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For social commitment

I would like to thank you for your two issues "In the Public Interest" [RECORD, November 1988 and November 1989, the first covering residential projects and the second focusing on recreational facilities], and I look forward to those in the future.

Your commitment to public issues is an encouraging example to me that the profession can respect a broader scope of social needs than has been evident in architecture during the last decade.

BRYAN BELL
New Orleans

An unpleasant dinosaur

"Icons of Modernism or Machine-Age Dinosaurs?" was the question posed in your article on the Skidmore, Owings and Merrill's renovation of San Francisco's Crown Zellerbach building, among others [RECORD, June 1989, pages 142-147]. You do no one a service by covering the renovation without at least providing your own answer to the question.

The fact is, the building from the outset has been a big stick in the eye to the city. Why?

The plaza: sunken, shadowed, secretive. My walk through its open hostility yesterday revealed that the patron count remains, as ever, zero. There is not a single place to sit.

The siting: where other architects have managed interesting solutions to flat-iron-shaped sites, Crown Zellerbach offers two concrete maws for underground parking, a humped access road, solid concrete barriers and general confusion to motorist and pedestrian alike.

The building: presenting a facade of 17 sheer stories of bathroom tile to Market Street . . .

But I grow too aggravated to continue. I guess my point is that I would welcome a fearless, instructive evaluation of some of these iconic dinosaurs. I have a list of candidates.

JOHN HUDSON
LANDOR ASSOCIATES
STRATEGIC DESIGN
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San Francisco

Just a quick note to share my enthusiasm for ARCHITECTURAL RECORD and for two of its issues in particular.

The first issue was the one on public housing [November 1988], especially the article on the Mad Housers in Atlanta written by Karen Stein, which I found so moving that I volunteered to build huts in New York and Atlanta while in those cities on business.

As for the second issue, I finished the June 1989 issue at three o'clock in the morning, and it has been a long time since I have read such inspiring material. International Contract Furnishings has always stood by its dedication to Modernism, and I sent a letter to our entire sales force requesting them to read this issue, as I feel that nothing can be more inspiring to a group of people who make a living representing modern design.

JANINE JAMES
DIRECTOR OF DESIGN AND
PRODUCT DEVELOPMENT
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Corrections

The civil engineering firm for the recreation centers in Commerce City, Colorado, and Westminster, Colorado [RECORD, November 1989, pages 100-107], was KKBNA, and Richard Weingardt & Associates was the structural engineer. Virginia DuBrucq was the interior designer for the Westminster project.

The entry for February 18 on last month's Calendar [RECORD, January 1990, page 197] should have read "architectural lecture series" sponsored by the American Institute of Architects.

The source for metal wall coverings shown in the products issue [RECORD, December 1989, page 112] is Numetal Surfaces, Inc., of Riverside, New Jersey.

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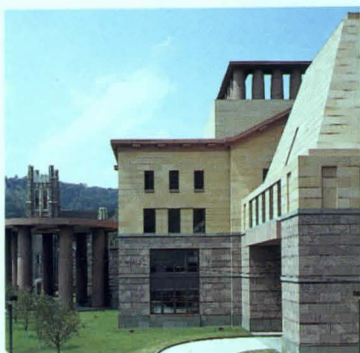
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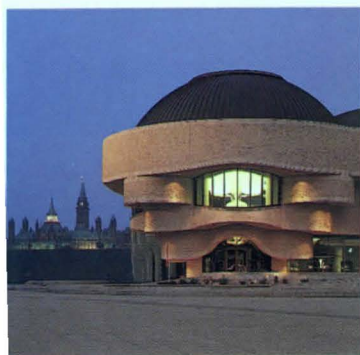
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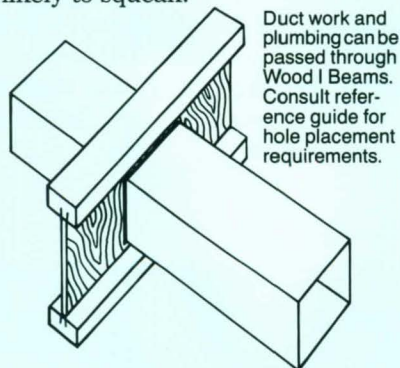
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Crown American Corporate Headquarters, Johnstown, Pennsylvania; Michael Graves, Architect. Photographer: ©Timothy Hursley.



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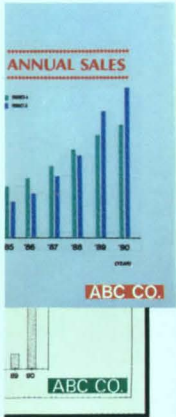
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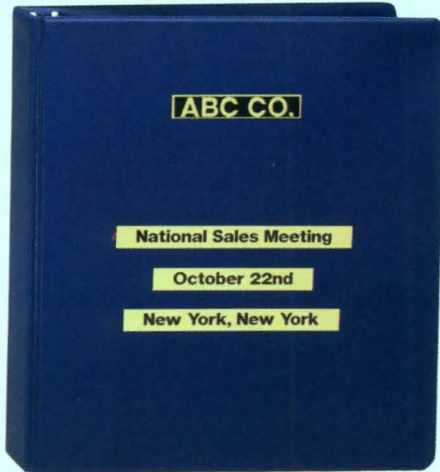
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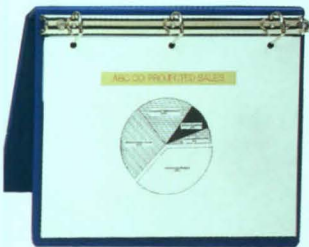
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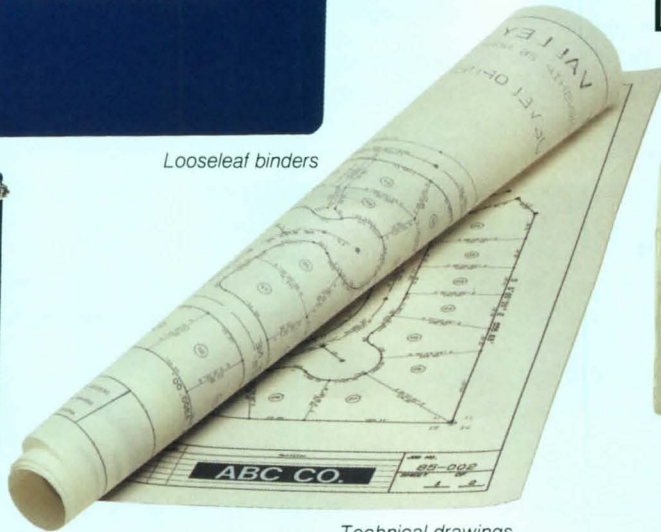
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PRACTICE

Architecture a Growth Industry?

The AIA's 1985-88 firm survey would certainly have us believe so. It shows firms' billings up 33 percent and revenues up 22 percent for the period. The 1988 value of construction designed by institute members is reported to be \$188.1 billion or 90 percent of all building construction for the year—a surprisingly high figure considering all those buildings not designed by architects of any stripe. Office-building design is reported to be the largest source of income for the large firms (over 10 people), but this has surely declined with the past year's 6-percent slump in construction and will decline with an anticipated further slump in 1990 [RECORD, November 1989, pages 37-47]. Conversely, the prospects for small firms should

be brighter, as their largest source of revenue is single-family houses, a building type that is expected to grow by 10 percent. This might reverse the reported trend of large firms' getting steadily more of all work (56 percent in 1988).

Despite gains in revenues, architects continued to get small fees (5 to 9 percent of construction costs—comparable to what a broker would get for selling a building). Employees' compensation during the period hardly kept pace with inflation (7.7 percent rise). Principals did almost twice as well—but, at a top of \$99,000 per year on average in large firms, still way below those in other professions.

Encouragement for the future can be found in the 1990

survey by the *Professional Services Management Journal*. It reports currently improved revenues from both higher hourly rates (up 4 to 8 percent) and tighter contracts, in which the amounts of reimbursables remained fairly stable compared to last year, but were covered by more limiting language. Other sources of compensation crept into contracts. Among them: typical markups of 10 percent on consultants' fees and retainers of up to 16 percent obtained by over half the firms. In a move to attempt to lower the overhead of insurance costs, limitation-of-liability clauses are used by 48 percent of firms (vs. 37 percent last year) and cover 43 percent of all work, although there is disagreement on how effective they will be when put to the test.

CHARLES K. HOYT

An End to Those NAAG Contracts?

The National Association of Attorneys General has suspended publication of its controversial model contract forms for owner-architect and owner-contractor agreements pending further review. NAAG will take up the issue again next month, says NAAG counsel Lisa Wells. But pressure from eight professional groups representing architects, builders, and their liability insurers [RECORD, September 1989, page 31] may make the issue mute.

Science and Art at the AIA



LYNNE LEWICKI

Last December, Sylvester Damianos (photo) took over as the 66th president of the AIA. He seems ideally suited to the role in this age of blurring national boundaries [news story, left] through his international activities, including the coordination of the AIA/Royal Institute "Remaking Cities" conference and study and travel abroad. He also has talents that cross traditional roles. He is an internationally exhibited sculptor.

On the administrative staff at the Institute, Richard Hobbs takes over from James Scheeler as vice president for design and practice. "Dick's design and practice experience and expertise," says AIA CEO James Cramer, "are tailored to our missions of promoting professional efficiency and advancing the science and the art of planning and building."

Opportunities Over There



Hokkaido, Japan, clubhouse by The Stubbins Associates.

American architects have heard so much about the nation's lack of ability to compete abroad lately that they may be overlooking the unique advantages that their profession has to do just this. American architects offer more comprehensive services and, as a result, their broader and more advanced training in technical and other practical matters required to see buildings through construction-contract documents and the building process itself—phases typically left to engineers, construction managers, and con-

tractors in other countries.

"America is not technologically inferior to any other country in the world," says a recent report by the National Institute of Building Sciences, which concludes that foreign influences (popularly known as globalization) represent more of an opportunity than a threat. The report most directly concerns the possibilities for American construction abroad, which, if done by U.S. standards, would require American architects' control. The down side of the report is the assertion that the nation

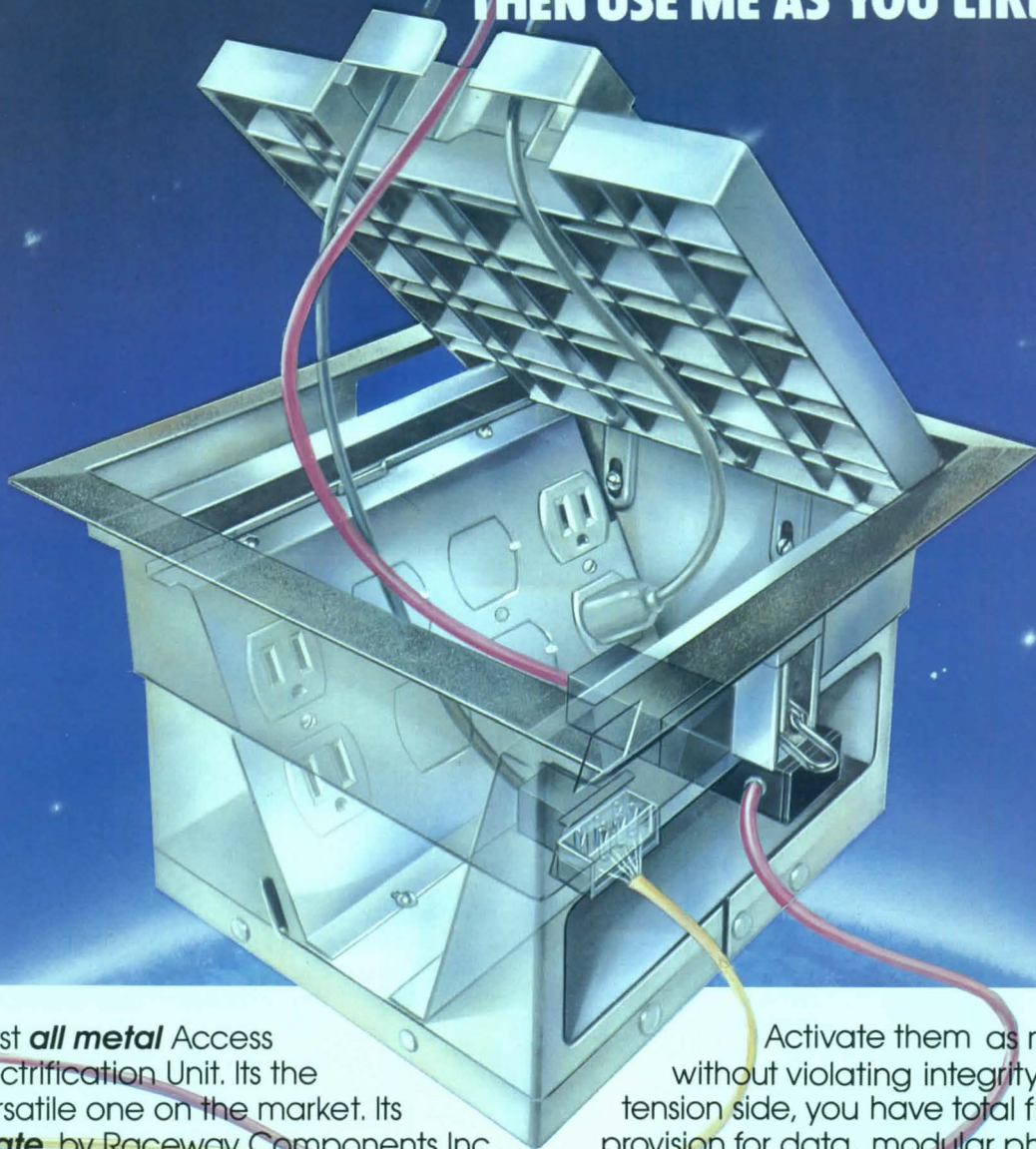
must spend considerably more time and money than at present on research and development if it is to maintain its competitive edge. Fair-trade and tax laws conducive to U.S. professionals' working abroad are urged. While there is the growing influence of Europe to contend with here and abroad, "competitors excel only in specialized areas," and Japan, with less efficient construction techniques than ours, is seen as no threat at all for the present.

That American architects can continue to do well overseas is borne out by a survey of the largest international firms conducted by *ENR* magazine last year. It showed Americans outdoing all nations for foreign work everywhere except Africa. In their biggest foreign market, the Mideast, U.S. professionals beat all European countries combined. And they did not do badly in Europe itself against Europeans seeking work, acquiring over 60 percent of that total pot.

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Where the Investors Plan to Invest

Will United States real-estate investment pull out of its slump and shift into a reversal in the new decade? Some cities will fare better than others, professionals predict.

A report, "Emerging Trends in Real Estate: 1990," sponsored by Equitable Real Estate Investment Management, Inc., forecasts trends in the office, housing, industrial, and retail markets. Information is gleaned from interviews with more than 100 investors, lenders, and developers. Keeping in mind that the report is largely based on opinions rather than statistics, consider the following rundown of the best and worst cities for real-estate investment in 1990.

The West Coast takes the lead, specifically Los Angeles and San Francisco with Seattle trailing them. Washington, D.C., ranks among the top three for the third year in a row. It tends to be a stable market because government is the key industry there, explains Jonathan Miller, vice president of Equitable Real Estate Investment Management. Chicago is the only non-coastal city to rank high.

Both New York, which was in the top category until the 1988



report, and Boston slipped a tad from previous rankings because of problems in the financial industries, Miller said. Houston and Dallas are expected to emerge from an economic slump, resulting in those cities becoming key spots for property purchases. Meanwhile, Denver and Phoenix offer the least potential for development because

they are "buried in vacant space that will take several years to absorb," the report said.

There is no place in the country that is particularly well positioned for new development, not even the West Coast cities," Miller commented. "But of all the markets on a relative basis, the West Coast is strongest." The report cautions there was a

general lack of enthusiasm among interviewees for any region.

"Developers and their financial sources would be wise to curtail activity. Development should remain on a slowdown path," which might allow the market to rebound, Miller suggested. "It's a fairly sober view, but we think it's a realistic one."

Real estate is headed for an upswing by the mid-1990s, the report predicts. Miller: "There's going to be more of a focus on improving existing buildings rather than building new ones." Areas of potential growth for architects will be in rehabilitation, expansion, and enhancement of existing property.

"If you're looking for something new next year, you're going to be disappointed," cautions Richard Kateley, author of the report and president and chief executive officer of Real Estate Research Corporation, a Chicago consulting firm. "The impacts of overbuilding simply aren't going to be reversed next year." And Kateley says he foresees environmental issues as "a '90s problem."

Meanwhile, says the report, the pace of buying and selling investment properties will be "moderately strong in 1990, up from the very slow years of 1988 and 1989." **SUSAN R. BLEZNICK**

S and L Bailout to Swamp Builders?

There is mounting concern in the building industry already that the administration and the Congress, in their zeal to stem the federal hemorrhage engendered by the savings and loan crisis, may be throwing out the baby with the bathwater.

The baby, in this case, is the builders and the architects who fear that new drastically tightened credit rules for construction and land acquisition are going to put the squeeze on building during the coming year.

One main worry is that the plan offered three days into the new decade by the Cabinet-level Oversight Board of the Resolution Trust Company, (the new agency created by Congress to dispose of the troubled savings and loans' assets and to straighten out the industry) may depress the existing real-estate market further by rushing the sale of the

distressed properties and swamping the market. Acknowledging these concerns, Oversight Board president Daniel Kearney said in announcing the plan on January 3, that "for those who are concerned about the possibility of dumping of real-estate assets, let me point out that the process of gaining title to much of the real estate and other legal problems will necessitate a lengthy period of sales stretching over several years."

But beyond that, a first reading of the plan has led industry observers to worry that the new rules are leaving a lot of people and new projects high and dry. Citing one example of the new toughness, Melissa Allen, director of financial institutions at the headquarters of the National Association of Homebuilders, says the amount a thrift can lend to one developer or buyer

was slashed from 100 percent to 15 percent of capital. "If builders can't get as much money as they need now there may be real trouble," she says—"havoc maybe. If Congress passes a law next year, it won't do much now," she adds, and there may be an industry shakeout.

Many structures that are under design now or that have completed design are forced to look for new financing, reports Albert C. Eisenberg, the AIA director of federal liaison. "Designers who had financing assurances now find that the assurances are no longer valid." Eisenberg agrees with the NAHB's Allen that there was a "failure in transition" to the new tougher rules: "We don't want to open the savings-and-loan issue again, but we want a fair and equitable transition from one period to the next," he says. The AIA has already received complaints from architects worried about their busi-

ness this year or who have already felt some impact.

For instance, David A. Holtz, vice president of CHK Architects Planners Inc., estimates that his work load has dropped some 10 percent due to the quagmire, and he has been forced to lay off a portion of his work force. "Congress has a tough decision to make," says Holtz. "It probably didn't recognize the effect on the design professions."

So far, it's not altogether clear what the professional organizations plan to do. The AIA's Eisenberg says: "We are just now in the process of developing our response. Most likely," he says, "we will be contacting the Hill." The NAHB's Allen says the situation is "up in the air. We have been talking to regulators, and we'd like to get a regulatory solution before going to Congress."

PETER HOFFMANN
Washington, D. C.

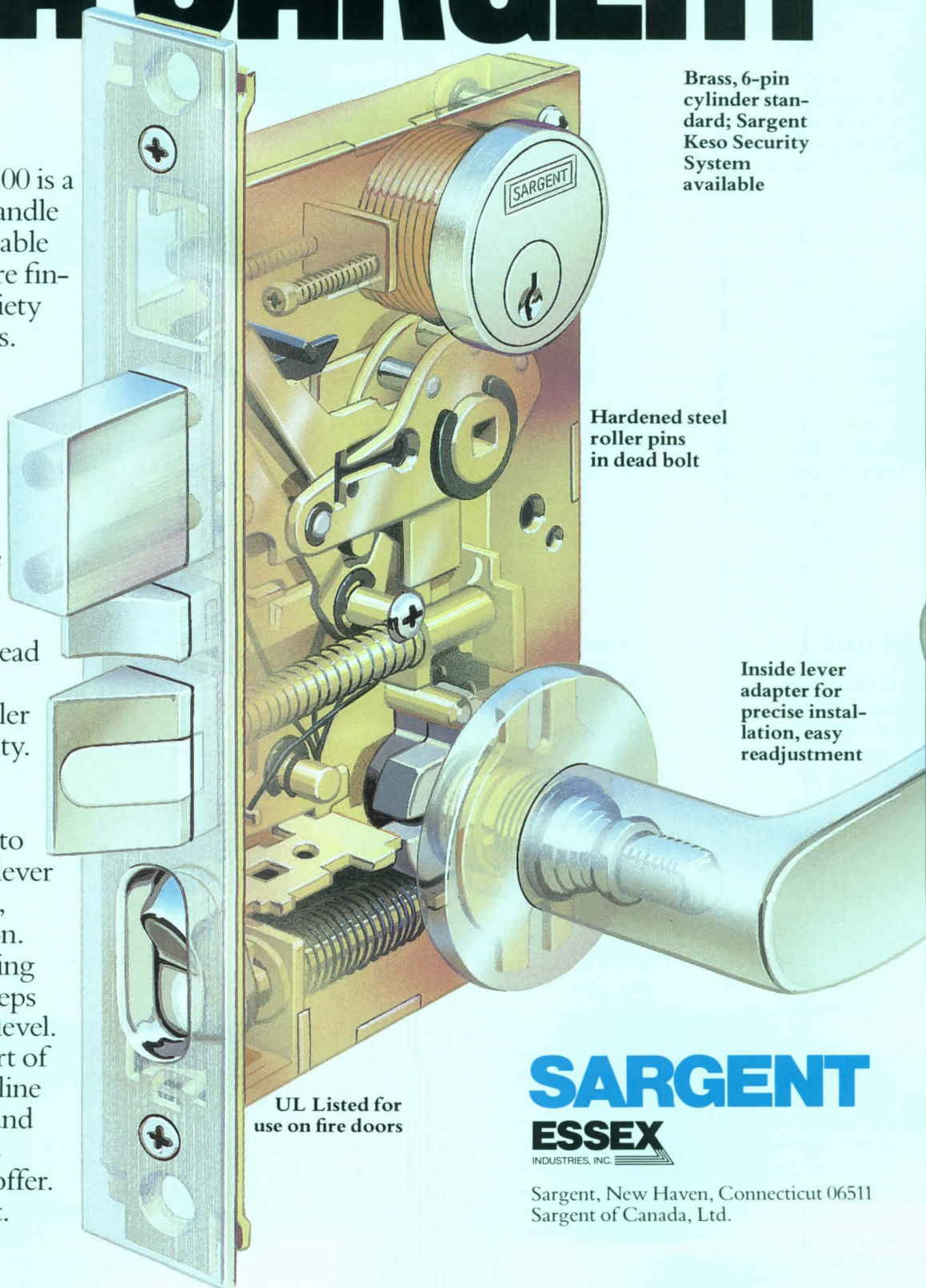
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DESIGN

A New "Tallest"...

Records are made to be broken, athletes say, and Sears Tower's record as the world's tallest building is now threatened by another skyscraper proposed for Chicago. The building will be located only three blocks from the current champion.

Designed by Cesar Pelli & Associates, the Miglin-Beitler Tower will occupy a site merely an acre in area, and it will consequently be extraordinarily slender. Pelli sees the resultant profile as an esthetic plus—"The form of a very tall, unique structure obeys a different set of esthetic rules than those of the buildings of Louis Sullivan. If one builds against the sky, the most beautiful and graceful objects are slender, tapering forms." And Miglin-Beitler Developments, Inc., sees the form, with floor plates of 10,000 to 18,000 square feet, satisfying a tenant need for small but up-



New Chicago tower will be 400 feet taller than Sears.

scale individual office floors.

Referred to in Pelli's office as the Skyneedle, the spire rises to a sharp point through a series of articulated setbacks. The shape is in deliberate contrast to the squarish mass of bundled tubes seen in Sears Tower's silhou-

ette, which will loom nearby. On the whole, however, this skyscraper will have little competition on the skyline, and Pelli developed its form with reference chiefly to its own size and shape. Another Pelli building next door, designed for the same client, is only 50 stories high, and its contextual reference is taken from other buildings in the neighborhood.

The structural system, engineered by Thornton-Tomasetti of New York City, calls for a tube at the core, with eight projecting fins creating a cruciform plan with reentrant corners. The reentrant corners, defining column-free wings for office floors, will provide eight corner offices per floor.

The building, which at 1,914 feet will top Sears by about 400 feet, received approval in December from Chicago's city planning commission and the city's zoning board. Construction will begin later this year.

Resuscitation in Egypt

The ancient Alexandria Library once enjoyed a reputation as one of the world's greatest libraries but was destroyed hundreds of years ago. To revive that resource, the Egyptian government launched an international competition that was won by Snohetta Arkitektur Landskap, of Oslo, Norway.

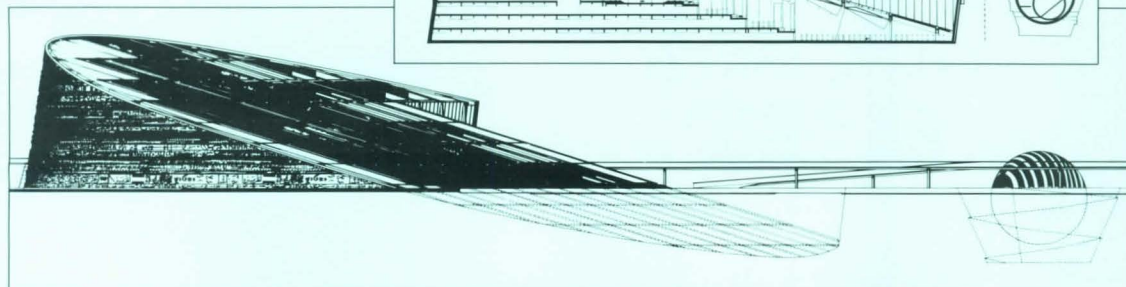
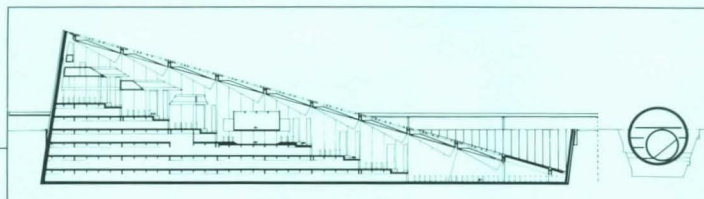
The new Alexandria Library will be constructed on a site believed to be near the original building, overlooking Alexandria's harbor. A disk-shaped roof with geometric suncreens

that allow indirect light to penetrate is positioned on a tilt and lies above and below ground. Stone exterior walls are carved with ancient and modern calligraphic symbols.

The competition was marked by an international flavor. The winning firm, comprising three Norwegians, an American, and an Austrian, was selected from

a pool of 500 entries that were submitted from 77 countries. A seven-member international jury of architects and librarians judged the submissions in the competition.

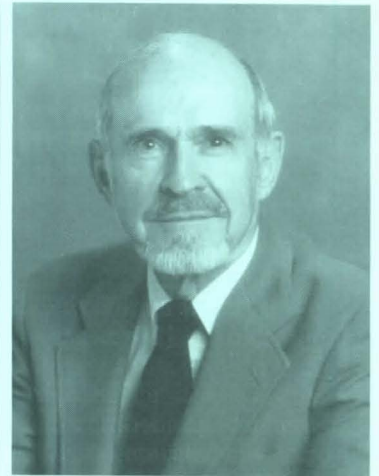
The United Nations Development Program financed the project, organized jointly by the United Nations Educational, Scientific, and Cultural Organization, and the International Union of Architects. **S. R. B.**



E. Fay Jones, AIA Gold Medallist

Demonstrating that a big architectural reputation need not be equated with a big architectural practice, the American Institute of Architects has conferred its 48th Gold Medal on E. Fay Jones, partner in the five-man firm Jones & Jennings Architects of Fayetteville, Arkansas.

Though cognoscenti in the profession have long recognized Jones's design and educational talents, it was his Thorncrown Chapel in 1980 that first drew widespread admiration—admi-



E. Fay Jones will receive this year's AIA Gold Medal.

ration that cut across all manner of generational and philosophical architectural opinion, and admiration that reached outside the profession (some 1,000 people visit the chapel monthly). Influenced by Frank Lloyd Wright's "organic" design as well as by other esthetic principles, Jones's individualistic architecture has been characterized as the "Ozark style."

Jones also served as chairman and dean of architecture at the University of Arkansas during the 1960s and '70s.

The AIA will present the Gold Medal in Washington, D. C., on February 22.



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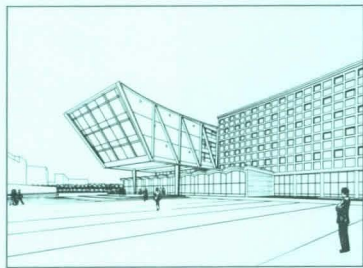
Give and Take on the Eastern Front

New York City architect Karen Van Lengen's design for an expansion of the American Memorial Library in West Berlin won an invitational competition for American architects, overturning an earlier jury decision in favor of Steven Holl, of New York [RECORD, June 1989, page 65].

West Berlin senator Wolfgang Nagel, the minister of building and housing, announced in December the decision to veto an earlier jury decision. Nagel took office about a year ago, when the far-right-wing Republican party gained power over the previously dominant center-right coalition.

Nagel cancelled the decision of the previous administration, whose members belonged to a different political party, "just out of spite," conjectured Peter Lynch, associate of Steven Holl Architects and project architect for what originally had been the winning scheme.

Both Van Lengen and Lynch indicated that political manipulation played a part in the complicated competition scenario. However, Van Lengen pointed out, "It is a built-in process that



the architectural jury only makes a recommendation to the Senate, and the Senate has the right to accept or reject the recommendation."

Van Lengen's design combines reinforced concrete and steel to form a Modernist slab with an atrium as its focus. A plaza in front of the complex is intended to provide a unifying urban element, and a skylight of steel and glass bathes the interior with light.

Prominent in Holl's design was a "browsing circuit" that would have surrounded the original structure, which was built in 1954 by Germany and the United States.

S. R. B.

A Traditional City Hall for Orlando



The copper dome of Orlando's new city hall will symbolize the traditional forms of civic virtue. The building will occupy the center of the city's new downtown complex.

The city hall planned for Orlando, Florida, draws its design not from the storybook and sci-fi fantasies of Disney World and Epcot Center, which most people reflexively associate with the area, but from an older,

more dignified image of governmental building.

The new building, which was designed by architects Heller & Leake of San Francisco, will constitute the centerpiece of City Commons, a multibuilding

mixed-use downtown center combining civic, commercial, and arts facilities. From a distance, the most commanding "governmental" feature will be the 120-foot copper dome supported by a shallow, columned drum. Wrapping around the base of the structure, a long colonnade will stretch out to buildings on either side to create a unified pedestrian precinct.

Inside the entrance, a Great Room will carry forward the theme of civic dignity. Described by the architects as rotundlike, the room is meant to serve the hall not only as a foyer but also as a living room for both formal and informal occasions. A grand staircase will lead from the Great Room to the City Council Chambers.

The 220,000-square-foot building, with its flat faces and rounded corners, will be clad with granite-aggregate precast concrete.

Construction of the building, which will be owned jointly by the City of Orlando and Lincoln Property Company, is expected to begin this year.

A Western Version of Arlington Cemetery in Utah

Designed to echo the colors and shapes of the Wasatch Mountains surrounding it, the Utah State Veterans Memorial Park and Cemetery near Salt Lake City will appear to grow out of those mountains, which is the effect intended by architect Kevin C. Scholz, of Springville, Utah.

The cemetery and chapel complex/freedom shrine occupy a state-donated 30-acre site that is perched on a hill and is visible from as far as five miles away, said Scholz, who was commissioned by Utah to design the project. Between 30,000 and 45,000 veterans can be buried in the cemetery, which is referred to — at least in Utah — as the "Arlington of the West."

The chapel complex/freedom shrine on about two acres of the site is prominent in the design. The five-story memorial chapel overlooks both the patio and the low-rise freedom shrine containing a museum for military artifacts, statuary and memorials, and offices.

S. R. B.



A five-story memorial chapel is prominent in Kevin Scholz's design for Utah State Veterans Memorial Park and Cemetery, near Salt Lake City.

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News Briefs

"An overwhelming menace" is the charge leveled at the Italian government's plan to hold Expo 2000 in Venice. The World Monuments Trust and Save Venice, Inc., two American preservation organizations that have channeled funds into Venetian conservation, deplore the probable effect of 230,000 visitors a day—not to mention the buses that will transport them—on the city's fragile fabric.

Thomas J. Watson, Jr., and IBM will receive the National Building Museum's annual honor award in recognition of their "distinguished and sustained contribution to American building." Watson's company has commissioned designs from such architects as Breuer, Eero Saarinen, Barnes, Noyes, Pei, Mitchell/Giurgola, Legoretta, and Burgee-Johnson.

The value of good architecture: for \$3 million, one can have a single-floor "Usonian Automatic" house in Phoenix designed by Frank Lloyd Wright; the house is offered for sale by Fred Sands Realtors of Beverly Hills, California. One of Wright's Usonian series, it was built in 1953 under his direct supervision and includes Wright furnishings.

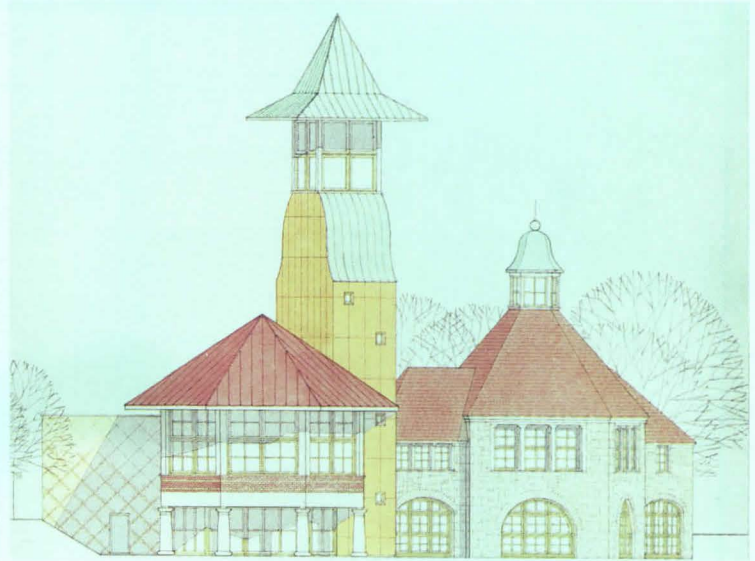
Awards: The Boston Society of Architects gave its 1989 Award of Honor to Norman C. Fletcher, a founding partner of The Architects Collaborative; the Detroit chapter of the AIA has awarded its Gold Medal to Kenneth Neumann, partner in charge of design with the firm Neumann/Smith of Southfield, Michigan.

Architectural commissions: Frank O. Gehry has been commissioned by the Toledo (Ohio) Museum of Art and the University of Toledo to design an art building for the university on the museum grounds; Antoine Predock will design and Dworsky Associates will be executive architects for the Government Center and Civic Auditorium in Thousand Oaks, California; the Reston Associates have named LeMay Associates architects for a Headquarters and Town Center in downtown Reston, Virginia; Tony Atkins & Associates, Architects, will design an addition to the Museum of Art at the Rhode Island School of Design.

A Restaurant for Atlanta's Piedmont Park

Parkside, a restaurant and bar complex now under construction, will occupy what its architects term "an idiosyncratic 1930s clubhouse" in Atlanta's Olmsted-designed Piedmont Park. The stone clubhouse (at right in the rendering) will be renovated for an entry lounge and wine bar upstairs and banquet rooms on the ground floor.

Anderson/Schwartz Architects of New York City has also designed two additions (at left in rendering): a long arcaded building with a large bar downstairs and a 200-seat restaurant upstairs, as well as an idiosyncratic clock tower at the juncture of old and new. (The designers took inspiration for the design from the 1895 Cotton States and International Expo-



Parkside will offer Atlantans food, drink, and verdant views of the city's large Piedmont Park.

sition that was held in the park.) The architects say that they took special care to harmonize colors and materials in old and new buildings. The new dining hall, for instance, has a red met-

al roof to agree with the old clubhouse's red tile roof, and the new gray brick piers suggest the old Stone Mountain granite masonry of the original building.

WestWeek's 15th Anniversary

WestWeek 90 entitles itself "LA 20/21: Design. Business. The New Century." The program, scheduled for March 21-23, will be the 15th annual West Coast furnishings market sponsored by the Pacific Design Center in Los Angeles. It will include: several sessions of a design and business symposium, which in addition to architecture and interiors will consider such matters as "LA Avant Garde" and "LA Film and Fashion"; several sessions of industry programming, which will cover such subjects as design philosophy and textile design; PDC's facility-management conference; and exhibits of new interior furnishings and architectural products.

In its announcement of the event, PDC calls our time "the Pacific Century," and finds Los Angeles "a source of ideas, inspiration, and financial clout of great relevance" to the period. The introductory sessions of the Design/Business Symposium—"LA 20" and "LA 21"—thus bracket the imminent millenium. "LA 20," which will explore this century's cultural and financial history, will have architectural historian David Gebhard of the University of California, Santa Barbara, as chairman. "LA 21,"

will undertake to predict next century's financial and design figures. It will be conducted by architect Michael Rotondi of the Los Angeles firm Morphosis.

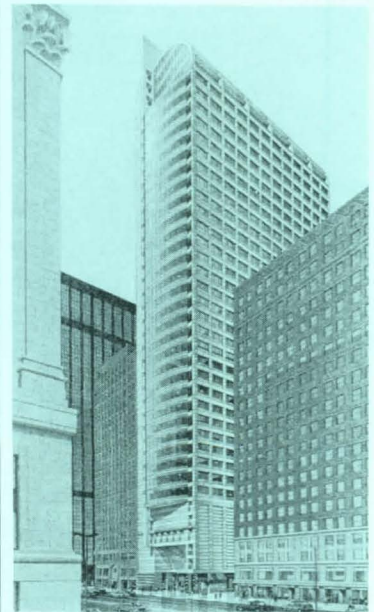
Other speakers will include architects Frank O. Gehry, Jon Jerde, Barton Myers, Craig Hodgetts, and Richard Logan, and interior designers Janet Polizzi, Ron Wilson, Gere Cavanaugh, Claire Thompson, Jarrett Hedborg, Michael Bedner, and Glenn Texeira.

In addition to new products on view in the PDC's showrooms, WestWeek will feature a number of related exhibits, including "Steel Cloud," showing the winning design by architects Hani Rashid and Lise Anne Couture for a monument marking Los Angeles as the western point of entry for U.S. immigrants. Other exhibits will be sponsored by the Steelcase Design Partnership, the Los Angeles chapter of the Industrial Designers Society of America, *Metropolitan Home* magazine, and the Association for Contract Textiles.

For further information, contact Judi Skalsky or Luci Balinbin, Pacific Design Center, 8687 Melrose Avenue, Los Angeles, California 90069 (213/657-0800).

In the Loop

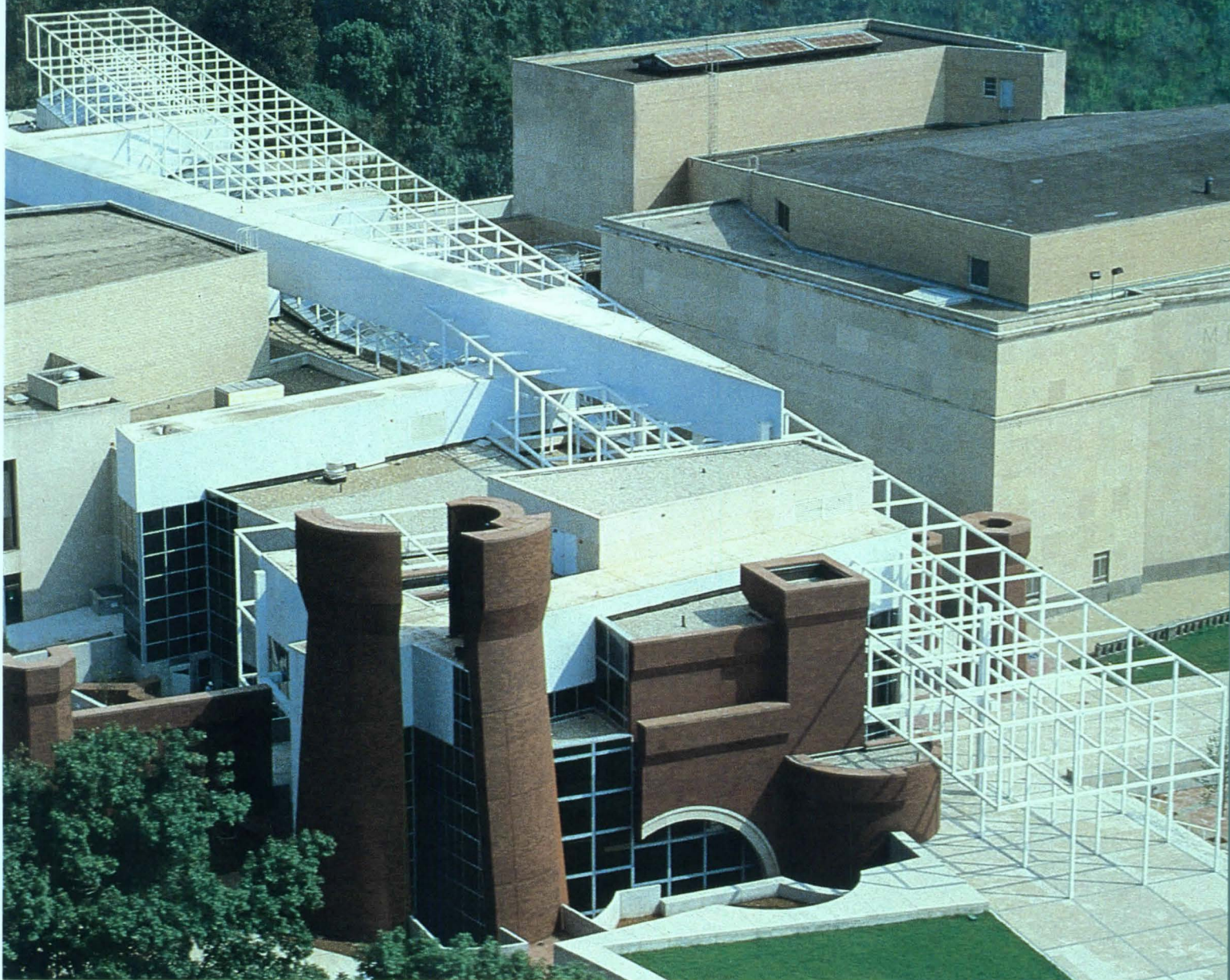
Architect Helmut Jahn continues to enlarge his oeuvre of commercial office buildings, the latest to be in his hometown of Chicago. The 40-story Savings of America Tower, under construction across from City Hall,



is expected to attract attorneys as tenants.

The granite-clad tower will have glass bays on both its LaSalle and Wells street facades, and a trellis will cover a walkway connecting the two streets.

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A Hoped-for Landmark From Bay Area Designers



Three glass pleasure domes overlooking the Pacific would replace San Francisco's dilapidated Cliff House.

Though design professionals prefer to work on commission, from time to time they feel compelled to take the initiative. In San Francisco, a team of architects and engineers saw that the Cliff House, despite its views of Seal Rock and the Pacific Ocean, had turned into a collection of mismatched additions and had lost its former popularity. Further, the structure seriously needed seismic engineering.

Members of the design team included architects James Ream

and Stone, Marraccini and Patterson, engineers Ove Arup and Partners, and landscape architect Michael Painter. The new Cliff House would have glass-enclosed rooms recalling 19th-century conservatories. Dining rooms, galleries, and a visitors' center would thus enjoy unimpeded views of sea and seals. The team, which offers its design free, now actively seeks a philanthropist to donate the building to the city and the Golden Gate Recreational Area.

Three Buildings for Sacramento's Capitol Mall

At the same time it selected this three-building complex as the winner of a developer competition for a major site on the California State Capitol Mall, the Sacramento City Council cited the design submitted by John Burgee Architects as the best that was presented. The development firm that won the award, Capitol Mall Partners, is a partnership of Rockefeller Associates Realty, Inc., and McKuen Properties.

The complex, which will include two office buildings and a hotel, will be constructed in two phases over a five-year period. The first component to be built will be a 34-story office building that will step back from the mall. Subsequent construction will include a 20-story office building with a curving facade and a 300-room luxury hotel at one corner of the site.

Both architect and developer were especially concerned with urban planning for the prominent site. Burgee in particular wanted to give the city a new public space that "would be active with many

varied uses and would connect Sacramento's beautiful mall to the city's retail center."

The three buildings will be joined together by a colonnade that will ring the site to reinforce visual perception of the edge of Capitol Mall. Moreover, the design will open a



California project offers two office towers and a hotel.

large landscaped plaza for pedestrian use. The plaza will benefit the hotel especially by offering outdoor views. The hotel, which will be adjacent to Sacramento's retail district, was designed to facilitate pedestrian circulation between stores and Capitol Mall.

News Briefs

A wooden bridge (1), designed to be built first in Dover, Vermont, is a prototype for bridges in the state. The prototype was created by two Boston-area designers, architect Paul Steven-son Oles and engineer Daniel L. Schodek, winners of the Vermont Timber Bridge Competition. A steel frame hangs from the center of each of two triangular wooden trusses.

The Westchester Pavilion (2), a \$100-million specialty retail center to be built in downtown White Plains, New York, was designed by The Callison Partnership, a Seattle-based firm. Multistory glass atrium entrances are featured in the design, which is intended to blend in with the character and scale of the surrounding buildings.

611 South Flower Street (3), a 20-story building in Los Angeles that at one time was the tallest structure downtown, will under-

go a major renovation and make its debut as 811 Wilshire Boulevard. Among changes proposed by the Santa-Monica-based architects, The Landau Partnership, are recladding the exterior glass mosaic tile with stone and creating a new entry and lobby.

The Martin Luther King, Jr.

Federal Office Building and Courthouse (4) in downtown Newark, New Jersey, was designed by The Grad Partnership, of Newark. The building will be precast, glass-fiber-reinforced concrete. Features include a five-story rotunda and a 75-foot-high skylight.

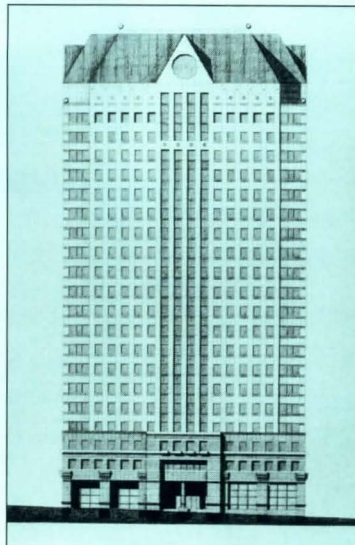
A new firehouse (5) designed by Jonathan Cohen for Emeryville, California, is intended to evoke images of old-time firehouses. Situated less than 50 feet from San Francisco Bay, much of the wall is glass. A clock tower, for hanging hoses to dry, is intended as a new civic marker.



1



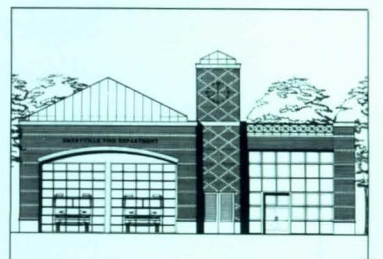
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AWARDS FOR WOOD BUILDINGS

In an architectural awards program sponsored biennially by the Cedar Shake & Shingle Bureau/American Institute of Architects, four buildings received First Awards and another nine got Merit Awards. The awards were presented at the Bureau's 74th annual meeting in Seattle last September.

The three-architect jury included James H. Crissman of Crissman + Solomon, Wattertown, Massachusetts; Charles M. Davis, San Francisco; and David Furman, Charlotte, North Carolina. Commenting on the submissions as a whole, the jury said, "Consistently the projects were extremely well built. There perhaps should be a way of recognizing the builder as well as the architect."

1. First Award: McKim House, Fisher's Island, New York; Mark Simon and Leonard J. Wyeth of Centerbrook Architects. Designed to connect a group of rambling Gothic Revival farm buildings, the house has "a stark and brooding presence," in the jury's opinion.

2. First Award: Gates of the Grove, East Hampton, New York; Norman Jaffe. The jury called this synagogue "contemplative as well as uplifting" and commended the "beautifully detailed interior" [RECORD, January 1990, pages 124-127].

3. First Award: Private House, East Hampton, New York; Jaquelin T. Robertson. "A fresh reinventing of the East Coast Shingle Style," the jury said of this combination of residential formality and rusticity.

4. First Award: Shope House, Greenwich, Connecticut; Shope Reno Wharton Associates [RECORD, Mid-April 1987, pages 80-85]. A small house whose design relied heavily on the architects' knowledge of woodworking, it is "a building of uncommon significance."

5. Merit Award: Jordan/Blumstein House, Seattle; Gary Tabasinske. An enlarged house designed to fit quietly into a traditional neighborhood, the project was designed "with good style and wit."

6. Merit Award: Reid House, Cleveland Heights, Ohio; Jefferson B. Riley and Walker Burns of Centerbrook Architects. Though it was designed for a "stately" suburb, the jury approved the house's "great sense of whimsy."



1



4



2



3

The joint sponsors of this biennial competition—the Cedar Shake & Shingle Bureau and the American Institute of Architects—sought significant functional and esthetic uses of cedar shingles and shakes.

The projects honored this year are, as one might expect of wood buildings, largely residential, though they also include an inn and a chapel.



5



9

7. Merit Award: Vacation House, Rehoboth Beach, Delaware; Winthrop Faulkner of Wilkes Faulkner Jenkins & Bass. Elevated to avoid flooding and to capture an ocean view, the house has detailing "that suggests something grander than its straightforward plan."

8. Merit Award: Private House, Highland Park, Illinois; Stuart Cohen & Anders Nerein. The jury remarked that this residence, which was designed to exploit views of Lake Michigan, "is impeccably detailed and exquisitely crafted."



6



10

9. Merit Award: Inn at Langley, Langley, Washington; Gaylord Grainger Libby O'Brien-Smith Architects. The 24-room hotel is "a recognizably regional solution on a difficult site." (The inn appears on pages 126-127 of this issue.)

10. Merit Award: Pine Ridge Condominiums, Fairfield, Connecticut; Mark P. Finlay Architects, Inc. The jury found "the village green concept... well conceived and believable" when applied to this condo.

11. Merit Award: Borgford House, Medina, Washington; Baylis Brand Wagner Architects. For this addition to a Shingle Style cottage, the jury thought, "the architects acted with sophisticated restraint."



7



11

12. Merit Award: Bridge House, Bainbridge Island, Washington; James Cutler Architects [RECORD, Mid-April 1989, pages 66-67]. To preserve the landscape, the house was built as a bridge, "a simple but bold solution."

13. Merit Award: Hitchings House, Philadelphia; Tony Atkin & Associates, Architects. Meant to be a seamless addition to a Tudor house, the building also has interiors "undoubtedly better than the original," the jury felt. □



8



12



13

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Colonial window, 1822.



Mission window, 1793.

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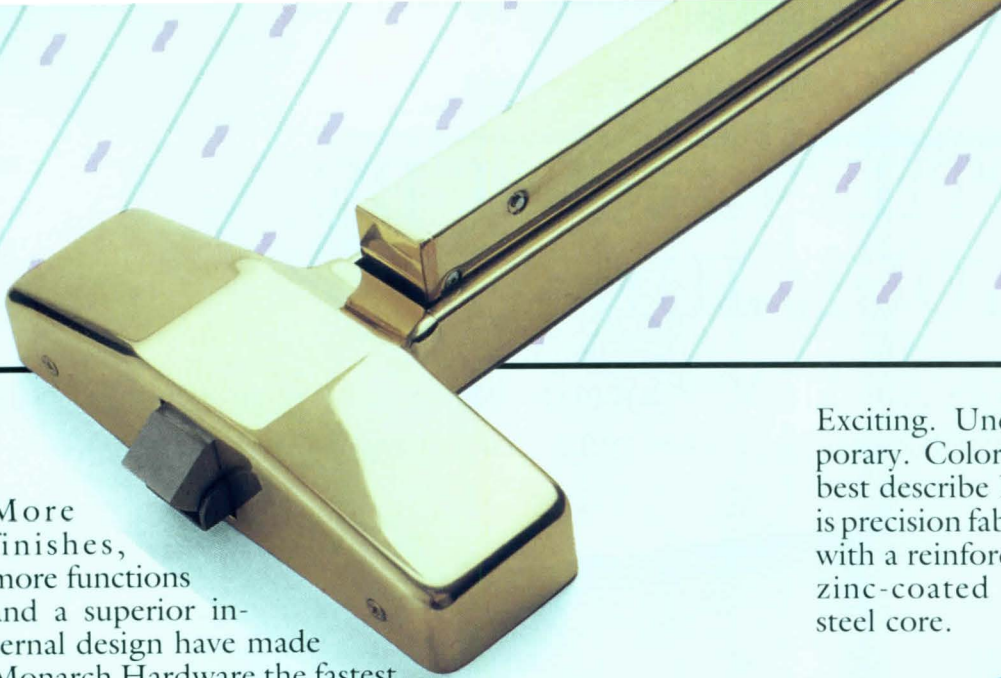
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NEWMAN TONKS

Circle 14 on inquiry card

LET THE CLIENT BE YOUR JUDGE

The client judges of the 10th annual SMPS awards bring a new perspective to marketing strategies and reveal that less may not be more, but more is.

What makes marketing materials more memorable in the eyes of our clients, and how do we know what they want to see in our printed (and audio-visual) communications to them? After a decade in which the members of the Society of Marketing Professional Services reviewed promotional material for their own annual awards program, the answer was easy. Let potential clients judge the material and, at the society's annual convention last fall, present the awards.

The SMPS is an organization of professionals within the building- and engineering-design community with particular interests in promoting their firms' services. Hence, the traditional practice had been somewhat like contestants in a beauty contest judging themselves without a mirror. There had been little feedback on the actual success of materials that the members believed were successful. What members had accurately observed when picking previous winners was that there was nothing as convincing as client testimonials. The results of direct client judgment were startling. While there were reconfirmations of often-stated ideas and surprising revelations on others, some myths were completely swept away.

Marilyn Hennessy, the society's awards chairperson, initiated this significant change with the simple reasoning that, "after all, we design our materials to be scrutinized by clients, why not have them tell us which they react to most positively?" Hennessy selected the jury of potential clients from companies that solicit design services nationwide. They reflected the disciplinary and geographic distribution of the SMPS member firms, including both the public and private sector.

Myths destroyed

The most popular misconception among SMPS members, growing in acceptance in recent years, was that clients, being busy people with much on their minds, responded best to quick-take promotional materials that would catch the eye but require little reading or involvement. Not so, at least to this group of client-jurors.



Simple effectiveness from small firms (Wilson & Griffin, top); materials that look like popular magazines (Sverdrup, center, and CH2M Hill, bottom).

While previous awards had traditionally gone to designs with little or no text, sophisticated graphics, and, sometimes droll humor, this jury preferred to have ample detailed text about the services of a firm. They wanted to see client lists. They wanted to see photographs of the principals and their projects. They wanted solid information without such distractions as puffery or abstract images and philosophy. They expected good photography, good graphics, quality paper, color, and printing. Yet they wanted more. They responded most of all to substance, not style. They preferred the traditional-size company brochures, over odd-sizes and formats. No surprises there.

Out the window went pristine graphics, art photography, clean expanses of white space, and minimal text. Comments such as, "These photos do not tell me much," and "Where's the list of people this firm has worked for?" were commonplace, says Hennessy, who participated in the judging of each category.

What the clients liked:

The company brochure was by far the most favored promotional medium by the client-jury. The preferred version gave them all they needed to know about a design firm for future reference.

Hennessy noted a trend toward reaching for international markets, especially influenced by the opening of the European Common Market in 1992. There was more text in dual languages, very often Japanese or French. The placement of the foreign text was invariably parallel to the English. Among the award winners using this approach was the architect/engineer firm RTKL, for an exceptionally well-designed newsletter.

5 qualities you can count on from

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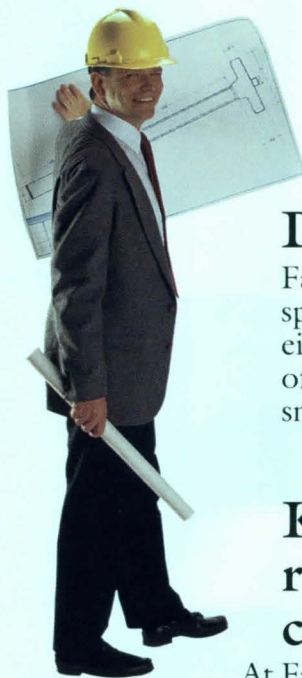


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Circle 14 on inquiry card

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ter, tying for first-place in that category.

While not discarded entirely, most exceptionally creative and innovative materials were given honorable mentions, meaning that they were noticed, even while the top three awards in each category almost invariably went to the tried-and-true with a specific problem-solver approach. The materials that emphasized a design firm's people received strong commendation from the client-jury. After they had seen enough projects and judged the firms to be equally competent, they consistently commented: "We want to meet the people."

More like a magazine

What the jury liked was graphic design that looked more like a consumer magazine's. At least that is what they picked.

The photography that had exceptional appeal had to be literal. It had to show the buildings and other projects as realistically and thoroughly as possible. Or it had to evoke sentiments in the jury to which they could relate. For instance, engineers CH2M Hill won the top award for its overall communications program. Graphic consistency between brochures, reports, mailings, and other elements of its program (a prime criterion for awards in the past) was not one of RTKL's major concerns. In fact, each printed material looked quite different, which led jurors to give strong positive comments on the individual identities. A report on the firm's work in Alaska (bottom photo on previous page) elicited the comment: "It looks like Alaska." And the high-quality evocative photography won the award as much as the overall design.

Themes attracted the jurors. CH2M's annual report was structured on Ripley's *Believe It Or Not*. Another brochure contained photographs of team rowers progressing toward the finish line. Humorous materials, while not absent from the awards, won for such pointed exchanges as: "My design firm is so exclusive, it has an unlisted number," countered with: "Mine is GSGSB and you can't believe what they'll do to keep in touch." (Architects and engineers GSGSB took third place in the direct-mail category, not only for the appeal of its humor, but for including a business-reply card, preaddressed to its business development head).

A chance for the small firms

The increasing sophistication of promotional materials, requiring large outlays to achieve, has caused small firms to be steadily squeezed out of the awards. An innovation this year was the Small Firm Award, given to firms with 10 or fewer people. It proved that budgets did not have to be huge to deliver a quality message. This factor will mean that the awards program will be open to more firms in the future.

The first-place winner in the Small Firm

First Place Awards

Best of Show
CH2M HILL

Firm Brochure
LCP ASSOCIATES, INC.

Small Firm Brochure
NOTCH & ASSOCIATES

Special Market Brochure
CH2M HILL

Newsletter (tie)
RTKL ASSOCIATES, INC.
SVERDRUP CORPORATION

Magazine
HNTB

Corporate Identity Program
WIMBERLY ALLISON TONG & GOO

Direct Mail Campaign
CH2M HILL

Corporate Advertising Program
STAHL CONSTRUCTION CO.

Annual Report
CH2M HILL

Trade Show Program
STETSON-HARZA

Communications Program
CH2M HILL

Audio Visual Presentation
SHWC, INC.

Jurors

Overall Awards Chairperson:
Marilyn Hennessy, Gensler & Associates

Audio-Visual Chairperson:
Ernest Burden, Burden Assoc.

Judges:

Edward Barber, The Staubach Co.

William Barnes, U. S. Air Force

Michael Boyle, William Beaumont Hospital

David Forrest,

BCE Development Properties, Inc.

Kenneth Penuel, Alabama Power Co.

Sherry Jones, MCI Telecommunications Corp.

William Gormly,

Washington Suburban Sanitary Comm.

Sheila Brand, Schwimmer & Associates

Ellen Flynn-Heapes, Flynn-Heapes Consulting

Allan Rettig, American Red Cross

category was engineering firm Notch + Associates for its company brochure. Done entirely in black and white in a spiral binding, the small square brochure carried a checkerboard graphic theme from page to page, with the white spaces gradually being filled in to correspond with the growing list of firm merits, qualifications, experience, and projects.

Second place in the category was won by consultants K. Lentz for a series of direct mailings for architects Wilson & Griffin

(top photo, previous page), with the message alternating between quiet assurance and humor. (The card illustrated pokes fun at the idea that architects' qualifications have something to do with their golfing associations.) Clearly the jury was willing to let the small-firm winners have more fun than the large ones.

Consistent demands for quality audio-visuals

In the audio-visual category, the client jury was equally critical and demanding. The members were accustomed to judging film and video programs from all over the world. Again, they picked programs that clearly solved specific problems. And they often chose these over entries that featured spectacular video effects.

Their comments on scripts and soundtracks indicated that the entries fell into two categories: those that understood the power of the medium and those that did not. Among them: "Scripts are written for the eye, not the ear, with cumbersome words and phrases." Equally distracting was "wall-to-wall" narration, without breaks for natural dialog or music. Overall, they felt the videos showed a low level of risk-taking. The impression the client-jury received: an industry trying to look homogeneous. Although firms documented their competence, most attempts were trite, had too many success stories, and no unique selling points. Practices to avoid: trying to show all things to all people, using non-professionals as spokespersons, and using the phrase "state of the art."

The importance of client juries

The results of the client-jury process used this year? The winning entries go far beyond the graphic exercises and subjective viewpoints inherent in peer review and judging. We should all pay attention to jury comments. After all, these are the people who are responsible for selecting your firm over the many others. Their important message this year: a brochure, direct-mailing, or video presentation is a good deal more than an exercise in graphic design and photography.

Since these promotional materials are the means by which we directly communicate with our would-be clients, they had better be responsive to their needs and requirements. This is no time for abstractions, or anything less than our best efforts. □

Mr. Burden is an architect based in New York City. He specializes in the design and production of marketing presentations for design professionals, and lectures on all aspects of presentations—particularly on video and computer technology. His latest book, Design Communication: Developing Promotional Material for Design Firms, was recently published by McGraw-Hill.

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HOW DO THEY GET THOSE COMMISSIONS?

Part two of a series in which George and Laura Heery interview Arthur Gensler and Bill Lacy to get the inside story.

Last month in RECORD [pages 34-41], the results of interviews, by marketing pioneer George Heery and his architect daughter Laura, with the principals of one very large and two smaller highly visible architectural firms revealed how the smaller firms (Peter Eisenman and Anderson/Schwartz) do well despite a lack of what the professionals in marketing would call a comprehensive plan, while the big firm (Kohn Pedersen Fox Associates) is very organized indeed. Still, Eugene Kohn offered some surprises as well.

This month, the Heery interviews continue with Arthur Gensler, who reveals his marketing techniques, both orthodox and unorthodox, and with Bill Lacy, who brings the clients' point of view on the techniques that work—and those that do not.

C. K. H.

ARTHUR GENSLER

Gensler and Associates

Gensler and Associates is a prime example of a big established firm with multiple offices that can keep a leading position in design. Despite its size, it does not try to be all things to all people. It specializes in commercial work with a large percentage of it in interiors. Although the practice has found its own special niche, Arthur Gensler does not relax, but works hard at keeping an edge.

Knowing his audience

George Heery: How do you stay ahead of the game?

Gensler: Marketing is not about selling design as pure esthetics. First of all, I just don't think that sells. What architects must do is communicate to clients that we understand what their problems are. I think many architects don't understand clients' problems. Nor are they interested.

I read 50 magazines and newspapers a month. Two-thirds are business publications. To be expert in a field takes a tremendous amount of studying, reading, researching what has worked and what hasn't, and being realistic about costs. I try to learn as much as I can about how clients operate. If I want to do a convention center, I spend a lot of time talking

with the operators in order to understand what makes a convention a success or a failure, where the economics are, and how the various pieces of the deal fit together.

If I'm talking to a lawyer, I talk lawyer talk and, if I'm talking to a developer, I talk



Gensler: talking the clients' language.

business talk. You have to understand the client's game and business, and how and why they are doing what they're doing.

Zeroing in

Heery: Who are your principal clients?

Gensler: We try to do projects mostly for business people. Our work can produce a direct payback. The project works or it doesn't; the economics work or don't work; a delivery date works or doesn't work.

The word "architecture" is not sufficient anymore, because it includes too much. You need to focus on what kind of architecture. I am a design-oriented business architect. We understand a series of industries but not all industries. We don't try to be all things to all people. There are a lot of project types—housing and health care, for example—that we don't attempt.

We will at times act not like an architect, but a management consultant. People ask

us: "Should we have three secretaries or four in this situation? How big should our library be?" I'll say: "This company does it this way and this company does it that. It seems, after listening to you, that this is the way you ought to go." They may follow my advice or not. Usually they do.

I can't emphasize enough that what we do isn't superficial. We can help clients with their lease, with their real-estate economics, with how a deal goes together, with what to do with their property.

We can now go in where enough is known about us that we don't have to do much of "this is who we are and these are the pretty pictures of what we've done." Of course we still do some of that.

On starting out

Heery: How did you begin your practice?

Gensler: I was awarded the tenant-space planning of one building, which was my first break. I worked awfully hard with companies like IBM and J. Walter Thompson, and did a lot of research on what those companies did. That was 25 years ago. I didn't know very much, but there wasn't that much competition then either.

Today our field is cluttered with people. When we first went into interiors, there were not many people who cared about interior architecture. I was lucky that the tenant work was the first thing I did because it was a very good introduction for me. I worked part-time for two months to prove that I could do it and I worked 18 hours a day, because I was working for myself and at the same time for Wurster Bernardi and Emmons, with their support and knowledge of my outside activities.

What he says and shows

Heery: How do you sell?

Gensler: Before I make a presentation, I spend the first 10 minutes getting to know and understand the client. I've done enough research to know something specific about what that person or company is interested in. I'll read, for instance, an annual report to know how a company ticks.

We share with our clients a variety of alternatives so that together we can find the one that fits the company and the organization. I think that's our stock in trade; we don't try to sell a set design.

We have three types of written promotions. First is the Genslereport, which we publish two or three times a year and mail to about 4,000 to 5,000 clients. It started as a publication of our projects and has evolved; each issue covers a specific topic—master planning, law-firm design, etc. It is glossy, in color, about 12 pages.

Second, we print a fact sheet for each significant project: one page, one side, with a simple written description, a color picture, perhaps a floor plan. We also print one-page information sheets, such as lists of projects, clients, services, etc., and keep information, such as bios, in the computer for desk-top publishing.

There is no such thing as *the* Gensler brochure, but different offices have regional-office brochures. We also make extensive use of reprints of magazine articles about us.

Looking for clients

Some find them at a tennis club, a church, a charity group. The AIA is a wonderful organization, but there are no clients there. Drue, my wife, and I won't entertain in the



Gensler's Columbia Pictures headquarters in Burbank.

evening for business. I don't spend a lot of time socializing with my clients. Still, I have most of the clients that I had 20 years ago. They don't have the time to socialize either. I'm not big on competitions, but we do a great deal of pro bono work. If you're inter-

ested in designing churches, you should be going to church conventions.

Part of the reason we have multiple offices is to help build relationships throughout the nation and the world. It helps to balance out the regional nature of business cycles.

Another marketing decision is what kind of organization you have. There's the star system and the non-star system, as we all know. We work on the non-star system, but we have lots of talented people just the same.

Having a strong interior-design business helps too. It produces add-on business. Out of 1,750 jobs last year, 800 to 900 were supplemental assignments. Only 320 of our projects involved fees over \$25,000. The smaller work also evens out the ups and downs that are inherent in our field. I am known to say we are happy to do small jobs for big people. Selecting an ashtray for a CEO is okay if he thinks of us for his next big project.

We try to remember we are in the service business, the design-service business. □

BILL LACY

Bill Lacy Design

Though he is an architect, Lacy provides a client's point of view on why architects get selected; in fact he is currently consulting full-time with clients on architect-selection procedures. He comes from a broad background of judging design excellence, having been director of design and architecture for the National Endowment for the Arts; president of the American Academy in Rome; and president of Cooper Union College.

Only the experienced wanted

George Heery: What are some of the biggest mistakes the inexperienced make?

Lacy: I think a lot of architects go after commissions simply because they want them, not because they are well suited for them. That happens over and over.

I have avoided recommending design competitions to clients for several years. It is an artificial process by which an architect is chosen by a design and the design is arrived at without benefit of client dialogue. It's very costly and time-consuming, and the winning design will be changed. I recommend an interview process by which a long list of architects are invited to submit qualifications and then we visit those architects' previous projects.

I'm impressed by how much one cannot tell by photographs. Architects do not, for some inexplicable reason, know how to take a picture of their buildings, nor recognize one taken well. The number of archi-

tects having good slides of their projects is infinitesimal. I could go into details of what I mean by bad. I am talking about 14th-generation dupes, bad lighting, inconsistent lighting throughout a slide show, poorly composed pictures, and pictures that don't tell any story about the building. Architects taking pictures wait for just the right cloud, giving a too stylized look to their effort. There are neither people nor imagination in photo angles. Occasionally, you will get this great shot—across the water at sundown, for instance—and it is a fantastic selling tool.

I once made a joke: "You issue a call for credentials and everyone sends in their Rizzoli book. Then you get a tape measure and see which book is the thickest. Helmut Jahn always gets the commission."

A book has not had the effect of replacing the tear sheet. Most architects are faced with the dilemma of firm brochures that become dated as soon as published. Senior partners are added; the big project wasn't included or changed. Brochures are obsolescent.

I saw video used in a selection process. One of the architects couldn't be there and he mailed in his performance resume on video. It was deadly.

On winning jobs during presentations

Architects excel, in general, in their personal presentations, face to face with the client. They are very good—intelligent, articulate, and charming. They all have their own individual personalities; that comes across. They are shy and winning or they are sincere or eloquent. You can hear a pin

drop when Ed Barnes makes a presentation. He charms clients right out of trees.

Heery: I make the case that a presentation to possible clients amounts to chemistry. It is very, very important and will frequently carry the day or lose it more than will brochures, slides, and other visual presentations.

Lacy: Because many clients are going through selection for the first time, they are quite taken. Architects increasingly come off as celebrities, so clients are predisposed, as they are when they go to see a performance by a great entertainer, to be impressed. It plays an important part.

There is a certain intimidation factor at play there. The beginning relationship between the client and architect sometimes carries over into the design of the project, so that the architect is able to be more in control than he should be. We have to remember that clients come in all different shapes and sizes, as do architects, and the fit between them is critical.

Sometimes, architects come in with this canned, hard sell, and they lose their client immediately. The client doesn't want that. He wants someone different, and there is a very subtle thing that goes on in interviews that is much more than just answering questions.

There are some stock questions that are always asked architects and I've seen even mature professionals bungle those. The client wants reassurance. When he asks how much time the architect will give the project, he doesn't want him to tell what his work schedule is. He wants an answer that is reassuring. "I will give as much time as

required," is every responsible architect's answer.

I am constantly amazed by how many times architects come into an interview and don't act as if they want the job. They must have enthusiasm about *this* project. The rest is teaching, sales, tricks of the trade. You can't blame a client for not responding to a lackadaisical presentation. But it is a little like walking into a mine field. The client looks for bold answers. If you give one, it had better be the right one—exactly what he has been waiting for you to say. But, if he doesn't want to hear it, you lose.

It is not all show biz. You have to be sincere. You have to say, okay, I will do this and I can't do that. Clients, I think, respect that kind of integrity and can sense it.

None of the written material they send in has any meaning. I think that architects' written statements are pure gibberish. Clarity comes through in the written word, but a lot of architects can't write.

Heery: I have always been suspicious that people who send out requests for statements and qualifications and get in lots of big thick fancy books never read them. But I have also had clients say: "Oh yes, we read every word."

Knowing client foibles

Lacy: You have to take into account that people on a selection committee are not used to architectural jargon. They are from different walks of life. You have to allow for the fact that some of them are sophisticated and have been involved in building projects before and some have not and they are terrified by the responsibility.

One measure clients have of whether an architect is one of some reputation is whether he has been published, because most are sophisticated enough to know that hardly anyone who does good work can avoid being published these days, somewhere.

Heery: Are they put off, though, by the architect who says: "Here is a reprint of an article that was done about us?" Is there any sort of feeling that this architect is too much of a snake-oil salesman if he has those reprints made instead of giving you the whole magazine? [See Eisenman interview, RECORD, January 1990, page 37.]

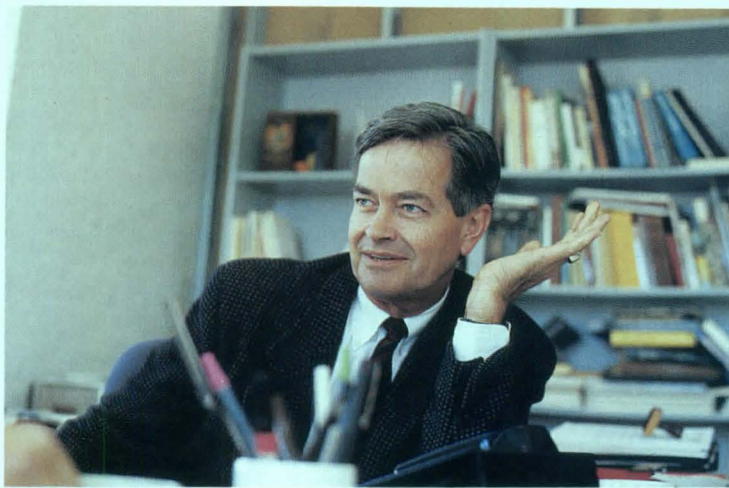
Lacy: Reprints are common practice. You begin to hate the architect who gives you more material than you can carry.

Laura Heery: Many architects, such as Gensler and Kohn, select museums to send to someone inquiring about museums. Do you ever see a client who is turned away from an architect who shows the client comprehensive work, rather than the spe-

cific building type he is interested in?

Lacy: That is a tricky question because clients are not entirely predictable. One of the ways that they are reassured is by someone saying this architect has done five museums. Another committee member may then say: "But maybe we will just get one like the one he's done."

Architects who have not done the building type, of course, have the argument: "I have never solved this problem, so you will get so much more out of me. I don't know all the answers, so I am going to have to



Lacy: Interviews can be like walking into a minefield.

find the answers and the result will be terribly innovative and terribly original."

George Heery: That varies with building types. A committee of intellectuals selecting an architect for a museum or a new city hall is probably more likely to take the chance than a committee selecting an architect for a hospital.

Lacy: Architects on selection committees are usually not the best. They bring a point of view and they have enough knowledge so that they are persuasive to others less certain of their opinions.

Laura Heery: So if you are informing yourself about a prospective client, you will notice, in particular, if there is an architect involved, what his orientation is.

Relaxing under the strain

Lacy: One thing not to do is come to an interview with too rigid a plan of presentation because improvisation usually wins the day, if you can stand the strain. It is a good idea to be prepared—not to research the client so much as to research the problem and the site. There is nothing a client likes to hear more than that you have really looked at the site, that you have really thought about it, that you have really studied it, that you are engaged by his problems. He wants to talk about what he has on the table.

George Heery: We would go out and photograph the site even though often I would hear someone in our firm say: "That's silly; the client knows what his site

looks like." We would hire a little airplane and take aerial views, some from up so high that it was almost like a map. We studied them, we familiarized ourselves with the rock system, the ingress and egress, the zoning. Then we would develop a project-management chart for how we were going to schedule the design work, when we would expect it to go to bids, when the construction would finish.

Lacy: Clients love to see pictures of their children and they love to see pictures of their site. I have seen variations on

what you did that were just short of designing the building—some mass studies and just a little bit of instant site analysis. But you can shoot yourself in the foot and show something they have already rejected. It's good to be able to give them a projected schedule and show that you are professionally competent and capable; but you have to be careful, also, with that approach, that you don't come off too much as a firm that is more interested in the business of doing this project than in the design of it. A lot of clients want to make the choice on design ability and then they want to be reassured

you are competent.

I know it is tough for a young firm to get on a selection list, but, even so, I know lots of young firms that have. The reason such firms don't get on the list is not because they are young. Usually it is because they don't have the requisite experience, yet. Someone said once that there are dilemmas and there are predicaments and I think this is a predicament. □

In future issues: Interviews with David Childs, Denise Scott Brown and Robert Venturi, and Dirk Lohan, among others.

George Heery is a pioneer in developing, among other innovations in the profession, the concept of construction management. In 1986, Heery and his colleague shareholders sold Heery International to BICC. He is currently active in several enterprises with his children, including Ms. Heery. He is the author of Time, Cost, and Architecture, published by McGraw-Hill.

Laura Heery is chairperson of the Brookwood Group, an architectural firm that uses the concept, developed by her father, of making the contractor responsible for design development, leaving the architectural firm in control of design. She has traveled and studied widely and worked for some of the best-known names in the field.

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HOW A SMALL DESIGN FIRM WORKS WITH DEVELOPERS

The going may not be easy, but the rewards can be great. Creating an atmosphere of collaborative effort helps.

While we tend to judge good buildings on the merits of the finished product, we may pay too little attention to the sometimes difficult processes that produced them. These processes can be especially difficult for a small architectural firm typically working for small developers with tight budgets.

One case history, examined here, illustrates the added complexities of such work in cities, where high land costs may drive owners onto marginal sites, and community and regulatory pressures might discourage all but the most intrepid. Architects Daryl Carrington and Gavin Macrae-Gibson, principals in Carrington Associates, in New York City, cannot place too much emphasis on the importance of process. They characterize theirs as "an experiment in architect-developer collaboration." While many architects may find this a bit strong in a field in which they are hired to impart their expertise, Carrington and Macrae-Gibson see the expertise flowing both ways. They are fortunate. They choose the right clients. And they concentrate on building close working bonds.

Their client relationship has been continually refined in the three years they have worked with Waterfront Invest, a young development company founded by three university friends from New Jersey who started out by renovating brownstones in the Hoboken area. Together, as the architects put it, they and the growing development company have created four residential developments in New Jersey's Hudson and Essex counties, just across the Hudson River from Manhattan. While not all architects may want to admit to or be capable of getting so much client rapport, these architects illustrate the benefits that at least an atmosphere of cooperative effort, created by their receptive attitude to clients' ideas, motives, and needs can produce—important to all architects, but especially to fledgling firms. Here is how it helped Carrington Associates. C. K. H.



One architect's reward: Centre Court in New Jersey.

Turning tough sites around

Waterfront Invest does not give its architects easy sites. Its development philosophy is to seek out difficult, even risky, situations and try to turn them around. Each of its developments involves a site that is underdeveloped, undervalued, and sometimes contaminated—sites that other developers might consider difficult or, indeed, impossible.

Its initial advantage in building is never purchasing property for more than 80 percent of its market value. "We make an offer at every opportunity, and maybe one out of every 100 gets accepted," says Robert Fioretti who, with his brother Peter and partner Kevin Wilk, founded Waterfront Invest. "By buying the land 20 percent below market value we can add additional amenities and still undercut the average selling prices in the area."

Because the developers work with their architects from the outset, they can get a better idea of a site's possibilities, despite its problems, which gives them another advantage over other potential investors. "Most developers look at a piece of land and can only envision one type of solution," Fioretti says—the type of building they have built before.

A case in point is the 180-unit Centre Court in Jersey City (photo above) located in a mixed neighborhood of large apartment buildings, smaller ones, and wood-frame row houses. Gaining acceptance by the community was a key requirement in obtaining the tax abatement that made the development possible. To that end, Carrington & Associates designed the mass-

ing to be contextually responsive, placing the largest block nearest larger existing apartment buildings and placing four-story wings, at the scale of the adjacent rowhouses, to embrace a central court. The developers got their crucial abatement.

Another example of the advantages that early close work with a dedicated small architectural firm can produce is Waterfront Invest's 132-unit, garden-apartment development in the North Ward of Newark

called Forest Hills. The neighborhood consists of two-family houses on 50-foot lots, but preliminary analysis showed that the new project had to be an even more economical housing type to be feasible. By having the city declare the site "blighted," the zoning could be changed to the new 48-unit-per-acre density with 12 units in each building.

To bring costs down further, wood-frame construction, the most economical form the building industry has been able to come up with so far, was chosen, producing costs of \$58 per square foot including site work. The type of construction, the scale its size limitations produced, and the alignment of the new buildings to continue existing street boundaries are credited with reinforcing the existing character of the neighborhood, which the developers had ascertained to be one of the principal strengths of the site.

Future extension of this project will reach out to face several down-at-the-heels midrise apartment buildings built during 1960s redevelopment, which the developer hopes to acquire and refurbish. "The challenge then," says Macrae-Gibson, "will be to find a way to establish the scale of a viable neighborhood among the scaleless residue of a bankrupt housing ideal."

Learning to live with change

"We do an enormous amount of schoolwork," says Robert Fioretti. This takes the form of a continuing series of monthly meetings in which all the players involved in a Waterfront Invest development sit down to brainstorm. The architects pre-

sent design strategies; the marketing team analyzes tenants the project is meant to attract, their wants and needs, and the number of units and their size; an apartment management consultant gauges everything from parking needs and security to garbage pick-up; and lastly, the construction consultants find the most economical method of building the building.

"This process of testing ideas generates a stronger product," says Carrington. "An architect working with developers must be able to change design ideas and have the flexibility to move from one concept to another. It's a difficult thing for many architects to learn. If the team says shift, we shift."

"While we consider such design versatility an indispensable strength," says Macrae-Gibson, "we nevertheless believe in the fundamental importance of a strong underlying architectural concept. This concept must be strong enough to resolve many often-contradictory and changeable demands such as density, context, scale, and approvals, not to mention budget. We prefer to find another concept if conditions change, rather than compromise an existing one so that architectural potency is lost."

Says Carrington: "The developers aren't looking to us only to accommodate their financial needs. They look to us for good design because that is a valuable part of marketing. With the risks they take with their sites, it is an important part of their investment."

Another reason for the need for flexibility is rapid changes in the building market. Even modest developments may sometimes take two or three years to get to the approval stage when construction can begin and, by then, the market has shifted. A change in the economy, the character of a

region or a neighborhood, or a change in popular taste can suddenly switch a buyer's interest from large living rooms to large kitchens and bathrooms. "We create a design that responds to all of these needs," Carrington says. "It's a multidimensional jigsaw puzzle that we put together."

The impossible takes longer

Onyx Court, the latest project in planning for Waterfront Invest, is an exercise in flexibility *and* working not only with a difficult site, but with inappropriate preapproved plans as well. The developers took over the site of the Onyx chemical factory in the historic Paulus Hook area of southern Jersey City from another developer who had planned a condominium complex there, and had given up. Among the problems:

First, the site was heavily contaminated with heavy metals and other toxic residue from the chemical plant. Although the owner of the property was required to clean the site before it was sold, some residue could never be entirely removed. Soil removal would have driven up construction costs to an unreasonable level. The architects' new solution is to build entirely above ground level on top of an 18-inch bed of concrete and gravel that isolates the contaminants.

The second problem involved working with a pre-existing site approval that called for an enormous building envelope and too many units unrealistically sized. The marketing team and the architects determined that 35 percent of the planned units were unsalable because of wasted space, and the planned building of eight stories was far too large for the neighborhood where it would stand. The challenge came in reducing the project's size and

cost while remaining within the pre-existing site plan and envelope. The architects proceeded to reduce the height by two stories and subdivided the large units into smaller, more reasonably sized and priced apartments.

Another aspect of the approved design that had to be changed was its facade, which was "completely unsympathetic to its historic neighborhood," says Carrington. "We evolved a building that is no shrinking violet, but that is, at the same time, appropriately scaled to be at home among the existing brownstones."

The construction costs were originally projected at \$60 million at the time of the purchase. After alterations in the design, costs were brought down to \$33 million. The community is pleased because the project is now much closer to the size of their own homes, Fioretti says of the neighborhood's reaction to the plan.

Onyx Court has been Waterfront Invest's most difficult development to date, and it is still far from finished. Changes will be made in this project, as in others, even as construction is underway.

The challenges the architects have had to face here are what they say they expect, even relish. "We find inspiration in the constraints of difficult urban sites," says Carrington. "We try to make difficult sites yield unexpected architectural events. Sometimes the main challenge is to gain the confidence of the community groups where we build; sometimes it is to fit more units into a given site; sometimes it is to work with unrealistic preapprovals; sometimes it is contamination. The tendency with all these pressures is for the project to start to appear unfeasible, and for the process to grind to a halt. The opportunity comes in finding innovative ways to work with these constraints." □

Ingenuity Par Excellence

Recently completed, this 54-unit condominium, Riverview Terrace, in Jersey City occupies the site and, in part, the original structures of a former industrial-dye factory. It is just the sort of project that "the experts" would say cannot be built. First, most engineers would say that uniting the four contiguous original buildings, each with different floor heights and built of different construction, would be unfeasible—especially when the code requires steel floor framing (when much of the existing was wood). But to demolish the buildings would have made the project unfeasible as well.

The owner sold the site to developers Waterfront Invest

for \$600,000. The zoning experts had assured them that only 28 units could be built without on-site parking—far too few to make the project doable. In came architects Carrington & Associates.

The developers got their parking—by the seemingly impossible feat of jacking up the existing structures and placing a garage, partially excavated, under them—and, with it, the extra 26 units that the code would thus allow. Where were the extra units placed, since the

original buildings could scarcely contain the fewer units previously allowed? In three new floors built on the top.

The problem of the unaligned floors was settled by building a new linking structure with stairs up and down in the center. The city got the required steel beams inside the original shells. Wood floors were placed over them by dropping wood joists in between on joist hangers. The buyers got unusual units, some multilevel with ceilings up to 13 feet, ranging in size from 700 to 1,300 square feet. The upper ones have terraces and views of Manhattan. The estimated sale price for all of them is \$8 million. The costs? In addition to the \$600,000 original land-and-building cost and the soft costs, \$3.2 million in construction. C. K. H.



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THE INS AND OUTS OF LIVING WITH LAWYERS

While the marriage seems preordained, despite problems, there are choices within it—including monogamy.

About twenty years ago, having finished a speech before the Rocky Mountain chapters of the AIA on a legal topic of current interest, I found myself at lunch seated opposite an architect of renown whose buildings had, on occasion, received national attention and whose colleagues had bestowed upon him an AIA Fellowship. Presently, he and I and others at the table were engaged in a vigorous discussion of the care and feeding of young architects after they enter into professional practice. Showing a pronounced insensitivity to the sensibilities of my hosts, I lashed out at a system in which, "You architects hire young professionals at slave wages without any promise of a career with your firm. If the young architects have any gumption, they leave as soon as they're registered, compete, and effectively keep the price paid for architectural services unreasonably low. In contrast, law firms hire your young architects' college classmates, offer them a path to a lifetime career, and pay them fairly."

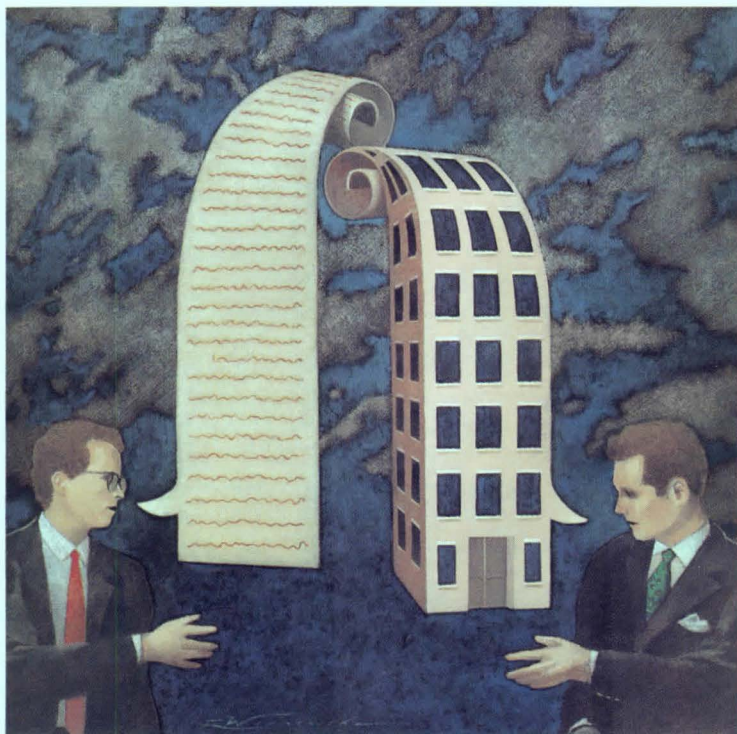
"What do you call 'fairly?'" asked my well-known architect friend.

"We pay our very first-year associates \$20,000," I said. (Of course that was in '969 dollars; today the figure would be \$66,000 in many cities and as much as \$85,000 in a few.)

"Twenty thousand dollars," he said, haking his head. "You know this is my '2nd year in practice, and I have yet to make \$20,000."

The first observable difficulty in living with lawyers is that so many of them make so much more money than most architects that it seems incredible that lawyers and architects inhabit the same economic system.

How much more galling is that discrepancy when one takes into account the service performed by each profession. Architects often design useful buildings and occasionally beautiful ones. Lawyers seem



ROBERT WISNIEWSKI

to spend much of their time trying to outwit opponents, finding ways to circumvent enacted laws, and jousting in unpleasant and provocative verbal combat. The Japanese observe that architects build things and lawyers divide them up. But for all of that, in a complex commercial world and in a litigious era, architects are compelled to treat with lawyers and might just as well learn to live with them.

Unions by shotgun

For most architects, lawyers enter their lives as the companions of disaster. First comes the summons initiating suit, then the notice to your insurer, then the insurer's letter appointing your defense counsel, and then the first visit from the man or woman who will, if successful, vindicate your reputation and save the treasury of your insurer.

Do you remember Alfred Hitchcock's thriller, *The 39 Steps*, in which the hero receives information critical to the survival of western democracy from an exotic beauty as she dies in his arms? The villain, she tells him, is a man missing the first joint on his little finger, right hand. The balance is garbled, but she does manage to pass to our

hero an address in rural Scotland which our hero not illogically believes is where he must go for help. Barely escaping the police who believe he murdered the young lady, our hero, after several harrowing misadventures, makes his way to the manor house in Scotland and warns the squire of the dark plot endangering western civilization. Recognizing that his facts lack some clarity, he tells the squire that they must in any case be wary of a villain with a truncated little finger. The squire lifts his right hand and reveals that our hero has delivered himself to the enemy.

Is it possible that you have done the same when you allowed counsel appointed by the insurance company into your files and into your confidence? What if the first hint of the claim came while you were insured by Old Faithful Insurance Company, but the suit came while insured by Reliable Indemnity? Will counsel appointed by Reliable report that hint back to Reliable so that it can disclaim coverage? What if you tried unsuccessfully to settle the matter with your client before notifying Reliable, in contravention of the clause in your policy that you will "not admit any liability?" Will counsel report that indiscretion back to Reliable so that your new company can disclaim coverage?

Fidelity in transactional couplings

Most courts now hold that counsel may not transmit information back to the insurer harmful to your interests. (Such precedent was set by the Arizona case of *Parsons v. Continental National American Group* in 1976.) After all, you are the client entitled to the protection of the sacred attorney-client privilege. But there are practical considerations to be taken into account. Insurance counsel often derive substantial income from a long-standing relationship with the insurer. Can a lawyer be expected to jeopardize a principal source of income for some scruple like preserving his client's confidence?

If he can't, he should turn in his license to practice. For it is his undiluted loyalty that a lawyer should promise when he takes an engagement. If he cannot do so, he has no business practicing law. That may be strong language, but the reality is that lawyers offer skills only marginally different from those of any well-educated citizen. They are trained to argue causes more persuasively, draft clauses more carefully, and read intricate language more closely than most architects. None of these is a god-like attribute. All of them together pale in comparison with the creative genius of our best architects. But to be able to engage a person possessing those marginal skills and know that those skills will be employed exclusively to your advantage, now that's a valuable bargain.

Twenty years ago, most lawyers would accept the previous paragraph as the credo of their practice. Twenty years ago most enterprises looked to one firm for their legal advice and considered that firm their general counsel. But there are strong countercurrents in the way law is practiced today. It is now common to engage lawyers for specific transactions rather than as general legal advisers. Many large architectural firms seek tax advice from one firm, ERISA and employment advice from another, and litigation advice from a third. An insurance defense counsel is the paradigm transactional lawyer.

Can the client who prefers the current transactional trend expect the same loyalty from its lawyer as the client willing to engage one firm as general counsel? Legal ethics recognize no difference in the duty owed by the lawyer in either case; but no lawyer can help but respond to the difference.

Until death do us part

Consider, for example, the difficult question of conflicts. If I have represented an architectural firm as general counsel for 10 years, I will not take on another relationship that may potentially conflict with my client's interest. (At my firm, for example, with a great number of long-standing general-counsel relationships with architectural firms, we will not take on the representation of a consulting engineering firm for any purpose unless there is a clear understanding at the outset that we will prefer our architect client should there subsequently be a conflict between the two parties' interests.)

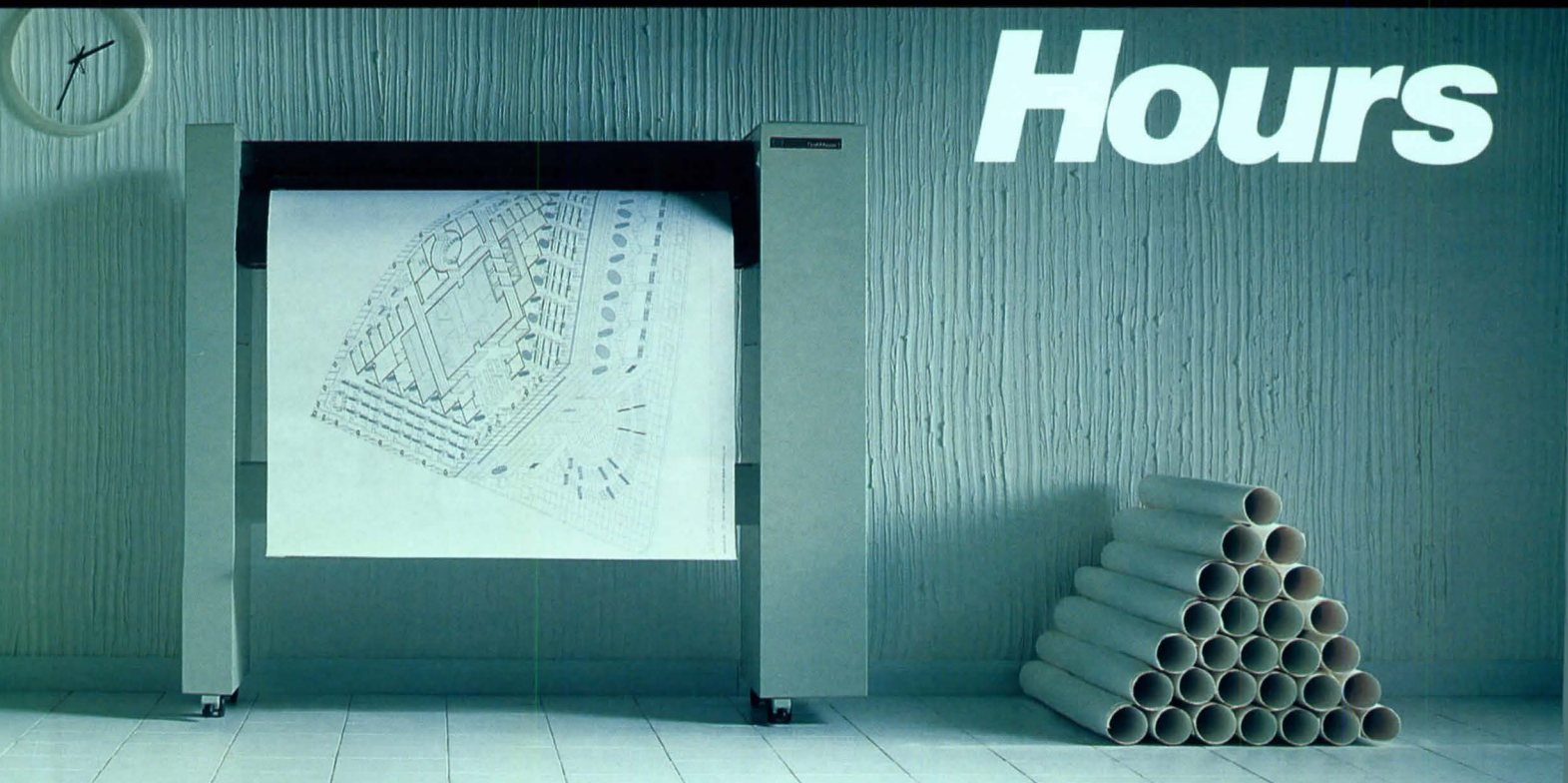
Consider the nature of the lawyer's obligation to worry about how a new law will affect his client's interest when he learns of the law's enactment. When a transactional lawyer is hired, obviously the engagement is limited to the transaction, and the lawyer has no right to go beyond its boundaries. But the general counsel has, in my judgment, an obligation to anticipate matters

that will affect his clients' interests.

Moreover, it is in the nature of the fiduciary relationship assumed by a general counsel that the cost of his service is one of his cardinal concerns as he serves his client. He must worry about the proportionality of the legal activity to the interest of the client being advanced. I have seen transactional-insurance counsel issue interrogatories and other extravagant discovery documents with respect to a matter ripe for settlement. General counsel can avoid any major expense to their client in litigation until it is absolutely necessary.

Recently, there was a particularly exacerbated personal injury claim involving the owner of a building, two consulting engineering firms, three subcontractors, the general contractor, and the architect as defendants. The plaintiff would have encouraged each of the defendants to point fingers at one another and incur expense with the abandon that exacerbated litigation brings on. The architect's general counsel was able to persuade all defendants to hire one independent counsel to try the damages portion of the case in advance of determining liability. The verdict on damages was more reasonable than most of the defendants had expected, and the case was promptly settled without the extravagant expense of a trial on the liability issues.

Protecting your interests means protecting your deductible. Your own general-



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counsel lawyer will be sensitive to using up as little of the deductible (i.e., the amount which you, not the insurance company, must pay) as possible. A lawyer appointed by the insurance company may not have a similar sensitivity. But is the general-counsel relationship practical for a small architect's office when the amount of non-litigation advice sought is so modest? It is if joined with the litigation role as well.

Many, but not all, professional-liability insurers are willing to let you select your own defense counsel if, first, you insist on that right at the time you apply for coverage and, second, your general counsel is competent to handle defense work. In most cases, your general counsel, who understands your firm and its objectives, who may have assisted you in developing your contract forms, and who knows and has the confidence of your personnel, is the most logical person to handle your defense. The insurers refusing to allow the insured to select his own counsel should explain why they take a course on coverage of architects at odds with the policy of professional-liability insurers for lawyers, doctors, accountants, management consultants, and others who typically select their own counsel under their policies.

Shrinking help from the counselors

All of us involved with the construction industry must be concerned with changes in

It is undiluted loyalty that a lawyer should promise when he takes an engagement.

the composition of arbitration panels resolving construction disputes. The traditional panel has included two industry professionals and a lawyer as panel chair. The industry professionals can cut through the technical complexities of the dispute while the lawyer insists that applicable legal principles are applied. For, in addition to those marginal talents I described above, a lawyer has a healthy respect for the legal system that sustains his professional work and knowledge of how it applies to a construction dispute.

Recently, the American Arbitration Association has appointed panels without lawyers, and many private dispute-resolution groups are springing up around the country urging that panels of engineers resolve disputes. These lawyerless panels often hold in contempt applicable legal principles and the precise language of the contract in issue, preferring instead to act "equitably,"

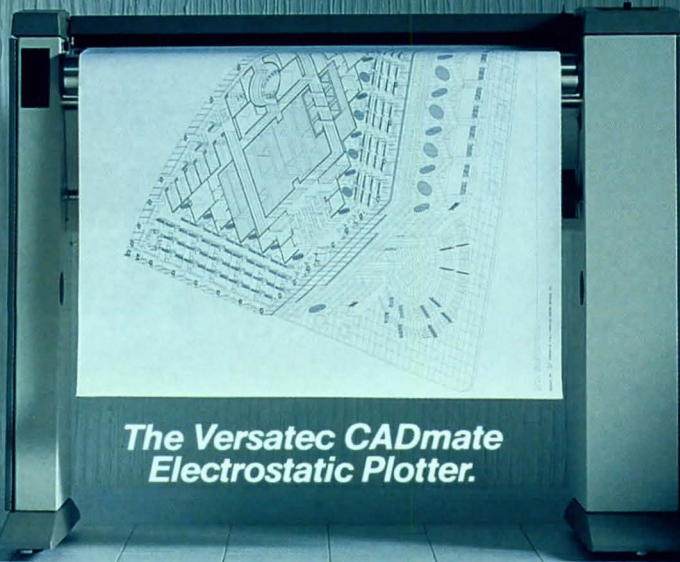
and achieve what they may believe is a "fair result" for all parties. But they neglect the critical proposition that a fair result is a predictable result. An owner who is spending millions on a building project does not expect to have his pocket picked by the custom of the construction industry or an engineer's view of fairness. Or, at least, so wrote a Mississippi court in 1971 in the case of *Citizens National Bank v. L. L. Glascock*. When a party to a contract negotiates directly to a point, he has the right to expect that language to be applied.

While it is true that some lawyers have tried the patience of the construction industry by turning alternative dispute resolution into a chaotic reflection of litigation, the necessity of a person familiar with and respectful of construction law on the panel is critical. For most lawyers, resolving disputes expeditiously and fairly in accordance with applicable legal principles is what their education and training has been about; it is the very core of the legal profession. □

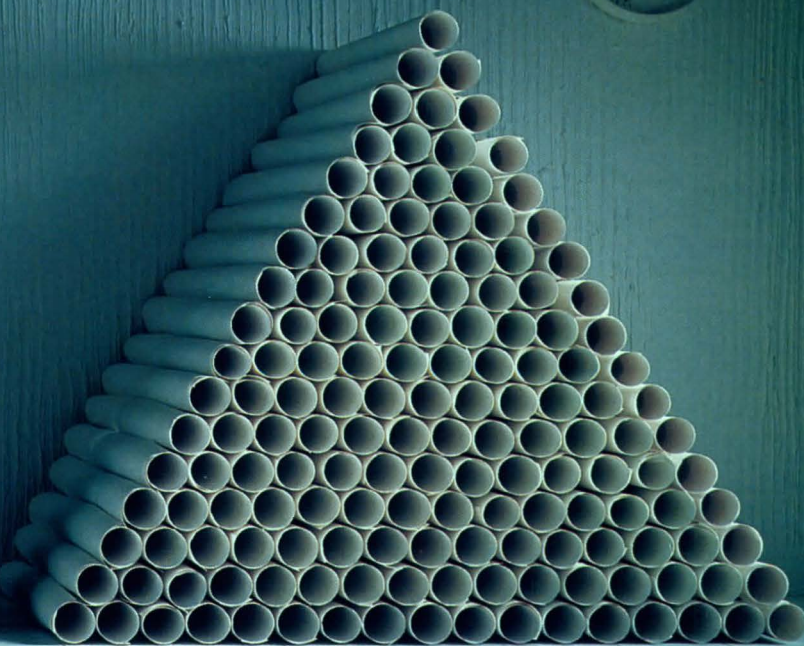
Mr. Sapers is a partner in the law firm of Hill & Barlow. His clients include architects around the world. He is adjunct professor at the Harvard Graduate School of Design, where he teaches legal problems in design. In 1975, he received the AIA Allied Professions Medal and, in 1988, was elected Honorary AIA.

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Not too long ago it seemed that we might be entering a period in the U. S. building industry of wretched inflation. In the third quarter of 1988, costs rose .81 percent on a national basis—the highest quarterly rise since 1984—during a period in which the volume of construction was already experiencing the moderation we would expect after a lengthy spate of overbuilding. Something seemed to be seriously wrong with the usual balances of supply and demand. At the same time, the financial press showed us figures that seemed to point to rising inflation in the economy in general.

Since then, however, costs have continued to tail off until we reached a .3-percent national rate for the third quarter of 1989 (see chart at right). Could we be headed for the deflation we experienced in the third quarter of 1987, when costs fell .54 percent? Regionally, costs did fall in the third quarter—by .09 percent in New England and similar amounts in scattered cities.

	Number of metro areas	7/89 to 10/89	10/88 to 10/89	1977* to 10/89
Eastern U. S.				
Metro NY-NJ.....	18	0.56	3.15	1989.14
New England States.....	33	-0.09	0.93	1848.36
Northeastern and				
North Central States.....	120	0.49	1.47	1759.39
Southeastern States.....	106	0.28	1.74	1823.96
Average Eastern U. S.....	277	0.35	1.62	1809.63
Western U. S.				
Mississippi River and				
West Central States.....	122	0.11	0.15	1708.67
Pacific Coast and Rocky				
Mountain States.....	106	0.39	0.85	1817.91
Average Western U. S.....	228	0.24	0.48	1759.46
United States Average.....	505	0.30	1.10	1786.98

*Using only cities with base year of 1977

The third quarter was not one in which such moderation would have been expected. Even the prime candidate for shrinking construction volume, nonresidential building,

had maintained a healthy lead over the previous year. Construction volume across-the-board soared in September to 178 on the Dodge Index after hovering in the 160s since the end of 1987 and upper 160s since the end of 1988. While it quickly settled back to its recent normal pace [RECORD, January 1990, page 14], we did not experience the catastrophic decline after 1987 that many feared. Nor does the outlook for 1990 with 5-percent growth, predicted in RECORD, November 1989, pages 37-47, seem likely to create a slackening of demand for materials and labor.

Still, a short-term blip in construction activity that we experienced in November, when volume fell back to 160 on the Dodge Index, could ease demand just enough to create a further lessening of price pressures. It will be interesting to see just how much.

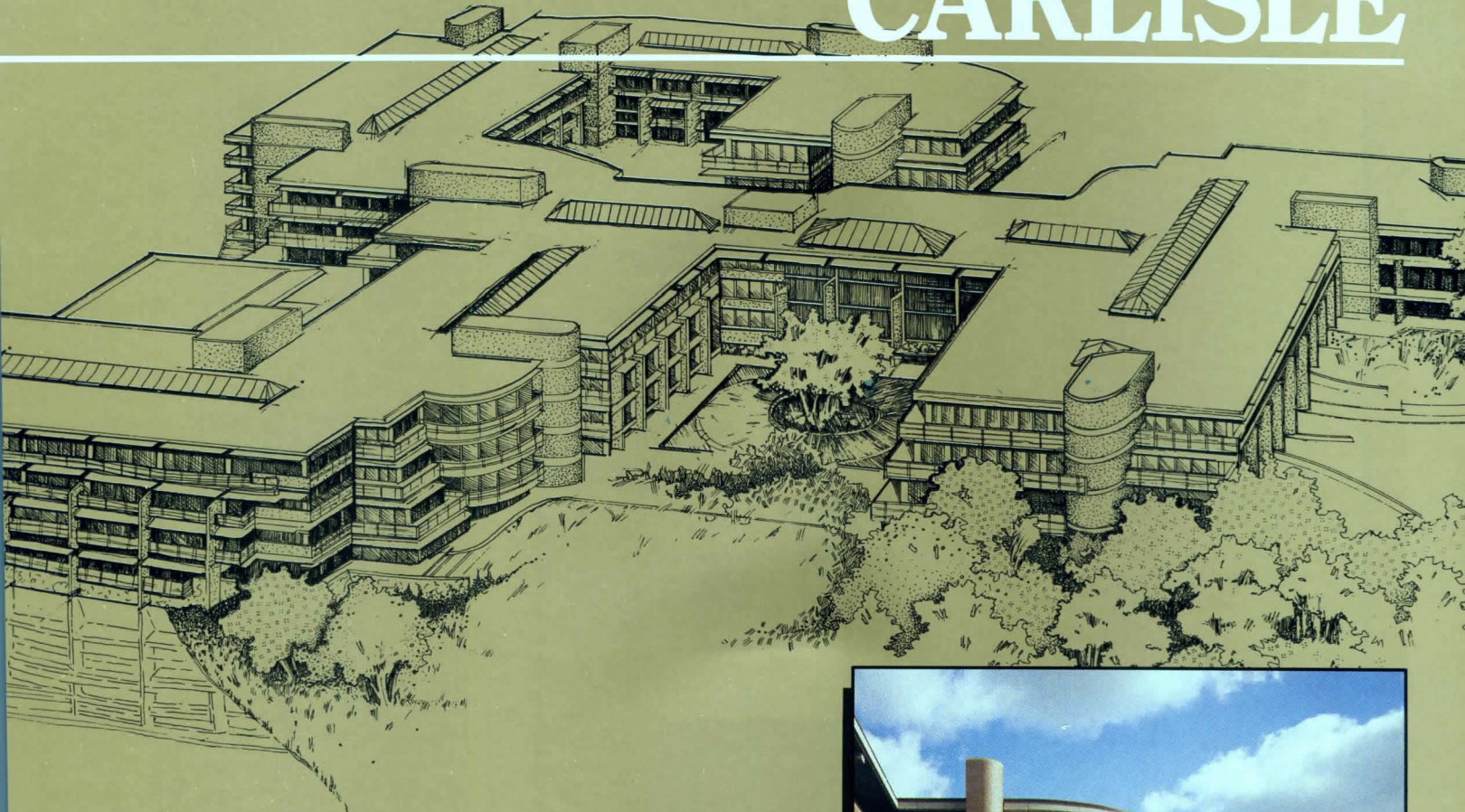
CHARLES K. HOYT

Data supplied by Dodge Costs Systems, Marshall + Swift.

Metropolitan area	Average of all Nonresidential Building Types, 21 Cities										1977 average for each city = 1000.0		
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989		
											1st	2nd	3rd
Atlanta	1925.6	2098.6	2078.0	2360.6	2456.7	2448.7	2518.3	2561.9	2580.9	2697.3	2729.1	2736.6	2744.0
Baltimore	1304.5	1446.5	1544.9	1639.5	1689.7	1703.7	1743.8	1765.2	1780.2	1849.1	1891.4	1889.5	1891.5
Birmingham	1329.9	1407.2	1469.9	1468.1	1535.7	1594.7	1565.7	1587.4	1542.6	1612.5	1629.0	1636.6	1647.3
Boston	1236.0	1283.7	1432.5	1502.0	1569.9	1646.0	1721.0	1773.6	1883.0	1921.6	1944.1	1944.8	1925.8
Chicago	1199.7	1323.6	1344.7	1425.8	1439.5	1476.7	1528.0	1599.9	1591.4	1636.5	1654.3	1672.1	1677.6
Cincinnati	1323.9	1385.2	1350.4	1362.6	1430.8	1484.5	1486.6	1499.4	1510.9	1526.8	1544.6	1554.4	1557.4
Cleveland	1287.5	1388.2	1459.5	1511.4	1475.9	1464.0	1474.1	1525.7	1541.8	1550.7	1536.1	1557.5	1559.7
Dallas	1431.9	1481.9	1750.6	1834.3	1925.9	1958.0	1963.3	1973.9	1947.2	1927.2	1930.0	1910.7	1895.7
Denver	1495.6	1487.4	1632.2	1679.1	1800.1	1824.3	1821.8	1795.8	1732.7	1725.3	1725.1	1745.4	1736.6
Detroit	1275.3	1447.4	1580.3	1638.0	1672.1	1697.9	1692.6	1696.6	1689.3	1734.4	1740.9	1744.3	1754.7
Kansas City	1125.8	1233.2	1323.4	1381.8	1407.5	1447.1	1472.5	1484.7	1493.7	1505.6	1511.7	1518.8	1520.4
Los Angeles	1255.3	1387.5	1474.3	1503.3	1523.9	1555.1	1571.0	1609.7	1675.1	1789.5	1784.8	1798.2	1817.0
Miami	1330.1	1380.6	1369.1	1392.1	1467.6	1522.2	1540.6	1566.2	1589.2	1625.2	1654.5	1638.0	1643.0
Minneapolis	1286.9	1327.7	1442.6	1576.8	1624.6	1640.4	1661.0	1674.0	1677.0	1690.6	1700.5	1698.2	1696.4
New Orleans	1291.9	1505.7	1572.7	1616.9	1650.5	1691.4	1762.5	1760.2	1699.8	1707.3	1706.9	1690.6	1698.4
New York	1247.1	1319.4	1419.2	1491.8	1672.5	1747.2	1806.7	1899.9	1980.9	2065.3	2091.3	2137.6	2144.9
Philadelphia	1487.5	1539.5	1660.7	1769.4	1819.5	1922.1	1967.9	1992.7	2023.5	2171.4	2216.4	2220.4	2247.0
Pittsburgh	1227.0	1341.7	1493.2	1479.5	1497.2	1576.1	1611.0	1665.8	1647.3	1700.3	1708.1	1721.3	1719.7
St. Louis	1275.9	1320.0	1397.3	1451.2	1524.9	1625.5	1641.8	1647.4	1653.5	1705.7	1727.7	1740.6	1748.2
San Francisco	1473.4	1644.8	1776.4	1810.1	1856.8	1935.3	1961.8	1995.5	1992.0	2090.9	2079.2	2091.4	2105.5
Seattle	1373.4	1616.8	1814.9	1962.7	1979.0	1948.9	1937.9	1925.3	1874.7	1968.0	1962.7	1968.4	1988.0

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 divided by 200.0 = 75%) or they are 25% lower in the second period.

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ON LOCATION

"But, why would you want to interview *me*?" was the response of Michael Blackwood, a man who regularly interviews the great architects and artists of our day. Using the 58-minute-long format tailored to the time slot of public television, Blackwood has completed over 50 documentaries on Robert Venturi and Denise Scott Brown, Frank Gehry, Richard Meier, Tadao Ando, James Stirling, O. M. Ungers, Ralph Erskine, Mies van der Rohe, Arata Isozaki, and, most recently, the "Deconstructivist Architects," along with a host of avant-garde painters, musicians, and choreographers. While his career takes him across the globe and allows him to brush elbows with the luminaries of the art and design world, the 55-year-old film maker has remained remarkably unaffected by the glamour: he is doing his job.

Blackwood is a personable and gentle man. He wears his collar buttoned to the neck, out of which a round face maintains a smiling, inquisitive expression; it is as though he were sizing up his visitor for an appearance in a future documentary. His studio on New York's West 57th Street is a modest cluster of serviceable rooms whose dominant color is black—echoed in Blackwood's own apparel and that of the revolving crew of interns, to the film canisters stacked to the ceiling on metal shelves. It is the type of environment where one either feels put out by the absence of a waiting room and a chair free of paraphernalia, or else completely at ease—intuitively helping oneself to the coffee and exploring the collection of art work and memorabilia donated by the subjects of his films.

Blackwood got into the documentary business soon after high school as an apprentice with NBC's Special Film Unit. His work on a series about important cultural figures served as inspiration for his future documentaries of lesser known, but equally significant personalities. In 1959, when the unit closed down, Blackwood sold his talents on a freelance basis, at first in this country and later in his homeland of Germany. But the flowering of American Pop culture in the 1960s lured the itinerant film maker back to New York. He established his own business making documentaries because, he modestly claims, "I have no other talents." Blackwood takes pride in

his lack of formal education and artistic authority, thus placing himself on equal footing with his audience: intellectually curious viewers. Ironically, Blackwood *is* in the education business, as his mission is to introduce the heroes of avant-garde art, and, by so doing, to carve them a niche in history. But rather than impose critical commentary or draw historical conclusions, Blackwood's films are intentionally a "slice of life." His nonjudgmental style arises from the premise that current theoretical arguments often grow meaningless with time.

The avant-garde, too, is threatened with oblivion unless, of course, its achievements and message are chronicled on film. Securing financial backing for films on lesser known, but promising, artists is one of Blackwood's greatest challenges. European television has proved to be a reliable sponsor despite the fact that Blackwood has tended to focus his camera primarily on the American scene. Because sponsors want to avoid risky investments, they are more likely to endorse a film that documents a group of artists rather than an individual. As a result of these economics, Blackwood's formula is, first, to produce a survey of an artistic group or movement. Having helped establish the reputations of the artists, Blackwood is then able to raise the money to make films about them individually. In a sense he is an impresario, using his instinct for discerning talent to nudge an artist toward stardom.

Ideas for films come to Blackwood through the professional grapevine. Having selected and researched a subject, Blackwood then assembles a team of experts to ensure that the documentaries are accurate, informative, and thorough. The cameraman is provided books on the subject, photographs, and floor plans to study before the actual shoot. Mead Hunt, a cinematographer who has worked with Blackwood since 1976, is a trusted collaborator who frequently makes footage in Blackwood's absence. Critics like Suzanne Stephens, who worked on the films about Richard Meier and O. M. Ungers, and Joseph Giovannini, who worked on "Deconstructivist Architects," provide interview scripts and commentary. "However," Stephens explains, "One must accept that it is



DIANNE ARNITT PHOTOS

Film maker Michael Blackwood has been making movies about architecture since the early 1980s. From the director's chair, Blackwood has developed a unique vantage point on the profession.

not the narrator's film. Blackwood shapes the attitude; he is the editor and art director and knows enough about architecture to make him an intelligent boss." Unofficial members of a Blackwood team may include architects and historians whose opinions appear on film for their particular insights. The director keeps a supply of quotable regulars handy; Philip Johnson appears so frequently that he seems to be on retainer from Blackwood Studios.

Although the collaborating historian characteristically will want to analyze the opus in critical terms, the impulse to critique is consciously repressed by Blackwood, who wonders, "Why make a film if you're not supportive of and convinced by the work? To make films about people, one cannot ask them to participate in some diatribe," he adds.

In 1983 Blackwood made his first architecture film "Beyond Utopia," a look at the key players of Postmodernism. He has since documented most of those architects in film-version monographs, part of his ongoing "The New Architecture" series. Blackwood feels a special affinity for architecture because of its similarities to film: it is a collaborative process, a public art form—and it is made on location. While Blackwood's purpose is to introduce architects to a wider public, he is not unaware of the experiential component of moving pictures, which can provide people already familiar with the work through the print media with a new vantage point. Through the eyes and ears of his camera, the audience can walk through a building. This realism is reinforced by synchronized sound: be it the background noise of a jackhammer or the hush of a country setting, Blackwood avoids masking the ambience in and around buildings with music.

As for the real subjects of his films, Blackwood finds that architects are good material because, in his words, "they perceive themselves as diplomats or statesmen. Architects have to deal with clients and have an image of perfection to maintain." The pitfall with architects as protagonists is that they tend to be private people. Blackwood tries to introduce a telling human dimension into the monographs, as, for example, when his camera followed Peter Eisenman to the barber's chair for an

interview while the architect was having a shave. Robert Venturi and Denise Scott Brown (who appeared in "Beyond Utopia" and in a subsequent monograph film) describe Blackwood's style as "nurturing." The architects opened up to the film maker because, they said, "We didn't feel that it was going to be some kind of ambush."

Blackwood's complimentary treatments help elevate an artist toward stardom, yet he has no interest in sharing the limelight. The audience never sees or hears the interviewer, and no attention is called to the film's craftsmanship. "I don't seek to make a work of art with my films," he insists. With minimal artifice, Blackwood lets the subjects speak for themselves—he wants a record of their thoughts right

Blackwood's films are a
"slice of life." His
nonjudgmental style
arises from the premise
that current theoretical
arguments grow
meaningless with time.

now. Even before a film is completed, Blackwood Studios informs potential clients that a new documentary is soon to be released. Interested parties include non-commercial networks in Germany, Australia, Singapore, and Israel. In North America, universities, museums, and libraries are principal customers as are individuals who simply have a passion for the arts. While Blackwood does distribute his films directly (16-mm and video cassette versions can be purchased from Blackwood Studios—telephone: 212/247-4710), he shares the responsibility with certain cultural institutions such as the British Arts Council, the Centre Georges Pompidou in Paris, and the United States Information Agency, which passes films (on American subjects only) to embassies worldwide.

Although Blackwood's films have won numerous awards, he remains frustrated by the financial pressures and the limited public acceptance that are the drawbacks of a relatively small, interdisciplinary field. Largely unfinanced by American television networks or museums, which consider his films too specialized for their audiences, and often neglected by the architectural profession for being beyond its immediate scope, Blackwood finds himself in the at times awkward position of being between professional boundaries.

At present, Blackwood is considering producing a two-part series on young architects, with one film focusing on Americans and one on Europeans. Though these movies are part of the continuing personal exploration of someone who admits to being a frustrated architect, they are not the only examples of Blackwood's work that have autobiographical content. One film in particular, entitled "We Were German Jews," stands in stark contrast to the expository journalism of his art and architectural documentaries. Made in 1978, the film recounts the escape from Hitler's Germany and subsequent American assimilation of a history professor named Strauss. Though Blackwood was commissioned to make this documentary, it is eerily autobiographical. Like Strauss, Blackwood's disbelieving parents chose to remain in Germany during World War II. Where Strauss's political activities made him a target of the Gestapo and prompted his dramatic escape, Blackwood's cunning mother, and luck, helped them survive the war in their homeland. Through the technique of flashbacks, viewers of the film witness a profound shift in Strauss's identity from the opening statement, "We were German Jews," that accompanies newsreels of Adolf Hitler, to the closing shot at the graduation of his students, where Strauss asserts, "I am what I do." Like the professor, Blackwood deals with the present and the past. After 35 years in Manhattan, Blackwood still feels like somebody without a country, and so he travels the world scouting for the stuff that myths are made of. □

Rosanna G. Liebman is a New York-based writer and photographer.

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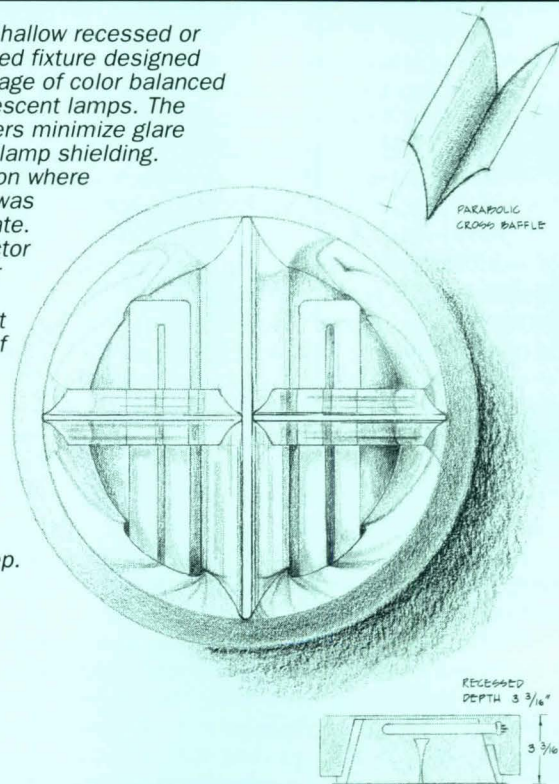


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LANDING ON ITS FEET

Penn's Landing in Philadelphia has been on the boards for nearly three decades, but a new plan emphasizing practicality over dazzle just may get construction going.

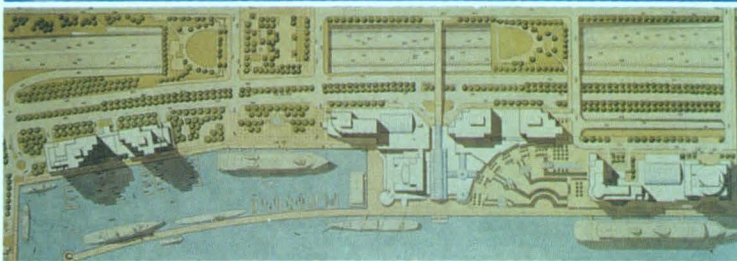
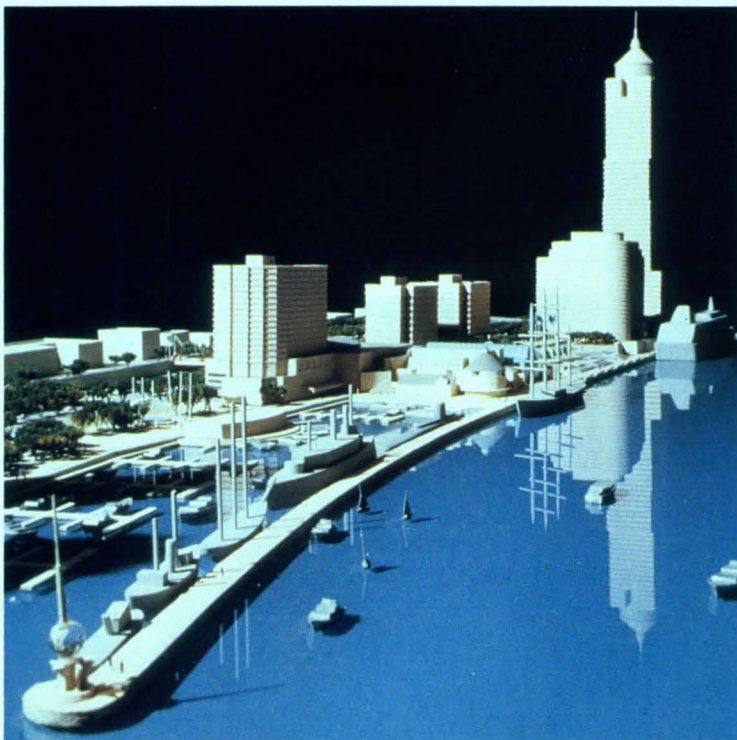
ARCHITECTURAL RECORD *invited a group of current and past participants in Philadelphia's Penn's Landing redevelopment to discuss the project's history, its future, and its significance for urban planning.*

If the Penn's Landing project in Philadelphia were a cat, it would be nearing its ninth life. Reincarnated by a series of big-name developers over the last three decades, it represents, all by itself, a short history of modern city planning—from the heyday of urban renewal to the more fiscally conservative period of today.

Penn's Landing, on the Delaware River, is where Philadelphia began more than three centuries ago. But as the city grew up, it abandoned its waterfront to warehouses and industries. As envisioned by William Penn in his 1682 plan for Philadelphia, the downtown moved westward to the area halfway between the Delaware and the Schuylkill rivers. The genius of Penn's plan lay in its strong perpendicular axes (Broad and Market streets) and regular grid, which provided the necessary determinants to future development.

As the eastern terminus of the Market Street axis, Penn's Landing occupies one of the most prominent sites in town. Now separated from the rest of Philadelphia by Interstate 95, it nonetheless is a short walk from the edge of the business district (the area known as Center City) and Independence Mall. To the south lies Society Hill, a successful redevelopment project from the 1950s and '60s that features residential towers by I. M. Pei and low-rise apartments and condos.

After shepherding the Society Hill complex to completion, Edmund Bacon, the executive director of the Philadelphia Planning Commission from 1949 to 1970, focused his formidable energies on Penn's



The latest plan, designed by Philadelphia architects Bower Lewis Thrower, calls for a 50-story office building on axis with Market Street (far right in photo), a retail pavilion (center), and two residential towers (left on site plan).

Landing. Bacon commissioned Robert Geddes in the mid-1960s to come up with a plan for the site. "Geddes was doing a lot of work with hexagons at the time," recalls Bacon with a touch of disapproval. "I told him to look at the project as a part of an area that stretched from one river to the other, to draw everything around the property and then move toward the site." The result was a sketch of Philadelphia in which the Market Street axis ended in a gently curved water-wall defining a new boat basin and riverfront esplanade at Penn's Landing. Bacon was pleased.

With Geddes' esplanade in place, archi-

tect Gerald Cope designed a Great Plaza for the site in the mid-1970s. This quarter-circle of cascading steps negotiated the change in levels from the street to the river, but didn't provide enough reason for Philadelphians to venture this far east. Without further development along the water, the plaza was a well-meaning orphan in a semi-industrial wilderness.

Throughout the 1970s and '80s a host of plans surfaced, then sank, victims of weak economics and changing attitudes in city planning. As megastructures, platform construction, and festival marketplaces lost favor, development schemes dropped by the wayside.

One of these plans, by Cope Linder Associates, addressed the problem of connecting the site to the rest of the city by creating a series of pedestrian bridges over I-95. "Each bridge was to be a special, public event," explains Gerald Cope. The plan also called for a 600-foot-high communications tower at the end of Market Street to act as a symbol for the entire project. "We felt there should be a public structure, not a private building, at this special spot in the city," says Cope.

Bacon, who has long argued that the intersection of Market Street and the Delaware River

is one of the most important points in the city and deserves special treatment, disagrees with Cope's proposal, calling the communications tower "a nonarchitectural and nonvolumetric" solution. He also criticizes the office building next door to the tower, saying such a large building off the Market Street corridor "has no relationship whatsoever to William Penn's axis" and would negate the importance of the point at the end of that axis. According to Bacon, the spot at which Market Street terminates deserves to be either left open for a view to the river or highlighted with the largest building on the Penn's Landing site.

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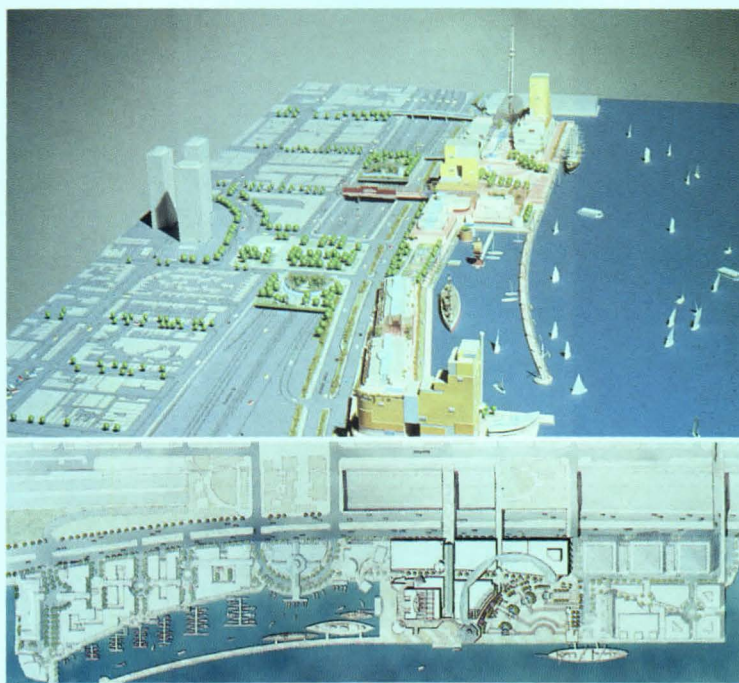
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Penn's Landing has been reincarnated a number of times, invariably using the latest tricks up urban planners' sleeves—from platform construction to festival marketplaces. The issues, though, remain the same: linking an underutilized waterfront to a busy downtown, creating reasons for people to cross a major highway, and ensuring public access.

The latest chapter in the project's history began with failure. In January 1989 developer Willard Rouse III withdrew from Penn's Landing just weeks after unveiling a plan prepared by Los Angeles architect Jon Jerde. Jerde, who had helped create such high-energy public spaces as those at the 1984 Los Angeles Olympics and San Diego's Horton Plaza shopping complex, envisioned three towers of nearly identical designs but varying heights just off the Market Street corridor. Predictably, Bacon attacks Jerde's placement of these towers and their nearly equal treatment as forces denying the special nature of the point where Market Street ends.

To retain a \$10-million Urban Development Action Grant earmarked for the project, the city hastily organized yet another competition to select a new developer. Despite the project's history of unfulfilled expectations and the tight deadline set for submissions, a handful of developers were keen on participating. Perhaps the main reason for this interest was the amount of change occurring around the site. Abandoned piers to the north and south of the project were in the process of being converted to luxury residences, and the developers involved in this work understood the importance of Penn's Landing as a catalyst for further growth. It is no coincidence that several of the firms vying to follow in Rouse's footsteps were already at work in the area.

The winning proposal, submitted by the Welcome Partnership and designed by local architects Bower Lewis Thrower, features a 52-story office tower at the foot of Market Street, a pair of high-rise residential buildings at the southern end of the property, and a variety of retail, office, and hotel structures in between. While previous plans required massive amounts of construction up-front, this one can be executed in phases, making it more viable financially. The developers, which include a young Philadelphia firm called Asbell &



The Cope Linder plan (top) featured a communications needle at the end of Market Street and lively pedestrian bridges, while the Jon Jerde plan relied more on retail.

Associates and the New York-based Rose Associates, combine local expertise with big-time savvy.

John Bower, who worked for Bacon at the Planning Commission for many years, understands Philadelphia, the particular needs of the Penn's Landing site, and the need to win the support of opinion-makers such as his old boss. His design for the project is a no-nonsense, perfectly rational, eminently workable solution. It makes the most of existing elements (such as the Great Plaza, the esplanade, the boat basin, and the Port of History Museum) and adds compatible new features, including a Crystal Pavilion (a glass-vaulted atrium with retail, entertainment, and cultural functions) and better vehicular and pedestrian access.

Bower's design also acknowledges the importance of outdoor spaces in bringing the project alive. Instead of being an office and residential complex with some public elements, this is a public project with office and residential components. One of the challenges Bower will face is making Penn's Landing work at different stages

of its development. "At any one time, the public spaces must seem complete," says Bower. Previous schemes had placed retail right on the water, but the current one wisely reserves the waterfront for public access and orients shops around the Great Plaza.

One of the first elements to be built is also the most public, the Crystal Pavilion. "The Crystal Pavilion is the front door of the project," explains Bower. Mid-rise office buildings and a hotel will then be "plugged into the Pavilion and the Great Plaza."

A key lesson to be learned from this project, says Bacon, is that developments of this size "must have organic parts that can work on their own" even before the entire complex is completed. Another is that designs should be site-specific, says Roger Pritchard, a community member of the commission that helped select the winning proposal for Penn's Landing. One of the strengths of the Bower scheme, says Pritchard, is "its obvious water-orientation."

Phased development clearly makes sense for Penn's Landing, but some of the plan's timing can be questioned. Retail and commercial will be the first elements built, with residential development waiting until the fourth and last phase. If the project hopes to attract round-the-clock activity, it may need more residents than those already in the area and those moving into nearby pier conversions.

While the plan impresses with its practicality and sensitivity to its site, it does not inspire images of greatness. The elements all fit together, but none of them is strong enough architecturally to give this project an easily recognizable or memorable identity. After so many years of false starts, though, and after one would-be developer considered bringing the Disney gang into the project, maybe the sensible approach is, after all, the best approach.

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THE SCOURGE OF A TYRANT

A new book looks at the architectural damage done by the “modernization” policies of Romania’s late Nicolae Ceausescu.

The Razing of Romania’s Past: An International Preservation Report, by Dinu C. Giurescu. New York: World Monuments Fund, 1989, \$19.95

Reviewed by Roger Kimball

At a time when *glasnost* seems to be breaking out all over and relations are ever chummier between East and West, it comes as something of a shock to learn what damage the Stalinist-style autocracy that ruled Romania until late December had managed to inflict in recent years on that country’s architectural heritage and, indeed, the lives of its approximately 22 million inhabitants.

In this brief but important monograph sponsored by the Kress Foundation in New York City, the historian Dinu C. Giurescu provides a horrifying account of how the fabric of Romanian urban and rural architecture had been systemically liquidated in order to make way for socialist “modernization.” Beginning with a quick overview of post-World War II preservation efforts, Giurescu—himself a recent refugee to the U.S. from Romania—details the Communist government’s deliberate and wholesale destruction of traditional Romanian architecture, the forced relocation of its population, and the nationwide imposition of standardized tenement apartment complexes to replace the existing melange of indigenous structures, many of which are hundreds of years old.

According to Giurescu, since the middle of the 1970s, when the “Urban and Rural Systemization Law” was first enacted, 85 to 90 percent of the urban fabric of at least 29 Romanian towns has been obliterated. Large-scale demolition—of buildings, monuments, even street layouts and neighborhoods—was also underway in an additional 37 towns. And since the disastrous earthquake of 1977—which provided a perfect pretext for government-sponsored demolition of older buildings—vast areas of the capital city of Bucharest have simply been leveled.

Roger Kimball is a writer whose work also appears in The New Criterion, The London Times Literary Supplement, and The Wall Street Journal.



A neighborhood in Bucharest is ripped by demolition in 1985.

The government’s efforts weren’t confined to transforming the character of its towns and villages. In the name of rationalization, thousands of villages were slated to be erased and incorporated into larger administrative units. Part of the government’s plan was to reduce the number of towns from just over 13,000 to around 6,000. Indeed, as Giurescu points out, the ultimate goal was to “homogenize Romanian society as a whole,” effacing the distinction between country and city.

Since the government did not publish a planning schedule—Giurescu tells us that the number of demolished houses was considered a state secret—inhabitants lived in perpetual fear of suddenly discovering that their privately owned homes were slated for demolition and that they would have only a few weeks to vacate. The result was nothing less than the forced degradation of the population from the status of home owners to state tenants.

Giurescu’s abundantly illustrated book, written before the democratic coup toppled Nicolae Ceausescu, is both a scholarly study and a call to arms. Behind its dry

and statistic-filled prose, it documents a case of cultural rape worthy of the grisly pages of George Orwell’s *1984*. One only hopes that Romania’s architectural heritage will fare better under its new leaders.

R. M. Schindler: Architect, 1887-1953, by August Sarnitz. New York: Rizzoli, 1989, \$35.

Nature Near: Late Essays of Richard Neutra. Santa Barbara, California: Capra Press, 1989, \$18.95.

Reviewed by Donald London

The paths of Rudolph Schindler and Richard Neutra crossed many times after their separate emigrations from Vienna. Both came to America—Schindler in 1914 and Neutra in 1923—on the advice of Adolf Loos and in search of Frank Lloyd Wright, whose Wasmuth Folio had a tremendous impact on European designers of the time. Read together, these books on Schindler and Neutra bring into focus the common ground held by both men, as well as the differences in the paths each took.

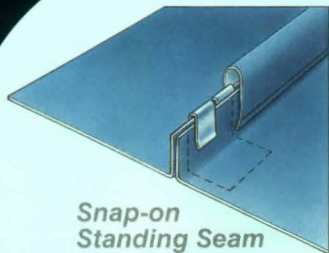
Schindler worked for Wright in Chicago and moved to Los Angeles in 1920 to supervise construction of the Barnsdall House. After working for Eric Mendelsohn, Neutra also arrived in Chicago. Following a brief stint at Taliesin, Neutra drifted out to California to work on his own, with Schindler’s support. Both native Austrians spent the remainder of their lives and careers in Los Angeles.

Their roots, however, lay in the Wagner Schule of turn-of-the-century Vienna, the Secessionist movement, and its subsequent reaction spearheaded by Adolf Loos. When Loos opened a new school of architecture in 1913, Schindler and Neutra were among the first to enlist.

These tremors signified a long struggle to move away from the Neoclassical impulse transmitted from Schinkel to Otto Wagner a generation earlier. The emergence of architects like Schindler and Neutra illustrates the shift from the 19th century’s re-constitution of classical Greece to the development of a place like 20th-centu-

Donald London is an architect with Kohn Pedersen Fox in New York City.

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Architect: Ferris Architect, PC.
Roofing Contractor: Barrett Non-Pariel Roofing Co.
Panel: Snap-on Standing Seam
Color: Slate Gray

See our catalog in Sweet's: file numbers
07610/PET, 07715/PET and 10426/CHC.

PAC-CLAD Metal Roofing Panels are a prominent design element on the recently completed 90 Main Street project in Westport, Connecticut.

The architect, Roger Ferris of Southport, Connecticut, has designed a mixed-use facility that is an attractive new addition to the town's commercial center.

PAC-CLAD Snap-On Standing Seam Panels were specified for the extensive metalwork and detailing of the metal roof, dormers and clock tower. The panels are coated with a PAC-CLAD Kynar 500® finish. The color, Slate Gray, is one of eighteen standard PAC-CLAD colors and is provided with a twenty year finish warranty.

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ry Los Angeles—from Hellenism to Hollywood in less than a century. Investigation of their work provides a vantage point to understand these forces at play.

R. M. Schindler: Architect, 1887-1953 is a translation of an excellent book originally published in Vienna. It offers incisive essays and a very good portfolio of the architect's work, including his well-known cooperative house for himself (1921), the Lovell Beach House (1925), and the cascading Wolfe House (1928). Deconstructivists may take special note of projects such as the Janson Residence and the Tischier Residence. The usually good-natured Schindler reserved his most sarcastic words for Philip Johnson, who excluded him from the famous MOMA exhibit of 1932.

The essays in the collection *Near Nature* represent a summation of Neutra's thoughts, feverishly penned during the final two years of his life. Neutra felt unappreciated and misunderstood during his career, and looked upon this work as a necessary and ultimate assault on the destructive trends he saw around him. The work explains his theory of "biorealism," which concludes that the environment, both natural and man-made, holds tremendous sway over the psychological growth and well-being of man.

New British Architecture, by Jonathan Glancey. London: Thames and Hudson, 1989, \$40.

Reviewed by Hugh Aldersey-Williams

Like several other recent books, this largely pictorial survey of new architecture in Britain has been hastily assembled and rushed to the bookstores for a royal rendezvous with Prince Charles's architectural manifesto, *A Vision of Britain*. Readers will need no introduction to the architectural controversy that the Queen's heir has sparked off. What the debate lacks in intellectual rigor it more than makes up for in shrillness.

For the Roundheads we have Richard Rogers and the new RIBA president, "Mad" Max Hutchinson, who dashed off his own riposte to the prince. Charles Jencks weighed in with a waspish war correspondence from the sidelines—predictably sympathetic to the prince. Now comes Jonathan Glancey's book, which its publisher claims offers an alternative to the "more unrepresentative" royal view. But this is hardly the case.

Barely 50 projects, some of them yet-unbuilt, maybe never-to-be built, make up this largely photographic compilation. Ostensibly even-handed, it includes the Post-modernism of Terry Farrell and John Ou-

Hugh Aldersey-Williams is based in London and writes widely on architecture.

tram, the "Classicism" of Quinlan Terry, the high-tech of Ian Ritchie and Nicholas Grimshaw, and the minimalism of John Pawson and Rick Mather. But this is the only manner in which *New British Architecture* can be said to be representative.

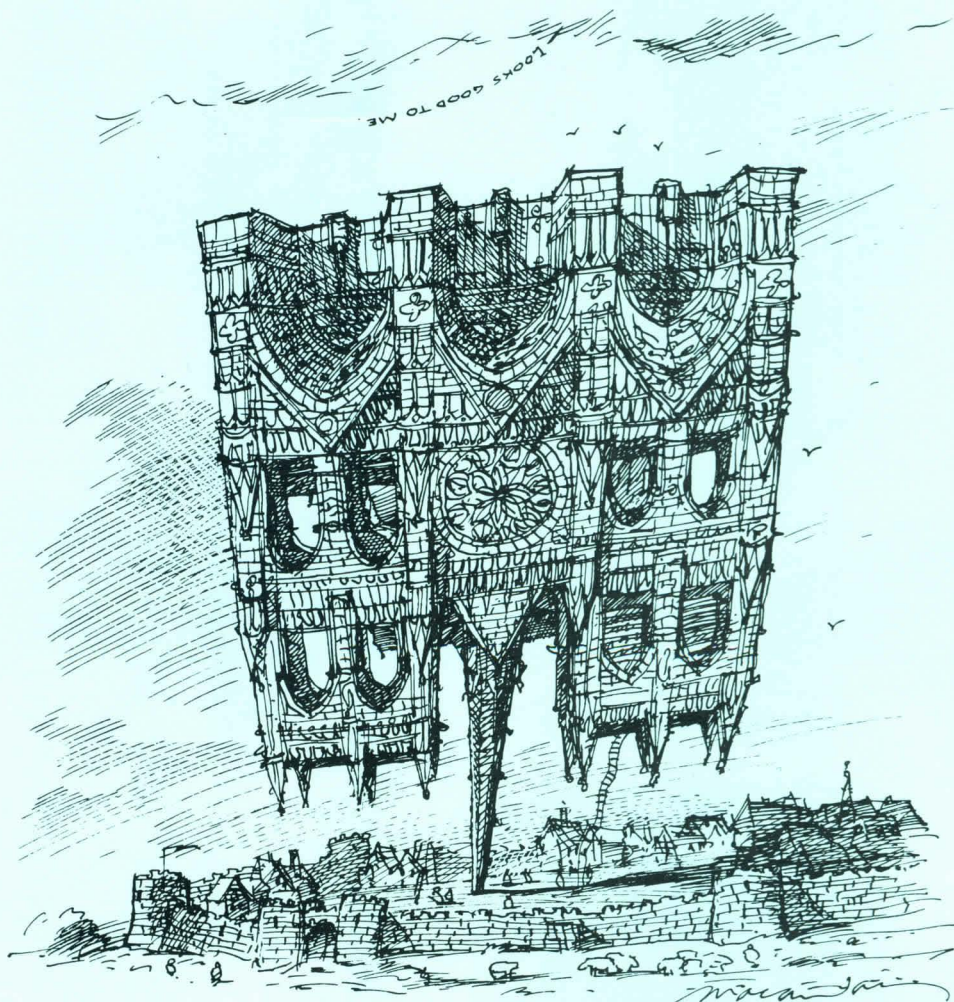
Glancey's own preferences show in his short commentaries on each highlighted project. He is a mechanically minded Modernist. A conceited house by Richard Horden made as far as possible from aluminum sections supplied by a leading yacht spar manufacturer is termed "one of the most convincing essays in prefabricated industrial house design," following "the precedent established by Charles and Ray Eames." This is nonsense. It is an impractical indulgence, hardly likely to become the housing prototype it is claimed to be. A City of London office by Farrell is "a well-mannered building, fitting neatly into its context despite borrowing from Manhattan and Viennese sources." Despite?

There are other, more invidious ways in which this book is unrepresentative. Despite their eclectic styles, the featured projects are largely of a type: small, even bijou, one-of-a-kind creations, fussily crafted and generously funded. Only in the final

chapter on urbanism does any grander vision show through, and most of these projects are still in the planning stage. Foster Associates' proposed King's Cross redevelopment and Arup Associates' completed Broadgate are among the entries here. Mysteriously, SOM's Canary Wharf, now under construction in London, qualifies as British. Stretching the definition of British architecture in another direction is the Arrow House in California's Napa Valley by Powell-Tuck, Connor, and Orefelt.

We live in a pluralist age, but it is nonetheless disappointing to find new British architecture presented as a parade of styles. So what style next? Glancey writes that "a Modernist revival free from guilt and moral stricture is beginning to emerge."

New British Architecture conveys an uncomfortably Panglossian sense that if we have a few neat bars and stores in Kensington, then all is well. It isn't—as is shown by the poor quality and modest quantity of new housing in Britain and the arrival of mega-square-footages of American-style, deep-floor-plan office towers. If amoral Modernism is to be the next style, Glancey's book offers precious little encouragement. □



The considerable dangers normally associated with construction of the central spire were virtually eliminated in this deceptively simple 1327 scheme.



A NEW CONSTITUENCY FOR AFFORDABLE HOUSING

Low-cost housing has its champions once again, but its problems are more complex than ever and demand fresh solutions.

Recognition of the prospect that the United States is about to enter a "peace economy" leads to the hope that reduced defense spending will soon allow the diversion of substantial sums to the construction of affordable housing. This occurs at a time when the nation's housing constituency (architects, planners, government officials, citizen activists) is greatly diminished in size and effectiveness, because, lacking the support of federal aid during the Reagan years, it turned to other pursuits. This constituency, which emerged in the '20s, became empowered by the New Deal, and brought about the vast housing complexes of the '40s, '50s, and '60s, and the smaller-scaled "infill" projects of the '70s, needs to be replenished by new recruits, especially from the architectural and planning professions.

In the meantime, architects who have continued to design affordable housing, both new construction and rehabilitation, under the severe economic constraints of the past decade, realize that now is the time to help promulgate the faith once again. Recently the Housing Committee of the New York Chapter of the American Institute of Architects sponsored an exhibition and panel discussion entitled "Affordable Housing New York 1990." Its purpose was to remind the community that good architects favorably affect the quality of housing by means of innovative and sensitive design, and that architects, furthermore, can lead the search for new ideas and directions to meet the enormous housing need. Just as importantly the Housing Committee made the point that in reconstructing the constituency, "housing" should not be interpreted to mean residential buildings alone, but should be centered within a broader focus that includes urban development and social programming.

The Housing Committee offered a set of provocative questions to the experts on the panel. A sample list: To what degree should social programming be an integral part of building housing units? Whose housing needs are the most crucial to address—the homeless, the working poor, the nonworking poor, moderate-income families? How should economic and humanitarian concerns be balanced? What kinds of sites and housing types should be considered? What should be the balance between directly sponsored subsidized projects and the various mechanisms of market-built housing? And more.

Given the limited time available for discussion, and the problematic and troublesome nature of the questions, the panelists' answers were elusive at best. But an important beginning was made. During the "fallow years" when little housing has been built, much thinking has been done. We should be hearing a lot very soon from the now-information new housing constituency.

MILDRED F. SCHMERTZ

Gravesian Images

©TIMOTHY HURSLEY PHOTOS



For the Johnstown, Pennsylvania, headquarters of Crown American Corporation, Michael Graves used Classical forms to create a modern-day office palazzo. The result is an imposing civic presence, bookended by a circular colonnade and a truncated pyramid, among the church spires, low-rise office buildings, and parking lots of what could be Anytown, U. S. A.

When Michael Graves burst into the limelight in the late 1970s advocating a figurative architecture, he became hero to those dissatisfied with faceless glass boxes—what Graves likes to call “dreadful Modern buildings”—and champion of the monumental front door. Though the sun-drenched palette of his delicate prismatic sketches promised a far gentler world than his built designs actually achieved (in retrospect such projects as the Benacerraf house addition of 1969 are surprisingly stark for someone who would come to embody the archetypal Anti-Modernist), they nonetheless represented a compelling first step toward a historically inspired design that would, as Graves put it in the preface to his 1982 monograph, “represent the mythic and ritual aspirations of society.”

By the early 1980s more daring clients were willing to share his vision, and Graves was able to give three-dimensional form to at least a portion of what previously had been imagined almost exclusively on yellow trace. Pediments, swags, garlands, and variations on other traditional architectural forms

embellished a variety of commissions from small-scale interiors to office buildings, though Graves’s Classical aspirations were often far grander than the gypboard, fiberglass, and concrete that his projects’ modest budgets could afford. If the overall effect was not as sumptuous as the architect himself would have liked, Graves pressed on, molding ancient forms to modern-day applications while hoping to imbue his projects with a humanist spirit. On his own terms, and without the typical budgetary constraints, Graves’s work was grand and inspiring—witness, for example, the Humana Building [RECORD, August 1985, pages 102-113]—but under more adverse conditions it came off as merely grandiose: the chipped paint of Classical figurines led some critics to liken his work to the Roman Empire on the verge of decline. Graves did not help his case during this time when he produced such items as a bird-whistling tea kettle for Alessi and pale pink-and-green shopping bags for the New York department store Bloomingdale’s—mass-sale totems that seemed to contradict Graves’s growing



CENWEST
PARKING

ONLY

TWO-WAY
TRAFFIC
AHEAD

Thrader
Flower Shop

Graves designed two disengaged portals—a circular colonnade (below) and a monumental porte-cochère topped by a ziggurat (opposite)—to counteract the impression of an impenetrable corporate facade.



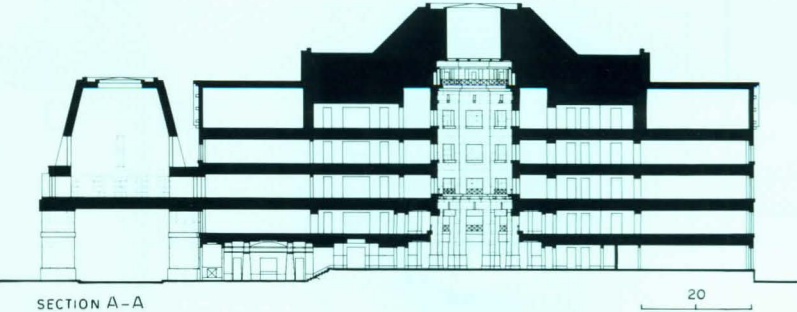
reputation as architect-scholar. It should be noted, of course, that Graves has never relied solely on iconic imagery. From the start, the formal decorum that pervades the architect's work was in part the result of rigorously ordered axial layouts with rooms neatly arranged enfilade. Graves applied painterly techniques in space-planning—foreshortened corridors and aggrandized central axes—to dramatic effect. As a result, the work, much like the man behind it, took on larger-than-life proportions. Graves suddenly was simply "Michael" to the architectural cognescenti. Intentionally or not, he became as much a symbol of Postmodern excesses as one of the swollen keystones from his own hotly debated Portland Building [RECORD, November 1982, pages 90-99].

Although Graves remains as closely identified with Postmodernism as ever, times have changed. No longer is Postmodernism the style of the moment, nor is the 55-year-old Graves an architectural revolutionary. The past 10 years, in fact, have seen Graves become something of an elder statesman, which,

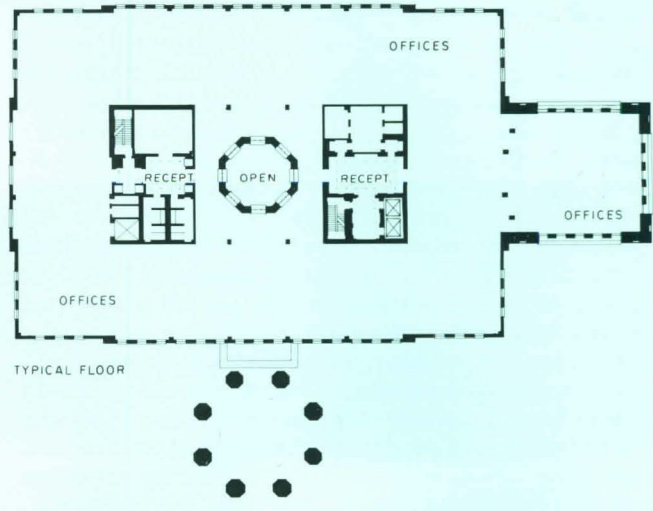
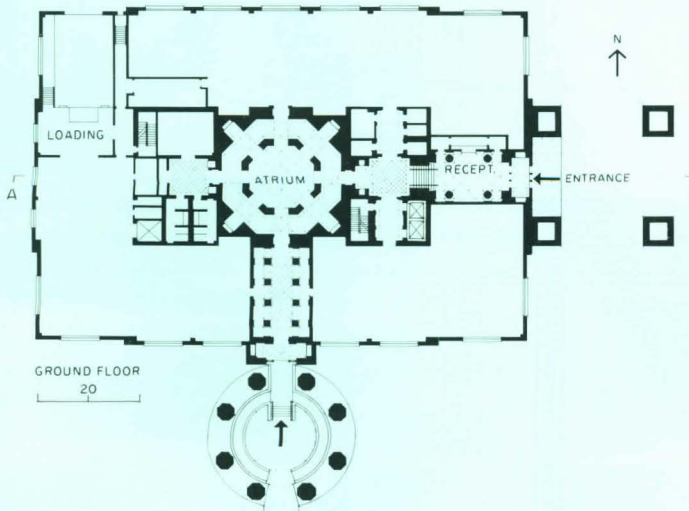
... the building has a tripartite division of volumes with wide stripes of mauve and ochre stone that accentuate its girth—surely an intentional move by Graves, a painter adept at surface illusion.



somewhat paradoxically, has heightened his popular appeal. There is no more telling testimony of Graves's assimilation into the mainstream than his own office. Once housed in cramped rooms above a Chinese restaurant in downtown Princeton, where Graves has been a member of the University faculty for over 25 years, the architect and his present staff of some 80 people now occupy more respectable quarters in a neo-Georgian mansion located on a residential stretch of the main street. Graves's popularity has recently attracted a variety of high-profile clients, including the Walt Disney Company, for which he is designing an office building in the United States and hotels here and in France. Although Disney has dubbed the architect's work for the company "entertainment architecture," undoubtedly referring to such elements as a frieze of the Seven Dwarfs, Graves is quite serious about having his fun. And why not? At the outset of a new decade, Graves has secured the position that most architects covet: the ability to command commissions, and budgets, commensurate with his ambitions.



A hexagonal atrium links all floors of the main office wing (left photos and plans). A rotunda inscribed in the square plan of the porte-cochère pierces a two-story executive suite and a column-lined library (photos right and opposite).





Graves-designed carpets and tables line the lobby and executive offices (top and opposite); tables and light fixtures by Graves are in the boardroom (bottom left); and chairs, china, and a mural by Graves fill the dining room (bottom right).



The Crown American Corporation provided just such an opportunity. Founded by Frank Pasquerilla in 1950, this privately owned company has evolved over the past 40 years from a small-town masonry contractor into a national developer, retailer, and hotelier with assets currently valued at over \$1 billion. Pasquerilla asked Graves to fashion a physical vote of confidence in Johnstown, Pennsylvania, a blue-collar community whose largely steel-based economy is still recovering from the effects of the 1970s recession. And what could be a more fitting tribute to Pasquerilla's hometown pride and magnanimous community spirit than a \$27-million showpiece, reportedly the largest private development to be built between Pittsburgh and Harrisburg, based on the architecture of the ancients?

While Graves's conceptual model for Crown American was Frank Lloyd Wright's Johnson Wax headquarters in Racine, Wisconsin, where Wright designed the building *and* the furnishings, the architect's esthetic inspiration came from further afield. Graves, winner of a Rome Prize travelling fellowship,

and Pasquerilla, who is of Venetian descent, discovered early on that they share a love of Italy. Not surprisingly, an Italian spirit predominates at Crown American's new headquarters—from the templelike crown of Doric columns atop the building to a collection of artwork curated by consultant Nancy Rosen, including specially commissioned allegorical paintings by Richard Piccolo of Rome. From an urban vantage point, the building's Palladian motifs seem remarkably at home in a mixed neighborhood that includes neo-Gothic and Romanesque Revival churches, low-rise office buildings, and parking lots (page 77). Spanning its block-long site, Crown American is undeniably a modern-day palazzo. Like its Renaissance predecessors, the building has a tripartite division of volumes with wide stripes of mauve and ochre stone that accentuate its girth—surely an intentional move by Graves, a painter adept at surface illusion. On closer view, however, there is a surreal quality to the overscaled pieces. The massive three-story columns of a resinous precast concrete, which form what Graves calls a “porch,”

... the formal decorum that pervades the architect's work [is] in part the result of rigorously ordered axial layouts with rooms neatly arranged enfilade.



and the ziggurat-topped porte-cochère, a hermetic tomblike form, have a forbidding presence.

Inside, however, Graves proves that given an enlightened client, he is a master at creating ambience. Pasquerilla encouraged the architect to design the building's furniture, light fixtures, carpeting, and company china and flatware, and he even commissioned the architect to paint a mural for the corporate dining room, because, in Pasquerilla's words, "I didn't want someone with different ideas to come in and specify everything." Graves adapted residential prototypes to corporate uses in Biedermeier-inspired furnishings finely crafted from bird's-eye maple—gentle reminders of Graves's sensitivity to the more genteel comforts of the workaday environment.

Although Graves has officially completed his work for Crown American, the Pasquerilla family remains a devoted ongoing client of sorts. There is talk of an eventual addition to accommodate future expansion, and Mark Pasquerilla, Frank's son and company executive vice president, is currently consulting

with local powers-that-be for Graves to design a gateway to Johnstown. Frank Pasquerilla predicts that a financially bullish Crown American will double its assets by 1992; but even by his own reckoning it's a modest forecast from a man who is clearly capable of executing grand plans. **KAREN D. STEIN**

*Crown American Corporate Office Building
Johnstown, Pennsylvania*

ARCHITECT: Michael Graves, Architect—Michael Graves, principal-in-charge; James Pricco, project manager; Terence Smith, associate-in-charge; David Dymecki, Ruth Wells, project designers; Nicholas Gonser, Craig Thomson, Warren Van Wees, Pamela Zimmerman, project team

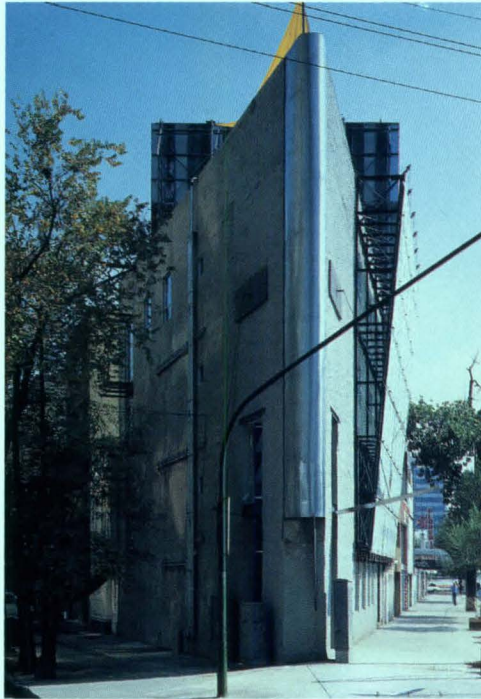
ENGINEERS: DeSimone, Chaplin & Associates (structural); Flack & Kurtz (mechanical, electrical, lighting)

CONSULTANTS: Acentech, Inc. (acoustical); Nancy Rosen, Inc. (artwork)

GENERAL CONTRACTOR: Crown American Corporation

BRINGING LIGHT

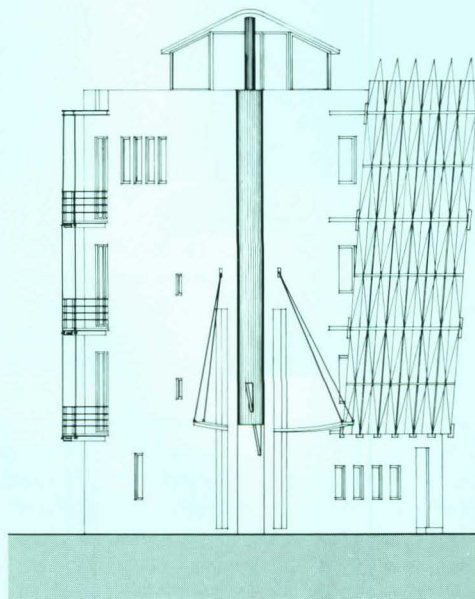
Architect Enrique Norten's deft insertions and overlays transform an unpromising 1940s apartment house in Mexico City to a fitting home for a lighting center's high-design wares.



An awkward triangular form becomes part of the lighting center's signature.

By the cliché measure of real estate—location, location, location—a site on a busy artery in the heart of Mexico City was just right for the Centro de Iluminación, a distributor of high-end lighting fixtures. By other measures, though, it had drawbacks. It was tiny—only 765 square feet. Its outline was a skinny triangle resulting from the collision of conflicting street grids. It was occupied, by an unprepossessing 1940s apartment house. And finally, new zoning regulations calling for on-site parking and a high proportion of permeable surface reduced its buildable area to near vanishing point. The original intent of razing the building and starting over became a formidable task of renovation.

Remarkably, architect Enrique Norten accomplished the transformation without major alterations in the existing building fabric, instead relying on the telling and often witty deployment of superimposed elements in a pointedly contrasting machine vocabulary consonant with the new use. The exterior's coarse, lumpy brick,



Simple additions—screen, balconies, entry canopy, and a bullnose “lamp” at the building’s prow—override their commonplace backdrop.

for example, was simply painted white, leaving even the fenestration unchanged. But over the front facade Norten hung a huge translucent membrane that both conceals the windows behind and controls the light reaching them. Fabricated of sandblasted glass with the center's logo traced in supergraphics of clear glass, the screen is a billboard by day and an immense backlit lantern at night. At the street level, which houses the main showroom and sales areas, the windows deepen to sidewalk display cases, alternating with similar cases oriented to the interior. The showroom's main entry is elongated to a slender two-story opening that pierces the narrow end of the triangle, overhung on either side by a curved perforated-metal canopy suspended from a bold steel plate.

Although the rear facade's most prominent feature is a strip of airy cable-hung balconies that open off executive offices, it is also marked by an espaliered “tree” of bundled conduit that supplies the building's exceptionally heavy power de-





Above: The exposed structure, underlined by suspended raceways, sets off such sleek forms as the main showroom's granite and metal counter and galvanized-metal screen. Below: The rear facade is marked by a row of balconies and a "tree" of conduit that feeds interior electrical grids.



mand. Since the floors could not be penetrated for structural reasons, the lines travel up and through the outer wall, branching as needed to form dense electrical ceiling grids that allow flexibility in organizing displays and other lighting installations. The metal bullnose at the point of the triangle is also a lamp that throws a brilliant vertical beam visible from long distances. The final fillip is a bright yellow rooftop "sail."

Norten's exploitation of the existing building's rough shell as a foil for sleek new inserts is even more emphatic in the center's interior, where the structure is exposed throughout, as are the industrial-type circular stair and such necessities as runs of conduit strung in neat patterns. The rich and varied palette of materials—glass, metal, polished granite, plastic laminate, lacquered wood—is in sharp contrast but calculated to complement, not compete with, the products on exhibit. Such additions as display fittings and the eye-catching panels that shape and enhance the space are spare.

In the street-level showroom (above), for example, accoutrements are confined to the window-wall showcases, a table of polished granite and metal base, which slants across "embedded" concrete columns, and a simple metal screen across a work area. Everywhere the starring role is reserved for the center's wares—lighting elements arranged in glittering and glowing assemblages that Nortén envisioned as changing "constellations" within the space.

MARGARET GASKIE

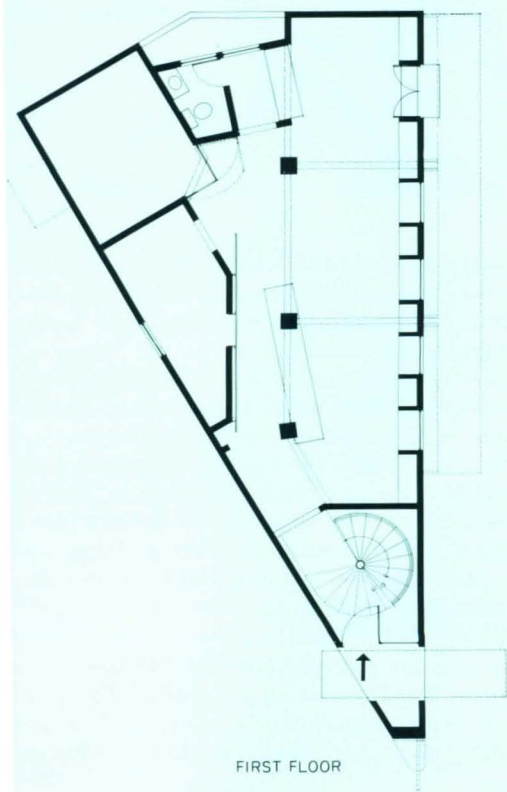
Centro de Iluminación, Mexico City

OWNER: Zelka, S. A.

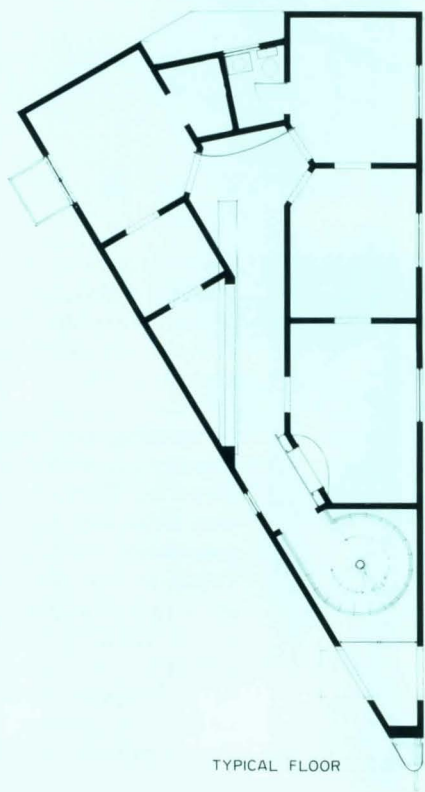
ARCHITECT: T. E. N., Taller de Enrique Nortén y Asociados—Enrique Nortén, Jorge Luis Pérez, Bernardo Gómez-Pimienta, design principals; Juan Carlos Tello, Axel Aranon, Jorge Flores, Antonio Canga, project team

ENGINEERS: Ingenieros Calculistas Asociados (structural); Zelka (lighting); Asociados A (electrical)

CONSULTANTS: Vidriera Ayuntamiento (glass)



FIRST FLOOR



TYPICAL FLOOR

Tucking vertical circulation into the thin end of the triangular plan makes the most of a small footprint. The relatively open street floor (far left) houses, in addition to the principal display area (above opposite), subsidiary spaces denoted by a curved panel (above left). On the second and third floors, where loadbearing walls precluded major changes in plan, typical layouts (near left) incorporate design studios and workshops, including a darkroom fronted by a pedimented mauve door (top left). Top floor executive offices are introduced by the reception area shown above right.

COLLECTIVE MEMORY



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Any commission to design a museum devoted to interpreting a nation's man-made heritage is a tough assignment. In the case of the Canadian Museum of Civilization, the challenge facing Douglas Cardinal was especially daunting, given the museum's ambitious plan to replace some 17 buildings scattered throughout the Canadian capital of Ottawa with a centralized facility comprising one million square feet of public-exhibition and storage space. What is more, when the Canada Museums Construction Corporation (CMCC) made public its plans in 1981, it was clear that the new building was to be far more than just a repository for 3.5 million artifacts ranging from a Haida war canoe to late 20th-century rockets. Together with Moshe Safdie's new National Gallery of Canada [RECORD, October 1988, pages 120-129], the Museum of Civilization was to be nothing less than "an initiation into the national identity," in the words of anthropologist George MacDonald—a symbol of Canadian unity in a country that is less an American-style melting pot than a mosaic of distinct native- and immigrant-based cultures.

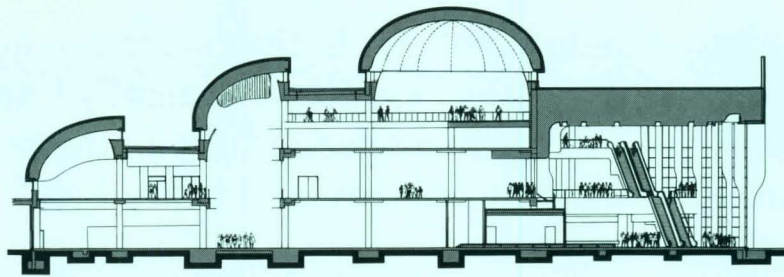
A unique building ensemble that seems molded by the forces of nature, Douglas Cardinal's Canadian Museum of Civilization successfully embodies a nation's history, culture, and aspirations.



The new museum was also meant to bridge a longstanding socio-cultural gap between the patrician, English-speaking capital city and working-class Hull, located just across the Ottawa River in French-speaking Québec. Toward that end, the CMCC selected a 24-acre site in Hull's Parc Laurier, an underused riverfront parcel between the Alexandria Bridge and the Eddy pulp and paper mill that commands a picture-perfect panorama of the neo-Gothic Parliament Buildings on the opposite shore.

The CMCC took a risk when it chose Cardinal from a short list of 12 invited Canadian architects. Dubbed by one observer "the man who believes that the shortest route between two points is a curved line," the Alberta-born, Texas-trained Cardinal might well be considered Canada's answer to Bruce Goff—a self-acknowledged member of Modernism's organic school who, until the museum commission came along in 1983, labored in relative obscurity, turning out undulating expressions of natural earth forms from his 35-person office in Edmonton. The museum commission gave Cardinal the chance to move to Ottawa.





A mechanically controlled watercourse (right) cascades alongside a sweeping outdoor stairway that connects the museum's main plaza with Parc Laurier. The Glacier Wing (foreground above) and Canadian Shield Wing (background opposite) are clad in split-faced and honed-finish blocks of Tyndall stone, a fossil-rich limestone from Manitoba.



wa and apply his architectural principles on a monumental federal scale. He has responded unflinchingly with a provocative concrete-framed building whose curvilinear limestone surfaces are meant to appear "sculpted by the winds, the rivers, the glaciers" (Cardinal's words) and whose bulbous copper-clad domes and roof vaults evoke native Canadian longhouses and igloos. The contrast between Cardinal's home-grown imagery and the icy hauteur of Safdie's palace of art across the river could not be more striking—or more deliberate.

Cardinal dealt with the museum's need for both archival storage and public-exhibition space, and with a series of mandated view cones toward Ottawa, by splitting the building into two distinct elements: the Glacier Wing (foreground above) housing galleries and other facilities open to the public, and the Canadian Shield Wing (background above), filled mainly with storage vaults and curators' offices. The wings are separated by a semicircular plaza that conceals a 500-car garage while offering Hull's citizens a generous public gathering space.

The contrast between Cardinal's home-grown imagery and the icy hauteur of Safdie's palace of art across the river could not be more striking—or more deliberate.



Though open to the public since July of last year, the building's interior is only 50 percent complete and is therefore difficult to evaluate. Like another popular Canadian institution, the British Columbia Museum in Victoria, the Museum of Civilization will feature artifacts of Canadian culture displayed in traditional galleries, together with a vast history hall filled with building re-creations meant here to give visitors a microcosmic tour of Canadian settlement from east to west. For now, though, the star of the show clearly is the Grand Hall, a 300-foot-long, boat-shaped gallery that offers museum-goers the most satisfying bit of spatial monumentality since I. M. Pei's East Building at the National Gallery. This imposing room, flanked on one side by facade reproductions of six rustic houses that would have stood in a 19th-century West Coast village and on the other by 50-foot-tall windows overlooking Parliament, in a real sense embodies the museum's goal: to develop a collective memory of Canadian diversity without losing sight of a national Canadian identity. **PAUL M. SACHNER**

*Canadian Museum of Civilization
Hull, Québec*

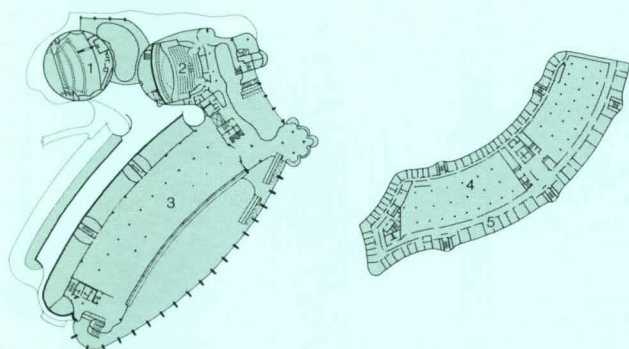
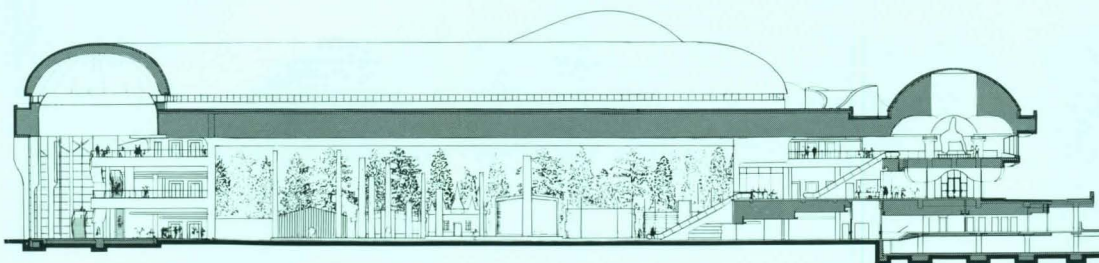
OWNER: Government of Canada

ARCHITECT: Douglas J. Cardinal Architect Limited and Tétrault, Parent, Languedoc et Associés—Douglas Cardinal, design architect; Michel Languedoc, associate architect; Jim Zulkoskey, project manager; Jane Gehring, consortium manager; Daniel Grand-Mourcel, Satish Rao, Gilles Maille, Peter Dolan, Tuan Nguyen, Mansoor Suteir, project architects

ENGINEERS: Asselin, Benoit, Boucher, Ducharme, Lapointe, Inc. (structural); Bouthillette, Parizeau et Associés (mechanical); Dessau, Inc. (electrical)

LANDSCAPE ARCHITECTS: EDA Collaborative, Inc./Parent, Latreille et Associés

CONSTRUCTION MANAGER: Concordia Management Company



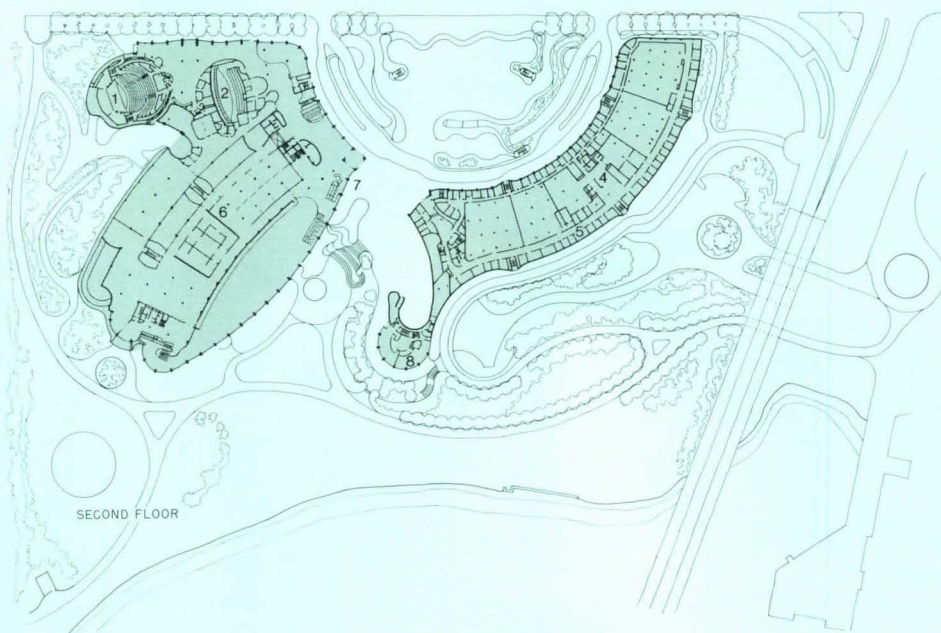
THIRD FLOOR

1. Auditorium
2. Imax/Omnimax theater
3. History Hall
4. Collection holding
5. Offices
6. Exhibit halls
7. Plaza and entry
8. Restaurant
9. Underground parking
10. Grand Hall
11. Cafeteria
12. Resource center
13. Workshops

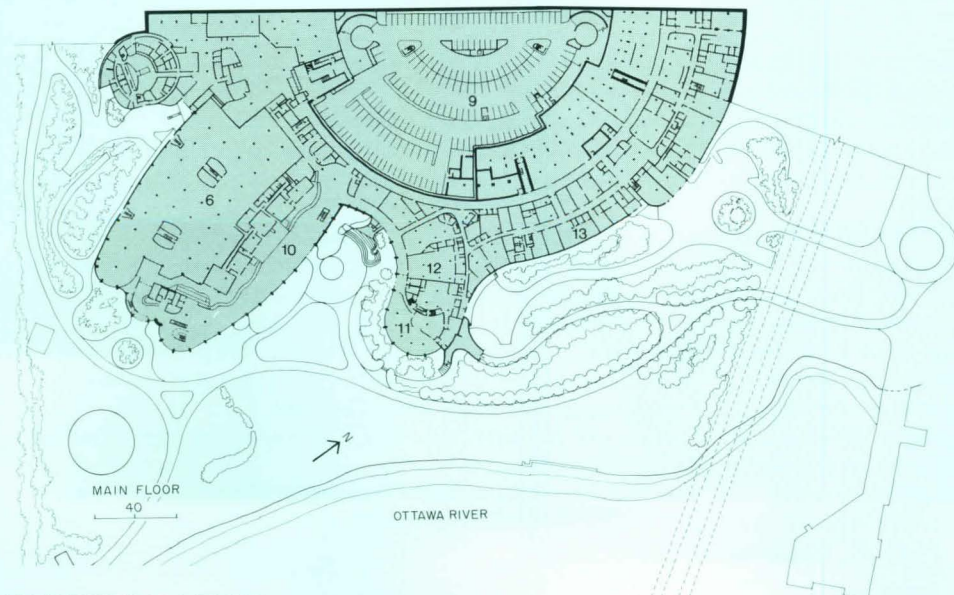
A permanent exhibition of carved totem poles and the re-created facades of six Pacific Coast village houses fills the west wall of the Grand Hall (opposite). A photomural mounted on two scrims above the exhibit depicts a British



Columbia rain forest. At the southern end of the hall, which has a floor of polished Québec granite, one of Cardinal's free-form stairways (above) links the museum's ground-floor level with the Native People's Hall, changing-exhibition galleries, and children's museum on the second floor, and the History Hall on the third floor (plans left).



SECOND FLOOR



MAIN FLOOR

OTTAWA RIVER



In Good Standing

At an important intersection of downtown Los Angeles, Albert C. Martin & Associates' Home Savings of America Tower reaffirms some of the traditional civic values that helped shape the city's architecture earlier in this century. A richly articulated two-story sky lobby is dramatic icing on the cake.



©GREG MURPHEY PHOTOS, EXCEPT AS NOTED

Once upon a time, before decades of deference to the automobile and seepage of the city's residential population to outlying areas, Los Angeles contained a traditional American downtown. Skeptics may be surprised to discover that in the midst of frenzied development activity, there exists a concerted effort to revitalize L. A.'s early 20th-century downtown, which may be on the verge of becoming a hybrid city where the new might peacefully coexist with the old.

One delineator of old downtown is 7th Street, which for years has lain largely dormant, with the ground floors of vacant office buildings open solely for retail trade. Tradition ends at Figueroa Street in the face of freeway wishbones and gigantic newer structures. The street wall cried out for an element at the corner to mark this crucial juncture. The Home Savings of America Tower, by Albert C. Martin & Associates, "stands like a sentry," as project designer Tim Vreeland explains, guarding the traditional downtown against incursions while the heart of the city is painstakingly refurbished and retrofitted.

Not surprisingly, the corner of 7th and Figueroa will also serve as a nodal point for L. A.'s new subway and light-rail commuter lines, two projects scheduled to open next year, that are meant to make the city more user-friendly. But today, the car culture still rules. Because of the trains below, the architects of Home Savings had to go up instead of down for parking: the first six floors of the 350-foot tower cleverly disguise a 125-car garage and ramp, and the main lobby is located on the sixth floor. All occupants and visitors, no matter what their method of transportation, haven't really arrived until they've ridden the shuttle elevators to the explosive sky lobby.

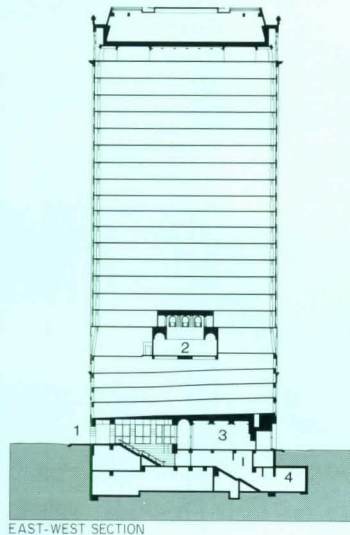
This grand double-height room gathers the colliding energies of the location and forms a portal within the site. In keeping with the building's banded-marble exterior, every square inch of the sky lobby is covered with color and pattern. The architects sheathed the lower portion in black-and-white marble, and artist Richard Haas took over from there. The masterpiece of the space, Haas's three-sided mural entitled "The Homes of Los



The floors and walls of Home Savings of America's 900-square-foot sky lobby (left) and elevator vestibule (right) are sheathed in geometric patterns of polished marble, with painted embellishment above.



1. Metro Rail entrance porch
2. Sky lobby
3. Home Savings teller space
4. Passage to Metro Rail station

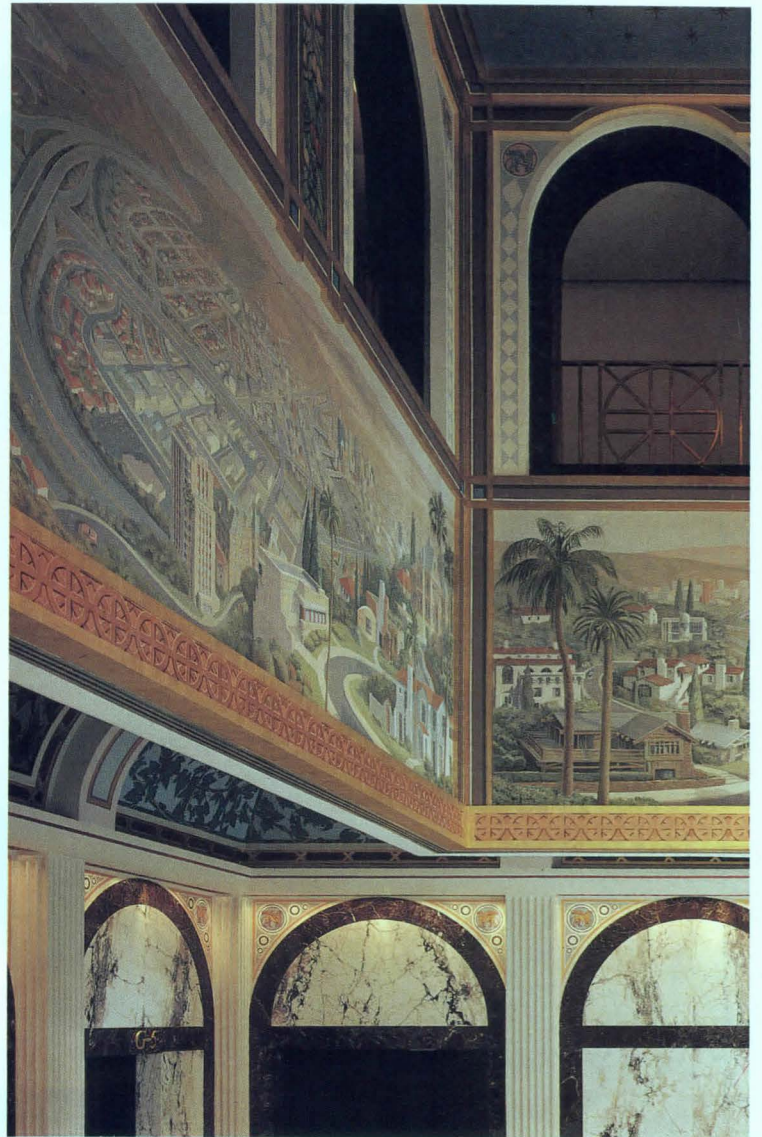


Angeles" represents a coherent, albeit romanticized, vision of the city. Above the mural, arched openings surrounded by painted garlands frame an upper-level gallery. A vaulted ambulatory features an elaborate trompe l'oeil embellished with birds. A quattrocento sun with the names of the zodiac is centered in the coffered ceiling, which is complemented by bronze lighting fixtures designed by Francis Krahe Associates. The elevator lobbies display similarly rich designs and statuary. This commitment to art, which continues a long tradition by the client, was encouraged by the city's percent-for-art ordinance.

Home Savings' imposing entrance in the sky gives a dramatic sense of arrival in a building that itself will give the future Los Angeles pedestrian a sense of the old against the new. Within the context of burgeoning development just across the street and beyond the adjacent Harbor Freeway, it has already contributed to a rekindled urban sense of place. **DONALD LONDON**

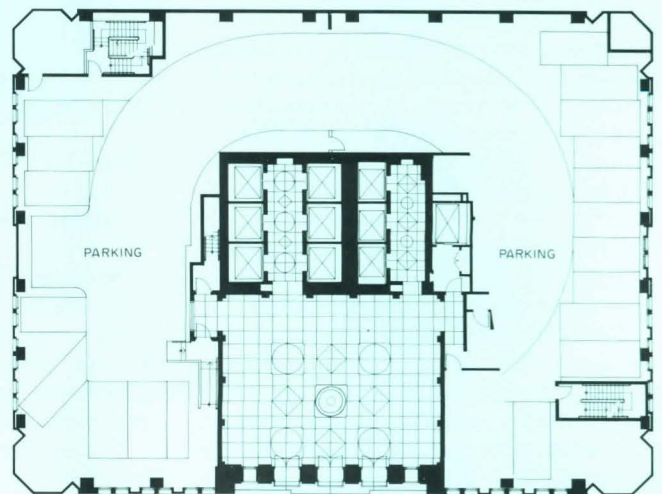
Donald London is an architect with Kohn Pedersen Fox.

Vaulted ceilings on three sides of the sky lobby have painted trellises entwined with flowers and vines (left). Richard Haas's mural over a gold-leaf frieze depicts a bird's-eye view of the Los Angeles basin (right).



Home Savings of America Tower
Los Angeles

OWNER: Ahmanson Commercial Development
 ARCHITECT: Albert C. Martin & Associates—Christopher C. Martin, partner-in-charge; John H. Johnson III, project principal; Thomas R. Vreeland, project designer; Nabih Youssef, project engineer
 ENGINEERS: Albert C. Martin & Associates (structural); Syska & Hennessy (mechanical/electrical); Psomas & Associates (civil)
 CONSULTANTS: Fine Arts Services (art)—Tamara Thomas; Francis Krahe & Associates (lighting); Richard Haas (sky lobby murals)
 GENERAL CONTRACTOR: Swinerton & Walberg



SKY LOBBY (6TH FLOOR)

THE BEST AND WORST OF WASHINGTON, D.C.

The years that closely followed the end of World War II were not kind to the nation's capital in terms of architecture. The last building to go up in Washington, D. C., before the wartime freeze on construction, and the last great work of Neoclassicism in the capital, was John Russell Pope's National Gallery of Art. After the war that kind of magnificence was prohibitively expensive. These were also the years in which Modernism launched the great offensive that was to capture architecture completely by the 1960s.

But the offensive was being bitterly contested every step of the way by traditionalists, whose major bastion in Washington was the Commission on Fine Arts, design review body for the federal core of the city and certain other historic precincts. In the Eisenhower years the commission was stacked mainly with predictably corporate practitioners. In the 1950s one architect was admonished by a commissioner to design for "the present, not the future." The commission clearly would have preferred the past if it had been affordable.

The result was compromise

The Mall and environs were littered with faceless boxes. Critic Jane Jacobs called it "creativity by subtraction." Federal buildings were designed in the classical mold but without the saving decorative appendages and flourishes of classicism as it had been known.

Things began to change in this area, as in so many others, with the arrival of the dashing young John Kennedy. The Kennedys had an informed interest in art and architecture and a sophisticated advisor without portfolio in artist, ex-newspaperman, and all-around operator William Walton.

Two early indications of Presidential interest in the face of the capital were a directive to see to the redevelopment of seedy Pennsylvania Avenue and the drafting of a policy statement on federal architecture. Both were entrusted to Secretary of Labor Arthur Goldberg, who delegated them to a bright young assistant named Daniel Patrick Moynihan. The policy statement essentially said that Washington and the federal government in general deserved nothing but the best in contemporary architecture.



ALLEN FREEMAN PHOTOS THIS PAGE



Top: The Willard Hotel, one of the capital's acknowledged treasures, was endangered in the '60s. It's across from a starkly Modernist Marriott.

Middle: The weird sisters of the Potomac—Washington Harbor, Watergate, and the Kennedy Center. Bottom: Red Lion Row, a full block of historic houses, all too perfectly renovated, and dwarfed by an office building looming behind.

To get the best you went to the best

It was the era of the big-name Modernists, who needed only to wave their magic wands to make celebrated architecture happen. Some such names, including Gordon Bunshaft, Hideo Sasaki, and John Carl Warnecke, showed up on the revamped Fine Arts Commission, along with critic Aline Saarinen and Walton, who was named chairman. Others, including Gyo Obata, Edward Durell Stone, and Marcel Breuer, began to appear on the list of architects for new federal buildings.

The results, however, were less than magic. Some of the relics of the period—the U. S. Department of Housing and Urban Development Headquarters by Breuer, the Department of Transportation Building and the John F. Kennedy Center for the Performing Arts by Stone (actually designed as a national cultural center before Kennedy's influence was felt on the Fine Arts Commission), the National Air and Space Museum by HOK—have turned out to be among Washington's most ponderous buildings.

Bunshaft was the nation's most publicized architect of the time, and he was the dominant (some would say domineering) design influence on the commission. It was during his term of office that he designed the misplaced pillbox of the Hirshhorn Museum. Actually, he wanted to make its sculpture garden a lateral slash across the Mall, but was dissuaded by his commission colleagues. Note that all of the above has dealt with official Washington.

Nobody was paying much attention to the rest of the city

The commercial core was filling up with rows of stumpy, curtainwalled boxes, and the shopping district downtown was moribund. There was, of course, the huge Southwest urban renewal project, but its social value is still being debated and it produced no architecture to stir the soul.

The plan that came out of the Pennsylvania Avenue Commission, another all-star body, would have dealt with parts of downtown as well as the avenue, but at a price. Had the plan's huge national square and superblocks been built, the Willard Hotel would have been demolished as well as scores of other fine buildings. All but the

Don Canty offers a brief history of four decades of architecture and planning in Washington, D. C., declaring most of it bad, but finding hope for the next decade in the work of local architects who love their city.

tower of the old Post Office would have been torn down to restore the "integrity" of the Federal Triangle.

Preservation was not high on the architectural agenda in those days. The Pennsylvania Avenue plan ended at the Treasury building east of the White House, so the magnificently exuberant War, State and Navy building to the west was not on its hit list. Still, repeated efforts were made by a curious coalition of Modernists and Classicists to remove this "eyesore." They had the active encouragement of the AIA's historic resources committee. Today, of course, this building (now the old executive office building housing White House staff), the Post Office, the Willard, and others endangered in the '60s are among the city's acknowledged treasures.

Ironically, given its bulldozer-oriented beginnings, the redevelopment of Pennsylvania Avenue has made its proudest achievements in the area of preservation. There have been some pleasant public improvements though no new architecture of real distinction—and some that is downright awful.

As the '60s ended, a new President had the opportunity to restock the Fine Arts Commission. Richard Nixon chose several campaign contributors who displayed no other obvious credentials. Fortunately he also appointed Kevin Roche and later J. Carter Brown, director of the National Gallery and a layman of extraordinary architectural sophistication.

Preservation hit Washington with a vengeance in the '70s

A group with the aggressive name "Don't Tear It Down" took on developers and city hall with considerable success. The preservationists also sometimes took on architects, but by now architects were joining the movement in significant numbers. This was partly the result of a mid-decade decline in new construction. There was money to be made in restoration and adaptive use of old buildings. Washington's first landmark adaptive-use project was Canal Square by Arthur Cotton Moore, a skillful amalgam of old warehouses and new construction on the C&O Canal in Georgetown, with a lively courtyard and a campanile. By now there have been so many



ALLEN FREEMAN



HARTMAN-COX



HARTMAN-COX

Top: Rosslyn, across the Potomac from Washington, now a forest of offensive towers. Market Square (middle) and the Georgetown Law Library (bottom), are unabashed works in the Neoclassical style, skillfully executed. Both are by Hartman-Cox, the most influential of Washington firms, who make no apologies for Beaux Arts planning and Classical references.

variations on this theme in the neighborhood, all with very much the same kinds of shops and restaurants, that Canal Square is a not-so-lively shell of its former self.

Another influence in the change of architectural attitudes toward old buildings was, of course, Postmodernism with its calls to context and history. At first this produced some rather strange results, such as a David Schwarz office building on Connecticut Avenue that was basically a white concrete box with a betowered brick front that throbbed with allusions to past times and places.

While such gestures continue, the Washington architectural community has developed notable skill in the interweaving of new and old. An early example was a downtown project in which Hartman-Cox blended a renovated school and office building, a new office building, and an adjacent hotel into a remarkably coherent composition. More recently Keyes Condon Florance achieved a similar melding of a new office building and condominium with a 1950s office building, all gracefully composed around a large midblock park and plaza. Hugh Newell Jacobsen has invented a technique that might be called expansion by replication. He has enlarged two fine old houses, one in the middle of super-sensitive Georgetown, by simply creating an almost exact replication of the original facade on an addition next to it. Shalom Baranes, among others, has made a specialty of expanding office buildings by giving them new tops, often improving the original in the process.

A less universally admired form of retaining the old and relating it to new construction is known as facadism—sometimes less politely called fasodomy. Washington has perhaps the best and worst examples of this technique, which involves keeping little more than the facades of old buildings and constructing anew behind the Potemkin screen. Candidate for the worst is Red Lion Row on Pennsylvania Avenue, where a full block of historic facades has been all too perfectly renovated to a Disneylike state. An absolute hulk of a building by HOK looms directly behind. Candidate for the best, by David Schwarz, is a sensitively remodeled, elegant mansion occupied by a law firm, joined by a

gently restored row of adjacent facades combined with a mid-block tower responsive to the old buildings in its neo-Victorian form and use of brick.

The decade's worst architectural disaster, paradoxically, involved adaptive use. Union Station, one of the city's proudest buildings, was converted into a so-called visitor's center for the nation's bicentennial. The station's great central space was stripped of its train-related functions and dotted with banal exhibits, including a slide show running endlessly in a carpeted pit gouged out of the floor. The station was rendered all but inoperative as a rail terminal. Less than a decade later, millions had to be spent to restore it to that function and to its former grandeur. Ancillary spaces were developed as a festival-marketplace-like mix of shops and restaurants, very similar to the mix in the restored Old Post Office, not surprising since Benjamin Thompson Associates did both.

The landmark building of the '70s was not only totally new but unabashedly Modern: I. M. Pei's East Building of the National Gallery of Art. Its Piranesian spaces and sharply angular form have made it a great popular favorite, though professional opinions remain mixed. Some feel it elevates architecture at the expense of art, relegating exhibits to perimeter, even ancillary spaces that suffer by comparison with the central hall.

Others, including this writer, find virtue in the spatial contrast. The central hall serves as a kind of spatial decompression tank when the individual galleries begin to feel constricting. The plan is best understood as a set of pavilions arranged around a central open plaza.

New construction resumed with a vengeance at the end of the '70s

It has picked up speed ever since. In the city it centered first on an area dubbed the West End, between the Connecticut Avenue commercial core and Georgetown. This had been a scraggly area of scattered houses and many auto-repair shops and other light industry. These were replaced by a dense concentration of office buildings and hotels (one intersection has new hotels on three of its four corners).

The West End has a certain coherence, mostly because much of it was built by the same urban-oriented firm, the Washington office of SOM. The buildings are almost too consistently clad in patterned brick and strips of concrete. A shining exception is a white concrete office building with a bow front festooned with colorful banners, the work of Boston's Don Hisaka. Preservationists gave Hisaka the task, which he performed admirably, of incorporating one wall of an old auto-body shop in his facade, for old time's sake.

Construction of Washington's sprawling and unlovable convention center, and com-

paratively low land prices, have now pulled development east of Connecticut Avenue—there is now an "East End." SOM is well represented here, too, along with other large firms, local and otherwise. The level of East End architecture might be described as somewhere between high respectable and bloated suburban. A fair number of buildings have elements of interest, and many employ very thin facings of fine stones.

But much of Washington's building boom has occurred outside the city

In 1979 the U. S. Department of the Interior filed suit against Arlington County, Virginia, after being alerted by the D. C. Fine Arts Commission that three high-rise buildings were about to go up in Rosslyn, just across the Potomac from Georgetown. The commission testified as an expert witness

Many of the local
architects are genuinely
fond of their city and the
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predecessors. Their
contextualism is rooted
in affection, not ideology.

that the towers would "compete with the Mall memorials and the Capitol dome, thus marring their symbolism." The suit was unsuccessful, Rosslyn is now a forest of offensive towers, and the commission was right about their impact.

Another center of suburban growth has been Bethesda, a pleasant first-generation Maryland suburb in the Kennedy years. The planners played it by the book in Bethesda. They clustered development at transportation nodes, in this case stations of the Washington area's excellent Metro fixed-rail system. They instituted a process of design review and offered developers benefits for including public spaces and amenities in their projects.

The result was a disastrous explosion of growth. The cause was partially the sheer density of development and enormous escalation of scale. But it has been a particularly *architectural* failure. Each new building seems more bizarre than the last, competing strenuously for attention. It is architectural cacophony at its worst.

A growth center farther from the core is Tyson's Corner, Virginia, which in the Kennedy days was little more than a highway intersection. Now it is one of those fast-growing agglomerations of develop-

ment which some call "urban villages," although they have few attributes of a village and no urbanity. There is no reason to analyze Tyson's Corner in detail. It is like all of the others around the country: bland, isolated buildings, many of reflective glass, in an auto-dominated landscape.

The Georgetown waterfront was the site of another defeat for the Fine Arts Commission. The name Georgetown conjures images of lovely federal townhouses along narrow, tree-lined streets of great beauty and dignity. But the waterfront, between M Street and the Potomac, was something else: a motly mélange of industrial and commercial buildings obscuring a few little historic houses.

Over the years, numerous proposals were made for redevelopment of the area, all stoutly resisted by the protective residents of Georgetown proper. Then came Canal Square and the other mixed-use developments, which were not uncaring additions to the area. It is under the jurisdiction of the commission, which kept a watchful eye on the new buildings and did everything it could to encourage residential as well as commercial uses.

For years the commission had urged the federal government to buy the land immediately adjoining the river and make it part of the National Parks system. In 1979 it rejected a proposal for a massive development along the waterfront strip. A year later it was presented with the less over-scaled and seemingly more serious proposal for what became the mixed-use Washington Harbour development. The commission, and Georgetown residents, stuck to their guns and continued calling for creation of a park instead.

By then, however, home rule had come to Washington and the city overruled the commission and allowed Washington Harbour to proceed (architect the aforementioned Arthur Cotton Moore). The result is the biggest and most bizarre building in the city's recent history. It is as if someone had been given a huge set of building blocks of wildly assorted shapes and required to use every last one.

Washington Harbour, the Watergate, and Kennedy Center are the weird sisters of the Potomac. Oddly, the Watergate was given its writhing forms as a kind of contextual gesture: Stone's first design for what was to be the boxy Kennedy Center was curvilinear. Here and in the much overplanned Southwest renewal area, where the Potomac is lined with uninspired restaurants and motels, Washington has laid waste its potentially precious riverfront.

The Fine Arts Commission may have lost Rosslyn and the Georgetown waterfront, but it won a big one in Washington in the early '80s, and may be paying a steep price. The victory was the execution
Continued on page 102

CONTROLLED CLASSICISM DOWNTOWN

Burgee and Johnson wrap a speculative office building in a Neoclassical skin.

Franklin Square
Washington, D. C.
John Burgee Architects with
Philip Johnson, Architects

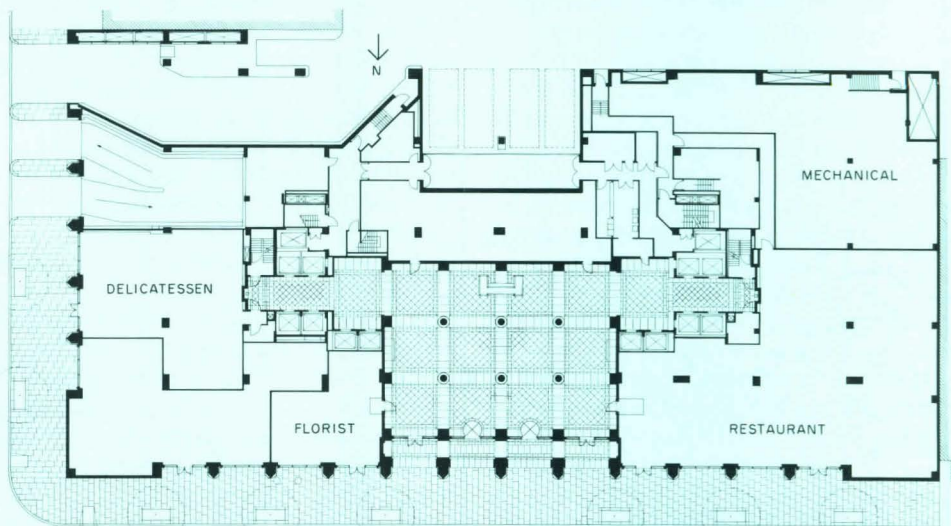
Although designed by architects of New York and the world, this is a very Washingtonian building, clad in well-crafted limestone and clearly in tune with the classicism of the capital. Named after the square it faces and located in the middle of downtown Washington, the building is a speculative venture of Gerald Hines. Given the space planning and marketing formulas of this developer, opportunities for expression were scant. "What you have to work with basically are the facades and the lobby," says project architect Steve Achilles. "The height limit also makes the roofline more important since it has more visibility than the cornice of a tower."

Franklin Square's designers made the most of these elements. The symmetrical facade overlooking the park consists of corner piers framing 12 bays recessed behind rounded columns rising 11 stories. The 12th story forms a cornice punctuated by sets of windows above each bay. The slate-covered mansard roof is rimmed by a balustrade and is capped with cresting and acroteria. The columns stress the vertical dimension, making the structure seem taller and more imposing, while the recessed bays give the facade its depth. Curtain-walls within the bays consist of blue and gray mullions and stamped decorative spandrels. The use of blue gives relief from the overall sobriety of a building described by Burgee and Johnson as an exemplar of what they call their "controlled classicism."

The spectacular three-story lobby has six fluted Doric columns supporting a richly decorated coffered ceiling. It is flanked by two separate elevator towers for the sake of flexibility in planning the office space above.



QUANTUM PHOTOLAB



JOE C. ACKER



Continued from page 100

of the Vietnam Veterans Memorial largely as designed.

All will recall that Maya Lin's masterfully minimal design became politicized when conservative millionaire H. Ross Perot of Texas organized a movement to place a huge flag on top of it and a heroic statue in front of it. It was the commission that worked out a saving compromise: the flag and statue would be some distance away from the memorial itself, at a pedestrian entrance.

The compromise worked and the memorial is one of Washington's most visited and beloved sites. But Perot was a friend of the Reagans, and the President, in what some saw as a retaliatory move, appointed the statue's sculptor, Frederic Hart, to the Fine Arts Commission. He has been an embarrassment. Last August he wrote an emotional article for *The Washington Post* deeming all contemporary art "perverted."

Walter Netsch of SOM replaced Kevin Roche on the commission in 1980, and his term ended in 1987. He was the last architect to serve on the commission in the Reagan years—the first time the commission has been without an architect member in its 79-year history. The commission, of course, is essentially a watchdog. It can prevent architectural disaster in the city's most sensitive areas and over the years has done so. But it cannot bring architectural excellence into being. That is the task of the architects who build there. In recent times the best of them have been doing fine work with more frequency than ever before since the end of World War II.

Is there a Washington school of architecture?

The architects of the capital perennially debate this question. In stylistic terms it is a hard proposition to defend in this eclectic city. David Schwarz, whose office is perhaps the city's fastest-growing in both size and reputation, believes that Washington architects are more likely to take their lessons in urbanism from European models than from New York or Chicago. He puts considerable emphasis on the impact of the height limit.

The boring postwar commercial blocks of K Street were produced because "people were building New York stuff and cutting it off at 12 stories," Schwarz says. He describes his quest and that of some of his local colleagues as achieving "a vertical architecture in a horizontal envelope."

Roger Lewis, who teaches architecture at the nearby University of Maryland and writes a column for the real-estate section of *The Washington Post*, has scolded Washington architects for their conservatism, lamenting the city's lack of adventurous works. A look at Bethesda, however, is likely to make one feel that a little re-

straint is not necessarily a bad thing.

If there is a Washington school, it is more a matter of approach than style, and has a lot to do with relating the present to the past. The city's fine stock of Neoclassical and Beaux Arts buildings is making its presence felt in the most recent examples of serious Washington architecture. Hartman-Cox, the most influential of local firms, is leading a return to Neoclassicism and is making no apologies about it.

Many of the local architects have been in Washington a long time and are genuinely fond of their city and the work of their illustrious predecessors. Theirs is a contextualism that is more a matter of affection than ideology.

Visiting architects do not always admire or apply this approach. It is a local cliché that out-of-towners save their worst work for Washington. Shortly after receiving the AIA's gold medal, Romaldo Giurgola built a brooding, starkly Modernist Marriott hotel on a key site just behind Pennsylvania Avenue, across from the Willard. It is an abomination. An exception is the East Building of the National Gallery, but more recently the Pei office has fallen prey to the "worst work for Washington" rule in an office tower in Rosslyn that tries to reconcile the chaotic surroundings, but winds up reflecting them.

A metaphor for the contrasting approaches to Washington's development can be found in the history of the AIA headquarters building. Those who remember the late 1960s controversy in which Giurgola's competition-winning design for the building was rejected by the Fine Arts Commission are likely to remember it as a victory of bureaucracy over art. Fewer remember that it, and the built version by TAC, required demolition of the Lemon Building, a lovely 19th-century brick structure up 18th Street from the Octagon.

Says Warren Cox ruefully, "no Washington architect would do it that way today." Contemporary Washington's way would have been to renovate the Lemon Building and either remodel or replace the modest little headquarters building that faced the Octagon across a courtyard, thereby creating something deferential to the old buildings in scale, materials, and spirit. It is this kind of sensitivity that augers well for Washington in the new decade. This is a city in which the past is always present. Recognition of this fact is the first step in the creation of a true Washington architecture. Washington has attracted some skillful and thoughtful architects to do the job. If their names are not household words, it may be because stardom emerges from the building of skyscrapers. Washington, blessedly, has no such skyscrapers. □

NEIGHBORLY BY DESIGN

A large multiuse project successfully inserted into a venerable historic area.

Mixed-Use Development

Washington, D. C.

Keyes Condon Florance, Architects

Stately 16th Street is on axis with the White House and at its lower end possesses a fine residential scale as well as buildings of historic importance. The neighborhood community, therefore, first opposed the plans of the National Wildlife Federation to construct a large new office building there. By skillfully knitting new and old, the architects have made the Federation complex a welcome neighbor.

The project was expanded to include the first new apartment building to be constructed for the area in years. It, the new office building, and the Federation's former 1950s headquarters are linked by a large plaza opening from a side street. The new building's 16th Street facade has both dignity and solidity, with a banded ashlar limestone base and brick above. At full height it aligns with taller neighbors, while the strongly accented entry element matches smaller buildings next door.

ARTICULATE APARTMENTS

A handsome addition to an elegant avenue.

The Saratoga

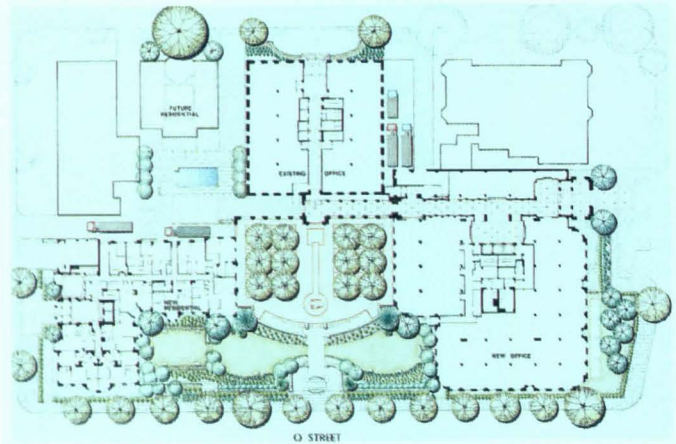
Washington, D. C.

David M. Schwarz, Architect

North of downtown, Connecticut Avenue is lined with handsome old apartment buildings. The Saratoga echoes their quality without resorting to direct imitation. Parallel to a side street that meets Connecticut at a sharp angle, it is seen from the avenue on the bias. Built of brick with limestone trim, it has alternating bays, balconies, and gables so arranged and attenuated as to make the building appear rich, complicated, and taller.



DAN CUNNINGHAM



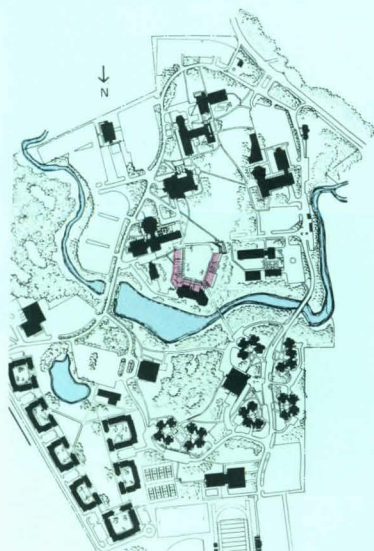
DAN CUNNINGHAM



POSITIVE SPACE



©WHEELER PHOTOGRAPHICS



Architect Tai Soo Kim's observation that the campus offered "no places to pose for pictures" when a student's parents came to visit was the metaphoric point of departure for his design of the University of Hartford's new Harry Jack Gray Center, leading to a project that reverses the more usual course by offering more than the client asked. The center began simply as a library expansion, given impetus by a grant for housing an important collection of political memorabilia. But when Kim pointed out in early discussions the building's potential as a visual focus for the motley central campus, the university also seized on its more sweeping possibilities as the nucleus of a cultural complex that would serve both campus and community. The resulting building includes, in addition to the library and political

museum, a conference center, art gallery, bookstore, small lecture theater, and studios for the art and communications departments.

As if to invoke the university's origin in a 1960s merger of several previously independent institutions, the academic campus was a follow-the-dots sprawl of stand-alone buildings. The existing library, however, lay at one end, opposite the main entrance, where its enlargement alone could suggest a natural endpoint for the cross-campus vista; the dimension added by the mushrooming program encouraged its elaboration from terminus to hub.

To exploit the project's heightened place-making potential, Kim established an ordered parti in which the library, with a new frontispiece that effectively doubles its size, remains as a backstop. From it, slightly splayed ell

Tai Soo Kim's multifaceted new complex presents the University of Hartford with a lively hub for cultural activities and lends the sprawling city campus a new visual focus as well.



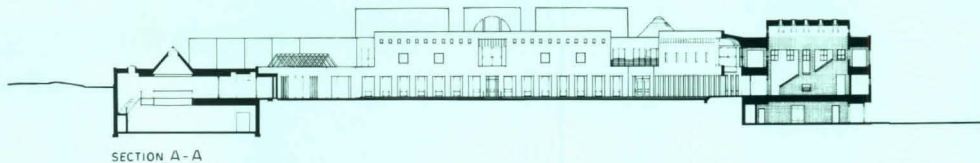
stretch toward the inner campus to create an expansive open-ended quadrangle that lends itself to both ceremony and sociability. Taking advantage of a slight slope, the U-shaped building "hides" a full story below the level of the court. The east wing presents itself as a single story containing the art gallery, museum anteroom, and bookstore, with the museum exhibition areas and a second bookstore floor housed below grade. The library and the western wing containing the conference center and teaching facilities rise an apparent two stories.

In keeping with its low profile, the space-defining facades the center turns to the commons are restrained textured-brick "screens" that reinforce the sense of enclosure. At the same time, though, deftly placed openings present forceful reminders of the building fabric

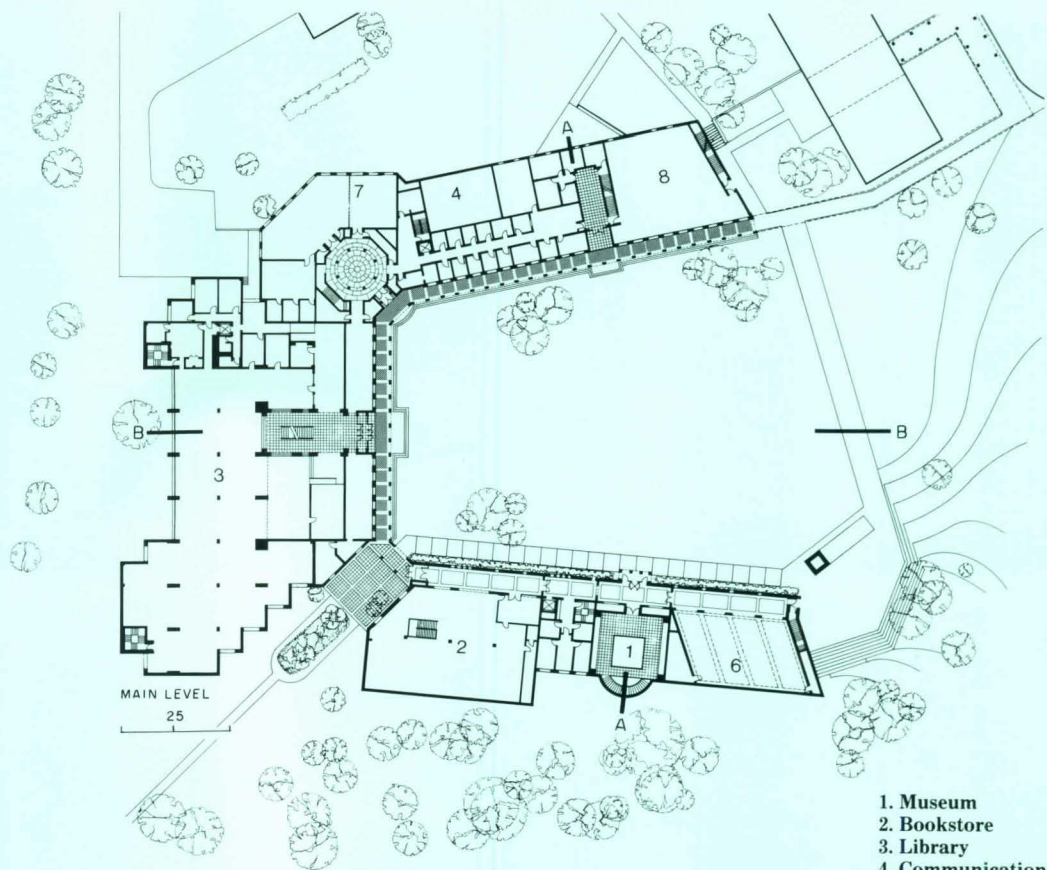
behind. The two-story elements, for example, are at once anchored and buoyed by a ground-level colonnade, while large hollow squares at their midpoints disclose half-vaults at the second-floor perimeters, where small high windows in dentil-like rows counterpoint widely spaced square windows below. Across the court, the east wing's triads of ceiling-high glass reprise an entry portico that announces the quasi-public museum and art gallery.

The center's outer repose carries through to serene interiors rendered in exposed concrete masonry with meticulous detailing of white oak, mahogany, and, on weather faces, teak. But the surface restraint gives way to spatial exuberance in the "surprise" spaces—made special by the literal outbursts of their roof treatments—that Kim contrived for each seg-

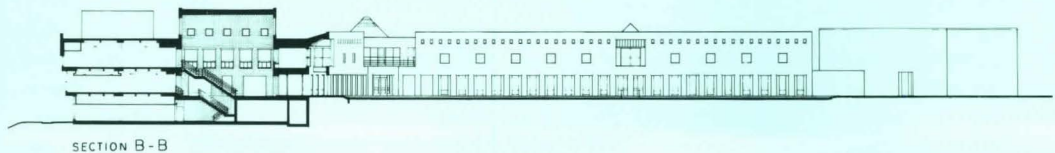
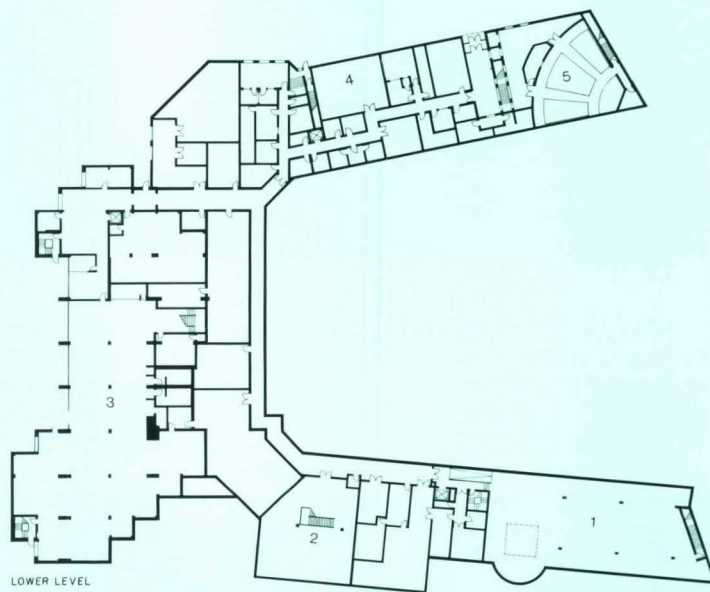
Unembellished planes and simple geometry give the U-shaped building framing the Gray Center's oversized cloister an outward serenity that understates its function as a cultural hub. Its pivotal role is supported by a site (plan opposite) that links the central campus and the dormitory area across the brook pond to the north.



In addition to the ground-level arcade, the center's two-story facades are enlivened by large square openings that interrupt the half vault along the second-floor perimeter (photos above) at the library's central atrium and the west wing's elaborated stair hall. At the corner, an exterior balcony and a stunning rotunda (opposite) introduce a conference center meant to draw the local business community.



1. Museum
2. Bookstore
3. Library
4. Communications (music library above)
5. Lecture theater
6. Art gallery
7. Conference center
8. Graphics studio







Like the exteriors, the Gray Center's interiors make the most of straightforward forms and materials. Used throughout, smooth-faced concrete block and beautifully crafted natural wood achieve elegance in such "special" spaces as the lanterned atrium that penetrates the library (right and below) and the skylit cross hall through the west wing's teaching areas (above).



ment of the building. The most predictable is the white-walled gallery, which draws natural light from sawtooth monitors angled to true north. Adjacent to it, the museum lobby is capped by a pyramidal skylight over a well leading to the exhibits below. In the library, a central stair becomes a progress through a generous atrium crowned by a lantern, while a similar if more modest treatment transforms the stair hall in the building's west wing. The grandest of the special spaces, however, is the conference center's columned rotunda, an elegant reception area that not incidentally also affords circulation among the meeting rooms.

The sum is a complex enriched both by memorable places, inside and out, and by its reticent but distinctive frame. "Photo opportunities" abound . . .

MARGARET GASKIE



An interior arcade draws a fine line between the east wing's perimeter corridor and the inner edge of the art gallery at its southern end (left). Angled roof monitors that admit controlled natural light from north-facing skylights also suspend partitions as needed to subdivide the 3,500-square-foot gallery's open floor plan.

Harry Jack Gray Center, University of Hartford, Hartford, Connecticut
OWNER: University of Hartford
ARCHITECT: Tai Soo Kim Associates—Tai Soo Kim, chief designer; Peter Ernst, project manager; M. Virginia Chapman, Ira Hessmer, Paul Tackowiak, Victoria Steven, Woo Chun Ra, designers
ENGINEERS: Burton & Van Houten Engineers, Inc. (structural); Savage Engineering, Inc. (mechanical/electrical)

CONSULTANTS: Staples & Charles (museum); William Lam Associates (artificial lighting); King-Lui Wu (natural lighting); BBN Systems & Technologies Corp. (acoustics); Zion & Breen Associates (landscape)
CONSTRUCTION MANAGER: Industrial Construction, Inc.

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GETTING AWAY FROM IT ALL

Inspired by regional models and the best of the past, architects are designing resorts that offer the stuff of dreams.

PHILIP ESCHLACH



To scale down mega-resorts like the Caribbean Beach Resort, architects are organizing them into villages.

If we could fit the current generation of vacationers on a couch and analyze them as a group, we would discover an interesting pattern to their fantasies. Diversity abounds, but a common thread ties various dreams together. People want to get away—from their everyday lives, the rat race, the 20th century. They want to go back to simpler times. At least for a week or so.

"Fantasy always relates to something you remember," explains Gerald Allison, a principal of Wimberly Allison Tong & Goo, a Newport Beach, California, architecture firm that has been designing hotels and resorts for over 40 years. One of Allison's most recent projects, the Grand Floridian Beach Resort in Orlando, is a good example of this. Borrowing forms and details from impressive Victorian hotels, it returns visitors to an era that many Americans remember (at least through old photographs and written accounts) as being less hectic. Whether the 1890s were indeed that way is irrelevant; what is important are the warm and fuzzy associations most of us have developed with turn-of-the-century architecture. Today's resorts offer the stuff of dreams, not historical reality.

Fantasy, then, is the sizzle that sells vacations, and it comes in all varieties. The unabashed historicism of the Grand Floridian is just one kind. The Hyatt Regency Scottsdale, designed by Hornberger Worstell & Associates, represents another. A clearly modern structure with exposed concrete block and flat roofs, the Hyatt nonetheless offers its fair share of escapism. Elaborately landscaped courtyards, multilevel pools, and dramatic waterfalls create a man-made garden in the middle of the Arizona desert. The final touch is a set of glass-wall panels that slide out of the way so interior spaces merge with the outdoors. By eliminating barriers between inside and out, the architecture sends a powerful message to guests—one that says this place is such a paradise, there is no need to separate people from nature.

Mark Hornberger, the design principal in charge of the Scottsdale Hyatt, likes to call the project a "place-adapted" resort, as opposed to a theme or fantasy resort. "Theme projects tend to have easily understandable images," says Hornberger, "and fantasy resorts emphasize nonarchitectural experiences such as dolphin rides and gondolas." A place-adapted hotel, on the other hand, relates its architecture to the environment and design traditions of the region in which it is located.

Another example of this approach is the Inn at Langley, a small project that defers to its residential neighbors on one side and dramatic views of Puget Sound on the other. Architects Gaylord Grainger Libby O'Brien-Smith took inspiration from the post-and-beam building tradition indigenous to both the Pacific Northwest and Japan. By blending elements from the West and the East into a single design, the inn becomes representative of a still imaginary place called the Pacific Rim, a region that exists mostly in the minds of trade representatives and cultural ambassadors.

Sometimes a piece of architecture not only reflects local building traditions, but helps establish an identity for a community. Such a work is Graham Gund's Waterville Valley Town Square and Golden Eagle Lodge. The dual project, which includes a hotel and a retail center, serves

as a traditional New England commons for a town that had grown up without much of a focus. For residents the Town Square is a much needed gathering place; but for hotel guests it is a bit of fantasy, a Currier & Ives image come to life.

Creating a sense of community typically has not been a function of hotels. A growing number of resorts, however, are using the village model to bring people together. Courtyards, building clusters, and, in the case of the Waterville Valley complex, a village commons are elements being borrowed from residential sources for use in vacation projects.

One reason for the growing popularity of residential models in hotel design is their usefulness in organizing large projects into easily understandable parts. Breaking down sprawling resorts into individual compounds or villages reduces their scale and offers architects the chance to play variations on a design theme. Architects Fugleberg Koch used such an approach in designing the Caribbean Beach Resort at Walt Disney World (above). By organizing the 2,112 guest rooms in this mega-project into five villages (each designed in a different Caribbean island vernacular), the architects created a sequence of experiences that takes guests from one end of the 200-acre resort to another.

Not too long ago, resorts were the domain of architects who worked almost exclusively for the hospitality industry. The 1980s were good years for these architects, as the number of hotel and motel rooms built in the nation nearly doubled, from 83,400 in 1980 to 155,800 in 1985 (according to figures supplied by the accounting firm of Laventhol & Horwath). Though construction is down today (only 108,200 rooms are forecasted for 1990), architectural luminaries like Robert A. M. Stern, Michael Graves, and Antoine Predock are bringing new limelight to the field. Only time will tell whether or not the hotels and resorts they whip up will break innovative stylistic ground. **CLIFFORD A. PEARSON**



CONTINUING A GRAND TRADITION

Wimberly Allison Tong
& Goo turned back the
clock to the late 19th
century when it
designed the Grand
Floridian Hotel.

The Grand Floridian Beach Resort
Lake Buena Vista, Florida
Wimberly Allison Tong & Goo, Architects





RONALD MOORE & ASSOCIATES PHOTOS

When the client asks for “a themed resort adventure” and brings in his “imagineering” people, you know you’re not in Kansas anymore. And when he says the hotel should “project” like an actor in front of an audience, you start to wonder if you’re dealing with architecture or entertainment. But before long, you pick up the lingo: service areas are “backstage,” uniforms are “costumes,” and the entire complex is a “fantasy destination.” You’re at Walt Disney World.

The Grand Floridian Hotel could have been pure fluff—all show and no substance. It isn’t. As designed by Southern California-based Wimberly Allison Tong & Goo (WATG), the resort rings true—in both its details and its overall design. The buildings may indeed be a bit theatrical, but they are not just stage sets. Guests sitting on the hotel’s spacious verandahs, for example, can knock on the railings and window trim and find real wood.

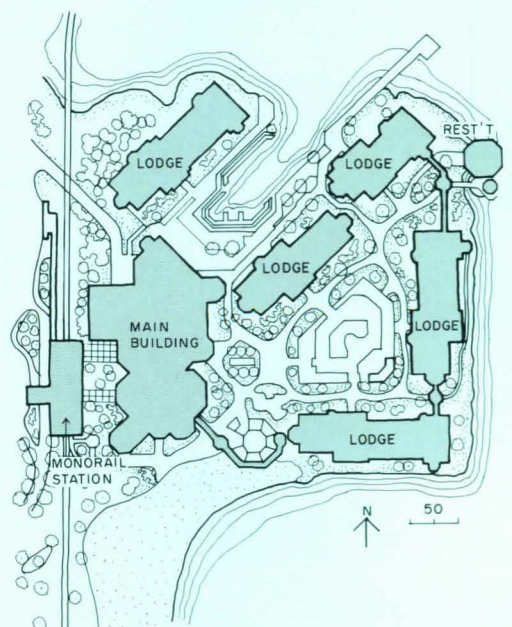
Like every good magician, though, design principal Gerald Allison had a few tricks up his sleeve. The materials used

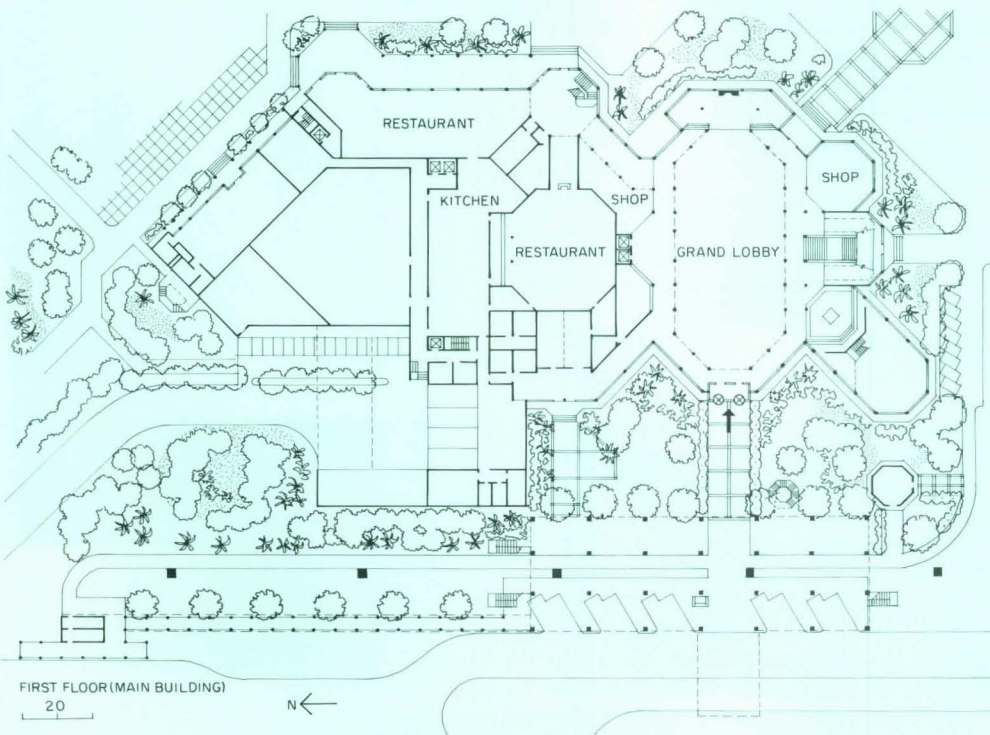
within touching distance of guests may be wood, but those used elsewhere are mostly fiberglass. The central Florida climate is hard on wood, so Allison used it sparingly.

After considering a number of Asian themes for the resort, Disney eventually looked to models closer to home, in particular expansive Victorian hotels such as the Grand Hotel on Mackinac Island, Michigan, the Del Coronado near San Diego, and the Bellevue Biltmore, just 80 miles away in Clearwater.

Allison borrowed a sense of casual grandeur from his Victorian sources, imitating the way they could be both big and informal. Without being literal, he appropriated specific forms—like cupolas, dormers, and octagonal towers.

The resort’s program originally called for 750 guest rooms divided among a main building and five lodges. When Disney asked for another 150 rooms, Allison solved the problem without changing the number of buildings or their footprints; he merely inserted the extra rooms under the project’s expansive red roofs and turned





false dormers into real ones. The sloped ceilings and distinctive windows in these rooms give them the feeling of “grandma’s attic,” says Allison, and have made them the most popular accommodations in the resort.

Because the Grand Floridian is connected to other Disney hotels as well as the Magic Kingdom and EPCOT by a monorail, WATG had to deal with a futuristic transit system in a 19th-century-revival environment. The architects decided to basically hide the monorail—in a structure modeled after a Victorian train station. The device works, but only when the streamlined trains aren’t zipping by.

The hotel’s most dramatic interior space is the grand lobby with its 85-foot-high ceiling, three domed skylights, and encircling balconies. Needless to say, the Victorian theme is maintained throughout the interiors, although the color scheme is lighter and less heavy than typical late 19th-century décor. “We wanted a seamless kind of design,” explains Allison, “in which you can’t tell where the architecture



stops and the interior design begins.”

All of the major buildings are steel-frame with poured-in-place floors and masonry walls. The total budget for the project was \$100 million or about \$100 a square foot. Construction costs came to about \$85,000 per guest room, an excellent figure for a luxury hotel. **C. A. P.**

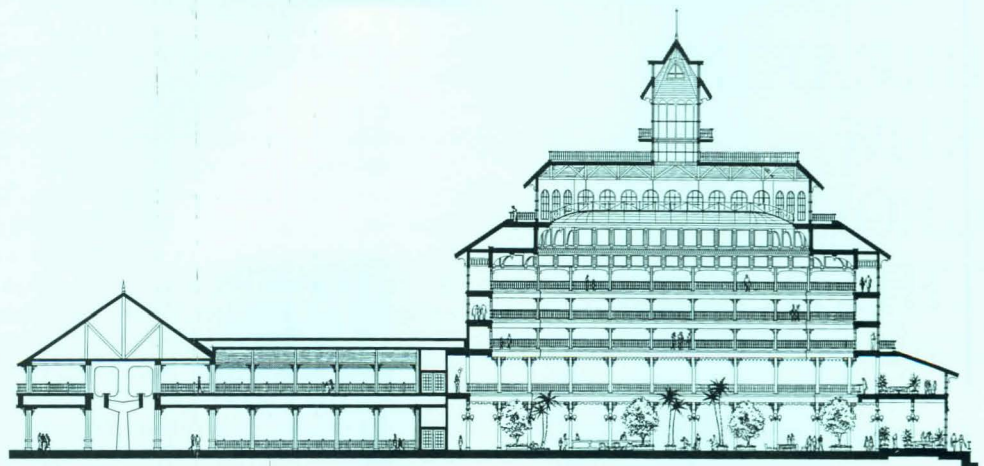
*The Grand Floridian Beach Resort
Lake Buena Vista, Florida*

OWNER: Disney Development Company
ARCHITECT: Wimberly Allison Tong & Goo—Gerald Allison, design principal; Michael M. S. Chun, principal-in-charge; Charles Corwin, James Loft, project designers; Emmanoel Francisco, project manager

ENGINEERS: Olsen, White & Associates (structural); Tilden, Lobnitz & Cooper (mechanical); Dyer, Riddle, Mills & Precourt (civil)

CONSULTANTS: Peridian Group (landscape design); Intradesign (interiors)

GENERAL CONTRACTOR: Frank J. Rooney



The main building features a five-story atrium (top) and a connection to the elevated monorail, dressed as a Victorian train station (opposite). The building accommodates 81 luxury guest rooms, while the lodges house an average of 164 guest rooms each.



BREAKING NEW GROUND IN THE DESERT

At the Hyatt Regency, Hornberger Worstell created a desert oasis by opening up the building and adding lots of water.

Hyatt Regency
Scottsdale, Arizona
Hornberger Worstell & Associates,
Architects

Best known for its soaring atrium hotels, Hyatt International learned how to hug the desert plain while working in the Phoenix suburb of Scottsdale. Instead of building up, it spread out.

Such a design strategy was dictated by a three-story height limit, which both owner and architect felt was appropriate for the site. "A tower in the middle of the desert would not have been right," says John Nicolls, Hyatt's senior vice president for architecture and design. Architects Hornberger Worstell, though, managed to get an extra floor onto the project by building up land in front of the hotel and creating a sloping site on terrain that had once been perfectly flat. The result is a structure that reads as three stories on the front and four on the back.

Because the hotel is large (500 rooms) and includes several restaurants, shops, a health club, 37,000 square feet of conference space, a 14,500-square-foot ballroom, and even a daycare center, keeping everything within reasonable walking distance was a challenge. The solution lay in organ-

izing the entire structure into eight wings enclosing six courtyards. This plan kept the length of the building down to 800 feet.

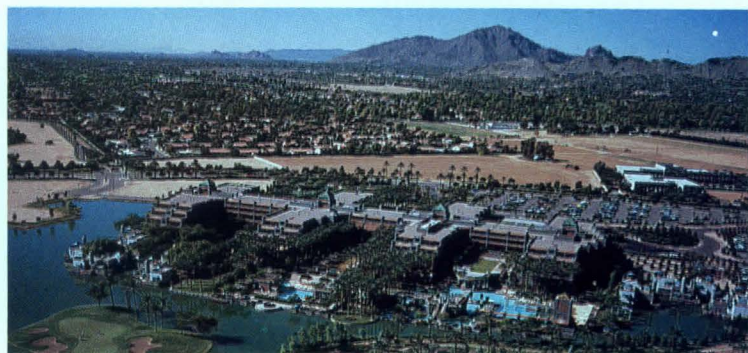
To make the most of the arid Arizona climate, design principal Mark Hornberger broke down barriers between indoors and out and extended interior spaces into neighboring courtyards. By using a commercially available sliding-glass storefront system, the architect was able to completely open the lobby to the outdoors.

The architects further adapted the building to its climate by using red-cedar brise-soleils and awnings, and making sure pedestrian pathways are in the shade during summer months. They also designed special air and light monitors over the hotel's four mini-atriums and then commissioned the Artificial Sky Lab at the University of California to run daylighting studies of models of the monitors.

Though clearly aware of the nearby Arizona Biltmore Hotel, Hornberger devised his own variation of that landmark's famous concrete block. By using three different sizes of split-faced concrete block and



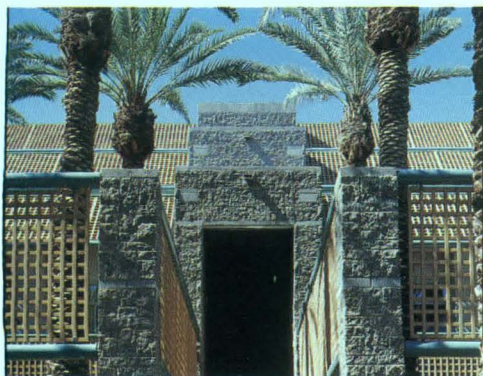
SALLY PAINTER PHOTOS, EXCEPT AS NOTED



A major commitment to landscaping and water features was a key element in creating a desert oasis that would serve as a destination resort, says Hyatt's John Nicolls. One- and two-story cottages called "casitas" (top, foreground) provide flexible accommodations for small groups of guests near the water's edge.



Architect Mark Hornberger calls the Hyatt Regency a “place-adapted” resort that responds to its particular environment by bringing the outdoors inside. A storefront system in the lower lobby (above), for example, lets wall panels slide out of the way so the interior can open onto an outdoor plaza.



laying them in a mosaic pattern, he gave the material a more expensive ashlar look. The effect of the material is quite handsome, especially when coupled with the red-cedar trim used throughout the hotel.

Being a desert oasis, the hotel boasts elaborate landscaping, including over 400 imported palm trees. Landscape architect William Callaway of The SWA Group treated each courtyard as a separate experience, emphasizing passive activities in some and active ones in others. Commanding most of the attention are the water features, which cover more than an acre. “We didn’t feel that a Polynesian pool with tropical plants was appropriate for this climate,” says Hornberger, “so we convinced Hyatt to let us do a more architectural pool with multiple levels and pavilions.”

While the main building houses most of the guest rooms, the hotel also provides eight “casitas” along the edge of the resort’s lake. These one- and two-story cottages offer two or four bedrooms that can work either together or separately.

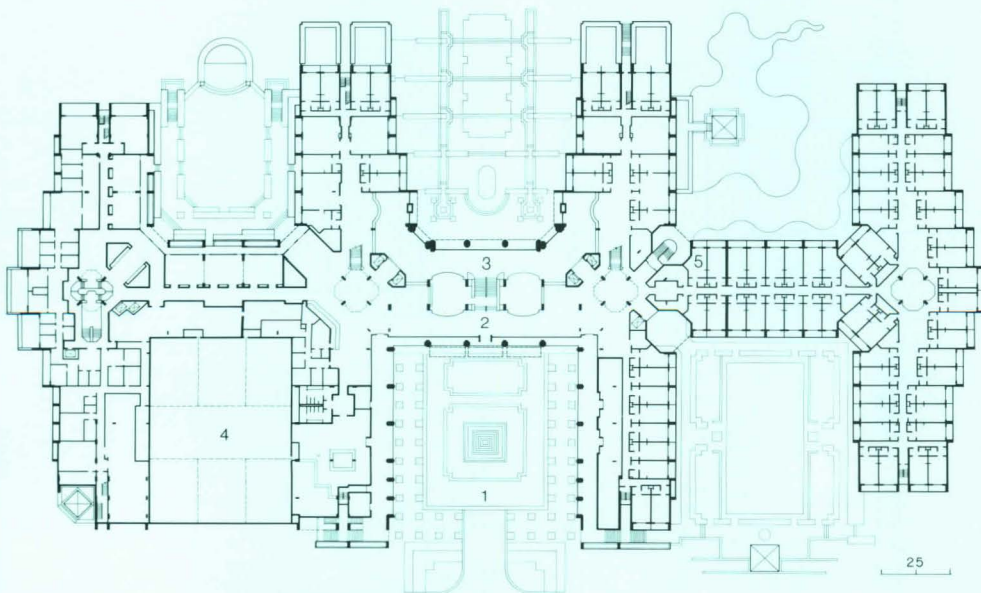
Using simple materials in a repetitive

way and concrete-frame construction, Hornberger was able to complete both design and construction of the project in about 21 months. Hard costs including landscaping and pools came to \$45 million, or about \$89,000 per room. C. A. P.

Hyatt Regency
 Scottsdale, Arizona
OWNER: Hyatt Hotels
ARCHITECT: Hornberger Worstell & Associates—Mark Hornberger, design partner; John Davis, project director; Darwin McCredie, project designer; Lynn Mezzatesta, John Chin, Irene Lo, Victor Smeltz, Susan Shafer, Jerzy Wollak, project team
ENGINEERS: Martin, Middlebrook & Nishkian (structural); W. L. Thompson (mechanical/electrical); Collar, Williams & White (civil)
CONSULTANTS: The SWA Group (landscape design); Lee-Rovtar Associates (interiors)
GENERAL CONTRACTOR: Turner/Transcon Construction



©STEPHEN FRIDGE PHOTOS THIS PAGE



To keep the hotel as compact as possible, Hornberger organized the building around six courtyards (plan left). Landscape architect William Callaway of The SWA Group gave each outdoor area its own identity with desert plants and features such as waterfalls (above).

- 1. Entry court
- 2. Lobby
- 3. Lower lobby
- 4. Ballroom
- 5. Guest room

PACIFIC RIM REGIONALISM

A country inn near Seattle blends the Northwest with the Far East.

The Inn at Langley
Whidbey Island, Washington
Gaylord Grainger Libby O'Brien-Smith Architects

The Pacific Northwest, sitting between the Midwest and the Orient, has become more crossroads than outpost. This 24-room inn on ruggedly beautiful Whidbey Island, 90 minutes from Seattle, expresses that fact everywhere. Though clearly in the Northwest tradition, it incorporates Japanese motifs, inside and out.

This fact is first stated in the entry gate to the dining room with its wide eaves, simple posts, and projecting beams—a design motif echoed in the gable ends of the building itself. Because the gate and dining room are at street level, the inn almost reads as a single-story building from the modest houses across the way. To the rear it drops sharply down four stories to the water, giving guest rooms spectacular views of the Cascade Mountains and nearby Camano Island.

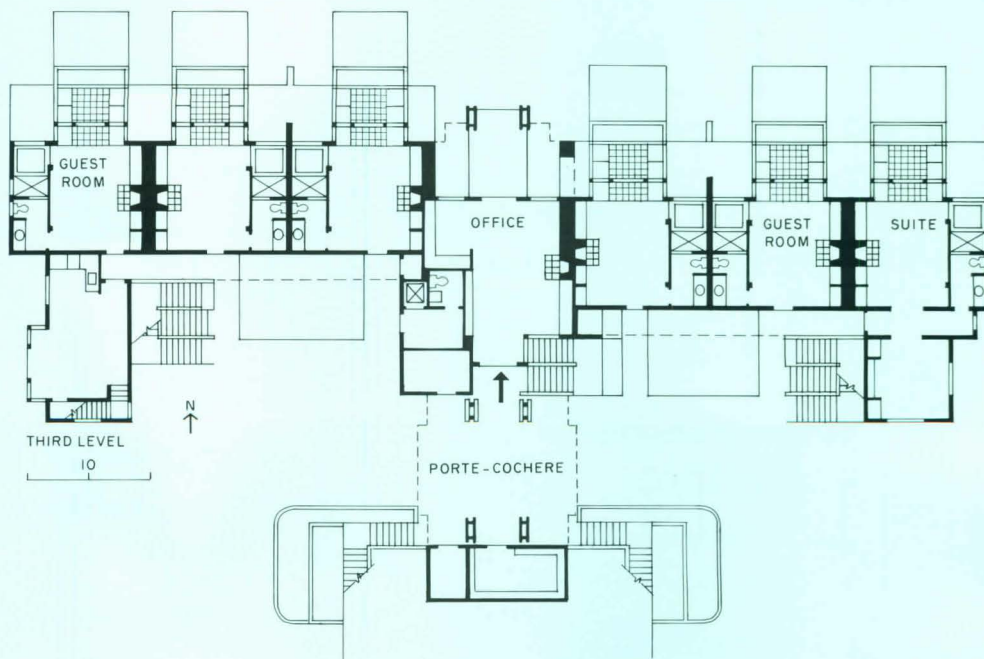
Guest-room décor is restful and coherent with a strong Japanese feeling in the muted colors, light wood trim, and translucent doors. Each room has a balcony with cushioned benches on the sides and a planter at the outward edge, simple elements that help define an outdoor space.

Naturally weathering cedar is used for roof, walls, trim, and structure, contrasting with concrete, stone, and crisp black-painted aluminum trim. **D. J. C.**

The Inn at Langley
Whidbey Island, Washington
OWNER: Pam and Paul Schell
ARCHITECT: Gaylord Grainger Libby O'Brien-Smith Architects—Alan Grainger, project architect
ENGINEER: Ratti Perbix & Clark (structural)
CONSULTANTS: Thomas L. Berger Associates (landscape); Marcia Johnson (interiors)
GENERAL CONTRACTOR: Hegenes Construction



MICHAEL IAN SHOPENN PHOTOS, EXCEPT AS NOTED

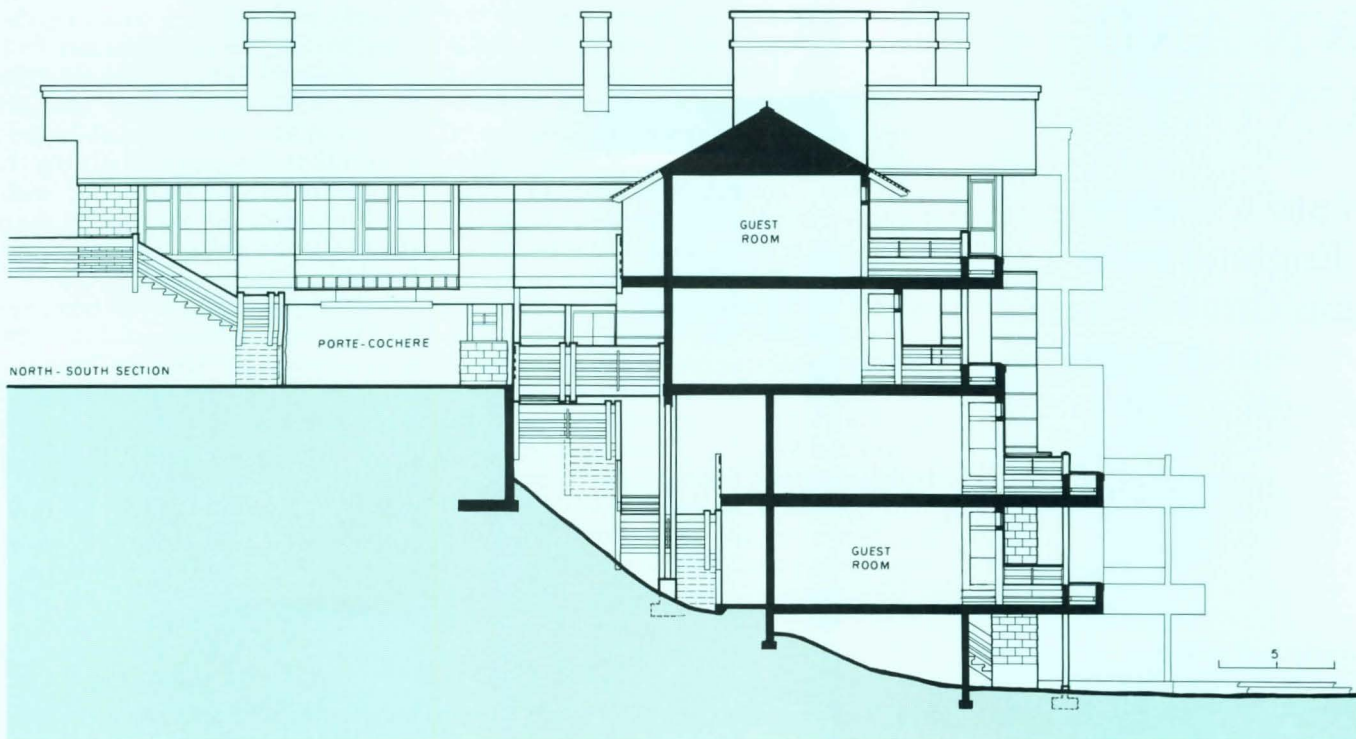




The entry gate to the dining room and Japanese garden beyond (opposite) blends East with West. Although the inn presents a one-story facade to neighboring homes, it tumbles four stories down a hill (left) on the other side of the site. A stone fireplace helps make the dining room (below) a cozy setting in all kinds of weather.



SALLY PAINTER





TOWN AND COUNTRY

To create a complete New England resort, Graham Gund designed a town center to go along with a new hotel.

Golden Eagle Lodge and Waterville Valley Town Square
Waterville Valley, New Hampshire
Graham Gund Architects

With a backdrop as spectacular as the White Mountains, the town of Waterville Valley, New Hampshire, never developed much in the way of foreground architecture or any kind of urban focus. As one of the major landowners in the valley, developer Tom Corcoran understood the need for a center around which the town could grow. And to make the building of a town center economically feasible, Corcoran coupled it with a new hotel.

The design of the Golden Eagle Lodge and the accompanying Waterville Valley Town Square fell to Boston architect Graham Gund. While Corcoran originally envisioned the lodge as a collection of small buildings, Gund felt that one large structure modeled after grand resort hotels of the turn-of-the-century would stand up better to the mountains in the background.

Like many of those older hotels, the Golden Eagle Lodge rambles informally, in this case following a ridge on the site (above). "We wanted the hotel to echo the shape of the mountains," explains Gund. "That's why the elevations start low, rise

to peaks at the towers, then drop down."

By bending the 175,000-square-foot lodge around a lawn, Gund provides a welcoming facade, while at the same time bringing natural light into the double-loaded interior corridors. An archway cutting through the central portion of the hotel leads from the front courtyard to a pond in the rear of the site and supplies another touch of informality to the design.

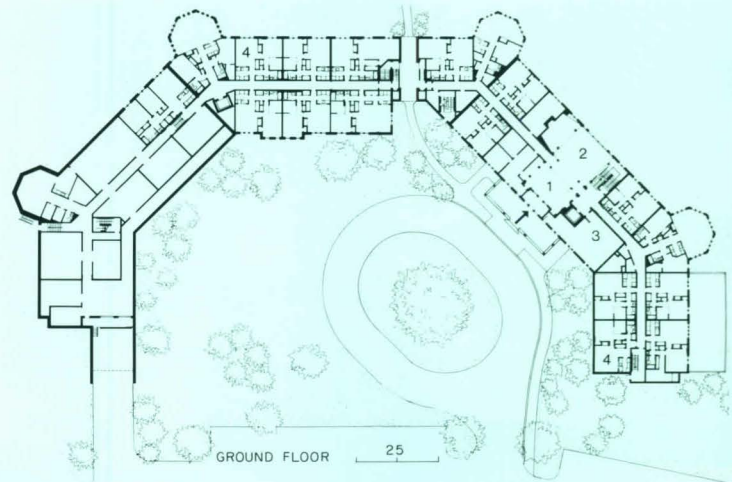
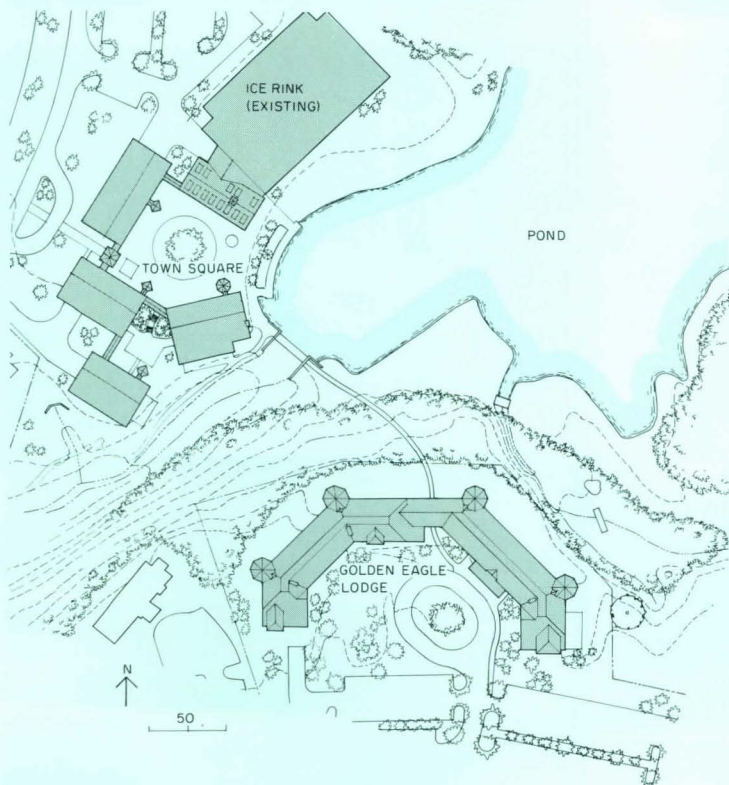
Public spaces inside the hotel are comfortable, but less successful than the exteriors. Posts with "tree-like" brackets support a "canopy" of wood beams in the lobby, but come across as heavy-handed rather than nature-inspired. An inglenook with a large stone fireplace makes a more valuable contribution to the lobby.

With facilities for downhill and cross-country skiing, an indoor swimming pool, and a skating rink, the Golden Eagle Lodge offers plenty of recreation. But the resort also boasts a more unusual amenity—a mixed-use development called Waterville Valley Town Square (opposite, bottom). Linked to the hotel by a foot path, it



©DAVID HEWITT PHOTOS





- 1. Entry lobby
- 2. Main lobby
- 3. Ski lockers
- 4. Guest room



serves as a traditional New England town center for the entire Waterville area. Although designed and built at the same time by the same people, the Town Square offers a number of contrasts to the Golden Eagle Lodge. While the hotel is a sprawling and casual structure, the Square is a collection of five compact buildings tightly arranged around a small plaza. And instead of turning to late 19th-century architecture for inspiration, the Square looks to colonial New England sources. If the former represents the country, then the latter stands for "town," says Gund. One is informal, the other formal.

The 146,000-square-foot town center includes restaurants, shops, and a post office on the first two floors and rental housing for resort workers on the top two. To emphasize the public character of the complex, Gund tied four of the buildings together with an arcade on the ground floor and a covered walkway directly above. The fifth building is set back from the others to help define a second, lower courtyard. Both the Golden Eagle Lodge and the

Town Square are steel-frame structures with precast concrete decking. By using repetitive structural systems (and only right angles for the Town Square), Gund kept construction costs down to \$65 a square foot for the hotel and \$58 for the town center. C. A. P.

Golden Eagle Lodge and Waterville Valley Town Square

OWNER: Golden Eagle Associates (lodge) and Waterville Valley Town Square Associates (town square)

ARCHITECT: Graham Gund Architects—Graham Gund, principal-in-charge; Richard Bechtel, project architect; Thomas Catalano, Gerry Frank, Jonilla Dorsten, Vernon Herzelle, Ric Panciera, Susan Israel, Judy Mulhern, project team

ENGINEERS: Le Messurier Consultants (structural); Zade Associates (mechanical/electrical); Philips Engineering (civil)

GENERAL CONTRACTOR: Pizzagalli Construction



Designed for year-round use, the Golden Eagle Lodge embraces a casually landscaped yard that attracts cross-country skiers in the winter. Dormers at the ends of the building (top) bring southern light into guest rooms. A front porch (opposite) picks up forms and details from old country inns in the area.

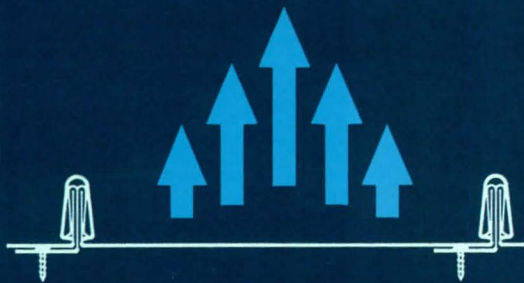
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Dallas 214/988-3300

Indianapolis 317/398-4400

Project: Hyatt Regency Grand Cayman, BWI

Architect: RTKL Associates Inc., Baltimore, MD

Roofing Installer: Ideal Roofing, Miami, FL

STICKING WITH BUILT-UP ROOFING

They're not high tech, but built-up roofs still have many advantages—if properly designed and detailed.

There are those who will argue that built-up roofs are something of a technological dinosaur when the wide variety of new elastomeric sheets now on the market is considered. But built-up retains some significant advantages, including redundancy (through use of multiple layers, which is more forgiving of installation errors), excellent puncture resistance, and more than 125 years of proven performance.

Good performance, however, is not a foregone conclusion. Though details and techniques are well established, specific areas in design and detailing that architects and contractors sometimes misunderstand or overlook are shown in these pages with comments (in red type) condensed from interviews with consultants and manufacturers.

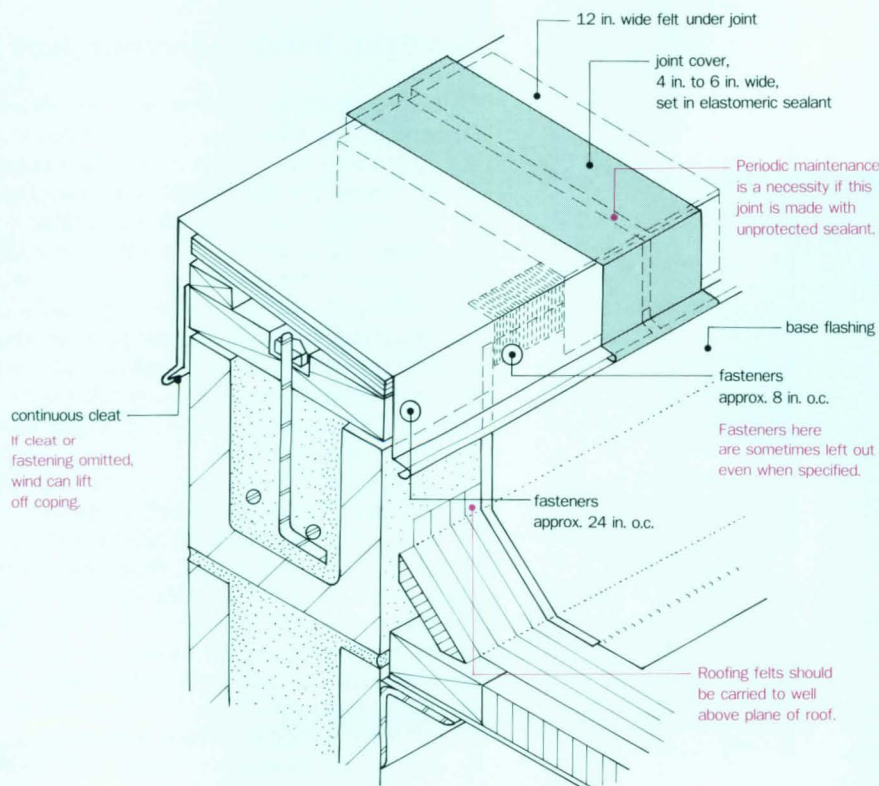
Details, however, are only as efficacious as the roof design of which they are a part. A nominally "flat" roof should "provide slope for positive drainage," says Tom

Smith of the National Roofing Contractors Association (NRCA), which he defines as "a roof free of water 48 hours after a rainfall." A one-quarter-inch-per-foot slope is recommended, taking into account that live loads (such as wind suction or snow) can reduce the slope through deflection, permitting ponding. All penetrations and expansion joints should be located on drawings so that slopes to drains can be planned and penetration details minimized.

Reroofing can raise difficult detailing questions: "Existing conditions that don't meet the requirements of manufacturers' details are frequently overlooked," says Kent Blanchard, Tamko's Director of Technical Services. These problems may include depressions that allow water to pond, and a panoply of monitors, skylights, equipment, pipes, and conduits resting at or near the roof surface. To leave these issues to the contractor invites disputes and can slow the work.

More information:

The NRCA Roofing and Waterproofing Manual has recently been updated and includes information on low-slope roofing (single-ply as well as built-up) and steep roofing. National Roofing Contractors Association, One O'Hare Centre, 6250 River Road, Rosemont, Ill. 60018 (312/318-6722). Recently revised as well, the *Built-Up Roofing Systems Design Guide* covers design, materials, and application, and is offered by the Asphalt Roofing Manufacturers Association, 6288 Montrose Road, Rockville, Md. 20852 (301/231-9050). Courses in roof design and application are offered by some manufacturers and The Roofing Industry Educational Institute, which can be reached at 14 Inverness Drive East, Suite H-110, Englewood, Colo. 80112 (303/790-7200). A roof consultant can assist in design, specifications, and site observation. Roof Consultants Institute, 7424 Chapel Hill Road, Raleigh, N. C.

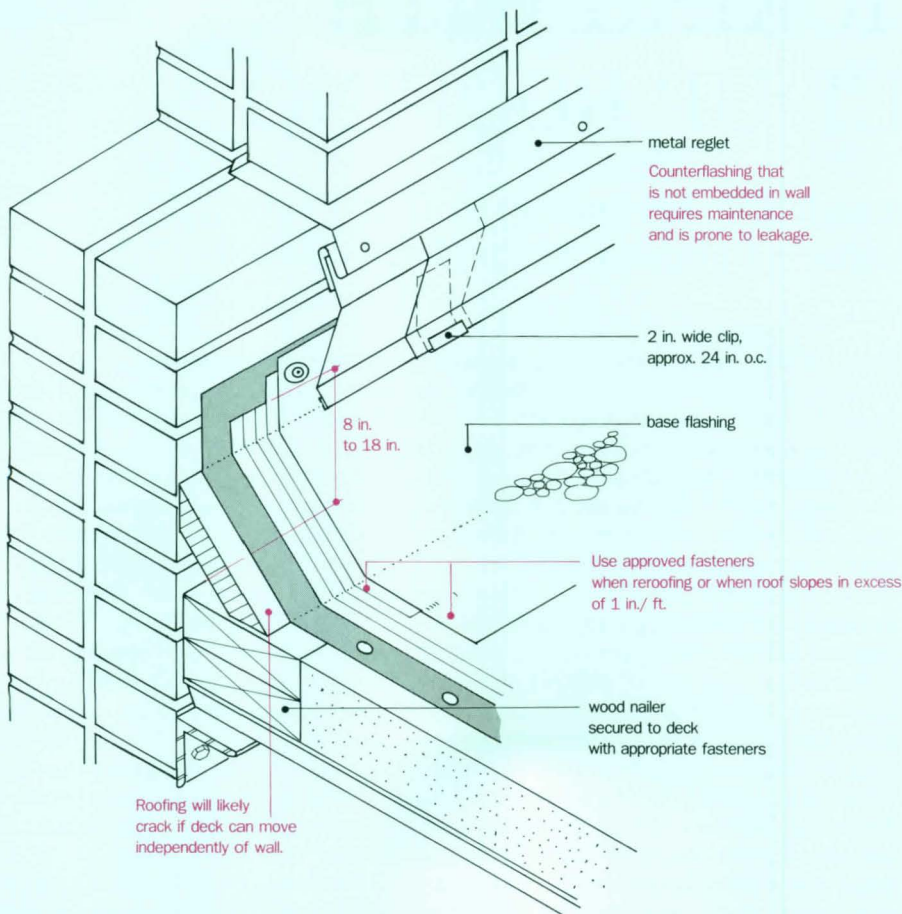


Light-metal coping

A low parapet can be an effective roof termination by positively supporting the layers of felts above the plane of the roof and providing a surface to which raised area dividers and expansion-joint covers can be readily terminated. The coping protects the top of the wall as well as counterflashing the membrane.

The roof slope should be designed and drains located to prevent water from accumulating along the parapet. Tapered-board insulation or other methods can be used to divert water to drains, which themselves should be set a minimum of two to three feet away from the roof edge. It is very difficult to protect the vulnerable roof/wall intersection if it is at the low point of the roof. Even with a sump at a drain, ponding can occur or slush can cause water to back up above the top of the roof edge. Therefore, scuppers through the parapet to rain leaders should only be used as a backup means of drainage.

Metal counterflashings or copings should be attached with concealed fasteners if possible or, if exposed, should be set in either sealant or a neoprene washer.

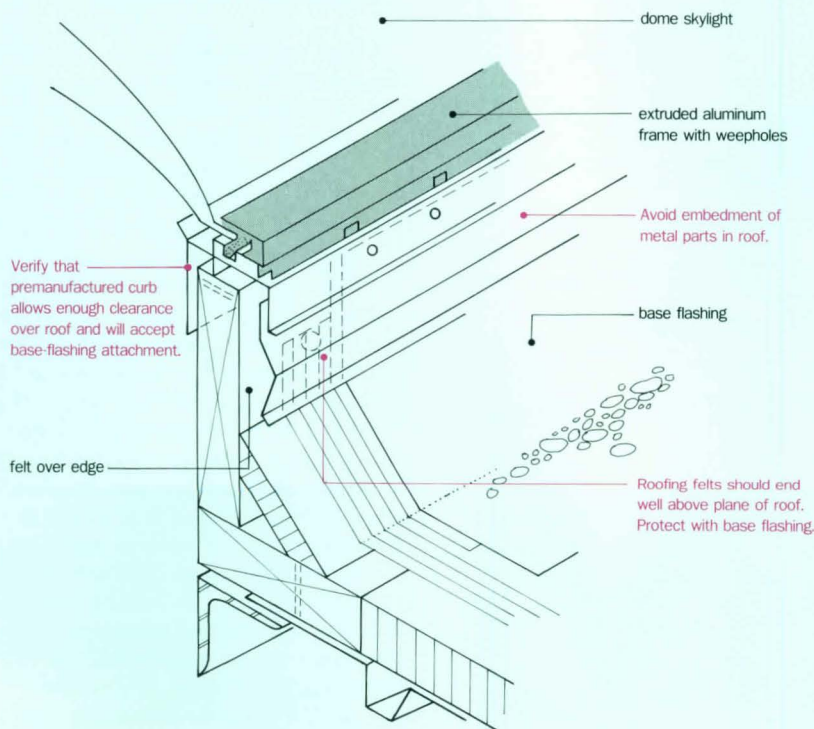


Flashing at a masonry wall

Experts say that many roof/wall problems begin because of differential movement between a wall and separately supported roof. NRCA detail E shows a flashing configuration that is appropriate in locations where independent movement is expected. The detail shown left is for cases in which the wall is rigidly tied to the roof.

Although there is a temptation to extend base flashing up the parapet as a waterproofing membrane, built-up roofing materials may not readily stay adhered to a vertical surface greater than 18 inches. Flashing that is carried at least 8 inches above the roof surface will cope with all but the most severe wind-driven rain and melting snow. If slush accumulation is anticipated to be more than about 5 inches (as, for example, near a warm exhaust hood), waterproofing the wall with compatible materials will be a better solution.

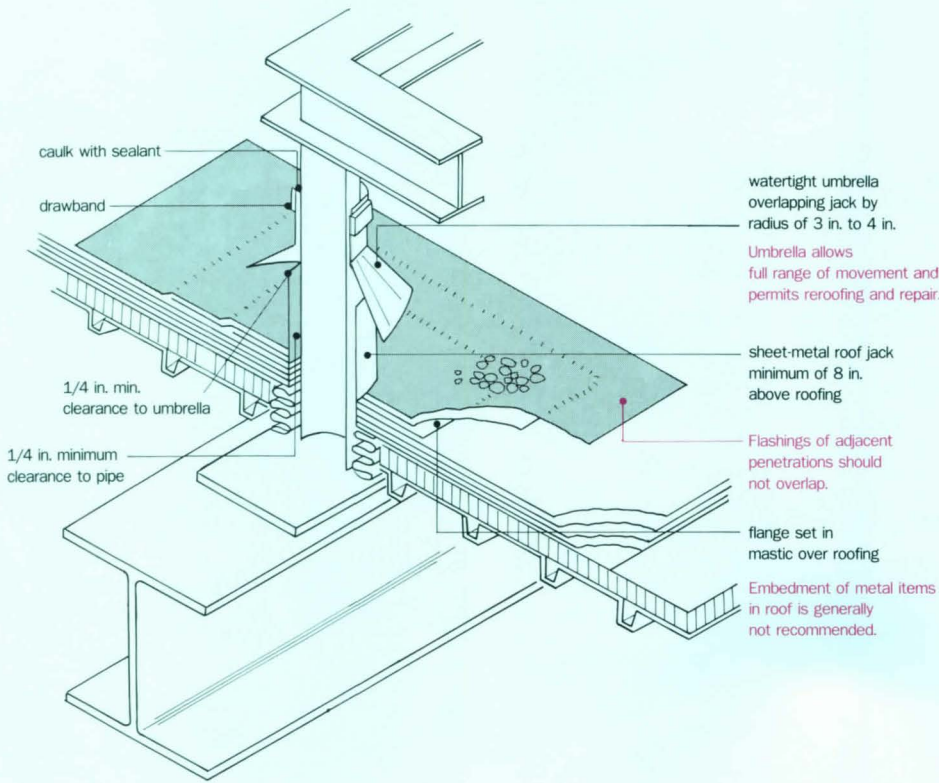
Even in areas of little rainfall, flashing that rises less than 8 inches above the roof surface will make roof maintenance more difficult. Wall coverings or counterflashing may have to be entirely removed or replaced in order to have enough space to repair or reinstall the roof.



Skylight, hatch, or smoke vent

Lightweight roofing accessories are often designed to be used in a variety of roofing configurations and systems, so it is important to carefully coordinate the manufacturer's details to the specific conditions of the project. The wood nailer or other curb construction must raise the frame of the item above its surroundings, especially if the penetration is near a low point in the roof. (The proper elevation of accessories is more often overlooked on retrofit applications.) Even with factory glazing and framing, no accessories should be expected to keep out standing water. There must be sufficient space to install a cricket or other diverter on the uphill side of a sloped deck. For existing decks that are often dead flat, it is best to create a slope away from the accessory with the use of tapered board insulation on all sides. Some preformed curbs do not incorporate methods to attach the roof's base flashing. For example, bituminous materials will not readily adhere to metals; a nailer or other means must be provided. Accessories, especially skylights, must be spaced far enough apart so that flashings are not overlapping each other.

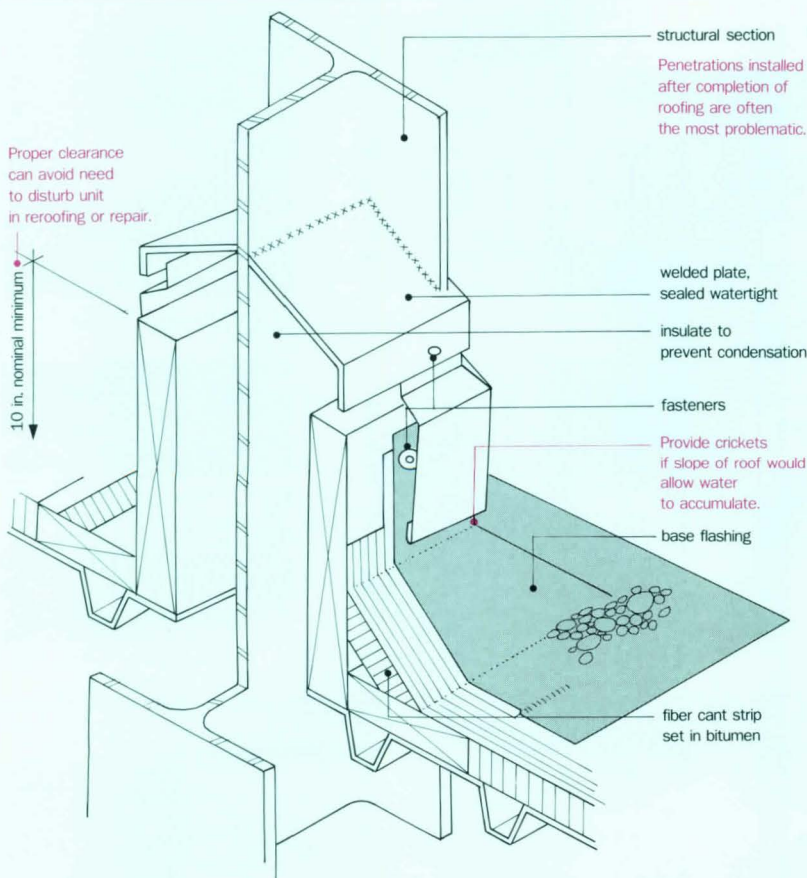
Vent-pipe flashing or equipment support



There are manufactured items that can be compared to this site-fabricated detail. To work properly the flashing must allow for movement between the roof and the penetration and repel water driven in by rain or slush backup. A light-metal framework, such as that shown, can support equipment above the roof, leaving it clear for easy maintenance and reroofing. The NRCA recommends various leg heights depending on the width of equipment to be supported.

Manufacturers and consultants emphasize careful planning of penetration locations. Closely spaced vents are nearly impossible to flash properly. Pitch pans, in which bituminous material is used as an elastomeric seal around a group of penetrations, are not recommended because they require periodic attention that they rarely receive in the field. NRCA details S and R offer alternative methods of flashing penetrations.

This is one detail in which metal is embedded in the bituminous material, a practice generally not recommended because the coefficient of thermal expansion is very different for metal and roofing materials.



Structural member flashing

A larger penetration than that shown above has certain advantages. In this case, the flashing techniques are similar to that for a vertical wall or parapet, with consequent economy of materials and workmanship. Even though many designers hesitate to use this detail because of contractor resistance to its complexity (the welded "umbrella" over the metal counterflashing), it is a detail that should be trouble- and maintenance-free for the life of the roof. The cant strip and nailer provide a firm base for attaching flashing; the counterflashing and welded plate shelter the open joint while accommodating thermal movement and vibration. It is especially economical if it supports a framework that raises equipment as well as related horizontal ductwork, conduits, or pipes above the roof. Such items (often placed on the roof surface after occupancy or over a period of years) create water dams and are extremely difficult to flash effectively. Roof consultants cite many examples of simpler details that have been unsuccessfully gobbled with roofing cement time and again.

JAMES S. RUSSELL

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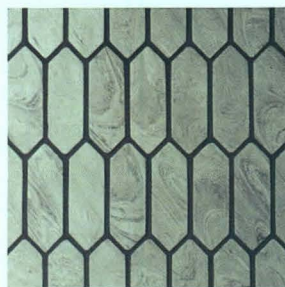
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54 Driftwood, 3" x 9" Hex



54 Driftwood, 6" x 6"



54 Driftwood, Spiral Pattern



54 Driftwood, 3 7/8" x 8"

TRIM SHAPES



FORCES OF NATURE

Whether it's an earthquake, a tropical storm, or a man-made windstorm, we're continuing to learn to cope with the occasional fury of the natural world.

In the process of designing a building, the pressures of time, budget, client needs, even simple information-overload can make it difficult to see the long-term effects of decisions. Thus, the events of late 1989 may have brought some of us up short. It's easy, for example, to take for granted the earth's *not* moving—until it moves violently. The force of hurricane or tornado winds is hard to imagine because, vast though the earth's atmosphere is, air movement is usually gentle, if not still. Once confronted, though, the remains of catastrophic events become laboratories in which the performance of construction techniques and products can be verified. To be sure, the record is not always clear, and analysts draw varied conclusions (and in the case of our current report, many of the examinations are not yet completed). Nevertheless, two of our stories draw together much that has been learned to date about two recent natural disasters, some of which are surprisingly elementary and easily implemented lessons. The forces of nature remind us that we are designing for a world that can rise up and lay bare the inadequately detailed connection or the poorly maintained roof. Our third story is a cautionary tale of how man's intervention can turn apparently benign forces into potentially tragic ones.

How powerful was it?

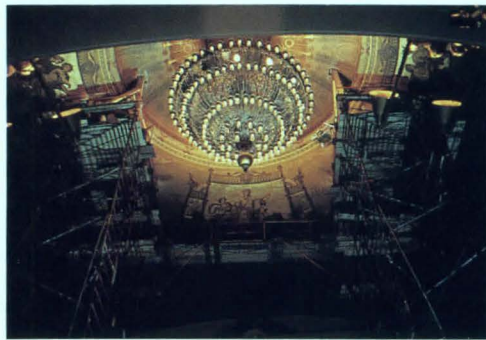
Among the controversies likely to dog analyses of Hurricane Hugo is the storm's severity. In terms of damage to both the built and natural environments, it was the biggest storm to hit the Atlantic coast since Hazel in 1954, and with damage valued at \$6 billion, it is the costliest hurricane ever. By comparison, Hurricane David destroyed \$753 million worth of property in the Bahamas and on the Gulf Coast in 1979. When Hugo hit, winds were widely reported at 135 mph along the Carolina coast, considerably above the design wind speed built into the codes. Others have argued, as Nancy Levinson describes in her report on page 144, that wind forces were within code maximums, which raises questions about the extent of damage. The storm is now considered a Category Four event on the Saffir-Simpson scale, which rates storms on a measure of one to five



Bay Area earthquake



Hurricane Hugo



Philadelphia's Academy of Music

(the most severe) by combining measures of wind speed, wave-surge height, barometric pressure, and damage.

Preparation pays off

Few residents of the Bay Area seem prepared to abandon Northern California, even after the terrifying shock of October 17. This is in part because notwithstanding news pictures of collapsed highways and burning buildings, the overwhelming majority of structures did what they were

supposed to do: protect their occupants from severe injury and death. Residents and analysts, however, are hardly sanguine as detailed on page 144. Many buildings that appear to have only minor cosmetic damage in fact require substantial repair work. Other observers fear that some apparently undamaged structures have undergone stress in hard-to-detect ways and, consequently, may be severely damaged when the next major earthquake comes along. But the Bay Area's highly organized emergency response was impressive. Schools that had been part of a state-directed seismic upgrade program were available to house the homeless; designated architects and engineers participated in a crash building-inspection program, augmenting overwhelmed local officials.

A man-made "act of God?"

In 1857, Napoleon LeBrun's and Gustave Runge's austere Romanesque Revival Academy of Music opened in Philadelphia. The building, with its exuberant neo-Baroque auditorium—modeled loosely on Milan's La Scala—has been the setting for a variety of entertainment: opera, ballet, jazz, film, dramatic readings, presidential addresses, political conventions, even a Penn-Princeton football game. A natural disaster of a sort befell the hall (described on page 146) in which man, perhaps inadvertently, has colluded. Though few would want to contemplate the tragedy that might have resulted had the roof of the 2,700-seat Academy actually fallen during a performance, it is an eventuality that *must* be considered, if future disasters waiting to happen are to be avoided.

Catastrophes are far from the most significant source of building failures. The weather and everyday wear and tear erode the efficacy of even the best detailed and constructed buildings. There are many who argue that to consider a problem from every angle and to anticipate the unexpected is too time consuming and too expensive, even when it does result in long-term rewards. The deliberative quality of architecture has long exasperated clients used to instant answers. But dire events puts such thought processes right back into perspective.

JAMES S. RUSSELL

ASSESSING “THE PRETTY BIG ONE”

The Bay Area earthquake showed that preparedness works.

News coverage showed an apparently apocalyptic picture: highway ramps collapsed, smoke billowing from listing buildings, the vital Bay Bridge out of commission. Though official estimates of damage continue to rise, the good news in the Bay Area earthquake is in the numbers of lives not lost and amount of damage avoided. The consensus of analysts consulted in preparation for this article is that earthquake criteria work. With the virtually problem-free performance of tall buildings in the recent quake, experts see past strategies as tentatively vindicated. The true test, however, has yet to come. As Richard Wright, director of the National Institute of Standards and Technology's Center for Building Technology notes, “this was not the design earthquake for the Bay Area.” The Big One is yet to come.

The overwhelming majority of structures exhibited only minor apparent damage, although architects from various local AIA chapters augmented engineers and

building officials in inspecting thousands of buildings for less evident but potentially dangerous problems. (A recent estimate is that perhaps one percent of the building stock sustained serious damage.) Unreinforced masonry buildings (built before the area's first seismic design requirements were enacted in 1933) were the first to be checked. This type of construction, with its lack of resistance to tensile and shear forces, was known to be susceptible to earthquakes (photos right). Another priority was inspection of buildings erected on clays and sands subject to “liquefaction”—soft subsoils that turn to a kind of mud (even if they are not moist) under earthquake forces, magnifying accelerations. The seriously damaged structures in San Francisco's Marina district were erected on such soils, although new structures built according to the most recent rules (which take liquefaction into account) apparently performed as designed.

Code outlook

Experts say there are a number of lessons to be learned from the quake: code officials will pay more attention to existing structures on soft soils, for example, not just new ones. Although some requirements refer to anchoring building contents, this area will likely receive more attention (top left opposite). “There is not now any requirement to retrofit bookshelves, cabinets, light fixtures, and water heaters [with restraining devices] in existing buildings,” says Patrick Campbell, chief structural engineer with the office

Continued on page 148



1 ©BOB SWANSON/SWANSON IMAGES PHOTOS



2

1. Terra-cotta sills sheared off the Southern Pacific Building in San Francisco.
2. Temporary sleeves protect damaged columns on the Southern Pacific Building.
3. Much damage to contents was due to unrestrained furnishings.
4. A ventilation fan apparently worked loose and crashed through the proscenium of the American Conservatory Theater's auditorium, in San Francisco.
- 5, 6. Repairs at the Paramount Theater, in Oakland.

THE COSTLIEST HURRICANE

Hugo will likely encourage changes in building codes and roofing details.

BY NANCY LEVINSON

Nancy Levinson is an architect and freelance writer in Worcester, Mass.

Hurricane Hugo, which swept through the Caribbean and the Carolinas in September 1989, lasted barely five days, but its effects will be felt for years. Analysts who have studied storms emphasized the difficulty of trying to classify the damage wrought by so complex an event as a hurricane. In both the Caribbean and the Carolinas, Hugo caused extensive and diverse damage to all types of buildings.

St. Croix, in the U.S. Virgin Islands, was hardest hit, experiencing sustained winds of 200 mph for nearly 13 hours. Margaret Welsh, a Program Associate with the National Trust for Historic Preservation, visited the island a week after Hugo; she was a member of a Damage Assessment Team cosponsored by the Trust and the AIA. “There appeared to be some damage to every building on the island, ranging from broken glass to complete destruction,” she reported. The Carolinas were spared so severe an assault—Hugo had by then slowed to 100 mph—but observers describe the situation there in similar terms. According to Carl Simmons, Director of Building Services for Charleston



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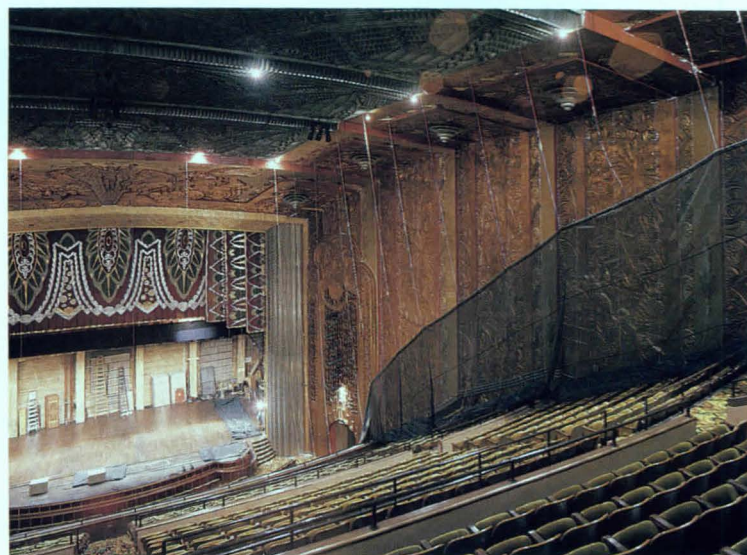
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County, “relatively few buildings here were destroyed, but it would be hard to find a structure that escaped damage.”

Roof failures widespread

Patterns of destruction did emerge, however. Dale Perry, Chairman of the Department of Civil Engineering at the Pratt Institute, sums up the most widespread building failure: “Roofing performed badly across the board. Clearly, we are not doing an adequate job in the design of roofing systems.” Everyone we spoke with echoed his concern. Architect Thomas Smith, Director of Technology and Research for the National Roofing Contractors Association, went to South Carolina after Hugo and inspected roof failures. In his opinion, “roofing manufacturers are not paying enough attention to high-wind resistance of roof systems. We have also found that architects often use Factory Mutual load requirements, but generally FM loads are less than code requirements.”

Certain roof forms proved particularly vulnerable. According to Douglas White, an architect in St. Thomas, “Gable roofs

with large overhangs can act like airplane wings. Hipped roofs with no overhangs are much more appropriate for hurricane regions.” Roof structures performed better than roof cladding. (Building frames in general stood up well.) Loose-laid, ballasted, single-ply membrane roofing was especially troublesome. Some observers contend that flying ballast damaged a good deal of property. Smith points out that the nature of single-ply membrane failure was less predictable than that of built-up roofs, in which behavior is better understood. A top priority in the roofing industry, according to Smith, is adoption of dynamic wind testing (similar to European standards) for single plys and for metal-edge flashings.

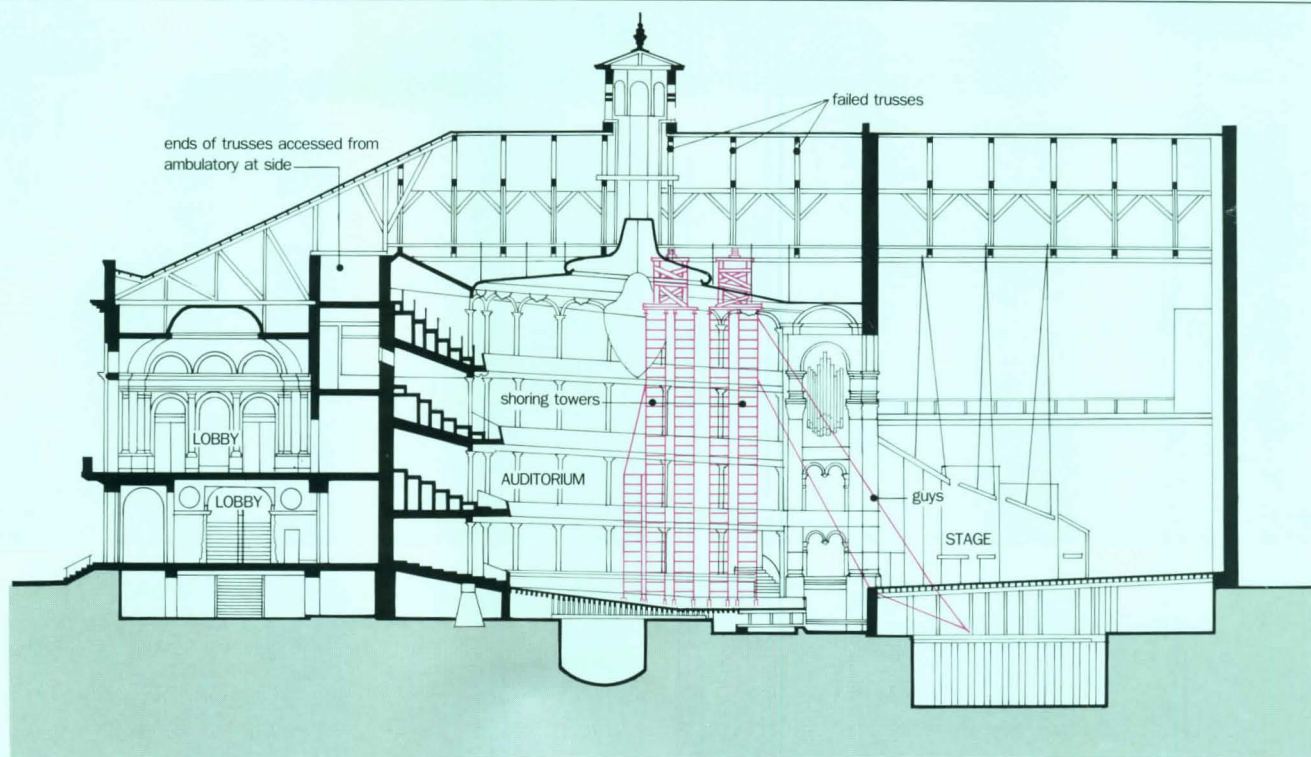
Code consequences

The hurricane exposed numerous inferior construction practices in oceanfront housing. Gered Lennon, a geologist with the South Carolina Coastal Council, was astonished by what he saw: “I never expected to see coastal structures like these. There were houses with no hurricane clips. There were houses elevated on piles—which is

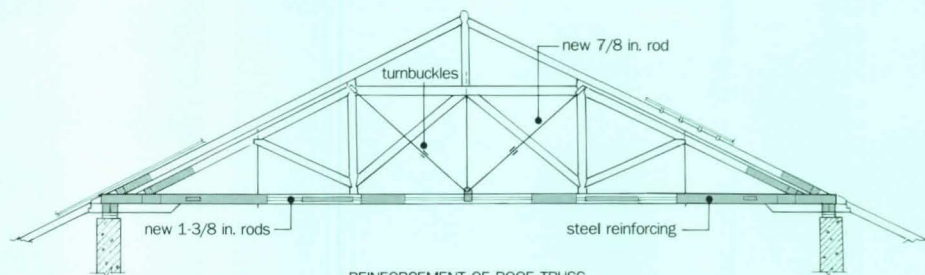
basically good—but the piles were driven only 3 feet into the ground. There were even slab-on-grade houses near the ocean.” A research team from Texas Tech University saw more of this: an elevated beachfront house connected to its piles by nothing but gravity.

Most of those we interviewed expressed confidence in the Standard Building Code, the model code used widely throughout the Southeast. And most would agree with James R. McDonald, Director of the Institute for Disaster Research at Texas Tech, when he says, “the problem is not the codes, but lack of compliance with the codes.” Still, Hugo highlighted a weakness in the SBC. Nonengineered buildings, such as single-family housing, pose a problem for enforcement officials. The SBC is basically a performance code; it specifies the loads a structure must resist. But most single-family housing is built to prescriptive standards, which specify (by indications for plywood thickness or nail spacing, for example) how a structure shall be built. It is difficult for builders to apply ex-

Continued on page 148



LONGITUDINAL SECTION



REINFORCEMENT OF ROOF TRUSS

A SUDDEN UNUSUAL FORCE

A close call in Philadelphia raises disturbing questions.

Since its opening in 1857, Philadelphia's Academy of Music has enjoyed a special place in the city's cultural life. Recently, however, this much-beloved institution, the home of Philadelphia's world-renowned orchestra, itself became the focus of a drama of a sort never seen on stage: a fevered emergency repair effort undertaken after the discovery in March 1989 that two of the hall's massive timber roof trusses had suddenly—and inexplicably—failed.

The finding of this possibly catastrophic condition came about fortuitously during a survey by Keast & Hood, structural engineering consultants for the Vitetta Group, architects that were preparing designs for the installation of passenger elevators. The engineers had especially wanted to examine the connections between the 90-ft-long Eastern white pine trusses that span the concert hall and the secondary structure of the encircling ambulatory.

Suzanne Pentz, project engineer at Keast & Hood, was examining a dust-covered truss when she noticed a crack or, more precisely, a tensile failure near its north bearing end. Pentz was alarmed. "I have seen a lot of failed wood," she said,

"but I've never seen anything like this. You could actually see the fibers separated from each other." She took photographs and showed them to Nicholas Gianopulos, a principal at Keast & Hood. He too became concerned, for the appearance of the crack told the engineers unmistakably that the failure was recent.

A condition of "imminent danger"

Two days later, on Friday, March 31st, Gianopulos and Pentz reinspected the truss and found that the damaged chord was not, as assumed, a single 12-by-14 piece of timber, but was built up of two 6-by-14s, one of which had failed entirely. "We realized then," said Gianopulos, "that 50 percent of the truss's capacity had been taken away by virtue of that tensile failure. This constituted a condition of imminent danger." Indeed, it seemed to Pentz that the crack had "widened perceptibly" since her original survey.

It was then that the routine gave way to the dramatic. March is a busy month at the Academy, and the engineers had begun their inspection just as the Philadelphia Orchestra was tuning up for an afternoon

concert. When they came back down, Gianopulos explained the situation to the management of the Orchestra Association. Then came the inevitable question. "I know it will always be a debatable decision," he says, "but I don't think any engineer could give assurance that the building was in a safe condition to be fully occupied." The Orchestra took his advice and, probably for the first time in its history, the Academy was evacuated in the middle of a performance. The same day, a round-the-clock schedule of analysis and repair was approved, both to reduce the chance of further damage, and to restore the structure to public use as quickly as possible.

The pressure never let up

Certainly to those present at the Academy's closing—musicians and concert-goers alike—the afternoon will count as memorable. But to those involved in the repairs, the following days will be remembered as still more remarkable. Cyma Corporation (as construction manager), a steel fabricator, and a scaffolding contractor were quickly hired by the Orchestra Association, which applied for a building permit and contracted for asbestos removal. Over the weekend, the engineers devised a repair strategy; in the following two and a half days their engineering design was completed. "On Wednesday, the steel fabricator got the [engineer's] drawings," recalls George Shaeffer, project director for the Orchestra. "They began measuring first thing Thursday and delivered the steel Friday afternoon. I gather they put all 40 of their shop employees to work on the job."

John Raidy, of Cyma, described the breathless schedule as the hardest part of his job. "Work was going on day and night, and so the pressure never let up . . . Every afternoon we had to plan for the night shift, to see that we had enough tools and materials so that work could go on continuously." The timetable allowed little time to order and wait for materials. "Sometimes," he said, "we had to phone all over the country looking for parts, because we didn't have the usual lead times. We got shear-plate cutters from California and shear plates from Idaho by overnight delivery."

Preventing collapse during repair

The schedule inspired unusual solutions. Nick Gianopulos remembers the Sunday afternoon he and architect Hyman Myers wanted to gauge the strength of the concert hall's plaster ceiling. They found the manager of a nearby delicatessen happy to help. "I think he was surprised but pleased to learn that the chunk of plaster he was being asked to weigh came from the ceiling of the Academy. It was his contribution to the repair effort."

Almost as difficult as the schedule were the constraints posed by the building itself. Keast & Hood's concept can be stated simply: the damaged timber truss was to be reinforced with steel, while temporary shoring towers were to support it at panel points, thus insuring against collapse during construction. The *execution* of this concept was far from simple, however, for it imperiled induplicable elements and delicate finishes.

The shoring towers were major intrusions. Each tower (photo below) rose 74 feet from the floor of the concert hall to the support points of the truss, necessitating the removal of 484 orchestra seats and the ever-so-careful penetration of an enormous hole in the ceiling.

The Philadelphia Academy of Music: exterior (top right), interior prior to repairs (middle), and interior during scaffolding erection (below). Napoleon LeBrun and Gustave Runge, original architects.



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Continued from page 144

of the State Architect, in California, "but there are requirements for anchorages in new buildings." According to Henry Legorio, an engineer who teaches in the Department of Architecture at the University of California, "We have buildings in Silicon Valley where the contents—equipment, tapes, programs—are worth more than the building itself. We also have some toxic materials. There is a need for architects to emphasize protection of nonstructural building components to clients."

Rebuilding housing; rethinking landmarks

Most experts professed little surprise at the kinds of damage encountered in the earthquake. Nevertheless, residents of earthquake-prone areas face some tough choices. San Francisco has lost about 5,000 housing units, Watsonville about 2,000 units, and Oakland about 1,500 units, and this is among the nation's most expensive housing markets. Local AIA chapters are in the process of setting up R/UDAT-style charrettes to assist the rebuilding of communities in the hard-hit Watsonville-Santa Cruz area.

Historic buildings continue to be at risk, both because they are prone to damage and because the cost of a seismic upgrade is in many cases so high that some owners can only afford to tear them down. Older institutional buildings present other challenges. They may be too valuable to replace, but, as Patrick Campbell reports, "when you look at seismic work, you inevitably get into other aspects of upgrading the building: asbestos removal, electrical and mechanical improvements. In one large building we are considering for retrofit, we have about \$8 million of seismic work, but the cost doesn't stop there. The total is about \$80 to \$90 million." But there are no hard-and-fast rules, experts say. Some seismic retrofits are straightforward, others extremely complicated.

Chris Arnold of the California Council/AIA, asserts that many wood-framed structures near the epicenter would have been spared serious damage had cripple walls (used in crawl spaces to support internal bearing walls), for example, been sheathed "using a few hundred dollars of plywood and nails," instead of being left open. Some of the wood-framed Marina-district buildings may have been weakened with the installation of ground-floor garages, which deprived the crucial lower stories of lateral shear resistance.

To put the Bay Area quake in perspective, its damage and loss of life—under 300 dead—compared to the less powerful Armenian quake, which leveled cities and killed some 50,000, indicates dramatically that California's elaborate and expensive preparations were well worth undertaking.

J. S. R.

Continued from page 145

isting performance codes to nonengineered buildings, and for inspectors to determine whether such structures are in compliance with the code. As a result, says Perry, "our design wind speed is about 100 mph, but most single-family dwellings would fail under 80 mph winds."

This situation may change soon. The Southern Building Code Congress International, which publishes the SBC, has been working since 1986 on revised rules. The Deemed-to-Comply Standard for Single- and Multi-Family Dwellings in High Wind Regions, now under review, is designed to allow small buildings to benefit from engineering expertise. According to Richard Vognild, an engineer with the SBCCI, "the Standard will make it possible to apply performance standards to prescriptive solutions." The Standard, says SBCCI, will probably be published sometime next year.

To Peter R. Sparks, Professor of Civil Engineering at Clemson University, disasters like Hugo reveal a fundamental weakness in the way building construction is regulated in the United States. In his judgment, "our current tests do not adequately reflect the way high winds affect buildings. This is a complicated subject, but, speaking generally, we need to take the process out of the political arena." Sparks believes manufacturers have too much influence and suggests that the United States could learn a great deal about this from Australia, Japan, Britain, or Canada. "What we need," he concludes, "is a long-term, disinterested testing organization that works closely with building-code authorities."

Landmarks fared better

In Hugo's path were a great many historic buildings. As the storm swept through the Caribbean and approached Charleston, many in the architectural community feared for that city's rich legacy. But the eye of the storm passed north of Charleston, and the day after Hugo, local preservationists found their historic district, the oldest in the nation, in unexpectedly decent shape. Connie Wyrick, Director of Development for the Historic Charleston Foundation, describes their relief. "Out of about 3,600 historic structures, only 16 were completely destroyed. Many were of course damaged, and 85 percent had some roof damage. Still, it seemed to us a miracle that so many performed so well."

Older buildings generally fared well. The AIA/Trust team in the Virgin Islands observed that traditional buildings often proved sturdier than modern construction, and that those older buildings that did perform poorly had been inadequately maintained. Historian George Tyson, a resident of St. Thomas and Regional Advisor to the National Trust, points out that 18th- and 19th-century structures, both masonry and wood, colonial and vernacular, were built

to withstand hurricanes. There have been, he notes, comparatively few severe storms in the Islands in this century (six, compared with more than 20 in the 18th century). As a result, new construction there is built to withstand winds of only about 85 mph. "Only two percent of historic urban structures on St. Croix were completely destroyed," says Tyson. "There is a consensus here that the newer buildings did not perform nearly as well."

To preservationists, Hugo offers more proof of what they have been saying for years: that we can learn a lot from traditional techniques. Certainly many of the building forms and details advocated by wind engineers would be familiar to the builders of old Charleston. Elevated first stories, hipped roofs, and workable shutters are common characteristics of colonial buildings in the Carolinas.

The humble shutter received much praise. Peter Sparks points out that the loss to a building of a single window can result in internal pressures strong enough to lift off the roof. "A strong shutter system can save a weak building," he says, and the HCF actively discourages replacement with storm windows. Connie Wyrick believes that shutters contributed to the survival of many old houses. "In a way," she says, "it shows that historic preservation can actually be a form of disaster mitigation."

Anticipating the worst

Planning for catastrophe is a favorite subject of Charles Harper, a principal in Harper Perkins Architects, in Wichita Falls, Texas, and a founder of Disaster Action, Incorporated. Designed to enable the architectural community to respond quickly (and without liability) to a disaster, DAI is a nonprofit corporation set up in 1970 by the Texas Society of Architects. That year a deadly tornado struck Lubbock, Hurricane Celia hit Corpus Christi, and "disaster preparedness" became a hot topic in Texas. Over the years, DAI has worked with architects in other states, helping them set up similar organizations. It has been the model for the AIA's Disaster Assistance Program, set up in the late '70s. According to Charles Zucker, Director of the Community Assistance Initiative at the AIA in Washington, "we are now actively rewriting the guidelines for our disaster response programs. One of the issues we'll be focusing on is the role of the architect." "The important thing," says Harper, "is to set up a response plan before a disaster. That is what DAI is designed to do. After a disaster, things are usually chaotic, and it's hard to coordinate disaster relief. Disaster preparedness is the key." It is also, Harper admits, an often unpopular topic. "Nobody wants to talk about a disaster until they're in one. But that makes the disaster more of a disaster." □

EXPANDED SINGLE-PLY LINE OFFERS DETAIL SOFTWARE

A roofing materials maker sums up a busy year with an every-detail-in-the-binder specification program.

Carlisle SynTec Systems will come to this month's National Association of Roofing Contractors convention with a bag full of products introduced in the past year.

New lines include HyChoice, a Hypalon (CSPE) synthetic rubber membrane reinforced with a polyester scrim. Approved for both mechanically fastened and fully adhered installations, HyChoice is hot-air welded, and resists flame propagation, oils, ozone, ultraviolet radiation, and many chemical pollutants.

The Design A fully adhered EPDM line was expanded by the addition of a reinforced .045-in. membrane that has three times the tear strength of Carlisle's standard .060 EPDM sheet. Besides upping puncture resistance, the membrane reinforcement is said to improve the wind up-lift performance of the substrate.

Improper edge detailing and the flutter that results are addressed by extensions in the Securedge line of aluminum and galvanized steel roof edge. Offered in configurations for ballasted, adhered, and me-

chanically fastened roofing systems, the detail allows the deck membrane to be installed over the waterdam, eliminating the need for flashing and lap sealant. Now available in over 15 standard colors, custom-design and special-color fascia can also be ordered.

The newest new product is a computerized installation, specification, and detail program. Developed as a reasonably

priced add-on for AutoCAD Release 10, the software can also be used with AutoSketch and WordPerfect Word Processing. It includes over 150 drawings detailing all EPDM roof systems offered by Carlisle: adhered, ballasted, and mechanically fastened. Although the details are specific to Carlisle products and call out the minimum requirements for warranty coverage, they are easy to customize to reflect individual constructions or an architect's standard practice. No logo appears on the screen. Approved roof installations range from dead-level to steep slopes and compound curves. Shown below are two fully-adhered roof details from the program: a low-profile expansion-joint treatment calling for a flanged, rigid joint support, and an edge detail using the Securedge fascia.

The package, priced at \$100, includes 13 3.5 or 5.25 floppy disks, with a master program and instruction manual. Carlisle SynTec Systems, Carlisle, Pa.

J.F.B.

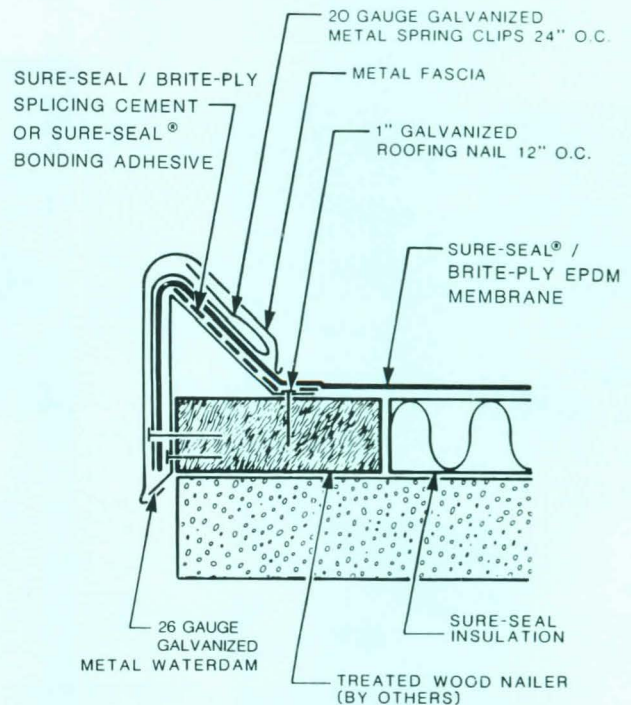
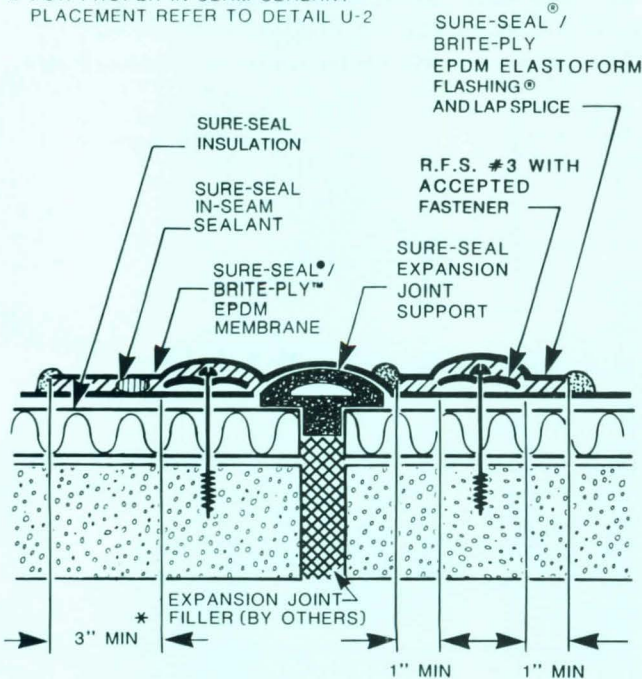
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More products on page 163



Securedge metal edging/fascia accessory

* FOR PROPER IN-SEAM SEALANT PLACEMENT REFER TO DETAIL U-2





Bristol Myers Research Facility, Wallingford, CT
Architects: The Stubbins Associates, Inc., Cambridge, MA
Roofers: Premier Roofing, W. Haven, CT
Photographer: Hay Photographers



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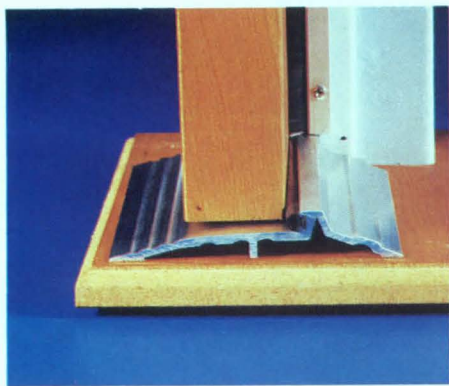
Pitney Bowes, Inc. World Headquarters
Architects: I. M. Pei & Partners, New York, NY
Roofer: Gottfried Roofing, Inc., Stamford, CT
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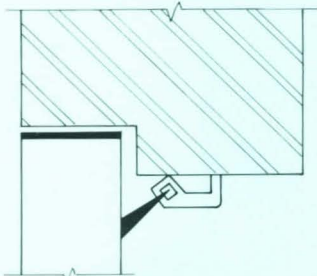


SMOKE GASKETING

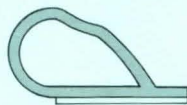
Classified materials poised to meet the stringent requirements of NFPA 105.



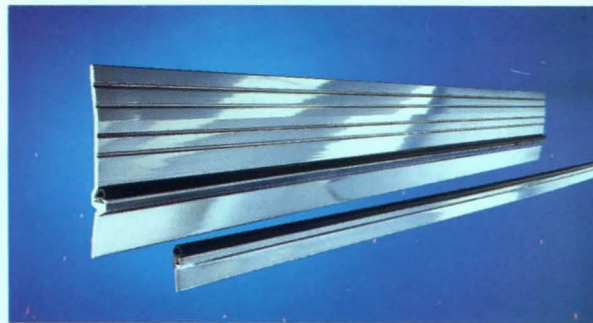
Neoprene-gasketed threshold, nylon brush



Angled nylon-filament brush

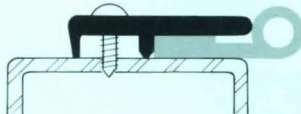


Pressure-sensitive silicone rubber

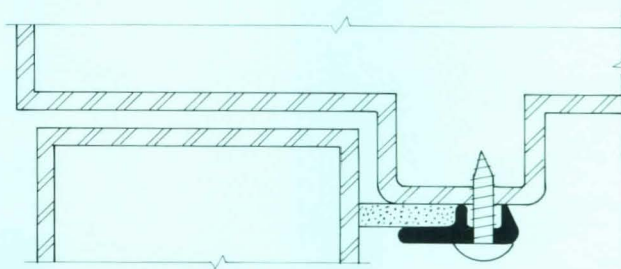


Aluminum-mounted rigid silicone rubber gasket

SOURCE: PEMKO



Solid Neoprene gasket, aluminum housing



Closed-cell sponge Neoprene, aluminum housing

SOURCE: ZERO INTERNATIONAL, INC.

A fire can cause death even in areas remote from its source, because powerful positive or negative pressures generated by the conflagration can drive smoke and poisonous gases through small gaps in barrier doors. Code bodies, fire marshals, and the National Fire Protection Association (NFPA) have worked to formulate standards for the use of weatherstripping as smoke-control gaskets on fire doors. The existing standard for fire-door performance, NFPA 80, does not deal with the passage of smoke *around* the door. Gasket materials achieve a fire label if they do not compromise the fire-resistive performance of the door assembly under his test. The Standard Method of Fire Tests of Door Assemblies, NFPA 252, permits the labeled door a degree of deflection considered unacceptable in a smoke control door.

Manufacturers of gasketing have used air infiltration testing under ASTM E-283 to gauge the effectiveness of their products against ambient temperature and smoke of p to 170 deg., while working toward an industry standard for smoke of higher temperatures. In 1985, the NFPA published standard 105, Recommended Practice for

the Installation of Smoke-Control Door Assemblies, with criteria for testing door seals in environments of up to 175 deg. Since then, the development of new test procedures (involving a series of increasing pressure differentials that take into account the behavior of the door and frame under actual fire conditions) has made air infiltration testing of gasketed doors at 400 deg. possible. Under NFPA 105 as revised in 1989, all gasketing for hot smoke (over 400 deg.) should be noncombustible, or proven not to break down under those conditions for a 20-minute period. This temperature is considered by John G. Degenkolb, chairman of NFPA's Technical Committee on Fire Doors and Windows, to be a reasonable level for corridors, in which fuel contribution should not be too high. It is also arguably the limit of today's testing technology, as a procedure for smoke-control evaluation under full-scale fire conditions is not now available.

The new UL test procedure, 1784, requires that the door and gasket assembly be cycled through at least five close and re-open operations, that the closing force be low enough to make the door operable with

minimal effort, and that the latch engage without on-site adjustment. UL is currently compiling test data under 1784 to provide a wide enough sample to confirm NFPA's performance criteria. The Builders Hardware Manufacturers Association is sponsoring consideration of a ANSI Standard, A 156.22, that details the test method to be used to compare the performance of gasketing to the criteria of NFPA 105. In January, the NFPA submitted 105 to the Uniform Building Code, and applications are pending before other code groups.

Tests by gasket manufacturers and associations such as the Steel Door Institute are tending to confirm the validity of NFPA 105 performance criteria. The gasket types shown above, made of self-extinguishing Neoprene, siliconized rubber, and nylon filaments, can meet today's air infiltration requirements at 175 deg., and are being tested by the new procedures. Products labeled for NFPA 105/UL 1784 should be available by next year. National Fire Protection Association, Quincy, Mass.

J. F. B

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More products on page 165



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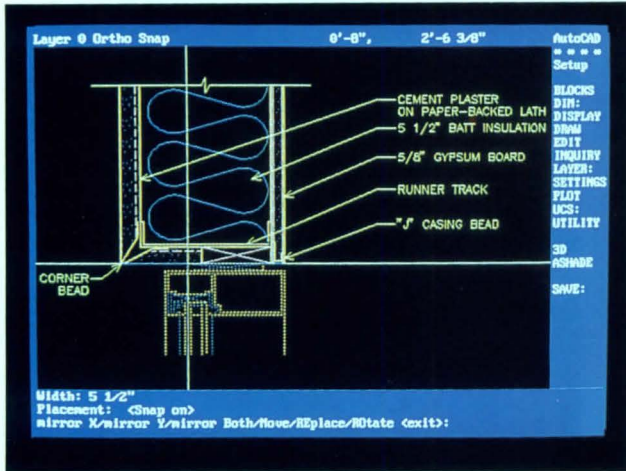
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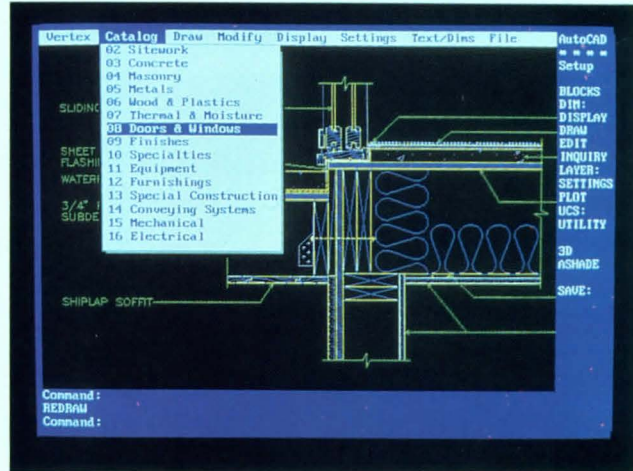
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ARCHITECTURAL DETAILING

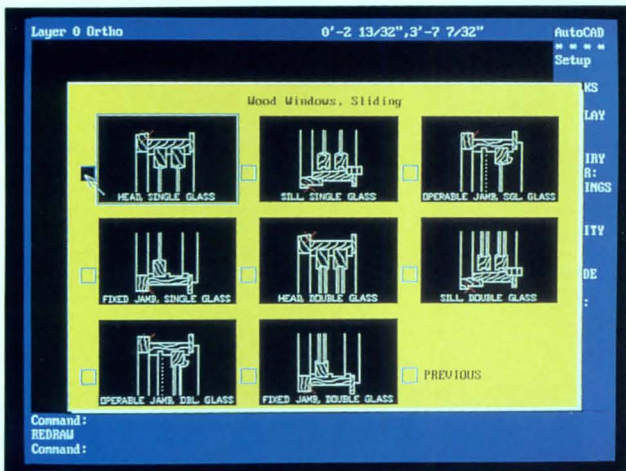
A kit-of-parts program automates the creation of project-specific construction drawings.



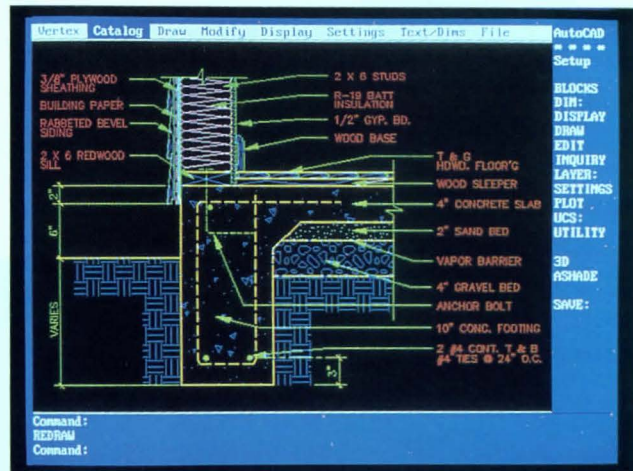
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Founded by a group of West Coast architects in 1987, Vertex Design Systems has just released its first product, The Detailer. A PC-based program that runs within AutoCAD 10, it is said to generate details much faster and easier than using standard CAD primitives. The Detailer provides over 25,000 building product and material components, drawn and annotated specifically for the program, organized in Construction Specification Institute divisions. The user selects components from pull-down icon menus, indicates the desired size, and snaps them into place. A built-in database manager simplifies drawing retrieval, compacting the files to save hard disk space; drawings are automatically decompressed as needed. Layering, drawing scales, and plotting have been in-

1. Predrawn components used to create an aluminum storefront detail. 2. Components organized by CSI divisions. 3. Sample icon menu for sliding windows. 4. Wall/foundation detail customized to specific project conditions.

tegrated to ensure consistency. A plot-sheet layout function facilitates plotting multiple details, even those drawn to different scales. Pen weights, text sizes, symbols, and pattern fills are automatically set. An added-cost feature, Dynamic Detail Groups, provides pre-assembled details pertinent to a particular building construction, such as built-up roofs or interior doors in metal-stud walls.

Purchasers of the basic Detailer program will receive free computerized architectural catalogs compiled by Vertex under contract to individual building product manufacturers such as Pittsburgh-Corning Glass Block. These disks can be imported fully into the Detailer database. Other AutoCAD 10-based proprietary catalogs can also be used, but the details must be incorporated one by one.

In addition to AutoCAD Release 10, the software requires a standard AutoCAD AUI-capable, MS- or PC-DOS system, with a minimum 40MB hard disk with 10MB free, and a mouse or digitizing tablet. Cost of The Detailer is \$1,995; a demonstration disk is available at no charge. Vertex Design Systems, San Francisco. **J. F. B.**
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Drafter, Architectural Landscaping. Total working hours: 40. Work schedule 8:00 A.M. to 4:30 P.M. Rate of pay: \$11.57 per hour. Duties include: According to customer requirements plans lay out of project for building, construction, or remodeling; prepares drawings, plans, site plans, grading and drainage plans, paving plans, interior design, confirms compliance with building code, estimates cost and building time. College degree required, bachelor degree of Architecture, also 2 years of experience as drafter, architectural landscaping. Send resume to: Illinois Department of Employment Security, 401 South State Street - 3 South, Chicago, Illinois 60605. Attention: Mary Millea. Reference # V-IL 9777-M. An employer paid ad.

Architects — \$25,000-95,000. The Shad-dox/Csutora Group Executive Architectural Recruiters. Key positions nationwide at all levels with Regional & National firms. Experience in research/development, health care, commercial, criminal justice, educational, institutional, industrial and sports complexes. Confidential. No fee. Include salary requirements. The Shad-dox/Csutora Group. Send resume to P.O. Box 460010, Denver, CO 80046. (303) 690-3440.

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FACULTY POSITIONS VACANT

Department of Architecture Norwich University: Seeking faculty member to fill tenure track position starting in fall 1990. Norwich offers two different campus lifestyles: the Military College of Vermont in Northfield and Vermont College in Montpelier which offers the traditional campus setting. The Architecture program is located on the Vermont College campus, which traces its history to the early 1800's, and will be housed in a circa 1870 building that is undergoing a \$1.6 million renovation. The Bachelor of Architecture program is admitting its first class in fall 1990 with a timetable of NAAB accreditation in place. Norwich has strong engineering programs, a strong engineering technology program, and a strong liberal arts. With these as a base, the thrust of the architecture program will be to strike a balance between structures and design. The successful candidate must have a M. Arch, teaching experience at schools with NAAB accreditation, a record of scholarly and/or professional work, and be registered. Rank and salary will be commensurate with background. For the first year the individual will be teaching basic architectural drawing, construction practices, and possibly some history. Please send letter of application, vita, statement of philosophy regarding education in general and architecture education specifically along with the names, addresses, and phone numbers of three references by 15 February 1990 to: Robert E. Schmidt, Chairman of the Department of Architecture, Vermont College of Norwich University, Montpelier, Vermont 05602. EOE. Women and minorities encouraged to apply.

Univ. of Wyoming. The Department of Civil and Architectural Engineering has a tenure-track position available at the assistant/associate professor level beginning August 1990. (An earlier appointment is possible). The duties include teaching and research in the area of architectural engineering/construction. This area includes architectural systems and construction materials and practices. An earned doctorate in Architectural Engineering or in a closely related area and professional registration are preferred; minimum requirements include a master's degree and some office/field experience. Strong preference will be given to candidates with prior experience in teaching students in Architectural Engineering programs. Rank and salary will depend upon experience and qualifications. Review of applications will begin March 15, 1990 and will continue until the position is filled. The University of Wyoming is an Equal Opportunity/Affirmative Action employer, and the Civil and Architectural Engineering Department wishes to recruit qualified women and minority candidates. Send vita, letter of application and the names of three references to Dr. Arthur P. Boresi, Head Department of Civil and Architectural Engineering, University of Wyoming, Box 3295, University Station, Laramie, WY 82071.

FACULTY POSITIONS VACANT

The University of North Carolina at Charlotte Faculty Positions in Architecture: Design, E.C.S., Urban Design, History/Theory. The College of Architecture seeks to fill five positions at the Associate and Assistant Professor levels. M. Arch. degree or equivalent required, prior teaching and practice experience preferred. Expertise in the areas of Contemporary History/Theory, Urban Design, Materials, Architectural Design-Construction, Site Design and Environmental Control Systems desired. Successful candidates will be committed to working with others to provide holistic, innovative architectural education and providing leadership in developing their area of expertise. The College of Architecture, composed of 24 diverse and dedicated faculty, and an extensive distinguished visiting architects program offers a 4+1 undergraduate program and a new graduate research program focusing on Theory of Architectural and Technology Design. Send cover letter describing your approach to teaching and area of expertise, and vitae to Charles C. Hight, Dean, College of Architecture, UNC Charlotte, Charlotte, NC 28223. Desirable response date is February 15, 1990, but will accept applications through March 1990. Affirmative Action/Equal Opportunity Employer.

Faculty Position in Architecture — University of Oregon Assistant Professor, tenure track position in design/theory, design/technology or design/media and methods. Require advanced degree in Architecture, experience in teaching, research, or practice. Please request full description. Faculty Search Committee, Department of Architecture, University of Oregon, Eugene, OR 97403. This is a new search in addition to those previously advertised. Completed applications for this search are due March 31, 1990. The University of Oregon is an Equal Opportunity/Affirmative Action employer and welcomes applications from women and minority candidates.

Roger Williams College, Architectural Division seeks applications for the following two full-time teaching positions in its 5-year Bachelor of Architecture Program starting August, 1990. The college campus is located on Mount Hope Bay in Bristol, 15 miles from Providence, RI, and 50 miles from Boston. The new Architecture Building (result of a national design competition) was dedicated in October 1987. The Architecture Program has 280 students (out of a total day student population of 2500), received its initial accreditation by NAAB in 1985 and was subsequently reaccredited in 1987 for five years. Position #1, Undergraduate professional instruction with primary responsibilities for teaching courses in Environmental Systems (Heating, Ventilation and Air-Condition Systems, Acoustics and Lighting). Degree in Architecture plus an advanced degree, professional registration required (architectural registration desirable), teaching experience in Environmental Systems. Position #2, Undergraduate professional instruction with responsibilities for teaching courses in Architectural History/Theory and Design Studio. Professional Degree in Architecture, advanced studies in architectural history (modern period), Ph.D. desirable, record of scholarship and research. Salary negotiable based on qualifications. Send letter of application including curriculum vitae, selected examples of design work and/or research publications, names, addresses and telephone numbers of three references to Raj Saksena, AIA, Director, Architecture Division, Roger Williams College, Bristol, RI 02809. Closing date is 28 February, 1990. Affirmative Action/EOE.

FACULTY POSITIONS VACANT

Dean Position Available: The University of Florida announces the opportunity for the position of Dean of The College of Architecture. Undergraduate programs within the College include: architecture, building construction, landscape architecture and interior design. There are graduate programs in architecture, building construction, landscape architecture and urban and regional planning. The college offers a Ph.D. program, supported by seven research centers and has one of the largest research programs in the country. Qualifications Include: hold an advanced degree and be eligible for full professorship with tenure within one of the college's disciplines; possess skills to include demonstrated ability to build academic, research and service programs with creative leadership and management; have demonstrated administrative and leadership ability in planning, program development, personnel, budget development and working with professionals related to the college; and be able to document distinguished scholarly, professional and administrative accomplishments within a broad base of experience in the field appropriate to his or her expertise. Applicants for the position should include at a minimum a letter of qualifications including relevant information regarding scholarly, professional and administrative experiences; a current curriculum vitae including addresses and telephone numbers of five references; and three documents which demonstrate the candidate's creative, administrative, managerial, scholarly and professional work. Nominations and applications should be sent to: Karl Thorne, Chair, Dean Search Committee, 311 ARCH, College of Architecture, University of Florida, Gainesville, Florida 32611. Telephone: 904-391-0215. Applications must be received by March 15, 1990. The University of Florida is an Equal Opportunity Affirmative Action Employer. Women and minorities are encouraged to apply. The selection process will be conducted under the Florida's "Government in the Sunshine" and Public Records Laws.

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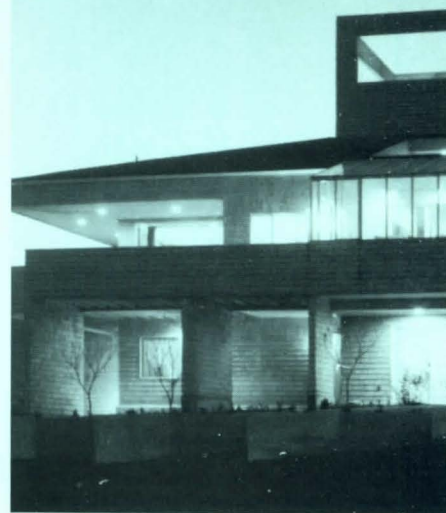
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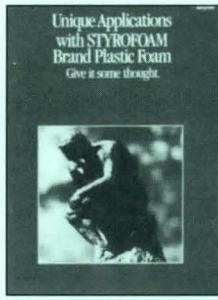
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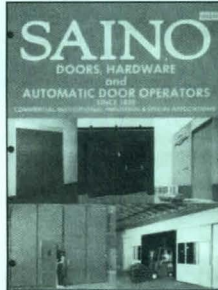
Designing with plastic foam

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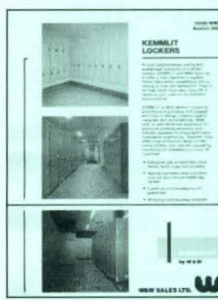
Curtainwall construction

An architectural guide stresses the importance of careful installation, correct details, and efficient construction scheduling in obtaining good long-term performance from metal curtain-wall systems. \$10 charge. American Architectural Mfgs. Assn., Des Plaines, Ill. *Circle 402*



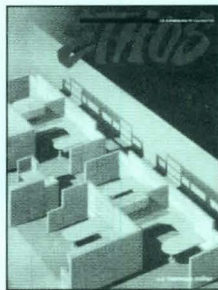
Industrial doors

Swinging, folding, and sliding doors for a wide range of in-plant, commercial, and institutional applications are shown in a 20-page design catalog that illustrates sections, dimensional details, mounting options, and power actuators. F. L. Saino Mfg. Co., Memphis. *Circle 403*



Cubicles and lockers

Colorfully illustrated brochure demonstrates the versatility of German-made Kemmlit lockers, made of either solid-core laminate or powder-coated galvanized steel. Vandal-resistant and sanitary features are highlighted. W&W Sales, Ltd., Spring Valley, N. Y. *Circle 404*



Office interiors

Humorous text, clever drawings, and color photos explain the human values intended in the Ethospace office. Steel-frame walls accept 16-in. panels that have acoustic, display, translucent, or other features. Herman Miller, Inc., Zeeland, Mich. *Circle 405*

Continued on page 172



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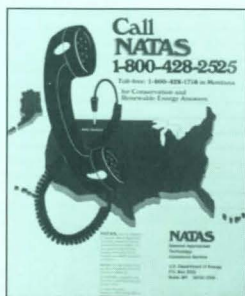
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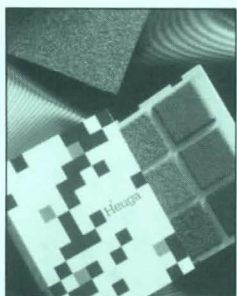


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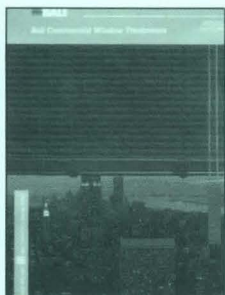
Energy-efficient design

A free technical, feasibility, and design-help hotline is provided for any energy-related project, from photovoltaic power to insulating a crawlspace. A flyer describes the DOE-sponsored service. National Appropriate Technology Assistance Service, Butte, Mont. *Circle 406*



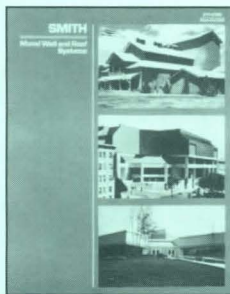
Conductive carpet tile

An Architect Folder contains samples of Electron II conductive commercial carpet tile, warranted not to cause static-induced glitches in sensitive electronic equipment. The textured-loop carpet comes in eight heathered tones. Heuga USA, Cartersville, Ga. *Circle 407*



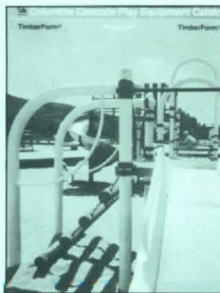
Contract window treatments

Major recent applications of Bali blinds are highlighted in a 28-page architectural catalog. Significant contributions to energy conservation, efficient daylighting, acoustical control, and life safety are explained. Carey-McFall Corp., Montgomery, Pa. *Circle 408*



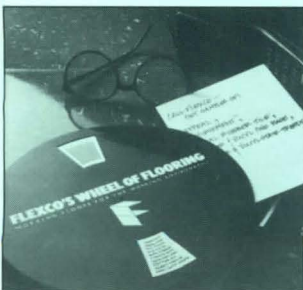
Metal building systems

A line of custom-made wall and roofing components now includes condensation-resistant Foamwall-HG insulated panels. A 24-page catalog includes product information, load span data, details, and on-site photos. E. G. Smith Construction Products, Inc., Pittsburgh. *Circle 409*



Play equipment

Dozens of TimberForm, modular TimberForm-2, and PipeLine play structures are pictured in an 85-page catalog. Designs range from a simple tire swing to elaborate, fortresslike configurations usable by many children at once. Columbia Cascade Co., Portland, Ore. *Circle 410*



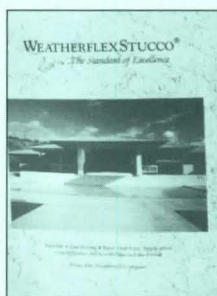
Resilient flooring design

The Wheel of Flooring lets specifiers turn to the product attributes they desire most, such as slip resistance or extra durability, and the windowed guide reveals the most suitable vinyl or rubber floor. Flexco, Tusculumbia, Ala. *Circle 411*



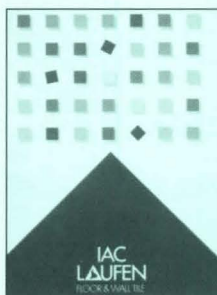
Solar greenhouse design

A 12-page brochure illustrates glazed enclosures that complement many architectural styles, from Georgian to Californian. Features include powered ventilation, self-cleaning muntins, and Heat Mirror glass. Four Seasons Solar Products Corp., Holbrook, N. Y. *Circle 412*



Synthetic stucco

A nontoxic acrylic, Flexible Stucco comes in eight colors; a single coat is said to cover practically any substrate. Catalog includes a physical data table, and describes application by hand trowel or spray equipment. Weatherall Co., Inc., Rolling Hills Estates, Calif. *Circle 413*



Ceramic tile

Spiral-bound catalog covers 18 ceramic tile lines for commercial and residential walls and floors. New products include a 12- by 12-in. floor tile with a skid-inhibiting surface guaranteed for 10 years, and an 8- by 10-in. granite-look wall tile. IAC/Laufen, Tulsa, Okla. *Circle 414*



Fire-rated separation walls

Produced for specifiers, a video tape demonstrates how the two-hour fire-rated H-Stud assembly equals the fire protection of masonry walls in multi-unit housing construction of up to four stories. \$15 charge. Gold Bond Building Products, Charlotte, N. C. *Circle 415*



Architectural doors

Seven-ply hardwood doors are offered in a variety of cores for both standard and fire-rated applications. An architectural catalog illustrates construction details, veneer species, and finish options; label and test data are included. Fenestra Corp., Erie, Pa. *Circle 416*



Textured concrete paving

A proprietary color, texture, and graphics system for concrete, Bomanite comes in 25 standard colors and over 50 slate, river stone, granite, tile, and other patterns. A 1990 catalog illustrates representative installations. Bomanite Corp., Palo Alto, Calif. *Circle 417*



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Continued from page 147

mous ceiling fresco (by Karl Heinrich Schmolze), the latter overseen by the Vitetta Group. Eventually eight of these tubular steel constructions crowded the Academy, each cribbed in the basement, guyed back with steel cables to masonry bearing walls, and topped with a timber load-transfer platform.

Once the roof loads—21,000 lb at each point of support—were transferred to the towers, work began on the installation of the reinforcing steel. A section of the ambulatory ceiling at amphitheater level had to be removed so the steel could be moved into the attic. Because of the Academy's extensive renovation history, John Raidy found he had not one, not two, but three ceilings to remove, and discovered a quantity of asbestos which had to be carefully extracted along with the ceilings. It then took five days and nights to install the steel, during which workers ferried 40 pieces, some weighing 600 lb, up and over the 16-ft-high auditorium wall (drawing page 146).

It is axiomatic that no construction job can proceed as planned. There must be a hitch: unseasonable weather, delayed deliveries, or, as in this case, more bad news. Three days into the job, on Monday, April 3rd, the engineers discovered during an inspection of the remaining structure that two other trusses had failed in tension, one of them completely, transferring its loads to adjacent trusses. "It was shocking," said Pentz. "There was a discontinuity of at least two inches in the failed chord. You could put your hand through the crack." According to the engineers, only a small bit of redundancy, a bolster that served as a splint, had prevented the Academy's roof from failing catastrophically. The project team quickly absorbed this unwelcome development, with everyone setting their minds to do twice as much work as planned.

16 days

Nearly 150 men and women worked on the project. Before the job was done they had reinforced and stabilized two large trusses, and erected and disassembled an intricate construction apparatus within the walls of the Academy. (The engineers judged the third damaged truss secure enough to wait until the slow summer season for repair.) Many worked 12 to 16 hours at a time, sleeping at a nearby hotel between shifts. On Sunday, April 16th, the building was reopened for a matinee by the Philly Pops.

By all reports, the project was infused from start to finish with a marvelous and uncommon enthusiasm. Gianopulos describes this as nothing less than "a sense of public mission." Philadelphia without the Academy did not seem right. The engineer recalled, "My clients, when they

heard I was busy with this job, by and large simply backed off and said, 'when it's over I'll talk with you, and good luck.'" George Shaeffer believes that for the construction crew, many of whom had never before been in the Academy, the building itself exerted a fascination. "It was the specialness of the building; compared to what they work in most of the time—slab, drywall—it was a real opportunity for them." Their prodigious effort did not go unappreciated. A week after the hall's reopening, the Orchestra Association threw a party and invited everyone who had worked on or been affected by the job.

The crucial question

When the repairs were done, Keast & Hood turned its attention to the crucial question: what caused the trusses to fail? The engineers saw nothing to suggest decay as the cause. Diligent maintenance had kept the wood dry and free from insects; shrinkage cracks had been controlled. In a report prepared for the Orchestra Association, Gianopulos states his theory. "The failures were the consequence of the roof having been subjected to unusually large forces of a sudden nature . . . some unusually heavy wind pressures must have been imposed on the Academy's roof to have caused the multiple failure."

But natural causes alone do not explain the failures. Gianopulos believes that the force of the winds was magnified by several high-rise buildings near the Academy, all of which were constructed within the past two decades. This thesis was tested and confirmed by two independent consultants. Harry Harris, professor of engineering at Drexel University, built a model of the Academy and its environs and tested it in a wind-tunnel. Meteorologist Francis K. Davis studied climatological records and found that the Academy had been struck by winds of 69 mph during a severe storm on March 18, 1989; this was 11 days before Pentz's survey. After observing Harris's wind-tunnel test, Davis estimated that the effective speed of the wind doubled to 140 mph as a result of the "channeling effect" produced by the Academy's taller neighbors.

The Academy of Music's brush with tragedy raises worrisome questions. How many buildings have suffered similar damage that remains undetected or (lacking the Academy's careful custodianship) has been blamed on maintenance? Since many newer large buildings are wind-tunnel tested, there may be cumulative but undetected changes in wind patterns over time. What is the nature of a tall-building developer's responsibility to older structures not part of his site? Nick Gianopulos believes that, at the least, these questions raise "serious ethical issues" for developers and those involved in the planning of cities.

NANCY LEVINSON

Manufacturer Sources

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

Pages 76-83

The Crown American Corporate Office Building
Michael Graves, Architect

Pages 76-79—Bluestone: New York Quarries. Agate granite: Cold Springs Granite. Kasota stone: Mankato Kasota Stone. Brownstone: Carl Schilling Stoneworks. Single-ply roof: Firestone. Copper roof: AEP/Spain. Entrance: Steelcraft. Windows: Wausau Metals. Exterior lighting: Sterner Lighting Systems.

Page 80—Skylights: Super Sky Products. Drywall: Gold Bond. Paint: Sherwin Williams. Locksets: Corbin. Hinges: Stanley.

Page 81—Custom carpet: Masland Carpet Mills. Chairs: Dunbar. Downlighting: Poulsen Lighting.

Pages 82-83—Carpeting: Vorwerk, Michael Graves design. Pendants, ceiling fixtures, and sconces: Bal-dinger Architectural Lighting, Michael Graves design. Custom desks, tables, and dining chairs: Craftwood. Upholstered seating: SunarHauserman; ICF; Thonet. Sprinklers: Grinnell.

Pages 88-93

Canadian Museum of Civilization
Douglas J. Cardinal Architects Limited
Skylights: Hickey Canada. Curtainwall: Hyalin Int'l. Louvers: Construction Specialties. Handrails: Inkan. IRMA roof: Dow Chemical. Limestone: Gillis Quarries. Escalators: Koné.

Pages 94-97

Home Savings of America Tower
Albert C. Martin & Associates, Architect

Pages 94-95—Marble: Bruner Pacific. Precast: Tecon Pacific. Hollow-metal windows: Carmel Steel. Glazing: PPG Industries. Entrance: Brite Vue Glass Systems. Aluminum grille: custom by architect, fabricated by Washington Iron. Sconces: CSL Lighting.

Pages 96-97—Ceiling fire doors: Overhead Door. Paints: Lawrence Bonas. Marble paving: Carnivale & Lohr. Elevators: Otis. Pendants: ELA. Wallwash and downlighting: CSL Lighting.

Pages 118-121

Grand Floridian Beach Resort
Wimberly Allison Tong & Goo, Architect
Siding: Alcoa. FRP millwork: DEC Assoc. Windows and doors: Kolbe & Kolbe. Dome skylight: Glass Arts. Paint: PPG Industries. Shingle roof: Celotex.

Pages 122-125

Hyatt Regency Scottsdale
Hornberger, Worstell & Associates, Architect
CMU: Superlite. Single-ply roofing: Carlisle SynTec System. Paving: Adoquin stone. Storefronts and entrance: Kawneer. Glazing: Ford Glass Div. Metal doors: Fenestra. Wood doors: CalWood. Sprinklers: Grinnell. Paints: PPG Industries. Brise-soleil: Thorens Millwork. Stone flooring: Prairie Slate.

Pages 126-127

The Inn at Langley
Gaylord Grainger Libby O'Brien-Smith Architects
CMU: Empire Block. Shingles: Western Red Cedar. Windows: Milgard Mfg. Dining table: John Griffith. Chandelier: custom by Marcia Johnson, fabricated by Nicholas Spanovic. Window blinds: Kirsch. Rattan chair: Palachek. Dining chairs: William Switzer. Drapery: Clarence House.

Pages 128-131

Golden Eagle Lodge/Waterville Valley Town Center
Graham Gund Architects
Cedar shingles: Shakertown. Roofing: Owens-Corning Fiberglas. Granite: Weymouth Stone. Wood windows and entrances: Weather Shield Mfg. Area lighting: Bega. Paints: PPG Industries. Interior lighting: Lightolier.

CAD THAT GROWS IN SOPHISTICATION WITH YOU

Intergraph's new package handles the conflict between the Macintosh streamlined ideal and architects' sophisticated needs with aplomb.

MicroStation Mac Version 3.5

MicroStation Mac redefines the limits of high-end CAD for the Macintosh. This is a full-featured "2.5-D-to-3-D" package that melds the Macintosh interface seamlessly to the power of one of the most flexible CAD systems available. Yet speed on such crucial tasks as full-screen redraws is better than average for the Mac. MicroStation works well in a "production" environment, yet can be handled by the casual user. As might be expected from Intergraph, many features allow easy networking. Many people can update a drawing at the same time, and see each other's work.

Equipment required: Macintosh SE/30, II, IIfx, IICx or better, fixed disk, at least 2MB of random-access memory (4MB recommended), System 6.0.2 or later. Digitizing tablet recommended. MicroStation works with any PostScript printer or HPGL plotter, as well as CalComp and some others.

Also recommended: A large-screen monitor, or several. Views can be sized to span more than one monitor. They can also be moved from screen to screen. The effect is akin to a baby version of the Clipper workstation. But the big Intergraph Clipper systems typically cost four times as much per seat.

MicroStation Mac can be linked with the Oracle database program to spin off bills-of-material and other reports from your design drawings. Oracle is a standard data-base package that allows use of

Structured Query Language (SQL). If you intend to run Oracle and MicroStation at the same time, add memory; Intergraph recommends at least 4MB, but 5 or 6MB would be better if you are dealing with large projects—the very kinds of projects where databases are most useful. Oracle and MicroStation can be active at the same time, with the Macintosh MultiFinder. But Oracle databases (unlike MicroStation design files) can be accessed by only one user at a time in a network.

Vendor: Intergraph Corp., One Madison Industrial Park, Huntsville, Ala. 35807 (205/772-2000). \$3,300.

SUMMARY

Manual: A first-rate package. The User's Guide (with tutorial) and Reference Manual are easy to use, thanks to a common index and plenty of tabs. The package comes with two tablet overlays—one for 11x17 and the other for 8x11 tablets.

Ease-of-use: Excellent for so sophisticated a package. You can use MicroStation at a less sophisticated level, and grow into new commands as needed.

Probably the biggest weakness for architects is the inability to draw parallel lines with one command, as you can with VersaCAD's Macintosh version or with simple 2-D Macintosh drafting software. Instead, you draw a line, then use the Copy Element tool in the main tool palette (it opens to a sub-palette, but the COPY PARALLEL tool on the sub-palette will display on the main palette if

you've used it last) to complete the representation of, say, a wall. Corners must then be cleaned up with the Extend Element palette. All this is easy if you are using a digitizing tablet, but it takes many mouse movements.

Error-trapping: Excellent. On-screen error messages pop up when you try to do something that is just plain wrong. You can only have one file open at a time (although you can attach existing files to an open file for reference). If you try to open a second one to work on, you are prompted to close the first file.

Seed files hold default settings for design files (the files you create, with your designs drawn inside). But unlike some Macintosh software, it is difficult to overwrite a seed file with a design file of the same name.

You can open an existing design file, change the working units, then continue to work on the file. If you do, the working units are the *old* ones, not the new ones. You have to save the design file after changing the units, then recall it to put the new working units into effect.

You can cover a hole (in a wall, for instance) with a pattern if the "hole" is actually drawn on a separate layer.

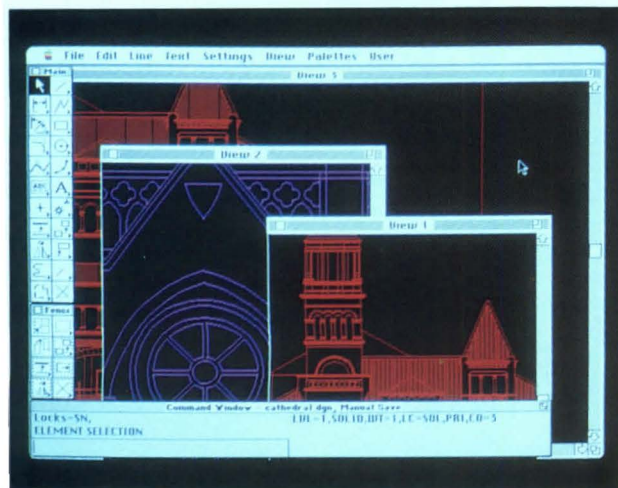
A minor point: It is possible to access an Oracle database on a network, then continue to keep the link open and running in the background as you return to MicroStation. This will keep other users from getting at the Oracle database until you log off of it.

REVIEW

There is always a conflict between the Macintosh ideal and architects' needs. The user interface must be, well, "Mac-like" enough so that any experienced Macintosh user can get into the program quickly. But the command structure must be sophisticated enough to handle a project efficiently. MicroStation Mac has handled the conflicts better in many ways than any other high-end CAD product for the Macintosh. It feels like a Mac. Yet, there are more than 700 commands in this package!

A good example: The command procedures start out Mac-standard. But you can interrupt a drawing command to adjust the on-screen view, then go back and finish placing the element you were drawing. Up

Up to eight views can be viewed at once, overlapping or tiled on the screen. Since all views are active at the same time, the user can start an element in one view and finish it in another.



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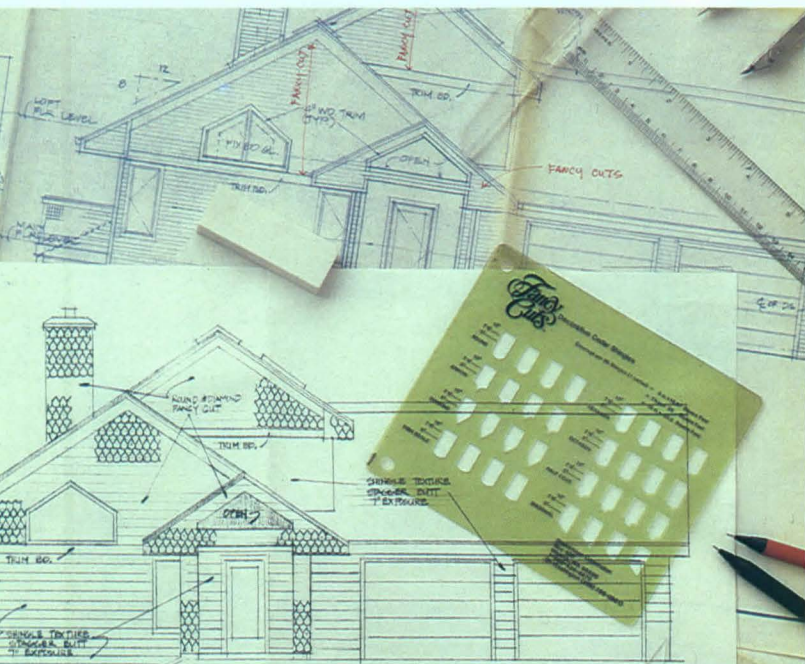
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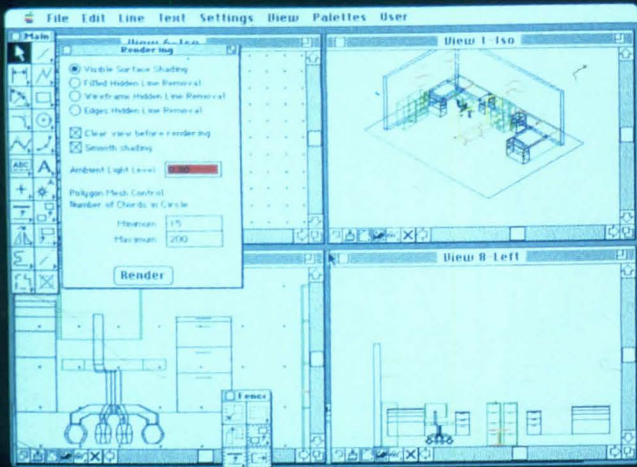
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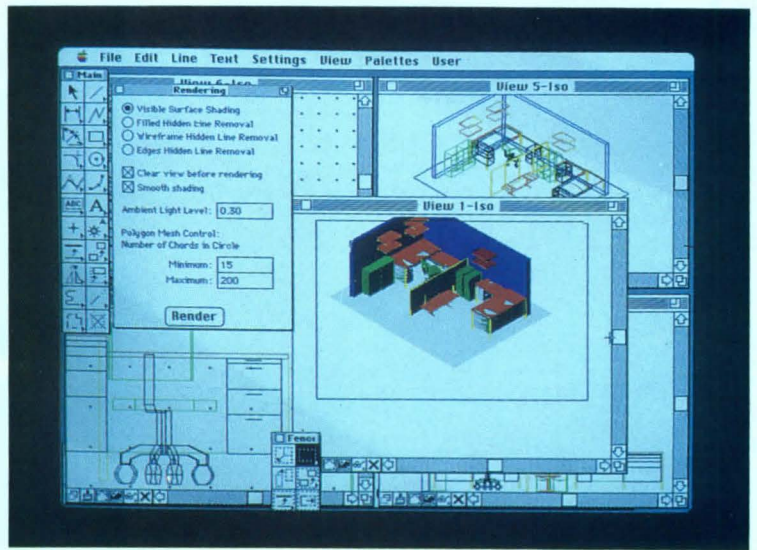
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Before: Four views of an office in 3-D wireframe.



After: The same views when RENDER menu was invoked.

to eight views can be open at once, overlapping or tiled on the screen. And all are active at all times—a departure from the Mac standard of only one view active at a time. Thus, you can start an element in one view, and finish it in another.

MicroStation also departs from normal Macintosh practice by leaving a view-control palette at the bottom of each window, so that you can zoom in on a specific part of the design in any view. You can also have different layers switched on or off in different views. Each design file can have up to 63 layers.

The nice touches start with the installation. You create a folder with any name you want, insert the first disk, click on the install button, and follow the on-screen instructions.

There's a security (copy protection) device, but it takes up little space. That's because it is on a flexible cable and can be inserted into any ADB (Apple Desktop Bus) port—either on the keyboard or behind the computer itself. Most Macintosh security devices require extra clearance behind the computer, because they attach only to the SCSI port.

Do you want to single-click or double-click on a tool to lock preferences into place? You can set up MicroStation to do either one. Do you want to have MicroStation save your files automatically as each element is added? Or only when you specifically issue the save command? Again, you can choose. Do you want to pan across a view? Standard Macintosh scroll bars, arrows, and arrows are supplied. But what if you scroll out of the active area of your drawing? A single command "fits" the entire design into the view, by zooming back and panning.

The command window and all palettes and settings menus (boxes that detail such items as the color and style of a line or

shading pattern) can be moved around the screen, hidden by views or overlapping them. Palettes display only some of the tools available. Most tools have a "sub-palette" of associated tools behind them. The most recently used tool is displayed on the main palette. The flow is intuitive, and allows MicroStation to be used fairly easily with the standard Macintosh mouse. But the digitizing tablet with command overlays really is much more efficient.

As with other MicroStation products, you can "Undo" commands in sequence, reaching as far back as you would like. Because all changes are kept, however, design files can quickly become huge. As with other versions of this software, there's a "compress File" command to knock out intermediate changes and save only the final version.

Typical of Macintosh products, you can "save a seed" file containing all the defaults for various commands.

Also typical of Macintosh CAD, especially low-end CAD, the design is stored in "working units," rather than as a floating-point database (a database with all coordi-

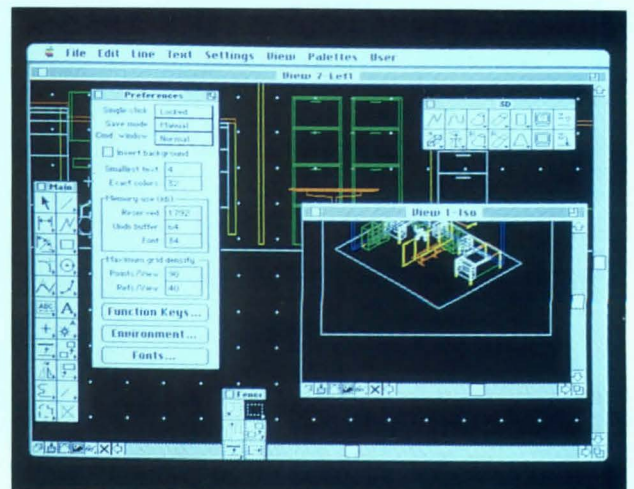
nates specified as floating-point numbers). This tends to allow the software to run faster—a requirement for the Macintosh, where graphics must be calculated by the central-processing unit rather than by an add-on graphics accelerator card.

But the working-unit scheme is not limiting. MicroStation Mac allows designs to spread over a huge grid (cube in 3-D), more than 4 billion working units on a side. Thus, there need be no compromise between accuracy and the area that can be represented. A building site plan might have you specifying units in feet and inches. This allows a plan to represent an area more than 8 miles on a side, with a precision of 1/8000 of an inch (0.00012 inch). That's good enough (in fact, far more than good enough) for the most precise steel work.

Text can be entered as a long line, and broken automatically to fit the space you specify. There's no need to cut the last word from one line and re-key it at the beginning of the next line.

Dimensions are entered one element at a time, by windowing the element you want

Palettes can be added and moved around with MicroStation Mac. Other welcome features: screen colors can be inverted, and preferences set within the program.



MicroStation... Intergraph CADD on your PC, Macintosh, or workstation

Three Platforms... One Solution

MicroStation software for design and drafting puts powerful, easy-to-use CADD capabilities at your fingertips. Backed by Intergraph's 20 years of leadership in developing CADD tools, MicroStation offers features once available only with powerful host-based systems:

- True 3D design
- Rendering, hidden-line removal (at no extra cost)
- Powerful Intergraph and third-party applications

MicroStation files can be shared between platforms without translation. MicroStation has this same compatibility with Intergraph's host-based systems.

The MicroStation Advantage

Whether your needs are Intergraph compatibility or standalone CADD, let MicroStation give you the advantage — power, ease of use, and product support from the leader in interactive computer graphics.

For further information, call 800-345-4856 in the U.S. (in Alabama only, 800-345-0218). Outside the U.S., please contact an Intergraph sales office.

INTERGRAPH

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Circle 51 on inquiry card

dimensioned and then activating the Dimension Size Arrow tool. MicroStation almost always snaps the dimension to where you want it.

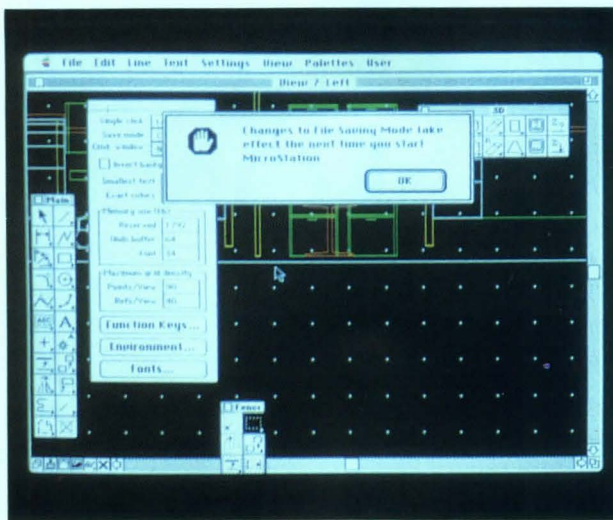
Of course, you can create libraries of standard images and surface patterns. Intergraph calls each image a "cell" and each collection of images a "cell library." The limitation is a minor one—no cell can be larger than 8 kilobytes in file size. Small libraries of standard architectural patterns (brickface, wood, and so forth) are included in the package.

Patterns are handled nicely to save space in your design (drawing) file and to reduce redraw time. The pattern you specify in a cell is repeated throughout the area of your design to be filled with the pattern. Thus, a pattern on any one surface never takes more than 8K in the design file. In VersaCAD, by contrast, each line or point in the pattern is a new element in the file.

Groups of elements can be fenced off for copying, deletion, or other manipulations. The fence can be highly irregular in shape, as long as the perimeter is a single continuous line (no selecting all the chairs around a table by creating a toroidal fence). In 3-D, the area enclosed by the fence is the volume swept by "moving" the fence along the Z-axis through whatever height you specify. 3-D items that intersect the fence volume at any point are considered inside the fence, so a 2-D fence on the "floor" of a drawing will pick up 3-D items (chairs or desks for instance) that sit on the floor.

Up to 32 reference files (files, including other design files, that can be viewed but not altered) can be attached to each level in the design file you are working on. With 63 possible levels, that's 2,079 possible reference files. But life gets confusing very fast. Eight views, 63 levels and 2,079 references are impossible for mere mortals to track. Just accept on faith that MicroStation has all the capacity you are likely to need.

A nice touch: The open design file (the one you are working on) can be attached to itself, to allow easy reference to changes you might be making. This reference file is



Error-trapping is excellent. On-screen warnings pop up when a user tries to do something that is just plain wrong.

great for networking. If everyone is adding elements with the continuous "save" mode on, each person in the network sees each other's work reflected in the reference file as the work is performed.

The 3-D is isometric, but 3-D images can be projected onto 2-D either with perspective (you set the eye point) or in parallel.

File transfers are adequate. Designs, including rendered views with hidden lines removed or surfaces shaded, can be saved as PICT files or copied to the Macintosh Clipboard. Up to 16 point sources of light, and one diffuse source, can be specified for shading. Files can be copied from the Clipboard with the normal Macintosh limitations (2-D only, lack of support for QuickDraw fonts, and so forth). There's DXF conversion as well, although differences in computer configurations can produce odd translations of colors and line weights.

It is possible to link Macintosh MicroStation stations to Intergraph VAX-based systems and to MS-DOS systems as well. File structures are similar, though not identical.

Links to an external database are done from inside MicroStation; there's a special database palette to prompt the addition of elements or groups of elements. You can also begin an SQL query at the keyboard from inside MicroStation simply by start-

ing the query with the vertical line character.

Hypercard can also be used with MicroStation. It is much easier to corrupt a Hypercard stack than an SQL database file, so multiseat offices using MicroStation should consider investing in Oracle, or in similar products just emerging.

The built-in macro language can be used to reliably handle repetitive drawing tasks, as long as the tasks are done from one menu at a time. You can use macros to build a command menu of your own, for a digitizing tablet. Bentley Systems, the actual developers of MicroStation (which is partially owned by Intergraph) also distributes routines that can be called from C-language software, for other MicroStation add-ons.

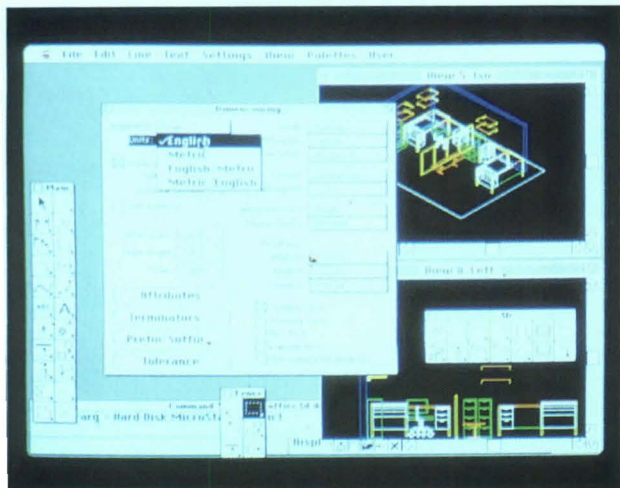
How does MicroStation compare with other high-end CAD software for the Macintosh? Networkability is simply without equal. The interface is among the best for high-end 2-D CAD. Commands are logical. Adequate redrawing speed and great flexibility for on-screen views make it easy to draw with.

The chief weakness compared with VersaCAD is in drawing parallel lines. VersaCAD also makes better use of Hypercard as—essentially—a programming environment for add-on products.

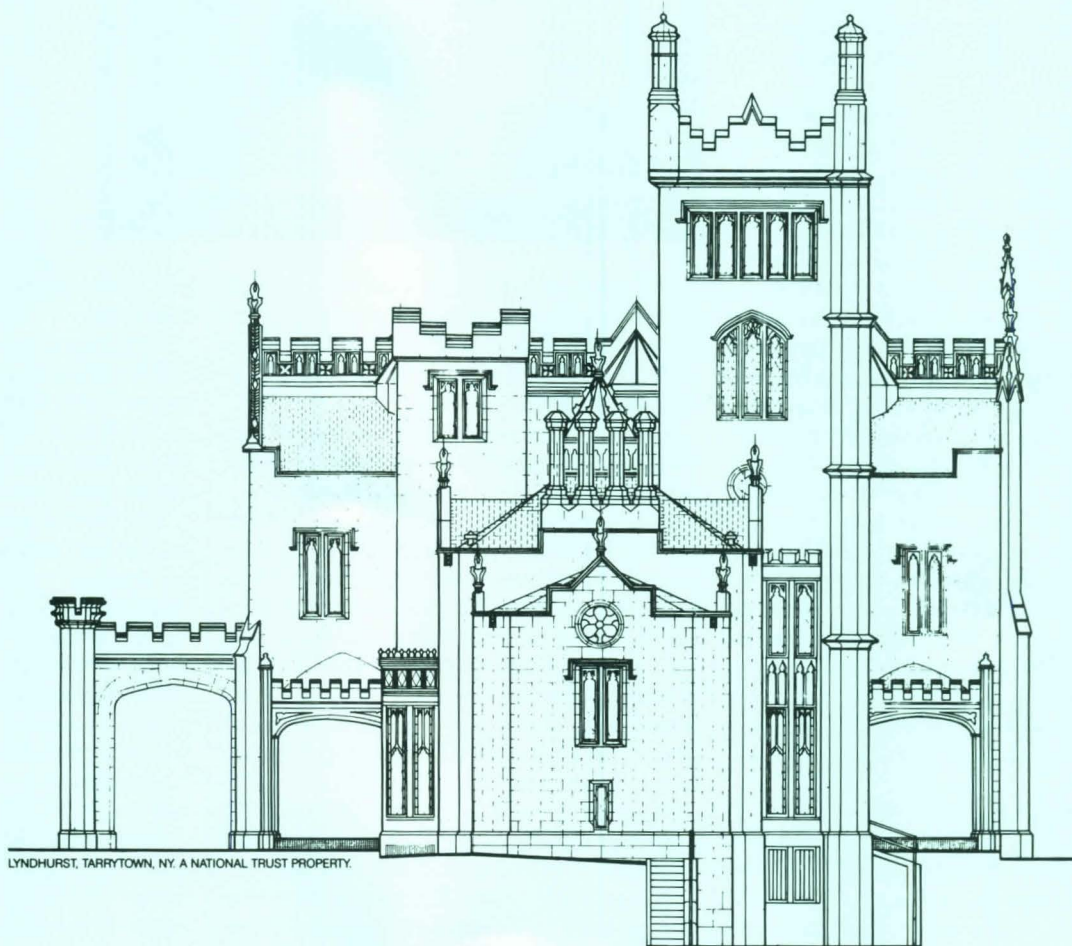
The 3-D interface is fine for those who think mainly in 2-D, then use 3-D to model. But for those who start with a model, especially on small- and medium-size projects, ArchiCAD and Mac Architrion II offer advantages in working speed. The tradeoff is a lower accuracy for endpoints in elements. MicroStation's file size is large, compared to similar files for ArchiCAD and Architrion, but not as large as a similar file in VersaCAD, especially if the files contain patterned surfaces. □

Steven S. Ross is a prominent computer consultant and a regular contributor to RECORD. His latest book, Data Exchange in MS/PC-DOS, was published in 1989 by McGraw-Hill.

The dimensioning dialog box is clear and feature-laden. Dimension elements are entered one at a time by windowing the element to be dimensioned and then activating the Dimension Size Arrow tool.



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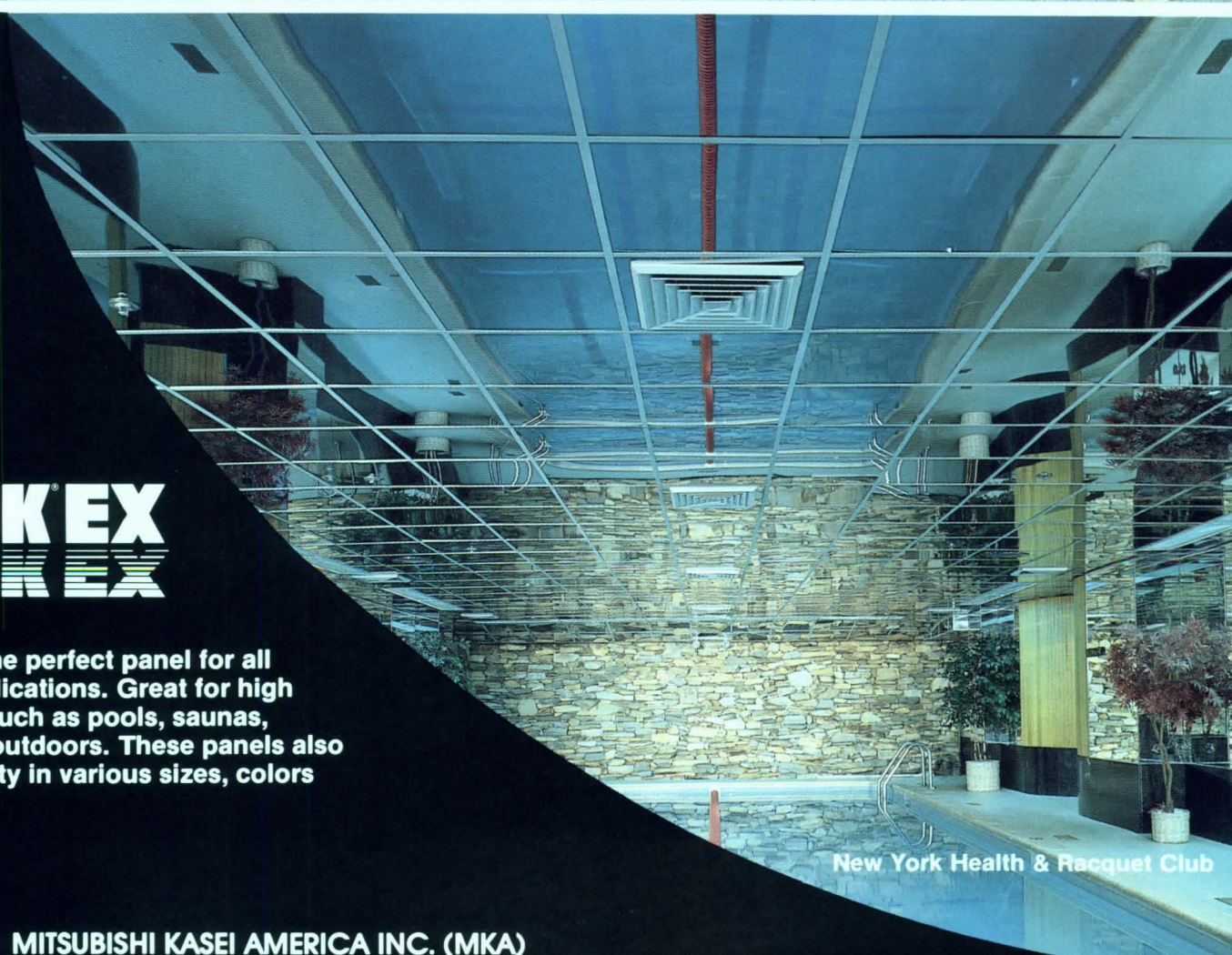
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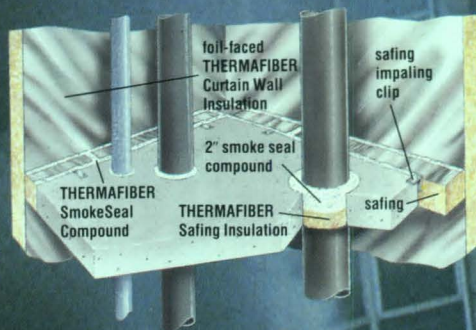
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