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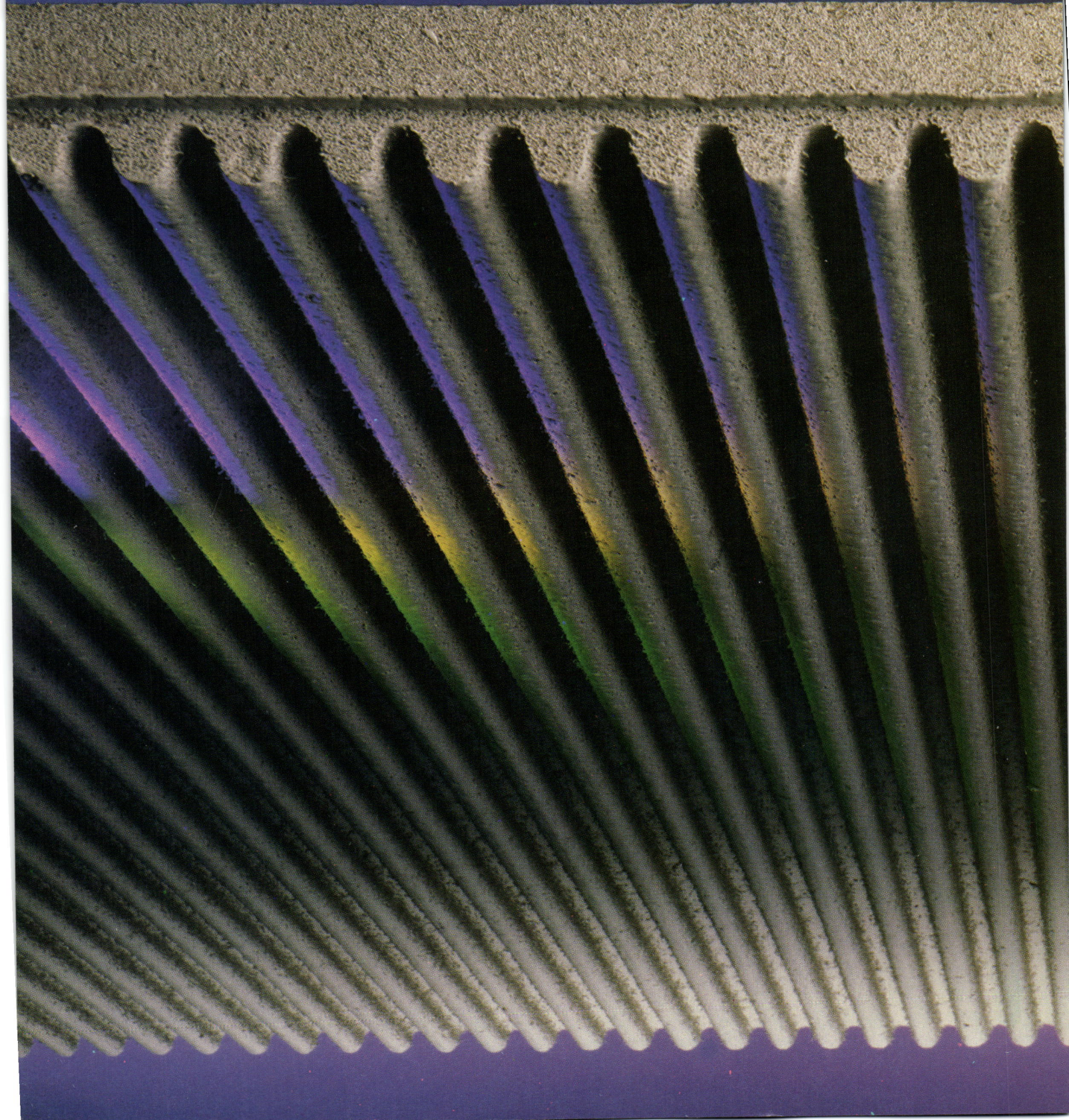


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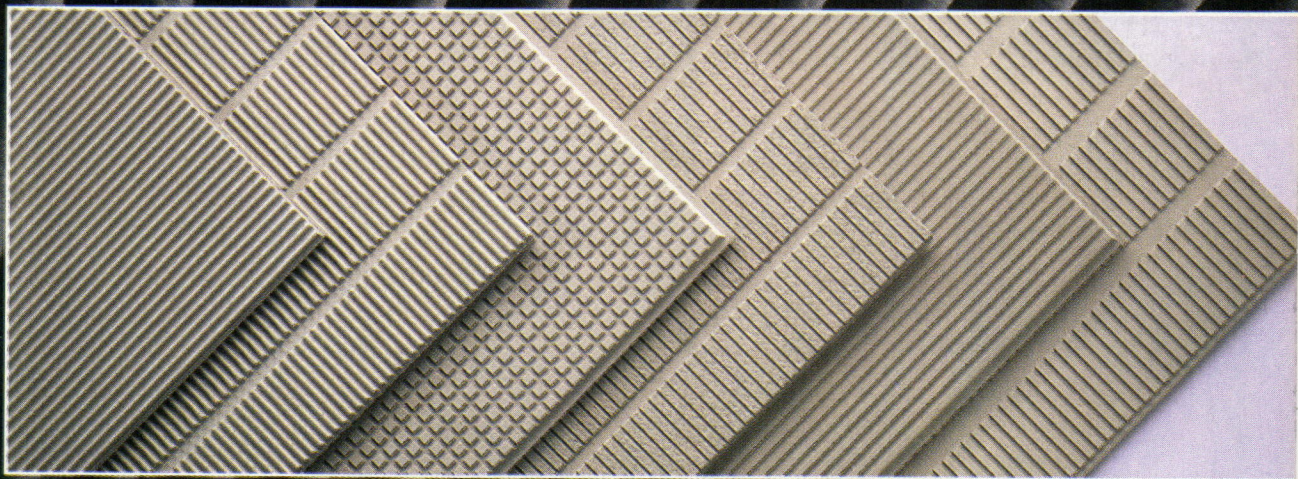
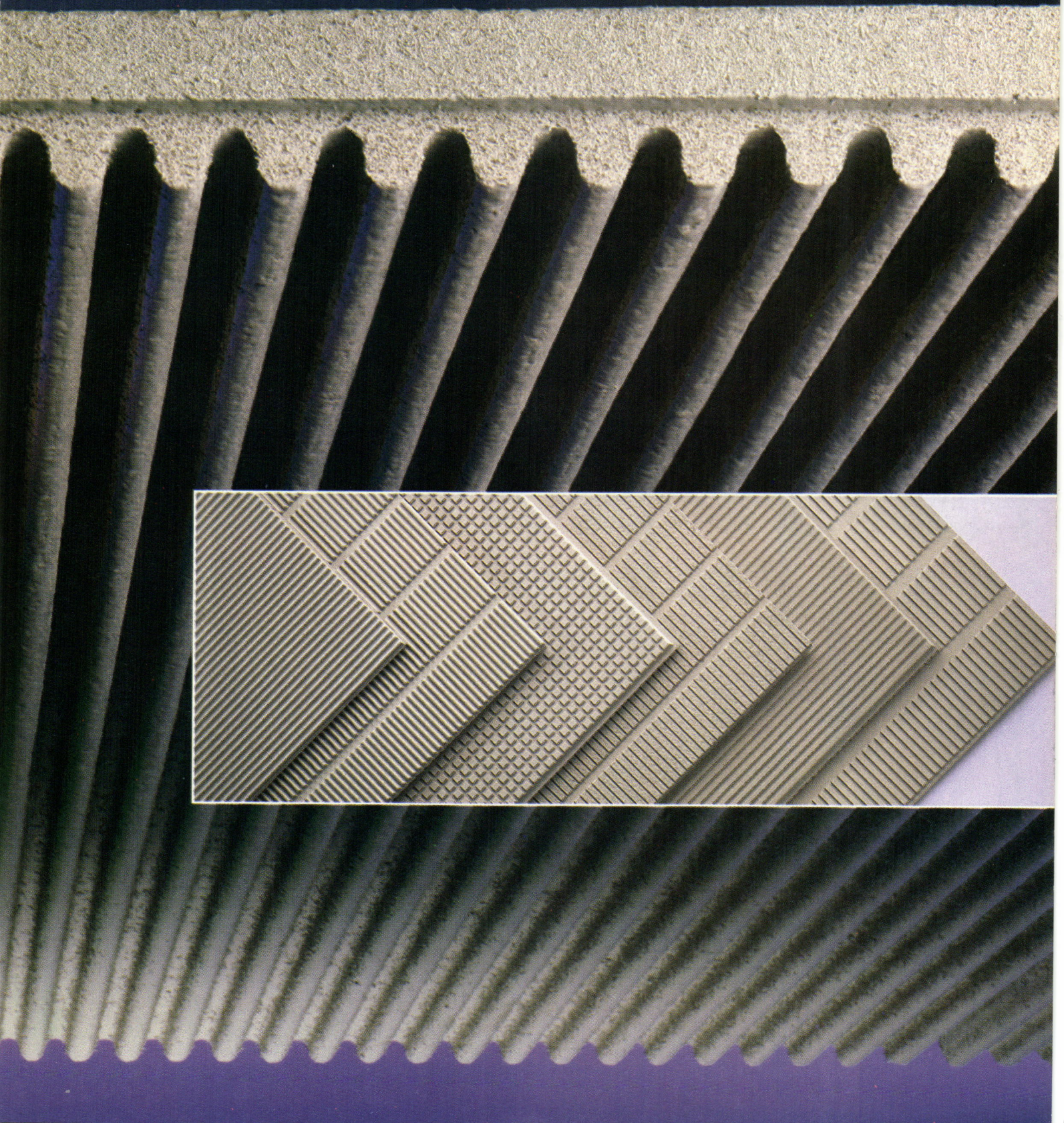
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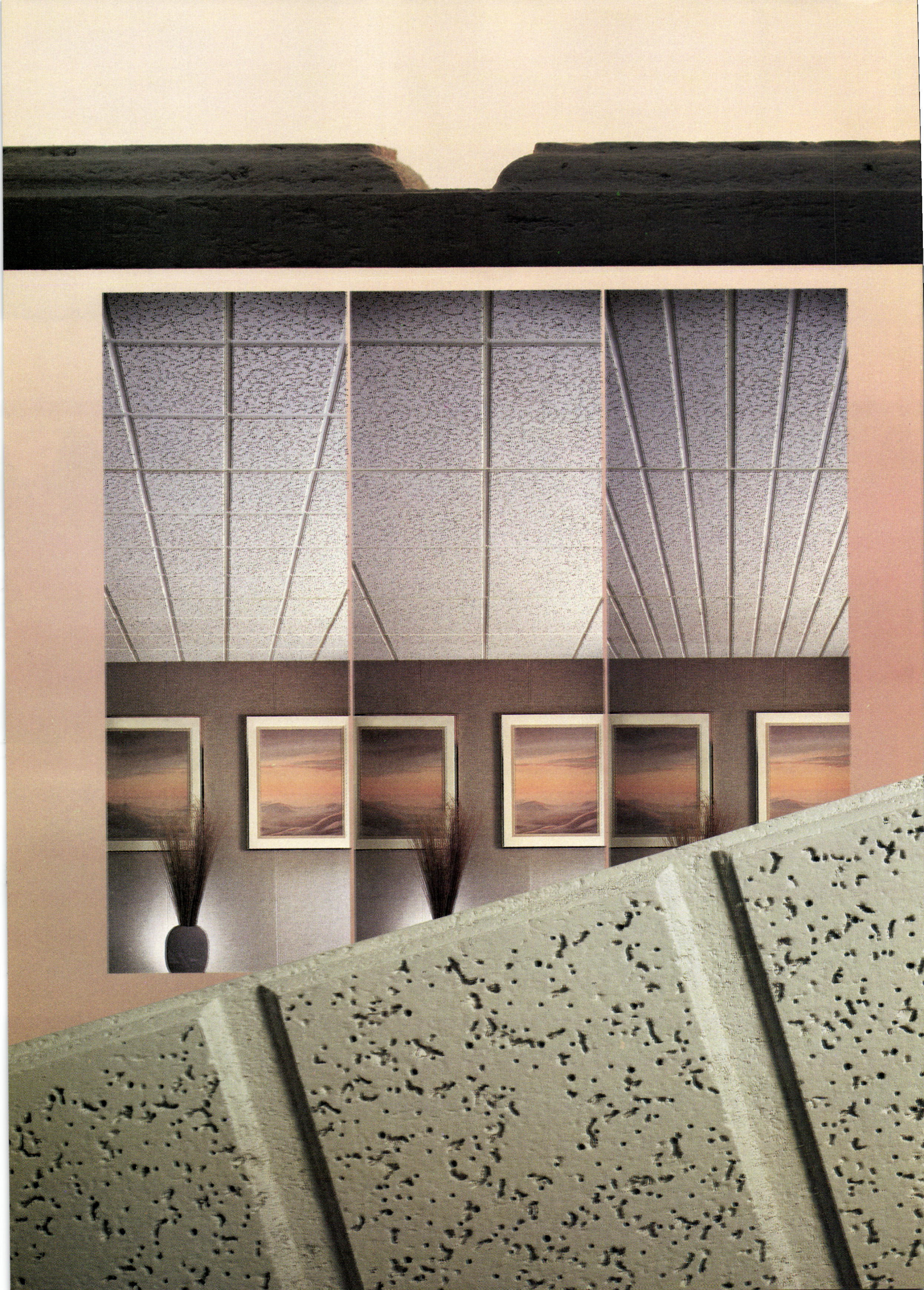
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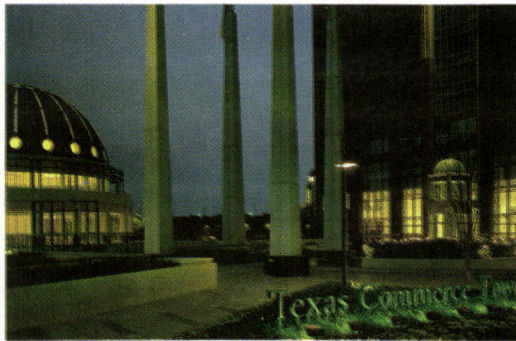
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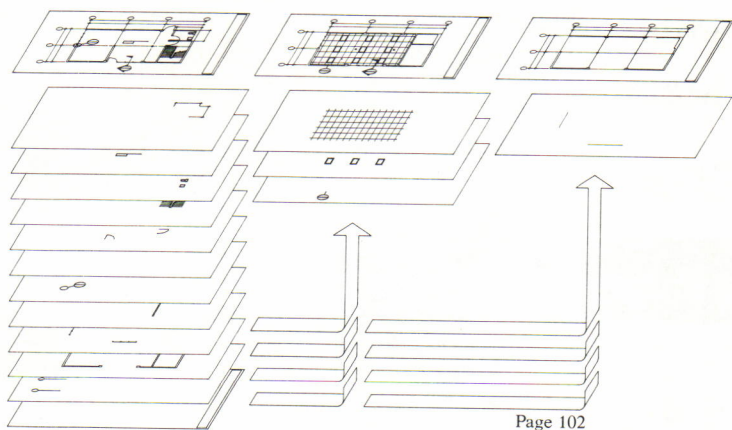
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*Texas Commerce Tower in Dallas by Skidmore, Owings & Merrill. Photograph © Aker Photography (see page 50).*

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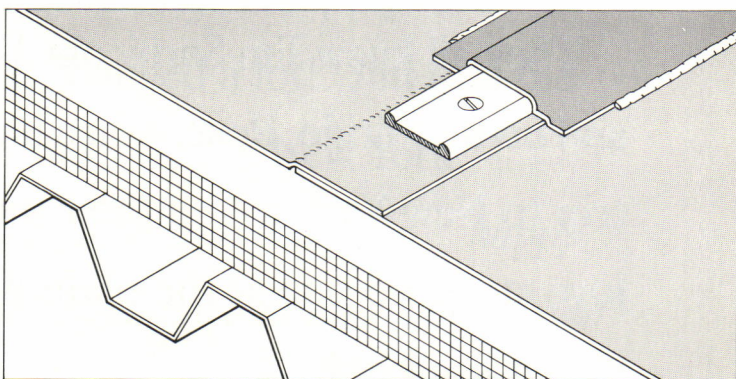
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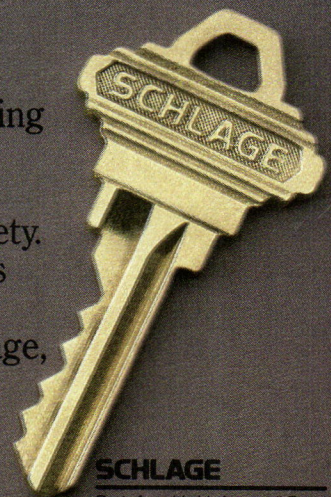
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*Practice*

## Research Group Reports Guarded Optimism Despite Sluggish Economy

Overall, real estate development will be in a holding pattern in 1988. The realities of overbuilding, a sluggish economy, concern about user demand for space, the impact of tax reform, and lender hesitancy all add up to conservative development, which means that new building starts will be more selective and less speculative than in the past. This is the word from the Real Estate Research Corp. (RERC) in its newly released report, "Emerging Trends in Real Estate: 1988."

Four factors are largely responsible for this slowdown, according to RERC. Supply and demand are out of equilibrium in most markets and are expected to stay that way for some time. Niche opportunities are not available in sufficient number to support all the interested developers—miniwarehouses, structured parking, and retirement housing are generally overdone in most cities and suburbs. New project financing became increasingly difficult to obtain in 1987 and is not likely to loosen up in 1988. The need for commercial space is not expanding at the rate it did between 1975 and 1985, as the number of baby-boomers entering the work force (and consuming increased goods and services) has begun to level off.

But even with such good reasons to slow down development and construction, some owners are driven by other forces that will serve to keep new construction higher over the next year than economists would like to see. These developers intend to keep their organizations intact and plan to do so by taking on new projects. While in the past, says RERC, home builders, for example, would have gone fishing when the building cycle called for it, medium- to large-size commercial developers are not willing to cut back now, or even to maintain a constant level of activity. And to make matters worse, in RERC's view, money is readily available. Financial institutions may be more cautious than before about new deals, but they are happy to keep their established customers going.

In the short term this news is not bad for architects—their design services will be needed for the increased activity—but over the not too long term, developers will be unable to maintain substantially vacant buildings and stay in business.

RERC is concerned that stepped-up building will once more outstrip the existing, and foreseeable, demand for space. In sensitive markets, such as Dallas and Denver, even a small volume of new construction might cause a relapse before these unhealthy markets can recover.

The greatest activity over the coming year, in order of preference, is expected in retail projects, industrial buildings, and land development for future office space. Then come single-family residences and apartment buildings. Excepting only a few chains, hotel development is not looked on favorably. Unlike RERC, many of the developers responding to its survey are still enthusiastic about office construction.

In 1988, the heaviest concentration of new retail construction will be in the Southeast, Southwest, and Northeast. The expanding population of Florida and the large and relatively wealthy population of California are enticing retail developers. The Northeast has a number of hot spots, including upstate New York and parts of Pennsylvania. Large institutions and foreign investors are expected to build retail centers to hold for their own portfolios in these areas.

Specialty stores are favored investments and include those targeted to the value-conscious—Price Club, Wal Mart, and Venture, to name a few—as well as the majority, which are targeted to the more affluent shopper—such as Banana Republic, Ann Taylor, and Williams-Sonoma. Designer boutiques in particular, such as Ralph Lauren, Calvin Klein, and Valentino, are expected to appear everywhere. There will be greater emphasis on the older consumer as the population ages. Department stores are looking to increase their productivity, efficiency, and service, which indicates substantial new design and construction. This year and in the future, retail developers are expected to put much of their energy into retail components of mixed-use projects, urban infill, and unusual concepts.

Despite the optimism of respondents to its survey, RERC finds industrial real estate an uncertain venture this year, with wide regional variations. Office developers trying to keep busy are turning to industrial projects, increasing the market's poten-

tial for overbuilding. In many places, the value of industrial projects is in their redevelopment because they are near central business districts, transportation, and waterfronts. These sites are expected to be prime development prospects in the next peak of the construction cycle. High-tech, R&D, and flex-space industrial projects are sure losers for the time being. Northeastern locations are the most attractive markets this year for industrial buildings.

The office market in 1988 should repeat last year's: oversupplies will continue almost everywhere. New construction will decline in the worst markets and continue, but at a slow pace, in more vital areas.

"As projected last year," says RERC, "construction of new office projects dropped in 1986, and figures show a decline in the first half of 1987. . . . Construction hit its peak in 1985, then declined by almost 24 percent in 1986. New starts dropped most precipitously in the southern and western parts of the nation; in the less overbuilt Midwest, they were down by less than 4 percent."

Office construction has not come to a complete halt, however, as it did in the 1973-1974 downturn. Only in the most severely overbuilt markets has office construction all but stopped. Any new buildings, however, are providing intense competition to those constructed one to three years ago and still trying to lease up. However, RERC is convinced that, from mid-1987 on, vacancy rates will slowly drop in most cities as some developers avoid office projects. Downtown office space will fare better than suburban for 1988.

In 1986, a record 91,000 new hotel rooms were brought on line, increasing the total by 3.5 percent; and 1987 additions totaled 60,000 rooms. This year is expected to bring more of the same because aggressive national hotel chains have not been affected by the widespread failure of new hotels. Good investments this year are resort hotels, and much attention is given to Orlando, Hawaii, and the Caribbean.

Land development projects are being hailed as the smartest. RERC says the timing is right to purchase, hold, and develop land in readiness for the next construction cycle. The best prospects are underutilized or vacant land in or on the edge of downtown; infill sites within urban areas that have zoning and infrastructure in place; and raw land on the edge of an expanding metropolitan area.

Housing markets are expected to remain incredibly active during 1988, and multifamily buildings still look profitable. There is money being made in the hous-

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## Practice from page 15

ing market, institutional investors are more willing to hold apartments in their portfolios, and home builders have profited from the size of the trade-up market with a great deal of amenities. The only caveat is that interest rates remain relatively low.

Strong housing markets in the Midwest and the Northeast result from the strength of demand and the scarcity and high cost of sites. Today, the most costly housing markets in these regions are in Boston, Hartford, and New York City.

Retirement housing is not being absorbed as expected, and smart developers are cutting plans. Housing the poor is the next big issue, and means of making it profitable to developers—with trust funds, partnerships, and innovative use of tax credits—are under investigation.

In general, 1988 ought to be a quiet year for real estate development, according to RERC. Whether developers take RERC's advice remains to be seen. Only in New York City, Washington, D.C., Los Angeles, and Boston do opportunities abound.—ELENA MARCHESO MORENO

## Research Conference Contrasts Role of Architect and Engineer

"Are architects and engineers different kinds of human beings?" Mario Salvadori set the tone for the AIA/Association of Collegiate Schools of Architecture Research Council conference with this question.

Architect and engineer are definitely different, he said, in psychology, disposition, and training. The architect is a generalist, among the last humanists left in our technological culture. Today's architect must know so much more about so many fields that he or she ends up knowing nothing about everything. The engineer, by contrast, is a specialist. There are structural, concrete, and thin-shell specialists and even one who does only hyperbolic paraboloids. The result is that the engineer knows more and more about less and less until he or she knows everything about nothing.

Nothing about everything and everything about nothing equates the knowledge of engineer and architect, for things equal to the same thing are equal to each other. Salvadori, the mathematical physicist, had slyly and charmingly made them equal to each other.

The research conference was held in conjunction with the Boston Society/AIA's annual "Build Boston '87" convention in late November. The conference was organized, according to its sponsors, to "examine the demand for and application of architectural research and its relation to architectural practice [and] provide a forum for researchers, educators, design practitioners, and construction industry representatives to discuss mutual interests," which it did.

Plenary presentations focused on the diverse traditions of architectural research; debates presented critical perspectives of research traditions, alternative methodologies, and application of research to practice.

Yorihiko Ohsaki of Shimizu Construction Co., Tokyo, presented examples of Japanese research and the operation of robotics in building. The robot spraying beam insulation did not appear particularly talented, but the demonstration of wind simulations around building forms was truly an esthetic experience.

A panel discussion by Michael Brill of the Buffalo Organization for Social and Technological Innovation and Richard Krauss of Arrowstreet, moderated by Robert Shibley of SUNY at Buffalo, led off the conference. Sessions dealt with a wide spectrum: research/practice interface; research methods and technology; offices as building types; vertical transportation; prisons; typology and enhancing architectural research; energy; architecture and senior housing; design management; technology; design education; research methods and behavior; methodology; special populations and the general populace.

The papers presented showed both generalist and specialist equally adept in solving problems on the high ground of rigorous analysis and equally inept in defining and solving the "wicked" problems in the swampy bog of human behavior.

Inevitably, some presentations were obvi-

ous bids for tenure, but the majority seemed to be honest and thoughtful attempts to define, face, and forge a basis of architectural research.

Lynda Schneekloth's and Robert Shibley's discussion of a new paradigm for research and practice was a valiant, if wordy, struggle to balance the high ground of the hard sciences and the low bog of the behavioral sciences.

Volker Hartkopf's presentation of his well thought-out and documented paper, "The Need: Intelligent Building for Building Intelligence," continued the valuable effort of the Carnegie Mellon group allied with Peter Mill and Public Works Canada to forge a reasonable diagnostic base for building design and evaluation.

For a serious effort to integrate what Donald Schon, a professor of architecture at Massachusetts Institute of Technology, has labeled "knowledge in action" with architectural research, a better selection of plenary panel participants—Brill, Krauss, Shibley, Ezra Ehrenkrantz, FAIA, Robert Gutman, and Donald Watson, FAIA—could not have been found.

An excellent conference did not deserve so many empty seats.

The difficulty remains obvious, that the architectural community does not see research as a serious activity, nor take it seriously, judging by the attendance. The product booths were well attended, but sessions were sparsely peopled.

—FORREST WILSON

## The Institute

# Board Adopts Umbrella Policy For Licensing Allied Professions

At its December meeting in Washington, D.C., AIA's board of directors approved a broad umbrella policy that defines the purpose of architectural licensing and provides the substantive basis for all Institute public policies on licensure.

As directed by the board at its September meeting, the licensing law task force, headed by Robert Broshar, FAIA, developed a new, integrated group of public policies. The approved policies state that AIA "believes that the practice of architecture must be licensed to protect the public health, safety, and welfare" and calls for standards of licensure "based on minimum levels of competency relative to education, experience, and examination to insure public interest is served."

The board also reaffirmed its position on "licensing of other building professionals," stating "in the building design industry the responsibility for the public health, safety, and welfare demands the education and experience required for the licensing of architects and engineers. The AIA opposes any dilution of this responsibility."

On the specific issue of licensing for interior designers, the board approved a legislative and media strategy, based on the government affairs advisory committee's directive that licensure for interior designers "is not in the public interest."

The approved proposal restates AIA's "support of private, voluntary certification as a means of differentiating between trained and untrained interior designers, as well as the AIA's belief that interior designers are valuable members of the design team."

This approved plan outlines a coordinated national AIA campaign responding to the interior designers' legislative and media initiatives and provides for a national public relations effort, the development and distribution of resources and tools for AIA members and components, and a legislative assistance effort.

In other action, the board approved three appointments to the National Judicial Council. Glenn Buff, FAIA, Robert Harrison, FAIA, and Thomas McKittrick,

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### Deaths from page 24

"To the search committee, his talents were immediately apparent, including his unique contact with government agencies."

During the nearly six years Meeker headed the AIA staff, Institute membership grew from 25,000 to 43,000. AIA's efforts contributed to the congressional decision to restore rather than expand the West Front of the U.S. Capitol, and AIA's leadership helped save the design integrity of the Vietnam Veterans Memorial.

AIA presidents who served during the Meeker years remember him warmly. Says R. Randall Vosbeck, FAIA, "We worked as a team when I was president, and he gave me a tremendous amount of support." "His real strengths were in the fact that he could have a vision and enthusiasm for getting things marshaled and organized to realize that vision," says Robert Broshar, FAIA. "He related well to members," recalls Robert Lawrence, FAIA. "He had been involved in AIA as an architect. When he went out to components and to regional meetings, he could speak to members from the standpoint of a practitioner." "Dave came on the scene at a time when we wanted a presence in the capital, politically, and he filled that bill for us," says Charles Schwing, FAIA.

David Dibner, FAIA, who was GSA's head of design and construction during much of Meeker's tenure, says, "I felt that he understood the problems of architects in government. I had a friend in this house, both as a government official and as a practitioner."

After leaving AIA, Meeker resumed his career as a practitioner and, last January, cofounded Plus 4 Architects in Indianapolis with Michael Lester, AIA, Craig W. Rapp, AIA, and Thomas C. Dorste, AIA. "Meeker had a particular eloquence in presenting architectural ideas to clients," says Rapp. "He understood the politics of a project, especially with academic clients. Through diplomacy he could find a compromise that seemed to be one of their own suggestions. And in the firm, everyone looked up to him. He was a teacher."

—ALLEN FREEMAN

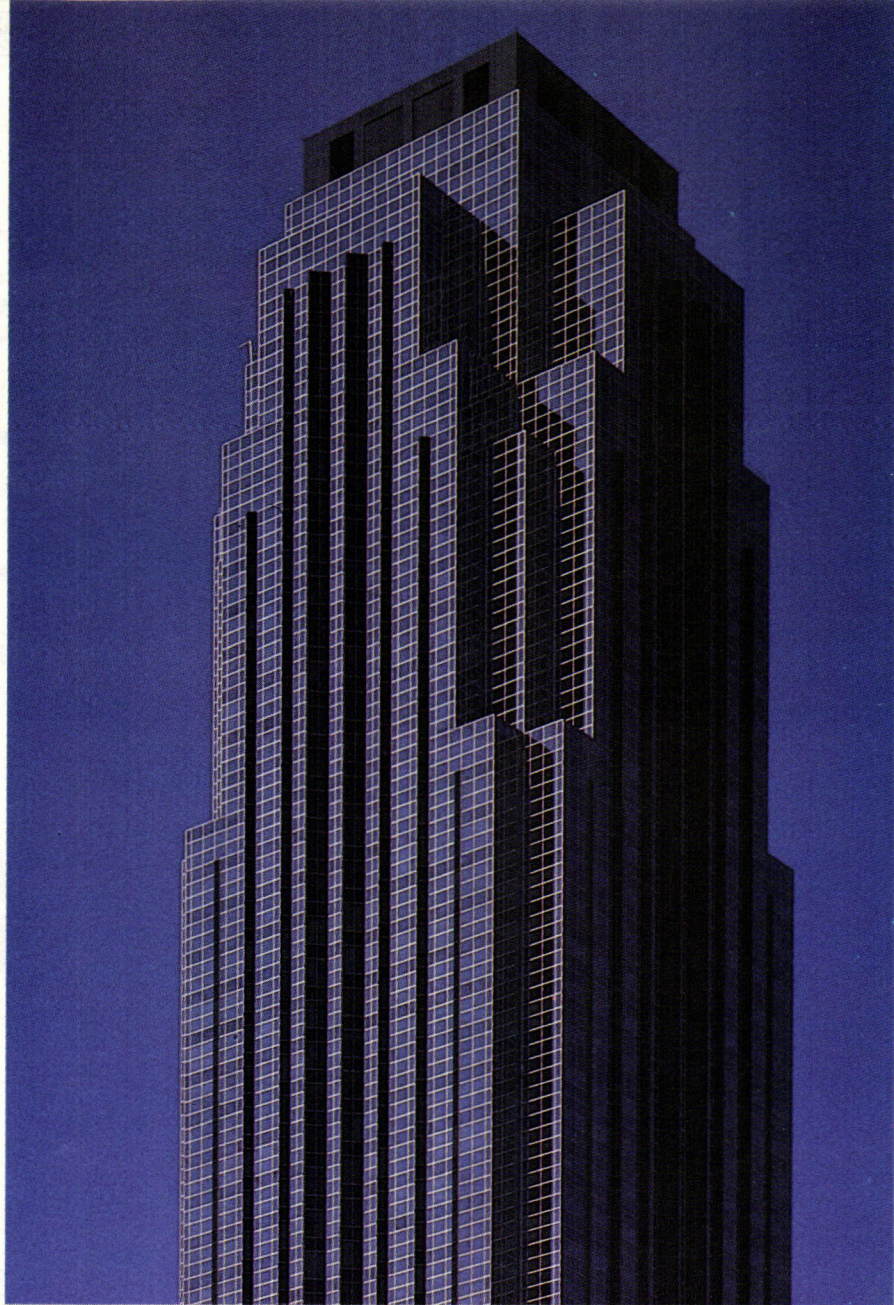
### Thomas F. Ellerbe Sr., FAIA

Thomas F. Ellerbe Sr., FAIA, a major figure in Minnesota architecture and a civic leader in St. Paul, died in November at age 94. For half a century he presided over the architecture and engineering firm Ellerbe Associates, which his father, Franklin H. Ellerbe, founded. When he took over the firm, he employed five architects, one engineer, and a secretary; over the years the firm grew to employ more than 500 people.

Upon his retirement in 1955, Ellerbe gave all the shares of his company to his employees, saying they were the people who made the company successful.

The firm has completed more than 100  
*continued on page 31*

*continues on page 33*



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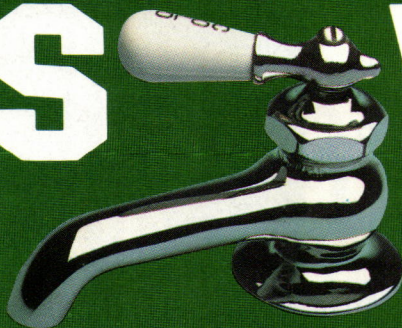
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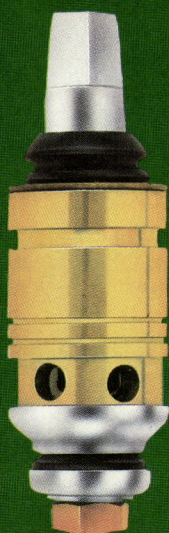
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# CHICAGO FAUCETS



## Housing from page 31

ities into apartments for families.

The subject of the Washington, D.C., workshop is a group house for battered women, to be operated by the local Housing Opportunities for Women. A building for this shelter had been acquired prior to the formation of the task force.

For the Search for Shelter projects, the design problems usually are straightforward. Common themes include the desire to create a noninstitutional atmosphere, the need for adequate communal as well as private spaces, and the need for appropriate spaces for social services.

A potentially volatile issue is a community's reaction to a project. In several Search for Shelter projects, buildings chosen for redesign had already been designated for such development and the communities were well informed. In a few cases, community dissension was anticipated; therefore, changes in a building's size or appearance were carefully weighed to assess the impact on the community.

Other concerns included whether zoning variances are needed to, say, convert a former single-family house into a group house; sources of financing; and plans for facility management.

While most workshops centered their efforts on specific buildings or sites, a few looked at the problems in broader terms. For example, the task force in San Mateo County, Calif., surveyed the county and recorded existing shelters and low-income housing stock and potential sites and buildings.

Nationally, the prognosis for availability of affordable housing remains dismal. Perhaps one of the bleakest predictions comes from one of the Search for Shelter sponsors, the Neighborhood Reinvestment Corp. By the year 2003, it warns, given current trends, 18.7 million could be homeless, burdened with excessive rents, or forced to live in slums.

—NORA RICHTER GREER

## Senate Defeats First Major Housing Bill in Seven Years

What would have been the first major housing legislation in seven years was dealt a fatal blow by the U.S. Senate in late November.

Acting on President Reagan's appeal that the legislation would be too costly and send a "terrible signal" to Congressional budget negotiators and the financial markets, Republican senators blocked consideration of the bill. Their method was to evoke a congressional budget rule that requires a waiver to proceed on bills requiring expenditures exceeding budget totals set by Congress early in the year.

In contention is the amount of federal monies that would be channeled to a variety of community development and housing assistance programs. The bill's major

*continued on page 35*



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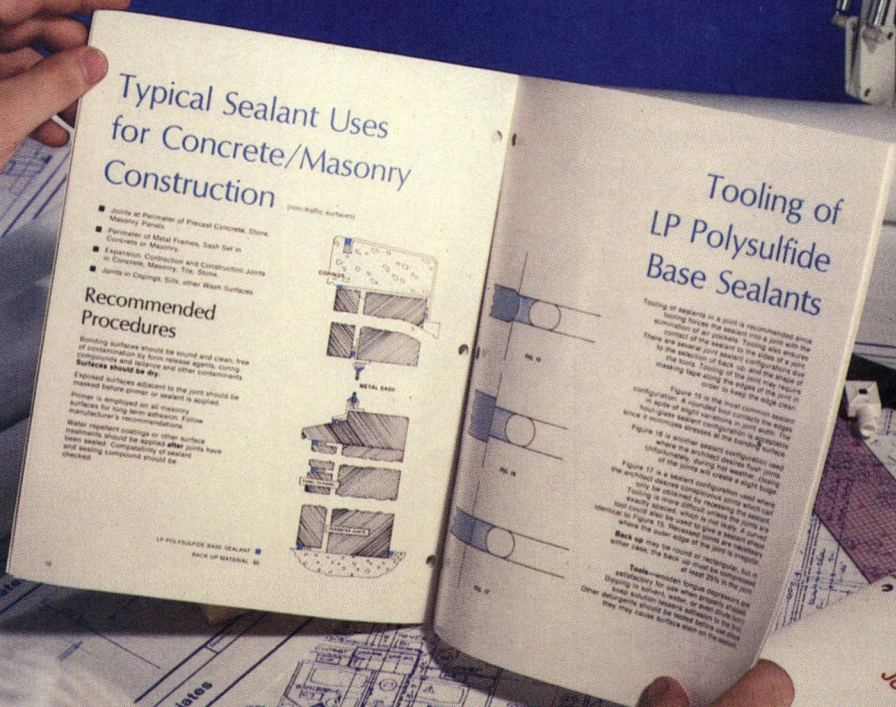
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### Housing from page 33

sponsors, Sen. Alan Cranston (D-Calif.) and Sen. Alfonse M. D'Amato (R-N.Y.), said the bill would authorize \$15 billion in 1988 and \$15.6 billion in 1989. Reagan and the Office of Management and Budget contend the cost would be at least \$19 billion a year and potentially a great deal more in the future. Programs will most likely continue through appropriations, as they have for the past seven years.

The housing legislation is considered by its sponsors to be a stopgap measure as lawmakers begin a major overhaul of the nation's housing policy, a process that may take two years. However, some new programs are included in this year's housing legislation. One is based on the successful Nehemiah program in Brooklyn, N.Y. If approved, federal money would go to nonprofit corporations for interest-free loans of up to \$15,000 for the purchase of houses in distressed areas.

The Administration contends the program, aimed at families with incomes in the \$12,000 to \$25,000 range, would take scarce federal assistance from the most needy. Supporters of the program say it produces units more cheaply than traditional assistance programs and at the same time frees public housing space for those most in need.

—NORA RICHTER GREER

## BRIEFS

### Linen Design Competition

The International Linen Promotion Commission and the National Home Fashions League Educational Foundation are co-sponsoring a student design competition for a linen working or living environment—linen upholstery, drapes, wall coverings, and bed and table textiles. Prizes will include \$2,000 to the winner and \$1,000 each to three runner-ups. The entry deadline is March 1. More information may be obtained from National Home Fashions League local chapter offices or ILPC, 200 Lexington Ave., New York, N.Y. 10016.

### Kimmel Honored

The International Facilities Management Association has presented its 1987 "distinguished author" award to Peter S. Kimmel, AIA, executive vice president of Facilities Solutions in New York City and Washington, D.C. Kimmel was selected primarily because of an article he wrote for the July/August 1986 issue of ARCHITECTURAL TECHNOLOGY on the facilities management market.

### Energy Innovation Award

John G. Lewis Jr., AIA, of Richmond, Va., is the recipient of the 1987 Virginia Energy Innovation award for his design concept for fireplace energy conservation. His project received the state award from the Virginia department of mines, minerals, and energy, and has been nominated by the state energy division for a national award. □



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The Woodfield at the Crossing office complex in Indianapolis, Indiana is a good example. The open web configuration of the steel joists was ideal for the use of suspended,



*5-foot spacing between Vulcraft joists permits easy installation and maintenance of heat pump units.*

energy efficient heat pumps. But, the 3' spacing between joists was not adequate for the installation and maintenance of the heat pumps. So, 5' spacing were initially specified wherever the heat pump units would be installed. However, varying the

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## Chiding Wright the Man, Slighting Wright the Artist

**Many Masks: A Life of Frank Lloyd Wright.** Brendan Gill. (G.P. Putnam's Sons, \$24.95.)

Not only was Frank Lloyd Wright, by consensus, the greatest American architect, he was perhaps—as the historian Henry-Russell Hitchcock suggested—the greatest American of his time. His life is a rich subject for biography. He was an American of the most representative kind, steeped in the self-aggrandizing values he learned from his intellectual heroes in the mainstream of American culture: Emerson, Thoreau, Whitman. And his private history was as dramatic as a soap opera. Driven in both his life and his work by a yearning for a permanent hearth and home, he nevertheless more than once ran off with mistresses. The great house, Taliesin, that he built for himself in Wisconsin burned to the ground twice. The greatest love of his life died in a mass murder. In his early 60s he was largely forgotten, having built almost nothing for years, and his work seemed ended. Yet

he recovered and went on to create a new series of masterpieces in a second career that lasted almost 30 years until his death at 91.

Despite his celebrity, Wright has never achieved the recognition he deserves, partly because his public personality—especially in later life—was that of a tiresome (although often humorous) braggart. The personality is a problem for any biographer. There are perhaps two ways to deal with it. One is to concentrate on debunking the endless boasts and fabrications Wright created about himself and his work and to expose his devious relations with his clients. The other, more difficult and more subtle, is to explore what it was about the man—the braggart, the liar, the charmer, the Emersonian self-created ego, the son of a domineering mother and an absent father—that enabled him to achieve his great buildings.

*Below, Wright with Fallingwater client Edgar Kaufmann Sr. at Taliesin West.*

Brendan Gill has written the first book but not the second. His biography is readable, funny, and informative. It presents Wright as a comic figure, as a preposterous showman. He is always in debt, his roofs always leak, his drawings are always late, he conceals his sources, he clones his designs, and his buildings are forever tripling or quadrupling their promised budgets, yet he lovably blusters and fibs his way through every crisis. So much of *Many Masks* is taken up with chiding Wright as the con man he certainly was that the great artist fades out of the picture.

Although Gill is the architecture critic of the *New Yorker* and a lifelong architecture buff, there is no serious architectural criticism in his book. Gill is more concerned, for example, to show us that Wright's Unity Temple is partly derived from Viennese examples (an obvious fact) than to explain or express its magic; "marvelous" is his vague and, in context, grudging word of praise. Wright's Martin house of 1903-1906 in Buffalo is dismissed as uncomfortable, as indeed it is, with nothing said of the rich development of forms and the spatial drama that even today take one's breath away. It's a cop-out to call Wright, as Gill does repeatedly, a "genius" without defining that genius or even showing much respect for it.

*continued on page 40*



Courtesy of Avery Architectural and Fine Arts Library, Columbia University



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### Books from page 40

As a Wright apprentice who sharpened pencils for the master while the original

backward glance as far as the Renaissance, but as serious history begins with the well-trodden ground of the Chicago World's

### Books from page 42

Barnett's trump card, the New York City 1961 revised zoning ordinance, lacks critical evaluation. Too much of his treatment of "the Modern City," the longest of his six chapters, smacks of high-class journalism. "The urban crisis is last year's problem," is a typical Barnett put-down. The design of the city is the concern of many, Barnett declares, but then comes the paradox: no one is concerned with the design of the city.

Cities need design, and it must be provided by designers. They must enter the urban planning and development process at the beginning and be present whenever significant decisions are made. Barnett is at his best in insisting on these fundamentals. One hopes his book will be read by the many public officials and developers who need this message. One regrets that the point could not have been made more convincingly.

—FREDERICK GUTHEIM, HON. AIA

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

### Project Management in Construction.

Sidney M. Levy. (McGraw-Hill, \$34.95.)

This introductory text provides methodologies for all aspects of project management, including project organization, project controls, contracts, claims and disputes, procedures for acquiring an accurate data base of costs, estimating, project administration, how to monitor costs, and how to initiate and monitor an effective safety program during the construction process. Examples, sample problems, and charts supplement the text, which is designed for architects and design engineers. The presentation of the management process includes special problems encountered when working with various construction materials, including masonry, steel, and concrete.

### Cartography and Site Analysis with Microcomputers.

N. Brito Mutunayagam and Ali Bahrami. (Van Nostrand Reinhold, \$34.95.)

The book serves as a programming guide for physical planning, urban design, and landscape architecture. It explains how to use microcomputers in map generation and site analysis. The book claims to be "user-friendly" and that no previous experience with microcomputers is necessary for its use. The text begins with an explanation of the functions of a microcomputer, how it works, applications, and a general discussion of hardware and software. It contains a menu-driven general program and subprograms that enable preparation of a site map including colors and location of points, lines, and polygons on the map; evaluating alternative sites; and making optimum use of cut and fill. The programs are in Apesoft BASIC, which can be converted to other versions of BASIC, as well as translated to other languages. □





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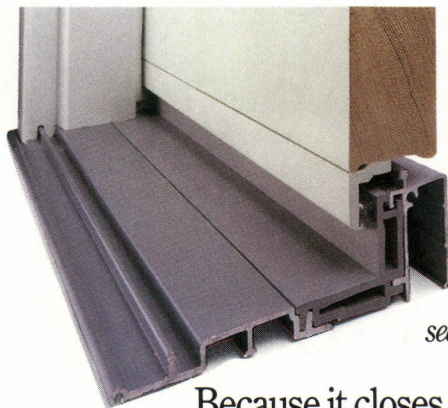
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# ARCHITECTURE

A good deal of this issue is devoted to office buildings, most of them corporate or speculative. As our lead news story indicates, this may be an endangered species, depending on where you are and which economists you believe.

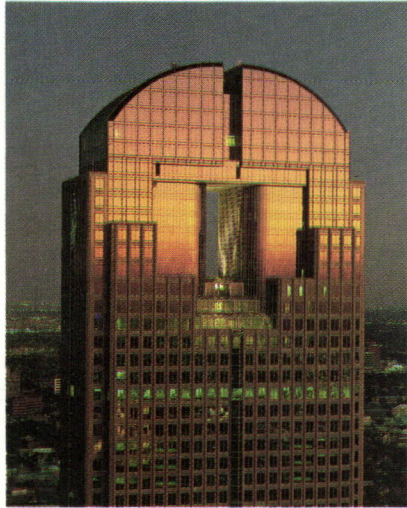
As those on the following pages indicate, office buildings these days elicit a dazzling variety of design approaches. They are the most adventurous of building types in terms of shape, form, and fineness of materials.

This, of course, is no accident. The rise of client awareness that architecture could add to the desirability and value of their buildings has been well documented. It has become commonplace to talk of “designer buildings” bearing the signatures of “starchitects.”

This phenomenon has two edges. It can be argued that anything that calls attention to the value of architecture, monetarily and otherwise, is to the good. Conversely it pushes architects perilously close to the role of fashion designers.

There is nothing particularly wrong with trying to impart a special identity to buildings, just so long as design concern doesn't end there but extends to matters such as suitability, respect for context, and attention to users' as well as clients' needs. Without these things the buildings become the three-dimensional equivalent of the trademarks on expensive jeans. —*D.C.*





© Wolfgang Hoyt/ESTO

## A Sibling but Far from a Twin

*Texas Commerce Tower joins LTV Center (both by SOM) on the Dallas skyline. By David Dillon*

LTV Center is to Texas Commerce Tower what a Lincoln is to a Lamborghini, but making sense of the analogy requires knowing something about recent development in Dallas.

From the mid-1950s to the late 1970s downtown Dallas was a dumping ground for off-the-shelf office towers by renowned and not-so-renowned architects. As Houston's skyline rose to operatic heights, Dallas remained safe, derivative, and uninspired. Among the leading perpetrators of this commercial banality was the Trammell Crow Co., which for years had built ubiquitously but none too well. In the late 1970s control of the company's office building division passed from Trammell Crow to his son Harlan, and with the passing came a more enlightened attitude toward design.

The first building under the new regime was an architectural mediocrity; the second showed a budding awareness of more sophisticated precedents; with the opening of LTV Center in 1984 the Crow company finally struck architecture.

LTV was such a financial and critical success that the Crow company quickly teamed up again with Skidmore, Owings & Merrill's Houston office to build the 55-story Texas Commerce Tower across the street. These two buildings, together with Henry Cobb's nearby Allied Bank Tower (see Dec. '86, page 44), suddenly gave Dallas a skyline that could hold its own with Houston's in swagger and panache, though not in diversity.

With their cut stone facades and crisp three-part divisions into base, shaft, and top, LTV and Texas Commerce evoke the romantic skyscrapers of the '20s and '30s. Each contains a monumental lobby, one resembling a miniature internal street lined with



© Aker Photography

shops and restaurants, the other a grand banking hall ringed with gleaming teller cages and luxurious conference rooms. LTV is the more formal and conspicuously allusive, recalling priapic predecessors as varied as Napoleon Le Brun's 1909 Metropolitan Life Tower in New York City and the campanile in St. Mark's Square in Venice. Texas Commerce's progenitors are the dozens of precisely gridded office buildings that SOM turned out during the '60s and '70s, although its broken pediment at least winks in the direction of Johnson/Burgee's AT&T headquarters in Manhattan.

But the buildings are totally different in spirit. Despite its bustling lobby, LTV is fundamentally sober and upstanding, desiring more than anything to be considered a paragon of commercial design. Texas Commerce Tower is the flamboyant sibling intent on being noticed as well as admired. With LTV the Crow company finally got respect; with Texas Commerce Tower it demonstrates that it can have fun, too.

LTV Center was the product of calculation and happy coincidence. By the early '80s Dallas developers had discovered that good design sells, a lesson that developer Gerald Hines, Hon. AIA, and his Houston counterparts had learned a decade earlier. Tenants were ready for something besides flat-top skyscrapers with windblown plazas. Simultaneously Dallas was planning its downtown arts district, an ambitious 20-block culture park that has since foundered because of a cratered real estate market and the absence of a long-range planning vision. LTV was to be the first commercial building in the district, located on the highest point of ground and directly across the street from





*In this panorama of downtown Dallas, Texas Commerce Tower is the building with the 'sky window' at left, and LTV's crown is directly above. Allied Bank is the second tower from right.*

Edward Larrabee Barnes's new Dallas Museum of Art. Such a key site demanded a building that others besides CPAs could appreciate.

SOM responded with a classical 50-story tower consisting of a cruciform base, an equally well-defined shaft, and a glass-enclosed pyramidal top. Like most new Dallas buildings, it is a sculptural object in a plaza rather than part of an urban ensemble. But because of its strong cross axes, linking it to both the art museum and the future main street of the arts district, LTV marks a place instead of simply occupying it. From a distance it resembles a gigantic obelisk in some partially completed city plan.

Parallel rows of bay windows, miniature versions of the pyramidal top, rise from the third to the 44th floor, reinforcing the building's strong vertical thrust while moderating the sheerness of its walls. The tower is finished in dark polished granite and bronze glass, with a gray limestone banding that acknowledges the museum next door. Unfortunately this elegant combination gives the building a somber, Darth Vaderish character much of the day. The lighter granite cladding on Texas Commerce Tower was a direct response to the unexpected broodiness of LTV.

LTV became an instant landmark, the first pointed top in Dallas's crew-cut skyline. More importantly, it was expansive and

welcoming at street level, where Dallas office buildings have typically been aloof and austere. In plan the lobby is a circle within a square, with the circle forming a two-level rotunda containing several restaurants, a bookstore, a flower shop, a bank, and other retail facilities. In atmosphere the lobby recalls the grand concourses in, say, the Empire State and the Fisher buildings, but its orgasmic finishes—white marble, bronze, exotic African woods—reflect unexpected shifts in Dallas's office market. Between the time LTV was designed and construction started, rents rose dramatically while labor costs and interest rates fell. The result was a \$10 million windfall that the Crow company converted into expensive finishes and sculpture for the plaza.

The plaza, including a two-story pavilion for exhibitions and performances, is a collection of small, semi-autonomous gardens, each with benches and tables, fountains, and pieces of French figurative sculpture, including work by Rodin, Bourdelle, and Maillol. The sculpture serves as a loose paradigm for the whole project: tasteful, conservative, easy to like, and attentive to its surroundings, such as they were. In a city noted for impressive boardrooms and pitiful public spaces, LTV was a breakthrough. It made an inviting plaza part of the cost of doing business in downtown Dallas.

The popular and critical success of LTV Center significantly influenced the program for Texas Commerce Tower, which opened last September. The initial scheme by Richard Keating, FAIA, architect of both towers, called for a six-story banking and retail pavilion along Ross Avenue, the area's major street, with the office tower pushed to the rear of the site and a large







Left, LTV's darker cladding of polished granite contrasts with Texas Commerce's gray granite. Below, lobby banking room in Texas Commerce. Right, LTV's elevator lobby.



Hedrich/Blesing

circular plaza, containing a Southwestern version of the Hanging Gardens of Babylon, situated in between. It was an urban solution that created a formal street wall that also respected the scale of a historic cathedral across the street. But the lead tenant in the project, Texas Commerce Bank, felt it might be forgotten if it didn't occupy space in the tower, so the design was scrapped in favor of a single 55-story building, set back on the site, with a monumental plaza as foreground.

The Texas Commerce plaza is unlike any public space in Dallas, perhaps in the country. Instead of being a setting for the office tower, or an architectural extension of it, it has been conceived almost as a separate world, a miniature village, complete with pavilion, restaurant, gardens, maze, ceremonial staircases, and a lawn that slopes down to a computerized fountain that sprays sausage-like jets of water from pool to pool and that once was intended to be foreground decoration for a gigantic underground aquarium, which has since been scuttled and replaced by additional retail space.

Of course it's too much. Half the elements could go, starting with the concealed loudspeakers that pipe in Bach and Tchaikovsky and the arc of low, doughnut-shaped fountains in front of the main entrance, over which every visitor must trip at least once. Yet given the dreary history of Dallas plazas, excess is a pardonable offense. Its message is similar to LTV's, namely that good urban buildings are more than solitary compositions of line and volume, that they are parts of larger wholes, and that owners and developers have some responsibility to that larger public realm. Whatever one thinks of specific details, Texas Com-

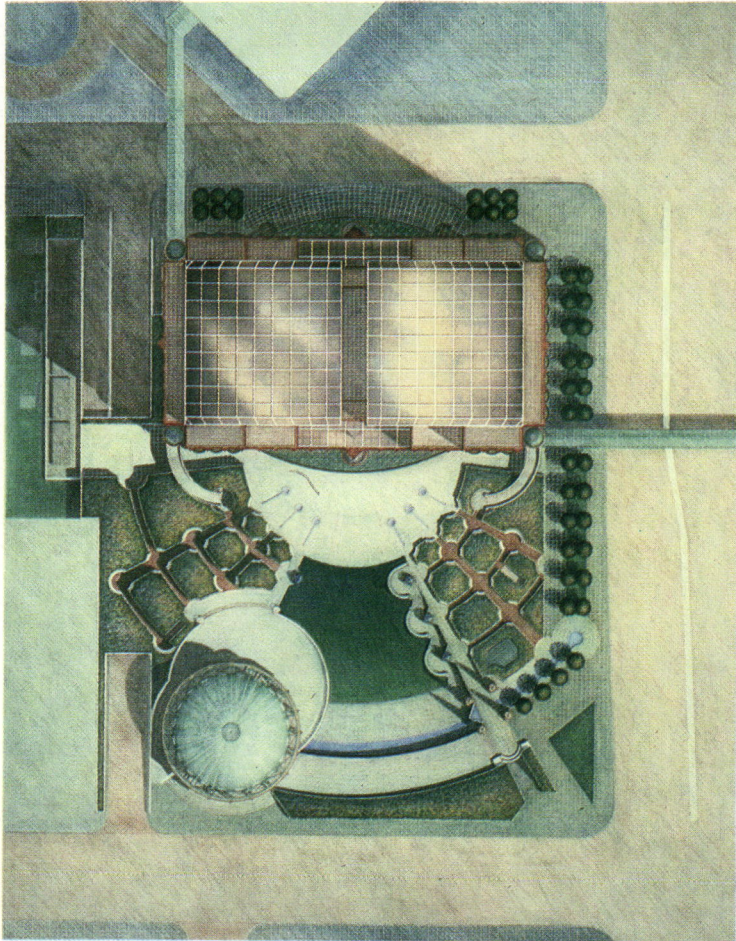
merce plaza takes account of what's around it. Its pavilion respects the scale of the cathedral and also lines up with the entrance to I.M. Pei's new Morton H. Meyerson Symphony Center, creating opportunities for visual and physical connections to proposed arts district buildings. Its lawn already has been the scene of numerous concerts and parties. If it is difficult to think of anything that has been omitted, it is also difficult to imagine what more one could ask a private developer to do to engage the public.

Out of this festive setting, Texas Commerce Tower rises 55 stories, a trim slab that is compelling in profile as well as full front view. Once again the basic cladding is granite—several shades lighter than LTV—that is rusticated at the base and polished above. A small rotunda, playing off the larger pavilion on the plaza, marks the entrance to the lobby, which contains teller cages instead of shops and restaurants but is nevertheless bright and welcoming. The craftsmanship throughout is exceptional. Stone looks like stone, not metal or wallpaper, and is cut and fit to extraordinary tolerances. Particularly notable is the way the architects have managed to create a sumptuous traditional feel in the lobby without resorting to labored historical allusions. A great deal of money was spent, but not to cover up flaws in the design. There is no confusion here between opulence and good architecture.

As Texas Commerce rises, it gradually sheds its dignified granite skin for glass epaulets and what could be mistaken for a cleft pirate's hat. The glass arch carries the grid pattern of the granite wall over the top of the building, translating it into more



*Left, Texas Commerce site plan shows plaza with round pavilion, fountains, ceremonial stairs, and an entrance (photo below) that mimics the pavilion. Right, Texas Commerce's thin profile.*



and more minimal terms until it becomes only a simple gray line on a dark background.

The dissolving skyscraper has become a cliché, finding elegant expression in Cesar Pelli's World Financial Center at Battery Park City, for example, and innumerable less pleasing manifestations in office parks throughout the country. Texas Commerce Tower is definitely on the elegant end of the spectrum, although its glass top doesn't make nearly so tight a fit as LTV's. It is more like a snap-in piece than the inevitable termination of the building's vertical thrust.

There are other points of irresolution, stemming from too many ideas rather than too few. The meeting of the granite facade and curved glass walls of the sky window is awkward, with planes advancing and receding and overlapping. The problem is compounded by the addition of a stair-stepping white steel truss for the 40th floor "sky lobby." More bumping and grinding, although the space itself is spectacular. Lower down, where a strip of bay windows (a detail carried over from LTV) meets the scooped-out space that frames the front entrance, we find another awkward collision that is only partially concealed by grilles and lights and other stylistic devices.

The sky window—a gigantic Magritte painting 75 feet high, 27 feet wide, and 80 feet deep—is Texas Commerce Tower's trump card in Dallas's dueling skyscraper sweepstakes. According to Keating, the idea evolved from an earlier study for a 150-story skyscraper in Chicago, in which engineers discovered that by poking holes in the top of the building they could reduce wind loads and thereby save on the amount of expensive steel brack-

ing required. The idea reappeared in SOM's entry in the 1982 Southwest Bankshares competition, and was finally implemented in Texas Commerce Tower. The window also creates parallel stacks of small floors for lease—approximately 9,000 square feet—for tenants who want rooms at the top without having to put up with neighbors.

Structural logic and economics aside, the window is also a hell of a gimmick, as Keating readily admits. Here is a window with neither inside nor outside, that frames the sun and the clouds, and that marks the skyline like nothing else in town.

Texas Commerce Tower is not only Dallas's newest skyscraper but also, because of the recession, possibly its last of the century. As such, it is perhaps appropriate that it also be the most flamboyant, filled with 20th-century swagger. In a single decade the city has gone from a plethora of banal glass boxes that were all function and no form, to more expensively dressed nip and tuck skyscrapers with some pretensions to style, to skyscrapers such as LTV and Texas Commerce Tower that combine architectural refinement with a sense of public purpose.

It is a measure of the basic strength of the design that for all its stylistic gyrations Texas Commerce maintains its architectural equilibrium. The balance is occasionally precarious; there is tension and a fair amount of irresolution in details; but it does not tip over into frivolousness. If LTV Center is ultimately more coherent, and perhaps more durable, Texas Commerce is clearly more adventurous. Together they signal that the developer and the city have reached a new level of architectural sophistication. □



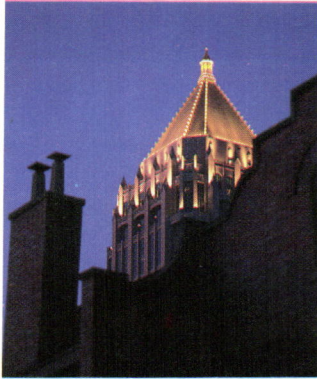






  
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Allen Freeman

# A Trip Back to The '20s in Atlanta

*The IBM tower by John Burgee with Philip Johnson. By Allen Freeman*

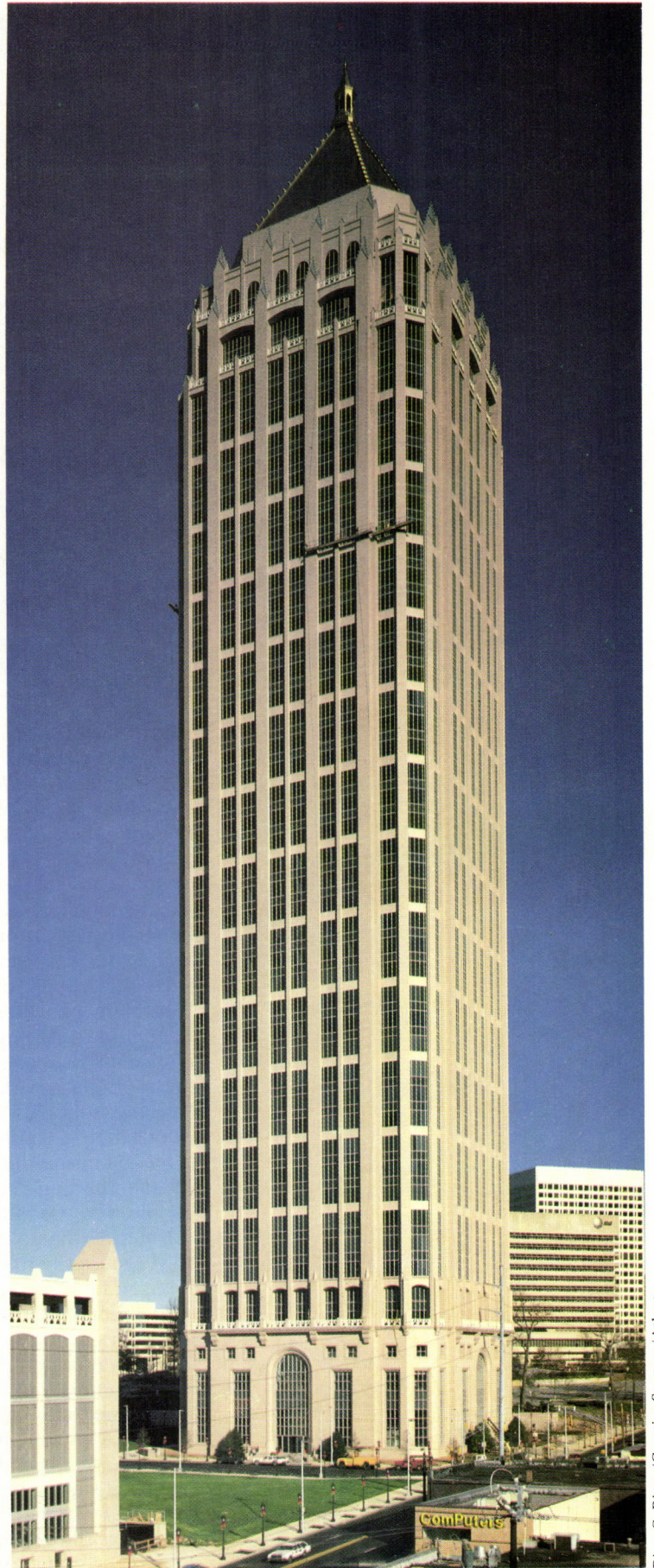
The new IBM Tower in Atlanta isn't *like* a 1920s skyscraper, it *is* a 1920s skyscraper. John Burgee Architects with Philip ("you cannot not know modernism") Johnson seem to have erased 60 years of design evolution, mining historical sources such as Cass Gilbert and Raymond Hood did prior to the rise of modernism. Elements of postmodernism are nowhere in evidence. IBM is, literally, back to the future.

A '20s tower for the Big Blue? As Burgee puts it, "You wouldn't call [IBM] a historical, classical kind of company. But then, you've got to say what is modern architecture? What is today's modernism? Well, it is a throwback and a turning away from an industrial architecture and into a more decorative or classical spirit. IBM very definitely just didn't want another repeat of what IBM buildings have been in the past, and they did want to be recognizing the new, coming architecture."

Historicism breaks recent precedent on Atlanta's skyline as well, where flat tops are punctuated only by Portman and Portmanesque flourishes. At 825 feet from sidewalk to lantern tip, IBM is, for now, the city's tallest skyscraper. Although a signal building, it stands apart on an edge of Midtown, itself a peripheral second cluster of mid-rises and high-rises two and a half miles north of Five Points, the historic downtown hub. IBM towers over Richard Meier's High Museum, rears above nearby Ansley Park houses, punctuates the vista north along West Peachtree Street from downtown, and is a beacon to the freeways and affluent suburbs in the hills of north Fulton County.

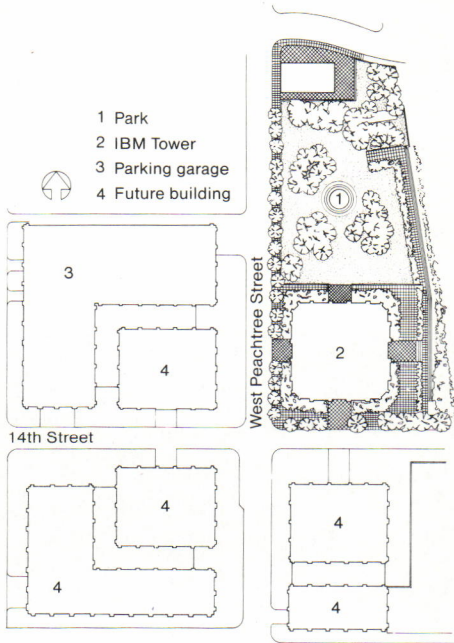
The tower shines as an urban icon by virtue of its brilliant crown, a steeply pitched, 100-foot-tall, eight-sided pyramidal copper roof (reminiscent of Richardson's Trinity Church) embellished with gold-leafed crockets jutting 30 inches from the ridges. When they catch the afternoon sun or reflect the

*Left, a somewhat telescoped view along West Peachtree north from Peachtree Center in downtown, an axis the IBM Tower seems to terminate from this vantage point. Right, IBM from the west along 14th Street. Beyond is Colony Square, an early '70s MXD. Above, the illuminated crown at twilight.*

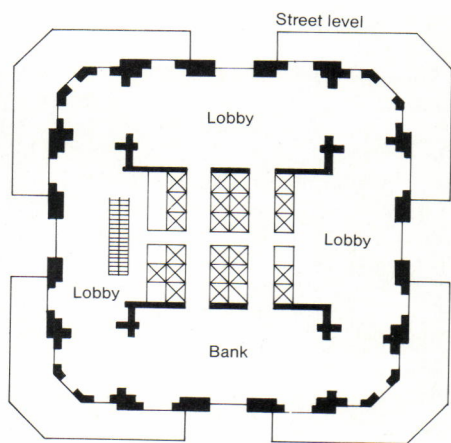


Rion C. Rizzo/Creative Sources/Atlanta





Rion C. Rizzo/Creative Sources/Atlanta



Rion C. Rizzo/Creative Sources/Atlanta

*Above, two views of the marble-clad lobby. Site plan shows built tower and three planned office buildings of complementary design that will comprise Atlantic Center. IBM co-owns the development with Prentiss Properties, a former component of Cadillac Fairview. Right, the tower and the High Museum.*

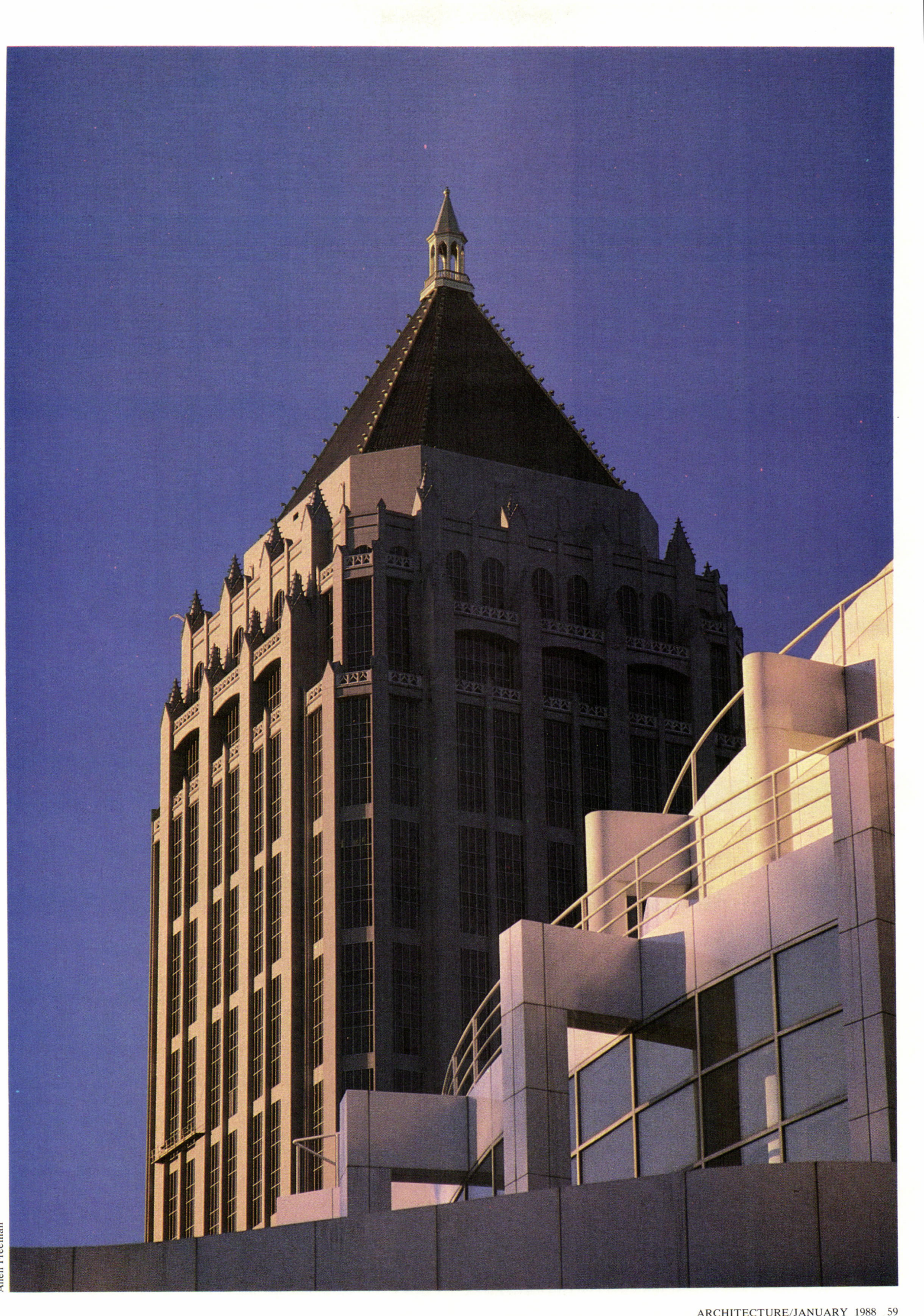
dramatic up-lights concealed behind the stepped Gothic finials, the crockets seem to glow like Christmas lights. It is a knockout resolution to a vertically ribbed shaft of rose-colored granite and gray glass rising from a surprisingly prosaic, more solid granite base of unrelating neoclassical design.

Burgee/Johnson and the associate firm, Heery Architects & Engineers of Atlanta, sited the freestanding tower close to the intersecting streets, leaving the adjacent two and a half acres to the north for a park. Landscaped by Zion & Breen, the park is fetching, soft, and Southern with indigenous magnolias, dogwoods, hollies, and azalias. No loading dock is in evidence. It is tucked inside the parking garage across West Peachtree, as are the building's cooling towers. Freight, chilled water, and people who use the garage are tunneled under the street.

Entering the tower, one finds its ground floor problematic. IBM reportedly rejected Burgee/Johnson's first design, which Johnson himself says was "too overwhelming." As built, the spaces ringing the core seem high enough, but their wide marble arches nearly touch the flat, banal ceiling and seem crowded. Too, chamfering the corners of the square tower produced lobby corners that are awkward in relation to the broad arches that frame the ends of the four large rectangular rooms (one of which is a banking hall). In all, the pieces don't quite fit together, and you are left with the impression of design by pattern book.

If, as it seems, the architects spent more energy refining the tower's crown than its base, that is status quo for Atlanta. IBM still meets the ground with more grace than any other recent skyscraper in the city. □





ALLEN F. COLEMAN



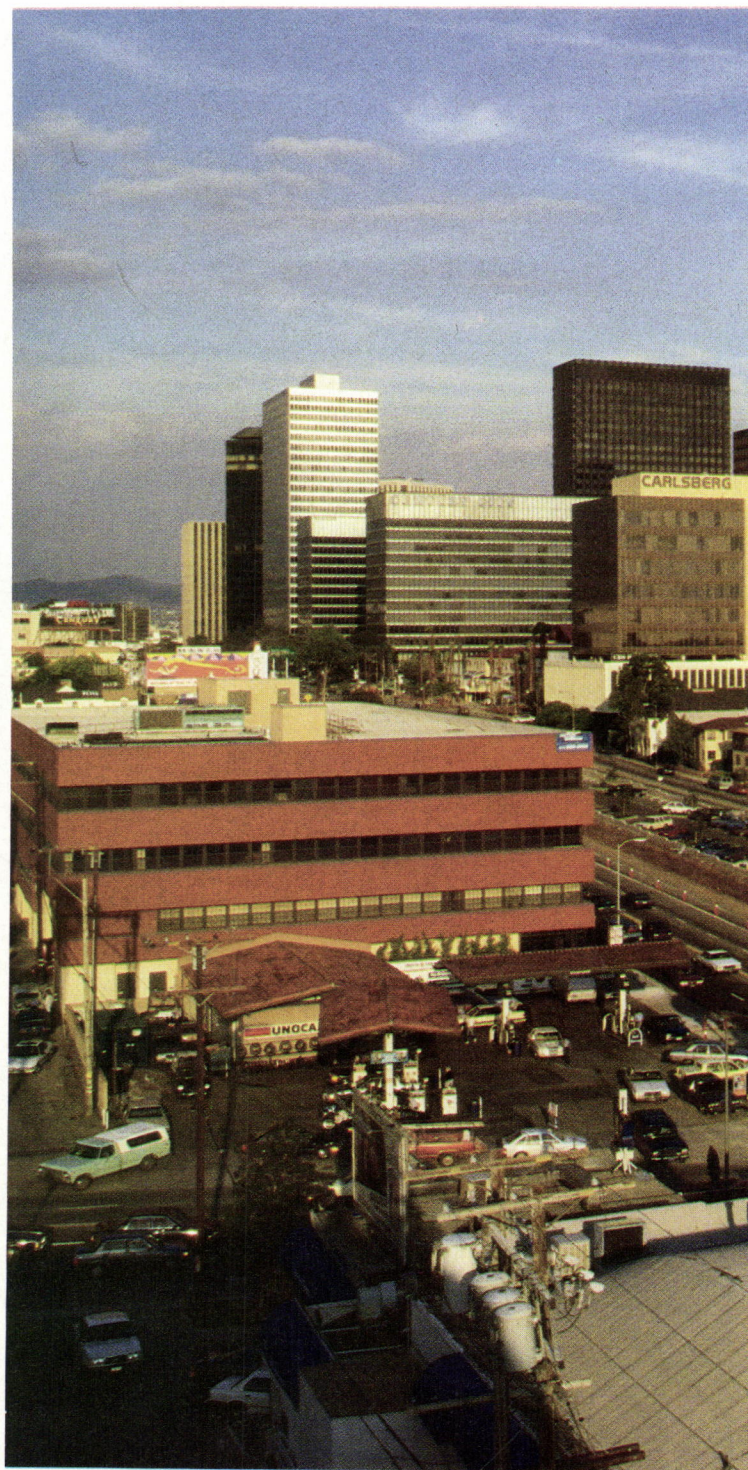
# Century City After A Quarter Century

*The huge Los Angeles complex ends its architectural drought. By John Pastier*

Tom Carroll/Photographic International



John Pastier



Century City is one of the more instructive chapters in the annals of urban development. Twenty-five years ago, it was a 180-acre film studio back lot bordering Beverly Hills; it had been sold by 20th Century Fox to the Aluminum Corporation of America and William Zeckendorf, and it was just beginning a transition to permanent development. Today the portentously named, mile-long development encompasses 2,000 units of high- and low-rise housing, three retail complexes with more than 200 establishments occupying about a million square feet, one playhouse and 18 film theaters, a medical center, three hotels totaling 1,500 rooms, and 10 million square feet of office space.

Century City is home to 40,000 workers, 4,000 residents, and 2,500 businesses. Its skyline is equal in height to that of a good-sized downtown such as Fort Worth or Cincinnati. It is advertised as the largest and costliest totally private real estate development in history. The architects involved in its execution include such well known names as I.M. Pei, Skidmore, Owings & Merrill, Cesar Pelli, Anthony Lumsden, Minoru Yamasaki, Hellmuth, Obata & Kassabaum, and Benjamin Thompson.

And yet, this is not a place that the architectural profession cares to talk about. Century City has not been extensively pub-

lished, and its planning and individual buildings are not often the subject of architects' debates. There are several reasons for this indifference. Although its very earliest and latest buildings are well designed, the overwhelming majority are ordinary at best, and the visual relationships among them are usually haphazard or simplistic. (The larger buildings, for example, include six pairs of identical twins, and the low-rise housing units would certainly increase that figure.)

Century City's overall planning, begun in 1958, was based on modern-movement and urban-renewal notions about unformed space, monumental scale, and sparse ground coverage— notions that then were taken on faith but now are known to be seriously flawed. Even worse, the development had to be designed for large numbers of automobiles, which mandated highwaylike streets, superblocs, and copious parking. And its location on the basically suburban west side of Los Angeles gave it neither an urban physical context nor a strong local urban value system to help guide project planning decisions.

Welton Becket Associates, the master-plan architect, controlled only part of the street system, parcel sizes and uses, and design of the street signs and lighting fixtures. Once Century City was





John Pastier

*Opposite page, above, aerial view of the vast Century City site in 1976; below, heavily traveled Olympic Boulevard in foreground flanked by the medical center and the condominiums. Above, the full skyline with office district clustered to the left and housing, hotels, and Fox Plaza to the right.*

planned, its owners apparently were not interested in any systematic method of plan updating or building design review, so implementation left much to be desired. A down-the-road decision to sell off many of the parcels to various developers resulted in even greater fragmentation. Neither a planned freeway nor an anticipated rapid transit line ever materialized; thus the difficult issue of traffic was further complicated. In its treatment of vehicles, pedestrians, shopping, and housing, Century City combined urban densities with suburban values. In short, a rare opportunity for enlightened city-building evolved into an immense but rather ordinary real estate development.

And yet, several things can be said in Century City's favor. It is an economic success, so much so that the Los Angeles City Planning Department had to restrict its development to bring its traffic generation in line with nearby street capacity. It is pop-

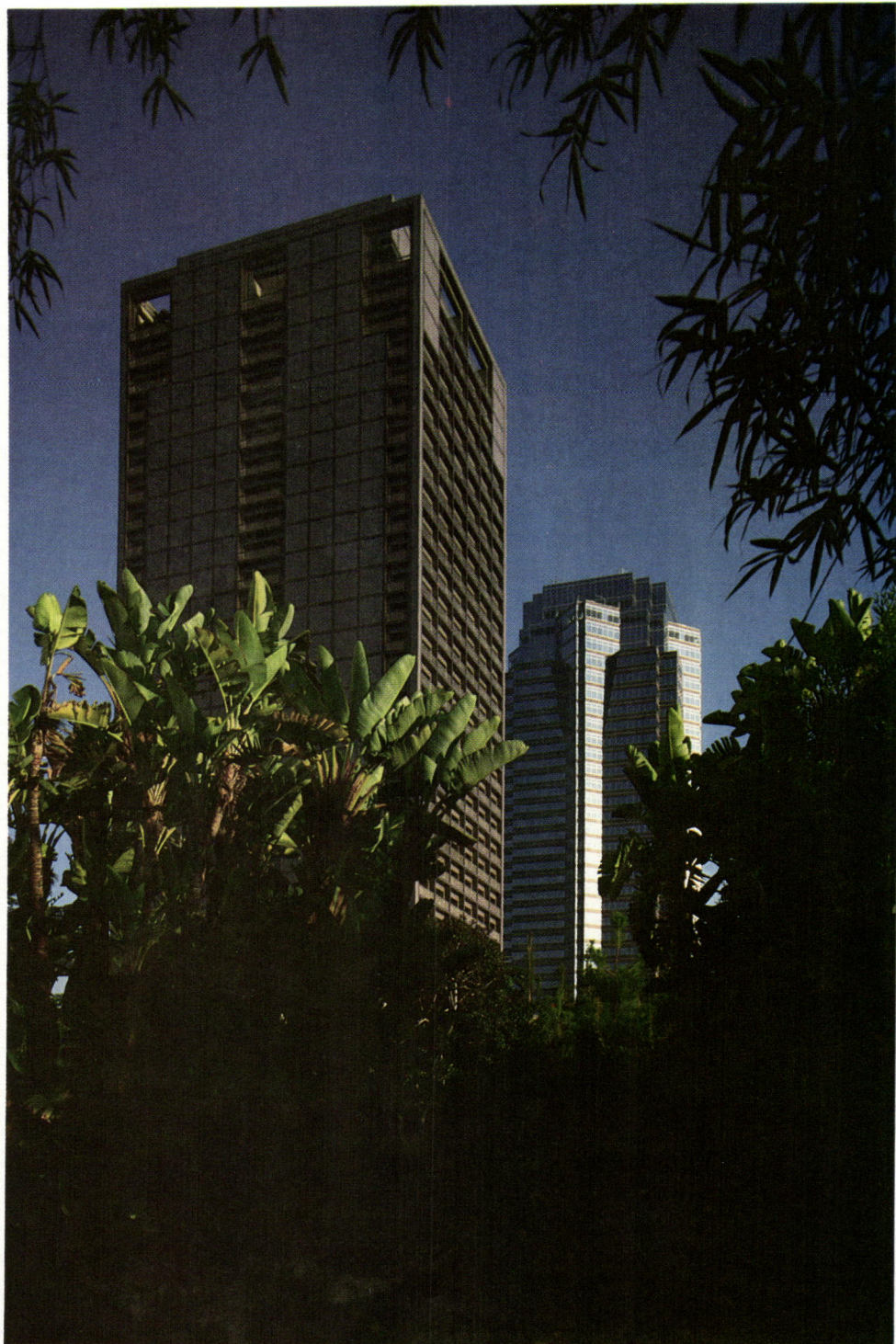
ular with political leaders—every U.S. President and Vice President since 1964 has stayed at its main hotel—and with many of Los Angeles's affluent west-side residents. Its mixture of uses, although coarse-grained, is surprisingly diverse; and, unlike many comparable developments, Century City has an active life at night and on weekends. In keeping with Los Angeles's strongest environmental tradition, Century City is generously and skillfully landscaped. This process was aided by the presence of mature trees on the film lot; Becket was able to save them and replant them once the infrastructure was in place.

In the beginning, there was reason to believe that Century City's architecture might grow as richly as its plant life. In 1964 its third and fourth buildings, I.M. Pei's 27-story Century Park Towers apartments (later converted into condominiums), set a strong design standard. Unfortunately, over the years occupants of many units have glassed in their recessed balconies, thus diminishing the vigor and consistency of Pei's statement. Even so, the towers still represent a milestone in local high-rise housing design.

Other early buildings—a hotel by Yamasaki and office buildings by Becket, HOK, and Albert C. Martin & Associates—did not measure up to Pei's work but still were solid, respectable



*Below, vacuous plaza of Minoru Yamasaki's twin Theme Towers. Right, Gruen Associates' recently topped-out, 375-room Marriott Hotel and Fox Plaza beyond.*



efforts in the context of their time. Contemporaneously, however, a pair of mediocre apartment towers was built, foreshadowing a decline in quality that, starting in 1970, became the rule rather than the exception for about a decade and a half.

Office building design became erratic, as did the formal relationships among buildings. The residential sector became totally suburban in character. Century City's original vision of a model urban environment was supplanted by a myopic pragmatism. The worst example unfortunately happened to be also the development's largest component—Yamasaki's 2 million-square-foot Theme Towers, built in 1975. These 44-story, 571-foot-tall twins, at one time the tallest U.S. buildings outside a central business district, were similar to Yamasaki's World Trade Center towers in New York City: volumetrically unelaborated, with a repetitiously banal skin treatment. Their floor plates took the form of equilateral triangles, a shape that results in squat proportions and possesses the geometric property of blocking the most view for a given amount of floor area.

Finally, at the end of 1984, Skidmore, Owings & Merrill's San Francisco office ended the architectural drought by producing a slender tower addition for the Century Plaza Hotel. This ele-

gantly gridded building plays a skillful set of variations on the bay size and opening proportions of Yamasaki's nearby ancestor building and counterposes its vertical mass to the older building's horizontal arc. This is an architecture of understatement and refinement, coming to expressive life at its top, where the play of solid and void within the continuing structural grid creates a supple termination to an otherwise rigorous design. The tower's aluminum skin (a common material in Century City—at least eight of its larger structures are so clad) adds another element of animation. Depending on how it catches the sunlight, its color can range from light bronze to a dusty plum, and its surface can seem matte or reflective. At the time of its completion, this tower was arguably the best-designed building in Century City.

But in 1986 it was displaced by what is probably Los Angeles's best postwar skyscraper, built just a block away. The 34-story Fox Plaza, designed by Scott Johnson of Pereira Associates, sits on a rise south of the office cluster but at the center of the overall development. Unlike the hotel tower, its strengths reside in sculptural and surface qualities straightforwardly expressed.

Yet Fox Plaza is not a one-liner; it reads well over a wide range of distances, and the appearance of its semireflective glass and





*Two views of Scott Johnson's Fox Plaza illustrate its varied facades. Left, rising above a residential neighborhood and, below, in relation to older office buildings.*



two-tone red granite skin varies in response to changes of weather and vantage point. It is an impressive sight from the Santa Monica freeway two miles away, and it culminates the vista down at least two west-side thoroughfares thanks to its strongly chiseled form and some fortuitous bends in the street grid. Even when sighted from the hills near downtown, a good nine miles off, its deftly shaped silhouette marks it as the pride of the L.A. skyline.

At those middle-to-long distances, the building recalls a classic 1920s or '30s skyscraper. Its upper-level notching resembles the legally required setbacks that became trademarks of prewar towers in New York City and, through imitation, in most other big cities. And with distance suppressing detail, its walls appear to have the monolithic solidity of prewar masonry.

But it is also very much a child of its time. If its modern allusions tell us that we live in a postmodern age that often looks backward for reassurance, many of its specific details tell us that late modernism also remains a vital tradition today. This is a clean-lined building that strikes an astute balance between simplicity and incident. Its manipulation of surface reflections pays conscious homage to artists of light and space such as Robert Irwin, and reminds us that architecture can find a convincing

basis in real phenomena as well as in historical reference.

The building's form is that of a complex prism, in which one sculptural volume seems to be emerging at a 45 degree rotation from the top of another. This evocative geometry has commercial value, since it allows for 16 corner offices on each floor. It also contributes to the tower's success as a landmark, enabling it to present varied faces in different directions and to respond dynamically to the constantly changing viewpoint of an occupant of a moving car.

In this sense, it is a quintessentially Los Angeles building, and that characteristic is restated in its relationship to its setting. The Fox Plaza site is six acres, more than half the size of the original Rockefeller Center and incredibly large for just one medium-sized urban skyscraper. Much of this ground area is occupied by a multilevel, 1,830-car parking garage. The north side of that structure is visible along Olympic Boulevard, and it is designed nicely enough to contribute to the vista along the street. Its top level forms a large motor court behind the tower—even larger than planned because the client is still undecided about erecting three pavilionlike buildings designed to give shape and scale to that space. With the plaza thus unfinished and with un-built-





*Opposite page, twice-expanded shopping center; above, its outdoor public spaces. Right, the pitched roof of the food court of the new Marketplace, designed by Benjamin Thompson Associates.*

upon land extending hundreds of feet in other directions, the Fox tower is an extreme example of a building adrift in amorphous space rather than grounded within a strong urban matrix.

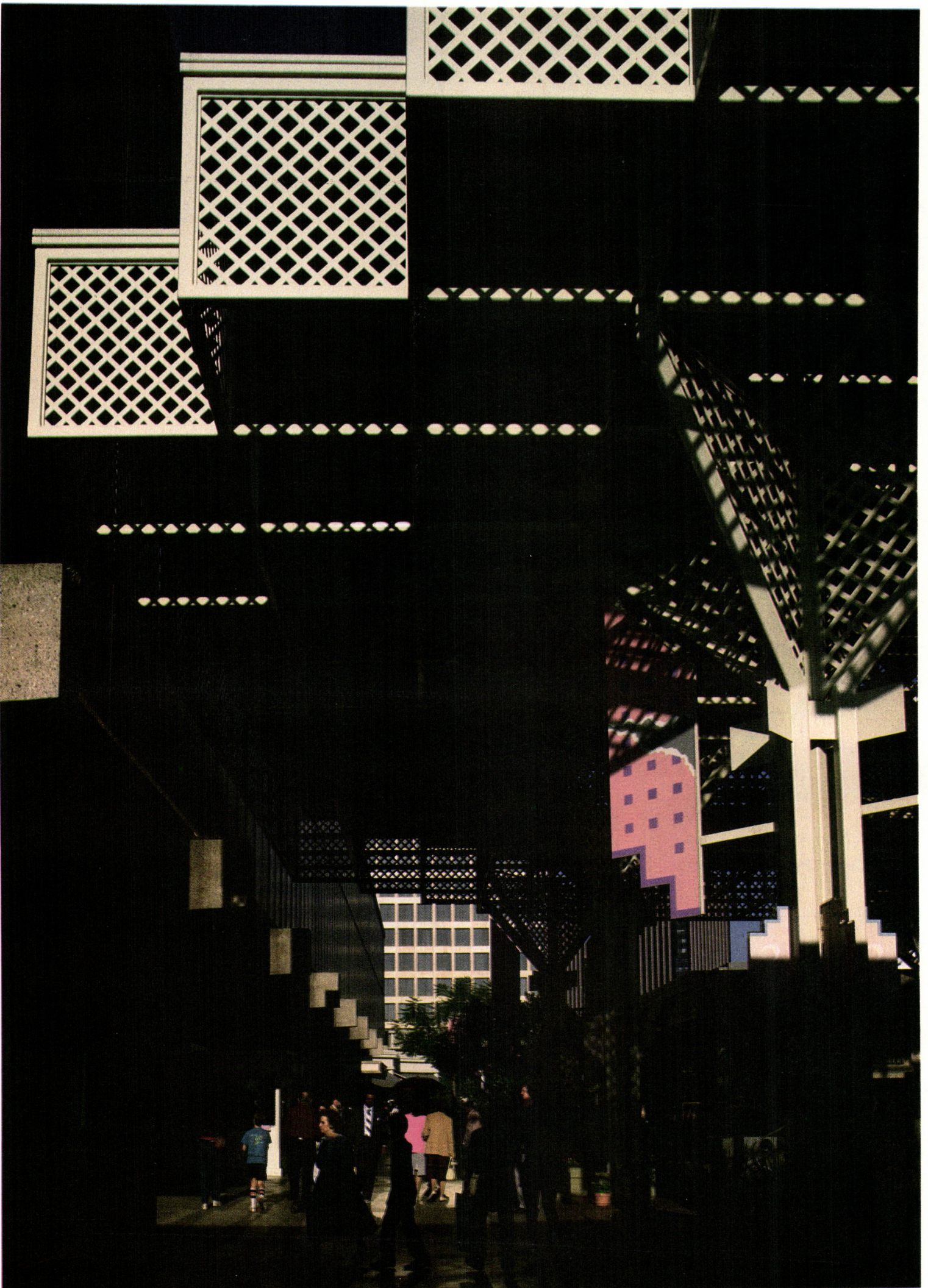
Here, Fox Plaza is victimized by Century City's suburban shapelessness; it is a building that cries out for a coherent urban setting and a better defined spatial context. In that respect, it is less typical of Los Angeles than of Houston, where such sophisticated design is common in commercial skyscrapers and where tall buildings float in seas of open space even more commonly than they do in Los Angeles and the lack of a pedestrian-scaled context for midtown office buildings is even more apparent. Thus, Fox Plaza's success is spectacular but not complete. This elegant tower has managed to transcend its setting architecturally but not to escape it in terms of urban design.

A third recent building is just short of completion as these words are written. The Marketplace, designed by Benjamin Thompson Associates, is a smaller food hall inserted into the twice-expanded Century Square shopping center that was first built in 1964. Its program is the now familiar festival marketplace, and its style is an unassuming tropical vernacular, not so much Californian as Caribbean in flavor. Its primary design statement,

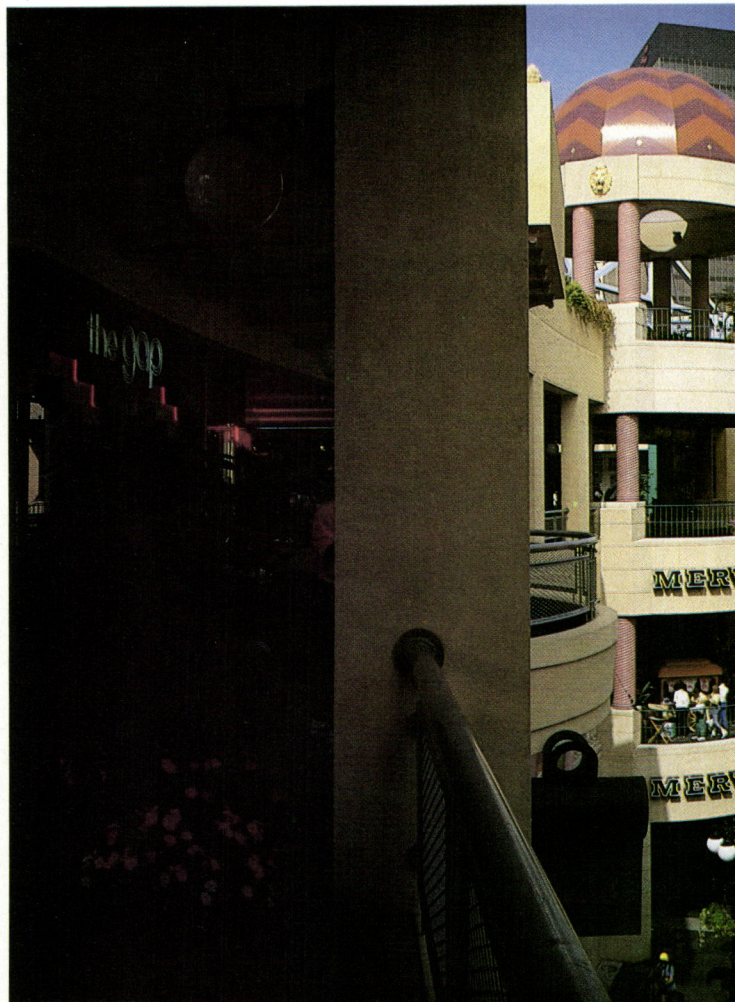
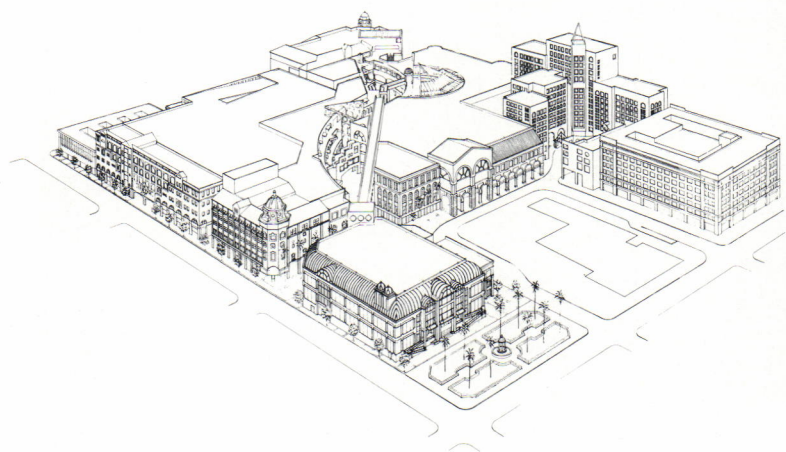
aside from prominent graphics, is a red metal pitched roof that will be better visible from nearby office building windows than from its patrons' eye level. Inside, that lofty roof will shape Century City's first significant public indoor space, and, given the Angeleno infatuation with food and the universal human response to well proportioned architectural space, the Marketplace promises to be a positive and popular addition to the single unequivocally pedestrian-friendly sector of Century City.

Thus, the three most recent Century City buildings include two very visible landmarks and one self-effacing building that promises to be well used and well liked nonetheless. Still to be completed are a recently topped-out 375-room Marriott Hotel by Gruen Associates and a 40-story office tower by Pereira Associates that is still under design. Neither of these seems likely to equal their immediate predecessors in design quality, so Century City's last act probably will end with less panache than it began. Nevertheless, that trio of buildings, especially the two towers, brings a welcome measure of architectural respectability to Century City, and provides a tantalizing glimpse of what might have been if architectural design excellence had been given a consistently higher priority over the life of the project. □









# Architectural Comic Opera

*A day in the life of San Diego's  
Morton Plaza and alternative assess-  
ments of its success. By George Rand*



Photographs © Randall Michelson Photo





We are not used to thinking about architecture in terms of tragedy and comedy. Yet International Style architects strove to create spaces that would achieve a heroic sense of tragic isolation. And more recently others—notably Charles Moore—have designed in a comic mode that reaffirms the fluid and the unconventional.

Jon Jerde, AIA, has made the most of working in the comic mode. Horton Plaza by his Jerde Partnership is best understood as a series of theatrical stages that employ position, distance, and symbolic decoration for dramatic effect. Jerde scripted, designed, and produced the San Diego complex as if it were a movie, and the effect is a comic opera stage set where social ritual is played out in architectural space. The following is an account of that ritual on a given day.

**7 A.M.** At Broadway and Fourth Mexican workers wait quietly for buses. Diagonally across the street is a small, simple park surrounded by benches and adorned at its center with a templelike fountain Irving Gill designed in 1909. This morning the dozen or more street people sitting there are joined by several religious proselytizers reading scripture to them.

This small, palm-studded park, now a corner of Jerde's extravaganza, is the original Horton Plaza. Since about 1870, when it was built, it has functioned as the physical and psychological heart of downtown. A century after its completion, downtown had degenerated into an urban combat zone replete with porno shops and cheap hotels; as recently as a few years ago the park was overrun with down-and-out characters. But most of the alcoholics, drug addicts, and homeless have responded to changes in the neighborhood by moving elsewhere. The old park's walks have been resurfaced in brick, kept very clean. The pavers extend to Robinson's department store on the northeast corner of the new Horton Plaza complex.

*Professor Rand teaches at the graduate school of architecture and planning at the University of California, Los Angeles.*

**7:15 A.M.** There are no gates or doors into the shopping plaza; the facility is always open. This openness necessitates intense surveillance by a security force three times that of comparatively sized malls. The maintenance staff, too, operates on a 24-hour schedule.

An ascending "grand staircase" states unambiguously the transition from the public street to the plaza's interior. To get to the staircase, however, you have to walk around a sunken plaza that contains the Lyceum, playhouse for San Diego's repertory company, and an obelisk. Here the device of making pedestrians go around obstacles is first evident. Jerde believes people abhor walking in straight lines, that they prefer to traverse a space on the diagonal or in a great arching curve, and that they enjoy looking in all directions rather than along major axes. Much as merchandisers interrupt shoppers' paths on the ground floor of department stores with strategically placed counters offering impulse items, the center discourages direct crossings.

The staircase, modeled after one in Perugia, is interrupted on the diagonal by a striking terra-cotta-colored arcade building. This tall, gaunt structure slices through the Horton Plaza complex with a powerful straight edge. From the top of the stairs a long courtyard unfolds, formed by the arcade building on the right and a crescent facade opposite.

**7:30 A.M.** Gray morning fog lingers above the open courtyard. There are signs of life inside the still-closed shops. Maintenance workers wash down awnings with soapy liquid. The morning sun reflects from sparkingly clean signs that can be read from a variety of angles and directions, adding visual complexity. On the left, the yellow stepped building that runs

*Above, four levels open to the sky and alive with people in the smaller of Horton Plaza's two interior courtyards. Mervyn's, the least pricey of four department store anchors, occupies only the lower two floors. Left, the jazzy palazzo—beflagged, triangular, and cutting a sharp corner into the larger courtyard.*





*Above, sidewalk vending carts are strategically placed courtyard punctuations. They collectively account for a high percentage of sales dollars in the complex. Facing page, people lose inhibitions, stop and view the scene, saunter through. Military men in crisp uniforms are a common sight in the plaza.*

the length of the mall vaguely resembles American Indian pueblos on a canyon wall. On the right, the straight arcade building is interrupted by a projecting triangular tower in olive green and an appended Venetian bridge. Topiary hippopotamuses cavort in comic innocence in the courtyard.

The tower marks the entrance to the Broadway department store with its arched orange window. All four of Horton Plaza's department stores are identified by towers and fronted by squares, like piazzas in front of Italian churches.

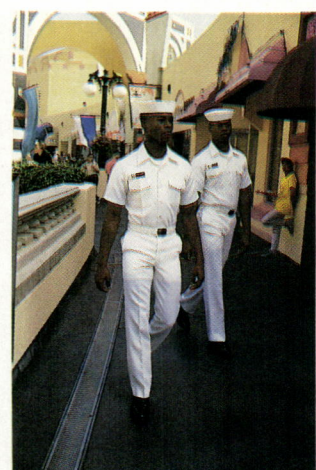
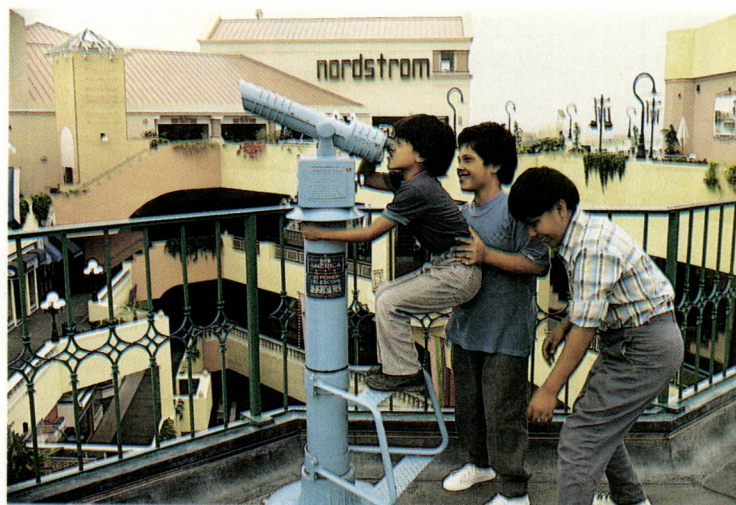
**8 A.M.** After passing under the low overhang of the blue bridge, I am confronted by the pointed presence of the black and white tiled "palazzo" building that encloses a smaller courtyard. An edge of the triangular palazzo narrows the passage into a small lane, which is punctuated by a freestanding, four-faced antique clock set plunk in its center. The palazzo's upper level is an open terrace filled with rows of colorful dining tables.

On the terrace nearby, employees are gearing up to open the myriad fast-food stands. Some of the signs here seem to leer or shriek at you, as if expressing enthusiasm for food. Close to a quarter of the mall shops sell food, a higher percentage than is typical in suburban centers. Much of the action throughout the day and well into the evening centers around these little food shops, which are clustered near a seven-screen movie theater.

**8:30 A.M.** Here and there people stroll through, sit alone writing letters, or gaze at the bay. A phalanx of four middle-aged men in short pants and athletic shoes moves through at a healthy speed. They talk loudly, spryly navigate stairs and ramps, charge along the unoccupied terraces with a sense of mission, climb to the highest point in the plaza, and then leave my sight down a series of stairs, their voices trailing.

**9 A.M.** Farther into the plaza the spaces become fractured by a collection of seemingly unrelated building elements dominated by an indigo and red, zigzag-tiled Moorish dome at the entrance to Mervyn's department store. Mervyn's has several levels of rooftop activities. There is a bandstand ringed with shops,





a “sports deck,” and—visible through a large oculus—a mezzanine that one city guidebook calls “a rooftop gallery of restaurants.” Hovering above the restaurants is a large, fan-shaped, metal frame structure painted a periwinkle blue. It resembles a member of some 19th-century railroad bridge.

Directly ahead is Nordstrom’s department store, a stately free-standing building capped with a cream, pink, and light blue tower that recalls California mission architecture. Nordstrom’s exterior escalators offer the only unambiguous means of vertical travel (other than elevators) in the entire plaza. As one customer told me later in the day, “It’s great to wander around here as long as you don’t have to get to a particular place. *That* can be frustrating.” Past Nordstrom’s, at the end of the plaza opposite where I started, another monumental staircase descends to a shaded dining plaza adjacent to the city street.

**9:15 A.M.** Walking back on the top level, I pass along Mervyn’s peristyle, along the edge of the restaurant mezzanine, and down the long hall of the arcade building to an area three stories high overlooking the Lyceum’s sunken plaza. Marie Callender’s cafeteria on the third level has been open only a few minutes, but already all the window tables are occupied. The cafeteria boasts an average of just over three minutes from customer arrival through food selection to completion of purchase.

**9:30 A.M.** From my high vantage point I see small groups of people wandering into and crossing the courtyard. People sidestep varnished vendor carts strategically placed to break up direct lines of walking. The bright colors and complicated vistas conspire to make people seem youthful, buoyant. They move with accented dancelike steps.

**10 A.M.** The plaza is beginning to hum with activity. First showings are already under way in the movie theater. People move along almost all the decks, ramps, and bridges, but not yet in great numbers. Children scamper around their parents. Early shoppers seem intent on getting to particular stores; military men in civilian clothes, recognizable by their short hair-

cuts, seem not to be going anyplace special; and couples and individuals wander casually, occasionally stopping to watch the crowd.

**11 A.M.** The sun is high and the mist has disappeared; large areas receive direct sunlight. The plaza is quite busy now. Most people enter from two large parking structures on the edges of the plaza. The day’s first musicians, singing minstrels, arrive; later they are replaced by a brass band.

**Noon.** The tables atop the palazzo are full; fast-food purveyors are doing a brisk business. More and more people stream on bridges, ramps, terraces, and balconies, and the general pace has slowed somewhat; the noise level has risen to a pleasant roar.

**1 P.M.** The plaza has become crowded and the pace has slowed more, but the festive atmosphere remains.

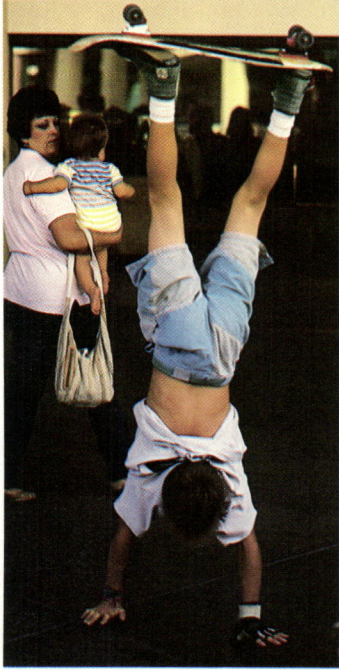
**2 P.M.** Some tired shoppers retreat to the cool sanctuary of the larger stores. The crowd in the plaza includes teen-aged boys carrying Day-Glo-colored skateboards, intensely observant Europeans speaking various tongues, Japanese tourists madly clicking cameras, families from Mexico obviously enjoying the place, bubbly teen-aged girls whispering breathless conspiratorial comments, locals carrying ghetto blasters with the volume turned down, and a few serious shoppers. Curiously, some very old and frail people appear to feel at home, even at this height of the hubbub.

**3 P.M.** As the sun’s intensity wanes the crowd thins out and the plaza seems more the habitat of the “flaneur,” an urban personality type suggested by the French verb implying strolling, sauntering, loafing.

**4 P.M.** Sidewalk vendors are still receiving a good deal of attention. Some of these do greater sales volume than fairly large stores. “People feel free to ask questions and browse,” one operator tells me. “I get the feeling these are customers who don’t want to deal with sales people in shops.”

**6 P.M.** The sidewalk vendors begin to pack away their merchandise. As one says, “You can get alone in a hurry here.” As





*Above, an impromptu acrobatic performance, lunch in the palazzo, and layered views through architectural stage sets. Facing page, a troupe of tourists from abroad, armed with cameras, swings through the plaza, which frequently hums with a babel of languages.*

the shops close up, employees quickly disappear into the parking structures. High above the Lyceum Theater, in a balcony in the arcade building facing the city street, the brass band plays in a slow, New Orleans Preservation Hall style. Groups of younger people dressed for cooler evening temperatures enter the plaza with refreshed steps.

**7:30 P.M.** Movie lines snake along upper decks, stairs, and ramps that earlier were dotted with tourists. With advancing darkness, the sales-machine environment seems to have been turned down considerably. The illuminated signs and displays cast a soft glow for the few remaining window shoppers. Many elements of the plaza's design that seemed hokey in daylight now seem more convincing. Victorian lamps on parapets have become lovely. Long ramps for people with disabilities are studded with minilights to become fantasy gangplanks. The environment feels secure.

**9 P.M.** Outdoor restaurant tables are almost full. People queue up for Heaven, a 1950s-style hamburger joint with jukeboxes blasting vintage rock 'n' roll. While business is fair at Harbor House: Top of the Plaza, volume does not approach that of another Harbor House restaurant in Seaport Village. The plaza appears not to be a strong draw for so-called destination diners.

**10 P.M.** Only a few venues remain open. At the Hat Shop people are trying on headgear with pink rabbit ears, magenta fezzes, two-foot-tall top hats. Next door is Super Star studios, where people pay to be videotaped lip-syncing recordings superimposed against backgrounds of European cities. The recorded results are projected to a small crowd outside.

**11 P.M.** From the Lyceum Theater complex two levels below grade theatergoers make their way up spiral stairs to the street level. Over at the old fountain of the original Horton Plaza people gather for free sandwiches and doughnuts provided by a local mission.

**Midnight.** A security guard in a blue suitcoat, standing near a topiary hippopotamus, tells me, "I have people all over the complex now checking the nooks and crannies to make sure no





one sleeps here." He describes the video/audio surveillance system for parking areas. "Nothing happens here that we can't handle with our staff. The [city] police almost never come into the complex. A lot of military people visit here, but they are no problem. I was 30 years in the military myself and most of my men are ex-military. . . . People come through here all night long. Guests over at the hotel who can't sleep wander through at 2 A.M. That's what we're here for."

After two years in operation Horton Plaza can be judged a success in helping downtown San Diego shake a reputation for seediness. Horton has become the linchpin in a redevelopment that includes a hotel and convention center. These and a city commitment to generate downtown housing suitable for white-collar workers were among the preconditions set by the developer. Horton Plaza was seen as part of a long-term commitment to the central city, a policy that convinced department stores to enter the venture and lenders to back it.

Now San Diego's third-largest tourist attraction after the zoo and Seaworld, Horton Plaza has become a focus of civic life. Bob Hope performed here in a U.S.O.-sponsored concert, marathons and parades start here, public ceremonies take place here, and local television news spots originate here.

While taxable sales are 50 percent higher than predicted and the developers are reaping higher than expected profits, the plaza's success is not unmitigated. The figures mostly reflect profits of the small operators and not the department stores, some of which appear quite unpatronized. Shopping bags are uncommon in Horton Plaza, while food, entertainment, and impulse purchases are much in evidence.

Rumor has it that several majors would have never gone into Horton without receiving commitments for coveted locations in suburban malls. In this regard Horton demonstrates that department stores may be unnecessary for the success of a downtown center.

Horton Plaza thrives in spite of daunting discomforts. Cus-

tomers are willing to drive downtown and park in decks that are notoriously difficult to understand and navigate. People complain that they can see their cars but cannot get to them. One woman told me she had to "scramble over a multistory drop" to reach her car. Six fruits and six vegetables mark parking areas, but what good are they, asked one shopper, "if you know your fruit but you don't know where it is?"

The plaza has seven levels, including a "high three" and a "low three," a "high two" and a "low two." Half levels formed by the offset make for interesting views within the plaza but cause consternation to someone trying to get to the other side of the canyon. And the names of areas in the plaza make about as much sense as the fruits and vegetables. I made futile attempts to locate Chelsea Court, the Esplanade, Columbus Tower, Galleria, the Colonnade, and other zones using the color-faded, three-dimensional, Plexiglas directional aids.

Yet people continue to come in droves. They told me: "This place has character." "It is intimate and yet big enough to be exciting." "This is confusing as hell, but it's fun." Horton Plaza seems to appeal to a wide variety of people because of its colors, sounds, and smells of the market and carnival. None of the many people I interviewed expressed awareness of the imagery of Italian cities, and they couldn't be provoked into much interest in these architectural quotations.

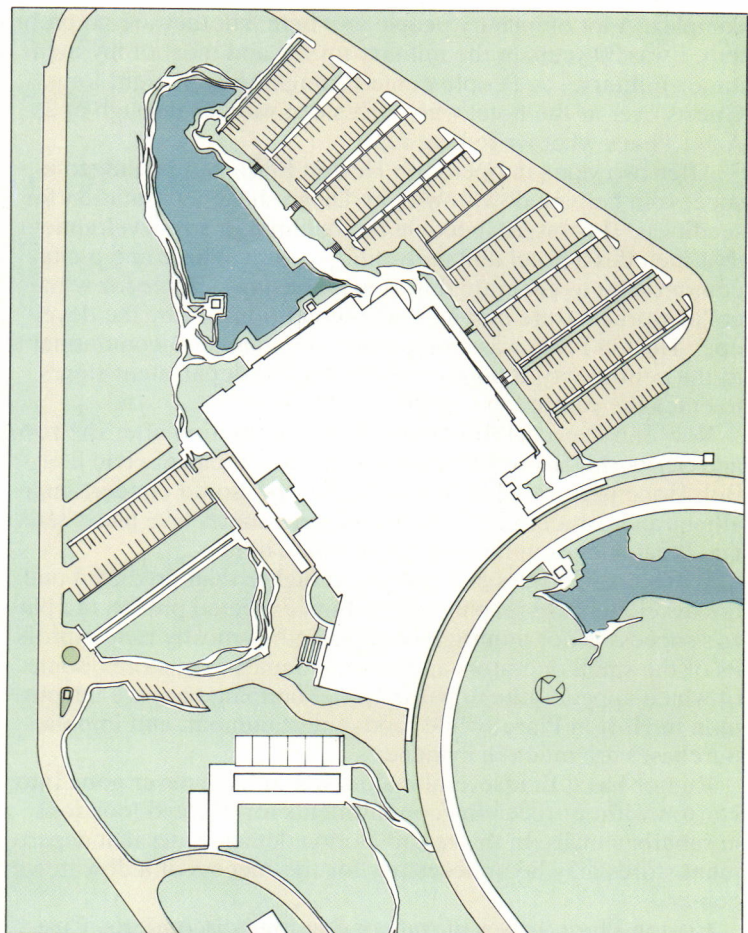
There are at least three ways to evaluate Horton Plaza. Is it the overheated ravings of a postmodern mind run amok? In this interpretation, Jerde and his design team are out-of-control artists substituting tidal waves of visual excitement for genuine architecture. Or is it an extension of merchandising design, which, like commercial television, creates a desire, divides attention, and makes the user vulnerable to impulsive buying? Or does it herald a new approach to architecture as "experiences" rather than buildings? Jerde says, "I often say I'm in the movie business, but there are no cameras, no actors, and no endings."

Perhaps it is a combination of the three. □



# Intimations of Urbanity in a Bucolic Setting

*Codex headquarters near Boston,  
Koetter, Kim & Associates.  
By Robert Campbell, AIA*







Photographs © Steve Rosenthal

The American suburban office building is probably the least satisfactory of all the basic building types we are designing in this country today.

Most architects, strapped by budgets and banal clients, try merely to give such a building some new shape, which they then set down on a field of asphalt as one might set a vase on a table. They “soften” the exterior with stagey landscaping and on the interior they carve out an atrium filled with potted foliage. But atrium and landscaping seem only to mock the rich natural world that usually lies, inaccessible, beyond the parking lots.

Such designs ignore two issues. The first is how to involve the building with its site, so as to enhance the lives of the people who work there. The second is how to replace the rich public world of streets, shops, restaurants, clubs, and services that surrounds and supports city office buildings.

The new Codex headquarters outside Boston confronts these issues and as a result is unquestionably the best suburban office building in eastern New England, although that isn’t saying much. What’s impressive at Codex is the attempt to create some sense of a public world in both the building and the landscape—“urbanity without urbanism,” says the architect, Fred Koetter, AIA, pointing to the Italian Renaissance villa as a prototype for that paradoxical quality.

Inside the building, one attempt at a public world means broad, skylighted, triple-height arcades instead of corridors. It means a glazed winter garden, an elegant library, a light-flooded cafeteria with views across a rooftop herb garden—that’s right, herb garden—toward a grass horse track. Outdoors, it means an Arcadian garden with paths, ponds, and natural plantings.

Codex, now a subsidiary of Motorola, designs and sells electronic communications systems—“modems and multiplexes,” in the diction of the trade. The new building began in the mind of

its president, James Storey, who seems to have run the company single-handed and who decided, in 1978, to create a headquarters that would be a “lasting” work of architecture.

The site for this ambitious building was to be an abandoned horse farm, Maresfield Farm, in the suburb of Canton. The farm lies beneath the Great Blue Hill, a Boston landmark and the centerpiece of a woodland reservation.

Not surprisingly, the idea of building a corporate headquarters next to the Great Blue Hill proved controversial. Robert Redford, the actor, and Dave Cowans, a former Boston Celtic, were among the ecologically minded who opposed the proposal. The dispute was settled by an agreement between Codex and Canton, later ratified by the state. Codex would develop only 11 of the farm’s 55 acres; it would maintain the rest of the land in active agricultural use; and it would build no more than 250,000 square feet of office and related space, under no more than 125,000 square feet of roof.

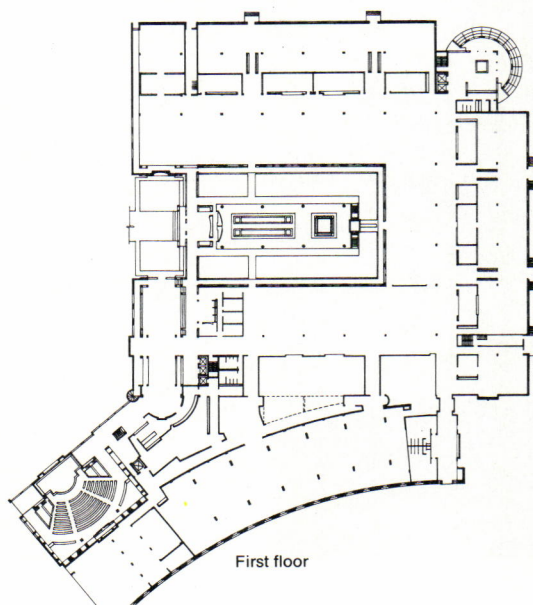
With this exemplary program in hand, Codex moved equally wisely to choose an architect. Storey decided on a competition and with two advisers invited 100 firms to enter. The advisers, who along with Storey also made up the jury, were Jaquelin Robertson, FAIA, dean of the University of Virginia school of architecture, and Michael Buckley, president of Halcyon Ltd. of Hartford, a firm of development consultants. Forty-eight firms submitted designs in the first stage; four were chosen to develop their proposals in a second stage; and from these Koetter’s design was selected. Koetter, at the time, was a professor at the Har-

*Above, research labs line the horse track that rounds the building’s west side; left, top and bottom, glass-topped south facade; left, center, pond adorns the east side of the building; site plan shows melding of buildings and landscaping.*









vard University graduate school of design who had built little. As it has finally taken shape on the site, the Codex headquarters is a big, low building made of red sand-struck brick, granite, lead-coated copper, white windows, and gray slate roofing, all traditional New England materials. It stands among clumps of equally New England sugar maples, oaks, and white pines.

From the outside, the building looks somewhat austere. Koetter says that traditional New England mill buildings were one source, although the idea of a mill on a farm seems odd. The bold gridding of the mullions can seem a little stark, and when seen together with the round library turret at one corner they give the building something of the look of a prison.

The best views are from across a pond on the east side and across the grass horse track on the west. A curving wing of research labs bends to embrace the track like a grandstand, dramatizing the fact that the building is responding to its site as well as to its internal needs.

At its edges, the building generally steps down nearer the ground to relate to the scale of the farm outbuildings, and special spaces—the auditorium, for instance—tend to cluster in houselike shapes at the perimeter for the same reason. At the entrance side, three freestanding gabled arcades protect the visitor while complicating the building unnecessarily.

Taken as a whole, the exterior of Codex is handsome and quiet, but the exterior isn't the real strength of the design. It lacks an overall shape or idea, seeming rather to be a heap of small inspirations, or perhaps one big boxy shape larded with many small overlays.

Inside, by contrast, the order is simple and clear. In the center of the building is the winter garden; on one side of it is the entrance lobby; on the other three, the wide arcades serve broad expanses of office space. The winter garden is meant to be an outdoorsy space, the opposite of the usual climate-controlled atrium, and is neither heated nor cooled.

In winter, heat carried from the computer rooms keeps the plants alive; in summer, roof exhaust fans moderate the heat buildup. In the early sketches, the winter garden was floored mainly in gravel, like a true outdoor square, with picnic tables and even with horses wandering around. It evolved into something much tamer and, to this observer, too thickly carpeted with plantings and with benches that look more ornamental than useful. It's now a viewing garden but a splendid one, a visual delight shared by everyone in the building.

Other spaces are equally fine. The auditorium is a gem and so is the round library. The cafeteria is broken into dining rooms of many kinds and sizes, all delightful. Daylight seems to flood the building almost everywhere. Materials are solid: cherry floors, mahogany trim. Ceilings and walls are given scale and measure by gridded beams and pilasters, and the grid theme carries out onto trelliswork on the dining terrace.

The interiors architect, Carol Fippin Inc., was responsible for space planning, all movable furnishings, and, in consultation with Koetter and his partner Susie Kim, some of the built-ins and the choice of finishes.

One aspect of the interior caused problems. The competition program called for a building to house 1,000 employees. But Koetter's scheme devoted so much space to public circulation that this number, or anything approaching it, proved unattainable within the envelope mandated by the agreement with the town. Storey chose to build the design and modify the program, rather than vice versa.

It may be, too, that as the design evolved with its broad axial galleries and fine finishes it became a bit too much the toy of the architect and the company president. Certainly the building seems a little formal and dressy for the people who use it.

As for the landscaping—by Laurie Olin of Hanna/Olin of Phil-

*Left, from top, grid patterns carry through the building to three-story interior public spaces, in the trelliswork surrounding the auditorium, and in the cheerful and open cafeteria spaces. Opposite, skylighted atrium provides daylight to a generous corridor and its adjacent interiors.*



adelphia, a Harvard colleague of Koetter's at the time—it's impressive. An example is the treatment of parking: at Codex, there is no sea of parked cars. Employee parking is tucked away in a garage fitted tightly between the building and the major highway that edges the site. The garage is mitigated in every way possible. It is half underground, with bermed edges that cover the noses of cars beneath them. London plane trees, planted at the garage's lowest level, grow up through its top deck and appear, from above, like big shrubs (they were specially grown for two years in a nursery to keep the branches only at the tops). The berm edges the whole length of the site along the highway; it is planted with trees in a natural mix of species and ages that, when grown, will form a scenic barrier hiding Codex from the highway and the highway from Codex.

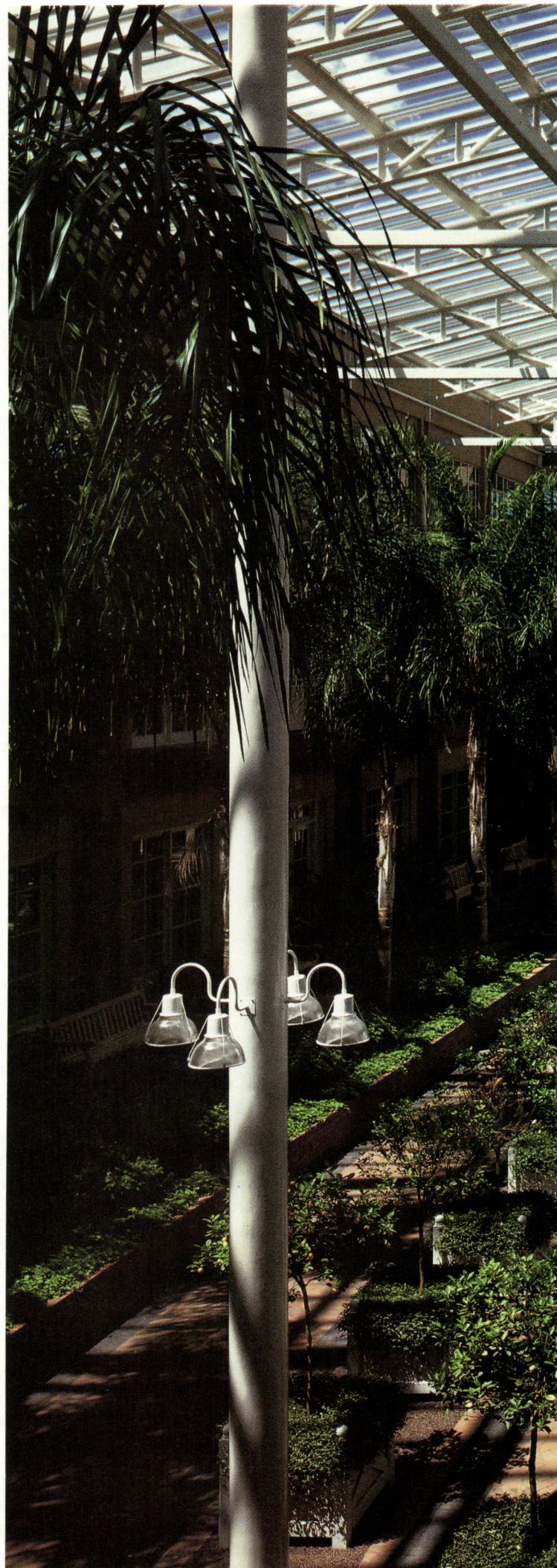
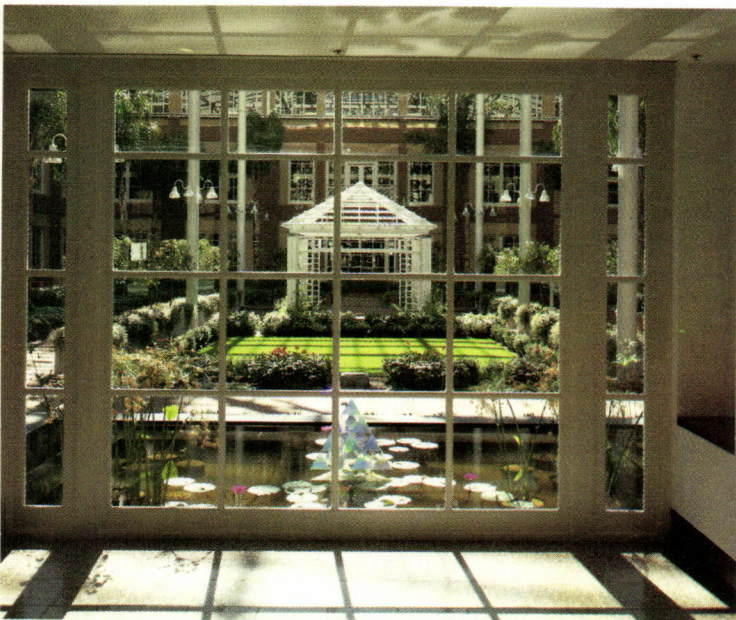
Or take the two ponds—picturesque and romantic in shape. They are artificial and serve as critical parts of the building's heating/cooling system. They are designed to leak water sideways into the ground; this groundwater, at a constant 52 degrees Fahrenheit year-round, is piped into the building where it cools in summer and, by means of a heat pump, heats in winter. It is then returned to the ponds to leak out again. No backup heating is required until the outdoor temperature falls below zero. The ponds also control rainwater runoff, of which none is permitted to leave the site.

The ponds are, thus, models of ecological balance, but of course they are also a visual and social amenity. "You need places where people can escape from these suburban buildings, get outdoors with a sandwich," Olin says. "Especially for the research types, they need to be able to walk and talk and bond together with one another." The pond nearer the building, with a sinuous walk, a gazebo, and a more formal grove of trees with benches, is meant for that kind of socializing.

And there are other amenities. The grassy track, for instance, is handy for joggers who sometimes also climb the Blue Hill. And eventually, if Codex lives up to its verbal agreements, there will be animals again on the farm. Koetter has sketch-designed an octagonal barn, and there is also to be a greenhouse in which new plants for the building and site can be grown. The former farmhouse has been restored as Codex's visitors center.

James Storey is no longer at Codex (partly, it is said, because he never established a budget for his building), and some of his best ideas seem unlikely to be implemented by successors, who, one suspects, aren't quite sure what his building is all about. Storey's newsstand and travel agency—fragments, at least, of a public world—remain unrealized. But Codex, as both a client's dream and an architect's realization, remains a standard against which to judge suburban office buildings. □

*The physical and social heart of the building, the winter garden, is a friendly, outdoorsy space.*















# Bridgelike Walkway System Links A Set of Five Office Pavilions

*Schlumberger Corp., Austin, Tex., Systems Center. By Joel Warren Barna*

A joint-venture firm combining the offices of Howard Barnstone, FAIA, of Houston and Robert Jackson, AIA, of Austin was chosen to design a campus for the Austin Systems Center of Schlumberger Well Services, a division of the multinational oil-exploration giant Schlumberger Technology Corp. Using only 20 acres of a 438-acre site in the hills northwest of Austin, the plan sailed through city commissions that held up a number of other projects in the environmentally sensitive area. Work proceeded smoothly, but falling oil prices and bad times for the company's computer-chip-making subsidiary forced it to lay off employees and made the decision to press on with construction difficult.

But persevering was a good choice for Schlumberger. Quiet, yet elegantly expansive, the center is as close to the suburban campus ideal as anything between the Salk Institute and Charlottesville, Va. It's introspective and turns away from the world, as suburban office campuses almost always do. The move away from the city, however, is directed not at projecting a powerful image but at making the workers feel good about what they do. It provides a near-perfect match for the high-tech but slightly exclusive corporate culture of Schlumberger as well as for the special character of the site.

"Everybody here is an engineer," said John Warren, manager of general services at the Schlumberger Austin Center. The center provides engineering and systems-integration services for the above-the-surface part of Schlumberger's worldwide oil-field work, as well as for the satellite and other data-communications operations. "It's essential that people working on one project here talk to people working on other projects," Warren said.

Interaction among the employees of the Austin Center was

the chief objective of the company's program, according to the late Howard Barnstone, who died last year after Schlumberger was built. "They didn't want the new facility to be in any way stratified," Barnstone said. "They wanted the space arranged so that the newest engineer right out of college and top management would be bumping into each other day after day."

That part of the program combines with the best features of the site to form the armature around which the Austin Systems Center was developed by Barnstone and Jackson. The center is a linear aggregation of five office buildings behind an entry pavilion, following the stuttering twists of a narrow limestone canyon.

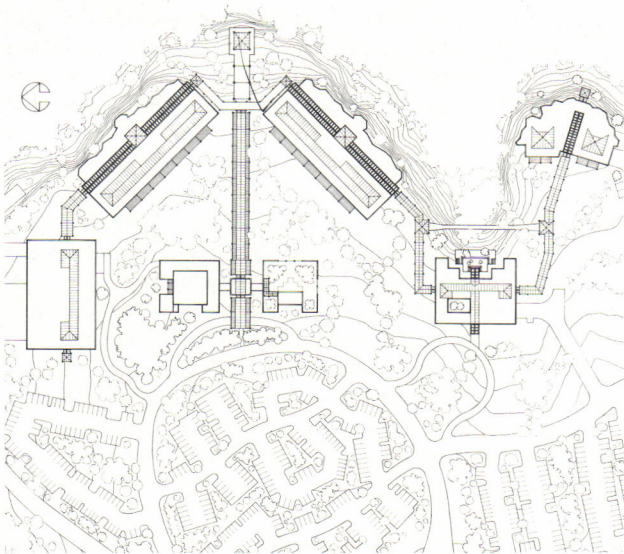
Offices, laboratories, a cafeteria, and other spaces serving the 165 current employees (fewer than a third of eventual full strength) are housed in taut steel-framed buildings, each one or two stories tall, comprising around 175,000 square feet. All are clad in *adoquin* stone from Mexico; the stone ranges in color from pink to gray.

Even from the entry the parking lots, tucked among the trees, are all but invisible. The pavilion has an auditorium on one side, opposite a library that looks out onto a walled, gravel-paved peach grove. The rectilinear grove is a necessary foil to the rest of the project, which responds to the site instead of shaping it.

Beyond the entry pavilion, a long, broad, covered walkway with a green corrugated metal roof, framed in heavy, sweet-smelling fir timbers, leads down to the canyon's edge and intersects with other timber-framed, green-roofed walkways, which link the S-shaped line of office buildings. The most striking part of the walkway system fronts the cafeteria (itself the only classically symmetrical composition on the site). Here it forms an



*Below, the 'broadway' circulation corridor at the intersection of a stair tower. The S-shaped pedestrian path that dominates the site plan links buildings in the complex and becomes the organizing element within the buildings. Right, the arrow-straight entrance axis intersects the lazy S path (far right in photo) and terminates with a pavilion at canyon edge. Axial photo, opposite below, shows same walkway from the west.*



uncovered bridge spanning a small ravine; it takes employees into the treetops.

Inside, the walkways continue in what Jackson and Barnstone called "the Broadway," a circulation corridor under dark-glazed skylights. These, said Jackson, "are literally the central part of the design from the standpoint of employee interaction. There is no other way into or out of the offices or labs."

Interior walls are finished in white-painted gypsum board. If there is a weakness in detailing anywhere in the complex, it is found by looking up at the junction of black-mullioned skylights, white walls, and framing timbers (which are stained black indoors) — walls and mullions look insubstantial and the timbers break through unevenly, looking unfinished.

No such problems are found within the informal meeting areas placed where the Broadway intersects with corridors leading from the offices along the building peripheries. And the offices themselves convey a sense of an individuality that Barnstone and Jackson wanted to encourage as a counterbalance to all the togetherness of the Broadway concept. Most offices have two or three

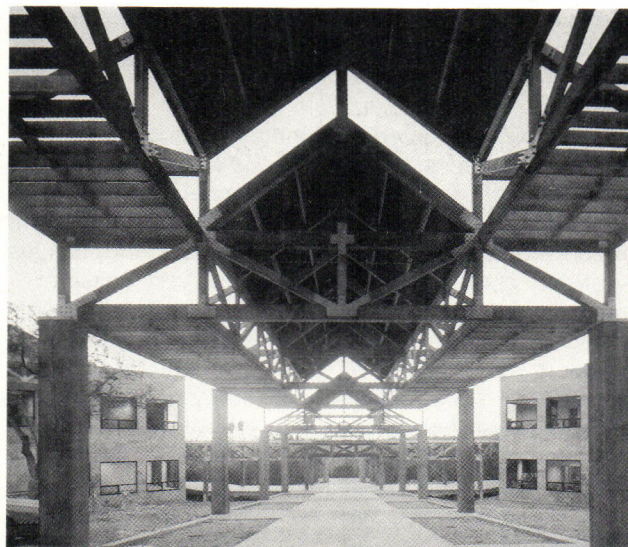




types of computers, and all have a floor-to-ceiling blackboard wall for calculations, doodles, and private decorations. All have excellent views into the surrounding hills and canyon, accentuated by the idiosyncrasy of their shapes. Angles of both interior and exterior walls shift to follow the canyon walls outside. Each office has a glass wall that brings light into the corridor and allows passersby to enjoy the shifting view. "There's some loss of visual privacy, but we decided that the view really belonged to everyone in the plant," said Jackson.

"If there was going to be a conference, we wanted it to take place in one of the meeting areas, not an office," said general manager Warren. "That's working. But we are finding that people have a very personal attachment to their own offices, with their special shapes and special views." Said Warren of the complex as a whole: "It's a success."

The reticence of the client and the skill of the architects will keep that success a secret from the city that is spreading out to embrace Schlumberger's Austin Systems Center. The employees will know, however, and that's what matters. □



Photographs © Greg Hursley



# Evaluation: Prototype in The Suburbs

*SOM's Connecticut General (now CIGNA)  
headquarters. By Michael J. Crosbie*



© Ezra Stoller/ESTO

The suburban corporate headquarters—a low-rise, rambling building surrounded by acres of manicured landscape—is as American an architectural invention as the skyscraper. Today we find its nearly indistinguishable variants hugging the beltways of major cities or the strip development of exurban sprawl. The office building in the country has been likened to academe (as in the “corporate campus”) and the estates of landed nobility (“corporate villas,” as Fred Koetter, AIA, describes them).

The headquarters of Connecticut General Life Insurance Co. in Bloomfield, Conn., completed in 1957, was virtually the first of its kind. Eero Saarinen’s General Motors Technical Center of 1956 is regarded as the first suburban corporate facility sited on an expansive tract of land. But because of its specialized program the Tech Center has fewer direct descendants than Connecticut General, which inspired several generations of “office parks” and became for many architects (including its own, Skidmore, Owings & Merrill) the touchstone for the design of such buildings.

Thirty years after its completion, the building houses CIGNA, a conglomerate of Connecticut General and Insurance of North America, and is no longer the company’s headquarters (since moved to Philadelphia). But it is aging with a grace too seldom found in modern office buildings. Inside and out it literally glistens with polished glass and stainless steel, the very image of an architecture of business efficiency and—to further stretch the elastic notion of “regionalism”—New England thrift. J. Raymond Fairman, CIGNA’s director of corporate facilities who joined the company a year before the building’s completion, remarks without boast that it “continues to look new, it is inexpensive to maintain, and virtually none of the original systems and furnishings has required replacement.” Of all the facilities CIGNA has built since, this is the one that has best adapted to change, says Fairman.



In 1984 the building was named in honor of the late Frazar B. Wilde, Connecticut General’s president who formulated the building’s program in its broad outlines and conceived its siting outside Hartford, where the company had been based since the late 1800s.

As might be expected from an insurance company, Connecticut General took a long view toward the building’s design and fabrication. The building had to be flexible—able to adapt to the company’s projected growth over decades (its financing, for example, was based on the building’s initial costs and maintenance costs over 50 years) and planned for expansion (which took place, as projected, in 1972). It also had to be made of durable materials that would be easy to maintain. In fact, Connecticut General hired a materials consultant—Walter Voss, emeritus professor of building construction at MIT—before it picked an architect.

Wilde believed strongly that the best way to get a building that met his company’s particular needs was to be a client thoroughly involved in its design and construction. Connecticut General simultaneously chose SOM/New York as architect and Turner Construction Co. as builder. Client, designer, and builder were to work as a team from the building’s inception to completion. “I don’t think we’ve ever worked more closely with a client or had a more demanding one,” remarked partner-in-charge Gordon Bunshaft, FAIA, of Connecticut General’s role in the design of the headquarters.

A full-scale mock-up of a typical bay was constructed on site so that the team could test design and construction ideas as they were conceived, as well as examine a range of lighting schemes, furnishings, and finishes in situ before making decisions. Connecticut General wanted input from its employees, too; in laying out the workstations, SOM and Florence Knoll, who designed the original furnishings (nearly all of them still in use) and con-





© Peter Mauss/ESTO

Above left, the headquarters as photographed in 1957. Above, cafeteria pavilion, expanded in 1972, is visible at far right in older photo. Right, elevation of entrance to 1972 addition with pedestrian mall to parking below.

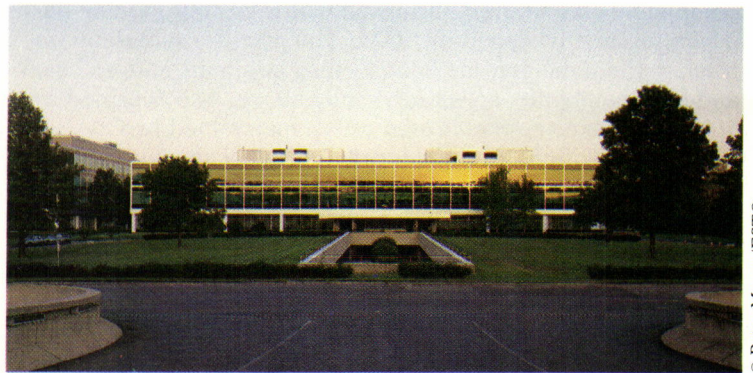
ulted on the interiors, employed quarter-inch movable furniture models of the 500,000-square-foot building in their meetings with office staff.

Siting the new headquarters on a 280-acre tract of farmland seven miles from downtown Hartford had a direct relationship with how an insurance policy is processed. Wilde compared the issuance and processing of insurance papers to a light industrial operation: both pass from one department to another in assembly-line fashion.

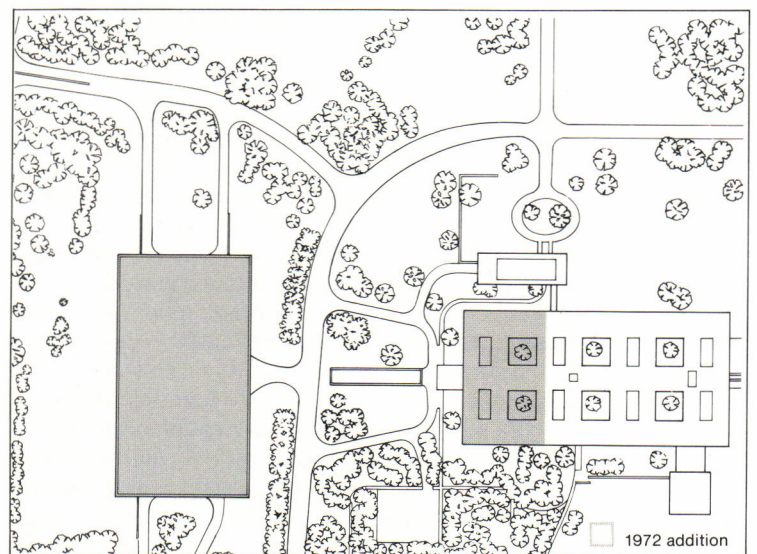
“Like making toasters, it’s not the type of thing you do efficiently in a 16-story building,” says Bruce Hayden, who was secretary to Connecticut General’s building committee and in effect served as the client’s representative to SOM. “Wilde’s notion was that the building should be horizontal, and there was plenty of room to spread out.”

SOM came up with six different schemes, among them an 11-story cube and a multibuilding cluster arrangement. A low, three-story building was selected as the best for its design of the office as a “factory,” with a five-story north wing housing administration and a single-story cafeteria pavilion virtually afloat on a reflecting pool. The three-story section, measuring 468x324 feet, was punctured by four interior, 72-foot-square, open-air courtyards designed by Isamu Noguchi. Thus, no employee in this vast office would sit more than 30 feet from a window. The open-plan offices were serviced by six cores containing rest rooms, stairs, equipment storage and ventilated coat closets, drinking fountains, and pay phones.

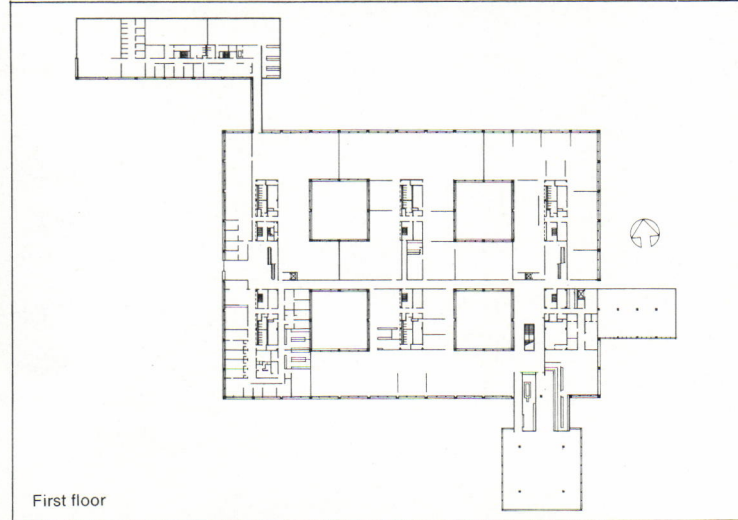
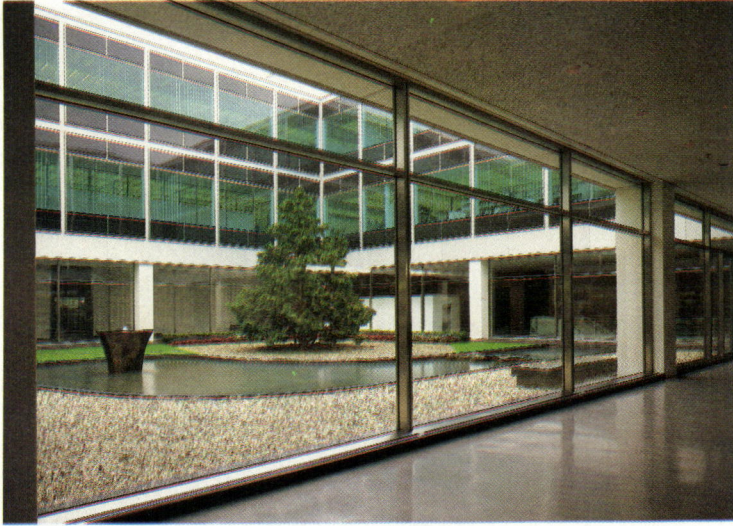
The interior, with its 60-foot, clear-span steel structure, was



© Peter Mauss/ESTO







First floor



completely column-free, furnished with a six-foot-module partitioning system designed by SOM. The partitions lined up on black strips in the gray tile floor, locking into brass buttons below and the open-baffle, egg-crate ceiling above, also designed by SOM. The same system is used today, maintained by CIGNA with new partitions manufactured to original specifications.

In moving its headquarters out of Hartford, where most of its employees lived, Connecticut General expected to lose 10 percent of its more than 2,000 employees. The 14-mile commute was not considered especially long, but many employees depended on public transportation. An indication of car ownership was SOM's provision of one parking space for every two employees. The company ran its own shuttle for a while, and its staff dipped only 2 percent. Today, of course, the location is considered a plus in attracting employees, and the addition in 1972 of an 1,800-space parking garage boosted the ratio to nearly one-to-one.

The company was also concerned about the loss of what the city offered workers in lunchtime and leisure activities. Thus it provided not only a comfortable cafeteria with sweeping views of the landscape, but also a gift shop, barber and beauty shops, a bank, a lending library of records and books, lounges, a medical department, and a 12-lane bowling alley. Most of these amenities proved popular, nearly all have been refurbished (although you'll find more joggers around the grounds than bowlers inside), and the bank has been replaced with automatic teller machines.

CIGNA has maintained the building impeccably—surely an indication of the company's satisfaction. The four Noguchi courtyards have raised lawn care and pruning to sculptural arts—maintenance workers wield hedge clippers like chisels to marble. The courtyards are accessible but rarely populated and reportedly sweltering in the summer. According to Raymond Fairman, the materials and finishes have held up amazingly well, just as planned, although all those hard, durable surfaces result

*Counterclockwise from top left, one of the building's four interior courtyards designed by Isamu Noguchi; typical office interior of the 1972 addition employs same architectural details and furnishings as the 1957 spaces, as seen above.*

in lots of ambient noise, particularly in the open-plan offices. A fabric-finished acoustical panel has been added to the partitioning system for conference areas. The permanence of the finishes also means that the interior has looked the same since 1957, which might get tiresome.

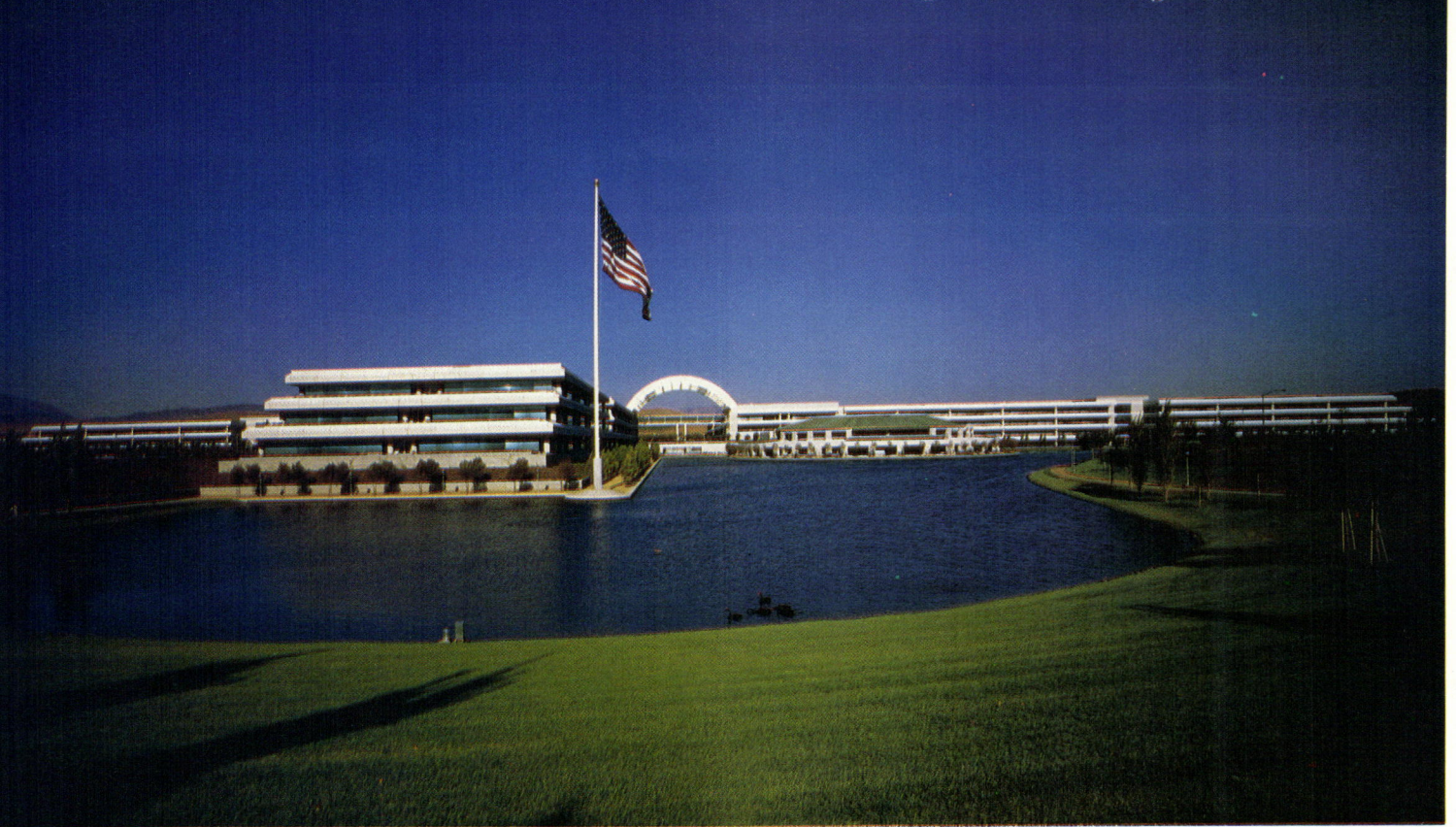
The 1972 addition, increasing the building's size by half, is remarkable in that it joins the parent virtually undetectably, and that was planned too. SOM's Roger Radford, AIA, who worked on the original as well as the addition, explains that the building was designed to expand east, but after construction more land was acquired to the west, making that the logical direction in which to build. The addition is identical in layout and detail to the original building, which now has six courtyards. The cafeteria was increased by half—an addendum you could discover only by counting its modules of glass in before and after photographs. It's as if the building regenerated itself out of its own DNA molecules, growing new limbs. Radford says materials for the addition were surprisingly hard to come by. The steel sections had changed so there was a little finessing of the structure; the quarry for the lower level's Quincy granite had closed and a substitute had to be found; and the glass had been discontinued and required a special run.

Connecticut General's headquarters as a type has been copied, certainly ad nauseam, across the country. But the key to the original's success appears to lie in a quality that can't be captured on film or in its plan—the collaborative nature of its design, which translated a program into architecture with linguistic precision. □



# Powerful Presence in an 'Urban Village'

*Pacific Bell Administrative Center, Danville, Calif. By Donald Canty, Hon. AIA*



This huge facility (population 7,000) is a direct descendent of the Connecticut General complex, the skyscraper-on-its-side corporate center, laid horizontally across a commodious site once thought impossibly remote from the nearest urban core. The dislocation here was potentially even more traumatic. Connecticut General was merely moving people from less-than-exotic Hartford. Pacific Bell was asking its employees to leave the center of San Francisco.

Of course there are differences. Connecticut General made its move at a time when cities were cities and suburbs were suburbs and many corporations were tempted by the lure of the latter. Some yielded, but not as many as had been widely predicted in postwar years.

Pacific Bell's site is in eastern Contra Costa County, 40 miles across the bay from San Francisco, past the terminus of the BART system (Pacific Bell operates shuttle buses for employees who use BART). It is in the town of Danville in the San Ramon Valley, which, with places like Walnut Creek and Concord, was rural before the war, suburbanized after, and now has melded into one of those recently celebrated agglomerations on the fringes of metropolitan areas oddly called "urban villages." Village the area is not—more a coagulation of sprawl.

There are also differences in materials—metal at Connecticut General, concrete at Pacific Bell—and in plan. While SOM/New York organized Connecticut General in cellular fashion around courtyards, SOM/San Francisco gave Pacific Bell two linear, L-shaped segments joined at the juncture of the arms.

Despite their differences, what is remarkable about the two



© Jane Lidtz

complexes is how alike they are. Both are low-rise, both rectilinear, both devoid of decoration, both glassy. It's as if a generation of change in architecture had passed this genre of building by.

They also have in common skill in execution. Pacific Bell's two Ls are separated by open space but joined by an upper-level pedestrian bridge and an overarching, open-work metal canopy whose only function, but an important one, is to unify the complex visually.

Common-use facilities are at the juncture of the Ls, whose arms extend to the perimeters of the site, cutting it into four segments of parking and landscaping. One of the common spaces is a three-story

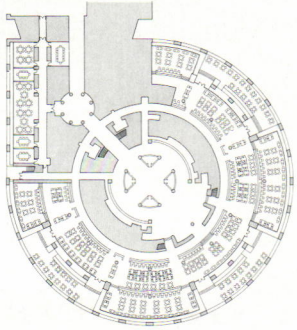
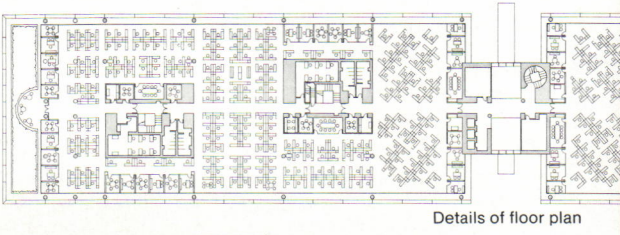
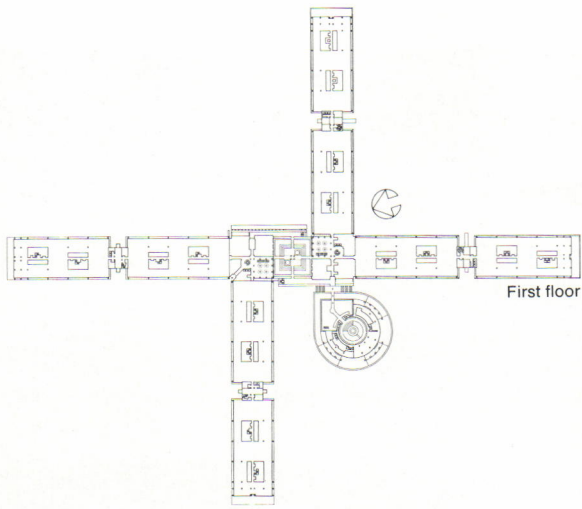
atrium lounge, another an elegant circular food-service building looking out on one of the complex's two large lakes. The food-service building is divided into small, interesting spaces.

Because of site conditions requiring pile foundations, there are 72-foot spans between columns, allowing great flexibility in the mainly open landscape office spaces. These are perhaps the most pleasant open landscape interiors since the same office's Weyerhaeuser headquarters in Washington state. Colors and lighting both are subdued and restful, and the bands of mullion-free glass bring in fine views of the surrounding hills (however unfortunate the auto- and sprawl-filled foregrounds).

Among the special amenities of the complex are a museum-quality art collection and MPA Design's generous landscaping inside as well as out, using mainly native plants and trees.

*Pacific Bell has four wings in two connected L-shaped buildings.*









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*Far left photos: Above, atriumlike entries at midpoint of each wing extend glass a full three stories high and divide wings into 50-foot bays of mostly open offices. Below, a typical office area. Near left, the somewhat overscaled planters in the central atrium lounge. Top, view across one of two reflecting pools to curvilinear dining facility at the juncture of the two buildings. Above, two views of the bridge and canopy that link the two at upper levels. □*



# 'Urbane and Lively' Stimulus to Revival

*Riverside Convention Center,  
James Stewart Polshek & Partners.  
By Andrea Oppenheimer Dean*

In 1982, the Rochester Chapter/AIA convened to discuss James Stewart Polshek & Partners' proposed design for the city's new Riverside Convention Center. "Does anyone here like it?" someone asked. There was no answer. Wolf Von Eckardt, Hon. AIA, then architecture critic for *Time* magazine, expressed the majority opinion when he said, "It's big and boring, and it steals away from the street." He also called it a cliché and "anti-city."

Not long afterward, a group of psychics met at the Rochester Holiday Inn, just across the street from the convention center site. There a Toronto seer predicted that "four to five years from now, everybody will be happy with it." Ironically, the 210,000-square-foot convention center's greatest strength is, in fact, its urbane and lively design.

Its success was ensured, in part, by the New York Urban Development Corp.'s decision—it contributed \$40 million toward construction—to cut no corners and let the architect design and detail every corner of the facility down to the bulletin boards and some of the furniture. The building, nevertheless, came in under budget and almost on schedule.

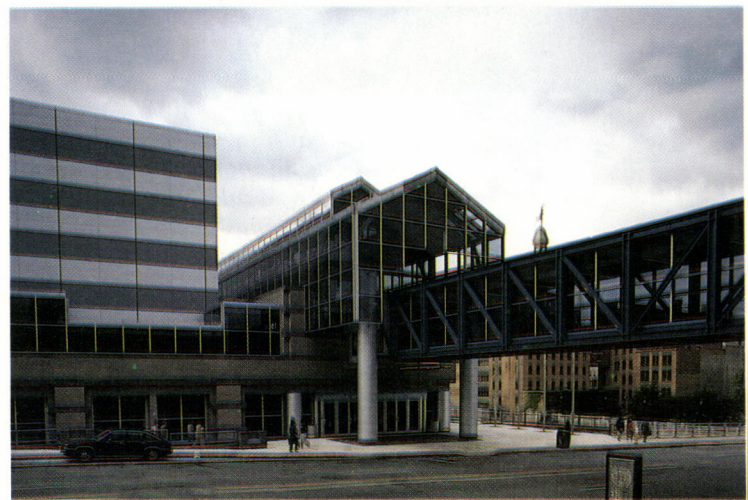
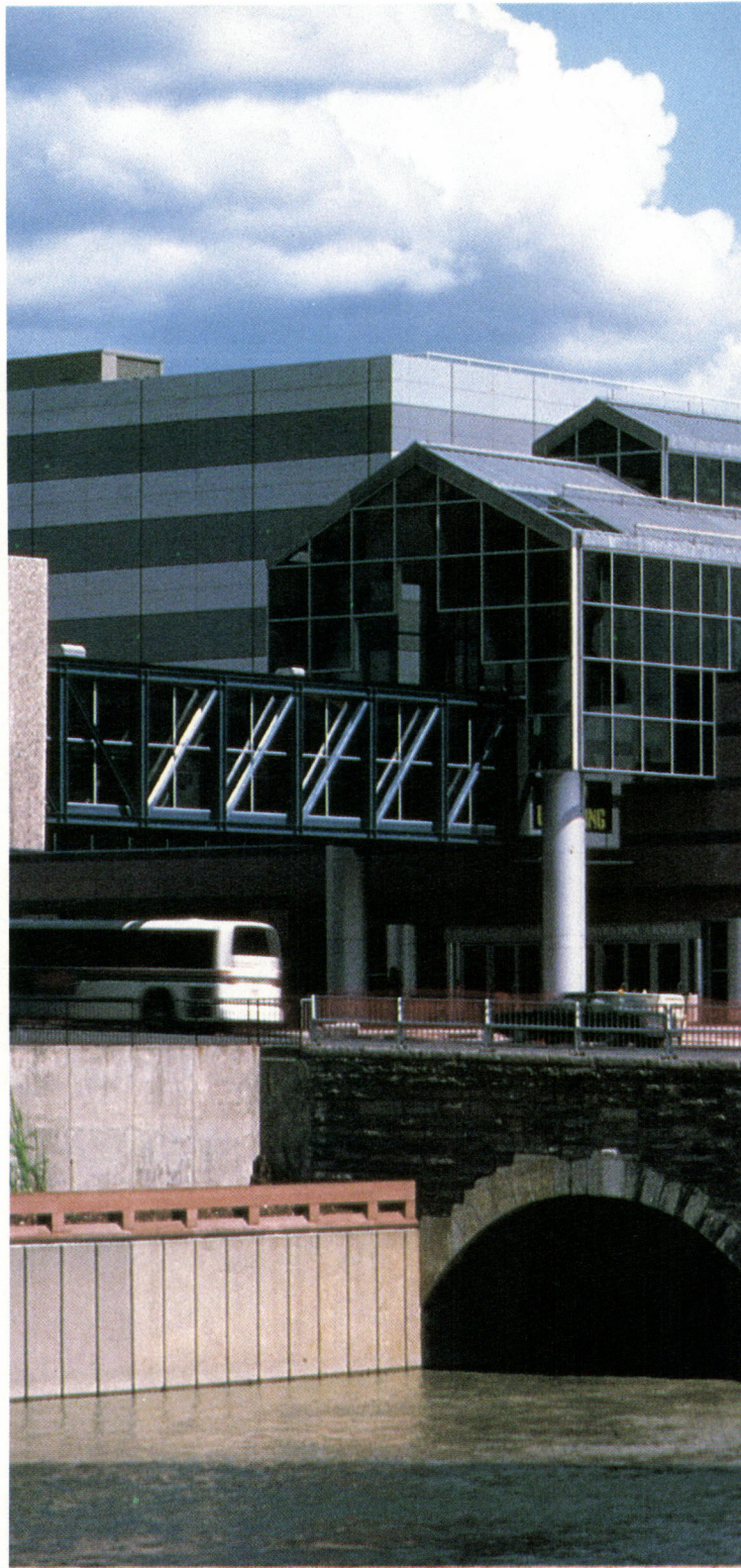
"From its beginnings," says Polshek, "Rochester has been a super-white-collar service town. There is Eastman Kodak, Bausch & Lomb, Louis Kahn's Unitarian Church, a house by Frank Lloyd Wright." The convention center site, on a corner bounded by Main Street and the Genesee River, is at the somewhat frayed center of a downtown stitched together with mostly pre-World War II masonry buildings. Like most older U.S. cities, Rochester has suffered abandonment and neglect, and the area surrounding the site was reduced to what Suressa Forbes, administrator for economic development, euphemistically calls "marginal uses," meaning pornographic book stores, video arcades, and the like.

"The project is an outgrowth of our concerns to enliven the downtown, respect its context, give something special back to the city," explains design associate James Garrison, AIA.

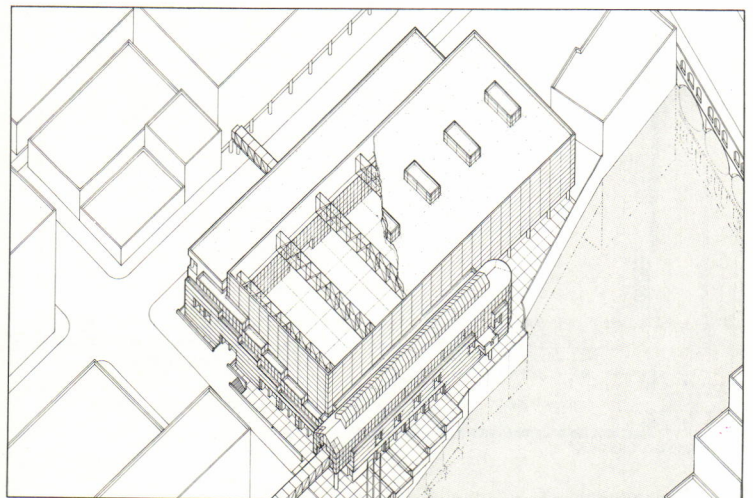
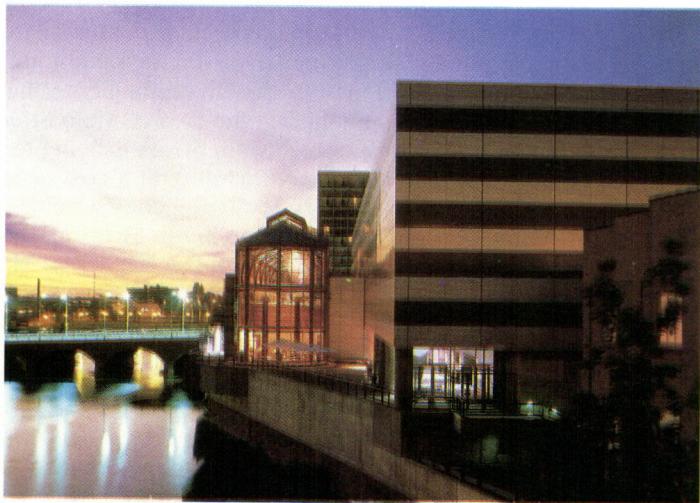
To underscore the importance of the street edge and the building's threshold, the architects began by wrapping the Main Street facade and the river elevation, containing the building's most public and splendid space—its glass-covered galleria—with a thick, rose-colored granite wall. Less fortunate are the east facade (shielding the loading dock) and the south elevation (largely hidden), which are clad in mostly uninterrupted concrete block, also rose-colored. Behind the articulated granite facing rises a high-tech-looking aluminum box housing an exhibition hall and conference rooms.

The horizontal banding of the stone on the west and north facades was first criticized as trendy and later as dated. But it echoes the patterns on nearby older buildings, especially the recycled, former warehouses and mills at river's edge south of the center. Moreover, the banding enlivens the facades, diminishes their mass, and differentiates them from the gridded metal volume behind them. Acting as interstitial tissue binding stone and metal elements are broad expanses of glass. These occur at circulation areas and over the galleria, bring in light, and open

*Above and near right, Main Street elevation with entry portico and skyway. Far right, view from the north.*



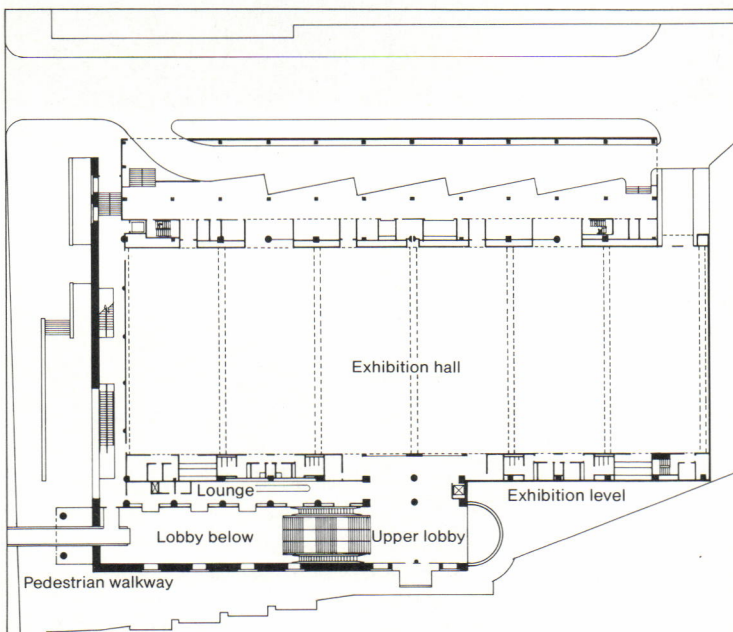








*Above, comprising the facility's centerpiece is a second-story, 50,000-square-foot, column-free exhibition hall. Serviced at grade, it can accommodate meetings of up to 6,500 people and banquets for 4,100 and can be divided for smaller events. The center's showpiece, opposite, is the 65-foot-high, glass-covered Galleria.*



the interiors to wide-angle views of downtown and the river.

Another target of criticism has been the less than complete integration of the contrasting forms, especially the factorylike stone facing and the glassy galleria. In fact, however, this bit of conflict and contradiction adds visual liveliness and a sense of energy.

The stone facade on Main Street, the same height as a low-slung information center across the road, steps up to follow both the street's incline and the vertical circulation within the building. It is overlaid at the entrance by a glassy, high-tech-looking portico, above which a pedestrian bridge spans Main Street to connect the center with the Holiday Inn. As the first piece in Rochester's growing second-story skyway system, the bridge creates a sort of gateway to downtown.

Within the building all movement converges toward the entrance: it contains a three-tiered grand staircase flanked by a pair of escalators and serves as destination for both the skywalk from the Holiday Inn and another connecting the back of the center with a garage. Zoning in the center is west to east and north to south by functions, the public areas and circulation occurring along Main Street, the galleria edging the river, and the workaday spaces—meeting rooms, service spaces, loading docks—lining the windowless east side. And because the site slopes steeply toward the east, the 50,000-square-foot exhibition hall is on the second floor rather than the more commonly used first.

Among several attributes making the center efficient are its column-free spaces; the flexibility of all room and hall sizes (though the moving of walls is made cumbersome by their less than perfect fit, a result of grade changes); floor-based electrical power set on a 30-foot grid throughout the building, as well as lighting on dimmers; and superior acoustics. Also, an extra-wide corridor outside the second-story exhibition hall, connecting the hall to the north skyway system, is often used as a lounge and bar area, which opens space in the meeting rooms. This corridor, and placement of stairways and circulation corridors along window walls with floor-to-ceiling views of the city, make finding one's way easy, unlike in some mazelike convention centers.

Most important "and most different from other convention centers," says director Joe Floreano, "are the finishes and detailing that pick up the motifs of the building's exterior"—its thick walls, reveals, and colors of rose, white, and gray. Furniture not designed by Polshek & Partners was selected with taste and good sense by Floreano.

The heart of the Riverside Convention Center is, of course, its 13,000-square-foot, 65-foot-high, glass-covered galleria with large double trusses containing HVAC ducting. The galleria connects the lower meeting/banquet rooms with the upper exhibit hall. It ends in a glass-enclosed, apse-shaped greenhouse space that overlooks the river and houses two doric columns, which were part of the bank building that formerly occupied the site. The galleria's principal attraction is its abundant natural light and feeling of airiness, which is heightened by colorful linen banners by local weaver Jeanne Petrick that span the trusses. Unfortunately, the Rochester sky's frequent leaden look is underscored by gray columns and mullions.

As a redevelopment linchpin, the convention center seems to be working. "From a planning perspective," says economic development administrator Forbes, "the Riverside Center has served a major catalytic role, anchoring the area of Main Street and stimulating a lot of investment." Main Street is being torn up to widen sidewalks and add street furniture at a cost of \$17 million. A \$40 million-plus, 27-story Hyatt Regency hotel is under construction opposite the center on South Street and will plug into it via skywalk. Meanwhile, the Holiday Inn across Main Street spent \$9 million on a face-lift completed in time for the center's opening, and Stouffer Hotels spent \$19 million to buy and renovate the nearby Rochester Plaza.

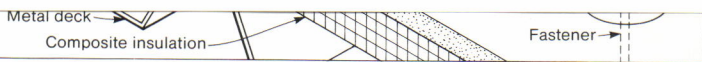
Since its opening in August 1985, the Riverside Convention Center has brought more new business (\$37 million) and more new convention and trade show visitors (more than 160,000) to the city than was projected. There is also evidence that suburbanites are beginning to focus more on downtown again. □





Photographs © Patricia Layman Bazelton

(Return label)





**NOTES**

There are three generic installation methods for EPDM roofing:

1. Fully Adhered: Membrane roofing is rolled onto the substrate and allowed to relax. Underside is then fully coated with bonding adhesive. After both surfaces are tacky, the membrane is pressed onto the substrate with a push broom. Adjoining sheets must overlap at least 3 in., with laps spliced and cemented. Membrane is mechanically secured at perimeter and penetration edges. Flashing protects all edges, openings, and penetrations.
2. Loose Laid: Roofing in this application is laid loose over the substrate, either deck or rigid insulation, and ballasted in place. It is positioned without stretching, allowed to attain its natural shape, and adjacent sheets spliced with adjoining sheets overlapping at least 3 in. Sheets are cemented and rolled together to seal seams. The membrane is mechanically secured at perimeter and penetration edges, and flashing is installed. For ballast, a sufficient amount of river-washed gravel is laid over the membrane to provide 10 lb/sq ft of weight. As an alternate, a pre-cast roof paver system is applied to hold the roofing membrane.
3. Mechanically Fastened: Membrane roof is directly attached to the roof deck with mechanical fasteners. The substrate is anchored to the roof deck, and the fasteners either go through both membrane and insulation or only go through the insulation and deck, with the membrane held down by retainer and cap over the base. Sealant protects against moisture.

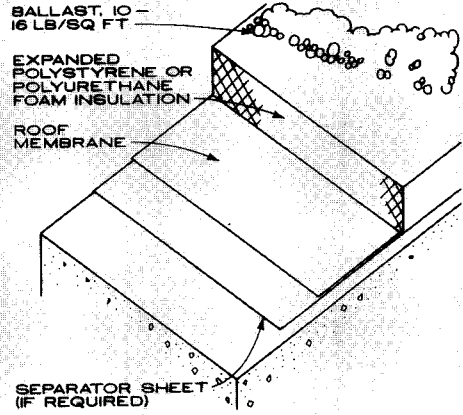
Many EPDM membranes are field surfaced to improve resistance to weathering and fire, or to enhance appearance.

**GENERAL NOTES**

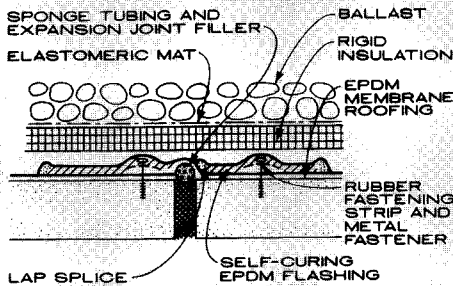
EPDM elastomeric roofing is synthesized from ethylene, propylene, and a small amount of diene monomer. Manufactured sheets range in thickness from 30 to 60 mils.

Advantages: EPDM roofing exhibits a high degree of resistance to ozone, ultraviolet, extreme temperature and other elements, and degradation from abrasion. It is resilient, strong, elastic, and less prone to cracking and tearing when compared to other forms of membrane roofing.

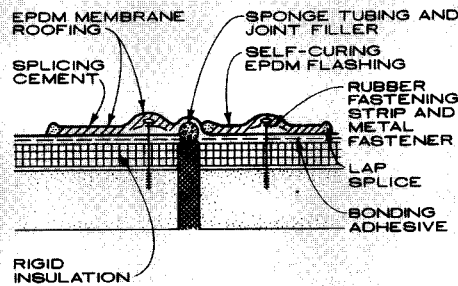
Disadvantages: Application methods, specific formulas and configurations for adhesives, fasteners, and coatings are unique with each system manufactured. Materials, design, and appropriate use vary widely. Close supervision and regular inspection by manufacturer are a requirement. Labor cost and time allotted for installation may vary.



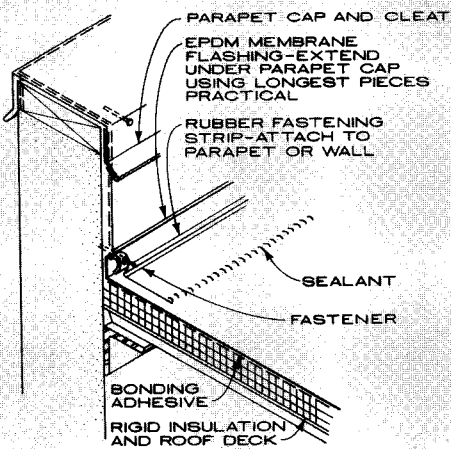
**INSULATED ROOF MEMBRANE APPLICATION**



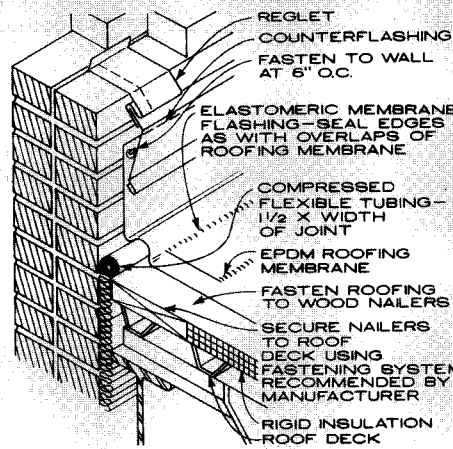
**EXPANSION JOINT: INSULATED ROOF MEMBRANE BALLASTED**



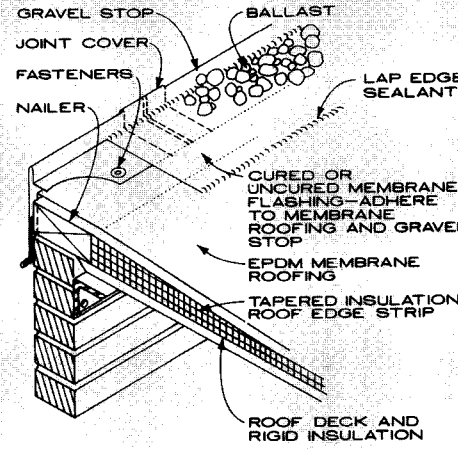
**EXPANSION JOINT: FULLY ADHERED ROOF MEMBRANE**



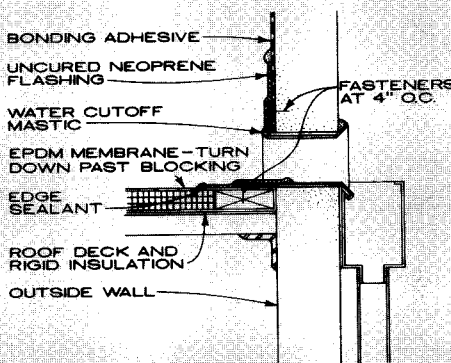
**FULLY ADHERED ROOF AT PARAPET OR WALL**



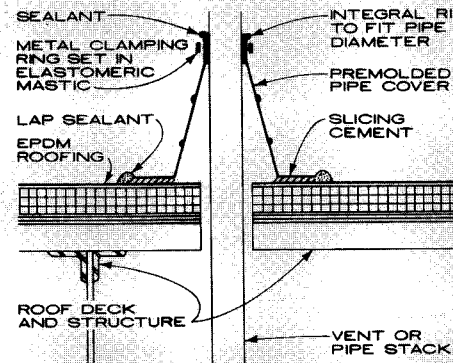
**ROOF EDGE AT NONSUPPORTING WALL**



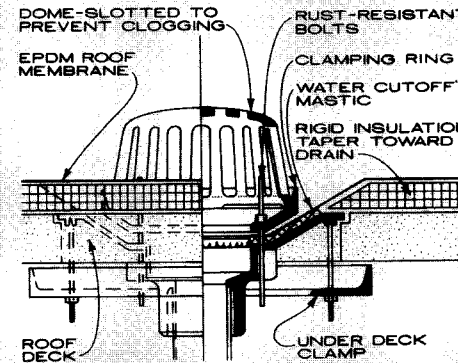
**LIGHT METAL ROOF EDGE**



**FULLY ADHERED ROOF SCUPPER**



**PREMOLDED VENT PIPE FLASHING**



**ROOF DRAIN**



ful. One that has worked well so far is replacing asbestos felt with glass fiber membrane. Along with improving membrane strength, however, glass-fiber felt has necessitated some changes in application technique that researchers are only now coming to fully understand, says Richard Boon, P.E., senior engineer at Firestone Building Products Co. Nonetheless, the principle of built-up roofs, with their full adhesion and comfortably redundant—albeit ungainly—application, is well established in the marketplace.

### *Testing and weatherability*

Predicting the lifetime of a product that is barely 20 years old can be tricky business. “Weatherability”—how well the roof will wear over time—is a major issue.

Some of the leading threats to a healthy roof are ultraviolet radiation, thermal cycling, and ozone exposure. When PVC membranes were first introduced as a roofing material, their weatherability was questionable. Designed for a different exposure than they received in the United States, they suffered hardening, shrinking, cracking, and splitting. Since then manufacturers have improved their performance by adding supporting fabric, increasing thickness, and taking advantage of better stabilizers and more stable plasticizers. Manufacturers now claim that PVC can remain elastic over a 10-year lifetime, according to manufacturers’ literature.

To establish such claims, manufacturers’ typically rely on four basic accelerated tests, in addition to real-time test panels:

- The QUV test, in which roof samples are placed in a test apparatus surrounded by eight fluorescent lamps that produce concentrated ultraviolet wavelengths.
- Carbon-arc testing using a “flame-type” synthetic light source. Roof samples are periodically moistened to simulate dew and are exposed to temperatures of 120 to 180 degrees Fahrenheit.
- Xenon-arc testing, which is similar to carbon-arc testing but uses a long-arc, water-cooled xenon lamp. With carbon- and xenon-arc testing, time supposedly is accelerated by a factor of seven.
- The EMMAQUA (equatorial mount with mirrors for acceleration with water) test, which directs concentrated (eight to 10 times) sunlight to the membrane by focusing mirrors on a single target area.

While all manufacturers take their testing quite seriously, opinions differ as to which tests are the best. Stevens Elastomerics, a division of J.P. Stevens & Co. Inc., a Northampton, Mass., manufacturer of a Hypalon single-ply system, believes the EMMAQUA test is the most realistic and accurate because it exposes the roof samples to the full spectrum of concentrated sunlight and uses water to produce degradation comparable to the worst natural weathering.

For EPDM, the Rubber Manufacturers Association uses the QUV or the xenon arc as the basis for accelerated testing. The association’s choice is based on a two-year study of samples exposed to the four standard weathering tests compared with naturally exposed panels in south Florida.

All four of these weathering tests measure the effects of radi-

ation, temperature, and moisture on the roofing membrane; the trick is to guess how long a period for which to simulate aging and at what temperature the roof will age, explains Richard Coursey, Stevens Elastomerics’ technical products manager. “Each type of test will yield different results. To optimally design a product, three of the tests should be employed: either carbon or xenon, the QUV test, and the EMMAQUA. The accelerated test methods are only for comparative tests and cannot be equated to real-life situations. What we look for is a collaboration among the tests. They are all effective at eliminating poor products, but may not be effective at identifying quality materials. What we really could use would be a time machine that ages the product exactly the way it would age in the field under specified conditions.”

Coursey estimates from his experience that 70 percent of roofing failures are attributable to installation errors, 20 percent to faulty design, and 10 percent to materials (membrane, adhesives, fasteners, etc.) failure.

“Ideally, we would wait until a material had proven itself before beginning to market it,” Boon agrees. “Unfortunately, that isn’t always possible. More realistically, a combination of tests, along with the necessary background on materials and their performance, yields a useful result in a reasonable time.”

Of the three control factors, temperature most radically affects the outcome of the weatherability tests. A change of 18 degrees Fahrenheit (10 degrees centigrade) at the upper temperature test range can double the effects of aging. Another major concern is that the light intensities and spectra given off by any of the sources may change undetected, resulting in an inaccurate picture of the roof’s aging. To ward off that possibility, material testers check the temperature and light source regularly and try to calibrate and compensate for unusual changes.

ASTM has standard accelerated aging tests for PVC as well as white and black EPDM and neoprene. Work on other membranes continues at ASTM. Bruce R. Wilby, Stevens’ business manager, argues that there should be standardized tests for generic types of roofs. For instance, he says, it is unrealistic to test white roofs, which reach a maximum temperature of 7 or 8 degrees Fahrenheit above the ambient air temperature, at the same temperature as black roofs, which can hit 60 degrees above the ambient air temperature under the same conditions.

“The advent of white roofing, regardless of base polymer type, has made the development of roofing systems even more complex than before,” says Don Backenstow, director of research and development for Carlisle Syntec Systems of Carlisle, Pa. “With white systems, it is very dangerous to rely solely on laboratory tests. Experience has taught us that reliable laboratory tests are developed after extensive field observation. This has again been proven with the development of our white membrane. The accelerated aging tests now used in laboratories throughout the world will not predict long-term serviceability of white membrane in the field. At best, laboratory-accelerated weathering tests can be used to monitor production to determine if there have been variations in the process and/or raw materials used to manufacture the product,” he says.

Other types of standardized testing include Underwriters Laboratories and Factory Mutual testing for fire ratings; ASTM tests for tear strength, breaking strength, ozone resistance, and hydrostatic resistance; and Factory Mutual’s I-90 wind uplift test. “The difference between these tests and the accelerated tests is that these are generic and measurable,” says Jim Huff, codes manager at Firestone Building Products. “For example, fire testing

*Drawings on this page and on page 98 were excerpted from Architectural Graphic Standards, 8th ed., edited by John R. Hoke Jr., AIA. Copyright © 1988 by John Wiley & Sons Inc. Reprinted with permission of the publisher.*

without exception, every roofing materials manufacturer that offers a full line of membranes, fasteners, insulation, and flashing also offers a bonus warranty for purchasing the entire package. The message is that attention to the entire roofing system—especially at penetrations, joints, and edges—is critical to predictable performance. □





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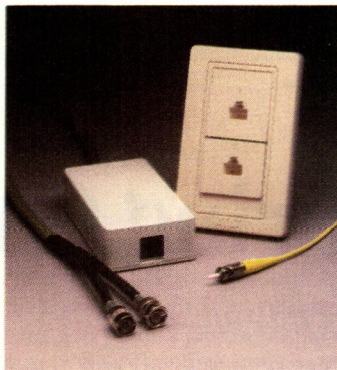
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# The Architect as Catalyst: A Case History

By M. Stephanie Stubbs and Douglas E. Gordon

**L**iberty Center is a multidimensional case study. Beyond its rational design and its role in Pittsburgh's renaissance, Liberty Center was blessed with a project team that included two architect/owners, three developer/owners, a financier/owner, and a great deal of cooperation.

The new, 1,300,000-square-foot, mixed-use complex combines a 25-story hotel, a 27-story office building, and a four-story connecting podium of specialty shops and ancillary hotel services on the Allegheny side of Pittsburgh's Golden Triangle, where the Monongahela and Allegheny rivers join to form the Ohio. The complex, adjacent to the new convention center, anchors an emerging redevelopment movement in that section of the city.

The design theme echoes the city itself. A combination of prefabricated and traditional structural systems accommodates the project's mixed uses while sophisticated security, fire, and mechanical systems ensure the safety and comfort of occupants.

Liberty Center is Pittsburgh's first major downtown development project in years designed by Pittsburgh architects. The architects for Liberty Center are Pittsburgh firms UDA Architects and Burt Hill Kosar & Rittelmann (BHKR), and The Architects Collaborative Inc. (TAC) of Cambridge, Mass.

The Liberty Center saga started in 1979, when the City of Pittsburgh's urban redevelopment authority announced a competition for development of the 2.4-acre site opposite the new David L. Lawrence Convention Center. The city wanted a hotel to service the convention center and draw tourists downtown. The value of the site was not immediately apparent—it was part of an abandoned railroad right-of-way parceled by the city (and adjacent to a red light district). But the site is now a prime location—the junction of the city's two major grids, which, incidentally, became primary reference points for building placement. The site demands acknowledgement of two opposing street-scapes, different in scale as well as in orientation.

One difficulty in following the story of this project's development is that it's tough to remember the players without a scorecard. Many of the firms involved wore two or even three hats during the course of the development. But amid the complex intertwining of relationships was a pragmatic division of labor that contributed a great deal to Liberty Center's success.

First, the principals of UDA Architects and BHKR discussed the possibility of developing the site. "We decided not to follow the usual *modus operandi*, which would be to wait for a developer to come to us," says David Lewis, FAIA, principal and founder of UDA Architects. "We wanted to take the initiative, shape the project, and find a developer with whom we wanted to work." The architects, joined by Pittsburgh real estate firm Beynon & Co., formed Grant Liberty Development Group Associates with two major national developers, Jos. L. Muscarelle Inc. of Maywood, N.J., and Jerry Wexler of Chicago.

Although the city's competition program called for only a hotel,

the group believed that the site was large enough to comfortably accommodate an office building as well. In fact, Muscarelle's firm was more interested in developing an office tower, while Wexler, developer of the New York Vista Hotel at the World Trade Center, took the lead on the hotel. Wexler introduced Vista (the American branch of Hilton International Hotels Corp.) to the growing team. Vista liked the premises and proposals behind the project and suggested adding an architecture firm with extensive hotel and mixed-use experience. The team agreed that The Architects Collaborative was the right firm for the job, and thus TAC joined the project. Later on, when Wexler withdrew because of overcommitment to other projects, the team acquired another developer, Forest City Enterprises of Cleveland. That acquisition would have major ramifications for the structure and construction process of the hotel.

To sum up, the developer, Grant Liberty Development Group Associates, was made up of two Pittsburgh architects (UDA and BHKR) and a Pittsburgh realtor (Beynon & Co.) joining the principal two national developers (Jos. L. Muscarelle Inc. and Forest City Enterprises). When the project was completed a new entity was formed, Liberty City Venture, which included Metropolitan Life Insurance Co. as major equity partner and permanent leader.

The project was hampered by the timing of its conception. It received the green light in 1980, then spent nearly four years waiting for a drop in interest rates, which had jumped from 8 percent to 22 percent in three years. Once construction commenced in late 1984, the project went from ground-breaking to opening ceremonies in two years. In addition to the financing provided by Metropolitan Life, the Liberty Center project received an Urban Development Action Grant of \$21 million from the U.S. Department of Housing and Urban Development through the City of Pittsburgh.

The team kept secret its plans to place an office building on the site until the competition due date. "Our mixed-use project offered the city the strongest economic benefit," said Raymond L. Gindroz, AIA, a principal with UDA Architects. "The city wanted a 600-room hotel with a large ballroom and parking. We also gave them 20,000 square feet of landscaped courtyard, a two-level, 600-car underground garage, and a pedestrian overpass to the convention center."

Construction management was handled as a joint venture of Pittsburgh's Mellon-Stuart Co. and Jos. L. Muscarelle Inc. Building management is by Beynon and Muscarelle.

How did this complicated conglomeration manage to hang together? Many members of the team give special credit to Donald K. Carter, AIA, a partner in UDA Architects, who was the

*Creative site planning permitted a hotel, office tower, and shops on a site originally earmarked for a hotel only.*





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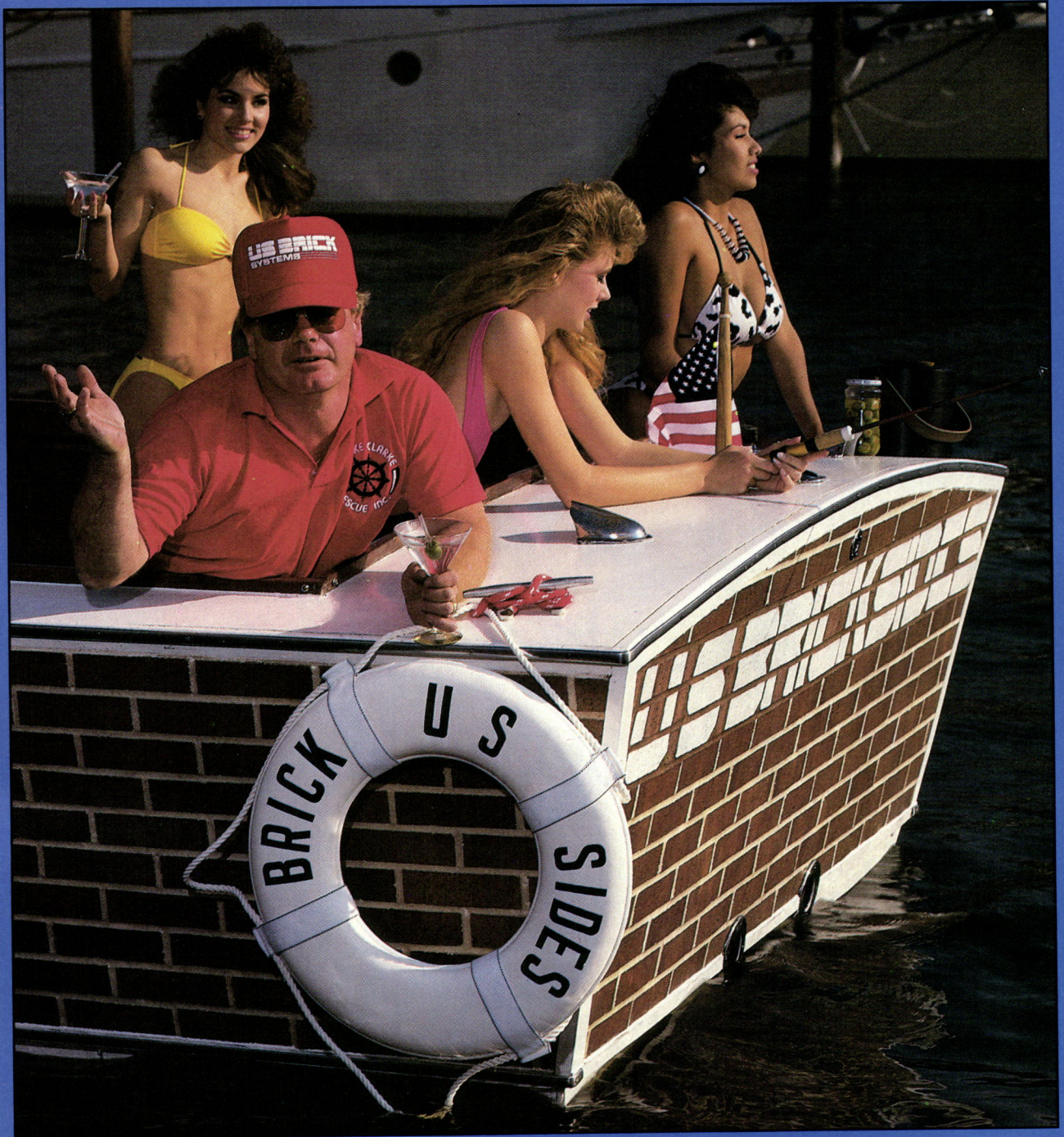


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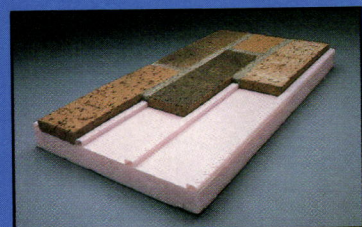
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# Pros and Cons of Incorporation

*In the light of tax reform. By Mark E. Battersby*

In light of the changes brought about by the Tax Reform Act of 1986, the decision whether to incorporate an architectural practice or not will depend in large part on a number of financial and tax factors. Whether it is more profitable to practice as a regular professional corporation, sole practitioner (partnership interests are treated as sole practitioners), or S corporation needs to be decided on a case-by-case basis with review of a firm's income history and realistic projections for its future income. There are advantages and disadvantages of each form.

For the first time in the history of our income tax system, individual tax rates are slated to be lower than corporate tax rates. Beginning in 1988, the highest marginal tax rate for corporations (34 percent, subject to an additional 5 percent "hump" to total 39 percent on taxable incomes over \$100,000 but not over \$350,000) is higher than the highest marginal rate for individuals (28 percent, subject to a 5 percent hump, or 33 percent total, imposed to phase out the 15 percent tax bracket as well as personal exemptions for the relatively wealthy taxpayer). Given these changes, most architects will pay substantially less tax if their income is taxed at individual rates instead of the higher corporate rates.

Under the new tax law, a self-employed architect now can claim a tax deduction for health insurance—up to 25 percent of the amount paid for the architect, his or her spouse, and dependents. In addition, the health insurance deduction is claimed as a business expense and does not come under the limits for medical expenses typically imposed on itemized deductions for the individual. Even the partial deduction for health insurance helps to eliminate one more reason many self-employed architects incorporate their practices.

Of course there are any number of reasons other than taxes for deciding to practice in the corporate form. Chief among these is the fact that a corporation limits liability for its principals, while a sole proprietorship or partnership does not. However, an S corporation may fit the bill because its profits are taxed at the new individual tax rates and yet it provides limited liability for its owners.

Numerous architectural practices already are incorporated and their owners may still feel it is advantageous to operate as a professional corporation because other benefits outweigh the tax factors. This is not necessarily a bad choice. A longer view,

however, could eliminate the corporate form of practice from consideration for a number of professionals.

Although the maximum tax has been reduced, the minimum tax for corporations has been raised significantly. An architect considering incorporation today must determine whether the new tax law provisions will cost him or her more as a corporation than as a sole practitioner. Ignoring this point could be an expensive mistake.

Until now, an individual taxpayer was always confronted with a higher maximum tax rate than was a corporation. This circumstance tended to favor incorporation of a practice. If the practice needed to hold profits as retained earnings, the architect-owner typically was indifferent to the fact that the corporate earnings would be taxed a second time when they were distributed as dividends to stockholders. Dividends were rarely, if ever, contemplated.

Funds that the owners required could be paid to them in the form of salaries, which were deductible by the corporation and thus not subject to a corporate tax. If an architect died, his or her interest would be liquidated without tax at either the corporate or shareholder level. These rules are still in effect, even under the new tax law.

Despite the fact that the top marginal tax rate for corporations is now higher than the top marginal rate for individuals, regular incorporation of an architectural practice still provides tax savings under certain circumstances. At lower levels of income, a corporation will continue to pay a lower tax than a comparatively situated individual.

It should be noted that congressional action taken on the proposed 1987 Tax Reconciliation Act may affect the architect's decision to incorporate. (At press time, the House had passed one version, and a similar version was pending before the Senate.) The proposed act includes, for example, a provision to eliminate the graduated income tax for personal services corporations. All income of such corporations would be taxed at a flat 34 percent; the individual rates, however, would remain as provided in the 1986 act. The new provision has been approved by the House Ways and Means and Finance committees. Eliot Rosen, an attorney and editor of "Tax Notes" newsletter in Arlington, Va., says there is a good chance the 34 percent tax for personal services corporations will be adopted if the reconciliation act passes; both the House and Senate bills include such a provision. He advises architects contemplating incorporation to wait



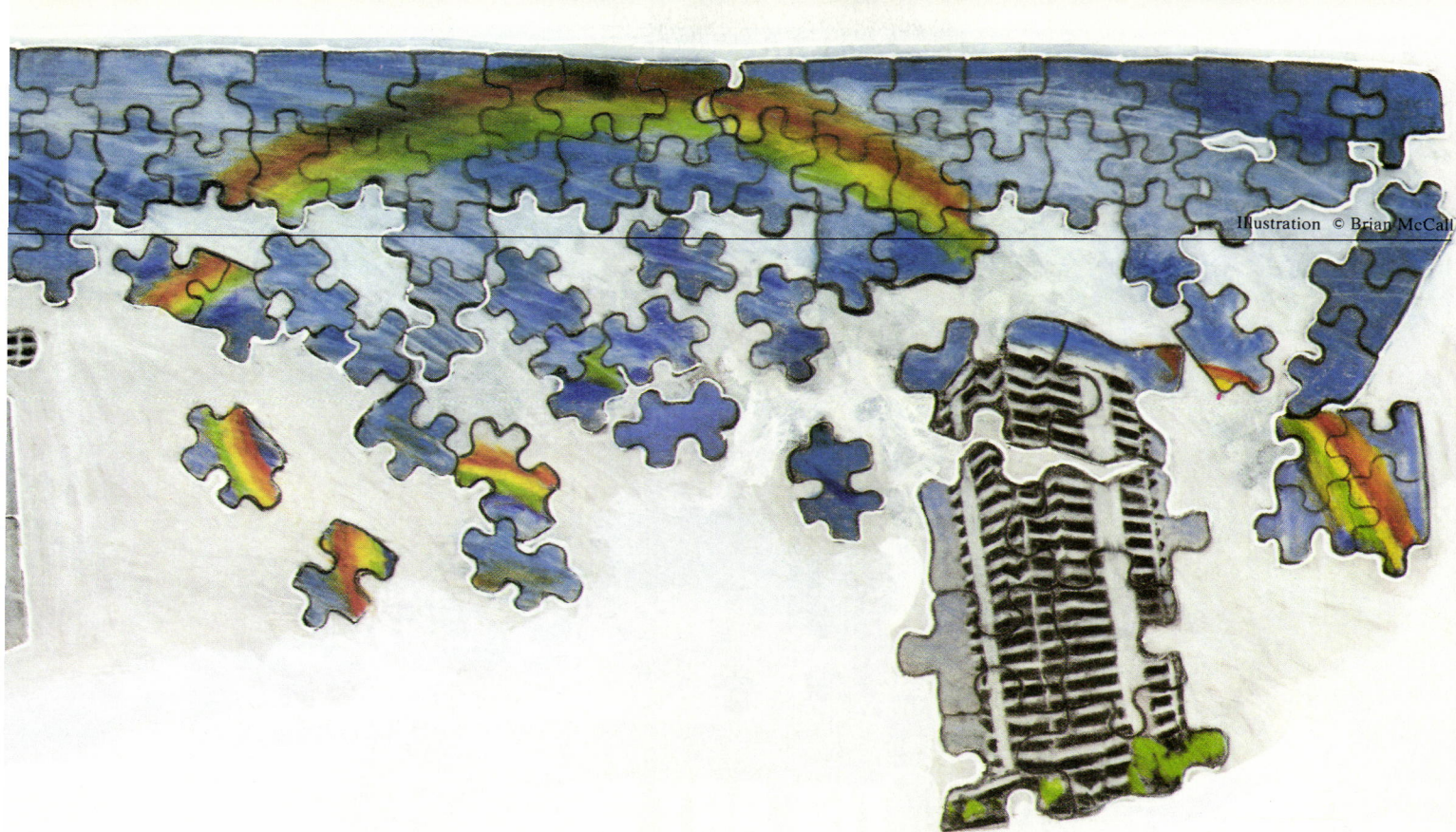


Illustration © Brian McCall

until 1988, when a decision is expected from Congress, so that they have a better picture of the taxes their practices will face.

Under the 1986 law, the point up to which the individual pays more tax than the corporation can be seen from the following example. The first \$50,000 income of a corporation is taxed at 15 percent, and income above \$50,000 is taxed at higher percentages; but for the individual taxpayer (sole practitioner, married, with two dependents) only the first \$29,750 is taxed at the low 15 percent. A professional corporation will pay less tax until income reaches \$154,790. At that point, tax for both the corporation and the individual will be about \$43,000. Then, at higher income levels, the individual in this example fares better than the corporation.

If a practice generates a net income at the break-even point of \$154,790, the lowest overall tax could be achieved by splitting the income between the architect and his or her corporation—\$75,000 to the corporation and the excess to the individual. The corporation would pay \$13,750 in taxes and the individual \$18,868, saving about \$10,000 of the tax that would be owed by either entity. The architect's salary of \$79,790, however, must be justified as reasonable compensation.

Unless the 15 percent tax bracket has not been exhausted with other income of the individual architect, it will usually be advantageous to operate the practice as a professional corporation that accumulates the first \$75,000 of taxable income and pays out the balance in the form of salaries to principals.

In the short term, a corporation has a number of advantages, but once the architect's practice income begins to increase, it may become more and more difficult—because of the requirement that compensation be reasonable—to pay out all the corporation's income in excess of \$75,000 as deductible compensation to the principals. Also, if the practice needs more than \$75,000 in retained earnings to operate yearly, the tax advantages of incorporation are not as clear.

Advance planning usually is necessary to minimize the impact of the alternative minimum tax (AMT) rules, particularly for a corporation. The AMT provisions of the 1986 tax reform package are aimed at broadening the scope of the minimum tax and ensuring that all professional corporations—including architectural practices—reporting substantial earnings pay some tax, regardless of the number of tax preference items or deductions.

The result, in effect, is that even if a corporation has enough deductions to wipe out all of its tax liability it must still make a

contribution to the federal coffers. Corporations are more likely than individuals to feel the sting of the AMT regulations because they are applied against a net book income adjustment. Any income greater than this calculated level will be considered excess AMT income, and 50 percent of it will be taxed at 20 percent. In the case of depreciable property, it is wise to compute the depreciation deduction for purposes of the regular tax using an accelerated depreciation and the resulting AMT liability and compare the result with a different method.

The seriousness of this rule is demonstrated by the U.S. Chamber of Commerce estimate that one-third of all businesses can expect an AMT liability beginning in the 1987 tax year.

When the business outlook for a practice is expected to be dim for a while, incorporation may not be a good idea. The losses of a regular corporation cannot be deducted on the tax returns of the individual principals, as they can be with a proprietorship, a partnership, or an S corporation. If a change in business conditions make a regular corporation undesirable, an S election can always be made. However, the architect is cautioned that electing to be treated as an S corporation will bring into play a special tax applied to built-in gains of the corporation.

If the long-term intention is to remove retained earnings from an architectural practice, the corporate form of business will result in a double tax. Unless the owner dies, earnings will be taxed when distributed to him or her—thus the same earnings will be taxed at both the corporate and the shareholder level.

In the past, retained earnings were taxed at the lower capital gains rate. Now, however, funds in excess of the stock basis or book value are taxed as ordinary income. Even if an owner dies and his or her stock is valued at the market rate (which avoids a liquidation or redemption tax), the present rules impose a new, corporate-level tax on property appreciation, stock redemption, and gains from liquidation of appreciation.

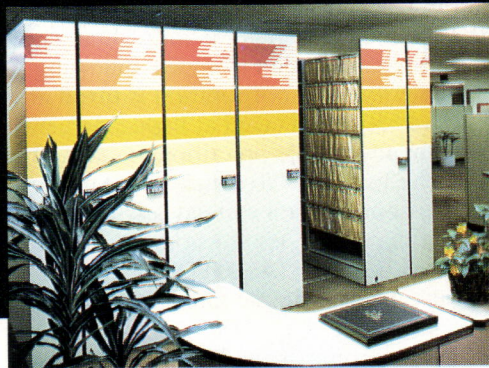
Because they cannot foresee the future, many architects will be inclined to take the short-term view if for no other reason than that the benefits derived from investing current tax savings available to corporations tend to counterbalance the threat of a double tax. But at certain levels of income, sole proprietors pay less tax overall. Obviously there are benefits and drawbacks to each form of practice, and the decision ultimately must be based on numerous factors. All the more reason to confer with a competent professional before making any move to change the status of your practice. □



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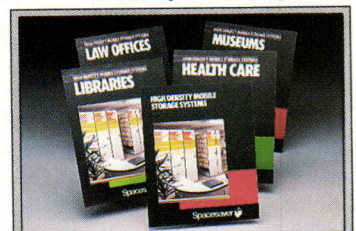
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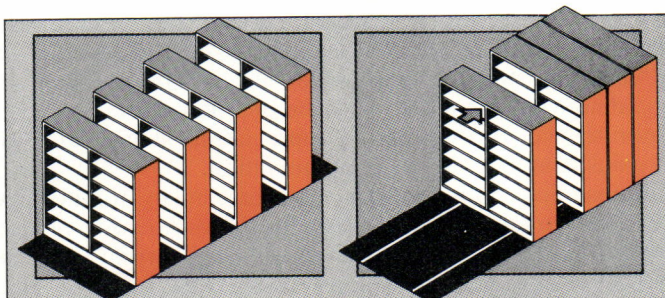
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# Stopping the Spread of Fire

In order to contain a fire and keep it from reaching the next room, hall, or adjacent building, walls are constructed of materials that can resist fire for a given length of time, permitting safe evacuation of the building and the arrival of firefighters before the fire spreads. The ideal fire wall is a continuous and unbroken barrier. But because building inhabitants can't walk through walls, openings are necessary, rendering the wall a less than ideal fire barrier.

Often the fire wall and the openings in it, not to mention the doors, frames and hardware, all are handled by the architect as discrete and separate items in a linear design process. Instead, the architect should consider fire walls, doors, frames, and hardware as an assembly or system. The fire protection ability of each component depends on the integrity of the assembly. For clarity, however, this article examines the components separately.

## Doors

In order for a door to carry a labeled fire rating, its prototype must have undergone a number of lab tests that measure the door's performance when exposed to fire. The fire temperatures reached and the length and severity of exposure all are recorded. In some cases, a fire door also undergoes a hose stream test, which measures its ability to withstand rapid cooling, erosion, and the impact of high-pressure water.

A rating label indicates that a door meets the same specifications as its prototype. Fire doors are classified by a letter designation and/or an hourly rating. The letter indicates a location in the building and the consequent fire protection required, as determined by the fire hazard of that particular location. The hourly rating indicates fire exposure in time, the "fire protection rating."

Certified manufacturers place a rating label on each door; the placement of this label is specified by the National Fire Protection Association (NFPA), and its removal for any reason will void the rating. If the door is machined at the manufacturer's plant, the label should appear

on the hinge side of the door at eye level. If the door is not machined at the manufacturer's plant, the label should be located on the top of the door. Any subsequent machining of the wood must be made by a certified supplier or distributor.

In the past, despite restriction on modifications, contractors often machined wood fire doors for lights and hardware, thus voiding the rating label. This practice of field modification as well as unauthorized shop modification should end soon with the stricter enforcement of restrictions. The NFPA's Standard "Fire Doors and Windows" (ANSI/NFPA 80) states, "Preparation of fire door assemblies for locks, latches, hinges, concealed closers, glass lights, vision panels, louvers, astragals and laminated overlays shall be performed in conformance with the manufacturer's inspection service procedures and under Label Service."

Contractors and uncertified suppliers have also been known to apply veneers over a door's original veneer, effectively voiding the rating.

The architect should note that NFPA and the model building codes prohibit louvers in 20-minute wood fire doors, and that lights must be at least six inches from the edge of the latch cutout in order to maintain the door's rating. Check NFPA standards and local codes for allowable types and sizes of glass.

## Frames

Labeled frames include aluminum, pressed steel, steel channel, and wood. If the chosen frame is not part of the manufacturer's assembly package and labeled as such, it must meet the fire rating requirements of the assembly. For instance, 45-minute-rated aluminum frames are inappropriate for a three-hour assembly. Frame anchors also must meet NFPA standards and local codes.

In the past, the door that prevented the spread of fire often didn't prevent the spread of smoke because of inadequate seals. The new NFPA Standard "Installation of Smoke- and Draft-Control Door Assemblies" (NFPA 105) sets criteria for air infiltration, testing for smoke and draft

control, as well as gasketing for rated fire door assemblies. New silicone rubber gaskets seem to perform well under high temperatures, are relatively unaffected by ultraviolet light and ozone, and don't react with paint or varnish.

Installation of the gaskets also affects performance. Attaching a gasket to the frame with a self-adhesive strip can cause the gasket to fail through improper contact with the frame or slippage caused by oil on the frame or constant door wear against it. To alleviate the attachment problem, manufacturers recently introduced a new generation of frames that have integral gaskets. The architect, in selecting these gasketed frames, should specify that they meet ASTM and Steel Door Institute (SDI) standards for smoke/air and fire criteria as well as NFPA 105 concerning air infiltration testing for smoke and draft control.

Gasketed frames also prevent air and dust infiltration and minimize sound transmission between rooms.

## Hardware

Hardware often limits fire door size and determines the assembly rating and classification. The following are examples of hardware requirements that, if not followed, could limit the assembly's effectiveness.

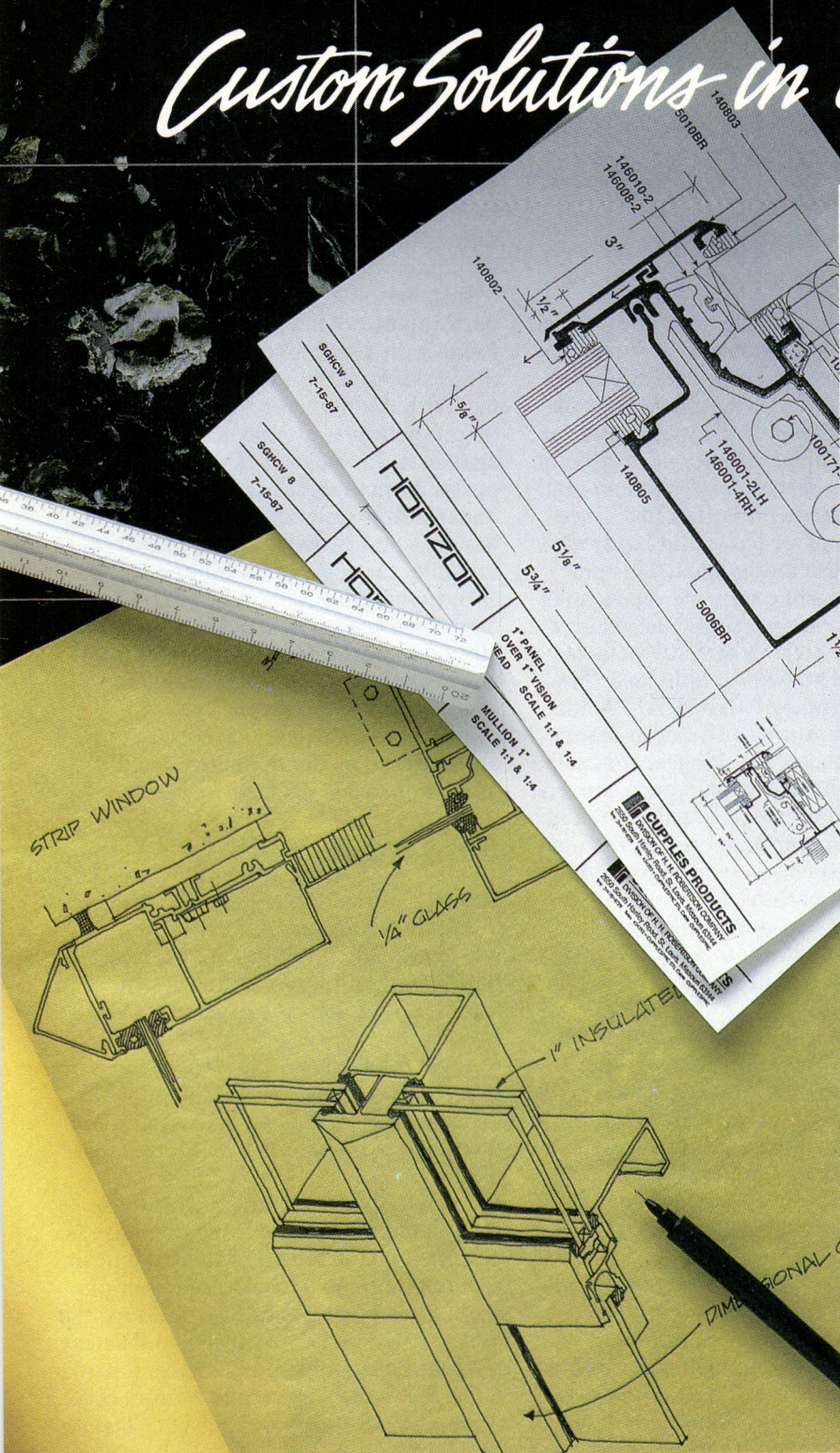
- Single doors, as well as active leaves of pairs of doors, must be equipped with locks or latches with an active latch bolt that cannot be held in a retracted position.
- When a door is equipped with single-point latching hardware, the door size is governed by the length of the latch throw.
- When three-point locks are required, as on three-hour-rated, Class A doors, the locks should be factory installed. Factory installation is recommended also for two-point locks and for top and bottom bolts on the inactive leaves of paired, Class A fire doors.
- The name "panic hardware" does not necessarily connote acceptable fire exit hardware—it must be labeled as fire-rated exit hardware.
- All butt hinges or pivots must be made of steel if they are to be used in a fire-rated assembly.
- Because all fire doors must be equipped with closers, the architect should be familiar with the workings of electronic door closers (see April 1987, page 132).

—TIMOTHY B. McDONALD



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We started with the membrane itself. (45 mils of white, scrim-reinforced Hypalon\*.)

We included the most popular insulations. (100% UL labeled.) The fasteners. (Stainless steel and ceramic coated.) And the

roof-edge fascia. (In a variety of metals and colors.)

**And that's not all, folks.**

Once we got all the right pieces together, we made sure only the best applicators would be allowed

to put them together. So we picked our most experienced contractors and made them authorized Hi-Tuff Plus

applicators. They, in turn, make sure your roof meets our inspector's tough standards. For at least 15 years.

**We'll back it into the 21st century.**

O.K., so a 15-year warranty's nothing new in the roofing business. What is new is what it covers.

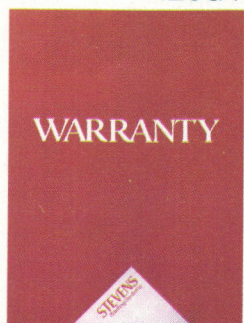
Our warranty doesn't just cover the membrane. It covers the insulation. The fasteners and plates. The adhesives. The fascia. And the workmanship. In short, every part of the system. Even against winds up to 70 m.p.h.

And if, within 15 years, your roof leaks, we'll fix it. Period. Paul Genest can tell you more. He can be reached at 413-584-9973.

All insulation is UL labeled.

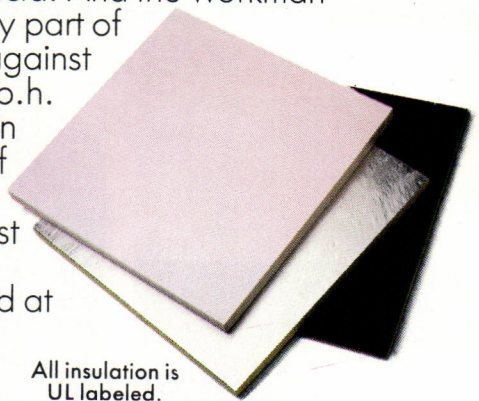


Corrosion-resistant fasteners. What goes down won't come up.



Our 15-year, 70 m.p.h. warranty covers all system components.

Our color-coordinated fascia has the edge in fighting high winds.



**STEVENS**  
Roofing Systems

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\*Hypalon is a registered trademark of Du Pont.

Circle 62 on information card





# Don't worry about staying inside the lines.

ECLIPSE® reflective glass from Libbey-Owens-Ford gives you incredible design freedom.

The colors are deep and rich. The reflectivity subtle. Blue-green. Grey. Bronze. And with the reflective coating glazed first surface, a distinctive silver.

There's no need to heat treat in most vision applications. Not even when the coating is glazed second surface. So there's no tempering distortion. ECLIPSE reflective lets you create it the way your mind's eye sees it.

Don't be bound by outdated glass solutions.

Color your vision with ECLIPSE® reflective glass.

ECLIPSE Reflective Glass  
Silver

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Blue-Green

ECLIPSE Reflective Glass  
Grey

ECLIPSE Reflective Glass  
Bronze



## ECLIPSE Reflective Glass



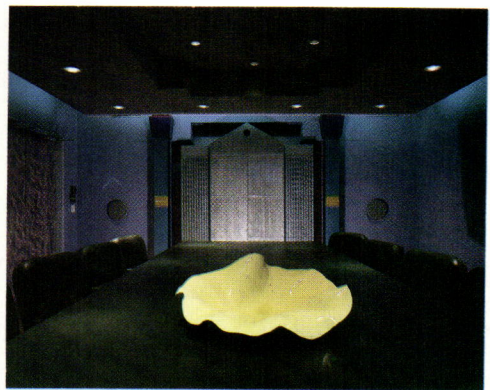
A member of the Pilkington Group

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- Atlanta 800-438-2330 (out of state)  
404-242-8860 (in state)
- San Francisco 800-843-8552 (out of state)  
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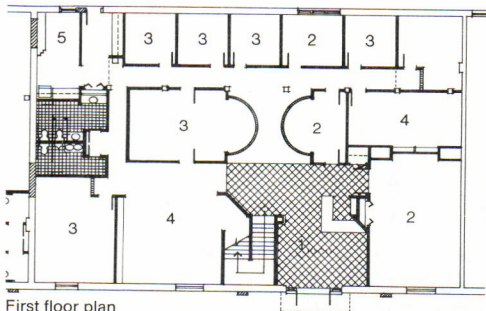
Circle 63 on information card



# Interiors



Photographs © Pat Crawford



- 1 Lobby
- 2 Conference room
- 3 Office
- 4 Clerical/bookkeeping
- 5 Break room

McClam-Blake Architects renovated an 1885 railroad spur warehouse, located in the historic district of the Congaree Vista redevelopment area in Columbia, S.C., into offices and studios for an advertising agency, Chernolf-Silver & Associates.

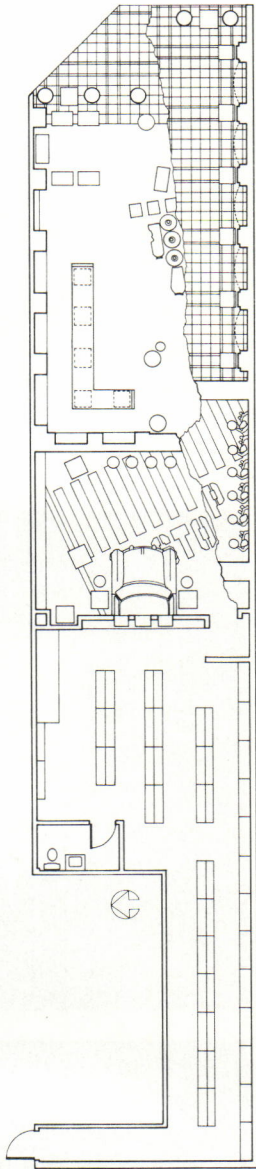
The conversion's visual centerpiece and main organizing element is a stairway detailed with bowling balls painted light blue and stainless steel tubular handrails. The architect (working with the local firm Lewis & Clark, which designed and crafted all the custom fixtures) incorporated the stepped pattern and similar railing details on a new loft level for the art department.

To accommodate this second level and take advantage of the exposed ceiling truss system, the original floor over a crawl space was dropped approximately three feet to grade level.

The original load-bearing brick walls were retained and a new main entrance with a curving glass-block wall was inserted into the middle section of the building. To further emphasize natural light, a saw-tooth roof system of gable windows and skylights was added along the rear facade. Custom light fixtures include a "chandelier" made of a neon tube painted black and white and set in a triangular frame.

—LYNN NESMITH





Upscale women's stores often attempt to elevate shopping from a casual activity to a ceremony. And the Goldi store, designed by Kubala Washatko Architects Inc. of Cedarburg, Wis., sets an appropriate stage for this contemporary American ritual.

Located in the Woodfield mall in suburban Chicago, Goldi's is a chain specializing in high-fashion women's shoes and accessories. In addition to usual program requirements, the client wanted a store that would "attack people" and requested a "classical facade" and a pink Cadillac be incorporated in the design.

Working with this mixed bag of requirements, the architect created the ruins of an imaginary earthquake and a fault line leading from the Roman Empire to 1950s southern California. This fault line, represented in the jagged pattern of the marble flooring and the painted blue sky beyond the broken line of the layered coffer ceiling and partitions, is the unifying element and imparts a processional quality to the



Photographs © Mark F. Hatffron





long, narrow, 2,351-square-foot space.

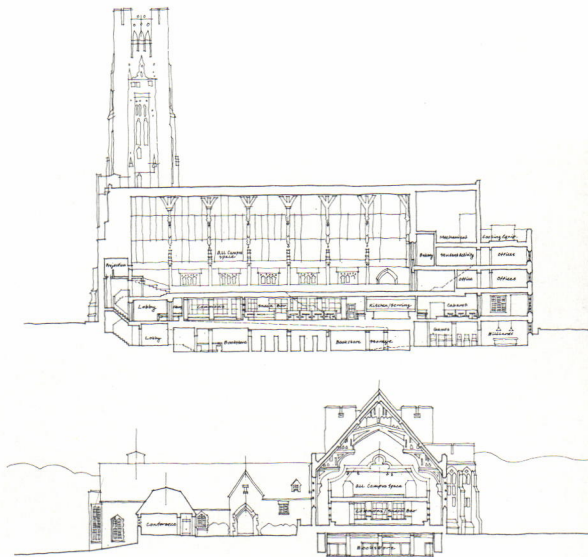
The entrance is defined by crumbled columns, which seem to defy gravity, and the ragged edge of the fractured architrave, while the fault line entices shoppers to explore the store's full depth. Following this path the architect's "stately ruins of ancient Rome" give way to a freeway with a carefully restored 1957 Cadillac and a series of wall-mounted mannequins dressed in '50s attire and covered with a flexible white coating, which appear as carhops serving trays of colorful shoes.

Both real and "faux" materials were used. The columns and many ornamental details are molded glass fiber, and the walls and patterned ceiling are drywall and plaster.

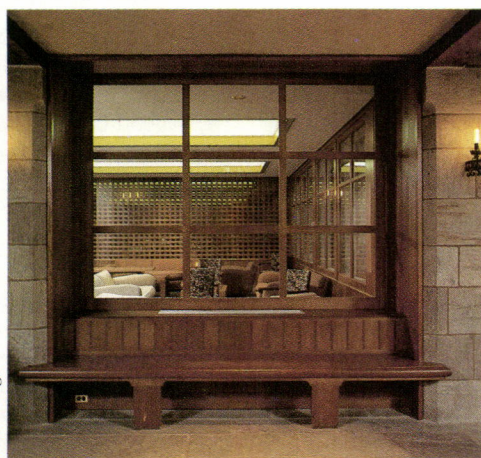
In talking about Goldi's, project architect Tom Kubala says he wanted to relate "fashion and fantasy" but credits the contractor, artist Donna Girard, and Lehmann & Buss Studio for their talents in bringing the scheme to reality.

—LYNN NESMITH

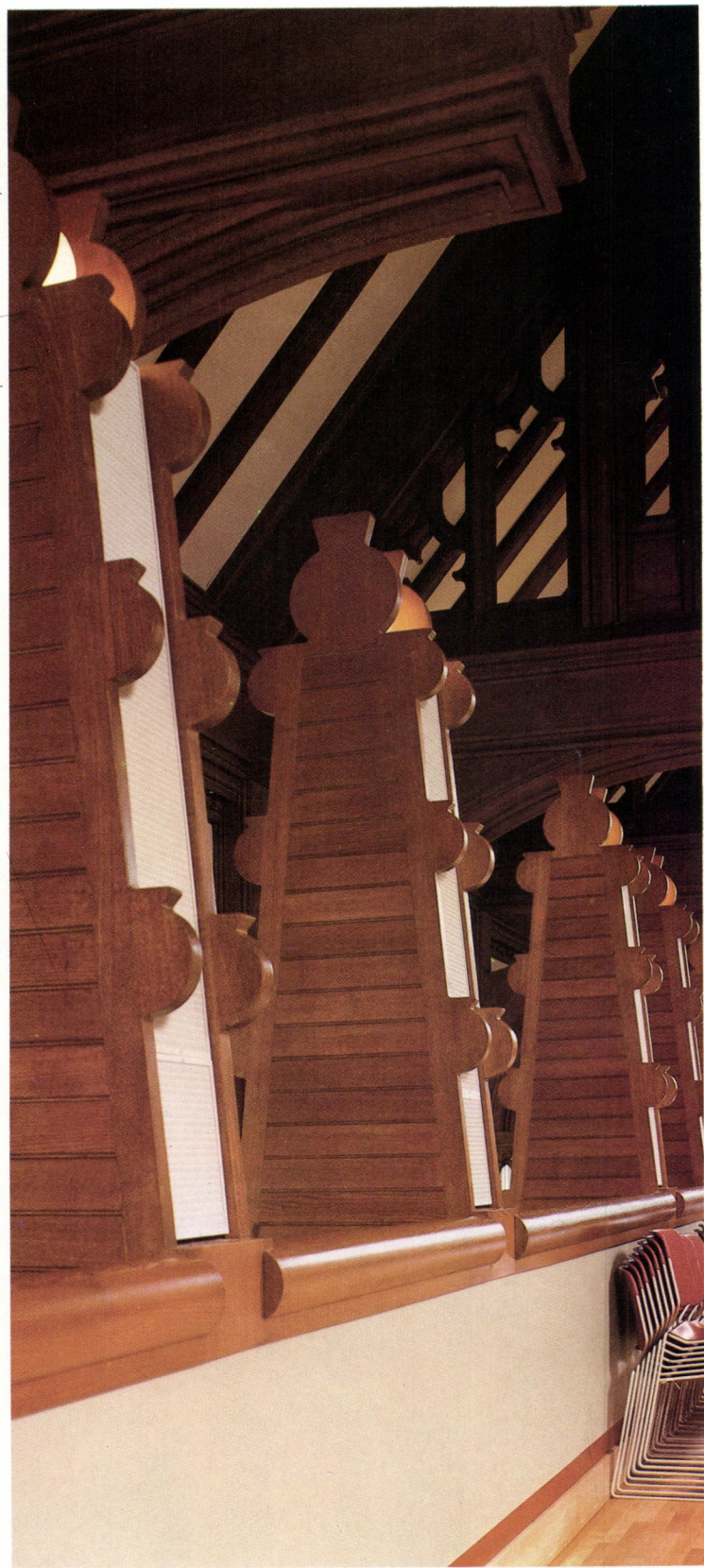




Matt Wargo



Matt Wargo



Venturi, Rauch & Scott Brown's scheme for converting a prominent collegiate Gothic building on the Swarthmore campus to a new student center was a bit like "inserting a ship into a bottle," says design principal Steven Izenour. Two new levels were created by carving out a full basement for the bookstore and adding a freestanding structure with new foot-

ings set away from the walls of the original 1920s building. This recess, which serves as a second circulation path, is combined with a series of large, double-glazed windows in the new wall (bottom left) to provide acoustical isolation but allow natural light from the original stained glass windows to enter the first floor snack bar and lounges.





Tom Bernard

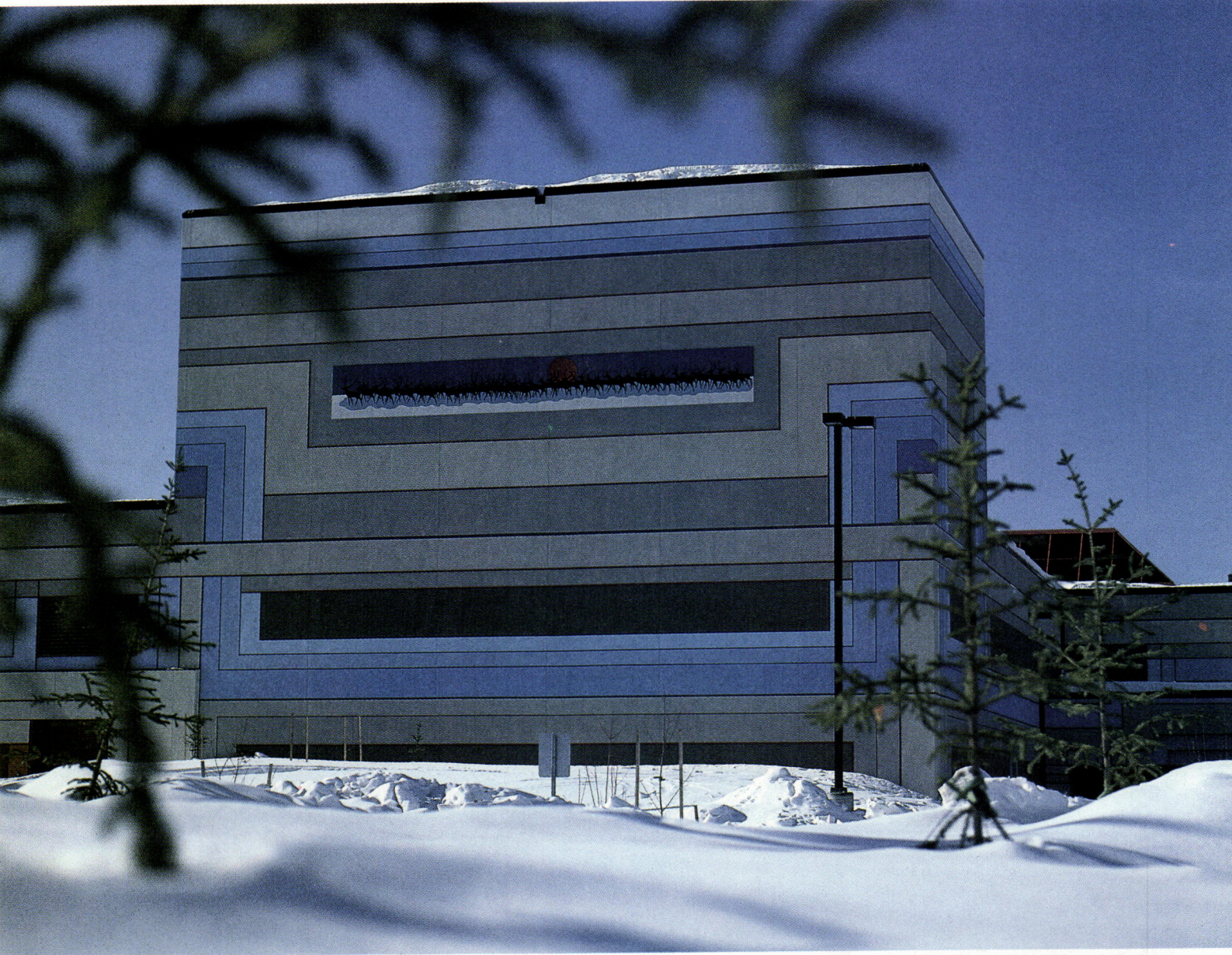
The addition of a new floor on the level of the original balcony reduces the volume of the old meeting hall by a third and creates, amid the ornate hammer beams, a more intimate space (with much improved acoustics) for dances, informal theater productions, and assemblies. Standing guard along the lengths of this arched space (opposite page) are rows of “Gothic pin-

nacles,” which serve as lighting fixtures and vertical risers to bring ventilation up into the space.

The Tarble Student Center’s furniture includes standard overstuffed chairs and sofas, some upholstered in a Venturi-designed Knoll fabric, and a variation of the architecture firm’s Wu Hall ladder-back chairs. —LYNN NESMITH



# Fry's Aluminum Architectural Moldings Add a Third Dimension to Your Design



North Pole Senior High School — A silent sentinel in the snow-covered frontiers of Alaska. A symphony of visual impact and originality, made possible with Fry aluminum moldings. Custom extrusions, carefully matched colors, and factory fabricated intersecting pieces allow this design to flow in an uninterrupted fashion.

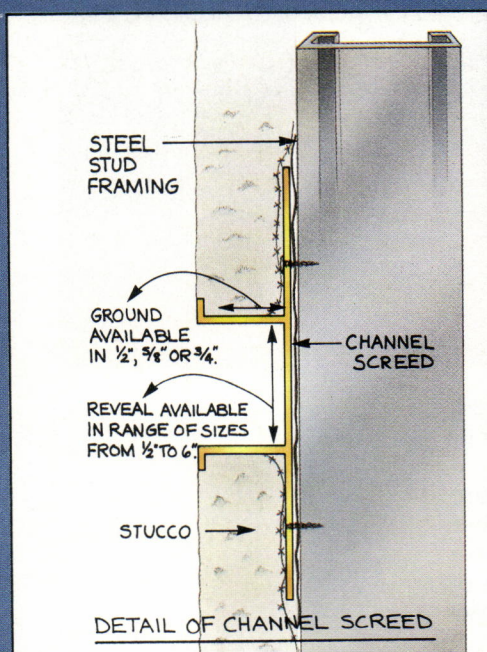
Fry's other capabilities to aid your unique design include radiused molding and fabrication enhancements to ease installation. No longer a purely functional product, Fry aluminum moldings provide you with design options as limitless as your imagination.

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# PRODUCTS

## Glass Panels That Turn From Clear to Opaque

Two recently introduced glass products feature the capability of converting clear glass, acrylic plastic, or other clear rigid substrates into an opaque medium within microseconds at the touch of a button or switch. The rapid transformation is caused by a minimal charge of electrical current that rearranges the molecular structure of liquid crystals, in much the same manner of the changing surface of an electrical digital watch.

Krueger's Translight film-laminated glass panels, shown in sequence below, can turn opaque selectively or in their entirety when a small electrical charge is sent to individually treated glass panels. An 8x10-foot area reputedly requires about the same current as a 75-watt light bulb. The panels are available up to 48 inches wide and 144 inches high. In new applications this sandwich is combined with a second sheet of clear glass or plastic into the framework to protect the film surface. The framework also serves as a channel for electrical wiring. On retrofits, the existing glass or plastic serves the same protective function.

The Translight may be custom fabricated to specific installation requirements, and is available in kit form. The kit contains the Translight film applied to the substrate, a channel for wiring, which also secures the Translight laminated sandwich in position, and necessary attachment hardware, wire, and switch.

Haworth's prototype Transpaque panels, shown above, currently available only for test site applications, are incorporated into the company's Architectural Elements line of glazed panels, doors, and fan lights

*Products is written by Amy Gray Light.*



in office environments. The coated plastic film is sandwiched between glass panels, with all electrical systems hidden in the raceway panels.

*Krueger Inc.*

*Circle 241 on information card*

*Haworth Inc.*

*Circle 242 on information card*

### Fire Protection

Two publications from 3M's Electrical Products division answer questions about fire barrier products, from need and concept to application and specifying. They contain a reference guide and information about the full line of 3M fire barrier products.

*3M Electrical Products*

*Circle 243 on information card*

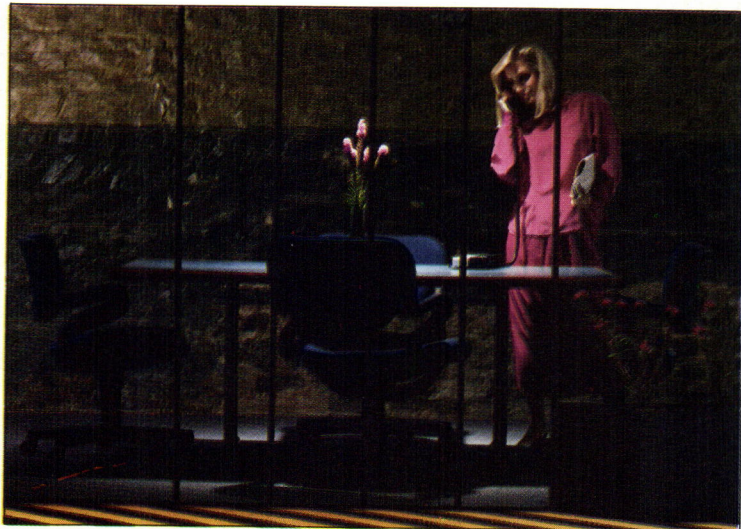
### Fire Doors

Weyerhaeuser Mineral Core doors DFM-90 (90 minute rating), DFM-60 (60 minutes), and DFM-45 (45 minutes), are UL-labeled and classified and meet Warnock Hersey International (WH) standards. Doors are 4x10 feet and come with vision panels. Hardwood crossbands and standard-thickness face veneers are bonded to the core with waterproof glue. To minimize field trimming, the doors have been manufactured  $\frac{1}{8}$  inch under nominal width without reducing stile thickness. All DFM-90 fire doors have triple-ply stiles of laminated hardwood lumber, plastic, and hardboard for triple strength and screw-holding ability. Triple-ply stiles may be specified on the DFM-60 and DFM-45 Mineral Core fire doors. Butt hinges are fully warranted. Fire-rating details are included in an information brochure.

The Ceco Corp.'s new Medallion vertically stiffened steel doors are engineered to meet or exceed the National Association of Architectural Metal Manufacturers (NAAMM) specifications, are available in a complete range of sizes, and offer a full selection of templated hardware preparations. The doors are available in a full selection of fire door ratings up to three hours and in sizes up to 4x9 feet single or 8x9 feet pair. Either UL or WH labels are affixed to the doors. Ceco's Fuego fire doors with a solid mineral fiber slab core are rated for 250 degrees Fahrenheit and exceed current NFPA-80 recommendations. Ceco conventional steel frames can be furnished with either UL or WH labels for use with fire doors having a three-hour rating.

Akbar rolling fire doors by Kinnear, a division of Harso Corp., are manufactured to meet or exceed the UL Classes A-D labels of inspection and certification. The

*continued on page 130*





### Products from page 129

automatic closing mechanism is activated when a fusible link melts at 160 degrees Fahrenheit. Available in sizes up to 144 square feet, the curtain is made of interlocking slats of galvanized steel. The ends of the slats are equipped with lock ends. The hood covering the counterbalance mechanism is made of 24-gauge galvanized steel and is equipped with an auxiliary inner hood that drops down in case of fire. A push-down spring facilitates testing. When a fire occurs and the fusible link melts, an auxiliary push-down spring provides a positive drive during automatic closure while sounding an audible warning. The auxiliary inner hood drops automatically to close the space between the hood and coil to serve as a flame baffle. The door closes itself if raised after automatic closure, and the original counterbalance is maintained. Manual operation is standard, but chain hoist, crank, and power operation are available as options. The fire doors can also be made of stainless steel. They are designed to conform with NFPA standards and are approved by both Factory Mutual and the New York Board of Standards and Appeals.

Pacific fire doors for interior fire wall openings are Class A rated and UL labeled. The doors close automatically in a fire and may be service operated at any time without disturbing the mechanism.

In addition to the normal fusible link control, which closes at 160 degrees Fahrenheit, the fire doors have smoke and/or heat detection systems for automatic operation. Electromechanical release devices must be located just above the door mechanism, but detection units may be placed in any remote location.

Superior Fireproof Door Inc. offers UL- and FM-labeled fire doors and frames for any application. A brochure lists charts for easy reference to fire code requirements. Because fire-rated openings must have the correct combination of UL-approved hollow metal doors, frames, and hardware, the brochure should be consulted regarding proper selection of these elements for fire-rated openings.

*Weyerhaeuser Company*

*Circle 244 on information card*

*Ceco Door division, Ceco Corporation*

*Circle 245 on information card*

*Kinnear, division of Harso Corporation*

*Circle 258 on information card*

*Pacific Rolling Door Company*

*Circle 246 on information card*

*Superior Fireproof Door Inc.*

*Circle 247 on information card*

### Fire Safety Door Controls

Dorma Door Controls Inc.'s series of fire life safety door controls is designed to provide automatic self-closing of fire and smoke barrier doors. Two EMR and FLR

series of door closers are described here, but other controls and electromagnetic door holders also are available. The Dorma EMR Series door closer is an electromagnetic hold-open device with an integrated smoke detector that closes a door at the sensing of smoke. When the smoke density in the chamber of the EMR detector exceeds the fixed threshold value an alarm is given; a signal lamp turns red; the circuit for the hold-open device is cut off; and the door closer immediately closes the door. After the smoke is dissipated the smoke detector automatically returns to the pre-alarm state. In case of a main power failure or short circuit, the electromagnetic hold-open device releases and the door closes. The hold-open device allows the door to be held open at any angle between 85 and 180 degrees.

The Dorma FLR Series is a door closer and electromagnetic spring locking device with an integral ionization detector. The initial opening of the door compresses the spring of the closer, and the electromagnetic locking device holds the spring in the compressed position. In all other functions the FLR operates similarly to the EMR and will close the door from any angle upon loss of current. The devices are UL listed and certified to the requirements of ANSI A156.15.

Rixson-Firemark's 5400 Series of door sequencing controls in coordinated

# Haven-Busch welcomes you to th





shallow-depth floor closers eliminates the need for a coordinator on pairs of labeled fire doors equipped with astragals, according to the manufacturer. Designed for two-leaf, single-acting doors, closers in the 5400 Series feature an adjustable closing force and closing pressure, a built-in back-check feature, and a safety valve to prevent overloading.

Architectural Control Systems Inc. introduces a series of modular control systems that automatically activate or de-activate Gemini door controllers. The 1400 Series fire release systems enable any door outfitted with an electric or pneumatic Gemini door controller to be directly interfaced with a building's fire alarm, smoke alarm, and power failure system. In an emergency, the system automatically unlocks all doors equipped with the Gemini operator, providing free egress to stairwells, and restores power to the operator so that the outside doorknob operates freely.

*Dorma Door Controls Inc.*

*Circle 250 on information card*

*Rixson-Firemark*

*Circle 251 on information card*

*Architectural Control Systems Inc.*

*Circle 252 on information card*

#### Door, Wall, and Framing Systems

Glassprotex door and wall systems from O'Keeffe's Inc. are composed of a metal framing system and fire-protective glass

panels. The glass, called Contraflam, is similar to insulating glass in structure and appearance. Contraflam 60, rated for 60 minutes, is composed of two lights of tempered glass separated by a metal spacer, and Contraflam 90, rated for 90 minutes, has an additional interior light of annealed glass. The cavity between the two lights is filled with a clear, transparent gel that absorbs heat radiation. The gel consists of an organic support that holds mainly water. This support structure, achieved through polymerization, reduces the natural hydrostatic pressure of water to negligibly low values, preventing the exertion of hydrostatic pressure on glass panes. When exposed to extreme heat the glass absorbs heat radiation by transforming the water in the gel to water vapor, which dissipates much of the energy generated by the fire. Another factor in energy dissipation is formation of an organic support grating with a high heat insulation capacity. Evaporation of the gel substance and formation of micro air spaces take place simultaneously in thin layers of the gel. The process continues until the gel decomposes to a crust, which is opaque to radiation and remains that way until it burns away. As the crust continues to burn, the remaining gel gradually changes its composition and the process continues on through the gel to the unexposed light of glass.

The framing system is composed of a steel core with steel framing and a glass perimeter protected from heat by refractory material. The design of the steel frame allows for vertical and horizontal expansion without any deflection of the framing members.

Single-leaf Glassprotex doors are available in sizes up to 4x10 feet, composed of two lights of glass with a vertical dimension not to exceed 81 inches. Double-leaf, double egress doors also are available and are built to specifications. Glassprotex wall assemblies are limited to a height of 10 feet and may be of indefinite length. The door assembly meets ASTM standard E-152, NFPA 252, UL 10B, and other standards. The wall assemblies meet ASTM E-119, NFPA 251, and other standards.

The SetRite steel door frame system from Ceco Corp. is a two-piece steel jamb frame that comes with a 1½-hour WHB fire-rating label. The foam-filled weatherstrip contains additives to provide a smoke barrier that carries a 20-minute smoke protection rating. The door/frame assembly has been fire and smoke tested for life safety.

*O'Keeffe's Inc.*

*Circle 248 on information card*

*Ceco Corporation*

*Circle 249 on information card*

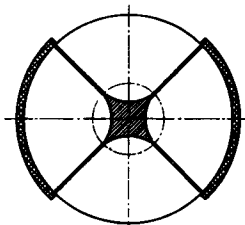
*Products continued on page 132*

# Threshold of design history.

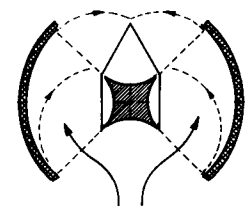
Cirkel-Line Entrance brings new design to the threshold of a new era. Impressive in scale, appearance and performance, it is the product you would expect from a quality-conscious company like Haven-Busch.

Available in diameters up to 10 feet, Cirkel-Line eliminates in many cases the need for additional emergency doors. Its wings fold out to provide two traffic lanes when needed. At all times, two of the wings are in contact with the inner wall of the entrance, keeping the air where it belongs—outside. Air draft is significantly reduced. Cirkel-Line, and the option to heat and cool the air inside the entrance to building temperature is available. A motor drive with sensors rotates the door to the direction of traffic. If someone stops walking, so does the door.

As for aesthetic considerations, Cirkel-Line offers a clean, European styling combined with almost unlimited possibilities for finish materials and colors. Come and stand at the threshold of new entrance design possibilities. The view is wonderful.



*During normal operations, two wings are always in contact with the entrance's inner wall.*



*In emergencies, all four wings can be folded as shown to clear two traffic lanes through the entrance.*

For a free brochure on the Cirkel-Line Entrance, contact us at Haven-Busch Company, 3443 Chicago Drive S.W., Grandville, Michigan 49418/(616) 532-3641/ Telex 292-879/Telecopy 532-7585. Circle 65 on information card

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### Fire Rated Door Frames

"Recommendations for Installation of Steel Fire Door Frames in Steel Stud—Gypsum Board Fire-Rated Partitions," prepared by the Gypsum Association, shows details for single unit steel frames for single swinging doors up to four feet wide and double doors up to six feet wide; triple-unit slip-on door frames for single swinging doors up to three feet wide; and passenger elevator door frames. The design and installation recommendations shown are based on details from ANSI/UL 63, "Standard for Fire Door Frames," and on selected door frame installation details published or recommended by Gypsum Association member companies.

Steeltree interior door frames from the Integral Engineering Corp. have a 1½-hour, Class B UL label. Through a bonding process, wood veneers are wrapped around a 14-, 16-, or 18-gauge, hot-dipped, galvanized steel frame. Veneer wrapping may be specified in a number of wood species, including red oak, cherry, and walnut. The door frames are ready for installation in most drywall partitioning systems. Standard sizes for single- and double-width door openings are available.

Firestile doors and matching wood Firejamb from the Minton Co. are available in a variety of hardwoods and meet

WH 20-minute protection labels, conforming to ASTM, NFPA, and UL standards.

Alumax's "Eagle" aluminum fire door frame offers a 45-minute fire rating and mixes various colors of metal finishes as desired. The Eagle, like all Alumax door systems, meets or exceeds ASTM E-152, UL 10B, NFPA 252, CSFM 43.7, and UBC 43.2 requirements.

*Gypsum Association*

*Circle 253 on information card*

*Integral Engineering Corporation*

*Circle 255 on information card*

*Minton Company*

*Circle 256 on information card*

*Alumax Inc.*

*Circle 257 on information card*

## NEW AND NOTEWORTHY

### Foam for Model Making

A lightweight, nonabrasive phenolic foam can be machined, cut, shaped, sanded, and painted for making architectural, topographical, and industrial models.

*Jiffy Foam Inc.*

*Circle 263 on information card*

### Slide Rule

A Galvanic Corrosion Indicator for engineers and others working with metals in seawater applications shows useful

galvanic combinations by positioning a sliding insert on a scale that contains a selection of metals. When combining any one of 30 different alloys with a choice of 30 others, the slide rule indicates through symbols which ratings are "compatible," "uncertain," and "unfavorable," and those that are marginal or should be avoided. Instructions and definitions of codes are printed on the front side of the slide rule.

*LaQue Center for Corrosion Technology*

*Circle 259 on information card*

### Metal Roofing Systems

Architectural metal roofing systems, building facings, mansard systems, soffits, and flashings are available in standing seam, batten seam, concave, convex curved standing seam, "T" seam, and integral lock-batten-look roofing panels. The panels are attached by clips, allowing for expansion and contraction movement. The roll forms are made from copper, aluminum, or galvanized color-coated coils. Ridges, flashings, and other shapes are factory formed in identical material or formed on the job site from flat sheets. A color brochure contains details and photographs.

*Fashion, a subsidiary of Kidde Inc.*

*Circle 260 on information card*

*Products continued on page 134*

## DEAN—SCHOOL OF ARCHITECTURE FLORIDA A&M UNIVERSITY

Florida A&M University is continuing its search for a Dean for the School of Architecture. Architecture is one of 12 schools and colleges at the University and is a designated Center of Excellence in the State University System. With 25 full-time faculty and 300 students, the School offers accredited B. Arch. and M. Arch. programs. Architecture occupies a new, 65,000 square foot award-winning facility, and provides research and continuing education opportunities for faculty and students through its Institute for Building Sciences and its Washington, D.C. studio. In 1986, a cooperative M. Arch. program was established with the University of South Florida in Tampa. Salary is competitive. Send letter of interest and resume postmarked by March 1, 1988 to:

Dr. Leedell W. Neyland  
Chair of Architecture Search Committee  
Room 403, Tucker Hall  
Florida A&M University  
Tallahassee, FL 32307

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## POSITION ANNOUNCEMENT

SUNY at Buffalo's Department of Architecture is recruiting up to three full-time tenure track and one visiting (one year) faculty positions for fall 1988. Two of the faculty are being recruited at the rank of assistant or associate professor to teach design studios as well as support courses in one or more of the following areas: graphic communications, building science, environmental controls, history, historic preservation/adaptive re-use, urban design, and design theory. Both positions will be filled with individuals who have demonstrated the potential for strong scholarship. Such scholarship should be construed to include significant research, exemplary design practice, or an outstanding record of publication or exhibition. A third position is being recruited at the rank of assistant or associate professor and will primarily focus on building science. The visiting faculty position is open for assistant/associate rank and is intended for studio and support course instruction. Salary for all positions according to rank and qualifications. Applicants should write to Professor Michael Brill, Chairman, Faculty Search Committee; Department of Architecture; School of Architecture and Environmental Design; State University of New York at Buffalo; Hayes Hall; Buffalo, New York 14214. Applications should be submitted not later than 1 February 1988 and should include: a complete resume; a list of at least three references with full names, addresses, and phone numbers; and samples of professional, artistic, and scholarly work. As an equal opportunity/affirmative action employer, SUNYAB is particularly interested in identifying and recruiting qualified applicants who are women, handicapped persons, and members of ethnic minority groups.



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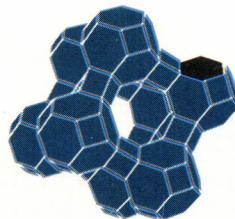
We also offer more experience in this field than anyone else. In fact, Union Carbide was the first to introduce molecular sieves as desiccant adsorbents more than 20 years ago. And we have continued to develop new and improved products to meet the need for high quality performance.

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**CADD Layering** Creating a standard strategy for organizing drawings and related information is fundamental to CADD efficiency. Because different software programs treat information storage and retrieval differently, creating one logical system of layers is hampered (see pages 102-105). The chart below compares a few attributes of some of the leading CADD systems currently in use. The list is in two alphabetized sections. The top block consists of turnkey and workstation-based systems. The lower block is for PC-based systems.

Layering Attributes of Selected 2-D CADD Systems

CADD Vendor and Product Name	Number of layers		Comments
	Named (N) or numbered only (#) layers †	Views multiple files, yes (Y) or no (N)	
Auto-trol, Series 5000	256 #	Y	Views up to 24 files at once
Calma Co., Dimension III	256 #	Y	
Cascade Graphics, Cascade X	256 #	Y	Can view two files at once
Computervision, Caddstation 4X	254 N	Y	
Holquin Corp., Mountaintop	100 N	N	
IBM, Cadam	200 N	Y	Stored as separate files
Intergraph, AEC models	64 N	Y	Views up to 32 files at once
Isicad (formerly Calcomp), System 25	255 #	Y	Added hardware is needed to view multiple files
McDonnell Douglas, GDS	∞ N	Y	Uses windows, 65 phases, and object names
Prime Computer, Prime Medusa AEC	1,024 #	N	
GMWComputers Ltd., Rucaps	∞ N	Y	Uses components, categories, and divisions
Sigma Design, Arris	∞ N	N	
Autodesk Inc., Autocad	∞ N	N	
Auto-trol, Series 5000	256 #	N	
Cascade Graphics, Atlas	256 #	Y	Can view two files at once
Generic Software, Generic CAD	256 #	N	
IBM, Microcadam	200 N	Y	Stored as separate files
Innovative Data, Macdraft	1 -	N	
Isicad (formerly Calcomp), Cadvance	255 N	N	
Mega CADD, Design Board Professional	50 #	Y	Views up to five files
Microecture Corp., Datacard	1,000 #	N	
Point Line Co., Point Line CAD	40 N	Y	Plots up to 100 layers
Sigma Design, Arris	∞ N	N	
SKOK Systems Inc., Drawbase	256 N	Y	Accesses up to 16 templates
Versacad, Versacad Advanced	250 #	N	

†Named files may also be numbered. ∞ Unlimited number of layers.

**Texas Commerce Tower at 2200 Ross, Dallas** (page 50). *Architect: Skidmore, Owings & Merrill/Houston.* Principal in charge: Richard Keating, FAIA. Project manager: Hal Sharp. Electrical and mechanical engineer: Purdy-McGuire Inc. Structural engineer: SOM/Houston. Landscape architect: SOM/Chicago. General contractor: Austin Commercial Inc. Interior design: SOM/Houston.

**LTV Center, Dallas** (page 50). *Architect: Skidmore, Owings & Merrill/Houston.* Principal in charge: Richard Keating, FAIA. Project manager: Gary Janssen. Electrical and mechanical engineer: Purdy-McGuire Inc. Structural engineer: SOM/Houston. Landscape architect: Myrick, Newman, Dahlberg Partners Inc. General contractor: Avery Mays Construction. Interior design: SOM/Houston.

**Horton Plaza, San Diego** (page 66). *Architect: The Jerde Partnership Inc., Los Angeles.* Principal in charge: Jon A. Jerde, AIA. Project manager: R. Scott Aishton, AIA. Electrical engineer: Store, Matakovich & Wolfberg. Mechanical engineer: David Chen & Associates. Structural engineer: Robert Englekirk Inc. Civil engineer: Paller Roberts Engineering. Landscape architect: Wimmer/Yamada & Associates. General contractor: Nu-Hahn. Interior design: The Jerde Partnership Inc.

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Harvard University  
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FACULTY POSITIONS BEGINNING ACADEMIC YEAR 1988-89

URBAN PLANNING AND DESIGN

The Department of Urban Planning and Design seeks to fill two positions in the coming year.

The first is for a person qualified to offer graduate level instruction in urban design, including both teaching design in studio and giving lectures or advanced seminar courses in the theory of urban design or topics related to urban design practice. This position may be filled at either the assistant or associate professor levels (full-time). Applicants should have a professional accredited degree in Architecture, Landscape Architecture or Urban Design, a distinguished record in research or practice, and experience or strong promise of excellence in teaching.

The second position is for a person qualified to teach graduate level *real estate development and finance*. This position will be filled at the assistant professor level (full-time) and applicants should have completed a Ph.D. or the equivalent in planning, economics, business, design, or a related field and have demonstrated, or have a strong promise of, excellence in both research and teaching. Candidates with a background in design and an understanding of the public and private sectors' perspective on development are preferred.

APPLICATIONS

Applications for all positions in the Faculty of Design should be made on forms available in Gund Hall 303 at the Graduate School of Design. They should be addressed as follows:

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Graduate School of Design  
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Applications should be received by February 5, 1988 and applicants should not send dossiers with initial applications. Harvard is an Equal Opportunity/Affirmative Action employer.

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FACULTY POSITIONS BEGINNING ACADEMIC YEAR 1988-89

ARCHITECTURE

The Department of Architecture seeks to fill positions in the coming year.

**COMPUTER-AIDED ARCHITECTURAL DESIGN:** A position at the level of Assistant Professor is available for a person qualified to offer graduate level instruction in the field of computer-aided architectural design (CAD). Responsibilities will include teaching, a high level of research or creative design work, and administration. Teaching duties will include offering introductory instruction in programming, CAD and general computational skills, participating with other faculty members in studio or technical courses, and offering seminars on chosen advanced topics. Preference will be given to candidates with advanced scholastic preparation, as well as teaching experience, and a record of research or practice in the computer-aided architectural design field.

**BUILDING CONSTRUCTION AND DESIGN/BUILDING CONSTRUCTION:** Positions at the level of Assistant Professor or Associate Professor are available in Building Construction and in Architectural Design/Building Construction for the fall of 1988. Responsibilities for persons qualified in Building Construction will include teaching introductory and advanced courses in building construction, and consulting in design studios. Responsibilities for persons qualified in Architectural Design will include teaching building construction and offering design studio in lieu of consultation in studios. Persons holding these appointments would be expected to conduct research or teach design studio in the areas of their expertise, participate in the continuing development of the GSD Laboratory for Construction Technology, and prepare teaching materials for instruction in this area.

APPLICATIONS

Applications for all positions in the Faculty of Design should be made on forms available in Gund Hall 303 at the Graduate School of Design. They should be addressed as follows:

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**Codex World Headquarters Building, Canton, Mass.** (page 72). *Architect: Koetter, Kim & Associates, Boston.* Partners in charge: Fred Koetter, AIA; Susie Kim. Team leaders: Kent Knight, Mark Chen. Competition project team: Neil Denari, James Favaro, Deborah Fennick, Sophia Grudzys, Steve Johnson, Steve Moser, Carolyn Rufo, Kelly Wilson. Production project team: Ken Bishop, Kathy Busch, Charles Carlin, Greg Conyngham, John Hathaway, Linda Hockett, Steve Johnson, Myles Katz, Ioannis Kythreotis, Tom Peterman, Lois Rosenblum, Augie Shaefer, Craig Spangler, Terry Steelman, William Tecu, Wilven Van Campen. Electrical and mechanical engineer: Flack & Kurtz. Structural engineer: LeMessurier Associates/SCI. Landscape architect: Hanna/Olin Ltd. General contractor: Turner Construction Co. Space planning and interior design: Carol Fippin, Inc.

**Austin Systems Center, Schlumberger Well Services, Austin, Tex.** (page 78). *Architect: Barnstone/Jackson (joint venture), Austin, Tex.* Principals in charge: Howard Barnstone, FAIA; Robert Jackson, AIA. Project manager: Daniel International Corp. General service manager: John Warren. Facilities manager: Saleem Jehangir. Design team: Howard Barnstone, FAIA, Robert Jackson, AIA, Lee Gros, AIA, Alan Schumann, Mario Sanchez, Robert Floan, Randy Maxwell, Rudy Colby, Peter Green, Rick Lewis, Richard Segars, AIA,

Jim Wilson. Mechanical and electrical engineer: Thomas Lightfoot & Associates Inc. Structural engineer: Luis Lemus Consulting Engineers Inc. Landscape architect: Robert Anderson, ASLA. Interior design: ISD Inc. Communications: Jancom Inc. Roofing consultant: Kent Chatagnier. Acoustics and A/V: JRR Inc. Civil engineer: URS Inc.; Espey Huston.

**Connecticut General Life Insurance Co., Bloomfield, Conn.** (page 82). *Architect: Skidmore, Owings & Merrill/New York City.* Partner in charge: William S. Brown, AIA. Partner in charge of design: Gordon Bunshaft, FAIA. Project managers: Edward J. Mathews, AIA (Phase I); Allan Labie (Phase II). Job captains: Roger Radford, AIA (Phase I and II); Allan Labie (Phase I); Natalie de Blois, FAIA (Phase I). Electrical and mechanical engineer: Syska & Hennessy. Structural engineer: Weiskopf & Pickworth. Landscape architect: Joanna C. Diman. General contractor: Turner Construction Co. Interior design: Knoll Associates/SOM.

**Pacific Bell Administrative Complex, San Ramon, Calif.** (page 85). *Architect: Skidmore, Owings & Merrill/San Francisco.* Project partner: Robert Armsby, AIA. Design partner: Richard Foster, AIA. Project managers: Ed McCrary, FAIA; Christopher Raker, AIA. Electrical, mechanical, and structural engineer: SOM/San Francisco. Landscape architect:

Michael Painter & Associates. General contractor: Swinerton & Walberg Co. Interior design: SOM/San Francisco. Architectural designers: Tom McMillan, AIA; Brian Lee, AIA. Interior design: Marcia Packlick. Interior architect: Stanford Hughes, AIA. Graphic design: Margaret Kays. Job captains: Walt Sonnichson, Michael Wilson, AIA. Senior structural engineer: Navin Amin. Senior mechanical engineer: Carl Jordan. Senior electrical engineer: John Schuitema. Client: Pacific Bell.

**Rochester Riverside Convention Center, Rochester, N.Y.** (page 88). *Architect: James Stewart Polshek & Partners, New York City.* Partner in charge of design: James Stewart Polshek, FAIA. Partner in charge: Joseph L. Fleischer, AIA. Design associate: James Garrison, AIA. Associates: James R. Gainfort, Sara E. Caples, AIA. Associate architects: Skoler & Lee, Architects; the DeWolff Partnership; Sear Brown & Associates. Structural engineers: Tor, Shapiro Associates and The Geiger Group. Associate structural engineer: Salmon Associates. Mechanical engineer: Kallen & Lemelson. Associate mechanical engineer: Wallace Johnson Associates. Landscape: Kotz & Schneider. Acoustics: Peter George Associates. Lighting: Howard Brandeton Lighting Design. Graphics: Kaeser and Wilson Design. Bridge engineer: J.P. Stopen Engineering Partners. Soils engineer: Raamot Associates. □

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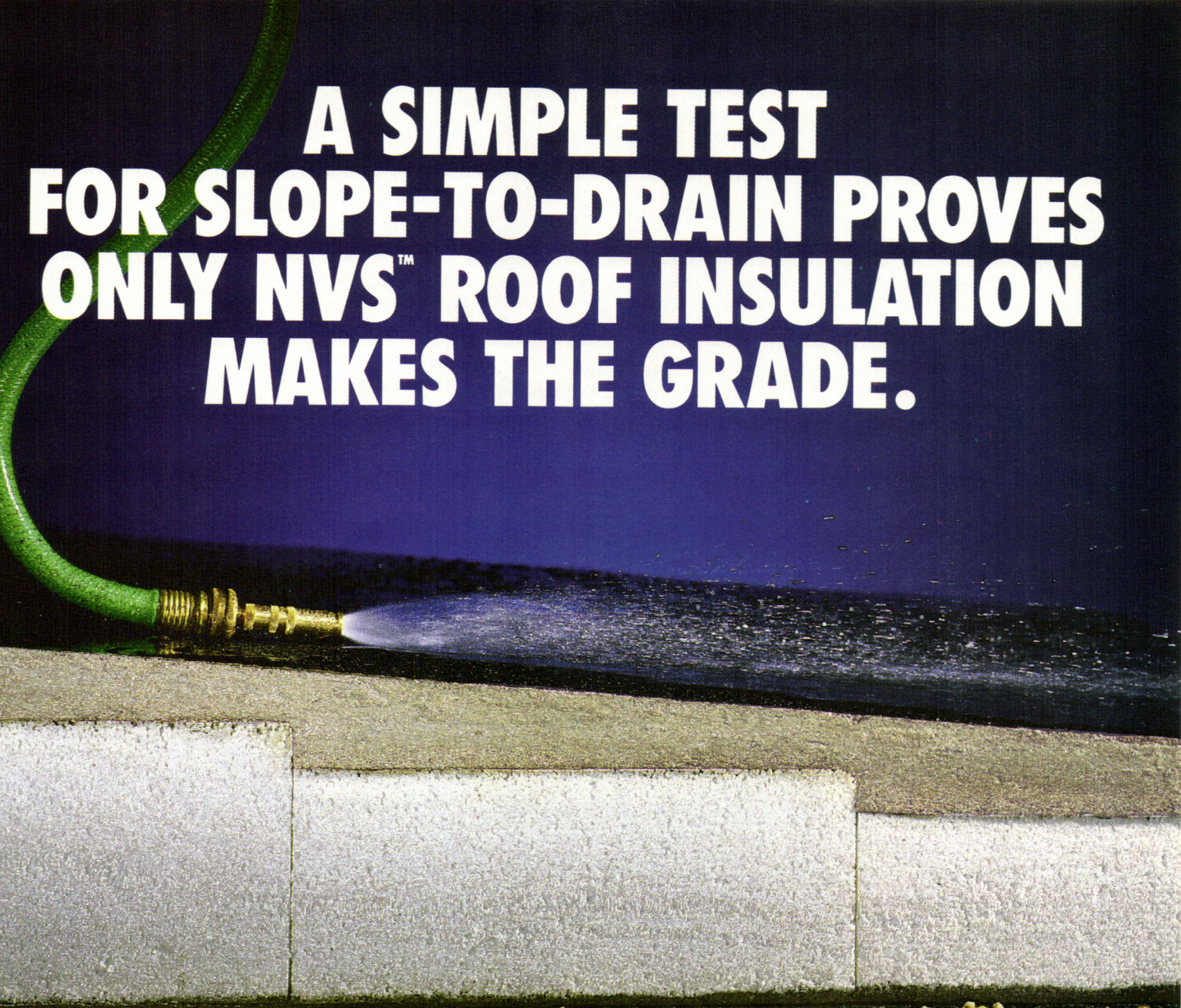
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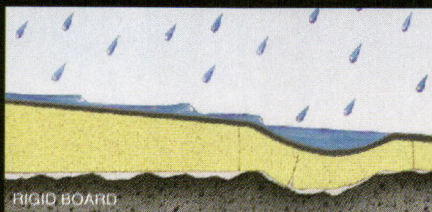
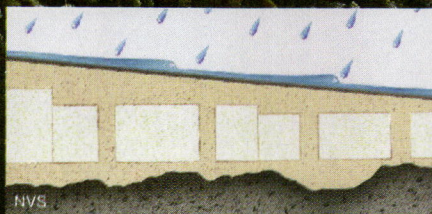


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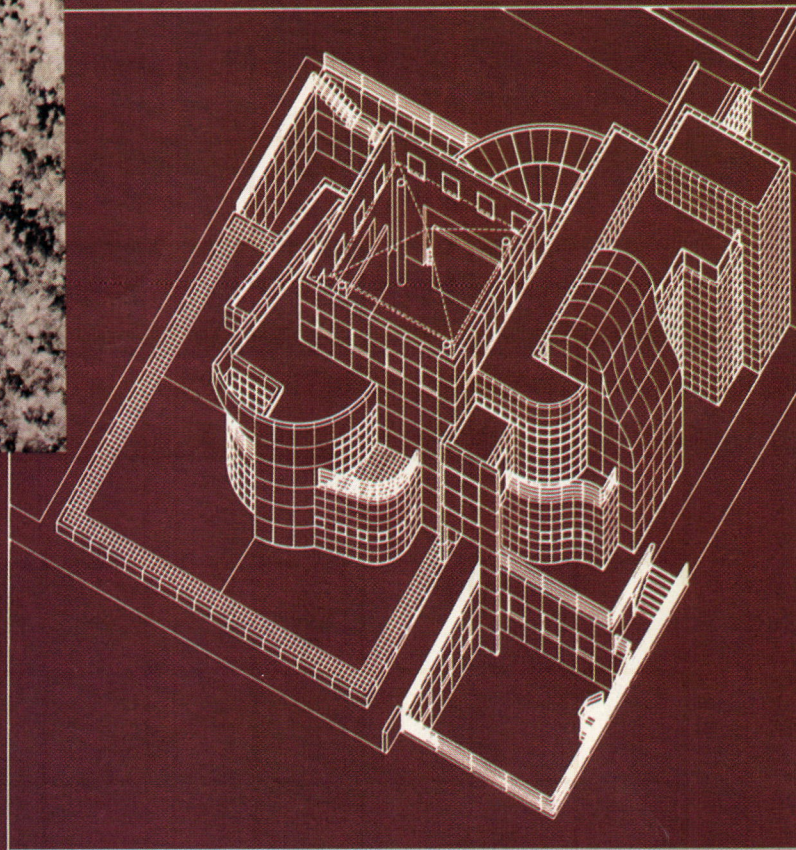
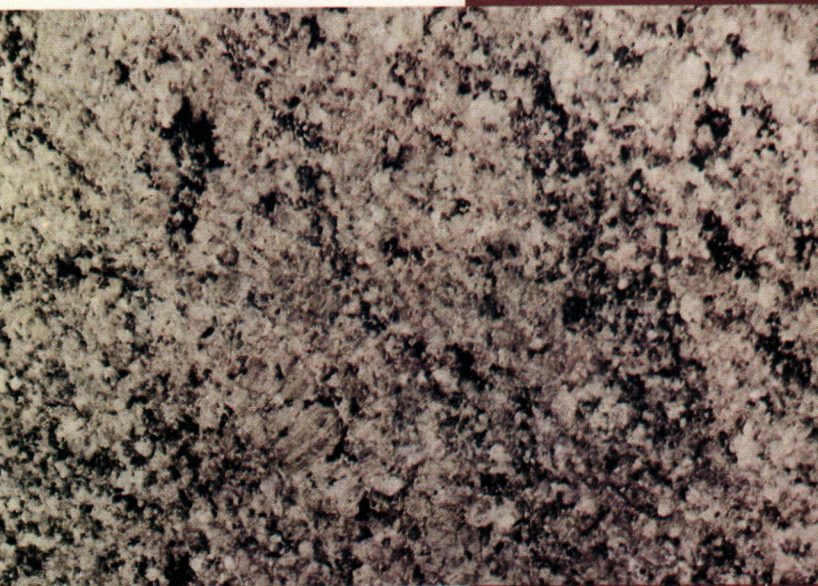
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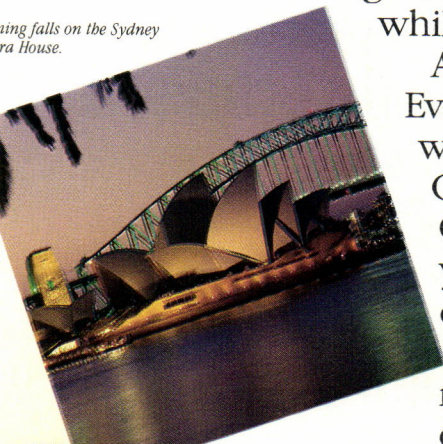
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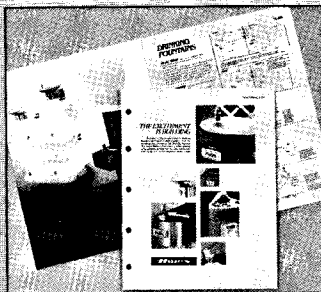
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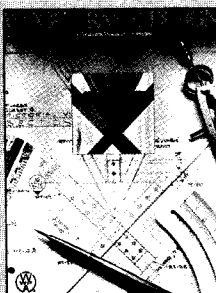
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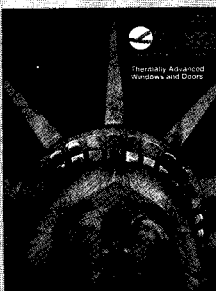
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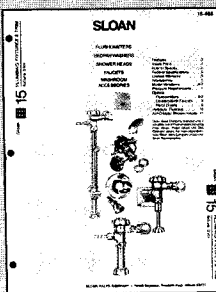
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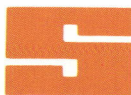
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