for a full-scale repointing job. In this procedure, brick is "masked" off, and a coating of grout is spread over the whole wall to fill all the hairline cracks. Once the procedure is complete, the mask is peeled from the wall. With glazed brick, the grouting may be applied without a mask, so long as the brick face is thoroughly washed at the end of the procedure. This process should be used only if the mortar is sound.

Sometimes there is a temptation to use a sealant in joints rather than repointing them. If the building was originally designed for mortar, it is necessary to stay with mortar. If water does get in behind the stone or brick, it will work its way out through a mortar joint. But if the joint is sealed, the water will be trapped and will work its way inward rather than outward.

When and How to Repoint Masonry

Repointing is necessary when

- mortar has eroded more than a quarter of an inch from the face of masonry;
- mortar has crumbled from the joint;
- hairline cracks are apparent in the mortar;
- the bond between the masonry (brick, stone or concrete unit) and the mortar is broken.

In undertaking a repointing project, the job must be planned carefully and logically. A prime consideration is the weather, because repointing should not be done under very cold or hot, dry conditions. Masonry surface temperatures should remain within the 40 to 95 F range. Weather presents a continual challenge: The day may be shirtsleeve temperature, but if the previous night was very cold, masonry, particularly on the north elevation, will take a long time to warm up. If the

temperatures are too extreme, it is preferable to close the job down until the weather becomes more moderate. Acceptable limits should be stated in the specifications.

Another consideration in planning a repointing project is the sequence of work. As mentioned earlier, all underlying causes of building deterioration and water penetration must be uncovered and corrected prior to the start of the repointing portion of the job. If water penetration is a problem, repointing should generally be done after all leaks are sealed. If the building to be cleaned is watertight, it might be better to repoint near the end of the job, after the building is cleaned. That way, existing mortar and new mortar can weather simultaneously.

To open the joint, we recommend cutting out the old mortar to a depth of $\frac{5}{8}$ inch. If the mortar is still unsound at that depth, the cut should be made deeper. Old mortar can be removed with a small mason's chisel or a handheld grinder. All loose mortar must be brushed or flushed from the joint. It is essential to avoid damaging the masonry when "raking" horizontal and vertical joints.

Matching Mortar

Matching existing mortar that has been exposed to the weather is almost impossible. The original mortar can be duplicated through carefully selecting lime, sand, or other aggregates. One way of doing this is to secure samples of the existing mortar that have not been exposed to the weather. These can be ground down and, with the help of a magnifying glass, the sand or other aggregate can be seen and color-matched. It does not take digging the sand out of the same gravel bank, but you can come very close to a color and texture match.

Trying to color-match old mortar that has been left in place can be terribly difficult. It is like trying to match paint that has been on the office wall for two years; this is virtually impossible because a certain amount of dirt, grime, and smoke has been picked up by the paint.

While matching the color and texture of the mortar is desirable, what is more important is that the mortar have a high lime content. Although high lime content mortar does not have the compressive strength of the usual Portland cement mortar, the lime adds a waterproofing quality and more flexibility to the joint. If high lime mortar is

used and water gets in through a hairline crack, it will mix with the lime and become almost self-sealing. Mortar that is harder than the stone or brick should never be used because it would allow no flexibility in the joint and could cause the brick or stone to spall at the edge if movement occurs.

Matching Brick

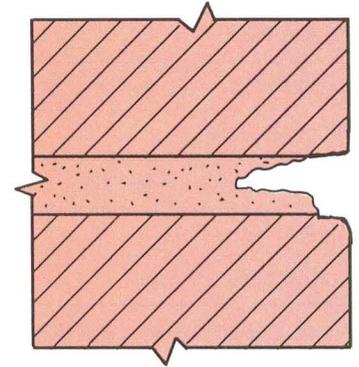
It is not usually difficult to match brick when it needs to be replaced. The biggest problem is to match glazed brick. Although replacement glazed brick may come out of the same factory as the original, it will not altogether match because the sheen on the original has faded.

Recycled bricks can be used, but great care must be taken in the selection process. In older buildings, two types of brick were often used. High-fired long-lasting bricks were used on the exterior face, while low-fired bricks were used in areas where they would not be subjected to harsh weather conditions. If low-fired bricks are used on the exterior face of a project, the brick could disintegrate within a few years and need to be replaced.

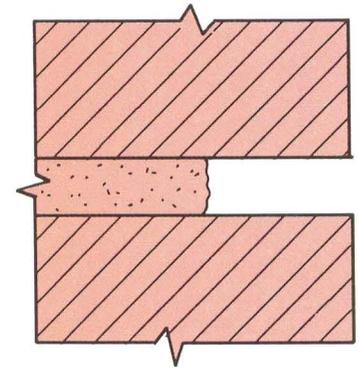
Filling the Joints

When undertaking a repointing project, the main concern is that all of the old, loose mortar has been cut out to the required depth and that the joint is free of debris and dust. This is critical. Before new mortar is applied, the joint needs to be blown out with an air hose, and the brick or stone needs to be wet so that it does not suck moisture out of the newly applied mortar.

Where existing mortar has been removed to a depth of greater than an inch, these deeper areas should be filled first, compacting the new mortar in several layers. The back of the entire joint should be filled successively by applying approximately $\frac{1}{4}$ inch of mortar, packing it well into the back corners. As soon as the mortar has reached thumb-print hardness, another $\frac{1}{4}$ inch layer of mortar may be applied. Several layers will be needed to fill the joint flush with the outer surface of the brick. It is important to allow each layer time to harden before the next layer is applied; most of the mortar shrinkage occurs during the hardening process, and layering thus minimizes overall shrinkage.



Incorrect: Mortar not cleaned out to a sufficient depth. Edges of brick damaged by tool or grinder. Creates wider joint.



Correct: Mortar cleaned out to a uniform depth - about 1" deep. Brick edges undamaged.

Material	Use	Estimated Life (years)
Brick	Walls	100 or more
Caulking	Sealer	3-10
Metal	Coping/ Flashing	20-40
Mortar	Walls	25 or more
Plastic	Flashing	25 or more
Finishes		
Paint	Waterproofing	3-5
Plaster	Waterproofing	3-5
Sealers	Dampproofing	1-5
Silicone	Dampproofing	1-5
Stucco	Waterproofing	3-5
Waxes	Waterproofing	1-5

Estimated Life Expectancy of Materials Exposed to Normal Weathering

Sources of Moisture Penetration ►	Previous Acid Cleaning	Previous Sandblasting	Plant Growth	Deteriorated Sealants/Caulks	Missing/Clogged Weepholes	Incompletely Filled Mortar Joints	Capillary Rise	Broken/Loose Units	Differential Movement	Missing Flashing
Effects of Moisture Penetration ▼										
Efflorescence	●		●	●	●	●	●	●	●	●
Deteriorated Mortar	●	●	●				●	●	●	
Spalled Units		●		●	●	●	●	●	●	●
Cracked Units				●	●	●	●	●	●	●
Rising Moisture						●	●	●	●	●
Corrosion of Back-up Materials	●			●	●	●	●	●	●	●
Mildew/Algae Growth	●			●	●	●	●	●	●	●
Damaged Interior Finishes	●			●	●	●	●	●	●	●

Possible Effects and Sources of Moisture Penetration

Tooling the Joint

When the final layer of mortar is thumb-print hard, the joint should be tooled to match the original joint on the building. Mortar joints are classified as either tooled or troweled. The tooled joint is preferred because it is watertight and more attractive. Proper timing of the tooling is important for uniform color and appearance. If tooled when too soft, the color will be lighter than expected. If it is tooled when too hard, there may be dark streaks called “tool burning,” and good closure of the mortar against the brick will not be achieved.

If the old bricks have worn, rounded edges, it is usually best to recess the final mortar slightly from the face of the bricks. This treatment will help avoid a joint visually wider than the actual joint width; it will also avoid creation of a large, thin, featheredge that is easily damaged, thus admitting water. The best type of tooling is a concave joint. In this type of joint, the tool forces mortar hard against the top and bottom of the brick. Obviously, there are many configurations, some of which are very difficult to match.

Cleaning

Sandblasting should never be used to clean brick, because it removes the outer surface, leaving it porous and susceptible to another cycle of deterioration. The best way to clean brick or stone is with water. A continuous small stream of water is run down the face of the wall for up to 24 hours, and then water applied under pressure is used to clean the wall. If there is a stain, something a little stronger may be used, but it is important not to use abrasives on the masonry.

In summary, the repointing of a masonry structure should never be undertaken until the root

cause of the deterioration is discovered and corrected. But once the underlying problems have been resolved, the building should be repointed as soon as possible. Although repointing is expensive, it is even more costly to delay it by allowing excess moisture penetration to cause further erosion of building systems.

The best defense against extensive masonry deterioration and the high costs of repointing is a comprehensive inspection and maintenance program designed to prevent problems before they occur. **Theodore F. Babbitt, AIA**

The author is director of architectural services for Hoffmann Architects, North Haven, Connecticut. He oversees masonry, curtain wall, and roof rehabilitation projects.

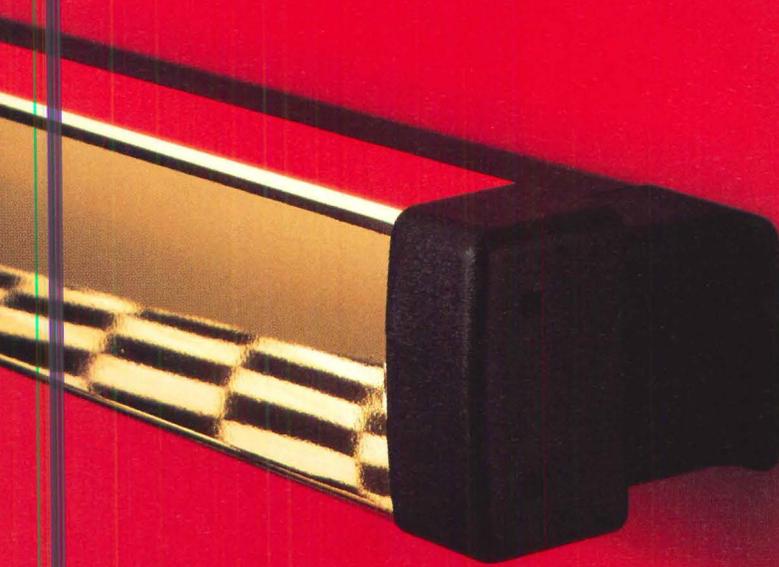
Recommended Reading

Repointing Mortar Joints in Historic Brick Buildings, Preservation Brief 2 (U.S. Government Printing Office order number: 024-005-00878-1); *Keeping it Clean: Removing Exterior Dirt, Paint, Stains, and Graffiti from Historic Masonry Buildings* (024-005-01035-1); *A Glossary of Historic Masonry Deterioration Problems and Preservation Treatments* (024-005-00870-5); *Moisture Problems in Historic Masonry Walls: Diagnosis and Treatment* (024-005-00872-1); National Park Service Preservation Assistance Division, U.S. Government Printing Office (202)783-3238.

“Tuckpointing,” *Concrete Technology Today*, volume 7, number 3, September 1986, PL863B, Portland Cement Association, Skokie, Illinois (708)966-6200, extension 356.

“Moisture Resistance of Brick Masonry: Maintenance,” number 7F, and “Cleaning Brick Masonry,” number 20, *Technical Notes on Brick Construction*, Brick Institute of America, Reston, Virginia. (703)620-0010

From Technical Notes on Brick Construction 7F, Brick Institute of America.



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Technics Topics

Moisture problem investigator **G. Gabriel Cole** describes the causes of

mildew growth in building interiors and how to suppress it.

Avoiding Mildew in Humid Climates

Buildings in humid areas of the world, such as the seaboard region of the southeastern United States and the Caribbean Islands, have long been plagued by the staining and odor known as mildew. This problem has become more apparent to architectural design-

from a runny nose to a violent bronchial attack.

It is impossible to completely avoid mildew in humid areas, but designers can reduce its outbreak by understanding the factors that influence its growth. Mildew can be controlled by selecting appropriate materials and design criteria for the exterior envelope and HVAC system.

dew is a fungus, it grows from spores, which frequently become airborne, spreading from one surface to another.

Moisture is necessary for mildew growth. Many designers take this to mean liquid water and feel that as long as they can keep liquid water out, they will prevent mildew. Unfortunately, this is not the case. The medical and biological communities have determined that many species of mildew will grow in an ambient humidity as low as 70 percent.

Material Choices

The first step in designing a structure for service in a humid climate is to select mildew-resistant materials. Various types of mildew can garner nourishment from almost any organic substrate, including plastics.

Wheat-based wallpaper paste, for example, is preferred by installers because of its superior workability. It is, however, an excellent food for mildew. Clay-based paste is a much better selection for a humid climate, because, although a few types of mildew do utilize this for food, it is more resistant to mildew growth.

It is not always possible, nor is it always sufficient, to select mildew-resistant materials. Therefore, it is sometimes necessary to protect materials with a mildew-resistant additive or treatment. These additives act as a poison to the mildew and prevent its growth as long as they remain in or on the organic material. Most manufacturers of commercial carpets and other interior finishes, for example, routinely treat their products with mildew-resistant

Tech Notes

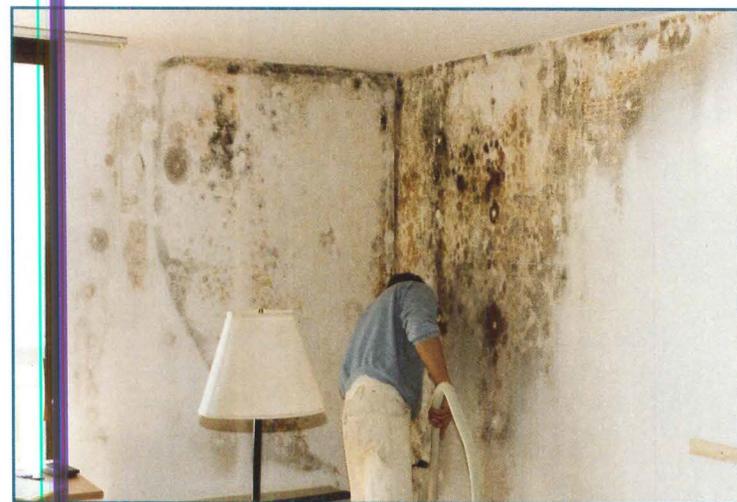
Sealants: Types, Application and Failure Analysis, a Sealant, Waterproofing and Restoration Institute seminar, will be held November 5-7 in San Francisco. Joint design, testing, and difficult substrates are on the program. SWRI, Kansas City (816) 561-8230, \$400.

Control of Cracking in Concrete Structures, 224R-89 (43 pp.) and Causes, Evaluation, and Repair of Cracks in Concrete Structures, 224.1R-89 (20 pp.) are new releases from the American Concrete Institute, Detroit (313) 532-2600, \$25.25 and \$11.95, respectively.

The Structural Insulated Panel Association has been formed to promote and provide information about structural panel products. SIPA will be managed by the Washington office of Steven Winter Associates (202) 408-5003.

Future/Build 2000: The Globalization of Intelligent Buildings conference will be held October 30-31 in New York under sponsorship of the Intelligent Buildings Foundation. IBI (202) 457-8477.

The Real World of Engineering contains 40 histories of litigation experienced by members of ASFE/The Association of Engineering Firms Practicing in the Geosciences. One concludes, "Architects do not always follow the consulting engineer's recommendations. Those who do not are high-risk clients." ASFE, Silver Spring, Md. (301) 565-2733, 108 pp., \$95.



The vinyl wall covering has been removed from this hotel room. Mildew is concentrated in the areas cooled by the air conditioning discharge vent - cold air exiting the air conditioner cools the wall covering, causing water vapor to migrate from within the wall system and wet the wheat-based paste.

ers in recent years, as traditional low-rise wood and masonry buildings have given way to modern structures utilizing lighter wall constructions and varied materials.

The effects of mildew are not only visual. With increasing consciousness about interior air quality and "sick building syndrome," designers are beginning to realize that mildew can also seriously affect occupants. Since mildew is a fungus, it can elicit allergic responses varying

What is Mildew?

People often refer to "mold and mildew" to describe all staining and odor in building. Mold and mildew are both colloquial names for many similar species of fungi. Mildew is not limited to buildings, as it can multiply and flourish anywhere there is sufficient moisture, nourishment, and protection. In humid areas, mildew occurs virtually everywhere, including such diverse places as soil and aviation fuel tanks. Since mil-

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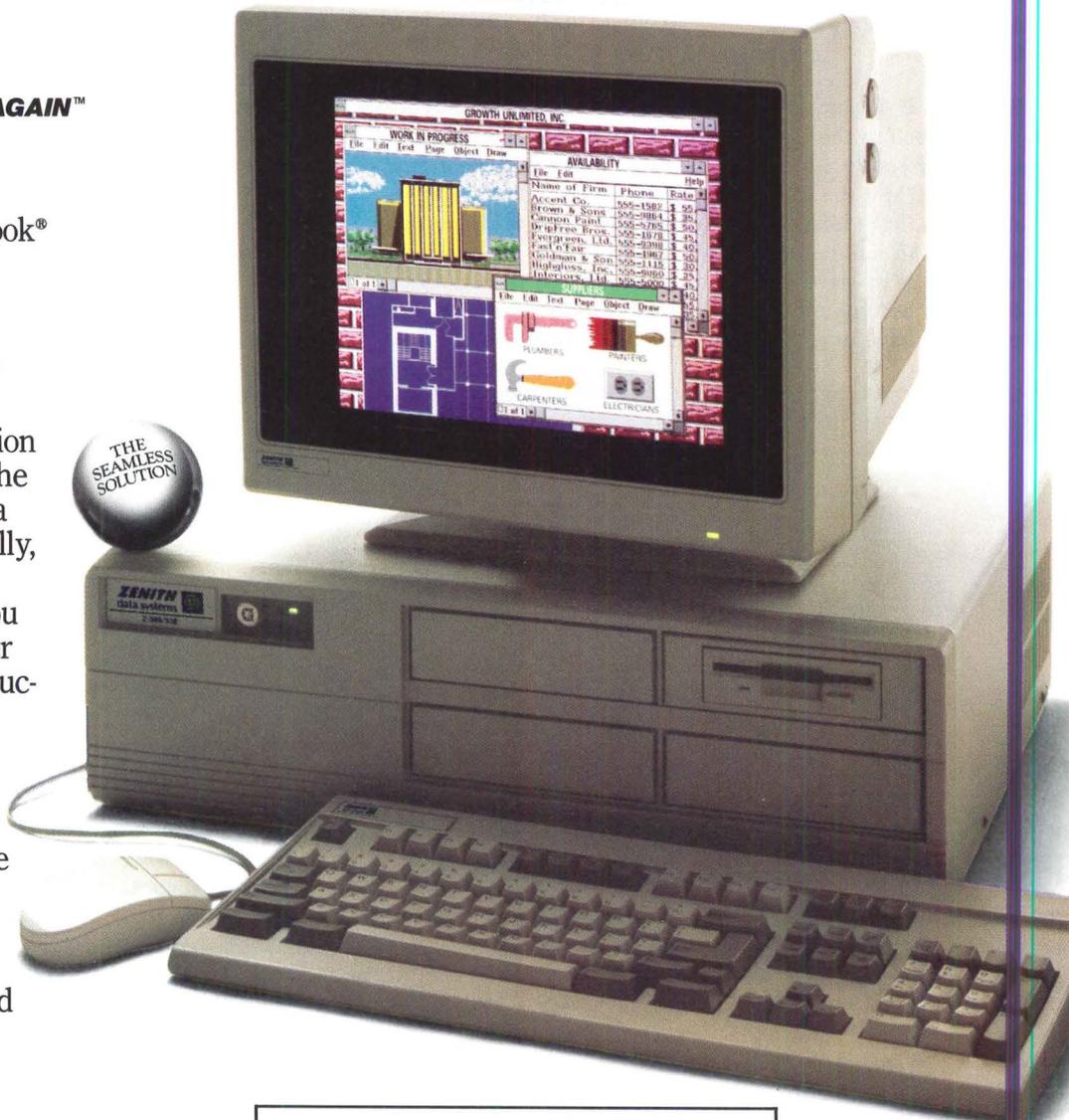
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substances, but some only do this for materials that are to be sold in humid areas. Use of mildew-resistant additives is not, however, a fail-safe way to prevent mildew formation.

Even the best mildew-resistant additives will deteriorate and allow mildew growth if they are constantly exposed to either liquid water or high relative humidity. Designers must, therefore, be careful to limit the level of moisture, both in the interior of the building, by controlling interior climate, and inside of the wall system, by controlling water and water vapor flow.

Interior Climate

The HVAC system is a significant, but often overlooked aspect of building design in humid climates. Also, some aspects of humid climate HVAC design run counter to industry practice in terms of both initial cost and energy conservation.

All air conditioning equipment has both a sensible and a latent cooling capacity. Sensible cooling is related to dry-bulb air temperature, and latent cooling is related to dew point temperature (which, with air temperature, determines relative humidity). Many HVAC units are designed with a specific capacity for sensible cooling, and the latent cooling capacity is incidental. This results in passive control of relative humidity, meaning that the system will cool the air until the present air temperature is met and the relative humidity will end up where it ends up. This works fine in moderate climates, but in humid areas it can result in high interior relative humidity that favors mildew growth on organic surfaces, including lamp shades.

To avoid this problem, designers must provide active control of relative humidity. This typically requires that all makeup air to the building be continuously conditioned (dehumidified). More often than not, reheat must be provided for the makeup air, since the exterior air needs to be cooled

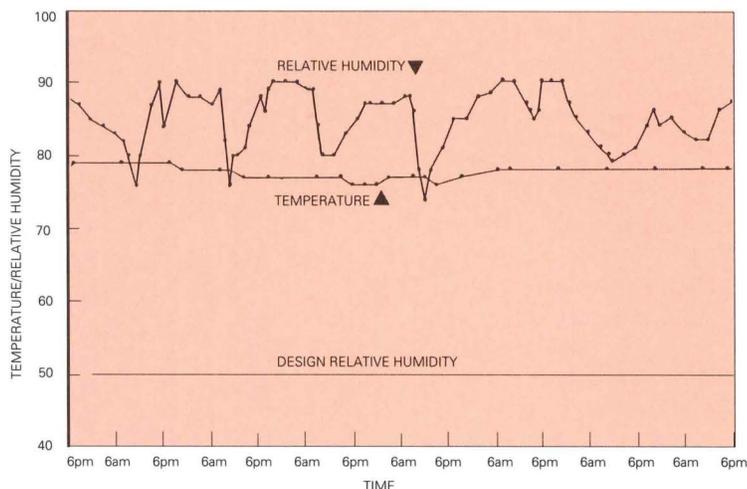
below the comfort range to sufficiently dry it out. Such HVAC systems can add significant capital cost, as well as increase operating expense.

Water Vapor Transmission

Air conditioning contributes to the accumulation of moisture via water vapor transmission through the building envelope. Water vapor migrates from warm, moist areas to cool, dry areas. In cooler northern regions, vapor retarders are incorporated on the interior side of the wall system by installing polyethylene behind the interior drywall, or by using foil-backed drywall. This prevents warm, moist interior air from migrating through the wall system to the cool, dry exterior during winter months. Vapor retarders of this configuration do not work in humid climates. In these areas, the predominant vapor flow is in the opposite direction and occurs during summer months when moisture migrates from the humid exterior to the dry interior. Although use of an interior vapor barrier might initially protect wall finishes from mold and mildew damage, it can cause condensation within the wall, which will deteriorate and corrode wall components.

Design practice would dictate that the vapor barrier be installed on the exterior face of the wall in humid areas, but this is more easily said than done. Many claddings, such as EIF systems, are relatively permeable. It is difficult to incorporate a vapor retarder into the exterior portion of the wall without risking damage from condensation during winter months when the vapor flow may reverse.

Selection of improper interior finishes can cause high moisture levels or condensation within the wall. Many commercial building owners, for example, mandate vinyl wall covering, but this creates a vapor barrier on the interior face of the wall. This barrier can trap moisture behind the wall covering, which leads to deteriora-



GUEST ROOM: TEMPERATURE AND RELATIVE HUMIDITY, STARTING 6:00 PM, 29 AUGUST 1989

This chart shows the temperature and relative humidity in an unoccupied guest room in a hotel in North Carolina. The bathroom has a continuously operating exhaust fan; makeup air is supplied by a through-wall air conditioning unit. The fan on this unit runs continuously, but the compressor cycles on and off. The operation of the compressor corresponds to the drops in relative humidity on this chart. The relative humidity is far above the design level, even though the air temperature is maintained within two degrees of it.

tion and mildew of the gypsum drywall. Use of breathable vinyl wall covering will significantly reduce this problem, without compromising the maintainability of the wall. Manufacturers render the vinyl breathable by punching thousands of tiny holes in each square foot to allow water vapor to pass through.

To ensure proper vapor transmission, designers should analyze the wall system for not only "design conditions," but also for average monthly conditions. This analysis should be done month by month to determine the yearly moisture cycle. The transmission of water vapor through wall systems should be balanced and capable of allowing vapor flow in both directions. Acceptance criteria should mandate that no condensation occur within the wall system for any condition and that the relative humidity at the insulation and interior layers be maintained below 70 percent.

Waterproofing Design

If water leaks into the wall system via rain penetration or faulty flashings, it will result in mildew of all organic surfaces which it wets, and the degree of mildew contamination will depend on how long the "wet"

environment is maintained.

The most problematic exteriors are surface-sealed systems that have no internal flashings to capture water and direct it back to the exterior. These systems are prone to mildew, because the water that penetrates broken surface seals can wet internal components of the wall.

These guidelines are only a start toward developing a coherent approach to addressing mildew as a design issue. It is important that designers of buildings in humid areas understand the subject and consider the factors that influence mildew growth during design development. **G. Gabriel Cole** ■

The author is a senior engineer with Simpson Gumpertz & Heger, Inc., Arlington, Massachusetts. He specializes in investigation and remediation of exterior wall problems.

Recommended Reading

"Thermal Insulation and Vapor Retarders—Applications," Chapter 21, *Fundamentals Handbook*, American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc., 1989, Atlanta.

Mould Allergy, Yousef Al-Doory, Ph.D., and Joanne F. Domson, M.D., Lea & Febiger, Philadelphia, 1984.

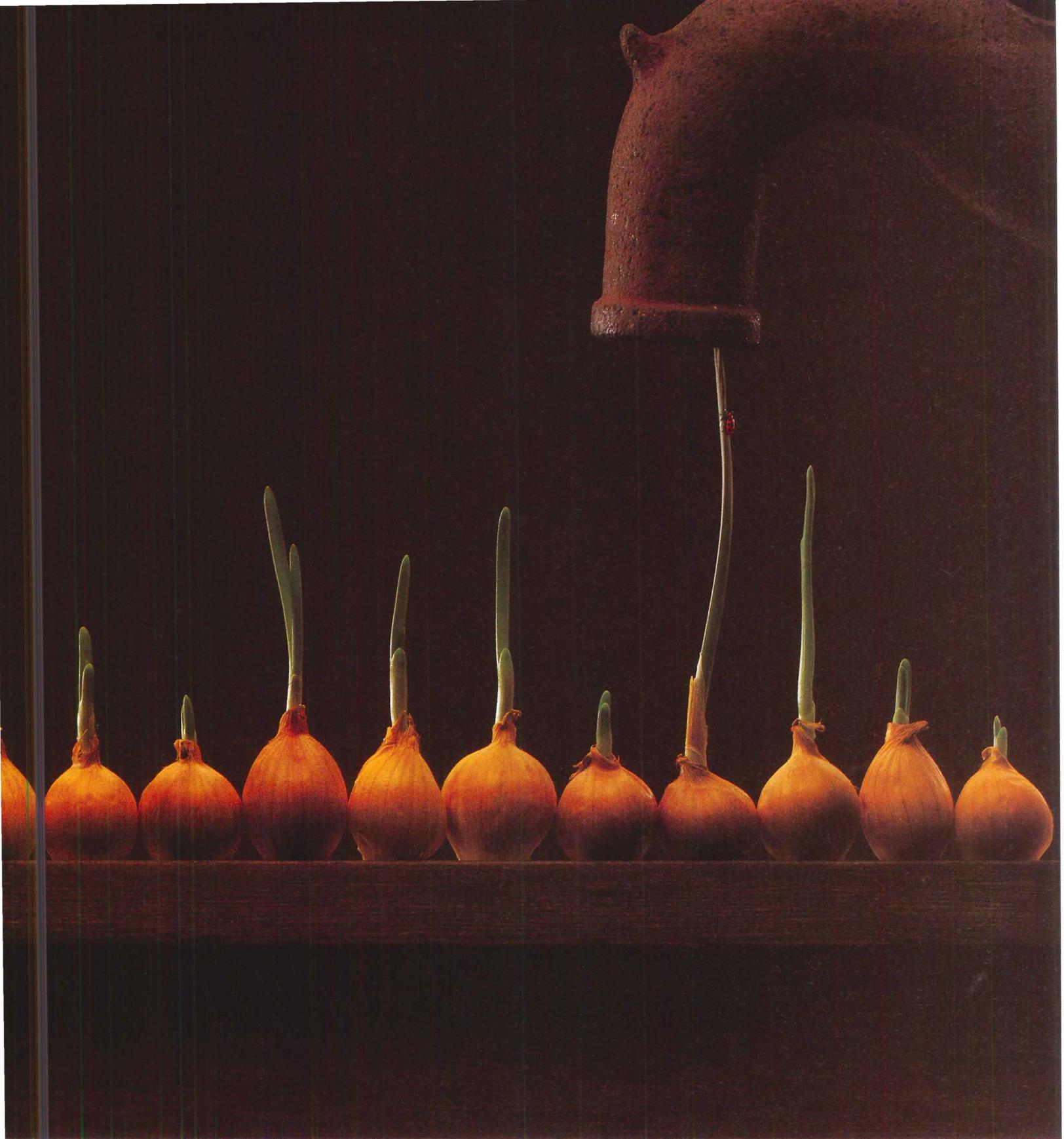


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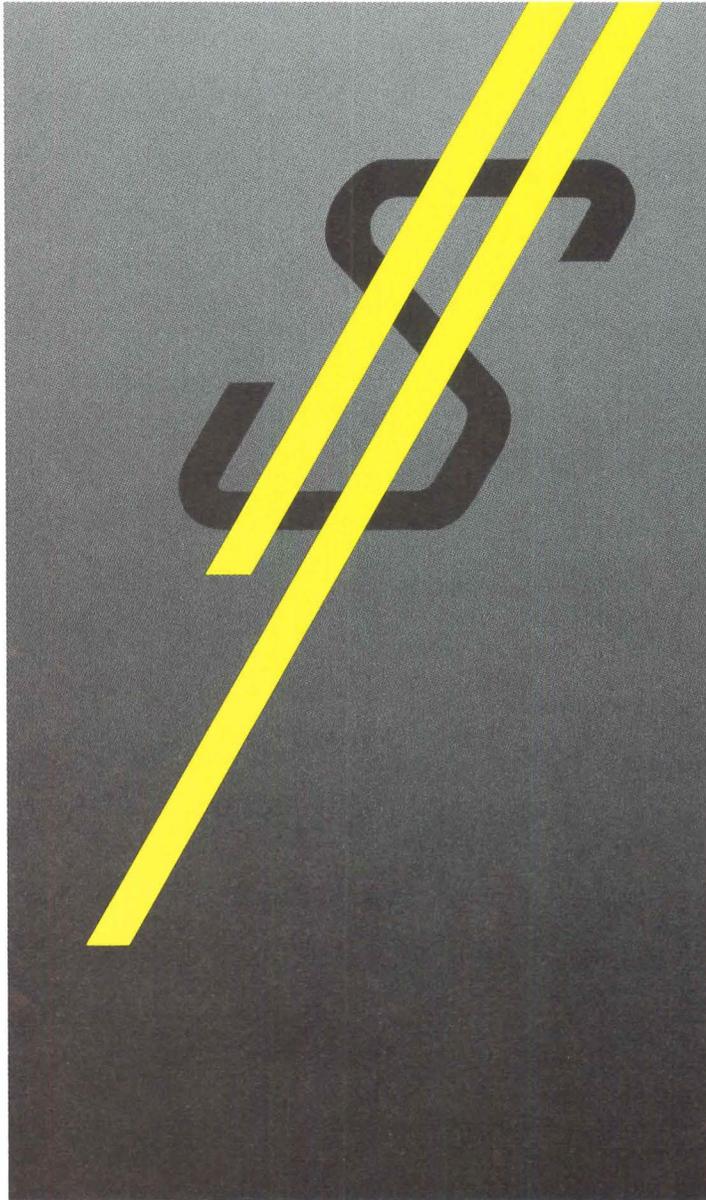
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Practice

Walter Rosenfeld argues that single-product selections

are rarely in the best interest of a project.

Specifications: Rules of the Game

Architects are particularly fond of designing and specifying around particular manufactured products that visually contribute to their buildings. Doing so seems to offer control and consistency in design and to simplify documentation. This tendency is entirely understandable and well-known to specifiers, manufacturers, and contractors. Unfortunately, it flies in the face of the realities of construction practice and economics, which have an entirely different and contrary basic competition among contenders to secure the work.

Whether designers like it or not, competition, not selection of favored products and suppliers, is the basic rule of the U.S. construction game. To win at that game, it's far better to understand, accept, and even exploit this rule than to fight it.

Public bidding laws are the most obvious embodiment of this principle, usually requiring mention of three products and three manufacturers or suppliers to encourage price competition. (To top it off, some statutes add that architects must also consider not-mentioned products that may be offered as "equal" to those specified.) But private work is not exempt from the principle either, though public bidding requirements may not apply directly.

It comes down to this: When you specify a single product, however desirable, appropriate, handsome, and proven it may be, you remove the supplier's incentive to compete, and thereby remove the only effective

control on product price.

Maybe that is acceptable in some instances, but it is often hard to convince the owner of it. Money always matters. And even if there appears to be no cost limit on all or part of the project, the rules of competition still apply and ought to be recognized for what they are: fundamental and pervasive. To produce the best (as well as the least costly) result, architectural design needs to include the admission that seldom, if ever, is the owner better off financially when the building is designed, detailed, and specified around noncompeting products and systems.

Exploiting the rule of competition begins in design development, where "thinking generic" should be the guide. Not getting tied down early-on to a specific product is the necessary precondition for later being able to specify three products or manufacturers in each case when the project manual is being prepared.

When detailing the windows, for example, draw the desired profile, but check to see that more than one manufacturer can furnish acceptable sections. Work with a manufacturer's representative if necessary, but make it clear that no exclusive rights to the contract are thereby being conferred. Manufacturers understand the realities of bidding and can accept your wanting the best product at the best price as being in the owner's interest.

Don't make the architectural success of your design totally dependent on one manufacturer's product. It may not work out the way you want it to.

Wholly without your consent or permission, often without your knowledge, manufacturers change product lines, decide not to bid a particular job, break with local suppliers, sell in excess of their production capacity, or go out of business. When they stay in business, it is by making as much money as possible on their products. There is no great harm in any of this as long as your project and client aren't victims of it.

Even if, for convenience, you use one manufacturer's product to detail part of the building, make it clear in the project manual that competition is expected and accepted. List three manufacturers in the specifications, even if you don't "have to." In so doing, you give the contractor some price leverage, and you protect everyone from suppliers' default, bankruptcy, sluggishness, and greed. But do the research to find the three acceptable products before bidding (or pricing) starts, not during bidding or after construction has begun.

Naming three manufacturers doesn't mean having to accept inferior, unaesthetic, or inappropriate products. The architect is still the judge in such matters. But it does mean that, while working within the existing system, and exploiting its advantages, the architect retains control of the final result, and the owner gets the desired building at the least cost. Isn't that what professional practice is all about? **Walter Rosenfeld** ■

The author is a consulting architect in Newton, Massachusetts.

[We would welcome the opinions of our readers on this subject.

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Practice Points

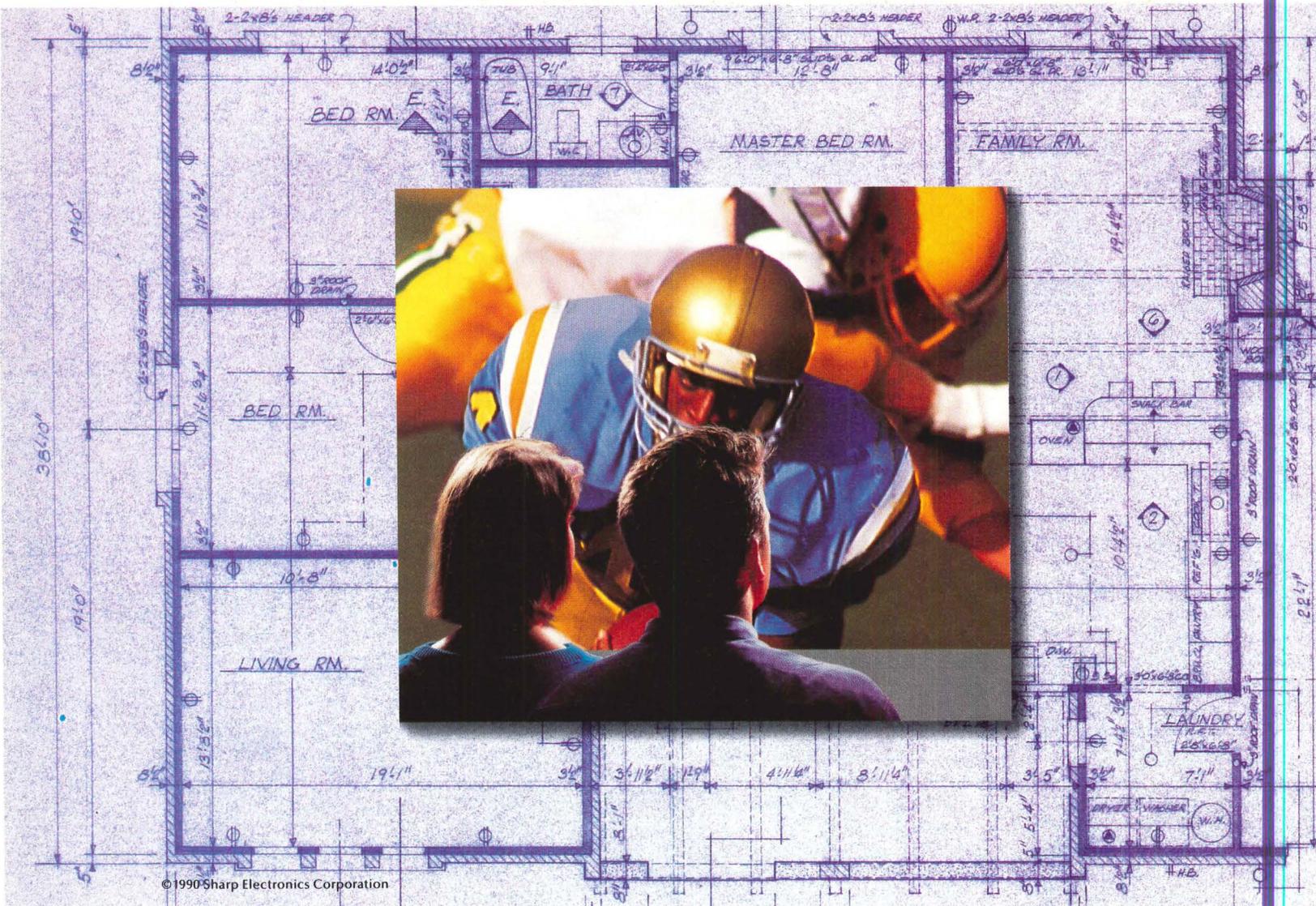
What can architects do to help house the homeless? The Boston Society of Architects Task Force to End Homelessness has recently published *Meeting the Challenge of Homelessness*, a guide for nonprofit developers that explains the development and funding process and provides a directory of technical assistance. Although the guidelines are specific to the Boston area, the book provides a model for similar efforts elsewhere. To order contact Payette Associates (617) 423-0070.

Total architectural industry billings increased by more than a third between 1986 and 1988, reaching an estimated \$10.1 billion in 1988. This figure from the *AIA Architecture Factbook* is from a survey of the 16,000 architectural design firms owned by AIA members. For more industry statistics contact the AIA's Office of Research & Planning at (202) 626-7517.

***Avoiding and Resolving Construction Claims* is a new book from the R.S. Means Company that illustrates how to manage the claims process by providing checklists, sample problems, and case histories. The book costs \$59.95; order from Means at (800) 448-8182.**

Many architectural firms are run by principals who were trained as designers rather than businessmen. *The Parkhill Report* is a new newsletter that addresses the concerns of A/E principals focusing on business issues. Call (313) 649-1211 for information.

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C. Jaye Berger recommends conduct and contractual language

that will help design professionals avoid environmental suits.

Law: Environmental Liability

Environmental liability is an expanding area of the law for many parties, including owners, landlords, and even real estate brokers and architects. Potentially hazardous substances number in the hundreds, although asbestos is one that is discussed quite a bit more than the others, such as hazardous fumes emitted from furniture or carpets.

Potential liability can arise from several distinct areas of a design professional's practice. One area is the actual design of the structure. If a building is designed to be "tight" and energy efficient, hazardous fumes and substances may not be able to escape from the building through ventilation and may cause health problems for the occupants. This is the "sick building syndrome."

There may also be potential liability problems when design professionals specify carpets, chairs, and desks that emit toxic fumes. A client may claim that the design professionals should have known there would be hazardous fumes and were negligent in specifying the particular item. In such cases the manufacturers would probably also be named as defendants in the lawsuit. If the heating, ventilating, and air conditioning systems are alleged to be inadequate for the space or to be not functioning properly, the design professionals will no doubt be drawn into a lawsuit, along with various consultants and the contractor.

Another area of potential claims involving design professionals may arise from their

failure to advise a client of the presence of hazardous substances. If an owner, for example, undertakes a renovation and does not know there is a hazardous substance and later finds out about it, he may claim that, if he had known about it prior to renovation, it would have been less expensive to eliminate. The design professionals might be sued for damages. This is a more remote possibility with asbestos, since many states and local municipalities now require asbestos inspections prior to issuing building permits.

If design professionals are retained to assist a client in determining the suitability or the condition of a building prior to purchase or renovation, obviously this would open them up to potential liability if problems later arise that were not revealed in the inspection.

Some design professionals issue opinions on the condition of buildings prior to conversion to co-operative apartment buildings or condominiums or for syndications. If investors rely on this opinion and it later proves to be inaccurate, there may be tremendous legal ramifications because of the number of people involved. If the design professional's inspection and resulting opinion is supposed to focus only on structural matters and will not touch on hazardous substances, it should be clearly stated as an exclusion from the report.

The new American Institute of Architect's contracts address some of these issues, but there are still some caveats. It should also be borne in mind that if design professionals do not

have a written contract, they will be more exposed to potential liability because their services have not been clearly delineated.

Section 9.8 of the AIA owner/architect agreement (B141), 1987 edition, makes it clear that the architect has no responsibility for hazardous materials, such as asbestos and PCBs. However, Section 10.1.2 of the A201, General Conditions, brings architects back into this issue by giving them a duty to render a final determination that the project area has been rendered harmless or that the PCB or asbestos threat is gone. Otherwise, the contractor and the owner must have a written agreement on this subject or the asbestos or PCB must have been rendered harmless. The owner may agree in section 10.1.4 of the General Conditions to indemnify the architects from any loss arising out of injuries to anyone employed in the performance of the work because asbestos or PCB has not been rendered harmless. But the architects are not a party to the general conditions of the owner/contractor agreement and still may be brought into a suit.

Also indemnification in the contracts applies to injuries suffered by people during the course of work or arising from the work. It does not necessarily apply to people who may inhabit the premises when the work is completed, who become ill well after the construction is finished or who are merely on the premises but not working there during construction hours. The indemnification is further limited to the extent

the injury is caused in whole or in part by the negligent acts or omissions of the owner. Although there have not been many environmental lawsuits involving design professionals thus far (see P/A, April 1990, p. 59), such suits will surely increase. Design professionals can do a lot to protect themselves by having written contracts for their services, having attorneys carefully review those contracts before signing, and avoiding being drawn into environmental issues by their conduct.

Design professionals, for example, should clearly state in their contracts that they have no responsibility for dealing with hazardous substances in any fashion. They should be able to stop work if hazardous substances are found and not be required to continue until they are abated. The client should be required to bring in the necessary consultants and contractors to handle the problem. Any delays caused by this should not be the legal responsibility of design professionals. Design professionals should make this clear before any contracts are signed with the general contractor. And finally, during the course of the project, any questions related to this area should be discussed with legal counsel.

C. Jaye Berger

The author is an attorney in New York City specializing in legal issues involving building construction, environmental, and real estate matters, ranging from contracts to litigation.

“Carolyn’s been w

Gordon Chong is the owner of Gordon H. Chong + Associates, a 45-person architectural practice located in San Francisco, California. He is president of the San Francisco Chapter of the AIA for 1991, and has been a director of the California Council of the AIA and president of Asian American Architects and Engineers.



Carolyn Isseks is vice president of Dealey, Renton & Associates, an independent insurance agency based in Oakland, California. She has represented DPIC's unique insurance program of education and loss prevention services for over thirteen years. She is also a member of the Professional Liability Agents Network (PLAN), a nationwide group that specializes in serving the risk management needs of design professionals.



Carolyn and Gordon met in 1977. “I was new and he was new,” she says, “and we sort of grew together.” Perhaps all clients don’t take advantage of Carolyn’s brand of thorough service, but Gordon does. “He’s cautious,” she says. “He tends to call us before he starts a project or gets into certain areas. He might say, ‘We’re thinking about a joint venture with another firm. How will that impact our insurance?’ Then our contract analyst and I work together to give him some advice on short and long-term consequences.”

On the account management side, Carolyn doesn’t just wait for the renewal quote to come in. She’s on the phone with DPIC — dealing with the underwriters, pointing out her clients’ strengths, negotiating for the terms she needs. And she’s persuasive.

“I expect a high quality of service for him — I want to be as professional as Gordon is. He

emphasizes high standards in serving his clients. And we feel the same way.” Carolyn also works hard to keep Gordon H. Chong + Associates informed about the many premium reduction opportunities available from the DPIC program.

Carolyn has a master’s degree in education and began her working life as a teacher. The teacher in her still comes out when she’s conducting a workshop panel on liability issues for one of the Bay Area AIA chapters or a brownbag seminar for one of her clients. “I love to see the light bulb go on in someone’s head,” she says. “The ‘oh, now I know what you’re talking about.’ I think that’s what I like about this job: I’m always teaching and getting close to people who, I think, appreciate what I have to tell them. They all have the same interests — they want to better their practice in a professional way.”

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Today our projects and contracts are bigger and more complex. Now we use Carolyn's agency, Dealey Renton, a lot for contract review and assistance. Our prospective client may be saying 'it's an unalterable contract — if you don't sign it in the next two days we're going to go to the next architect on the list.' But the agency can call our client's contract manager and say 'it's not in the best interests of either party to do this.' Then the feedback isn't coming from me, which would be totally self-serving. It's coming from Dealey Renton's contract review specialists who know industry standards. They've made little word changes which I think have made the difference, not only in terms of the insurability of the contract, but also from a business perspective.

For us the whole idea of service and quality assurance is key. It's been the focus of our firm since we started and it's very characteristic of what our clients demand. Our firm has never had a claim in its 15-year life. I believe that this is in part due to the preventative approaches to professional liability which DPIC and Dealey Renton advocate. ”

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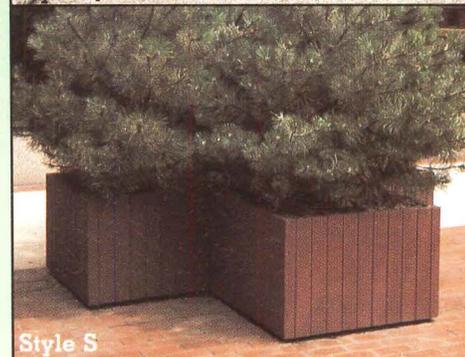
Style QPB



Style QS



Style CPB



Style S



Custom



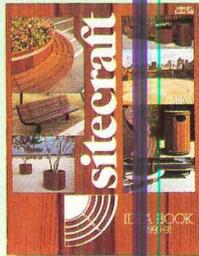
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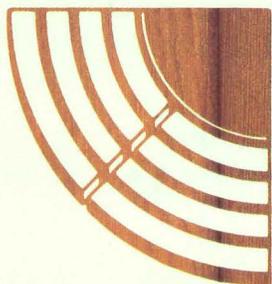
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Circle No. 334 on Reader Service Card

Reader Poll: Alternatives to Traditional Practice

When polled about the attractions that could draw them from conventional practice, P/A readers revealed

two complementary concerns — financial stability and personal fulfillment.

Architects have little difficulty envisioning themselves in nontraditional careers: Nearly half of the respondents to our poll have seriously considered leaving their profession for another. Only 23 percent said strongly that they were content with their work and had no desire to pursue alternative roles. The balance of those polled find the income and personal rewards of other fields attractive. With the assumption that our respondents are not exceptional in their job mobility or their self-scrutiny, the poll shows that alternative occupations aren't far from the minds of architects.

Are these signs of a swelling wave of disaffection in the profession? Perhaps not. One might expect to find a high level of curiosity about alternative roles in a generalist's field like architecture. Moreover, practice induces architects to explore a variety of options — every design effort is a search for new solutions. In this light, it's not surprising to find that 93 percent of this poll's respondents cited a career stage at which they had considered alternatives to conventional practice.

The Respondents (Figs. 1-6)
Of the 1000 respondents included in this poll (conducted in June 1990), more than a third said their work extends beyond the architectural office. This generous representation of people outside of conventional practice, in an architecture magazine's poll, is itself proof of the field's broad relevance. Forty percent of the respondents were in their thirties, setting the median age at 37; each other age group accounted for an average of 20 percent of the replies. Eighty two percent of the women polled were under 40, reflecting their increased enrollment in architecture schools over the past two decades. But overall, the number of responses by men exceeded those by women at a rate of almost 6 to 1.

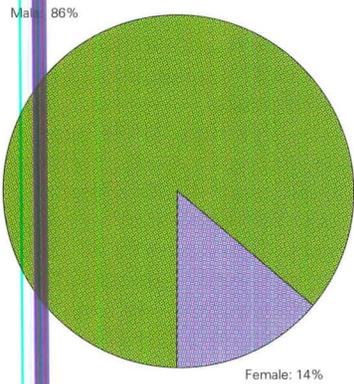
Although two thirds of the replies came from people working in conventional architectural practices, "other design firms" engaged 13 percent of the respondents, and 23 percent were in alternative careers. In the latter two categories,

women outnumber men, but conventional practice remains the choice among proportionately more men (67 percent) than women (55 percent).

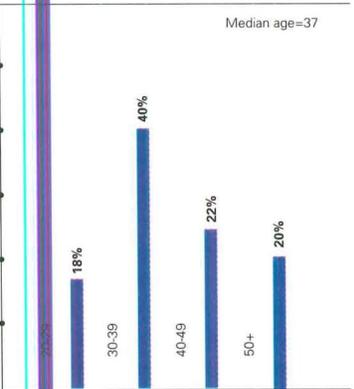
More than 90 percent of those polled have a professional architecture degree. In all but the B Arch. category, the percentage of women equals or exceeds that of men, and women were nearly twice as likely as men to have a bachelor's degree in another discipline. Perhaps women's more diversified education helps account for their quantitative lead in alternative careers.

Fifty percent of those who replied to the poll listed themselves as owners or principals, although women are more likely to be staff architects, draftpersons, or designers than managers or principals. In alternative careers, however, positions are distributed more evenly between the sexes; they offer broader avenues for independence and advancement — an attraction for those stymied by the structure of a conventional office.

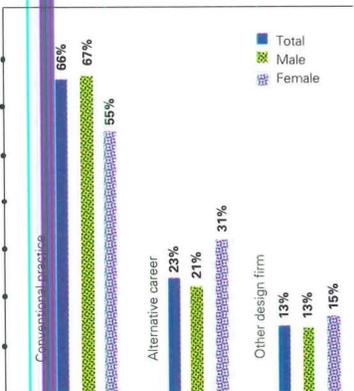
1 Composition of respondents



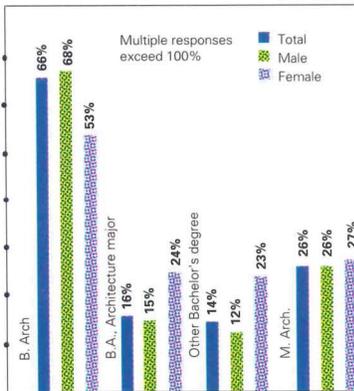
2 Age levels



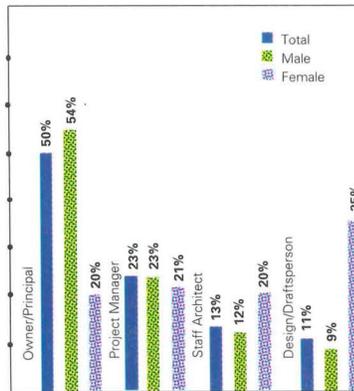
3 Current position



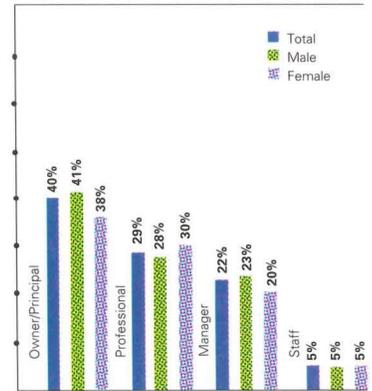
4 Degrees earned



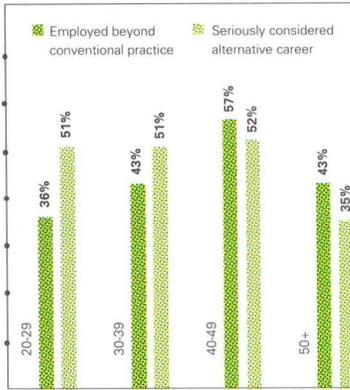
5 Role in firm; conventional architectural practice



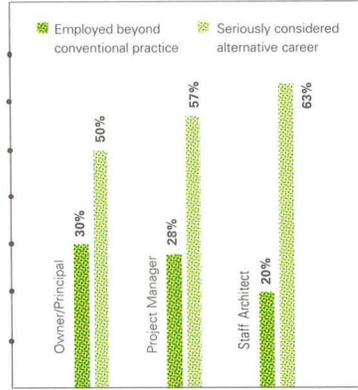
6 Role in firm; alternative career



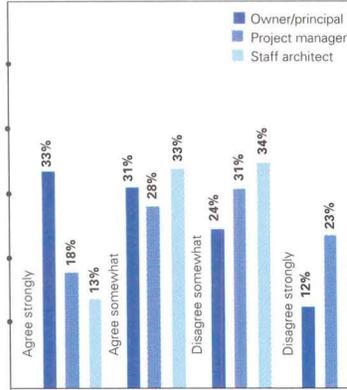
7 Ages of architects who have undertaken or have considered alternate employment



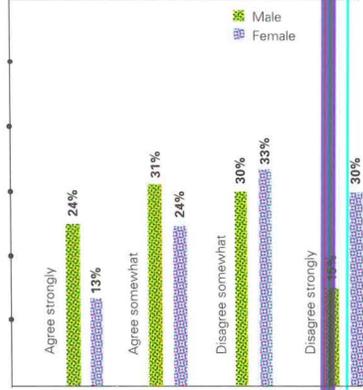
8 Positions of architects who have undertaken or have considered alternate employment



9 I am content with my career, and would not desire to pursue other roles



10 I am content with my career, and would not desire to pursue other roles - men's & women's responses



Considering Alternative Careers (Figs. 7-12)

While about half of all architects under the age of 50 have considered leaving conventional practice for nontraditional employment, those in their 40s are most likely to have actually worked outside an architect's office since graduation. Among respondents in their 20s (whose lifestyles are presumably more flexible) only 36 percent said they have worked elsewhere. Apparently most people turn to other jobs after they've accrued some experience in the field or perhaps those in their 40s entered a profession more flexible than it is today. Only 35 percent of those over age 50 considered nontraditional work — by far the lowest level among the age levels in the poll. This response and others show that the older the practitioner, the happier he or she (more likely a male) is with the architectural profession. One might infer that our senior colleagues entered the field with different expectations from younger ar-

chitects. It is also likely that those younger respondents with doubts about architecture leave the profession by their 40s, leaving a corps of committed and content architects.

The less responsibility people have in an architectural office, the more likely it is that they will have considered alternative occupations. When staff architects were asked if they'd considered leaving the profession, 63 percent said yes. However, they don't seem to be an exceptionally disgruntled lot: Their dissatisfaction was only 6 percent higher than that of project managers, whose position offers more pay and responsibility. When women architects replied to the statement "I am content with my current career and would not desire to pursue other alternative roles," they were more negative (33 percent agreed, 63 percent did not) than all staff architects (46 percent agreed; 54 percent disagreed with the same question).

Even though architecture is a generalist's profession, most respondents considered their education to be rather focused. Only 15 percent agreed strongly (and 32 percent disagreed strongly) that architectural school is a good introduction to nontraditional alternatives. While only 6 percent felt strongly that architectural practice exposes young professionals to alternatives, responses to this question were less negative — only 25 percent disagreed strongly.

Pursuing Alternative Careers (Fig. 13)

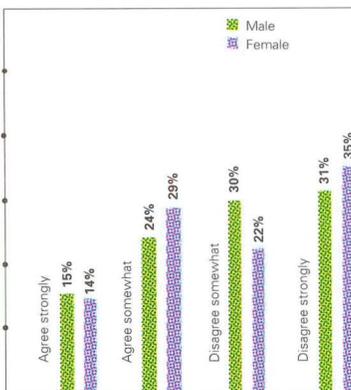
Our poll suggests that men are more likely to become interested in alternative careers after they've become acclimated to conventional practice. They report their lowest levels of interest in outside work during internship (13 percent) and preparation for registration exams (3 percent). However, women are significantly more interested than men in alternatives, as students and during

their first five years in an architectural firm. This pattern is probably a consequence of the more diverse educational backgrounds typical of women. Practically one quarter of the poll's female respondents and only 13 percent of the male respondents ranked internship as the stage when they were most interested in other careers. Conversely, 29 percent of the men replied that their interest in alternatives was strongest after they'd been in practice for a decade. Their level of interest in other careers increases steadily over the course of their careers.

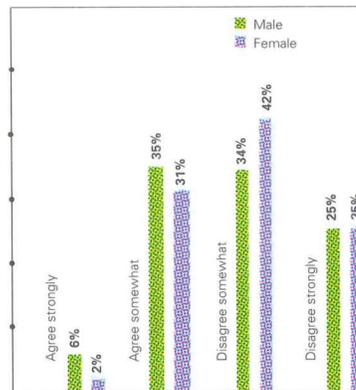
Architecture's Disincentives (Figs. 14, 15)

About two thirds of all the respondents said that the hopes of a higher salary were the leading reason people with architectural degrees pursue alternative roles. Less quantifiable issues — the measure of control over one's work, opportunities for advancement, and personal satisfaction — were

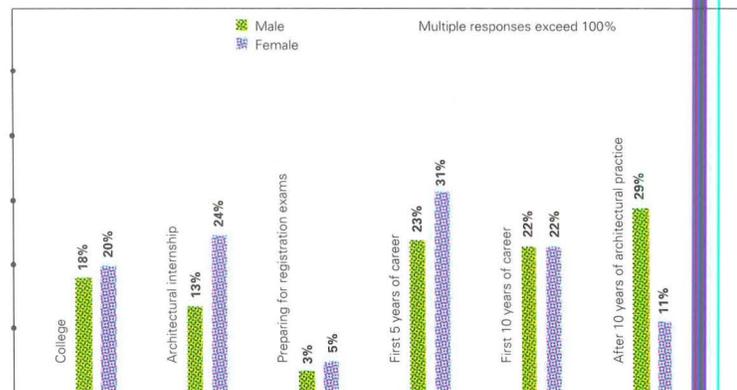
11 Architectural education provides a good introduction to roles beyond traditional practice



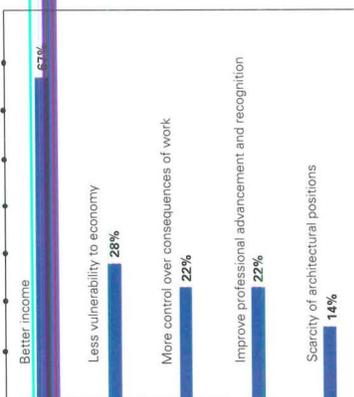
12 Architectural practice exposes young professionals to non-traditional roles



13 When have you been most interested in exploring alternative roles?



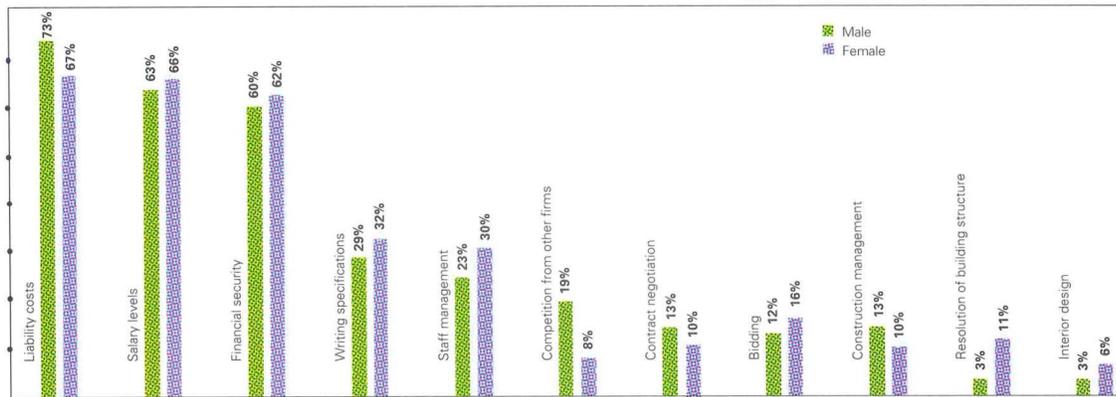
14 What are the primary factors that lead architectural graduates to pursue alternative roles?



each a concern for 22 percent of the respondents. Apparently, those in alternative roles felt that their careers in conventional practice had been progressing too slowly: 27 percent of this group, as opposed to 21 percent of those in conventional practice, believed that people leave architecture to improve their professional advancement and recognition.

The poll asked readers to list the least appealing aspects of architectural work. Liability costs were the first concern among 72 percent of all the respondents, followed by salary levels (63 percent), and financial security (60 percent). Fiscal shortcomings caused far more dissatisfaction than specification writing (30 percent) or issues of management (24 percent) and competition from other firms, which was of greater concern to men (19 percent) than women (8 percent). This last gap may reflect the disparities in the office positions of men and women. While resolving building structure ranked low on the

15 Which aspects of architecture are the least appealing, and could induce an exit to another career?



list of dislikes for both sexes, 11 percent of the women, as opposed to 3 percent of the men mentioned it. However, one ought not infer from these figures that women prefer interior design; they were twice as likely as men (6 percent vs. 3 percent) to find this work unappealing. Perhaps women are wary of being assigned to a limited or stereotyped role in an architectural practice.

Choosing Alternative Roles (Fig. 16)

While most respondents seemed discontent about the profession's remuneration, they ranked teaching (44 percent) and other design fields (40 percent) at the top of their list of desirable alternatives. Because neither area holds a sure promise of greater wealth, we can infer that the freedom to think and create independently remains an important goal long after architects finish school. However, real estate, which can offer more money (and, some would say, more impact) than

architectural practice, also attracted 40 percent of the respondents. Nonarchitectural businesses (32 percent) and the construction industry (32 percent) were the next alternatives of choice. These latter statistics reflect architects' frequent complaints about their lack of clout relative to developers and contractors.

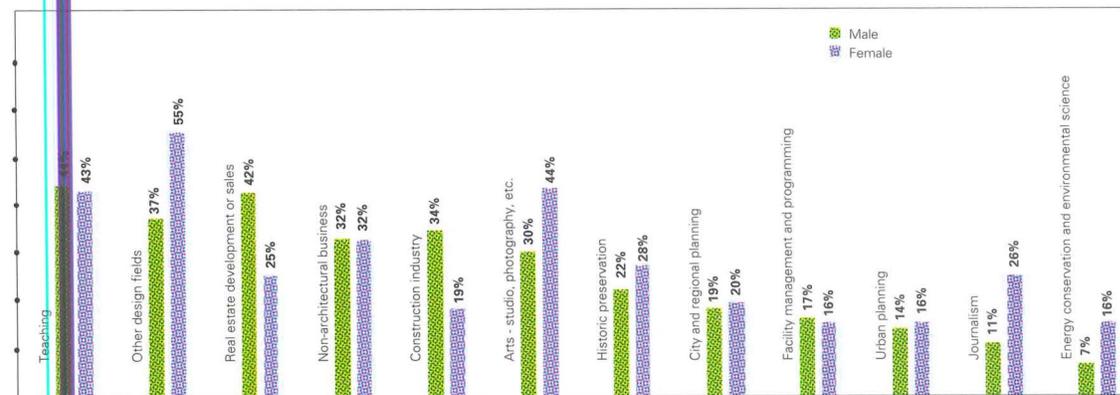
The more creative and independent alternative roles attracted a disproportionate number of women: 55 percent to design, 44 percent to studio arts, and 26 percent to journalism, which attracted only 11 percent of the male respondents. Historic preservation draws a slightly higher margin of women (28 percent) than men (22 percent), and energy conservation and environmental science appeal to more than twice as many women as men (26 percent vs. 7 percent). Architects' lofty visions of planning and rehabilitating our cities seem less vivid today: City and regional planning interested only 19 percent of our

respondents, and only 14 percent were likely to investigate urban planning.

Today, we find two distinctly different alternative routes for architects: creative ventures, whose rewards are personal, and businesses that offer potentially greater profits, but fewer design opportunities than architectural practice. It would be inaccurate to surmise from this poll that architecture is losing its talent to other occupations. On the other hand, the results suggest that architecture's synthesis of creative freedom and professional stature is actually a fragile combination of two contrasting realms. Today, a sizable number of architects realize that there are alternative ways to achieve those goals.

Philip Arcidi

16 Which alternative roles would you seriously consider?





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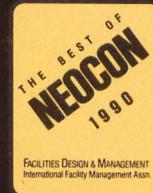
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A civic center by Perkins & Will (below)

and a profile of Disney as a prolific client

are highlights of this month's design features.

.....
Design

Feature: Orland Park Civic

Center **66**

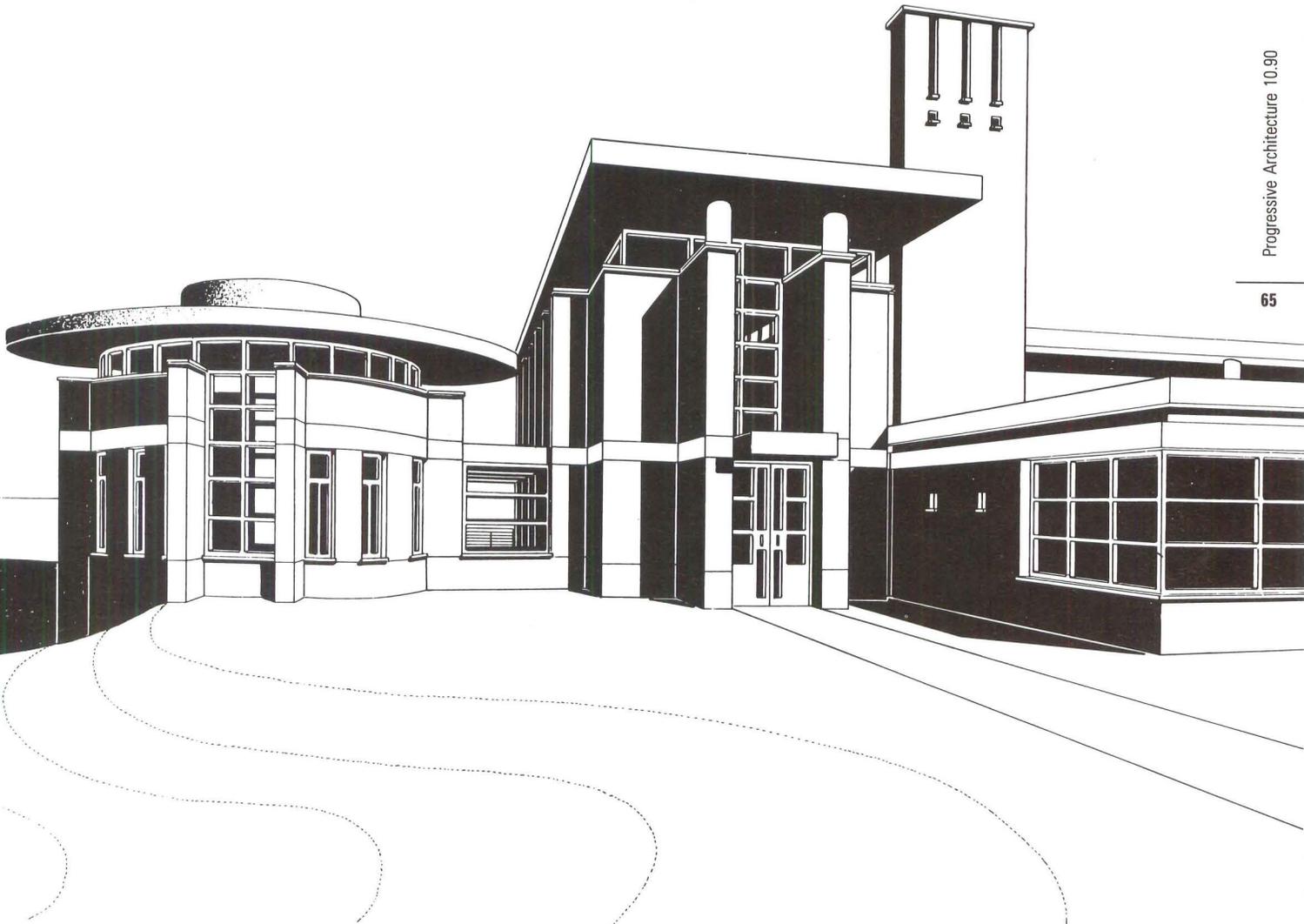
Selected Detail **77**

Client Profile: Disney **78**

Portfolio: Two Factories **96**

Perspectives **100**

Books **105**
.....



The Place of Government

Ralph Johnson of Perkins & Will raises questions about public life and urban order

in this new governmental center for a Chicago suburb.

What role should government play in our lives? And what, if anything, does architecture have to say about that? Such questions are asked and at least partly answered in this new village center in Orland Park, Illinois, by Perkins & Will, with Ralph Johnson as the design principal.

The conservative idea that government is best when interfering least with the making and spending of money, finds its physical expression in the village center's site. The complex of three buildings is situated behind a commercial strip and across the street from a large regional mall, which is the real center of town. An inconspicuous road along the strip gives access to the new buildings, which are obscured from view by some single-story stores. The site is a logical place for such a facility, given its location next to an existing police station, the playing fields of a nearby school, and the woods of a nature preserve. But that siting also sends a message, whether intentional or not, that this is a community in which private consumption takes precedence over public life.

A very different message, however, emerges from the architecture itself. The function, form, and arrangement of these buildings all point to a more positive and supportive role for government, which is seen not as a threat, but as a force for the public good. For that reason, among others, they deserve a careful analysis.

The Site

Consider the site for just a moment longer. Although Johnson and his team at Perkins & Will had no involvement in the initial site selection, they have tried to improve upon the subordinate position forced upon this public complex. They have proposed a second-phase site plan calling for the demolition of the stores that obscure the buildings from the commercial strip, the widening of the entry road, and the construction of flanking retail and office buildings that defer to the village center. Their goal, says Johnson, was "to create a perceivable center in a highly disordered suburban environment."

The government of Orland Park has yet to act on the proposal – or even to show much interest in it. But that one move would dramatically alter the relationship of the town's public and private sector. By opening the village center to the street and by creating a strong cross axis to the mall, this proposal would help draw people into the complex.

Attracting people to a public facility is one thing, however. Offering them a real alternative to what they might find in the private sector is quite another, and it is here that so many government centers in the past have failed. Since World War II, the favored model for public buildings has been corporate architecture, often taking the form of a bland box or a brutalist sculpture.

Governmental architecture has been most successful when it has found its own identity and image separate from that of the private sector. Such is the case with Johnson's work at Orland Park. His highly articulated buildings present a real contrast to the decorated or not-so-decorated boxes all around them. And his arrangement of the various public buildings into a kind of campus around a large man-made pond stands in direct contrast to the stand-alone object buildings along the adjacent strip. This is contextualism rightly considered, recognizing that a seat of government should differ from its surroundings.

That difference is conceptual as well as visual. Johnson's site plan, for example, offers an alternate geometry to the curvilinear layouts of the typical suburban development. The three buildings around the water stand in a strictly orthogonal relationship, providing, says Johnson, "an intentional contrast to the lack of spatial clarity found along the commercial strip." The intent, adds Johnson, was to recall "the organization and types of spaces found in traditional smaller American towns . . . using architectural order as a way of addressing suburban growth." The site plan also makes manifest the underlying geometry of boundary lines and utility infrastructure that support the romantic landscape of the suburb. Orland Park's village center not only runs counter to the existing order, but reveals aspects of it that are unseen, suppressed.

The Functions

Most suburbs in this country sorely lack not just physical density, but a density of use. The clustering of diverse public functions in this one complex, based on a previously commissioned master plan, is thus unusual and enlightened. The most prominent building is the village hall, which houses the government offices and board room. Adjacent to it is a civic center, containing exhibition space and meeting rooms. An auditorium is planned to occupy a site across the quadrangle from the village



1
The village hall has a semicircular back end that overlooks and is reflected in the water of a man-made pond (2). The board room occupies the center of that face and is marked by angled roof planes, large glass areas, and a central balcony. The focal point of the whole complex is the clock tower (1), which houses elevator equipment and marks the entry to the board room.





3

hall, and outdoor performances can be staged on the waterfront amphitheater. On the opposite bank a recreation building contains a senior center and daycare center as well as a gymnasium, an indoor track, locker facilities, offices, and meeting rooms.

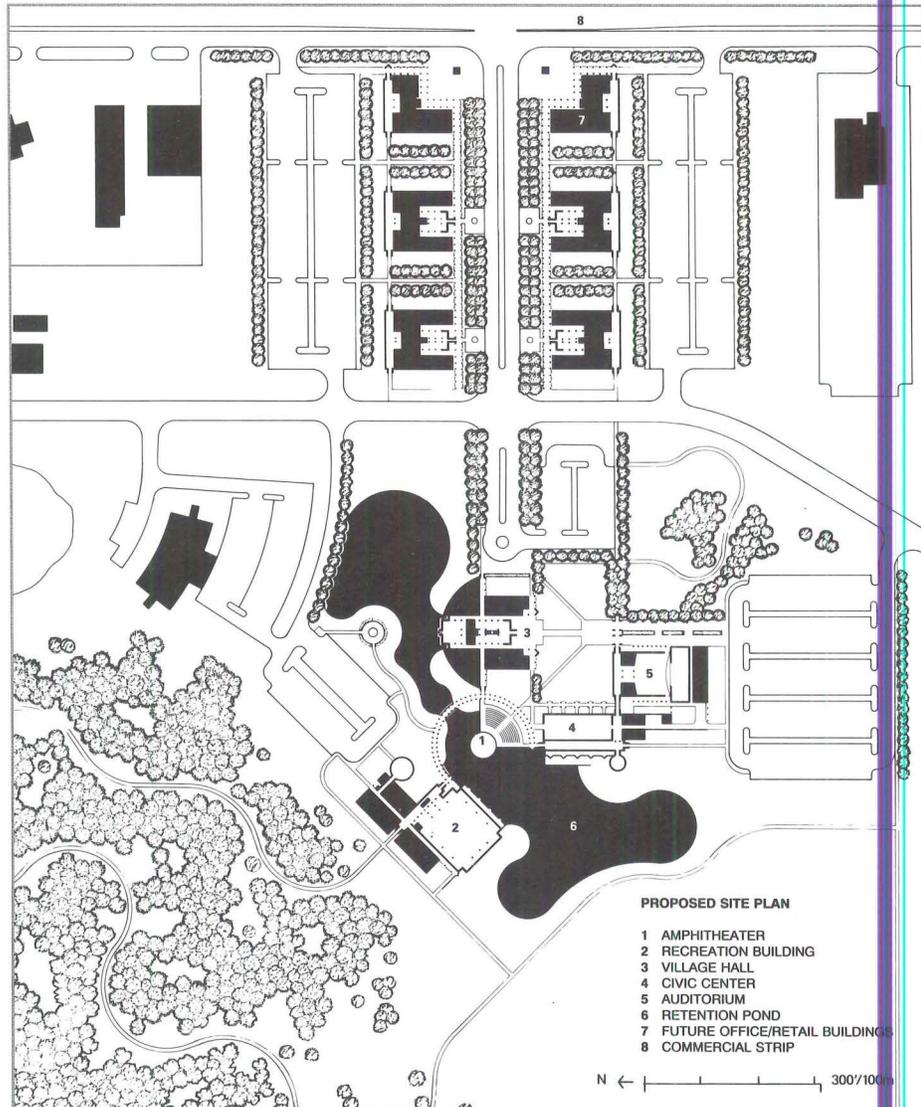
All of these functions are made more accessible through the scale and massing of the buildings. There is a grand, double-story entrance in each structure, for example, but they are not imposing or off-putting. The entries are visually open and light-filled, and the flanking walls of brick, banded to define various vertical relationships, lower the apparent height of the buildings.

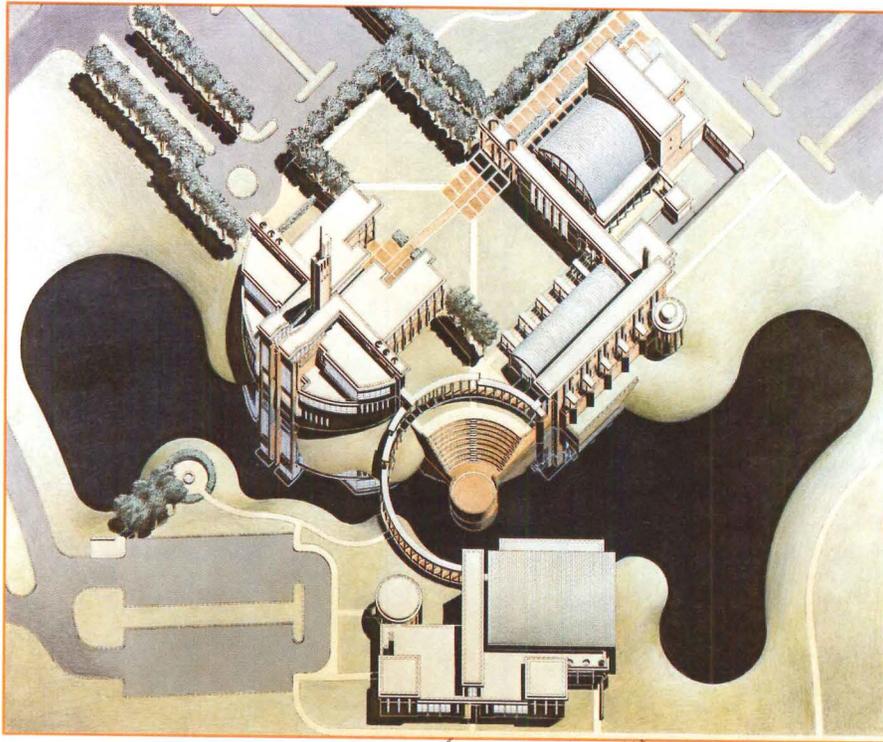
Inside, clear circulation routes also ease accessibility. The village hall has a central double-height lobby from which the various government departments and the board room are entered. In the civic center, a two-story spine along one side serves as the main circulation path and a kind of filter between the meeting rooms and lakeside balconies. And, in the recreation building, the split-level lobby opens up to the gymnasium on the lower floor and to community rooms on the upper.

Aiding the legibility of the complex is the hierarchy of forms used to house various functions. For example, spaces that accommodate large numbers of people – the multipurpose hall, the gymnasium – are identifiable by their vaulted roofs. In a similar way, the lobbies are identified by their tall columns, the meeting rooms by their circular pavilions, and the board room by its angled roof.

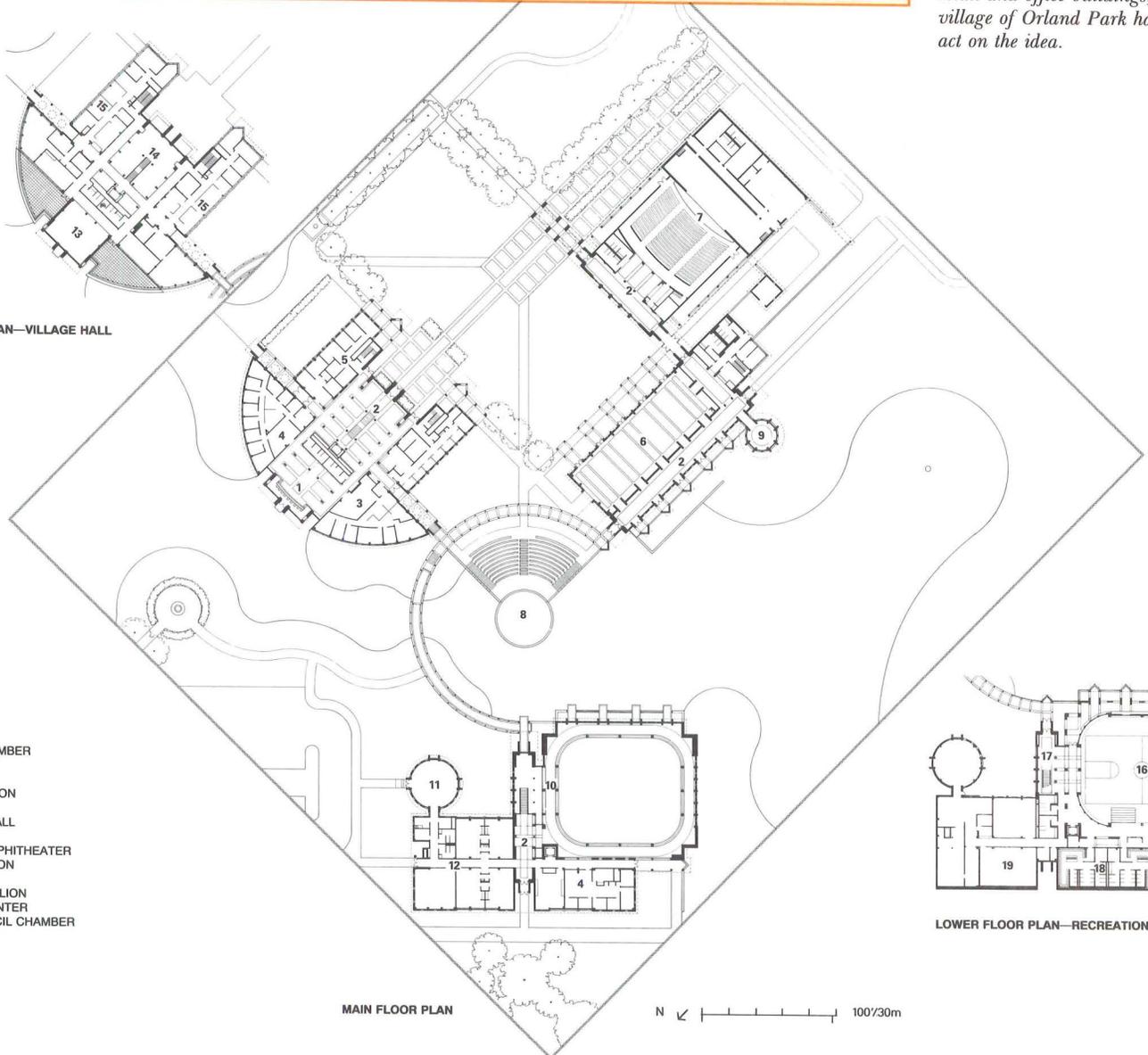
If there is a functional problem in these buildings, it is the quality of the interior finishes. This village center cost surprisingly little, particularly given the richness of the exterior forms and materials. But the interiors, especially the lobbies, tend toward the spartan: painted gypsum walls

(continued on page 72)





The three buildings of the village center are grouped around a retention pond that collects runoff from a large area (3). The village hall and civic center form two sides of a quadrangle, whose third side will eventually be defined by a theater. An amphitheater projects into the pond, and a curved, covered walkway connects it to the recreation building on the opposite bank. Functions are identified by different forms: Assembly spaces have bowed roofs; meeting rooms occupy circular pavilions; lobbies are all columnar halls. The site plan shows the orthogonal geometry of the buildings and spaces overlaying the irregular form of the lake. The spatial definition of the complex contrasts with the object buildings along the nearby commercial strip. The architects have proposed connecting the village center to the strip with a widened entry road flanked by retail and office buildings, but the village of *Orland Park* has yet to act on the idea.



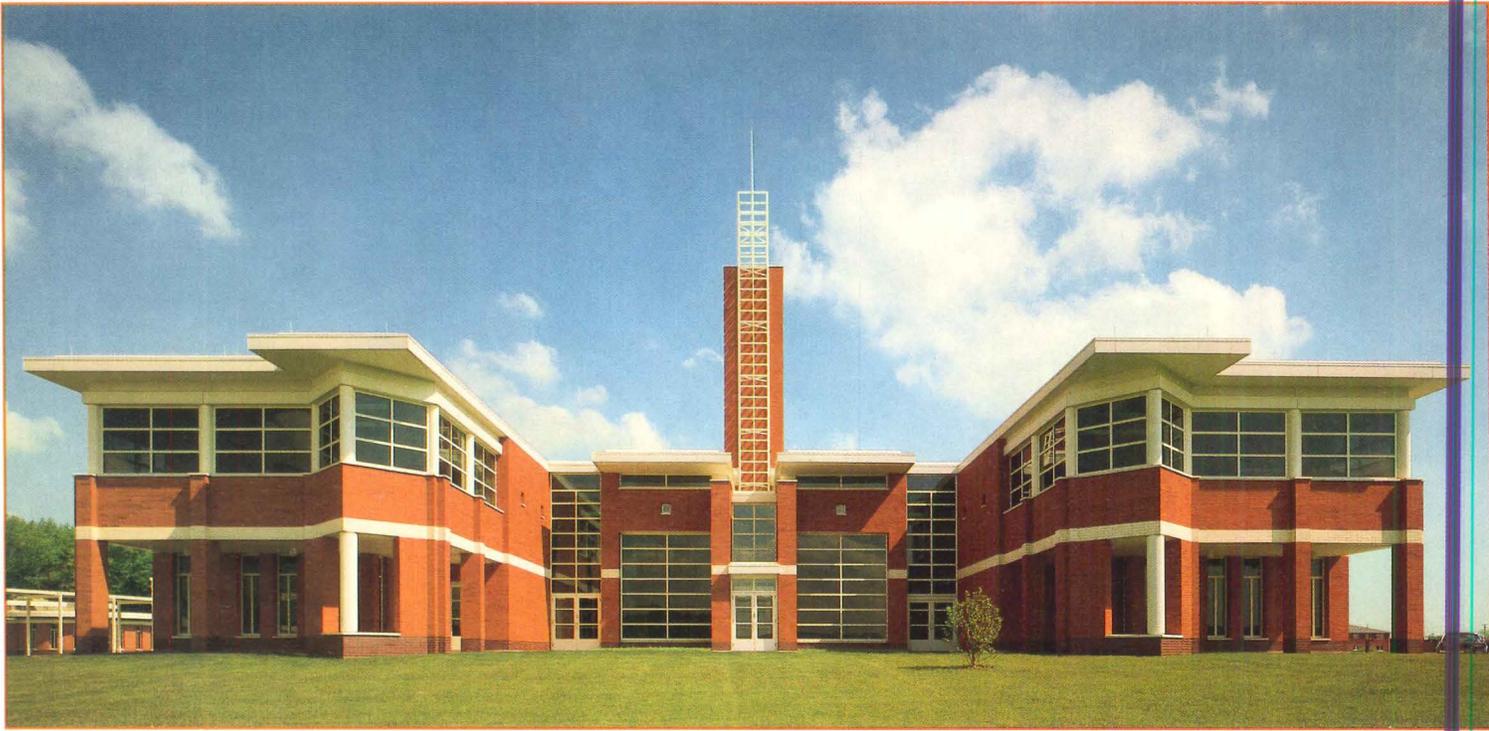
UPPER FLOOR PLAN—VILLAGE HALL

MAIN FLOOR PLAN

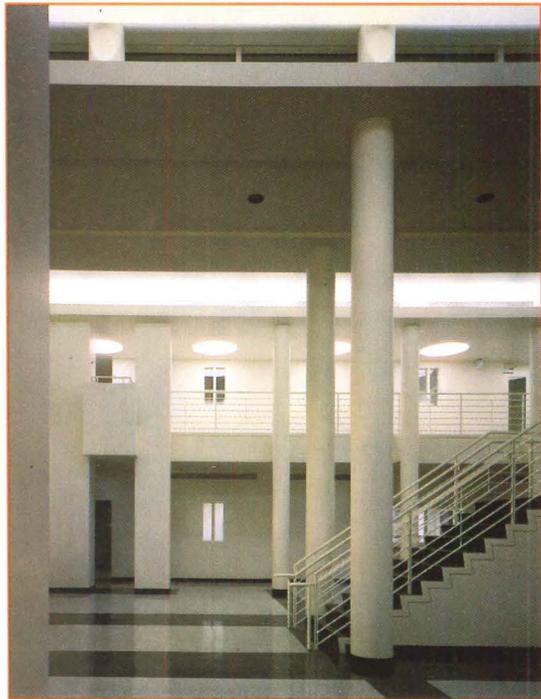
LOWER FLOOR PLAN—RECREATION BUILDING

- 1 COUNCIL CHAMBER
- 2 LOBBY
- 3 FINANCE
- 4 ADMINISTRATION
- 5 LAW
- 6 EXHIBITION HALL
- 7 AUDITORIUM
- 8 OUTDOOR AMPHITHEATER
- 9 DINING PAVILION
- 10 TRACK
- 11 MEETING PAVILION
- 12 DAY CARE CENTER
- 13 UPPER COUNCIL CHAMBER
- 14 UPPER LOBBY
- 15 OFFICES
- 16 GYMNASIUM
- 17 LOBBY
- 18 LOCKERS
- 19 HEALTH CLUB





4



5



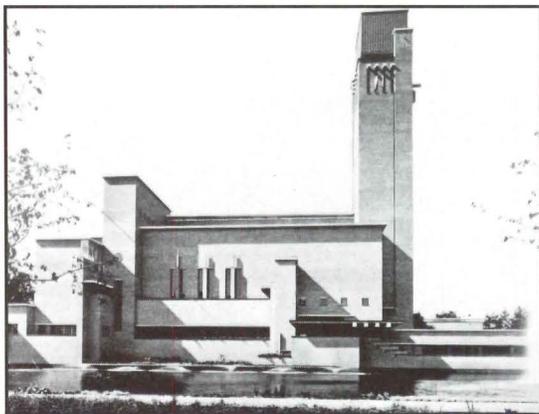
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The symmetrical front of the village hall (4) faces the quadrangle. Its projecting roofs and windows recall some of the early work of Wright while the tower and simple brick masses suggest the work of Willem Dudok. The U-shaped building wraps offices around a two-story lobby (5), behind which stands the board room (6), whose many windows and clerestories flood the space with natural light. Canopies extend over the side entrances (7).

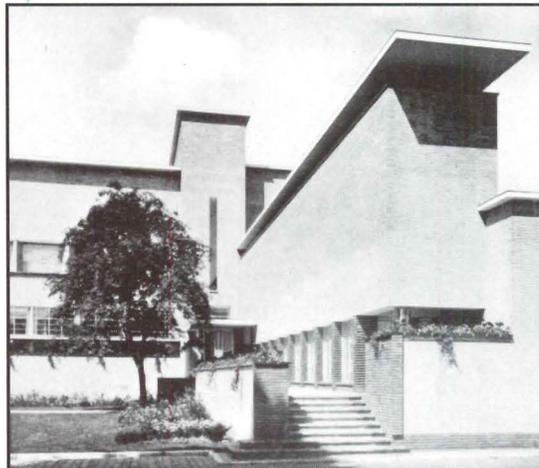


Dudok's Modernity

Willem Marinus Dudok, who for years served as the architect for the Dutch town of Hilversum, was an early Modernist largely passed over by polemical historians and critics. The reason is clear. Dudok's buildings, especially those done in the 1920s and 1930s influenced by the work of Wright, had the hallmarks of the approved Modern style – unornamented surfaces, interpenetrating spaces, asymmetrical compositions – but his massive forms and use of brick bearing walls retained a connection to traditional Dutch architecture. Once seen as lacking conviction, Dudok's bridging between Modernism and the vernacular now seems quite pertinent, and a clear influence on designers such as Ralph Johnson. As the world has become less simple and more ambiguous – and as architecture has become caught between an uncertain future and a past it can't forget – Dudok's complex sensibility has come to feel much like our own.



Front façade of the Hilversum Town Hall, Netherlands, 1928–31



Side entrance, Hilversum Town Hall



Bathhouse, Hilversum, 1921



8

(continued from page 68)

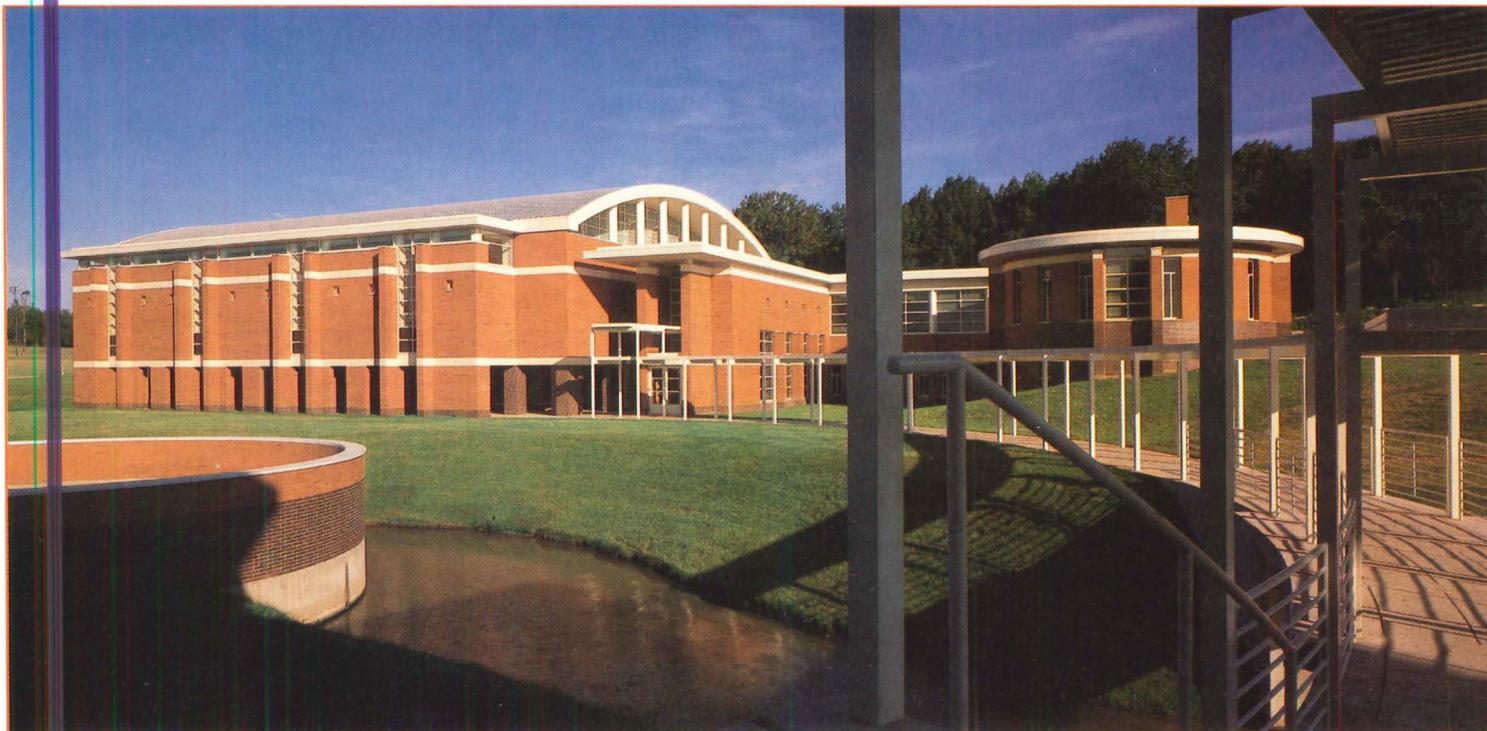
and ceilings, pipe railings, and black-and-white vinyl tile floors. Such finishes are not a problem visually, but one wonders how well they will hold up to heavy use by the public.

The Architecture

At first glance, these three structures appear to bear little in the way of political symbolism. There is no Classical ornament, no figural sculpture, no temple front. The architecture here is not only nonrepresentational, but intentionally nonmonumental. The village hall, for example, has a symmetrical front, but that façade is turned 90 degrees to the approach road and parking lot, so that most visitors enter through a slot in the side wall.

There is a political content to this architecture, nevertheless. Johnson acknowledges the influence on his work of the Dutch architect, Willem Dudok, especially the buildings completed in the 1920s and 1930s. Dudok's Hilversum Town Hall, for example, is recalled in the descent of the Orland Park buildings into the water, in the banding of the brick mass, in the use of tall columnar halls, and in the placement of a tower to mark the focal point of the complex. The influence of Frank Lloyd Wright's early work is also acknowledged. His boathouse for the University of Wisconsin, with its broad overhanging roof that seemed to float above the walls, especially comes to mind.

While often considered and discussed in purely formal terms, such precedents were connected to Progressive political ideas common in the early 20th Century. The Progressive movement was a reaction to the disparities of wealth and poverty that arose in this country in the latter part of the 19th Century. It saw democratic government as a necessary complement to private enterprise and a



9



10

The recreation building contains a large gymnasium and a second-level running track covered by a broad, bowed roof and ventilated by large, circular louvers (8). Connected to the rest of the complex by a semicircular covered bridge, the building has clearly articulated parts: the gymnasium, a two-story lobby, and a horizontal daycare wing that ends in a circular pavilion housing the senior center meeting room (9). The lobby, like that in the village hall, has tall columns, round recessed lights, extensive glazing, and a central straight-run stair (10).



11

The civic center appears to spring out of the pond, rising up to a long two-story lobby that runs the length of the exhibition hall (12). A circular meeting room/dining room is attached to one side of the lobby, and a waterfront amphitheater steps down in front of the lobby's entrance. (Unfortunately, the water level is lower than the architects had anticipated, resulting in the exposure of the concrete foundation.) The structural rhythm of the building is accentuated by piers, canopies, and prow-shaped balconies overlooking the pond (11).

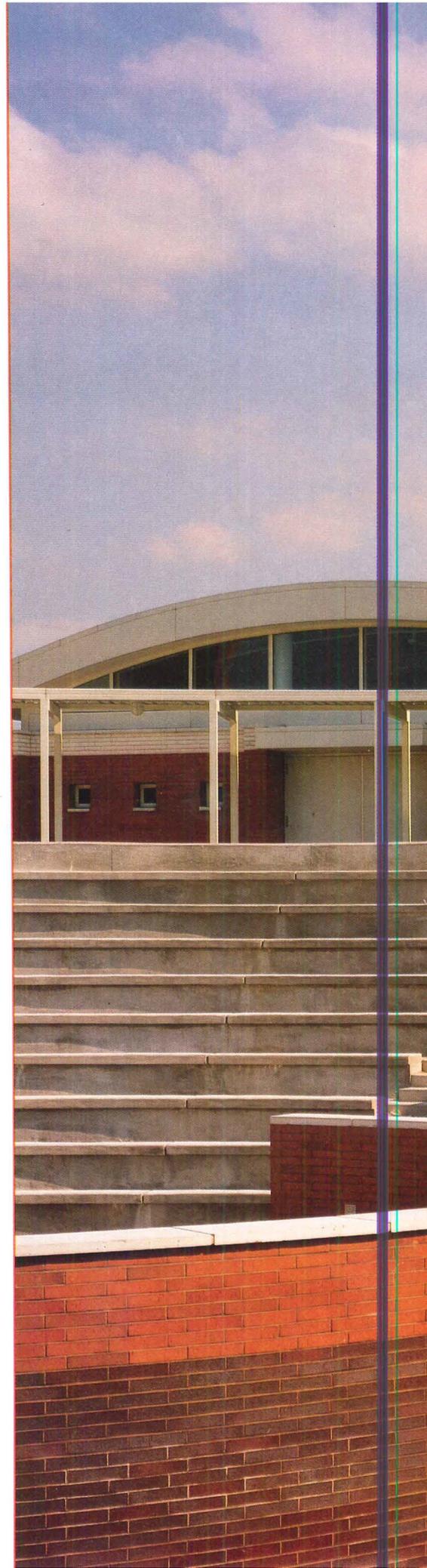
brake upon the unregulated greed of the robber barons. Government's role, thought the Progressives, was to provide for the unmet needs of people, protect the rights of individuals, and respect minority opinions. As Wright wrote, "Our ideal is Democracy, the highest possible expression of the individual as a unit not inconsistent with a harmonious whole."

Wright's Progressive leanings were certainly consistent with his liberal, Unitarian background and with his own democratic idealism. In Dudok's case, it was more a matter of his being Dutch. Holland has a long tradition of the government providing for the common good, and Dudok's long tenure as the architect for the town of Hilversum, designing most of its public buildings, is thoroughly consistent with those values.

Orland Park's village center thus recalls an era in architecture and politics that had yet to descend into the abstractions of the International Style or the authoritarianism of Fascism and Communism. Johnson's work stems not from nostalgia, but suggests instead that the Progressive era, embodied in the early work of Dudok and Wright, can be a new point of departure.

Some today would argue that that era cannot be recovered, that its innocence is lost to us. In the wake of the Holocaust and in the shadow of nuclear annihilation, how can we hold to the faith in human goodness and reason that prompted the Progressive movement and inspired Wright?

Yet even if our faith is tempered and our innocence gone, that does not make all order impossible or all politicians corrupt. The village center at Orland Park reminds us that government has a responsibility for the common good and architecture a role in giving that a shape and identity. **Thomas Fisher**





The side wall of the civic center's lobby forms a series of receding planes that are knit together by the projecting balconies and canopies (13). Although the wall looks massive from the outside, inside the lobby is airy and light-filled, with a projecting cove at door height to give scale to the tall space (14).

Project: Orland Park Village Center, Orland Park, Illinois.

Architects: Perkins & Will, Chicago (Ralph Johnson, design principal; Terrance Owens, managing principal; Charles Anderson, project manager; August Battaglia, senior designer; Randall Takahashi, structural engineer; Takenori Kanazawa, mechanical engineer; Thomas Kamis, Ken Kloss, Walter Hefernan, Carlos Parilla, Carolyn Smith, George Witaszek, project team).

Client: Village of Orland Park, Illinois (Patrick Scanlan, village manager).

Site: a 12.5-acre site on a 95-acre property owned by the village and used for playing fields and a nature preserve.

Program: a 42,000-sq-ft village hall containing a board room and administrative offices; a 10,800-sq-ft civic center containing an exhibition hall, lobby, and dining room; and a 34,600-sq-ft recreation building containing a gym, a track, locker rooms, meeting rooms, daycare, and offices.

Structure: steel framing and light-weight concrete fill on composite metal deck and steel beams. Civic center roof has steel cable-tied arches, and the gymnasium has steel bowstring trusses.

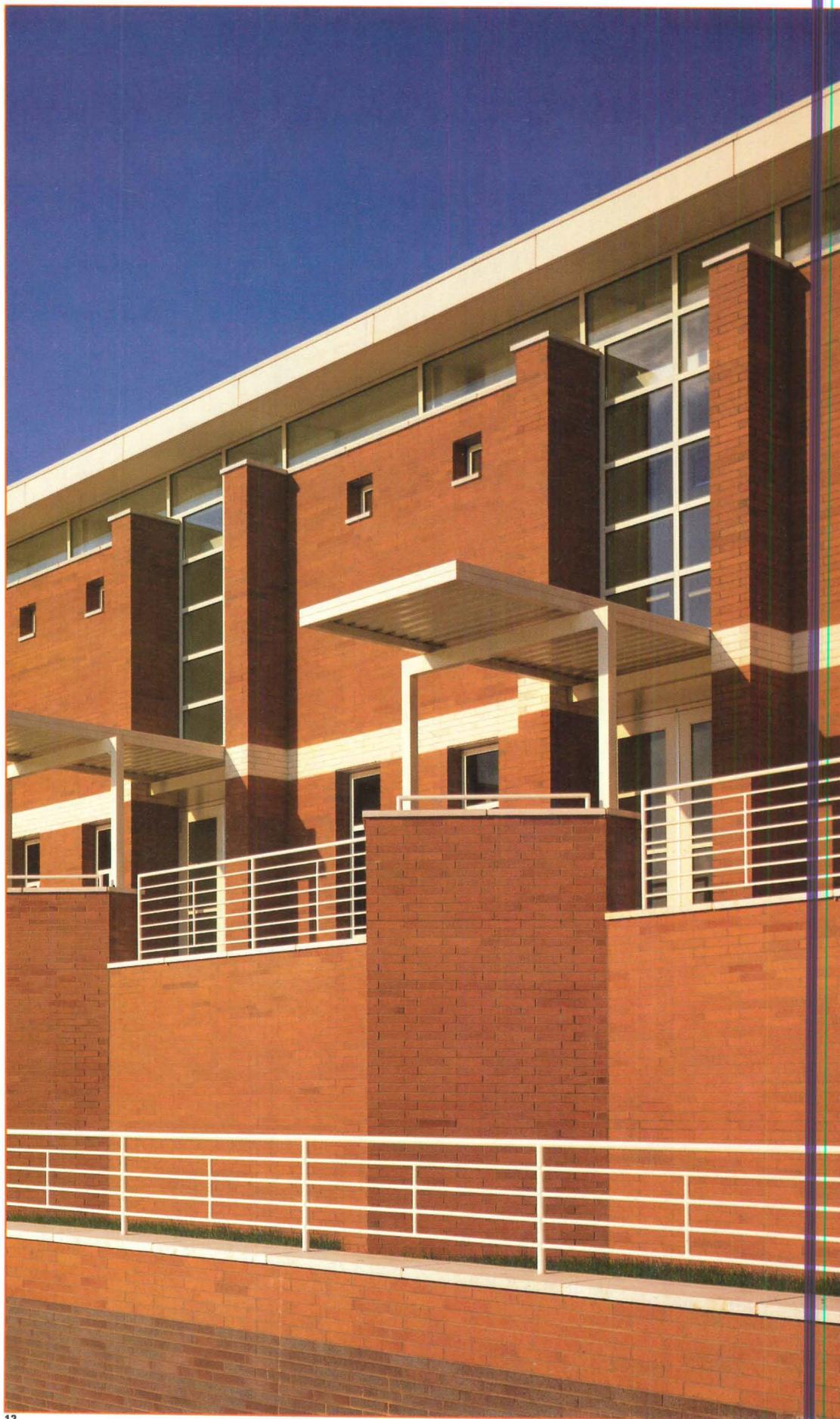
Major materials: brick, clear and gray-tinted glass, metal spandrel panels, vinyl flooring, carpeting, drywall (see *Buildings Materials*, p. 121).

Mechanical system: rooftop cooling units with hot water fin-tube perimeter heating. Recreation building also uses air-handling units for heating.

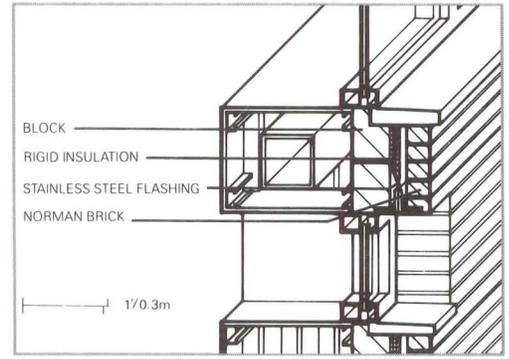
General contractor: Walsh Construction Company.

Costs: \$10.5 million for the building (\$120 per square foot); \$1.5 for site work.

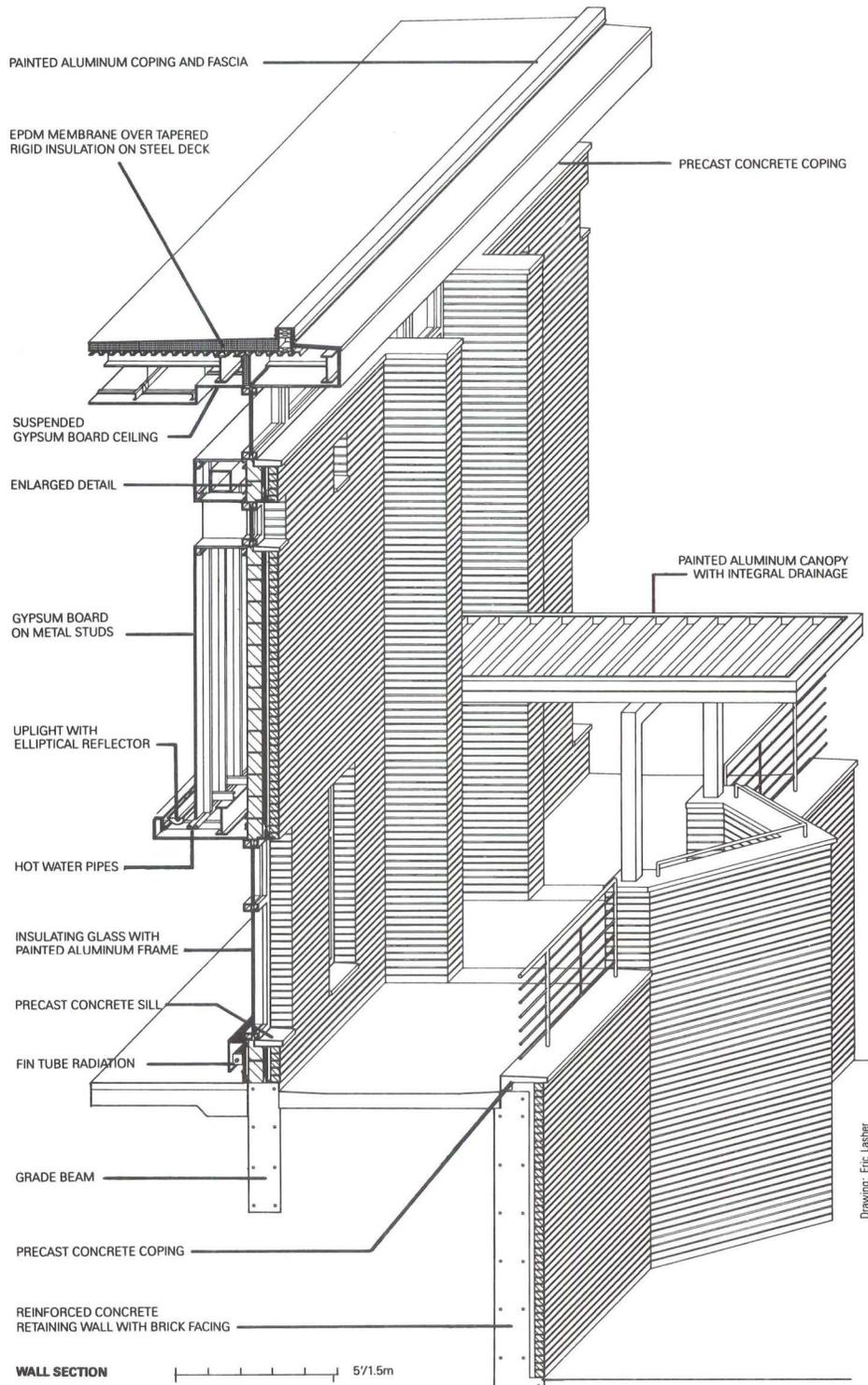
Photos: Nick Merrick/Hedrich-Blessing.



Selected Detail



ENLARGED DETAIL



WALL SECTION

Drawing: Eric Lasher



Wall Section
Orland Park Village Center
Orland Park, Illinois

One myth prevalent in the last two decades has held that highly articulated buildings are much more expensive than decorated sheds. While there may be philosophical reasons for choosing one over the other, the cost differences are not necessarily significant, as the Orland Park Village Center, by Perkins & Will, shows. Although highly articulated, its buildings were modest in cost, about \$120 per square foot. The civic center's lobby wall, for example (13, 14), has a simple underlying structure. There is a straightforward steel frame to which a metal stud interior wall and a brick-and-block exterior wall are attached. A few simple moves, such as thickening the interior wall to house steel bracking and emphasizing the depth of the exterior masonry wall by pulling the aluminum windows back to its inner edge, make the buildings seem more massive. These buildings are sheds decorated, not with cartoon ornament, but with the traditional materials of architecture.

Why (and How) Does Disney Do It?

The company's commitment to big-time architecture is puzzling,
given its expertise in environmental design.



1

Arata Isozaki's Walt Disney World headquarters building (1) is a long, low, rather banal building — a relatively 'dumb' box — that is broken in two by a group of energetic, polychromatic volumes. The theme here, more esoteric than most of Disney's, is time: The entry rotunda is a sundial-like timepiece.

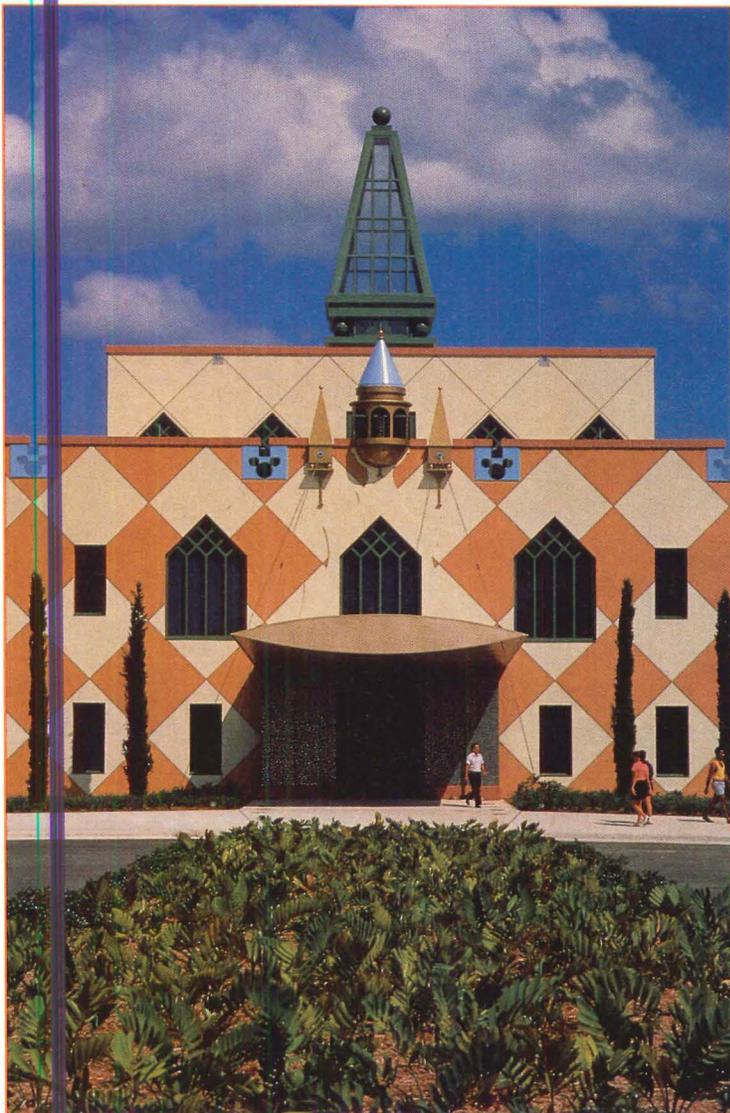
"We allow no geniuses around our studio," Walt Disney once said, so why has his company, which has had such phenomenal success at creating physical environments without the help of big-name outsiders, turned to people like Michael Graves, Robert A.M. Stern, Antoine Predock, and Frank Gehry for hotels, office buildings, and other commissions? Disney chairman Michael Eisner calls it a search for "excellence" and maintains that "we do it because we have to" to stay ahead financially. He also concedes, however, that "the hotel we get the best response on is the Grand Floridian," a straightforward Disneyesque interpretation of a turn-of-the-century resort hotel executed by architects Wimberly, Alison, Tong & Goo but conceived by the Imagineers (the prodigious designers of Disney's theme attractions). The Disney reputation for superior planning is so strong that the only things a "genius" architect could contribute are things Disney seems to have proven unnecessary to commercial success, things valued in the world of High Architecture: intellectual content, academic allusion, irony, ambiguity. Disney doesn't "have to" employ high-design architects; the simple explanation is that they want

these things because Michael Eisner wants them.

"When I was growing up, I always wanted to work at CBS, not because of their programs but because of their Saarinen building," says Eisner, who ended up across the street at ABC, taunted by his view of the more exalted CBS building. He remembered the lesson that "architecture is a magnet; if it's good it draws you in."

But he does work for Disney, a company that has to stand for entertainment — even in its buildings. Just what "entertainment architecture" (to use Disney's term) means isn't so simple. It isn't a particular aesthetic, but a set of different strategies for delighting and comforting users — strategies that come from the Disney architects' own varied philosophies.

The most overt approach, and the one most consistent with Disney's history, is the appropriation of past architecture practiced by Robert A.M. Stern, whom Eisner calls "a super-Imagineer." Although Stern employed less literal devices in his Disney Casting Center, his four hotels — the Yacht Club and Beach Club at EPCOT and the Newport and Cheyenne (page 93) at Euro Disneyland — are as historicist as the works of the Imagineers.



2

A second strategy is that of the Casting Center and of Michael Graves's Swan and Dolphin Hotels (page 82): the creation of fantasy out of whole cloth without clear reference to any time or place. Unlike most Disney attractions, the Swan and Dolphin do not have a temporal or locational theme that can be stated in one or two words. Bernini, Morris Lapidus, and Ledoux have been invoked to describe them, but they are foremost a product of Graves informed by Disney.

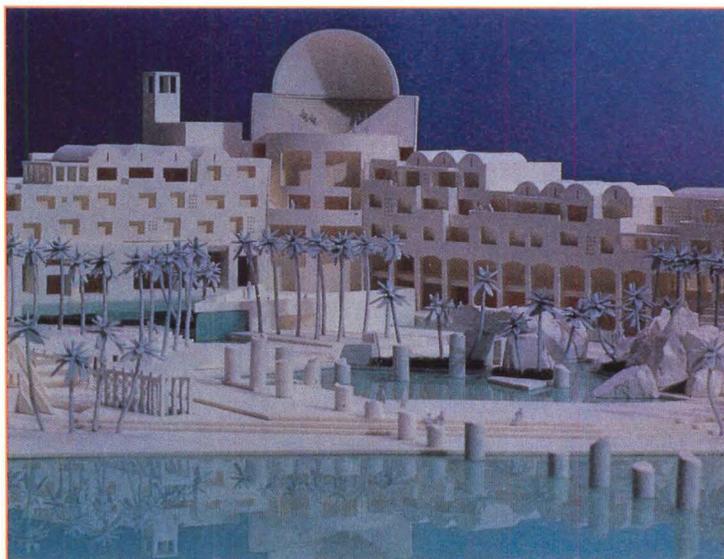
Most intriguing are the works that seek to represent the essence of a place without replicating its architecture, and Graves is trying that at Euro Disneyland with the New York Hotel (page 93), where he alludes to New York building typologies in massing but maintains his characteristic abstracted architectural detail. Along the same lines, Antoine Predock uses his customary narrative metaphors in the Santa Fe Hotel (page 94) and attempts to call up both the old and the new Southwest. Predock is also doing a hotel at Disney World that evokes Mediterranean themes.

The conventional wisdom about Disney's coupling with respected architects is that it is a unique product of its time, 1980s Post-Modernism, and

that architecture had to come to Disney before Disney would go to architecture. But the company's willingness to work with a Modernist like Predock – albeit a self-proclaimed “Cosmic Modernist” – indicates otherwise. So does their commissioning of Frank Gehry for two projects (a sculptural Disneyland office building and the entertainment center at Euro Disneyland, page 95) and of Arata Isozaki for the almost-complete Disney World office building. Eisner says he “can't think of an era that there hasn't been somebody I would think was worth working with.”

Both Eisner and Disney Development president Peter Rummell speak of the desire to “bring the fantasy outside the gates” as one of their motives for looking to brand-name architects. But some critics, like Vincent Scully (page 90) and Ross Miller (page 92), find these efforts to lack the innocence of Disney's theme parks – the hotels are more like the sweet prostitute in Disney's *Pretty Woman* than Snow White. This criticism is ironic, since the architects Disney has commissioned are amateurs at manipulating thought and behavior compared to the theme parks' Imagineers.

The Imagineers are at their best as environ-

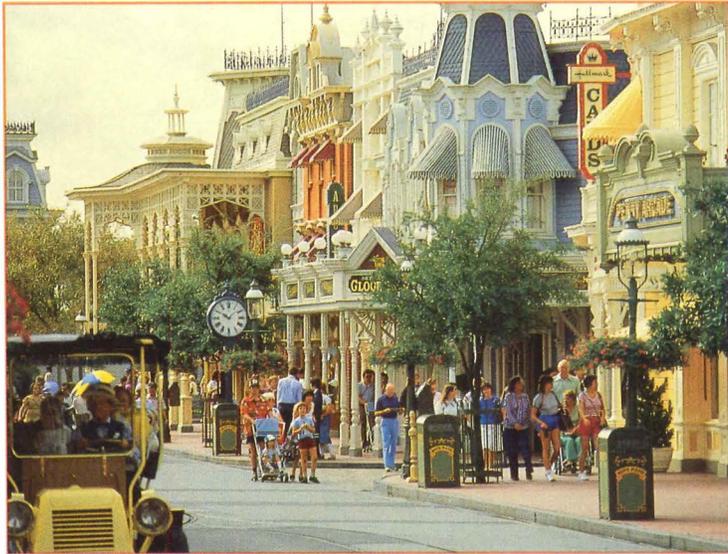


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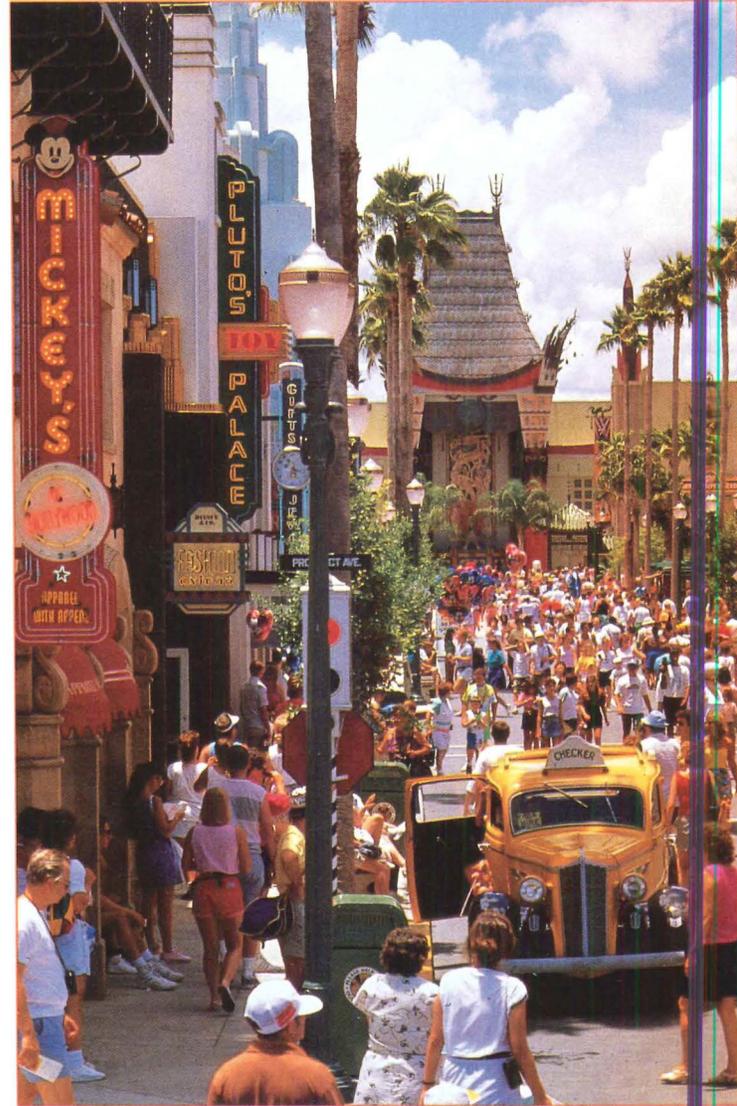
Robert A.M. Stern is the most favored Disney architect so far, with five commissions either completed or in the works. His Casting Center (employment office to you and me) at Disney World (2) includes a rotunda with a pantheon of Disney stars and is one of his less derivative fantasies. The Yacht Club hotel (4) at EPCOT, which sits dwarfed by the Dolphin and Swan next door, is a more straightforward interpretation of a seaside resort. Antoine Predock's Mediterranean Hotel at Disney World (3) relies on more gently suggestive devices.



5



6



7

"The hotels are more like the sweet prostitute in Disney's *Pretty Woman* than Snow White."

mental revisionist historians, giving physical place to our collective myths about the past. At the Disney/MGM Studios Theme Park in Florida, where the myth is Hollywood, things are complicated to the point where one restaurant is a recreation of a movie set that is itself a recreation of the Plaza Hotel lobby. With this and the "working" studio on the site – which seems to be more for tours than moviemaking – we are being asked to take part in the myth that we are behind the scenes of mythmaking. (Nowhere, though, in any of its attractions does Disney truly reveal, as James Wines proposed in a rejected Disney project, the parks' complex inner workings.)

Just down the road, the Imagineers have essayed a genre that some say is indirectly descended from Main Street USA: the restored, reused historic district. "Pleasure Island" is a collection of bars and restaurants housed in ersatz converted warehouses, with a fictitious history that is explained on markers throughout the site. The time at Pleasure Island is contemporary, except for one conceit: Every night is New Year's Eve.

A significant part of the Disney success formula is the employment of behavioral psychology. The

Imagineers are a storehouse of ideas about scale, procession, and perspective that help maintain the illusions of the theme parks. At first this seems chilling, like subliminal advertising, and perhaps on some level it is, but such manipulation is part of all architecture, including that which we celebrate. And, unlike, say, a shopping mall, whose psychological tricks encourage behavior that might not be healthy, Disney's motives are somewhat innocent: They want people to feel good.

Disney has apparently figured out that most Americans like the idea of surrendering for a few days to a place in which everything is where it's supposed to be, where Graumann's Chinese Theater is at the head of Hollywood Boulevard (across from the Brown Derby), where the nations of the world are lined up within walking distance along a lake, and where every night is New Year's Eve. Hardly anything can be seen or witnessed that was not Imagineered, and when something spontaneous happens, it's especially surprising and gratifying: the rustling of a nonaudio-animitronic bird in a tree, a glass dropping on the pavement.

The lack of spontaneity in this controlled environment is related to the major flaw in the argu-



Photos © Walt Disney Corporation

men that Disneyland can be considered part of the public realm. For this lack of spontaneity is a function of the privatized, undemocratic government of this would-be town square for America. Like the shopping malls that are defining themselves as community centers for increasingly centerless communities, Disneyland is an almost public place but fails when subjected to the tests of heterogeneity and free access. Charles Moore said of Disneyland "You have to pay for the public life." But is it still public if you have to pay?

Such questions are of little concern for Disney in its present endeavors, which deliver what they strive for: carefree, no-mess entertainment for families who will spend three or four days there. But down the road, Eisner and Disney Development are looking at the revival of Walt Disney's original dream for his Florida kingdom: an experimental, self-sustaining new town. (This is the origin of the name EPCOT, an acronym for Experimental Prototype Community of Tomorrow; as built, EPCOT is merely another theme park).

"Anything that has come forth in the way of standard kinds of development, we have said 'forget it,'" says Eisner about the large undeveloped

portions of their Florida land. The company has twice assembled their roster of architects and planners to discuss ideas for the new town development, which seem to be running toward themes of the workplace and manufacturing. "Wouldn't it be interesting to see a Coca-Cola factory, a razor factory . . . Most of our country thinks that milk comes from a Safeway," Eisner says. Factories would presumably provide the employment, and factory tours would provide the entertainment.

But how would people live in a Disney community? The company's passion for control – a major ingredient in producing its magic – could clash with fundamental American ideas about home and community to a degree that would make Seaside look *laissez-faire*. Perhaps that is why EPCOT evolved from new town to theme park, and it could be argued again that Disney should stick to what it knows best. Still, given the know-how and apparently sincere interest the company has brought to its architectural efforts, we shall not fault them for trying. If Disney can actually apply the lessons of their trade to create a public life you don't have to pay for, the joke will be on all of us.

Mark Alden Branch

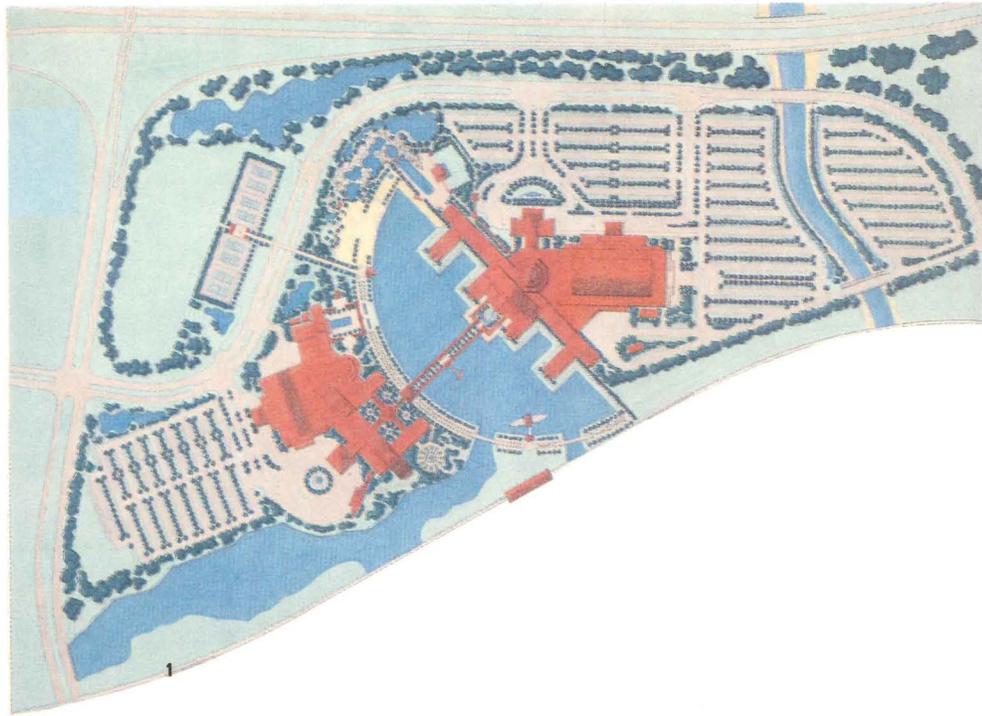
The work of the Imagineers includes images for everyone: the turn-of-the-century Main Street in the Magic Kingdom (5), less startling now than before the preservation movement took hold; a yuppie fun zone at Pleasure Island, a fictitious historic district where every night is New Year's Eve (6); a reduced-scale, tidied-up Hollywood Boulevard (7); and, in the parade of nations at EPCOT's World Showcase (9), about all the Europe many Americans will ever see. Outside the parks, the Imagineers also provide theming and imagery for projects like the Disney World Caribbean Beach Resort (8), a moderately priced hotel executed by Fugleberg Koch Architects of Orlando.

Fish Story

Michael Graves's Walt Disney World Dolphin Hotel,

a winner in the P/A Awards Program,

goes even further than the previously published Swan Hotel.



The Dolphin Hotel is one of two Graves hotels set on a semicircular lake adjacent to the EPCOT Center. The larger, more elaborate Dolphin (at right in site plan, 1) is connected to the Swan Hotel by a causeway (2). The triangular tower of the hotel is devoted to service space above the level of the balconies, which belong to the hotel's Presidential suites.

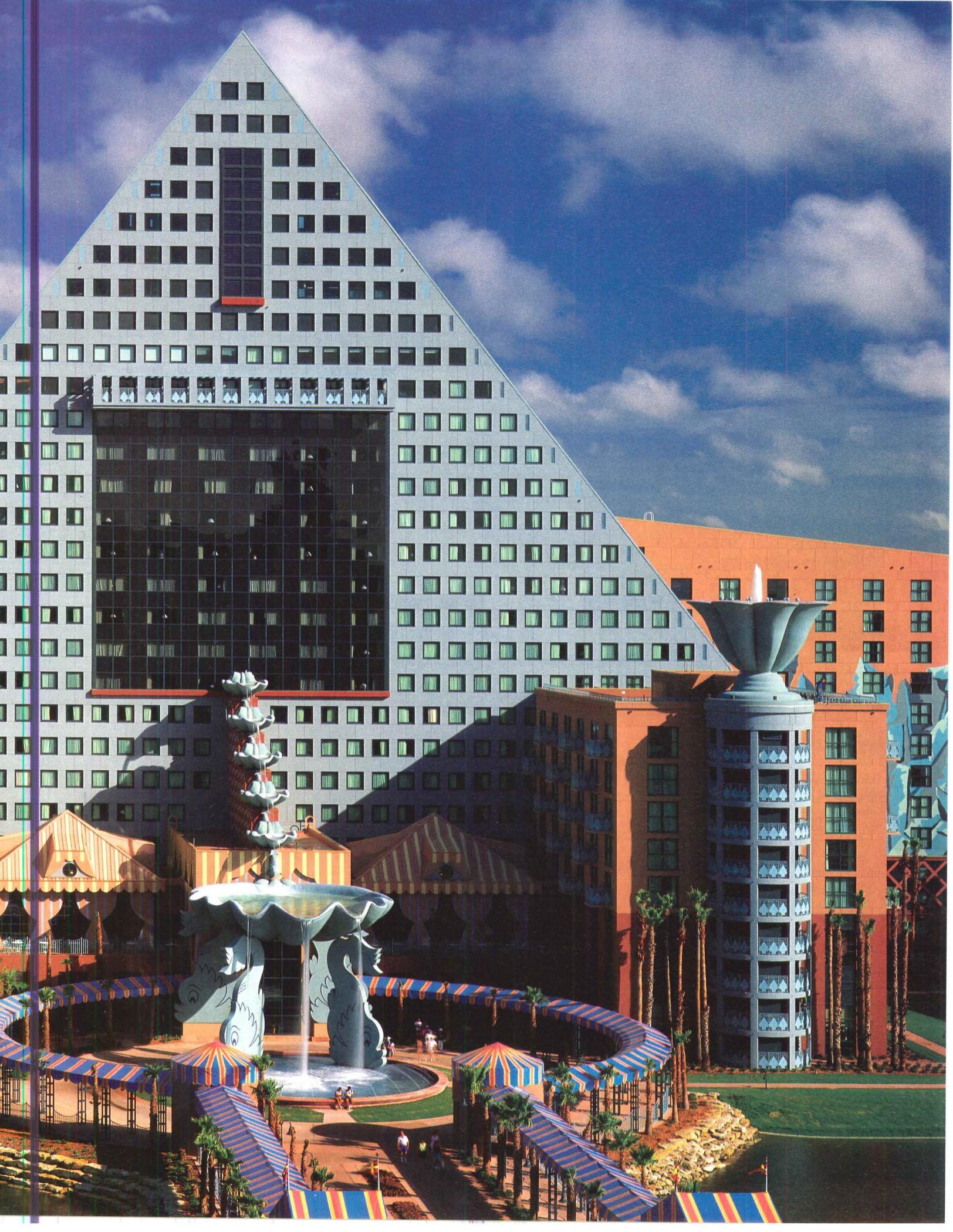
When the Walt Disney World Swan Hotel was completed earlier this year (P/A, Mar. 1990, p. 76), it may have seemed that Michael Graves and Alan Lapidus had pushed the limits of "entertainment architecture" about as far as they could go. But always looming behind in photos of the Swan was the unfinished 27-story tower of the Walt Disney World Dolphin, the Swan's larger – and more lavishly implemented – sister hotel. At this larger scale and with the more ambitious decorative program, both the weaknesses and the strengths of the architects' strategy become more apparent.

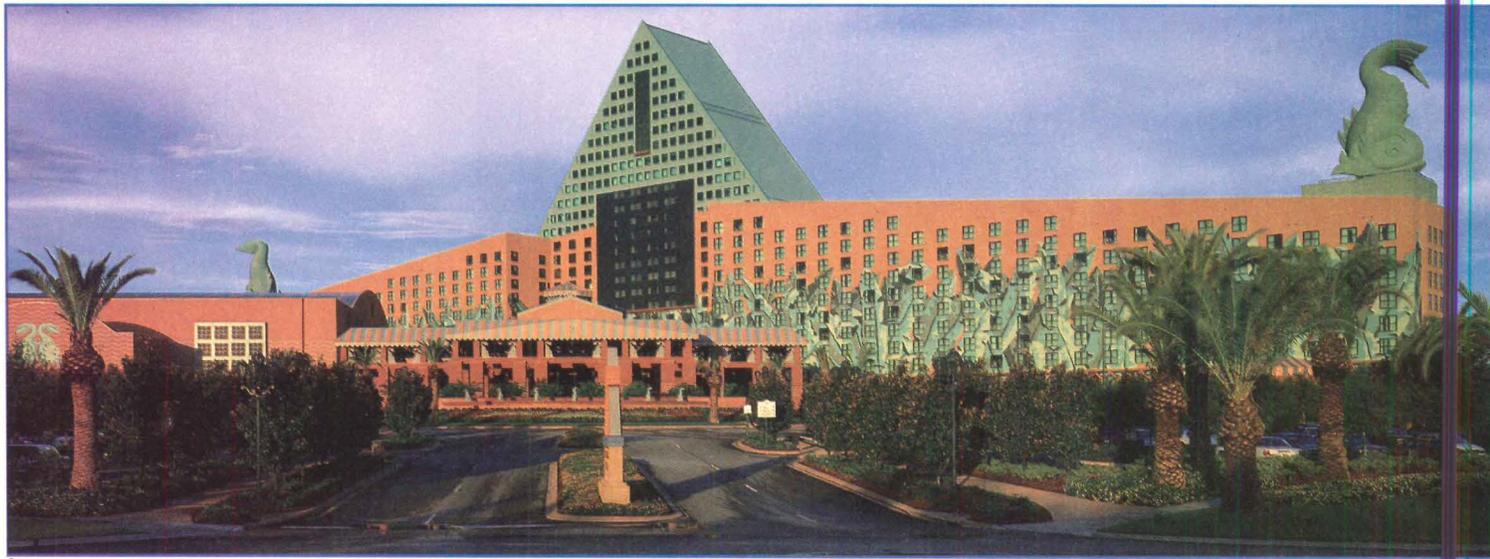
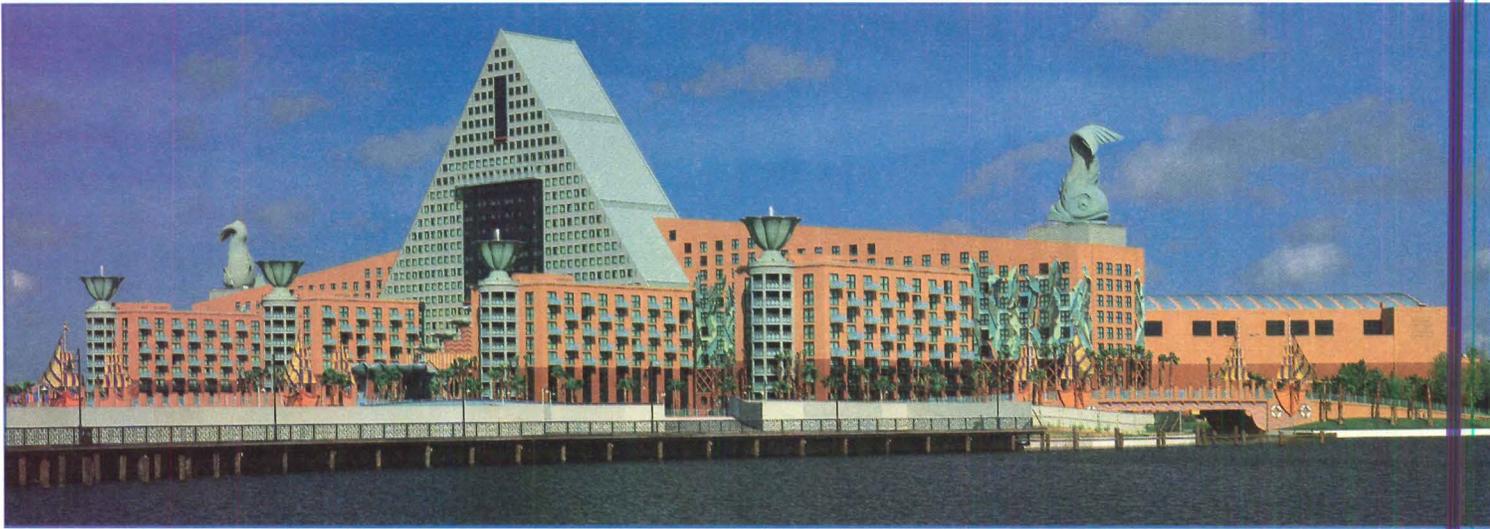
The Dolphin's triangular tower is, to be sure, the focal point not only of these hotels, but of the whole complex Disney is building between its EPCOT and MGM theme parks (including Robert A.M. Stern's diminutively scaled – that is, human scaled – seaside fantasies next door, over which one of the dolphin sculptures looms like a great aqua whale). The Dolphin's tower is the "weenie" – as Walt Disney himself used to call vertical elements such as Cinderella's castle – that beckons people in. But unlike the theme park "weenies," the Dolphin's tower is as two-dimensional as Mickey Mouse himself, and is best seen head-on or

close to it, as Vincent Scully points out (page 90).

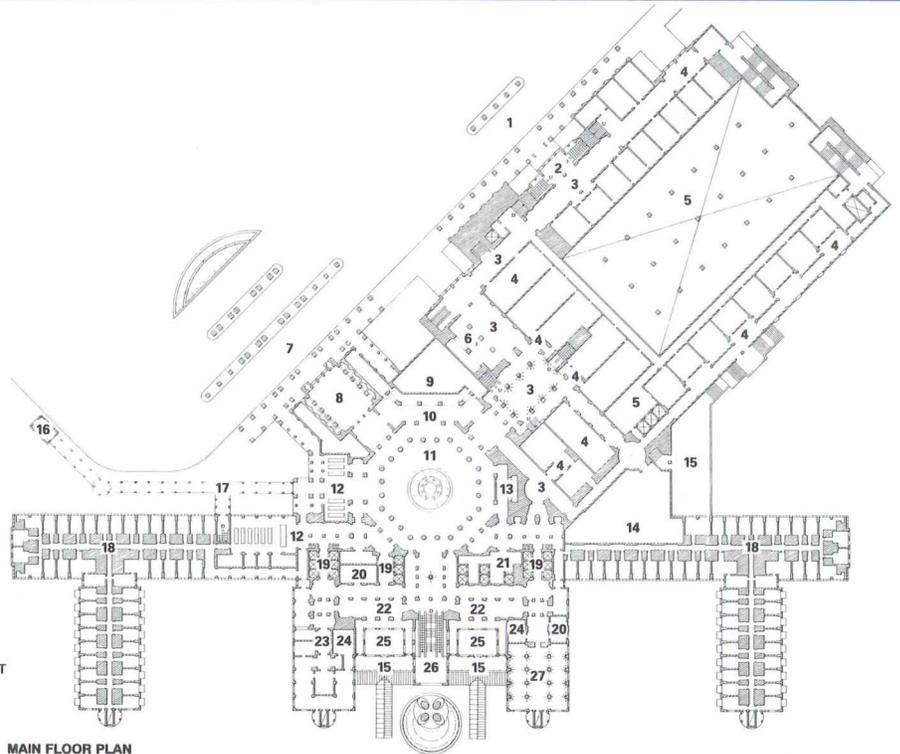
There is more happening in the Dolphin than in the Swan, and that means at once more delight and more evidence of the standard hotel budget to which the hotels were limited. While the first hotel was rather conventional in massing, leaving the flights of fancy to the decorative program, the Dolphin's tower and the gently rising wings on either side of it create a form that is more abstract and less "buildinglike" in the traditional sense. The Dolphin also plays more tricks with colossal sculpture, especially at the lakeside entrance where water splashes down several stories in stepped clamshell fountains. Most strange (but only upon close examination) is the layering of disparate stories at the ground floors of the building: It meets the ground with wide, late-Wrightian parabolic arches, atop which is piled a row of porthole windows and tremendously overstated, cartoonlike latticework. The interiors reveal a disparity between untypical aspirations and typical budget. The ubiquitous gypsum board looks cheaper here than in the Swan, where it was painted less pretentiously, and details such as

(continued on page 87)





While the lakeside façade of the Dolphin (3) is symmetrically composed, the other side (4), a more frequent point of entrance, is an asymmetrical – and, from some vantage points, more interesting – jumble of porte-cochères and bus stops generated by the alignment of the convention center. In plan, this results in competing axes that come together in the rotunda.

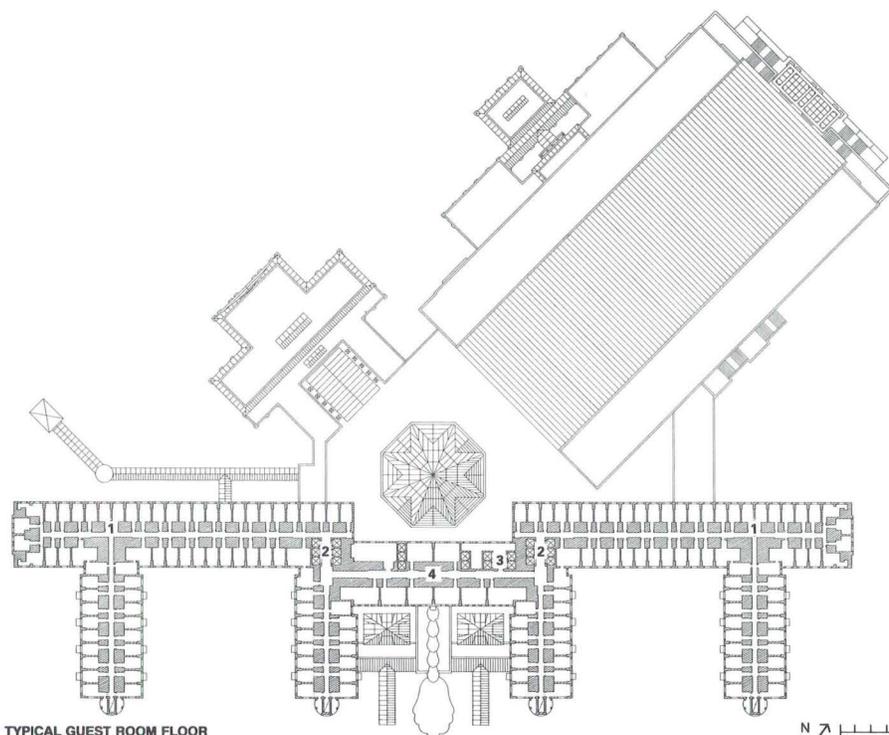


- 1 CONVENTION HALL PORTE COCHERE
- 2 CONVENTION HALL FOYER
- 3 CONVENTION HALL LOBBY
- 4 MEETING ROOMS
- 5 EXHIBITION HALL BELOW
- 6 CONVENTION REGISTRATION
- 7 HOTEL PORTE COCHERE
- 8 HOTEL FOYER
- 9 FRONT OFFICES
- 10 GUEST REGISTRATION
- 11 ROTUNDA LOBBY
- 12 RETAIL
- 13 CONCIERGE
- 14 OFFICES
- 15 TERRACE
- 16 BUS STOP
- 17 COVERED WALKWAY
- 18 GUEST ROOMS
- 19 ELEVATOR LOBBY
- 20 RESTROOMS
- 21 SERVICE CORE
- 22 LOBBY LOUNGE
- 23 SAFARI GRILLE RESTAURANT
- 24 KITCHEN/PANTRY
- 25 RESTAURANT BELOW
- 26 LOBBY BELOW
- 27 COPA BANANA LOUNGE

MAIN FLOOR PLAN



5

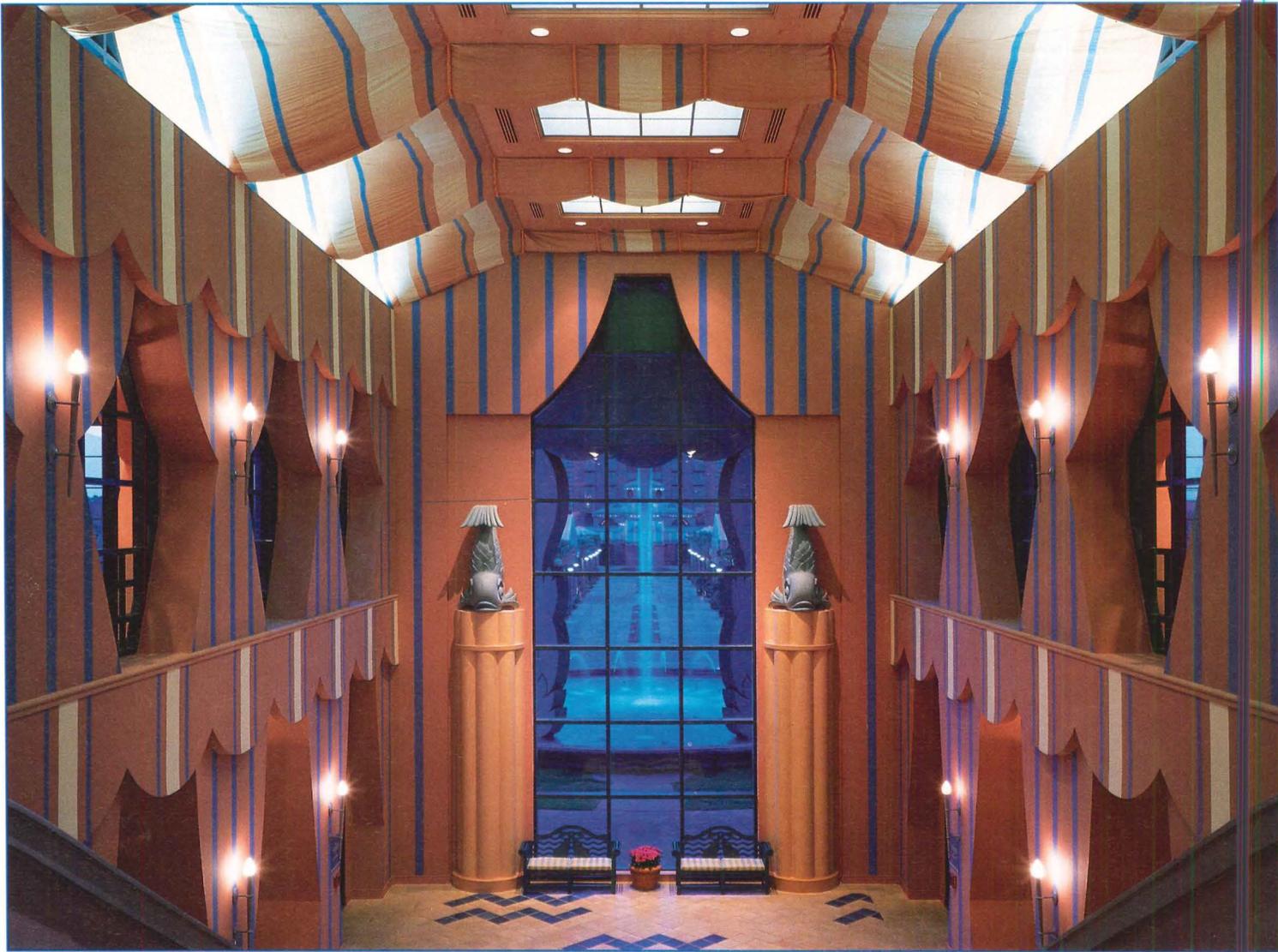


TYPICAL GUEST ROOM FLOOR

- 1 GUEST ROOMS
- 2 ELEVATOR LOBBY
- 3 SERVICE CORE
- 4 SUITES

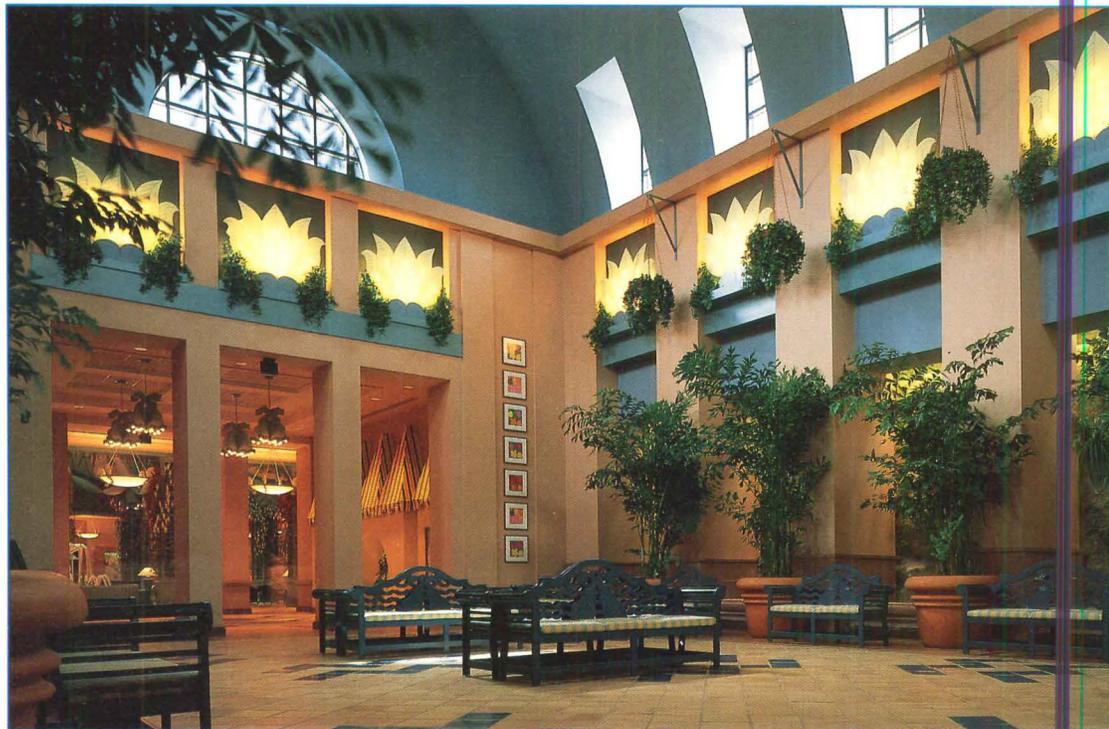
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The most astonishing element of the hotel is its lakeside entrance (5), with a colossal clamshell fountain held up by cutout dolphins Graves calls "fillets." At the end of each of the hotel wings perpendicular to the main volume is a cylindrical stair tower; the human scale of its balconies contrasts wildly with the urns that top them.



6

Upon entrance from the lake side (6), visitors ride escalators to the main lobby floor of the Dolphin. From the other side, a barrel-vaulted foyer (7), bent 45 degrees off the major axis, acts as ante-room to the main space, the rotunda lobby (8).



7



8
(continued from page 82)
expansion joints and air vents stand out more prominently.

In its rotunda lobby, the Dolphin has the kind of grand, definitive center that the Swan lacks. This is partly a function of hotel economics; the Dolphin's larger size justifies more nonrevenue-producing space. While the lobby is large enough to delight, it is small enough not to overwhelm, and it is a pleasant place to sit or stand. Graves ensures that people will pause in the octagonal lobby by moving the entrance from the automobile side 45 degrees off of the major axis between the Dolphin and Swan.

People may also pause looking for the elevators. The location of elevator lobbies in the Swan was a minor problem, but in the more expansive Dolphin, it is serious; a three-day stay is not sufficient to find one's way confidently from the lobby, with its eight nonhierarchical sides, to the elevators. Similarly, the long guest room corridors, despite their felicitous beach scenes, offer few landmarks to help a guest get downstairs.

And, finally, what of the dolphins themselves, which, like the Swans across the lake, are seen not

only in colossal form on top of the buildings, but as a recurring motif within, everywhere from benches to soap wrappers? Unfortunately, the smiling dolphins sit far less gracefully atop their domain; in fact, they don't sit at all but appear to have been dropped from a great height. Their profile also translates much less successfully into silhouette than the easily readable swans.

This is a shame, because otherwise one of the most entertaining things about both hotels is the use of varying degrees of artifice and representation; if in fact these hotels have a theme, that is it. In some public spaces, Graves juxtaposes real fabric ceilings with gypsum-board walls cut and painted to look like tied-up curtains. The aforementioned guest room corridors use two-dimensional scenes on both walls and floors in a way that is purely artificial, wholly unbelievable, requiring the viewer's imagination to complete the illusion. These toyings with our perceptions of fantasy and reality come as close as Disney will probably allow to a critique of its long-standing commitment to make-believe. **Mark Alden Branch** ■

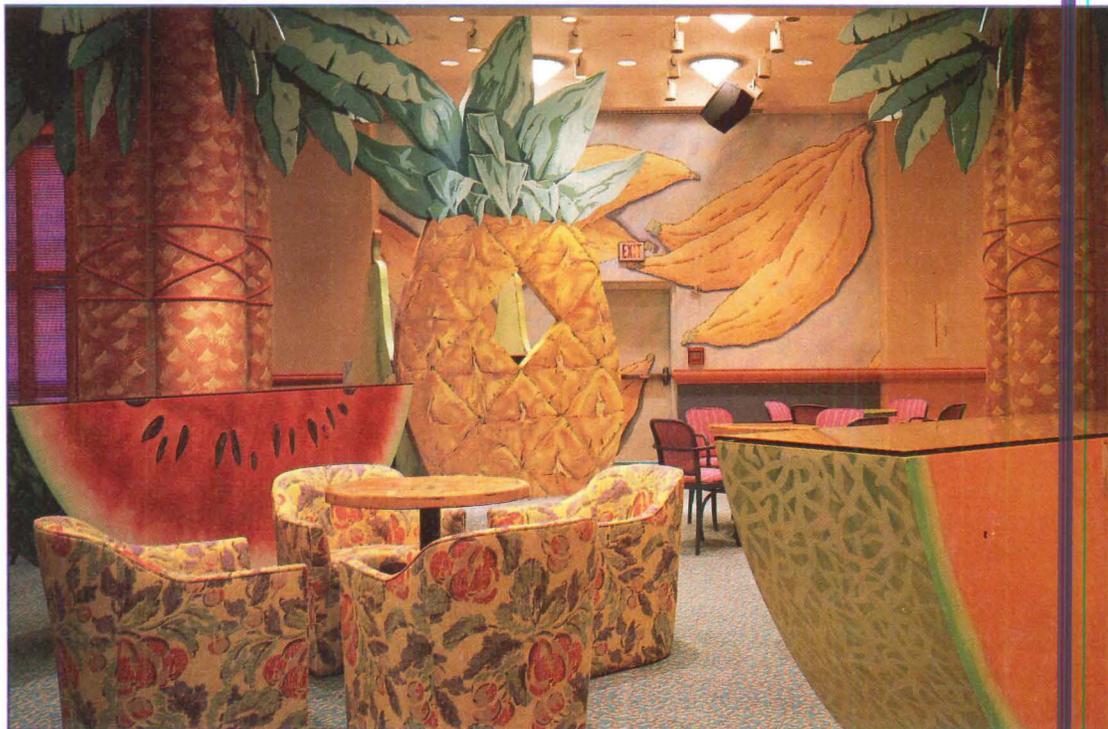
87
.....
The rotunda lobby (8), with its tentlike ceiling and porthole-studded lantern, is the heart of the Dolphin and the most monumentally scaled room in either hotel. Getting to the convention center, restaurants, or elevators involves more confusion than might be suggested by the formal, axial Beaux-Arts plan.



9

88

Most entertaining are the hotel's restaurants and clubs, including the lively Coral Café (9), dominated by cartoon fish, and the Copa Banana nightclub (10), where the stage is set by giant fruit slices and a pineapple-shaped DJ's booth. In the lobby lounge, drawn curtains rendered in gypsum board are set against real fabric ceilings (11).



10



Project: Walt Disney World Dolphin Hotel, Lake Buena Vista, Florida.

Architects: Michael Graves, Architect, Princeton, New Jersey (Michael Graves, project architect; Patrick Burke, associate in charge; Susan Butcher, Jesse Castaneda; Susan Bristol, Amy Cheun, Selim Koder, Michael Kuhling, Tom Rowe, Erica C. Weeder, Wilfrid Wong, Ross Woolley, design team; Meryl Blinder, Jennifer Carlisle, Amy Forsyth, Stephanie Magdziak, Saverio Manago, Carole Nicholson, Nancy Thiel, Pam Zimmerman, assistants); Alan Lapidus P.C., Architect, New York (Alan Lapidus, principal in charge; Joanne Kozel, project architect; Marta Enebuske, Craig Pillon, job captains; Evelyn Aron, Sharon Arrindell, Helene Conway, Katy Ho, Kim Lam, Doris Masear, Victor Soliven, Susan Turner, Jurek Zaborowski, architectural team).

Clients: Tishman Realty & Construction (managing partner) and Aoki Corporation in joint venture with Metropolitan Life Insurance Co.; hotel operator is Sheraton.

Site: (with Swan Hotel): 150 acres adjacent to EPCOT Center.

Program: 1,350,000-sq-ft hotel/convention center with 1511 guest rooms and suites, 5 full-service restaurants, 3 snack bars, 2 lounges, health club, and retail spaces.

Structural systems: reinforced concrete (hotel tower); steel superstructure (low-rise portions).

Major materials: (see *Building Materials*, p. 121).

Mechanical systems: electric drive refrigeration machines; gas-fired boilers; electric heaters in guest rooms.

Consultants: Cantor Seinuk Puig Associates, structural; Jaros, Baum & Bolles, mechanical; Fisher Marantz, lighting; Michael Graves Architect, Wilson & Associates, interiors; Ivey, Bennett, Harris & Walls, civil engineering; Robert Pacifico Associates, kitchens; Baring Industries, laundry; Paul Alan Magil & Associates, audio-visual/security; Cerami & Associates, acoustics; Herbert Halback, landscape; William Hobbs, fountains; Future Tents, tents; Law Engineering Testing Co., geotechnical; Cermak, Patarka, Peterson, wind; Parker Corporation, purchasing; Michael Graves Architect, Joseph Zelvin Models, Todd Associates Architectural Models, modelmaking; William Taylor, model photographer. Development manager: Tishman Realty & Construction.

Contractor: Aoki Corporation.

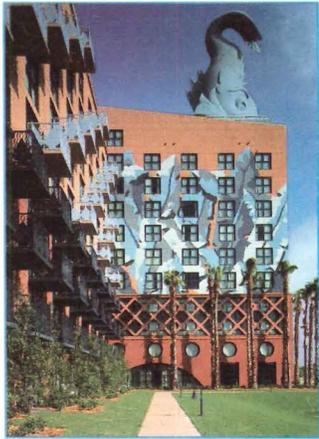
Costs: \$220 million.

Photos: Steven Brooke.

Animal Spirits

Vincent Scully visits the Dolphin hotel – with stops

at Cinderella's Castle and Main Street U.S.A.



Arches, portholes, and lattice form the base for banana leaves at "Jack-in-the-Beanstalk scale."



Under the clamshell fountain, "a splendid place to stand in a thunderstorm."

*When you wish upon a star
Makes no difference who you are
When you wish upon a star
Your dreams come true.*

Those words, patently false on the face of it, state the theme of themes of Walt Disney World, and for a while there in the impressive heat of high noon on the steps of Cinderella's (or mad King Ludwig's) Castle, Disney World makes us see that they are true. True not in any metaphysical or even historical sense, but absolutely true so far as the myths of American culture are concerned. They are everything we know is not really so but wish really was and want to believe in; nothing less, by heaven, than the heart's blood of the Republic, the vital force that made it different in intention from every form of government that had gone before: Life, Liberty, and the Pursuit of Happiness, equality, hope.

So the Disney chorus of beautiful young people dances and sings on the castle steps, always with one African-American among them, but an animal, Goofy, or Donald Duck, or the Wolf, is normally the center of it all, along, of course, with Cinderella, Snow White, or another of their virginal divinities, Disney's perennial prepubescent Artemis, the Mother of the Beasts.

So we ask ourselves what part animism plays in this. Can humanity's deepest instincts, beliefs, perceptions, be embodied only in animal form? Must they be disguised to be tolerated, recognized? Can only the animal convey the meanings that matter to us? One thinks of the animal dances of the Pueblos and of the predecessor of Greek tragedy, the goat song. The shaman in the animal skin is always present, connecting us with the ancestors and with nature's God. Did Disney see this? Consciously, probably not; artists rarely do. And Disney was an artist and a flaming genius at that. He tapped our absolute heart, an organ sentimental, ignorant, undisciplined maybe – no, surely – but the one that is, nonetheless. He did not create it, but he made it no worse. Bambi is ridiculous but better than the loose-lipped killers after all, and Main Street U.S.A. has played an honorable part in saving a lot of Main Streets U.S.A. over the past 20 years.* But under all that always is the animal. Oldenburg understood it. It's Mickey that counts. When Mickey comes down the steps of the castle the crowd makes a sound – not a roar but a

welcoming. Others, far off and near to us in time, have held to lions, eagles, bears. We, by God, produced a mouse.

One would have to be a mean old curmudgeon indeed to be less than delighted by Michael Graves's Dolphin Hotel, at least for a while. It is a quick read on the giant screen. The first view of it is the best. We drive in along Disney World's entrance road and come to a bridge and the foliage opens out to the right, and there they are, the Swan and the Dolphin, seizing the Florida sky. Disney World's terrain, like most of Florida, is utterly flat; that is Florida's special charm under its steaming, baroque sky. So far, in Disney World, only the Swan and the Dolphin exploit that special condition. Shocking in scale, apparitions, they stretch wide under the sky's incomparable expanse, and the enormous animal figures that crown their extremities like barbarous akroteria stand out against the towering castles of the clouds and are constantly echoed and re-echoed in their shapes. It is all animism itself, tapping nature's powers, but it sports mighty cartoons of classical urns as well.

Indeed the Swan and the Dolphin are cosmic cartoons in toto, their shapes abnormally few, obvious, and vast. They are fundamentally unbelievable, suggesting stage flats, brutal fantasies, fevered dreams. The Dolphin dominates. Its high gable – the biggest gable in the world? – looms over the Swan's flat curve. In this frontal view the gable is magisterial, the lord of the sky. From the side it is so narrow that it looks rather silly, like the false gables that have been cropping up in shopping centers lately. The Dolphin should in any event be approached through the Swan; its own automobile entrance is basically tacked onto the back of it. The Swan is in every way lesser than the Dolphin and a preparation for it. It has no major spaces of its own. One should pass right through its pinched central corridor to the giant's causeway of massive stones that leads from it across the lagoon to the Dolphin's wholly incredible façade. Enormous wings push out from it, crowned by the urns spouting water. Painted banana leaves clothe its high, flat walls at Jack-and-the-Beanstalk scale. A pair of metal pergolas, capped by gay striped awnings with scalloped edges, carry our eyes toward it across the water. They are echoed in the lower pavilion of the façade, while a series of Venus's scallop shells directs a heavy cascade of water down from the gable. The shells are flanked by dolphins, and the lowest one, the biggest of all, is monumentally supported by free-standing dolphin cut-outs. It is designed with a lip. It slanders.

We enter under it. It is a splendid place to stand in a thunderstorm, the shell looming high overhead, the clouds boiling above it, the roar of the waters. Behind it the public spaces of the hotel are high and appropriately scaled, culminating in a truly marvelous rotunda, a billowing pavilion like the world's largest tent, the Dome of Heaven in its original Etruscan form, lighted through oculi from above. At first the imagery seems excessive,

*Of which the first step in the architectural profession was probably Charles Moore's perceptive analysis of Disneyland, "You Have to Pay for the Public Life," in *Perspecta* 9/10, 1965, pp. 58–87.

but one rapidly gets used to it, perhaps numbed. Nevertheless the scale, though large, is very gentle: The piers are screened by trellises, threaded with vines; the dolphin fountain splashes. It makes a good place to sit, one of the few wholly successful lobbies of recent years, devoid of Portmanesque paranoia and Trumpish frump. The color scheme, too, represents an advance for Graves over that of the Swan, which is distinctly lugubrious. Fine color reproductions of paintings by Matisse are hung everywhere, and their shapes and colors are happily echoed throughout the building. The ensemble represents an impressive achievement by Graves, one which would not have been possible had he not been an architectural painter as well as an architect.

The corridors serving the rooms are nice too, with beach murals low down so that one feels pleasantly enormous, and with the floors suggesting beach sand spread with carpets and the doors vertically striped like Aldo Rossi's beach cabanas. The change of pattern every few feet and in the same plane suggests the design of the old master, Morris Lapidus himself, so that one is struck by what the football announcers would, I think, call *déjà vu* to learn that his son, Alan, worked on some of the details and did the working drawings. (The patterns are all Graves's, nonetheless.) It is appropriate to have this continuity of descent from the designer of the redoubtable Fontainebleau, who said of guests, "You should make them feel that they are all in the same musical comedy together." That's what Graves does and why his walls are treated where possible like curtains looped back or painted screens. Outside, the massive piers and rusticated lower floors, which look like masonry, ring hollow under our knuckles. Why not, it is all show. And the show goes on in the many restaurants too, all themed. The finest is the Ristorante Carnevale, where the polenta with wild mushrooms takes you right back to Val d'Aosta. The Carnevale staff, who are all as nice as can be, like all Disney employees, greet you with a "Buona Sera," but with the exception of one brave lady from Rome, that tends to exhaust their Italian.

No, none of it is real. One can't blame Disney World for that. At its best, which I think is in the Magic Kingdom, it is really one great amusement park, like the Savin Rock in West Haven to which we used to ride on the open trolleys of summer when I was a child. The difference, of course, is that the very poor could get to Savin Rock and wander through its wonders, even though, as we used to say, a dollar didn't last very long there. Disney World is too isolated and the theme parks too expensive for that. The really poor, who need it most, can't get there, though there are plenty of people around to whom the visit must have involved the hard-earned savings of many years.

Anyway, Disney recreates the trolley, too, as if we were all one people again, and the old Main Street at reduced scale, one which, curiously enough, doesn't make people look especially big but turns the horses into horse giants like the one

at Troy. The giant horse leads us to Cinderella's Castle, and we pass through it to Fantasyland and wander from there to Frontierland and Adventureland and maybe to Mickey's Birthplace, and there is always something going on, endless crowds in flow, music, singing, people shooting other people off roofs or taking off on Huck Finn's raft or in one of Cooper's canoes. We are wandering through the structure of a brain, pursuing the complexities of myth through its corridors.

The experience is Dionysian, disorienting. When the wonderful birds – ducks, sparrows, cowbirds, and crows – come and beg pieces of hot dog from us they all act like Disney characters. We have gone mad. But that's what Carnival is for. Life is altogether more real than we can take. We have got to disorient ourselves once in a while. Does it affect our capacity to make rational decisions on other occasions? Quite the reverse, the Greeks thought.

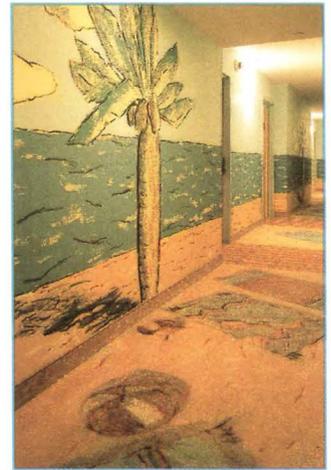
How well do the Swan and the Dolphin serve this end? Certainly they represent a new direction in the Disney Development Company's thought. They are far away from the Magic Kingdom and are intended to be the iconographic heart of the new Disney World, which is in my opinion somewhat more pretentious, less appealing, much less "affecting" than the old. They are very expensive, in no way populaire, housing vast conventions of sober-suited executives who to the innocent eye look out of place in Disney World. Nor do the new hotels as yet attract the vast day-time crowds that flock to the Floridian (for tea!), and they probably never will. They are also more wholly involved in the automobile culture than the older hotels; the monorail, proud harbinger of what we once thought the future was to be, is far away. Just so, outside the empire's mystic borders a random automobilistic urbanism, attracted by it, is taking horrid shape, destroying the earth from Orlando to Kissimmee. Here inside, though, all is quite genteel. A so-called "tram" connects the new hotels with the Epcot Center, science-oriented, highly uplifting, and a motor launch links them by water with the Disney MGM Studio Center, which is Movieland of the Art Deco period and Hollywood-Narcissistic, a little of which goes a very long way. The boat will also run to Robert Stern's light and well-mannered Shingle Style settlement, now under construction, which lies in close and rather surreal proximity to the Dolphin. This, so the boat's skipper tells us, will reproduce a New England seaside resort of the late 19th Century, complete with a real shipwreck.

In general, there is a kind of imperial brutality in the Swan and the Dolphin that serves this newer Disney World well. The movie is *Intolerance*, the set, Babylon. The fountains of this Paradise serve uncouth kings, richly bedecked, whose animal totems, illuminated from below, ride in the black velvet sky.

But where is the star, you ask?

Hell, where's Mickey?

Vincent Scully ■

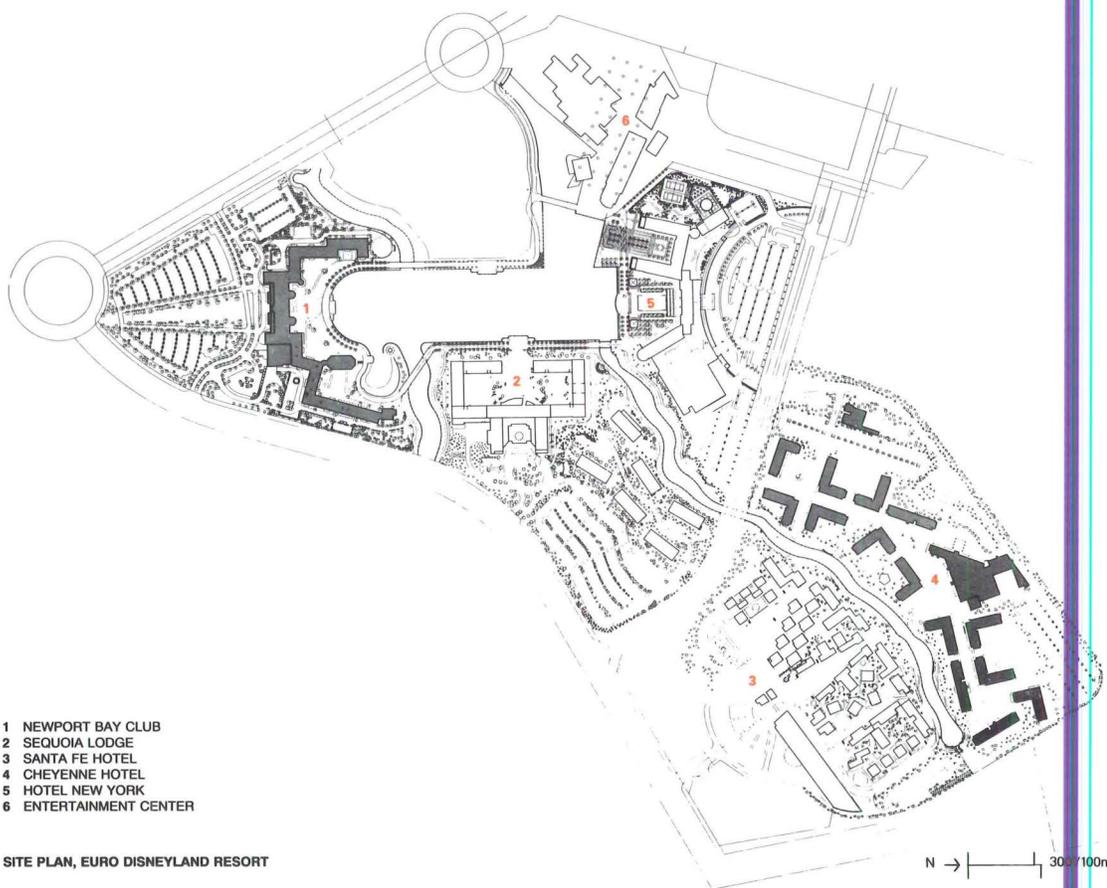


Beach scenes in the guest room corridors suggest "the old master" Morris Lapidus.

The author is the Stirling Professor of the History of Art at Yale and author of numerous articles and books on American and Modern architecture.

Euro Disneyland and the Image of America

Ross Miller discusses Disney's new multibillion-dollar resort outside Paris, and an accompanying text focuses on its American-designed hotels.



American Exotica

Disney has attracted some of the deans of High Architecture – Robert A.M. Stern, Michael Graves, Antoine Predock, and Frank O. Gehry, for example – to the world's most ambitious amusement park, where they'll provide Europe's version of the Magic Kingdom with a resort of 4688 hotel rooms and assorted nightspots. (The French architect Antoine Grumbach has also been hired by Disney to design the Sequoia Lodge, inspired by America's national parks, but it is not illustrated here). These hotels show the challenges of building for the mass tourist market: Here, there's little salvation for mediocre designs, but on the other hand, the setting helps strong schemes become more dynamic.

Stern, Graves, Gehry, along with Tigerman McCurry, and Venturi Scott Brown Associates,

Euro Disneyland is now being built on 4500 acres, 15 miles east of Paris. Before it opens in 1992, the Walt Disney Company will have spent \$2 billion, a good part of it to build hotels (page 82) designed by some of the world's most celebrated architects, many of whom are Americans. It is worth considering the implications of the export of this unique American product. What are the French receiving, and what are the Americans getting in return?

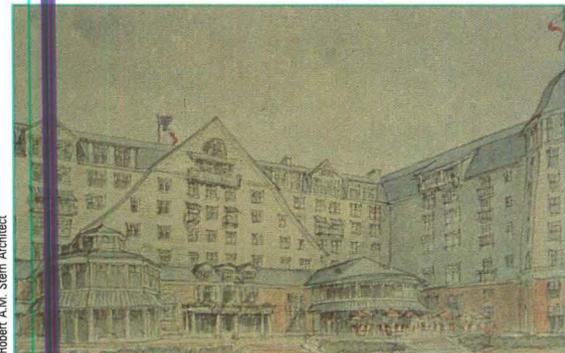
Having trouble generating a popular culture of their own, Europeans have long been drawn to that of America. In particular, French intellectuals as diverse as Tocqueville, Bourget, and Godard have often valued most what Americans take to be of little worth. We, in turn, have often looked to Europe for high culture and a sense of class. We have a long history of mutual misunderstanding that includes Jerry Lewis film festivals in Paris and the seasonal aping of ludicrous French fashion in New York. What is clear to many Europeans, however, is the difference between American pop – which is unself-conscious, energetic, and inventive – and their hated kitsch – which is pretentious and shallow with calculated public appeal.

Americans invent culture the way we farm and build, with a great deal of waste. Most of what we

produce is trash. But out of all the experimentation inevitably comes compelling work. Disney's early production is an example of this. His first work required the invention of new technology necessary for his kind of sophisticated animation. The early Disneyland parks were new little cities that worked with similar precision. Old or classic Disney was pop, not kitsch: innocent and faithfully democratic with its melting pot ethic of a "small small world" where all cultural differences were rendered benign, at the same Thumballina scale. Disney offered test-tube examples of how cities might be made to work.

Europeans, especially the French, have consistently stigmatized their own feeble attempts at pop by tarring them with deeply ingrained notions of class. In their view, culture is produced in the salons or *grandes écoles* and not on the street. Their use of the word kitsch carries all the disdain of a basically homogeneous and insular society for outsiders who refuse to be self-consciously serious or socially correct. In embracing Disney, the French are looking to us for our inimitable pop.

But what they are getting, at least with some of the hotels in Euro Disneyland, is kitsch. Under the direction of Michael Eisner, with the eager partic-



Robert A.M. Stern Architect

Robert A.M. Stern Architect

© The Disney Company

1, 2 Newport Bay Club by Robert A.M. Stern Architects
3 Hotel New York by Michael Graves Architect

American Exotica *continued*

developed the resort site plan in accordance with Disney's value system: Functional efficiency and the entertainment quotient are equally important. The hotels are to be at once whimsical and profitable; the resort will be both a playground and a commodity to be marketed to the entire Continent.

In some ways, Disney's hotels validate the design-by-packaging method the company has always pursued: Disney asked the architects to give their hotels themes inspired by American places, namely Newport, Rhode Island, New York City, the Western Frontier, and the Southwest. Given their tight budgets and the rigid functional issues of hotel design, some of the architects relied on associative images to furnish a veneer of architectural quality. Others told Disney they had no interest in representative architecture and instead relied on landscape design or abstract forms for impact. In both cases, Disney's bottom line calls for visual dramatics. During these video-saturated times, people associate entertainment with a surfeit of images and special effects. In a couple of projects, we find innovative spatial sequences or structures of impressive ingenuity. But otherwise, Euro Disneyland's resort is not a resounding chapter in the annals of architectural patronage.

Robert A.M. Stern's Newport Bay Club (1, 2) and Michael Graves's Hotel New York (3), sited at opposite ends of Lake America, show the difficulties of reconciling associative images with large modern hotels. The Shingle Style, one of Stern's most favored architectural resources, inspired a structure with a monumental colonnade in front and a rambling lakefront modulated by gambrel roofs. While Stern's architectural allusions are gracious, the scale of his façades seem forced – an 1100-room hotel does not readily accommodate domestic motifs.

When Michael Graves designed the Hotel New York, he

ipation of celebrity architects, an unconscious split has developed in the Disney empire. A needlessly pompous and grandiose coat of "High Pop," spread too generously over hotels and service areas, clashes with the nearby Magic Kingdom's original pop innocence. Ironically, under Eisner, the Walt Disney Company's patronage of high-style architecture for the hotel and convention areas may be at odds with European expectations for the original popular commodity.

It's worth remembering that Mickey and his crew are children of the Depression and will seem out of place and underdressed in Euro Disneyland's hotel area, an environment decorated with the hyper-sophisticated ironies of Post-Modern design. What distinguishes some of these hotels is their gawking obeisance to the monied world of Newport, New York City of the 1920s, and the beaches of Rio, with the slums wished away. By taking the façades of wealth and attaching them to conventional Ramada-like hotels, Eisner's architects have made gawking at the rich a new Disney attraction. Stay a night in a mock-exclusive hotel, the way American teenagers, for a high price, go to a mock-exclusive club like the Hard Rock Café. Disney invention is overwhelmed by the generic.

The American sense of inferiority before European culture also emerges in Euro Disneyland's hotels. Why are we dressing up again in the way Daniel Burnham, a hundred years ago, clad Chicago as the White City to impress visiting Europeans? Euro Disneyland's use of architecture is more a version of American boosterism than enlightened corporate patronage, in the way it existed in Renaissance Florence or in recent decades in Columbus, Indiana. Disney's effect on real building may be negligible, but its influence on marketing will be great. Serious architects are being used chiefly for their celebrity and market value, to sell a product just as "uncompromising" Lillian Hellman modeled a mink coat. How else can we explain the choice of architects as diverse as Robert Stern, whose hotels are frankly historicist, and Frank Gehry, whose relatively modest Entertainment Center resists revivalism. Culture here is being commodified, sold, and traded, the way Disney's intricate, hand-colored drawings for animated cartoons, once thrown out by the truckload, are now offered for thousands of dollars at international auction houses. The actual experience of Disney as a retreat or place apart is compromised and treated as a brand name.

.....
American Exotica *continued*

knew that it would be futile to recreate a fragment of Manhattan on his open site. Instead, he interpreted several of the city's buildings in a hotel of three parts, each of which recalls a different aspect of Manhattan. The eight-story core emulates five midtown highrises; three adjacent wings represent Gramercy Park, and the low-rise wing opposite "Central Park" evokes the brownstones that pervade the city. It succeeds in breaking the large structure into more manageable components, but with its minimal detailing and park-like setting, the hotel's allusions to Manhattan seem rather vague. It may succeed as a lyrical collage of buildings, but its "New York" traits are literally nominal.

Stern describes his second hotel at Euro Disneyland, the *Cheyenne* (4, 5), as a place where "the building not the vessel for entertainment; instead the building is the entertainment." It recreates the film set of a Western: Hotel rooms will be distributed among buildings that line pedestrian streets.

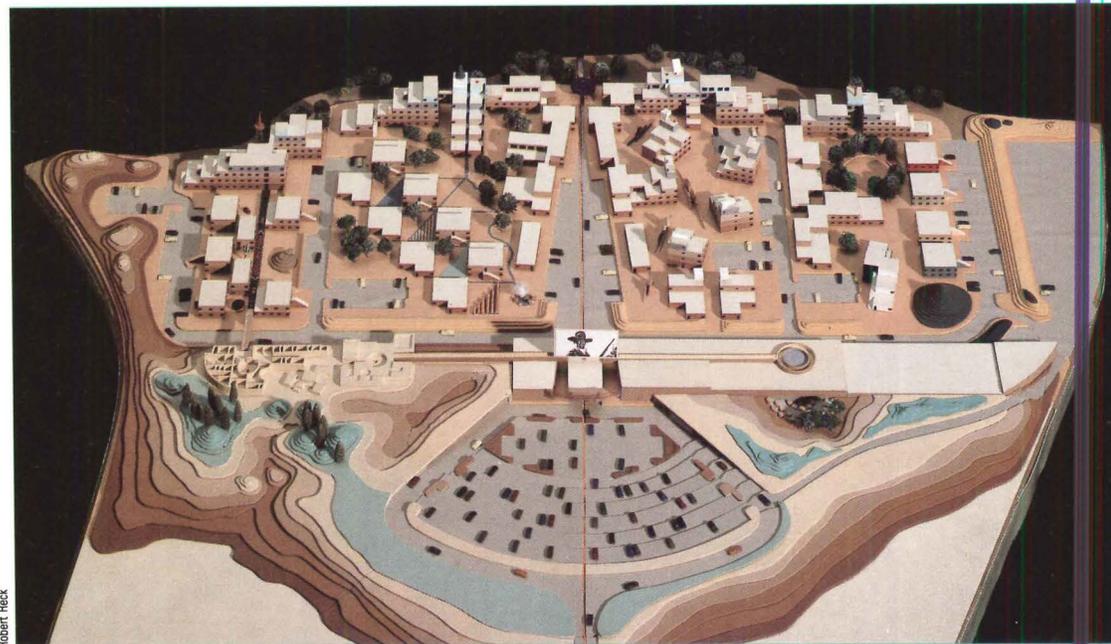
Though it is probably not Stern's intention, this hotel could be the most sardonic work of architecture at the resort — an implication that place-making amounts to nothing more than installing programmed space behind false fronts. On the other hand, stage-set architecture may be the ultimate Disney hotel — a place where people can conjure their own Wild West fantasies.

It seems at once appropriate and ironic for Disney to ask Antoine Predock to design the *Santa Fe Hotel* (6): While he is one of the leading architects of the Southwest, Predock is also one of our most site-specific designers. Paradoxically, he had to consider his hotel site a *tabula rasa*, and interpret a landscape that exists in another hemisphere. He responded thoughtfully, with five Discovery Trails, where plantings, sculpture, and artifacts (including an "abandoned" car) create a series of thematic courtyards. These lyri-



Robert A.M. Stern Architect

4 & 5



Robert Predock

6

4, 5 *Cheyenne Hotel* by Robert A.M. Stern Architects
 6 *Santa Fe Hotel* by Antoine Predock Architect

Disney's social climbing has been part of a prudent business strategy carried out over a number of years. Under Michael Eisner, whose leadership resuscitated a corporation without direction, Mickey has consistently gone upscale. The Mouse, who 30 years ago lent his ears to a high-spirited but goofy television show for kids, has them now appropriated for a doorway in a flashy new building at Disney World by Arata Isozaki. Mickey has proved to be big business, and not just for kids.

Walt Disney made a reputation and fortune by drawing flat cartoon images and setting them into motion. Slightly altering the details of each image, he flipped them under bright lights and recorded the results. He animated the static world of newspaper comics and managed to create a universe of characters who have provided great pleasure and won remarkable devotion. In the Mid-1950s, when he first built a town to transform his cartoon creations three-dimensionally, he carefully chose a neutral site that would have little competition from tawdry Hollywood or Los Angeles's small and already derelict downtown.

Orange County presented no dissonance for Disney's brilliant blend of the fantastic, like Tomorrowland, and the nostalgic, like Main

Street. Architecture wasn't needed for the skin-thin backlot illusions. All who entered willingly suspended disbelief if only to keep eyes fixed forward so as not to see the incongruous gas station signs and palm trees behind the Matterhorn. Disney peopled a series of improbable landscapes with the happy characters of his own imagination, a classless, racially homogenized America as inoffensive as a Jimmy Stewart movie. His formula owes its success, in large part, to the fact that it came as close as sprawling Los Angeles had ever come to the density and excitement of a real city: It did not have to compete with Paris down the road.

Unlike the international architects hired to build Euro Disneyland, Walt Disney did not use irony. He seemed to understand intuitively that it would undermine the fragile balance between illusion and realism, which kept his operation going. Midwestern in its compactness and fetish for order, Disneyland met the public's appetite for escape, community, and an unthreatening sense of place. Disney provided a displaced urban setting for a suburban generation threatened by the disorder and violence of the post-war city. His buildings and streets had the reduced scale of movie

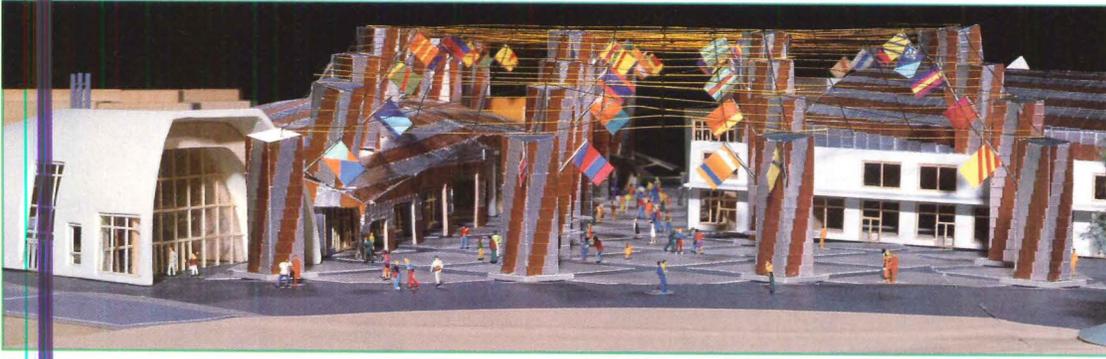
.....
American Exotica *continued*

cal vignettes of the Southwest are inspired by the films of Wim Wenders, as well as personal recall; they suggest that media images can enrich, rather than trivialize the identity of a place. The hotel, a collection of cast-in-place concrete buildings, will be a neutral backdrop to the trails, with references to roadside motels of the open desert and plains. A drive-in movie screen, an icon from rural America, will be the Santa Fe's frontispiece.

When guests return from the Magic Kingdom to their hotels, they'll pass through Frank O. Gehry's entertainment center (7, 8), where a gridded ceiling of suspended lights will illuminate a midway of restaurants, stores, and a Wild West pony show distributed among three rambling structures. Here the architect's design method, rather than any particular image, connotes an American identity. Gehry's formal invention should delight guests at Euro Disneyland, while offering a few lessons for architects. The buildings themselves provide sensory appeal: The arcs of lights and the twisted columns of the midway seam the buildings together without neutralizing their eccentricities; swelling roofs and bright colors will evoke the gaudy display of a medieval fair in a modern vocabulary.

Gehry's exuberant buildings introduce a welcome contrast at Euro Disneyland: They hold their own against the trademark Disney images of the Magic Kingdom, while bypassing popular banalities that distort Europeans' views of America. Like Predock, Gehry shows that we need not resort to explicit images to make architecture popular. **Philip Arcidi** ■

Ross Miller is a frequent contributor to P/A. He is the author of American Apocalypse: The Great Fire and the Myth of Chicago (The University of Chicago Press, 1990). He is currently at work on a book on architecture's role in American post-war urban development.



7, 8 Entertainment Center by Frank O. Gehry & Associates

sets not to accommodate the camera, but to satisfy the visitor's eye. The careful manipulations of scale made certain that visitors would not take on too much too fast or be overwhelmed.

Everything was happily mechanized. Visitors did not map their own path through the park as they might on a walk in a real city or a visit to the zoo or museum. Experience itself was predigested and then parceled out in easily swallowed doses. No one was threatened or permitted to escape the system. Even litter was abolished. Drop a gum wrapper and a smiling uniformed worker snatched it from the clean street with the snapping jaws of his butler's helper. The total environment with its passion for order made adults as pliable as children.

Walt Disney also seemed to intuit the potentially suffocating nature of his enterprise. In compensation for the totalitarian control that he felt was necessary to make the place function, he planned for disorder. Disney replaced the chanciness of modern urban life with futuristic rides and fun-house boat trips. All surprises occurred in the dark. Experiences were safe, coming predictably, one at a time, like the steady crawl of celluloid between the sprockets of a projector.

Ever since the 19th Century, when educational planners divided the study of architecture into the *École des Beaux Arts* and the polytechniques, sundering design from function, architects have been prone to mistake image for substance. Making historical façades at Euro Disneyland, in the form of images from the wild West or the monied East, divorces plan from program and breaks with the founder's original intention to create a compelling alternate city. What Euro Disneyland calls its "scenographic" organization for the hotels is unfortunately just a self-aggrandizing metaphor. Its strong associations with the making of movies serves as slick cover for yet another ad hoc development of another anonymous exurban property. Skimming America for its regional identities to serve as elevations for grand hotels that remain pedestrian in section has nothing of the back-lot wonder of the less grand and less self-conscious amusement park. By nourishing the imagination without pandering to the avariciousness of people who see pleasure only in terms of the images of power and exclusivity, Walt Disney created his own kind of authenticity. Euro Disneyland's hotels and their architects might do well to try to imitate that model. **Ross Miller** ■

Portfolio: Technology and Humanity

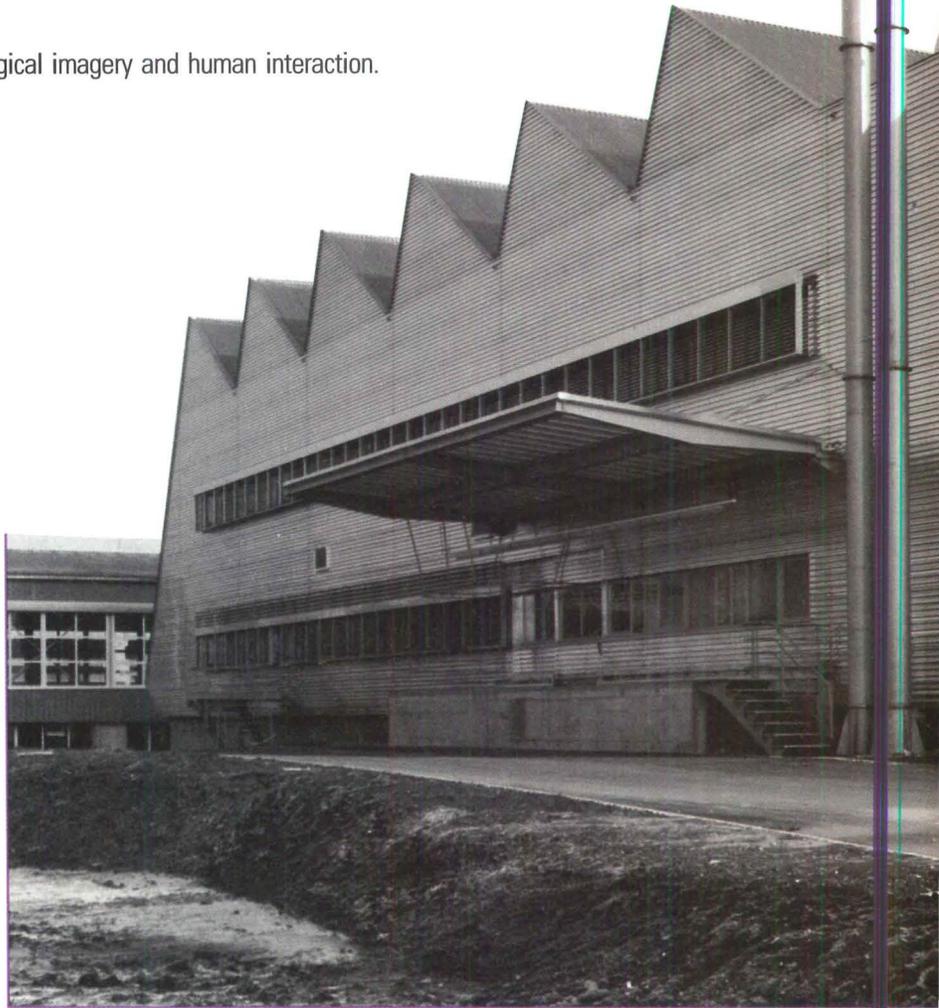
Two industrial buildings blend technological imagery and human interaction.

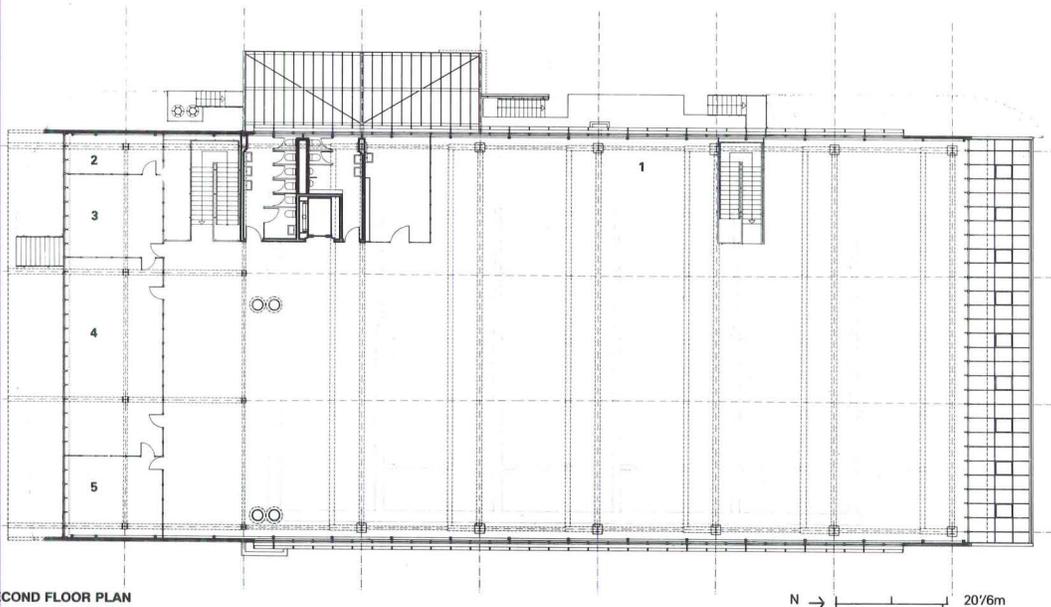
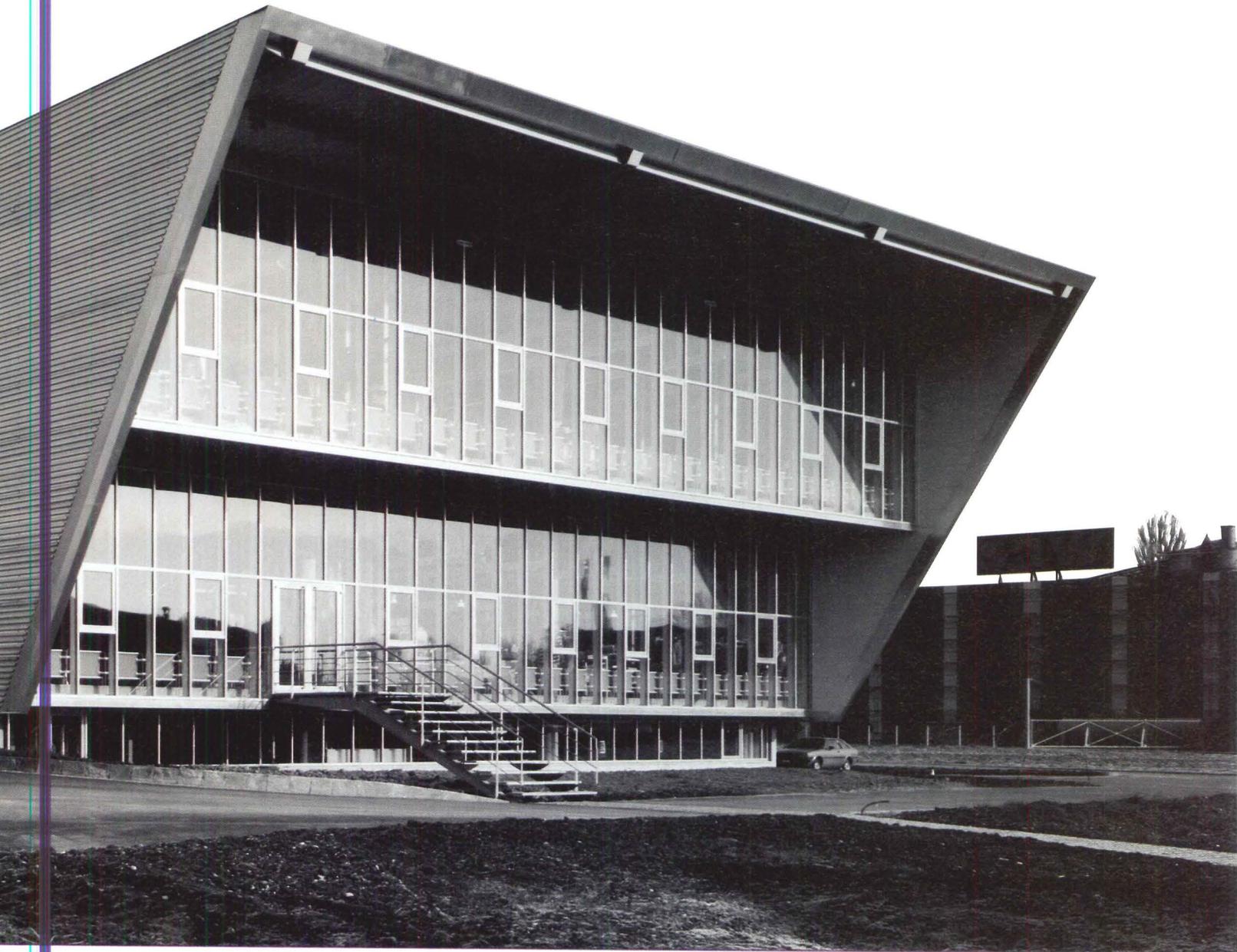
Beldona Fabrikations AG

A heightened awareness of employee needs is the generator of many key design elements of a lingerie manufacturing facility in Widnau, Switzerland. The winner of a 1985 competition, the Zurich architectural firm of Suter + Suter was asked to pay particular attention to creating “agreeable” working conditions for employees.

Sited in an industrial zone, the building is a clear and spare expression of the client’s needs and program. It is a rectangle approximately 85 feet wide, 213 feet long, comprising two floors and a basement and providing 100–120 workplaces. Since the structure is on a north-south axis, angled sawtooth roof clerestory windows have been used to gather in as much natural lighting as possible to supplement the strips of window along the east and west façades. The north and south ends are canted in the same south direction, reflecting the shading needed for each orientation. The wall on the south end is stepped out on the second floor, while the north end glazing is simply sloped.

Side walls of ribbed metal are held short of the ground, the base being formed by basement walls. The relative solidity of these sides in comparison to the ends does not convey the sense of the lightness and openness that is achieved with the skylights. Light, in fact, was what the architects based many of their design decisions on, since it was so important for not only visibility, but for ambiance as well. The second floor, as the client requested, is clear-span production space, with office and conference areas. Design and its sewing room, cutting room, staff support functions, and storage occupy the first floor. A concise statement, the building seems more than adequate to the client’s desires. **Jim Murphy** ■





SECOND FLOOR PLAN

From the southeast (1), the slope of the wing walls can be seen to be derived from the sawtooth roof skylights, then repeated in the pitch of the opposite end. Screening frames are attached outside the strips of window on the flat east and west sides. On the second floor, production spaces (2) benefit from the multiple ceiling openings. Six steel trusses span the width of the building, also supporting the clerestories. Mechanical service elements are handled in a very clean manner, combining with the clear span to create extremely functional and adaptable space.

- 1 SEWING/PRESSING
- 2 COMPUTER
- 3 OFFICE
- 4 RECEPTION/SECRETARIAL
- 5 PLANT MANAGER

A lighting laboratory expresses the egalitarian philosophy of its company.

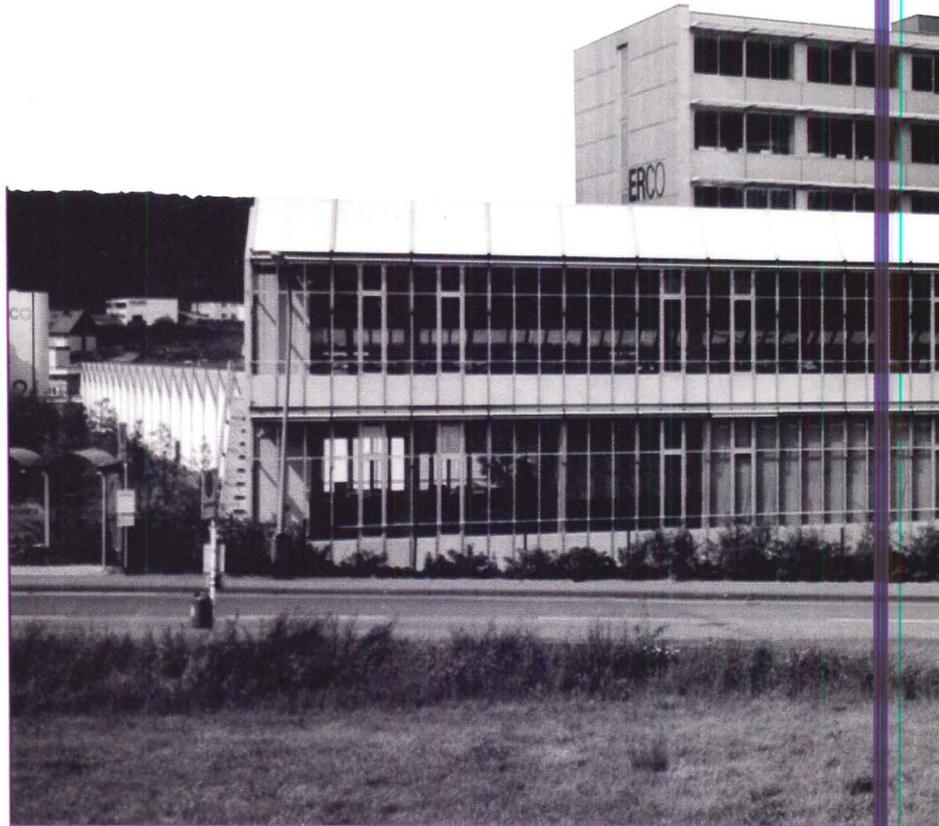
ERCO Leuchten GmbH

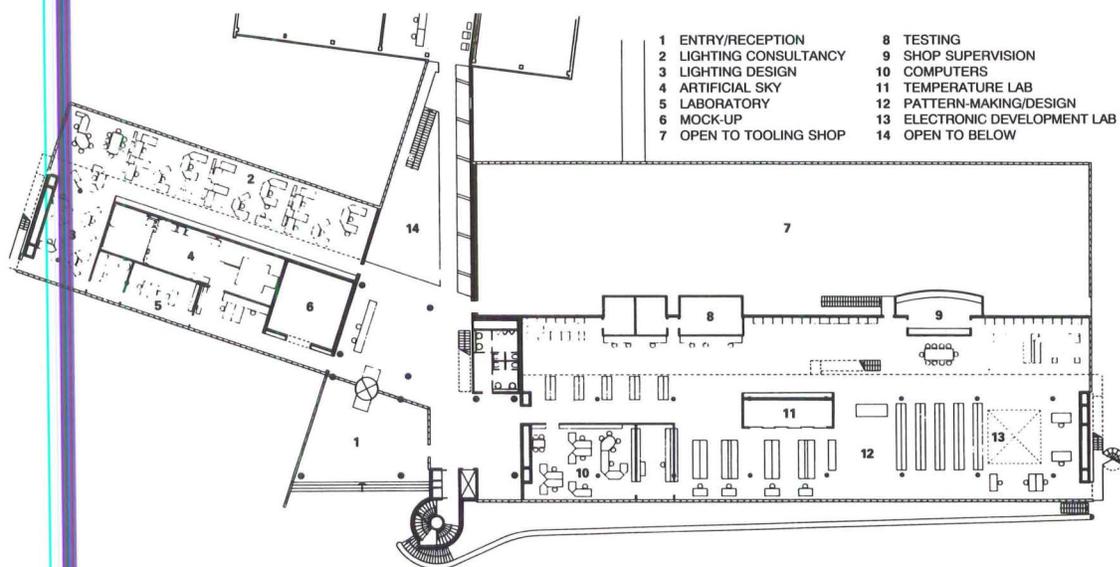
On many occasions, the President of ERCO Leuchten GmbH in Ludenscheid, Germany has publicly stressed the fact that his company did not produce "lighting," but rather it made light. He has also noted that the industrial sector of West Germany had created many buildings, but few legible expressions of companies and their philosophies. This he challenged the architects of the new ERCO Technical Center, Kiessler + Partners of Munich, to rectify in this new facility.

The program further stated that the facility should reflect the company's belief that "there is no intellectual difference" between the operation of a tool-making machine, a rotating mirror device, or a data processor. The center was to be a "workshop," an "overall, not a pinstriped suit." That was to be combined with the most economical building in terms of energy management.

To achieve the energy solution, sensor-controlled solar blinds and cloth awnings outside form sun protection, yet allow natural light to be effective in cutting electricity needs. External tracking movable louvers control sunlight through the skylights, opening completely on overcast days. Mobile horizontal blinds can be used inside to prevent glare on VDU screens. Of course, spaces requiring darkness are handled according to requirements.

The client seems to feel that the building achieves both the egalitarian and the symbolic characteristics requested in the program. The flexible way in which the factory is used, say the owners, creates a sense of being in one big workshop, with ample natural light for all of the staff; it achieves a sort of transparency from the exterior, to create a visible metaphor for the company's beliefs. **Jim Murphy** ■





Among the many energy-conscious measures included in the building are the manually-operated textile shading devices (1) on the east, south, and west façades. Other means of sun control are internal blinds, solar glazing, and tracking shading over skylights.

Many work areas of the facility are two-story open spaces (2), reflecting the company's policy of promoting the kind of intercommunication expected in their operation. In these locations, stairs within the space permit easy access between one level and the other. This is also a manifestation of the design approach, which made no attempt to contain all functional needs in one simple package, but exercised freedom to put functional items where needed.

Perspectives

Companion essays examine chaos theory and, in divergent ways,

find in it models for a **new architectural paradigm.**

Essay: Architecture in the Ice Age

Most of us live in a network of cold, brutal world capitals where a hundred languages are spoken and no single culture is shared but for that of violence and greed. Our political, social, and economic realities defy the rules of traditional logic and demand new tools for problem solving and new ways to define ourselves. The erosion of determinism frustrates scientists and, above all, architects in search of utopia.

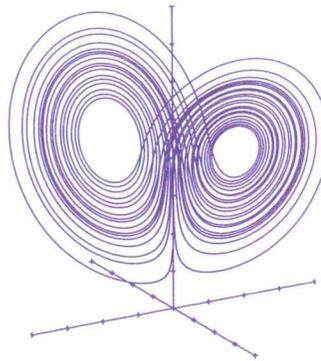
For three decades, scientists have been developing a new discipline to shed light on our confusing physical reality: the study of Chaos. Unlike traditional Western science in which very small influences are considered negligible within a system, chaos methodology is sensitive to initial conditions – recognizing that the smallest of actions can have vast cumulative effects on the outcome of events within a complex system. Close study of chaotic systems through computer modeling has allowed us to glimpse universal underlying structures in such seemingly unrelated phenomena as heartbeat rhythms and dripping faucets. These recurring patterns compel us to view chaos as “undiscovered order.”

The importance of chaos methodology to the applied arts lies in its revolutionary acceptance of instability and turbulence and in its visionary discovery of order and beauty within all that appears random and uncertain. Drawing a parallel to architecture, meaningful latter-day strategies must embrace the presence of turbulence and, from it, extract central, unifying themes.

Architecture, preoccupied with form, meaning, politics, technology, and finance, operates within the realm of chaotic systems. Architects, however, often ignore the terrifying complexities and uncertainties of urban life. Some attempt to find solace in the mythology of a simpler time, while others merely paraphrase social dislocation with now-fashionable subverted buildings.

Useful manipulation of uncertainty separates the creative individual, who sees opportunities in it, from the nostalgic, who sees threats. In architecture uncertainty has become a great paralyzing force, inducing in architects a sense of powerlessness, sentimentality, or worse, carelessness; we no longer feel we can change the world.

Architecture needs to be informed by a greater number of forces. It needs to be opened.



The Lorenz attractor, which became the emblem for the early explorers of chaos theory, reveals the fine structure hidden within a disorderly stream of data.

“Architecture needs to be informed by a greater number of forces . . . And there should be no doubt that [it] has the power to affect the course of human life, and the duty to do so positively.”

It must be more ambitious and communicative if it is to properly contain and shape the activities of the new diverse populations. And there should be no doubt that architecture has the power to affect the course of human life, and the duty to do so positively. For the architect to be effective, he or she must have a comprehensive understanding of international cultures and science, in addition to issues of building technology. The ecumenical comprehension of many disciplines will be critical to the architect’s discovery of those hidden repetitions or “universalities” that can generate meaningful solutions to programmatic and design problems. The transfer of ideas and technology from other fields is central to the creation of new architectural forms, which are to be developed in response to representational and functional needs.

To its credit (albeit by default) technology has failed to standardize and homogenize modern man. Yet, amid mounting social fragmentation and polarization, technology may serve to build bonds in the form of a shared visual language, since it is one of the common threads weaving through today’s disjointed urban culture. New technologies should be exploited to enhance the narrative and communicative aspect of design. Lively signage and sun reflectors that cast light into darkened streets, for instance, are some of the elements that can replace picturesque skyscraper “hats” with little practical purpose. Microwave communication technology could provide expressive sculptural features and appropriate form.

Deconstructivism, with skewed lines and photogenic, dashing planes, reflects in a literal way the visual disorder and irrationality of contemporary life. If this clashing “architecture of the other,” as Derrida put it, is a *tabula rasa* onto which we project our personal realities, are these constructions to be taken as mere scenery for the theater of modern life? Is this the proper role for architecture today?

In cinematic prose, the partners of Coop Himmelblau reveal their proclivity for breathless visual effects: “We want an architecture which bleeds, which exhausts, which revolves and breaks. An architecture which shines, which stings, shreds and splits apart while revolving: When cold, then it must be like a block of ice; when hot, like a wing of flame. Architecture

Raul Rosas charges that the **order underlying chaos**

has been overlooked by shallow deconstructivism

.....
 must burn.” Indeed, the real value of Deconstructivism is as picturesque counterpoint to the historic fabric of existing cities. However provocative, a world full of columns that do not touch the floor would be irritating, not enlightening. These constructions are not for the future as we wish it, but for the present as we fear it.

Deconstructivists miss truly heroic opportunities by failing to extract cohesive forces from the bedlam all around us. As architects, we can make no significant, lasting contributions if we abandon the search for unifying elements – collective truths. This new order should rest upon both universalities and site-specific, esoteric criteria. Architecture needs to distill forms that will speak directly to the racially and culturally diverse masses – a new, heteromorphous, technological “international style” – not a bland Esperanto, but a rich, composite dialect.

Consider some of the processes that can transform the products of architecture: *a. Higher user involvement in both design and construction:*

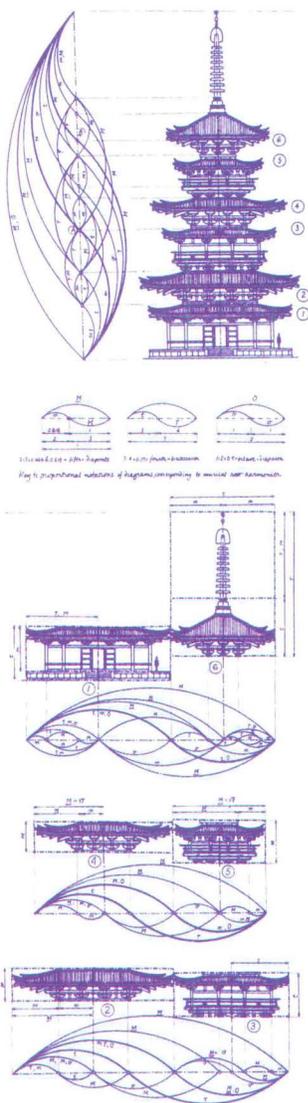
Reflecting increasing social diversity and the concomitant forces of self-determination, planners need to make the end user an integral part of the design process. This “sensitivity to initial conditions,” akin in spirit to chaos theory, could be particularly helpful in solving the housing crisis through the implementation of “sweat equity” programs with their dividends of reduced labor costs and renewed sense of community and pride. Training the needy to build their own housing would also provide them with marketable skills. *b. Increased private sector involvement with public welfare:* The primacy of economic forces over ideology and the unstoppable trend toward decentralization will force the replacement of monolithic, centrally planned efforts with localized, community-based programs. Architects and planners will need to respond to hybrid client organizations, which combine some of the structures and social goals of traditional governments with the streamlined efficiency of individuals. Indeed, individual initiatives will become a great force of change as private citizens and advocacy groups take more responsibility for civic endeavors – as postulated in chaos theory, a myriad of small influences having vast cumulative effects. Other types of central planning efforts will be undertaken by business/government partnerships, as new infrastructures for informa-

.....
 tion, energy, waste management, and transportation are deployed.

If architecture is to improve our lives, it needs to speak all languages. Lacking implicit cultural bonds engendered by blood kinship, we need to identify some common ground with its attendant visual vocabulary. Global archetypes need to be developed so that, combined with contextual and climatic considerations, technologically advanced and sensitive strategies for design and construction may be devised. We must be aware of what D’Arcy Thompson called the “deep-seated rhythms of growth,” which yield universal forms in nature, but we must also listen to specific and idiomatic cadences, those that speak the local dialect of a place. Most of all, architects and artists need to rediscover that true originality and meaning can be achieved only through rigorous assimilation and development of ideas and techniques, not through media-ready style.

Architecture and art alone will never be able to set the world straight for the 21st Century and beyond. If the arts are to be an important part of the lives of all humans, hunger and oppression must first be alleviated through financial, technological, and political means. We must find ways to discard the obsolete ideological and racial boundaries that now define and divide us. As architects, we must consider a rapidly changing world where increasingly diverse populations are demanding their rightful share in the power structures that up to now had been closed and homogenous entities. Chaos theory provides a useful model for thinking and acting effectively in the apparent Babel. Even though many consider social unrest essential to artistic creation, the world will not be truly civilized until food, decent shelter, relative freedom, and proper education are available to all. Art will then find new questions to ask. **Raul A. Rosas** ■

The author is an architect with a practice in New York and the Caribbean Islands and is currently at work on a book about legibility in architecture.



*Gyorgi Dcozi illustrates how wave diagrams reveal the proportional relationships among the elements of the Pagoda of the Yakushiji temple in Japan in his book *The Power of Limits: Proportional Harmonies in Nature, Art, & Architecture*, Shambala, 1985, Boston & London.*

Thomas Kubala argues that Louis Sullivan's unitary impulse

in architecture is a precursor to premises of chaos theory.

Essay: Finding Sullivan's Thread

"Logic deals with abstractions, and, from its nature, is soon lost in the maze of futilities toward which it flies." Louis Sullivan¹

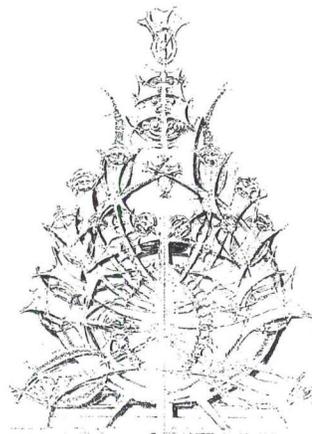
Rather than mount an attack on Deconstructivism et al, we wish to call for an architecture that, in its essential structure, does not rely upon abstract manipulations to generate its geometry. This alternative line of thinking holds, at its core, the understanding that the complexity and simplicity of the natural world are due to a number of fundamental principles. Implicit in this statement is the idea that the impulse behind the world's operating principles originates outside of man's purview. This notion, which is central to our thesis, is consistent with recent scientific explorations into chaos phenomena. Curiously, the same central idea formed the core for the writing and architectural practice of Louis Sullivan.

"The intellectual trend of the hour is toward simplification. The full powers of the modern scientific mind are now directed, with a common consent, toward searching out the few and simple principles that are believed to underlie the complexity of Nature, and such investigation is steadily revealing a unitary impulse underlying all men and all things." Sullivan²

The "unitary impulse" concept has been with us for ages and can best be recognized architecturally through buildings produced under the influence of the mystic branches of the world's major religions, be they Sufi, Shaker, or Zen. This approach to making architecture holds, as a primary goal, the creation of completeness and life in a building, and views the creation/maintenance process of the natural world as a model for building environments that enhance the health and progress of mankind rather than stimulate its suicidal tendencies.

There is no doubt that Sullivan was calling upon the architectural community to seriously consider utilizing the thinking methods of science for the purpose of creating a truly honest American architecture. He correctly determined that architectural design, proceeding in the mists of tradition and words, was veiled from the very forces it was being called upon to resolve. Sullivan strongly urged architects to open their eyes, to trust their natural ability to "read" the world scientifically without the approving nod of tradi-

"The 'unitary impulse' concept views the creation/maintenance process of the natural world as a model for building environments that enhance the health and progress of mankind rather than stimulate its suicidal tendencies."



Louis Sullivan's manipulation of organic elements derives complex decorative motifs from simple and compound leaf forms.

tion and the obfuscation of words. . .

"Then will our minds have escaped slavery to WORDS and be at liberty, in the open air of reality, freely and fully to deal with THINGS." Sullivan³

Just as scientists (sharing a common purpose and language) pursue the underlying principles and structure of the universe, Sullivan is telling us that we, as architects, have the same responsibility to uncover similar (if not the same) truths regarding the nature of architecture. His approach suggests that communal sharing of knowledge and insight is required in order that great strides be made toward a healthy manmade environment. How strange this viewpoint must appear to us now, steeped as we are in the belief that beauty is in the eye of the beholder and therefore subjective, entangled as we are in a cult of estrangement, and devoted to the idea that the value of art can only be measured relative to the artist's self-pronounced rules.

Sullivan's call for an organically inspired architecture fell on deaf ears. No American schools of architecture, as far as I know, seriously considered the educational program elaborated in his many talks and articles, primarily in *Kindergarten Chats*. Few, if any, architects picked up the torch of beauty, social relevance, and scientific rigor that Sullivan had lighted and so carefully tended throughout his life, at great cost to his physical and emotional well-being.

It would be interesting to pursue the reasons for the general reluctance of architects to develop Sullivan's ideas. Both his and Wright's work seemed to have been sidestepped by American architects' affair with European Modernism. Our point here, however, is to call attention to the unitary impulse theory of architecture, sometimes referred to as "unity of space," a line of thinking clearly distinct from the one currently being touted in architectural journals. We feel it is necessary, at this time in architectural history when esoterica reigns supreme, that Sullivan's heart-touching thread of thought be uncovered, expanded, and expounded.

Where is this thread to be found among today's architectural practitioners? No need to look in the abstract world of the university; Sullivan's philosophy (or "reason for living" to quote his own definition) can only manifest itself in the work and thought of those who are striving to

produce real places. The following questions are offered to assist the search. . .

1. Are the architect's personal ideals consistent with his architectural philosophy?

"... and may it not be said that he who would cause a beautiful architecture to grow in the garden of this world, must himself possess a nature in which are always growing beautiful impulses and a beautiful love of his art?" Sullivan⁴

2. Does the architect's philosophy integrate emotions in the design process?

"It has, alas, for centuries been taught that the intellect and the emotions were two separate and antagonistic things. This teaching has been firmly believed, cruelly lived up to." Sullivan⁵

3. Is the architect free of preconceptions, resistant to pressure from peers?

"The only safe method is to take nothing for granted, but to analyze, test and examine all things, for yourself, and determine their true values; to sift the wheat from the chaff, and to reduce all thoughts, all activities, to the simple test of honesty." Sullivan⁶

4. Does the architect advocate an education based on observation of the natural world?

"They shall teach that, while man once invented a process called composition, Nature has forever brought forth organisms. . . That true art, springing fresh from Nature, must have in it, to live, much of the glance of an eye, much of the sound of a voice, much of the life of a life." Sullivan⁷

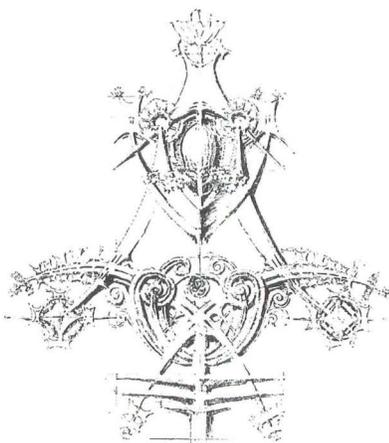
5. Is the architect's express purpose to create life-enhancing architecture?

"... in time your mind will clarify and strengthen and you will have moved into that domain of intellectual power wherein thought discriminates, with justice and clarity, between those things which make for the health, and those which make for the illness of a people." Sullivan⁸

"That an afternoon in the country, an hour by the sea, a full open view of one single day, through dawn, high noon, and twilight, will suggest to us so much that is rhythmical, deep, and eternal in the vast art of architecture, something so deep, so true, that all the narrow formalities, hard-and-fast rules, and strangling bonds of schools cannot stifle it in us. . ." Sullivan⁹

Whether one uses a process of elimination or attempts to pluck familiar names out of the air, it becomes clear that most of the stellar architects, about whom we continually read in both

"Few, if any, architects picked up the torch of beauty, social relevance, and scientific rigor that Sullivan lighted and so carefully tended. . . at great cost to his physical and emotional well-being."



the professional and popular media, do not live by these lights. Why are there so few who do? It is very possible that the reason for the reluctance to embrace Sullivan's vision lies not in our own stupidity or "decadence," as he was apt to preach, but in his ultimate inability to coherently describe the consequences of his theories. One can follow Sullivan's poetic imagery and be swept along in the grandeur and dignity of his eloquent arguments for beauty and naturalness, but when it comes to making an ego-sacrificing commitment to the idea of a "unitary impulse," one needs firm "proofs." Currently accepted theories of architecture must also be shown to have failed in addressing contemporary social, intellectual, and technological questions.

"But in the case of modern architecture, most of what passes for 'theory' is really just a manipulation of design concepts and ideas already derived from the experience of building. In other words, it exists in a peculiar relation to the final product. Such theory does not help create designs; it only explains them." Stephen Grabow¹⁰

We think it is time for the architectural community to awaken from its Classicist/Modernist slumber and seek a new architectural paradigm, one that parallels the revolutionary work of scientists and mathematicians. Thomas Kuhn, in his 1970 paper, *The Structure of Scientific Revolutions*, clearly describes the history of thought evolution in the world of the scientist. As one reads this paper, it becomes very clear that the world of the architect is undergoing a historically identifiable phase of evolution, one in which various "schools of thought" are competing for recognition as the new paradigm, while the profession languishes in a period of pronounced insecurity. The school that will gain acceptance is the one that can posit its intent and principles in language that can be understood and internalized by thinking people worldwide.

After our own careful review of the competing strands of architectural thought, Sullivan's thread emerges most profoundly in the work of Christopher Alexander. Not only has Alexander unknowingly restated Sullivan's central thesis of a naturally inspired architectural design process, but he has developed, to a very high degree, a systematically precise description of the unity of space, embracing aesthetic, functional, and technical elements.

"The congruence between beauty, truth, and goodness is of course an ancient idea: And just as Copernicus was not the first to suggest the earth's motion, neither is Alexander the first to suggest this remarkable idea. But he has arrived at it by way of an unprecedented linguistic and even mathematical system, which distinguishes him from his predecessors. And this, as Kuhn observes, is the crucial ingredient in paradigm shift – the ability to be precise about the consequences of a reality only believed to be existing independently of our knowing about it." Grabow¹¹

Length constraints do not permit a proper elucidation of Alexander's remarkable architectural labors over the past 30 years. But it is essential, we feel, to stress the importance of his discoveries. In a time so fraught with verbal convolution and after-the-fact architectural "theories," it is rewarding to find that the thread of thought we treasure has not only been picked up, but has been expertly woven into a fabric of beauty, strength, and wearability.

"The one thing I want to make quite clear is that the central issue of all art, even as it is understood by today's artists in their struggling, is to make things which have this luminous spirituality in them and which actually take your breath away and lead you into these very, very deep realms. And when you honestly pursue that, and learn how to do it, with full seriousness, it leads you into matters that are completely discussable and straightforward and where both artistic and scientific problems merge. . . ." Christopher Alexander¹²

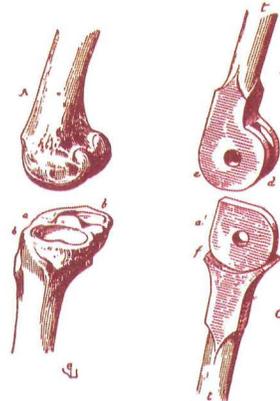
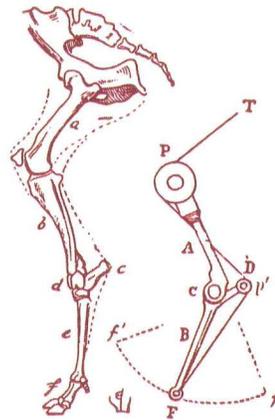
Thomas Kubala

The author is a principal of Kubala Washatko Architects in Cedarburg, Wisconsin.

1. *Reality in the Architectural Art*, 1900
- 2, 3, 6, 8. *What is Architecture: A Study in the American People of Today*, 1906
4. *May Not Architecture Again Become a Living Art?* 1897
- 5, 7. *Emotional Architecture as Compared with Intellectual: A Study in Subjective and Objective*, 1894
9. *The Tall Office Building Artistically Considered*, 1896
- 10, 11, 12. Grabow, *The Search for a New Paradigm in Architecture*, 1982

Passages from recently republished essays by **Viollet-le-Duc**

show that he, too, looked to nature and technology for truth.



Viollet-le-Duc's application of the skeletal system to mechanics.

Excerpts: Eugène-Emmanuel Viollet-le-Duc

In the arts – in particular, in architecture – vague definitions have engendered many errors, allowed many prejudices to develop, and caused many false ideas to become entrenched. Someone proposes a particular word, and everybody then attaches a different meaning to it. Reasonings that never should have been brought together in the first place all get laid down on the same shaky foundations; they fail to advance the questions; they simply burden indecisive spirits and nourish slothful ones. [*Dictionnaire raisonné*]

In fact, a skillful engineer may be a good architect, as an accomplished architect ought to be a good engineer. . . . If the engineers build a bridge, the architects say it is ugly – and are not always wrong in saying so. If the architects build a palace, the engineers think, not without reason, that in its construction the materials have been employed unskillfully and without due economy or an exact acquaintance with their properties in point of durability and strength. . . . The architects have been told: "You are to be artists; you are to look at nothing but form – trouble yourselves about nothing but form"; while to the engineers it has been said: "You are to occupy yourselves only with science and its applications; form does not concern you; leave that to artists who dream with their eyes open, and are incapable of reasoning!" [*How to Build a House*]

The leaf of a shrub, a flower, an insect, all have style, because they grow, are developed, and maintain their existence according to laws essentially logical. We can subtract nothing from a flower, for each part of its organism expresses a function by taking the form that is appropriate to that function. . . . The locomotive, for example, has a special physiognomy that all can appreciate and that renders it a distinct creation. . . . The locomotive is almost a living being, and its external form is the simple expression of its strength. A locomotive, therefore, has style. Some will call it an ugly machine. But why ugly? Does it not exhibit the true expression of the brute energy it embodies? Is it not appreciable by all as a thing complete, organized, possessing a special character. . . . There is no style but that which is appropriate to the object. [*Discourses on Architecture, VI*]

Excerpts from the *Dictionnaire raisonné* appear in *The Foundations of Architecture: Selections from the Dictionnaire raisonné*, introduction by Barry Bergdoll (George Braziller, New York, 1990). All other excerpts appear in *The Architectural Theory of Viollet-le-Duc: Readings and Commentary*, edited by M.F. Hearn (MIT Press, Cambridge, Massachusetts, 1990).

Books: Stature, Style, and Structure

Alan Gowans discusses the social forces that molded

the allusive architecture of 19th-Century America.

Books of Note

The Architect's Studio Companion by Edward Allen and Joseph Iano, John Wiley & Sons, New York, 1989, 468 pp., illus., \$44.95.

This reference manual simplifies technical and code-related information on structural, mechanical, and egress systems with straightforward text.

Le Désert de Retz (bilingual) by Diana Ketcham, Arion Press, San Francisco, 1990, 113 pp., illus., \$375.

An obscure but highly significant 18th-Century French folly garden – where the history of architecture was reconstructed in the form of ruins – has been documented with a thoughtful essay by Ketcham and brooding black and white photography by Michael Kenna.

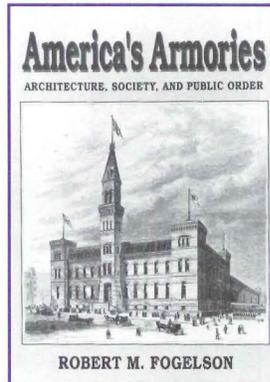
On Rigor edited by Richard Burdett and Wilfried Wang, MIT Press, Cambridge, Mass., 1989, 184 pp., illus., \$22.50, paper.

This catalogue from London's 9H Gallery discusses Heinrich Tessenow and Eileen Gray and then describes how contemporary architects likewise put substance before style.

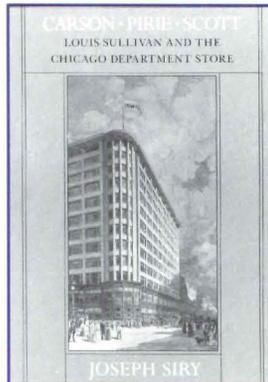
Cafes by Line Dru and Carlo Asan, Princeton Architectural Press, New York, 1990, 118 pp., illus., \$39.95, paper.

An international collection of well-groomed venues for food and drink, completed during the past decade, is presented with plans, drawings, and photos.

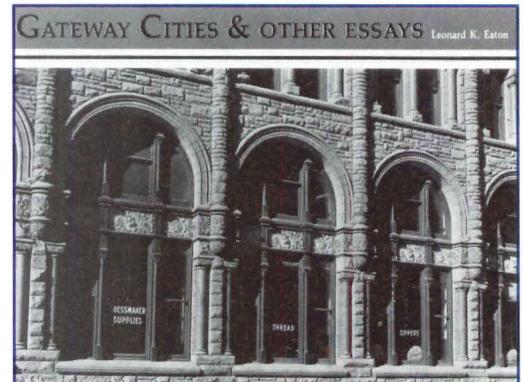
See Tech Notes (p. 47) for other publications of interest.



America's Armories: Architecture, Society, and Public Order by Robert M. Fogelson, Harvard University Press, Cambridge, Mass., 1989, 288 pp., illus., \$30.00.



Carson Pirie Scott: Louis Sullivan and the Chicago Department Store by Joseph Siry, University of Chicago Press, 1989, 290 pp., illus., \$39.95.



Gateway Cities & Other Essays by Leonard K. Eaton, Iowa State University Press, Ames, 1989, 248 pp., illus., \$32.95.

We used to see architectural history as a line of progress from one high style to the next. Historians traced sequential stages led by a creative genius, who was followed by emulators of successively diminishing originality, until at last the style “wore out.” Shortly afterward, it was replaced by a new style, introduced by another genius, whereupon the process repeated itself. Alongside this traditional framework, which remains valid and indispensable, other ways of understanding architectural style have become increasingly common.

Three recent books on American buildings of the late 19th Century illustrate these new historiographic trends: Robert Fogelson's monograph on armories shows the impact of social function on style. Leonard K. Eaton surveys warehouses on the Great Plains, tracing the way that cultural pretensions can precede functional issues in the development of a building type. Joseph Siry focuses on Sullivan's exemplary department store and reveals that its civic role was as important as its retail function.

Fogelson's *American Armories* is an exceptionally precise study of the relationship between style and type; it is an analysis of the hundred-odd armories that appeared in American cities from the 1870s to the 1920s. Built for citizen militias (later called the National Guard), they were almost always styled in a castellated Gothic that had gone out of fashion

decades before or a Romanesque that bore little resemblance to work by H.H. Richardson.

The reason, Fogelson argues, was the armory's particular social function: They followed a rash of violent labor strikes and created reassuring images of security for the middle-class citizenry. Given the militia's equivocal response to the strikes, the middle class hoped that a fortress-like building would inculcate a more martial spirit among the Guardsmen. A massive, domineering image seemed mandatory. Thus, armories resurrected an obsolete style; accordingly, they abandoned military allusions when confrontations between organized labor and the National Guard ceased in the 1920s. Soon afterward, the same armories were used as concert halls, art galleries, neighborhood centers and other decidedly nonmilitary purposes. Some were remodeled to look more hospitable; they became social centers, rather than defensive bulwarks.

In *Gateway Cities*, Leonard K. Eaton focuses on the warehouses of Chicago, Omaha, Winnipeg, and other transfer points on the Plains, where goods were stored for distribution to the surrounding hinterlands. You might have imagined that these warehouses were the same in every town; Eaton shows that they were as varied as their architects. He excels in describing these buildings

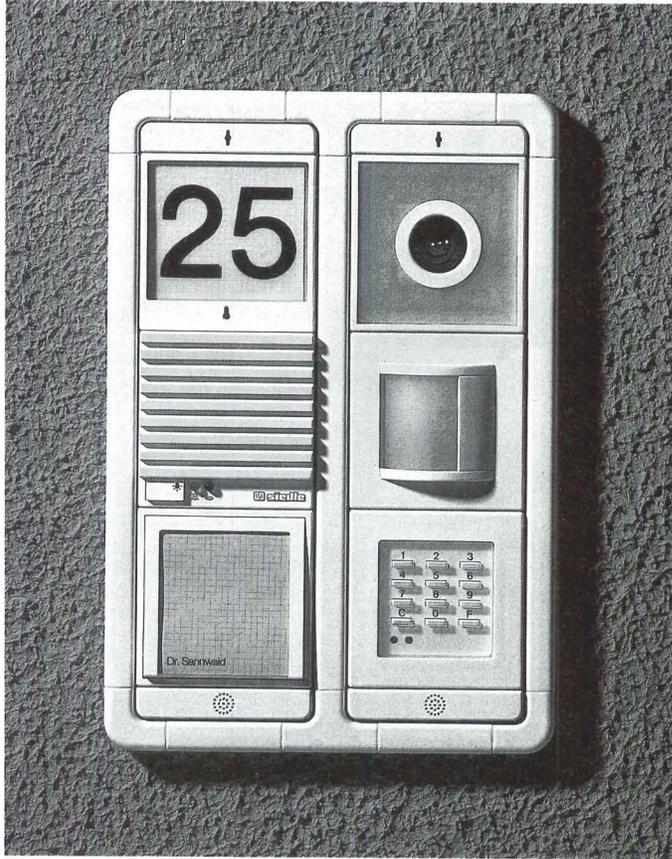
(continued on page 124)

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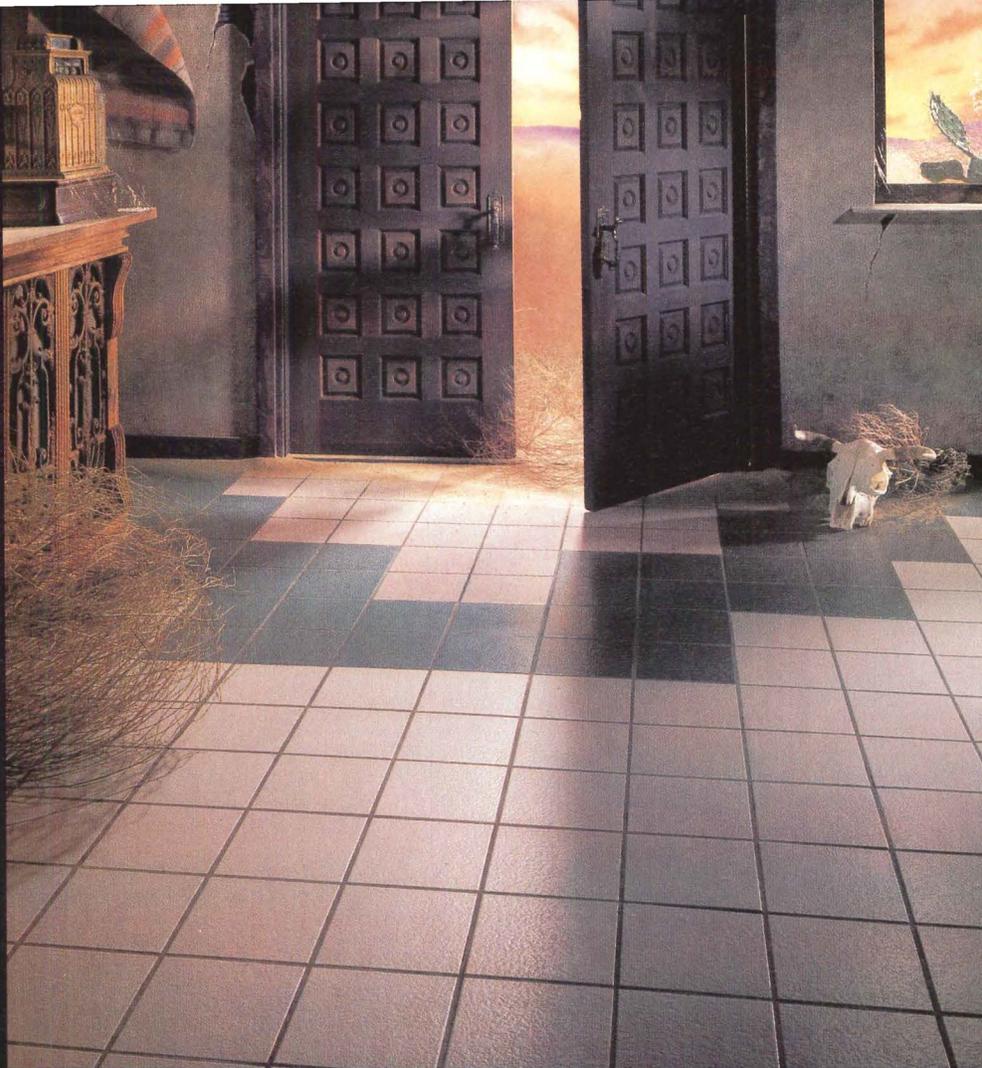
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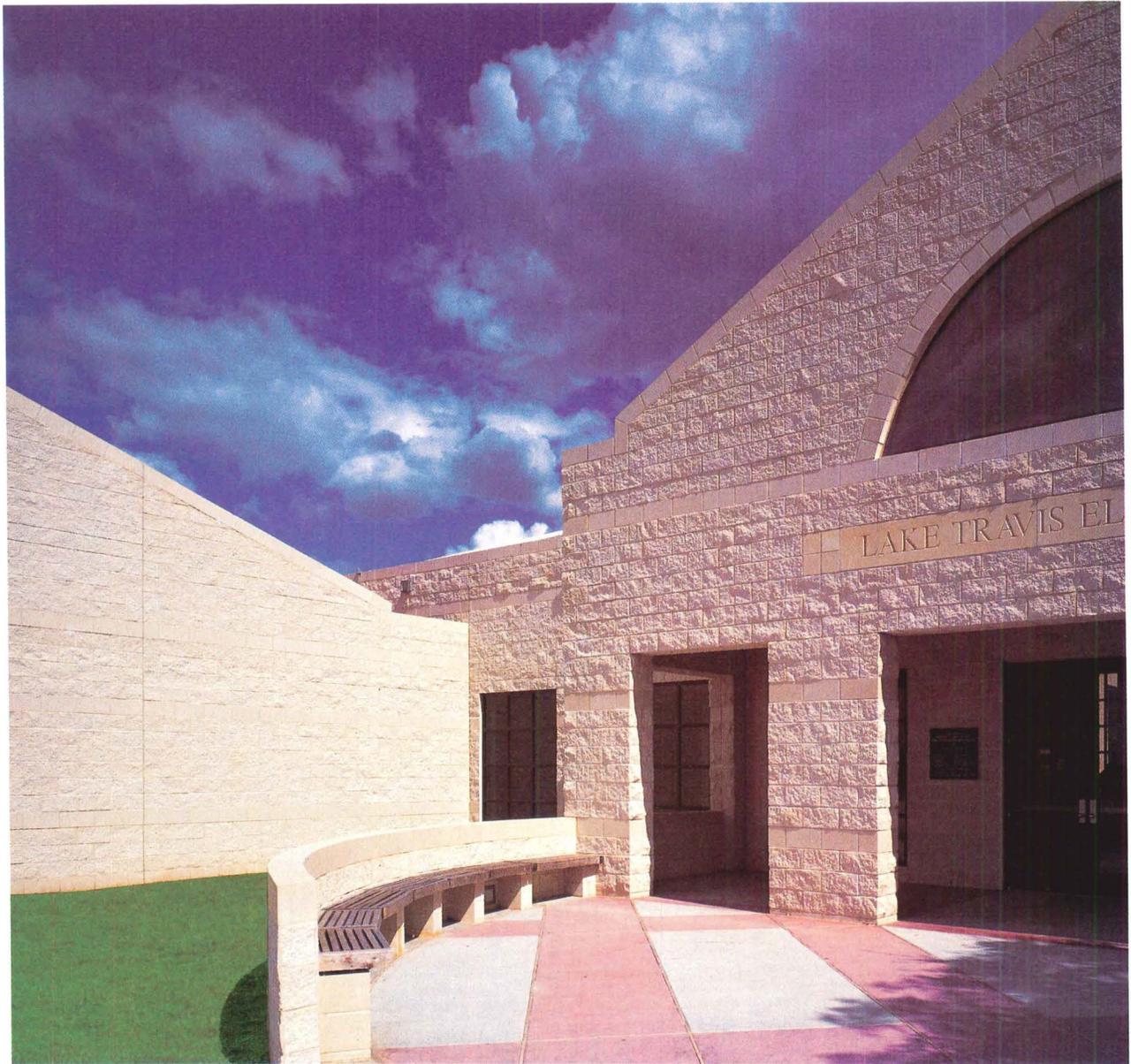
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Architect: CRSS Inc., Houston, TX; Photography: Pete Leach, Philadelphia, PA

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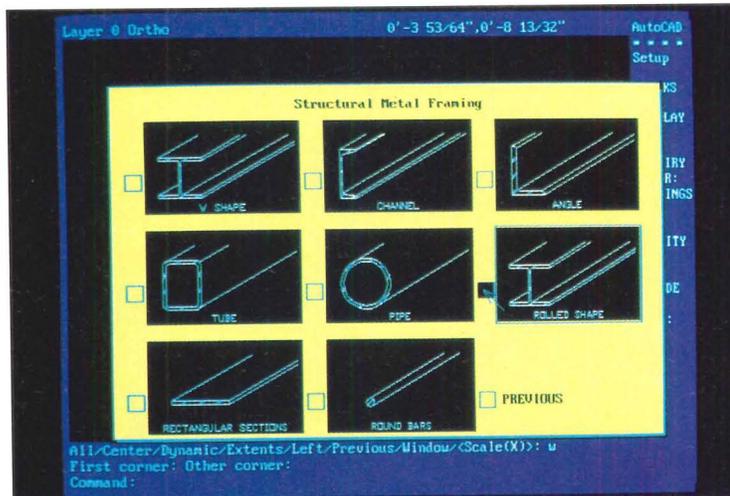
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New Products and Literature

New Products and Literature

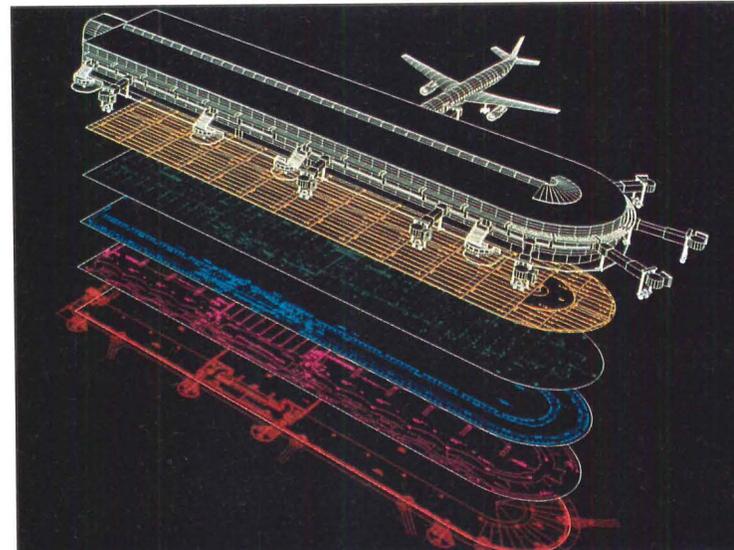
Products and Literature	13
Computer Products	18
Technics-Related Products	18
Building Materials	21



1



2



3

1 Architectural Detailer

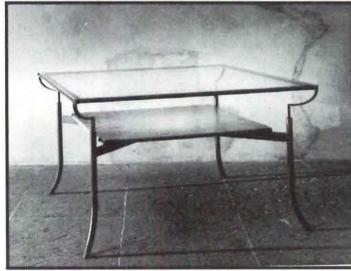
With the Vertex Detailer™ users can assemble detail drawings from a library of graphic components on DOS-based AutoCAD® platform. The Detailer library includes 25,000 types, sizes, and views of building products that can be selected and “snapped” into any AutoCAD drawing or specifications sheet. Electronic CADalogs™ with manufacturer-specific details are distributed with the Detailer; generic pre-assembled details for different types of construction are available separately. Vertex. Circle 100 on reader service card

2 DOS Perspective

Dynaperspective 2.0 DOS Version works with most CAD packages or on its own to create animated and rendered 3D models for design and presentation. The software allows the user to draw in three orthogonal views and a fourth “live” three-point perspective. Models can be edited in 3D to create high-speed animations. Dynaware. Circle 101 on reader service card

3 Updated AutoCAD®

Network capabilities, improved plotting support, and an advanced programming language are new in AutoCAD release 11. Advanced features include: reference files, network authorization, file locking, data entry improvements, multiple-view plotting, and the AutoCAD Development System (ADS), a new programming language environment. Autodesk. Circle 102 on reader service card



Coffee Table

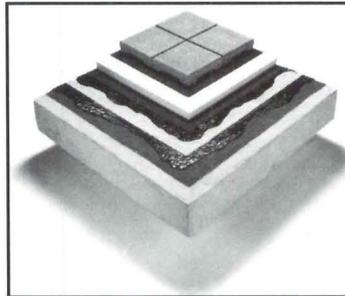
The Quadrant Coffee Table is 36" x 36" x 21" with gray metallic finished low-carbon steel frame, glass top with chamfered corners, and ash veneer bottom tray insert. John Saladino.

Circle 105 on reader service card

Blue Spanish Roof Tiles

One-piece barrel-shaped Mediterranean Blue clay tiles are suitable for steep and lower pitched roofs. Tiles are hard-fired and produced from Southeastern Ohio shale and clays. Ludowici-Celadon.

Circle 108 on reader service card



Roof Membrane Assembly

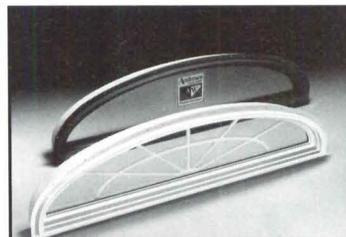
A fully warranted, single-source protected roof membrane assembly, "PRMA-Plus III", is constructed of Bakelite 2-ply reinforced roofing membrane and protection sheet, Foamular 404 or 600 extruded polystyrene insulation and Hanover architectural pedestals and pavers. UC Industries.

Circle 109 on reader service card

Locks Catalogue

The complete line of cylindrical and mortise locks and high-security deadlocks are detailed with photographs, function charts, construction features and specifications, trim design, and finishes. Falcon Lock.

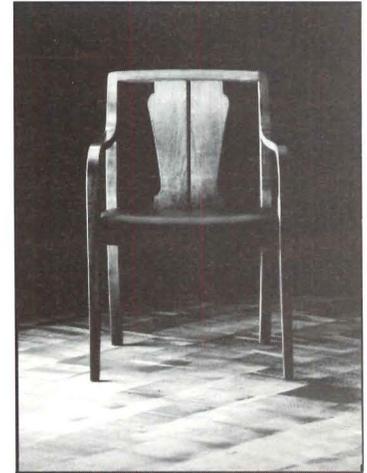
Circle 215 on reader service card



Elliptical Top Windows

"The Perma-Shield® Elliptical Top" window is available with High Performance or High-Performance Sun, Argon-filled, low-emissivity glass. Options include "starburst" grilles, ranch or colonial inside casing, and extension jambs. Andersen.

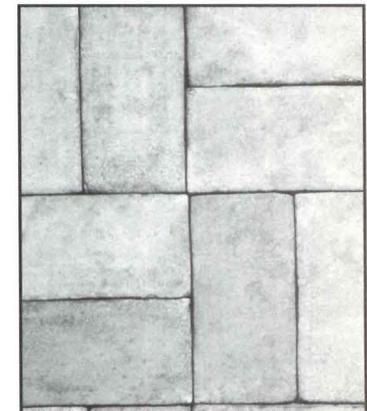
Circle 320 on reader service card



Fiddle Back Chair

The Truffle Chair, designed by Terrence Hunt, has a fiddle back that can be ordered in three "exotic" woods to match or contrast with its mahogany or cherry frame. Cabot Wrenn.

Circle 111 on reader service card



Brick Paver

A new mortarless brick paver is called "Four by Eight" (after the brick's dimensions); its one-to-two dimension ratio is designed for easier installation and pattern-making. Victor Cushwa & Sons.

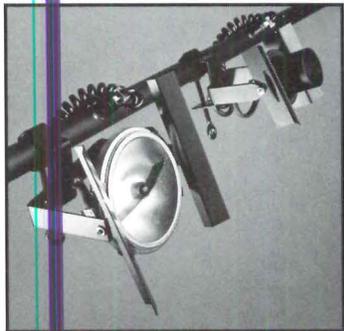
Circle 112 on reader service card

Image Erasable Vellum Brochure

A new brochure on 20EB Erasable Blue vellum describes product features and a series of photographs follow the process of a document from initial printing on a large format document copier to erasure for revision work to redraw with pencil or pen. Teledyne Post.

Circle 201 on reader service card

(continued on page 114)



Accent Lighting System

Lunarayl low-voltage lighting has two 500-watt capacity 12-volt circuits. A choice of two lamp fixtures clamp to the "ray" and plug into receptacles through a recoil cord. Mounting can be vertical or horizontal. Alva Lighting.

Circle 103 on reader service card



Side Rocker

A sideways-rocking rocking chair is of solid oak with natural lacquer or milk paint finishes. It is 37 inches wide, 47 inches tall, and 18½ inches deep. The Pasanella Company.

Circle 106 on reader service card

Retrofit Roof Drains

"U-Flow RetroDrain®" has a mechanical "water-tight" thermoplastic seal that expands to provide a positive connection to any existing drain pipe. U-flow Roof Drain Systems.

Circle 107 on reader service card

Track Lighting Catalogue

The Lighting Moods Specifications Quality Track Lighting line is compatible with incandescent or low-voltage lamp sources, is surface or pendant mounted, and meets UL 1574 code requirements. Hubbell.

Circle 200 on reader service card

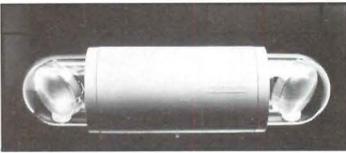


Homage Collection Textiles

Eight patterns, inspired by Chagall, Miró, and Gropius, among others, are cotton and wools in satin weave and tapestry configurations. Archtext.

Circle 104 on reader service card

(continued from page 113)



Emergency Lighting

Two-lamp Presto emergency lighting is 18 1/2-inches long and is designed to provide 1.5 hours of illumination. Halo/Sure-Lites.

Circle 113 on reader service card

Ceramic Tile Backerboard

"Substrate '500" ceramic tile backerboard panels can be fastened with nails or screws up to 1/2 inch from the edge. Eternit.

Circle 114 on reader service card

Wall Cladding Brochure

Product specifications and other information are included in this brochure on Neoparies glass ceramic exterior and interior wall cladding. N.E.G. America.

Circle 202 on reader service card



Italian-inspired Textiles

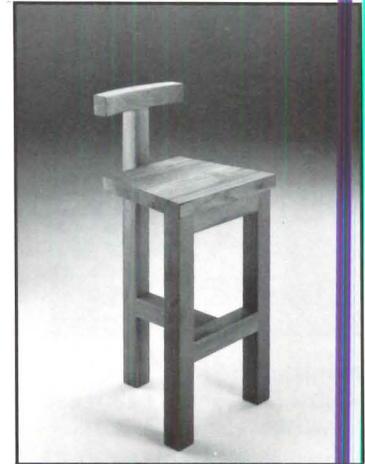
"Broccato", a worsted wool and mercerized cotton brocade, and "Cosmati", a cotton, wool, and nylon tapestry, are two of five textiles by Kristie Strasen. HBF.

Circle 115 on reader service card

Perforated Materials Catalogue

This single-source reference catalogue includes examples of applications, pattern specifications, and a description of the perforation process using ferrous and nonferrous metals and high-pressure laminates. Diamond Manufacturing Company.

Circle 203 on reader service card



Wooden Stools

Three-legged, eucalyptus wood Alwy T-Stools are available in 24- and 30-inch seat heights. Alwy & Company.

Circle 116 on reader service card

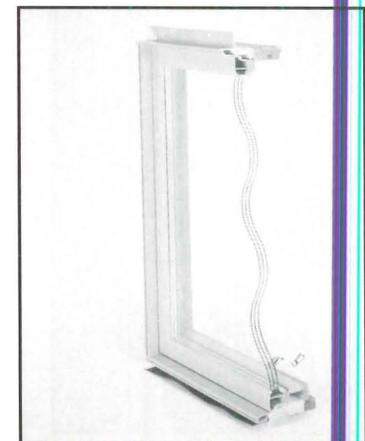
PPG Place, Pittsburgh, PA.
Architects:
Philip Johnson & John Burgee.

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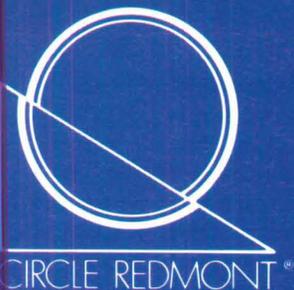


Wood Windows and Doors

The Supersmart[®] line of wood windows and doors has two Argon gas-filled airspaces and two coated surfaces to protect interior furnishings from fading, while also reducing noise penetration. Weather Shield.

Circle 117 on reader service card

(continued on page 116)



Glass Block Panels

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Connecticut Residence
Porch Over
Swimming Pool
Solarwhite Aluminum
Assembly
Architect: Thompson &
Scarlett
Southfield, Massachusetts
General Contractor:
Palmer Building Company
Winsted, Connecticut



Residence Greenhouse
Stonington, Connecticut
71R Concrete Assembly
Architect: Austin
Braverman Patterson
Southport, Connecticut
General Contractor: The
George C. Field Company
East Lyme, Connecticut



Residence
Dining Room Floor
Solarwhite Glass Block
& Aluminum Assembly
New York City
Architect:
ACBC Associates,
New York



Saint Teresa
Church Rectory
Trumbull, Connecticut
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Architect:
Architects Paniccia
Bridgeport, Connecticut
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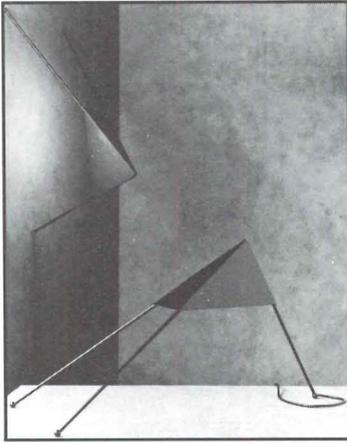
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(continued from page 114)



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Circle 118 on reader service card

Acoustical Ceilings Brochure

Fine Textured Choices is a brochure of color availability, grid compatibility, and acoustical performance specifications for the line of fine textured acoustical ceilings. Armstrong.

Circle 204 on reader service card

French Doors

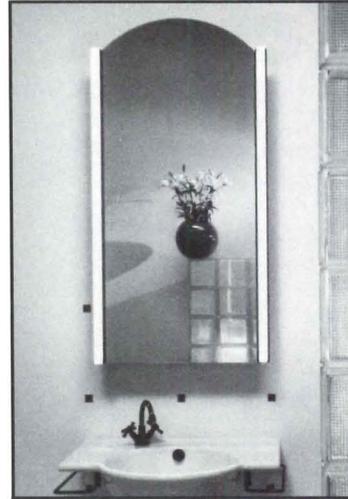
"Autolatch" French doors latch automatically at doors' top, center, and bottom as they swing shut. Eagle Window & Door.

Circle 119 on reader service card

Concrete Site Amenities

Concrete site amenities in the "Deerfield" series include a waste container, bollard, planter, cigarette snuffer, and light pole. Wausau Tile.

Circle 120 on reader service card



Mirror Cabinet

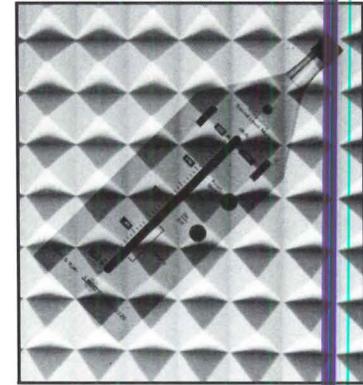
A mirrored storage and lighting system called Mirror Plus™ has tubular incandescent lighting. Interior electrical outlets and a mirror defogger are optional. Robern.

Circle 121 on reader service card

Perforated Metal Bench

A two-seat bench called Avenida has a 1 1/2-inch tubular steel frame and 1/16-inch-thick perforated metal back and seat. It comes with or without arms. Kroin.

Circle 122 on reader service card



Acoustical Foam Products

Foam sound absorption sheets are installed with foam adhesive and applicator gun. Azonic.

Circle 123 on reader service card

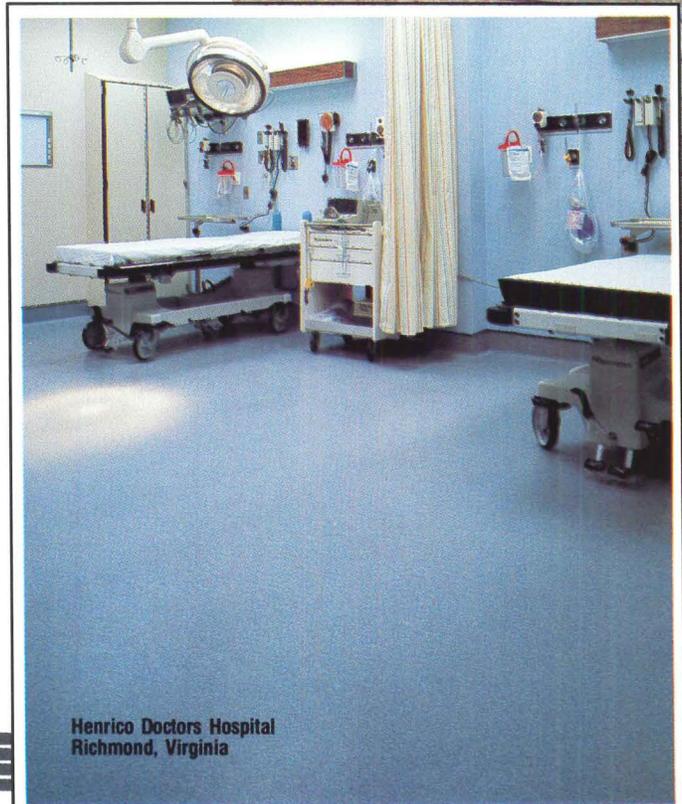
(continued on page 118)

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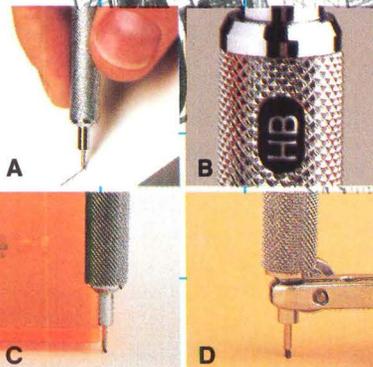
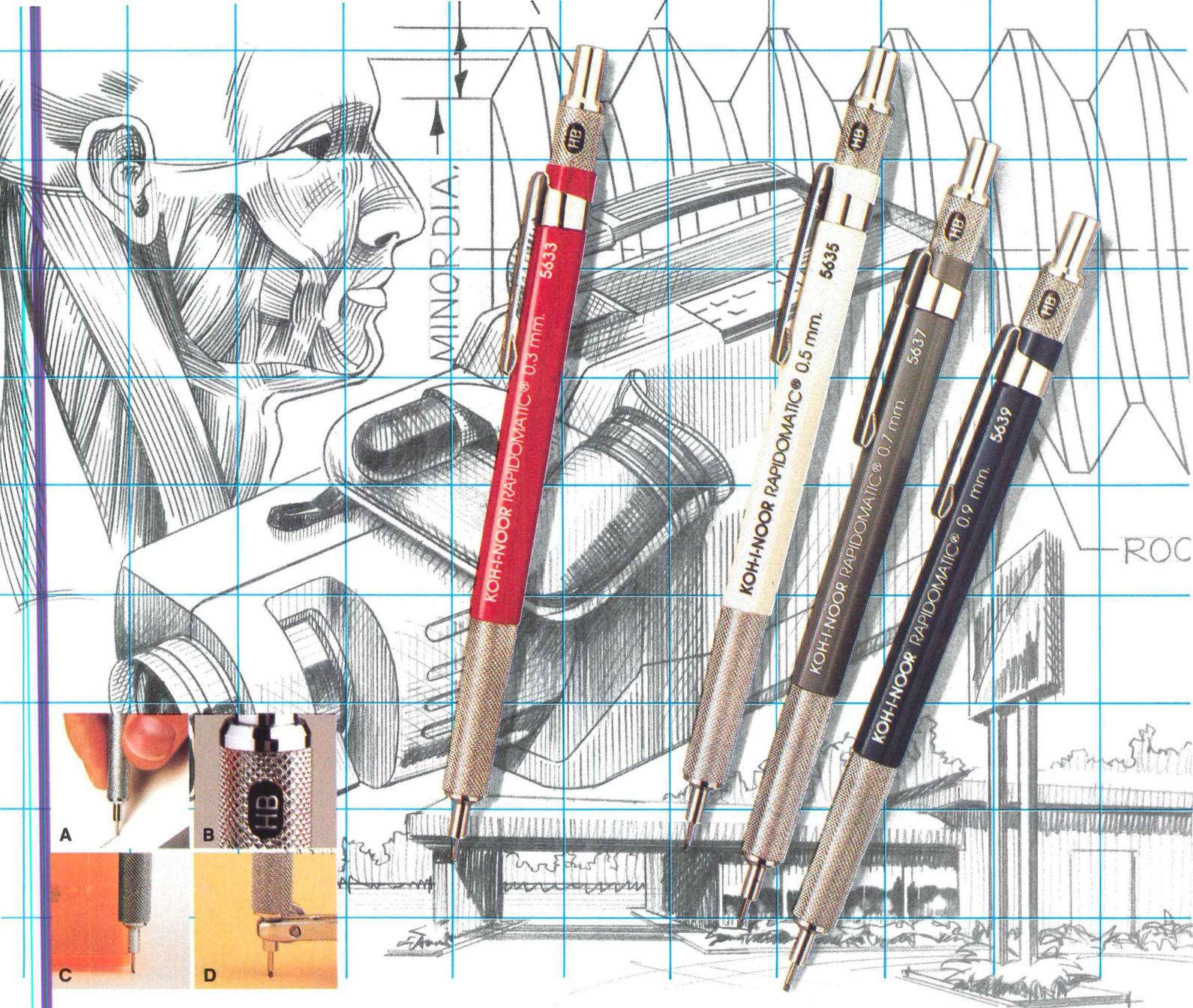


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(continued from page 116)

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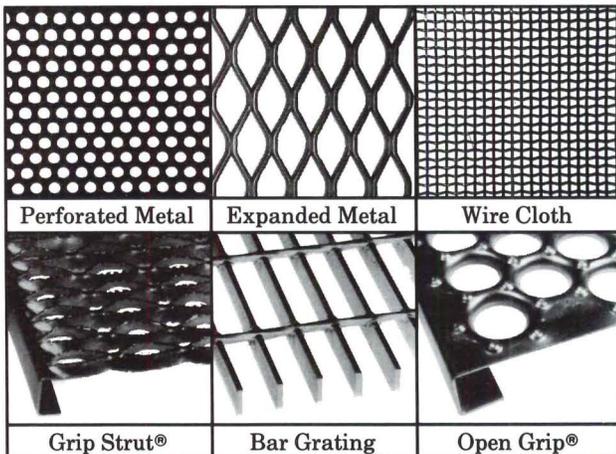
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(continued on page 121)



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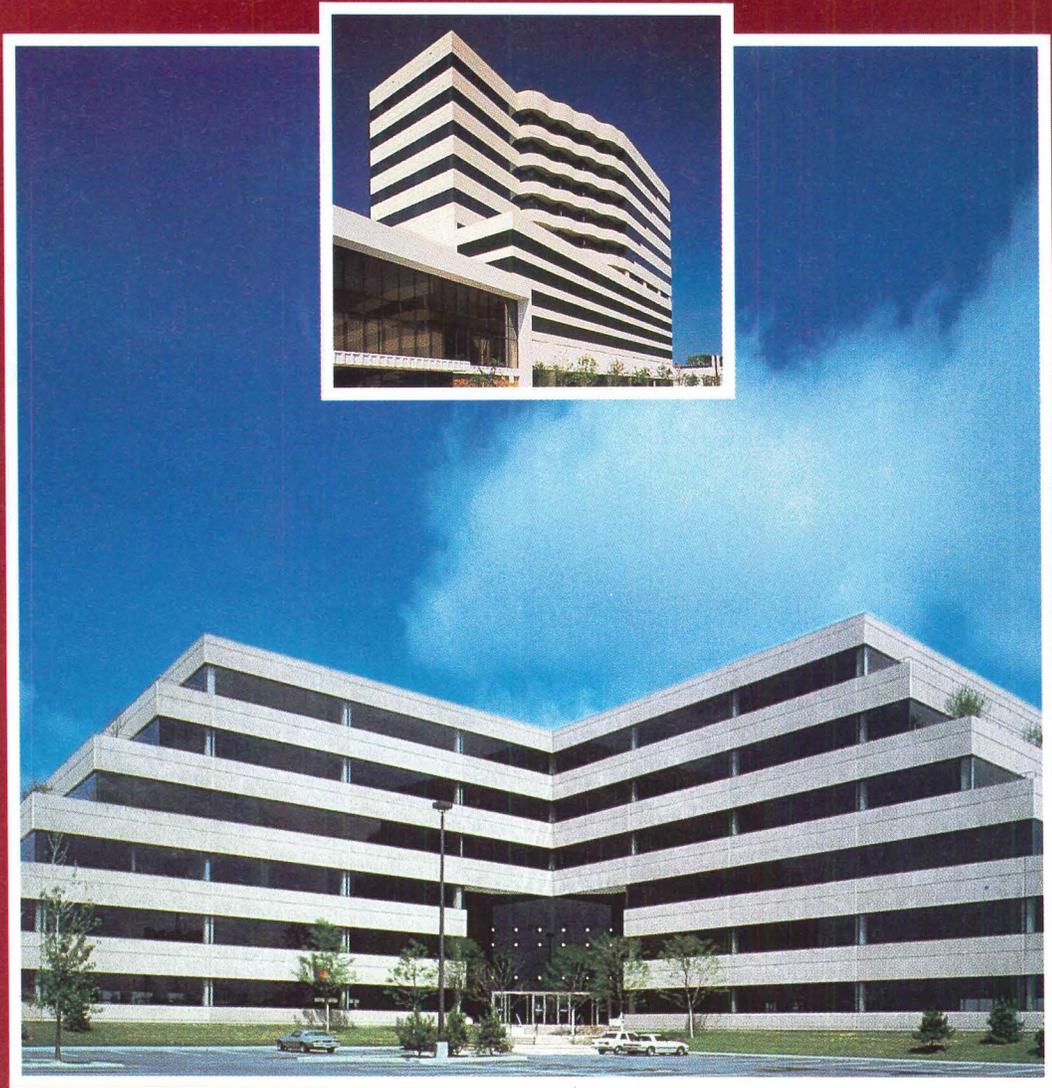


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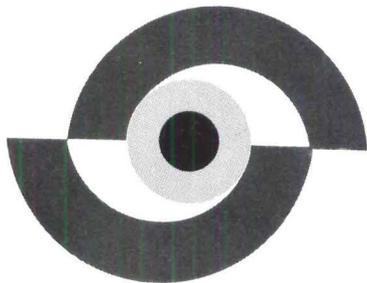


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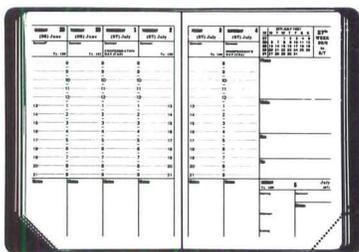
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Circle No. 003

(continued from page 118)

Building Materials

Major materials suppliers for buildings that are featured this month as they were furnished to P/A by the architects.

Project: *Orland Park Village Center, Orland Park, Illinois. Architects: Perkins & Will, Chicago, (p. 65).* Glazing: Indapone. Face brick: Endicott Clay Products. White face brick: PTL Inspectorate. Aluminum fascias: Newcourt. Metal windows and exterior doors: Amarlite. Glass block: Pittsburgh Corning. Interior doors and frames: Biltrite. Floor and wall tile: Dal-Tile. Brick pavers: Endicott Clay Products. Athletic surface: Taraflex. Vinyl tile flooring: Armstrong. Vinyl base: VPI. Simulated terrazzo: Fritztile. Lay-in acoustical ceiling: USG. Grid system: Chicago Metallic. Loose-laid and ballasted EPDM roof: Goodyear. Caulking: Tremco. Waterproofing: Vol-clay Bentonite. Tapered foam insulation: Dow. Porous concrete pavers: Hastings Checker Block. Walkway canopies: Texas Aluminum. Standing seam roof: Berridge. Drywall: Gold Bond. Exterior paint: Pittsburgh Paint. Interior paint: Benjamin Moore. Hinges: Lawrence Brothers. Locksets: Schlage. Door closers: LCN. Panic hardware: Von Duprin. Handicapped openers: Horton. Packaged A/C unit: Liebert. Halon system: Walter Kidde. Fire pulls/alarms: Gamewell, J.L. Industries. Lockers: Lyons Metal. Bleachers: Universal. Backstops: Porter. Chalkboards: Claridge. Tower clock: Electric Time Co.. Display cases: Nelson-Harkins. Flagpole: Baartol. Wall mats: Actionite. Dance floor: Robbins. Play structure: Landscape Structures. Hydraulic elevator: Otis. Stair rails/treads: Roppe/Johnsonite. Fluorescent troffers: Daybrite. Round fluorescents: Columbia. Downlights: Omega. Indirect metal hallide: Elliptipar. Recessed wall fixtures: Litecontrol. Gym lights:

(continued on page 122)

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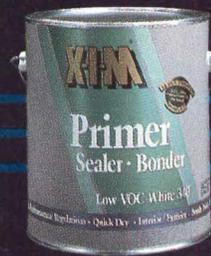
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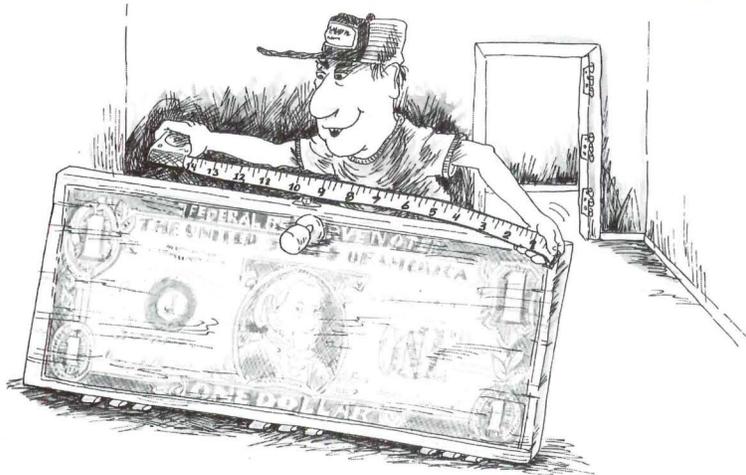


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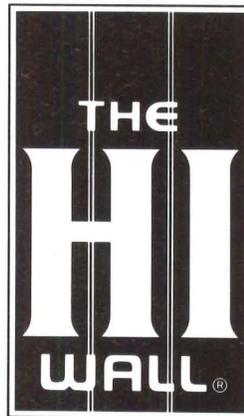
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(continued from page 121)

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Walt Disney World Dolphin Hotel, Lake Buena Vista, Florida (p. 82).

Architects: Michael Graves, Architect, Princeton, New Jersey; Alan Lapidus, P.C., Architect, New York. Metal studs: Met Studs. Concrete masonry units: A-1 Block. Exterior insulating finish system: Senergy. Gypsum board: U.S. Gypsum. Windows, curtain wall, storefront doors: ThermAlum. Skylights: Royal Greenhouse. Automatic doors: Automatic Entrances. Flush steel doors: Firedoor. Flush wood doors: Loughman. Rolling grilles and doors: Atlas. Acoustical tile ceilings: Armstrong. Metal standing seam roof: Zip Rib/Merchant & Evans. Membrane roofing: West Point Pepperell. Acoustical panels: Hufcor. Elevators: Montgomery, Orlando, Fla. Steel stairs, metal handrails: American Stair. Tubs, lavatories, water closets, fittings: American Standard. Saunas: Helo. Flush valves: Delany. Toilet partitions: Lambaton. Water fountains: Oasis. Gas-fired boilers: Cleaver Brooks. Air conditioning: Trane. Carpet (public areas): Brintons. Wall coverings: J.M. Lynne, J. Josephson, Lighting: CSL.

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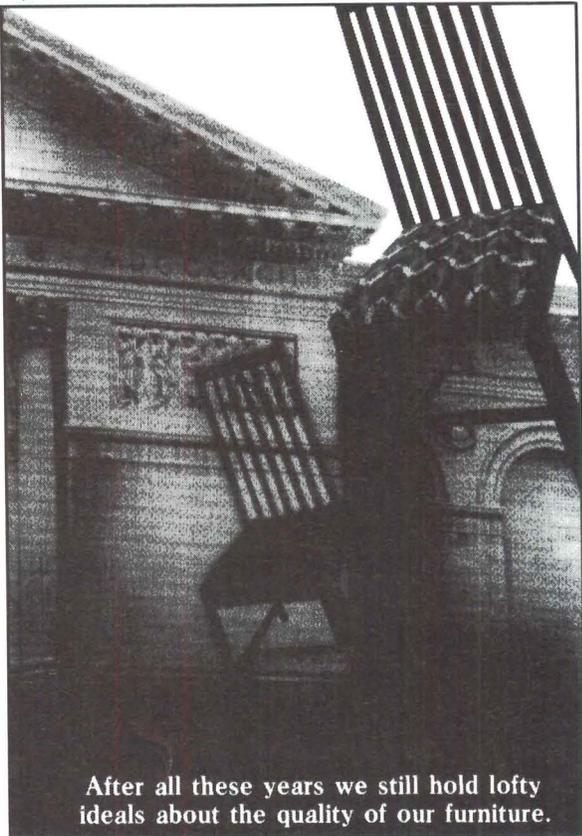
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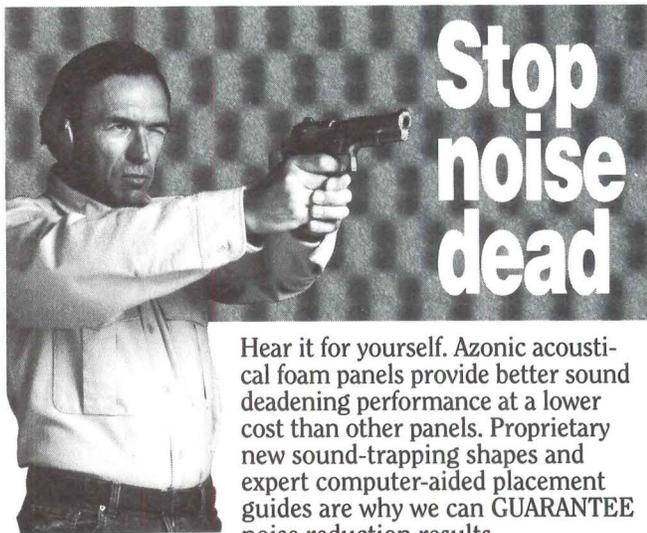
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Books (continued from page 105)

as biographical histories; we read how builders of warehouses made their fortunes and learn what kind of people they were. It is a fascinating account. For example, Eaton compares the noble starkness of Oscar Eckerman, architect for Deere & Company from 1897 to 1942 with Peter Behrens's celebrated but "neurotically ideological" Turbine Factory in Berlin, and with Albert Kahn's automobile factories in Detroit.

Eaton explains that the warehouse's physical function determined a utilitarian style, while its social function dictated visual nuances. Warehouses in those cities were perceived as civic monuments and as emblems of family enterprises. A warehouse was "essentially a more public building type than a factory. Contemporary descriptions make clear . . . that a [warehouse] building is 'a credit to the city.'" In a Post-Modern age, when architectural allusions have once again become important, we can look back at these late 19th-Century buildings with new respect and admiration not only for their forms, but for their concept of what architecture is and does.

Louis Sullivan has long been celebrated for his idea that a building's function – or inner essence – ought to be recognizable from its outward design or style. European Modernists perceived his "form follows function" aphorism as an endorsement of the 20th Century's mechanistically-inspired buildings. But more recent historians, of whom Joseph Siry is an outstanding example, have understood Sullivan's dictum to mean "form follows social function"; Siry's monograph is an extended essay on this theme, with particular focus on Sullivan's Carson Pirie Scott store.

Siry's documentation is truly impressive. He exhaustively traces this store, Sullivan's last major commission, from its inception in 1898 to the interiors that were finished in 1904. Sullivan considered his design at once utilitarian and ornate, an

expression of efficiency and luxury. He spoke of the Carson Pirie Scott as a Classical building. Yet he also said that its Classicism was so modified that ". . . no one can mistake. . . [the Carson Pirie Scott] for a hotel, an office building, a railway station, or a bank." In this light, Siry sees Sullivan's store as a masterful application of Classicism to modern conditions.

Unfortunately neither Sullivan's theoretical writings nor his thinking were very systematic. Siry notes that Sullivan admired the bridges, railroads, and other mechanical *tours-de-force* of his epoch; the architect believed that steel-frame skyscrapers embodied the era's *Zeitgeist*. At the same time, Siry writes, "Sullivan was consistently passionate in his assertion of the individual artistic imagination as the unfathomable source of architecture." Today, we recognize that these are precisely why the European Moderns admired him. According to standard Modern theory, the age demanded a new architecture and creative geniuses to bring it about. Sullivan became their prophet.

As we read Siry's study, we can discern the contradictions within accounts that claimed Sullivan as the Modern Movement's herald: If we believe that the age dictates architectural forms, we can conclude that it takes no genius to devise them. Moreover, at no time can humanity ever live by mechanistic science alone; it cannot express the social functions implicit in Sullivan's designs. By focusing on the facts that surround the Carson Pirie Scott store, Siry shows the importance of Sullivan's social milieu. Siry doesn't offer the sweeping statements common to earlier histories of Modernism. Instead, he focuses on a more confined topic and analyzes it with utmost precision.

Alan Gowans

The author's next book, Styles and Types of North American Architecture: Social Function and Cultural Expression, will be published by Harper Collins this fall.

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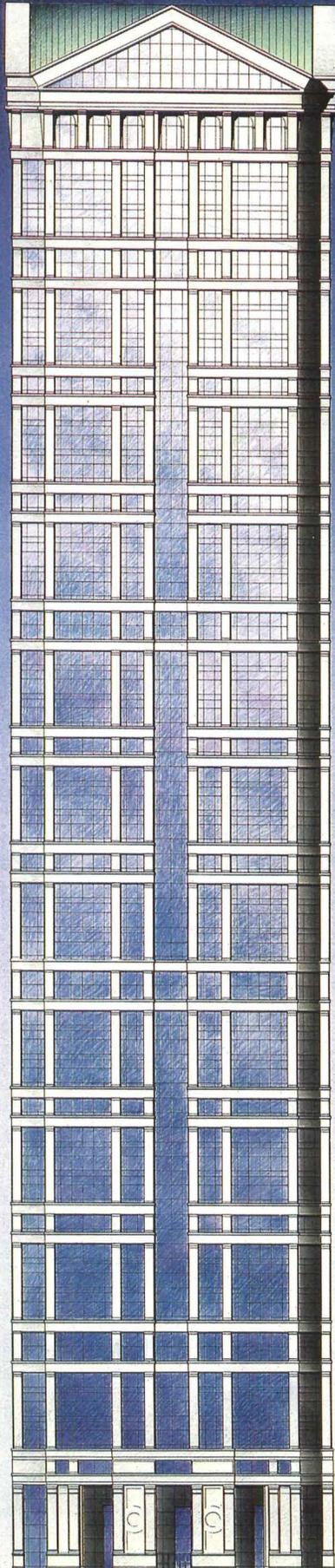
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We all use drawings and models when presenting a project, but how often do we consider their artistic merits or the effects they have on our design ideas? Communicating Ideas Artfully, an exhibition sponsored by the Steelcase Design Partnership and curated by P/A's Executive Editor, Thomas Fisher, offers some answers to those questions.

It examines the stylistic and conceptual differences among presentations. It questions the second class status of many renderers and model makers. And it shows how drawings and models affect the way we think about design.

In the exhibit original renderings and models from some of the country's leading practitioners are accompanied by a video that frames the questions.

The remaining venues

BOSTON

September 19 - September 28, 1990
Boston Architectural Center

NEW YORK

October 9 - October 31, 1990
Designers' Saturday
Steelcase Design Partnership
Symposium: Tuesday, October 16
Fashion Institute of Technology

LOS ANGELES

November 15 - December 14, 1990
Pacific Design Center
Symposium: Thursday, November 15
Pacific Design Center

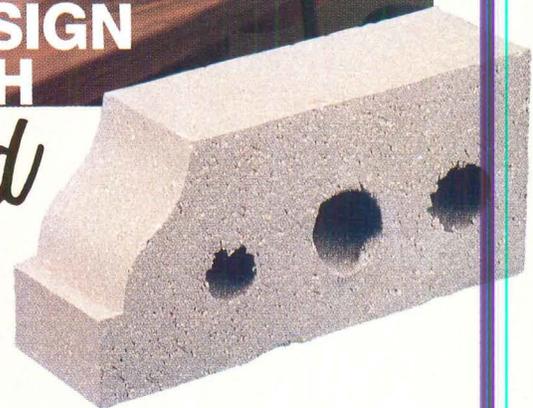
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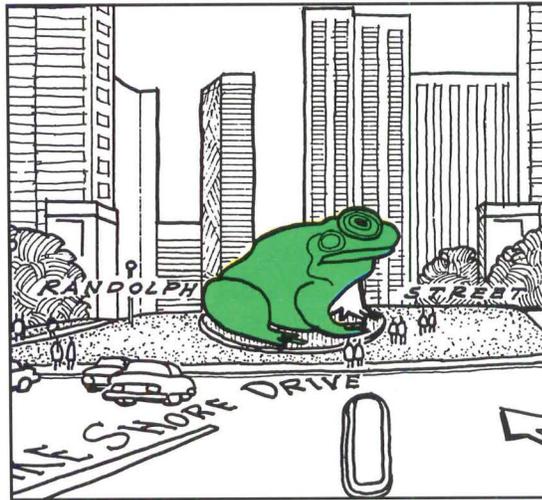


Circle No. 344



It is with some sore arms and aching backs that we have put together the November houses issue, built around the idea of the construction process. A few P/A editors, you see, are engaged in construction projects of their own, which we humorously call home improvements. One editor tells of a wrestling match he had with a new vapor barrier in the crawl space of his house. Another recounts her anti-gravitational efforts at holding up a kitchen cabinet and hoping, beyond hope, to screw it into the wall at the same time. And a third speaks of a weekend spent shoveling tons of coal out of his basement, only to discover more in his sub-basement. There is one thing we can say for certain about this work, which is ongoing and probably never-ending: You will never see it published in P/A.

One of our editors, whose assignment for the November issue took him to Fishers Island off the coast of Connecticut, reports: "For one version of our future, go to Fishers Island. Visually, the place looks quaintly old fashioned, with streets lined with Queen Anne and Colonial Revival houses, a town center dominated by a white-painted church, and an Olmsted-designed residential district in which, during the summer, no house is visible from the road or from each other. But beneath these fine appearances, there are some strains. Gasoline is extraordinarily costly, a premonition of what the current crisis in the Persian Gulf may bring to us all. And with no bank on the island, cash is in short supply, as it may be here if the failures of the thrifts continue. Finally, for a vision of what airline deregulation may produce, look to the Fishers Island airport, with its terminal badly in need of repair and weeds growing in the runway. Such



Giant sculpture ahead! A frog for Chicago (left) and a troll for Seattle (right).

things can be tolerated in a summer resort. But if they come to pass on the U.S. mainland, we will all need a vacation."

"Make no little plans," Daniel Burnham is said to have advised; had he stuck around for the Media Age, he might have added, "and make no plans at all without a good publicist." We bring this up in response to a flood of press releases (well, two) that came in recently promoting colossal public art projects. What separates Chicago architect Malcolm Weiskopf, who wants to build a 75-foot-wide, 30-foot-high frog sculpture in Chicago's Grant Park, from the scores of architects and artists that are probably out there with unrealized visions of colossal fauna in their heads? It's not that he has the benefit of a Walt Disney commission, like another well-publicized aficionado of giant aquatic creatures (page 82). It is, in a word, publicity. A nicely assembled press kit in a colorful folder, camera-ready art, a reputable-looking letterhead—these are the tools that

get a giant frog noticed. And that's just what we got from Mary McCall, who is promoting "Friends of the Frog," a group of 200 Chicagoans who profess a desire to build Weiskopf's idea, which first appeared on his Christmas card last year. The Friends' justification for the project includes no great leaps of logic; first and foremost, it is proposed "because it makes people smile." The Friends, too, borrow from Burnham; the motto on the cover of the press kit says "Make no small frogs."

But wait! Seattle is not without its fans of large, less-than-attractive creatures: Just before we went to press, we got an earthier press release from "Friends of the Fremont Troll," which is pushing a competition-winning design for a ferrocement troll clutching a Volkswagen bug to be built under Seattle's Aurora Bridge. This appeal, which asks for donations of "a VW, steel pipe, rebar, chicken wire, concrete, tie wire, \$\$\$CASH\$\$\$, a construction trailer, labor, time capsule items," bears the familiar

mark of itinerant builder/teacher Steve Badanes (P/A, April 1990, p. 118), who is himself no stranger to public relations—albeit a funkier variety. The troll, which is the work of Badanes, Will Martin, Donna Walter, and Ross Whitehead, is to be completed in October; the frog's fate is pending.

The prose in P/A rarely approaches a Gothic horror novel, but we found some of G. Gabriel Cole's account and illustrations of mildew growth in steamy Florida hotel rooms (page 49) to be downright chilling. He writes of buildings plagued by the staining and odor known as mildew, which can elicit a "violent attack," and warns ominously, "it's impossible to avoid...it can multiply and flourish anywhere there is moisture, nourishment, and protection." (i.e. Don't get them wet and never feed them after midnight). Cole cautions that the dreaded mold can "garner nutrition from almost any organic substrate...including even lampshades" (eughhh!) and that "it grows from spores, which frequently become airborne spreading from one surface to another." Happy Halloween!

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