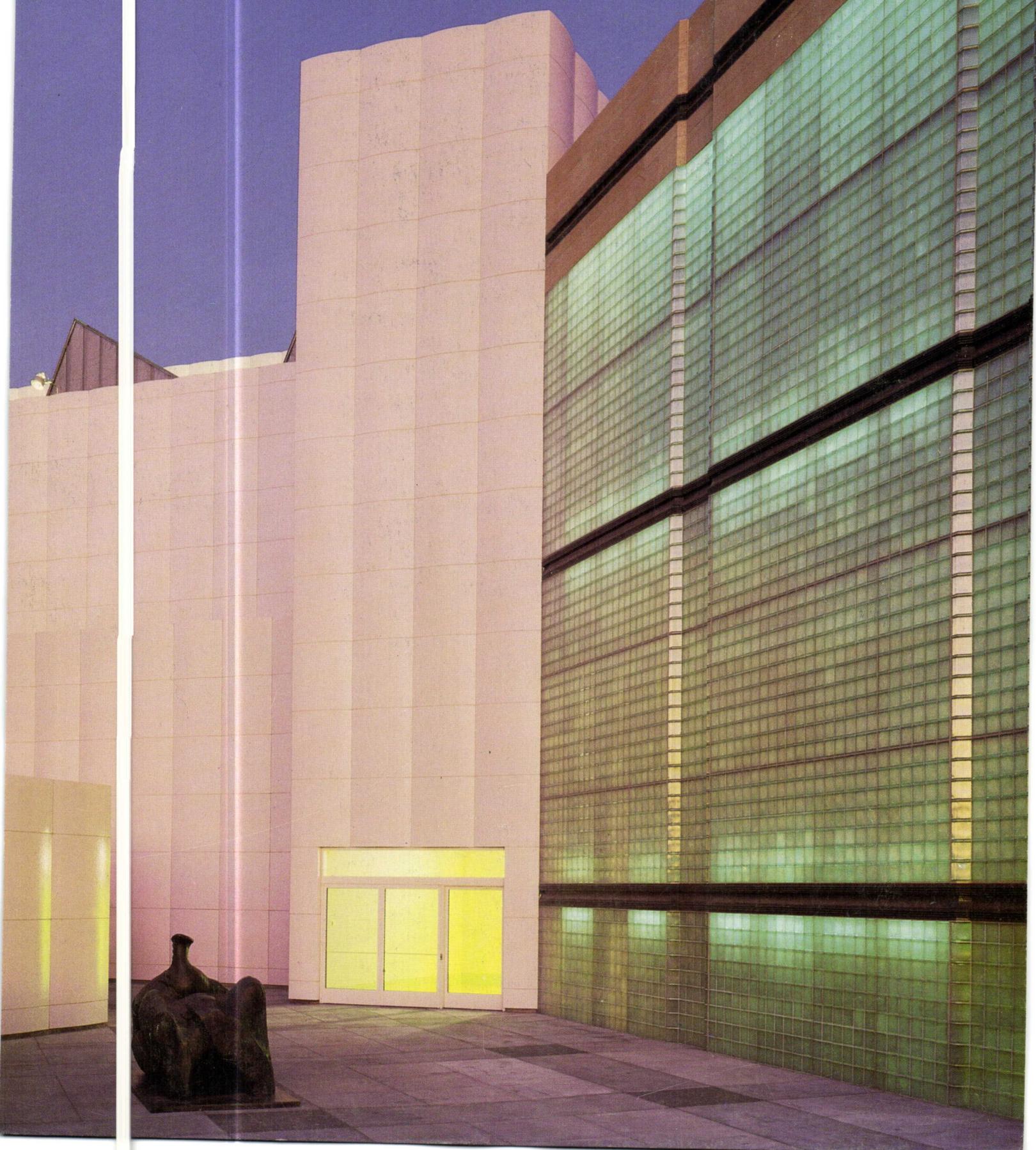
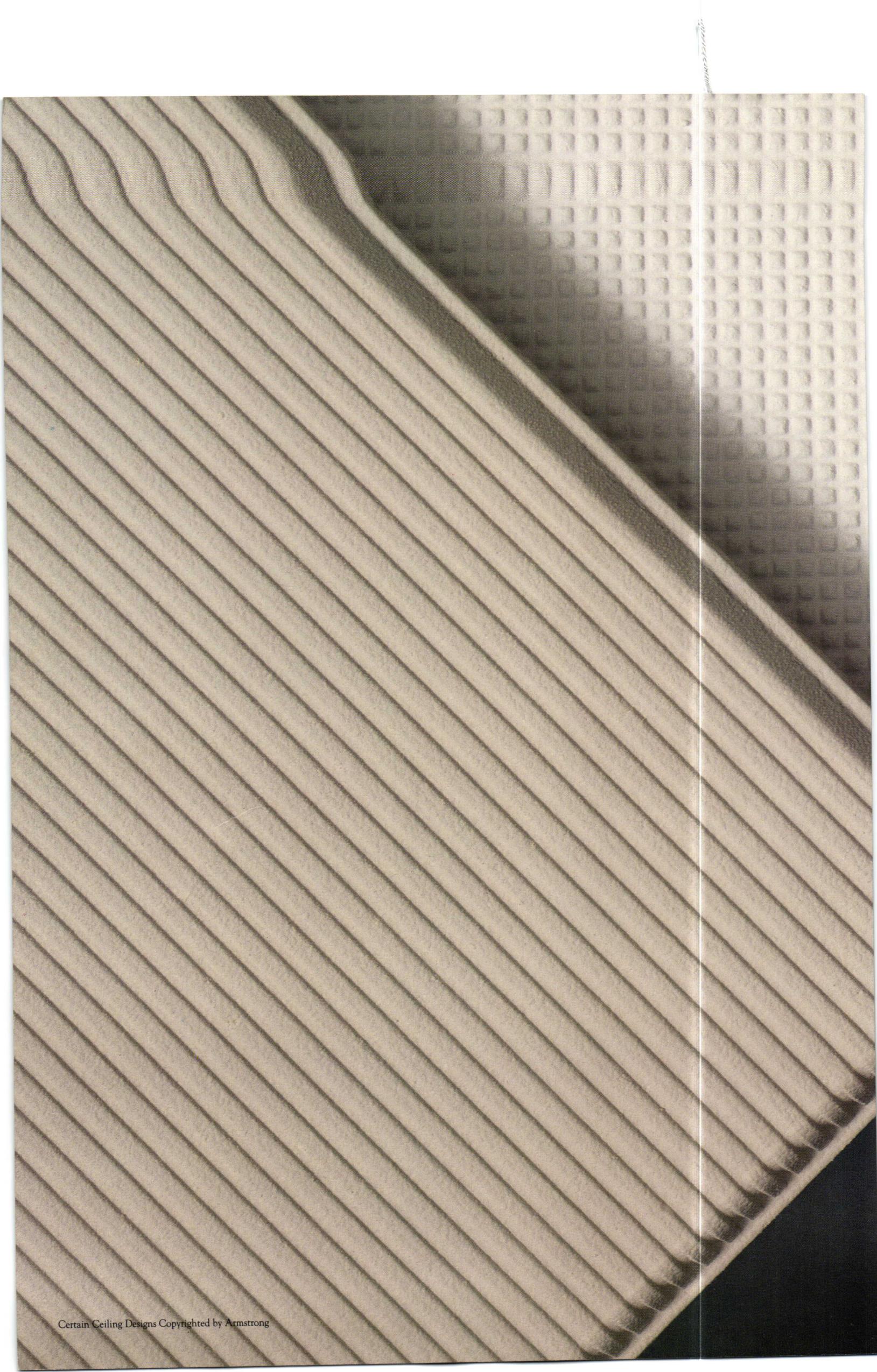


ARCHITECTURAL RECORD

Business Design Engineering
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Having seen the article on the Ismaili Jamatkhana and Center in Vancouver [ARCHITECTURAL RECORD, August 1986, pages 90-95], I request that you be kind enough to convey my congratulations to Douglas Brenner for the outstanding way in which he has translated the sense of what the Ismaili Community, Bruno Freschi, and I were seeking to achieve architecturally into language which is simple and clear and yet contains all the meaning to which we were aspiring.

*Aga Khan
Gouvieux, France*

Michael Sorkin must stop sugar-coating his observations about Philip Johnson's work [RECORD, September 1986, page 78 et seq.]. I found the whole exercise as delicious as a box of individually wrapped bon-bons.

My understanding is that Sorkin stands up not so much to proclaim that "the Emperor has no clothes" as to decry his wearing one more Perry Ellis knock-off. What we are talking about here is eclectic summing up, a movement that comes along every fifty years or so for about a decade while something real and lasting is invented by the next Mies, Wright, or Corbu.

Johnson's work is just style in the form of an intellectual breather. It happens all the time. Sorkin's hero, Frank Lloyd Wright, once labeled the Renaissance as "the sunset all Europe mistook for the dawn." We can all learn something by reading the history books. You just have to dog-eat the right pages.

*Garth Sheriff, AIA
Sheriff + Associates
Los Angeles*

Congratulations! Michael Sorkin's "The Real Thing" about Philip Johnson's work is the type of journalism one hopes to see in the mainstream trade press but usually finds only in his column in *The Village Voice*.

Thanks again.
*Steve Badanes
Jersey Devil Job Site
McLean, Virginia*

As the one who 15 years ago urged RECORD's use of the 16-division Uniform Construction Index format in its annual issue on architectural products, I read with a sting of conscience your reference to the UCI in the December 1986 editorial. A few years ago the Joint Advisory Council, which was composed of the AIA, CSI, and industry groups and which owned the copyright for the UCI, determined that the index "had fulfilled an historic role in organizing industry information"—and listed Sweet's as one of the organizations to be referenced

henceforward.

In response to this challenge, Sweet's has completely revised its classification system for its 1987 edition. The classification system was developed further to provide a comprehensive filing system for the different types of construction documents and has been named *Sweet's Data Filing Format*.

With the publication of the Data Filing Format, and of the Desk-Top Index that will be issued with the 1987 Sweet's General Building File, Sweet's should be recognized as the industry resource for the organization of documents (as distinguished from the organization of specifications).

Finally, Product Reports 1987 is an excellent issue.

*Anna M. Halpin, FAIA, CSI
Manager—Editorial
Sweet's Division
McGraw-Hill Information
Systems Company
New York City*

Your October 1986 issue should be entitled "The Good, the Bad and the Ugly."

The Good: the several infill projects were fine works, responsive to their sites and well done [Building Types Study, pages 89-103].

The Bad: the Leo Burnett building in Chicago by Kevin Roche John Dinkeloo and Associates [Design News, page 59]. These otherwise fine architects have apparently run out of ideas and hastily cribbed from various pages of whatever magazine happened to be nearby.

Now for the Ugly: as most of your readers could guess, it is the Riverbend Music Center by Michael Graves [pages 124-133]. It should, however, mellow with age as it slowly rusts away. Then if vines grow all over it, it may not look all that bad.

*Sy Richards, AIA
Atlanta*

In this time of unending repetitions of infantile grandeur, I want to thank you for the publication of the reconstructed Mies van der Rohe 1929 pavilion in Barcelona [ARCHITECTURAL RECORD, August 1986, pages 60-61]. You should publish the pictures as posters.

Every month I look at your magazine and think, "They got to be kidding," with the steady fare of Postmodernism you serve.

*Ludwig Spiesel, AIA
Lakeland, Florida*

Correction

The photograph of the Luna pendant lamp, manufactured by the Boyd Lighting Company, was printed upside-down on page 207 of RECORD's December 1986 issue.

February 17 through March 29

Flat Roofs and Pointed Arches: John Gaw Meem and the Architecture of Tradition, an exhibition of the work of the late New Mexico architect; at University Art Museum, The University of New Mexico, Albuquerque

March 11-13

"Research Laboratories: Planning and Designing Functional Facilities," sponsored by the University of Miami; at the University of Miami Conference Center, James L. Knight International Center, Miami. For information: Dr. Marcy Ullom, School of Continuing Studies, Allen Hall, University of Miami, Coral Gables, Florida 33124 (305/284-4000).

March 12

"Exterior Stone Symposium 1987, "New Technology, Design, and Construction for Exterior Wall Systems," sponsored by Tishman Research Corporation, American Society for Testing and Materials, Internazionale Marmi e Macchine Carrara, and McGraw-Hill Publications Company; in the McGraw-Hill Auditorium, New York City. For information: Barbara Torre, ARCHITECTURAL RECORD, 1221 Avenue of the Americas, New York, N.Y. 10020 (212/512-2815).

March 16 through August

Light Opera: Virtuosity in Lighting Design, an exhibit of objects from the Mitchell Wolfson Jr. Collection of Decorative and Propaganda Arts; at the Miami-Dade Community College, Miami.

March 18-21

A conference on design excellence sponsored by the AIA Architecture for Health Committee; in San Diego, Calif. For information: Mike Cohn, American Institute of Architects, 1735 New York Ave., N.W., Washington, D.C. 20006 (202/626-7366).

March 22 through May 24

Edward Larrabee Barnes: Museum Designs, an exhibit including both built and unbuilt architectural projects; at the Katonah Gallery, Katonah, N.Y.

March 25-27

"Structures: Style and Substance," the Westweek 1987 design conference; at the Pacific Design Center, West Hollywood, Calif. For information: James Goodwin, Director Marketing Communications, Pacific Design Center, 8687 Melrose Ave., West Hollywood, Calif. 90069 (213/657-0800).

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Designing the livable winter city

Over 600 million people in over 30 countries around the world live in towns and cities near or above the 45-degree latitude where the average January temperature is 32 degrees Fahrenheit or colder. Architects and planners, understandably, more often than not prefer to think about and be inspired by the arcaded cities and towns of southern Europeans or desert peoples—giving little thought to improving the environment of bone-chilled citizens in the urban centers of the frozen north. The latter dream of escape to warmer climes, but for most of them winter is an unavoidable fact of daily life. Only recently has this reality begun to emerge in urban design strategies.

It is a curious fact that although the northern United States has many more cities and towns in the snow belt than Canada, the Canadians have paid more attention to the challenge of making them good places to be. Last winter the AIA sent a Regional/Urban Design Assistance Team (R/UDAT) as far north as Edmonton, Alberta, to join a team from the Royal Architectural Institute of Canada (RAIC) to begin to develop a knowledge base related to the planning and design of more livable winter cities, and to assist Edmonton, in particular, with specific local problems and issues. Chaired by Boston architect Charles Redmon, this joint effort coincided with and was linked to Edmonton's Winter Cities Forum 1986, which in turn was a prelude to the forthcoming Third Winter Cities Conference of Northern Mayors to be held in Edmonton in February 1988. (The two prior mayors' conferences were held in Sapporo, Japan, in 1982 and Shenyang, China, in 1985.)

In the words of the team's report, *Livable Winter Cities*: "The winter city will not be created by a focus on space-age bubbles, heated sidewalks, malls that suck the life of the city into their corridors, or right-to-sun ordinances. It will require changes that are, at once, more profound, and considerably more modest. The hardest shift will be attitudinal: to constantly see the city in its winter state, to ask each time a decision is made how things will fare during the months of cold and darkness. If such questions are taken seriously, new designs will emerge, new standards will need to be adopted, and new patterns of collaboration will have to be forged. Many of these have already begun to evolve in cities like Edmonton; the barrier is the persistence of a summer state of mind. Winter cities need to be creative about winter, not simply tolerant."

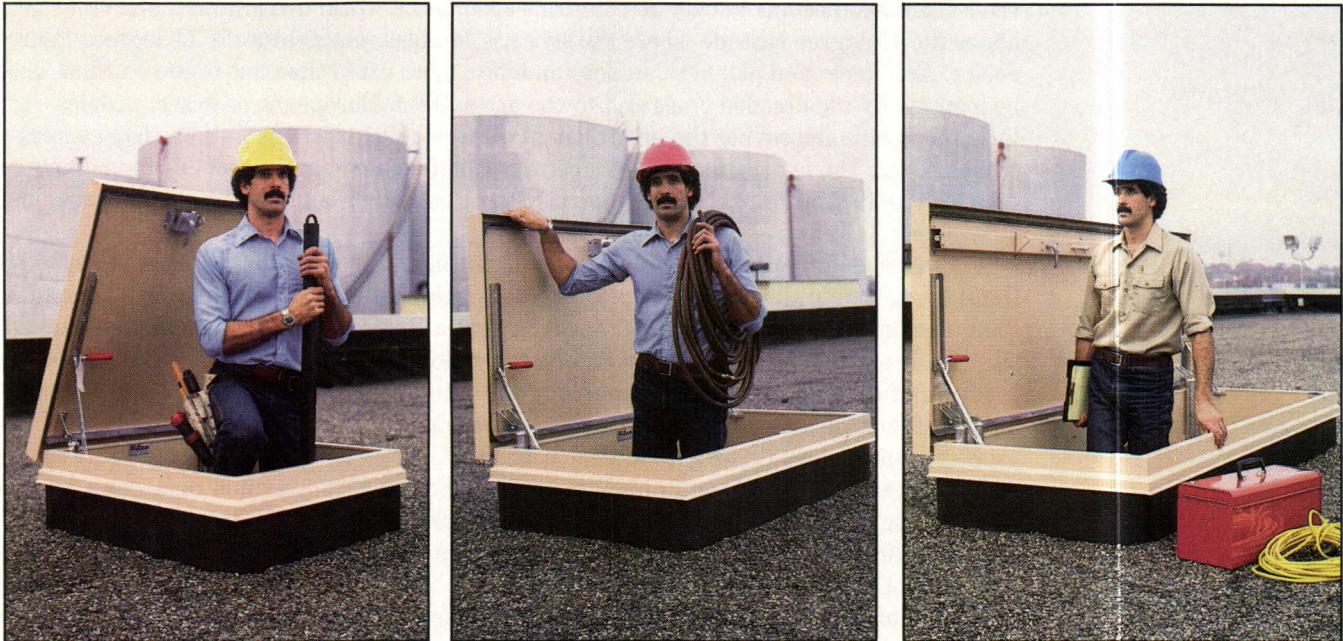
The report reminds us that there are ways to soften the urban winter experience. Focusing upon downtown areas as being of the most pressing concern, the R/UDAT-RAIC planners call for public art, outdoor facilities for winter recreation, improved lighting, and heated rest areas. "Warmth," the drafters of the report have written, "is a class and social issue. The city must be designed to accommodate those who cannot afford to enjoy commercial environments as well as those who can . . . In warm-weather cities, the homeless and indigent are present, but they are able to move about on foot rather easily. If people have to sleep outside, it is not life threatening." In behalf of the snow belt urban poor, the report urges that downtown spaces be designed to be inclusive, reflecting "concern for all the users of the downtown, not just the financially able."

Among the key points made by the report: Northern cities have both green and white worlds, and the white is as critical as the green; cities in the snow belt require more integrated environments than those in the sun belt do, their planning requiring innovative institutional arrangements which allow for the sharing of public and private funding and the arbitration of difficult issues of access and control; building materials, standards, methods of funding, and maintenance need to be reassessed with freezing temperatures in mind; and overall environmental concerns, not strictly compatible with those of warmer or more temperate climates, need continuing study.

A winter city, designed to make the most of a cold climate, would have its own indigenous building forms, densely compacted. There would be landscaped networks for cross-country skiing, outdoor skating ponds, urban parks with wind screens and warming huts, and skyway systems well integrated with the buildings they interconnect. And, as the R/UDAT-RAIC team report points out, such cities would be good places to live in all the year round. By bringing all this to the profession's attention, Redmon and his colleagues have made an important beginning. May their challenging ideas not be allowed to melt away with the spring thaw.

Mildred F. Schmertz

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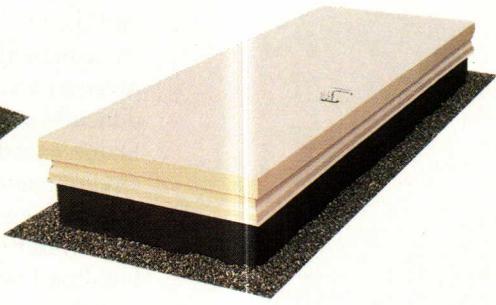
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Engineers fight competitive bidding

While many building-design professionals have assumed that the issue of low-fee bids to obtain federal commissions is now moot due to the firm status of the Brooks Law which forbids this, there are, even now, exceptions. The American Consulting Engineers Council reports that many of its members are being asked to bid on new work by local procurement officers who are unaware they must select design firms on their qualifications and then negotiate a fee. Of course, this leaves the design professional awkwardly defending a hard-won status by passing up the possible commission or arguing with the officer he hopes to please—or caving in and bidding.

To take the burden off its members in such cases, the ACEC steps in, contacts the procurement officers, and performs a function it sees as primarily educational. In one instance, an architectural and engineering firm was asked to submit a competitive bid because, as the engineers' organization discovered, the procurement officer thought that the speed with which his project had to be completed justified the circumvention. After the ACEC stepped in, the job was awarded by due process—to the firm which initially brought the situation to light.

In another case, the Kentucky office of the IRS followed the Brooks procedure up to the point of qualifying four firms—and then asked them to bid. According to ACEC special counsel for procurement services, Mark Cassio, the procurement officer was grateful for having her error pointed out, acknowledged that she was unfamiliar with the proper course of action, and went on to negotiate a fee with the firm with the highest qualification ranking.

It's time for the National Computer Graphics conference

The annual conference of National Computer Graphics, which seeks to further the development and use of computer graphics, is scheduled for March 22 through 26 in Philadelphia. Not all the tutorials and technical sessions are aimed at the design professional, but a total of 124 will be presented. For more information, write or phone the association at 2722 Merrilee Drive, Fairfax, Va. 22031 (703/698-9600).

Construction support to be slashed by HUD

In the spirit of federal austerity, HUD proposes to reduce its request for new-budget authority by roughly one third to \$10.2 billion.

One area of cuts: HUD secretary Samuel R. Pierce estimates the Urban Development Action Grant program has spent \$4.3 billion over the last nine years. "Budgetary concerns require sacrifice in this area," said Pierce.

He proposes to spend \$3.9 billion to help fund 80,000 new housing units, in the fiscal year beginning October 1. But the money would go mostly for vouchers to assist the needy in finding new housing, with very little for new construction. In order to stretch the budget, HUD wants to move funding for 2,000 new housing units under the Section 202 program for the elderly and handicapped from the current year into FY 1988. It also wants to shift \$463.9 million of already enacted modernization funds into the 1988 budget, seek a credit limit of \$70 billion (\$30 billion less than last year) for the Federal Housing Administration, and rescind \$375 million of the \$3 billion already appropriated for Community Development Block Grants.

Joined in protest against the cuts were representatives of the mortgage-banking and savings industries, the Federal National Mortgage Association, homebuilders, and public-housing officials. Irking HUD proposals include raising FHA mortgage-insurance premiums from 3.8 percent to 5 percent; requiring up-front payment of closing costs on FHA loans; increasing the Government National Mortgage Association guarantee fee from 6 to 10 basis points; increasing the Veterans Administration guarantee fee from 1 percent to 2.5 percent, and requiring that house buyers with more than \$40,000 annual income pay at least 5 percent down on FHA loans.

MBA executive vice president Warren Lasko called the proposals "taxes pure and simple." The National Association of Housing and Redevelopment Officials called the proposals "mayhem on an already mutilated body of housing programs."

Still, there is the possibility that some of the proposals were stuck into the budget as part of the annual austerity rites orchestrated by the Office of Management and Budget. Pierce himself seems to be less than enthralled with what's been presented in his name. Asked at a National Press Club lunch a few days after the budget release whether he supported the premium increases, Pierce deadpanned, "What can I say? They're in the budget." Peter Hoffmann, *World News, Washington, D. C.*

Construction contracting reaches a record high amidst talk of a downturn

In November 1986, RECORD reported the predictions of the McGraw-Hill Information Systems Company that the peak of this construction cycle was at hand (RECORD, November 1986, pages 35 et seq). In that month, as subsequent statistics now show, contracting for future nonresidential building reached an annualized rate of \$87.5 billion, topping the previous record set in April. Equally noteworthy, the advance was seen at the same time in all three of the major building types in this category—commercial, industrial, and institutional. And contracting for housing, which had been the bulwark of advances during much of the year, slipped 2 percent to an annualized rate of \$118.6 billion due to a drop in single-family houses.

At the end of November 1986, total contracting for new construction amounted to \$225.1 billion—a lead of 4 percent over the previous year's value. The Northeast and North Central regions, with gains of 10 and 13 percent respectively, were the nation's strongest. The West held a 5 percent lead over the previous year, but the South showed a 2 percent decline.

"Strong and steady," said George A. Christie, vice president and chief economist of the F. W. Dodge Division of MHISCO, referring to the above figures. "October [when volume rose 7 percent] and November could be called average months in a record year." But, he cautioned "the pace probably won't last."

For what lies ahead in investment real estate, a conference late last year held by land-use consultant Real Estate Research Corporation and sponsored by the Equitable real estate department offers some insights. The good news, according to the consultants, is that investment in real estate will continue. Pension funds, looking to satisfy diversification requirements, will use their billions to buy buildings like stock. With regard to new construction, some markets, such as Washington, D. C. are just now being overbuilt. And foolish developers, according to Prudential real-estate head George Peacock, will keep building as long as foolish banks will lend.

The bad news is that, outside of those areas that are not overbuilt, when the banks do stop lending, "there is going to be a lot of pain," said Peacock. And he was talking about new commercial construction. The investment that everyone agreed would continue would be in existing properties. All of which might lead design professionals to take an even harder look at remodeling and interiors than they have in the past. C. K. H.

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Finance: Taking it on the chin: what tax reform means to the construction industry and you

By Jesse M. Abraham

In last month's business news, RECORD reported on the AIA's reaction to tax reform and the generally perceived view that the real-estate industry, including building designers, "took it on the chin." Here, specifically, is what observers had in mind. C.K.H.

The rules for real-estate investment have changed. It used to be possible to realize a good return from real estate with modest down payment and risk. The government helped out by sharing losses in the early years of development and then taxed sales gains at a relatively modest rate. Not any more.

The new law represents an about-face in tax policy. Rather than giving special treatment for special interests, while raising tax rates to maintain revenue, reform cuts out many deductions and exemptions, thus permitting lower marginal (or top) tax rates. Both of these developments depress the return on real estate relative to other investments since real estate is an interest that had received special treatment. Thus, the construction and design of most buildings types will certainly be depressed.

At its worst, the next few years can be viewed as just another cyclical downturn in a market prone to wide swings. Expanding and contracting local economies, constantly changing concepts of land and buildings' highest and best use, and deterioration of existing structures will continue to create many opportunities for both renovation and new construction. But just as accelerated depreciation changed the arithmetic in 1981, the Tax Reform Act of 1986 is changing the arithmetic now.

Not all properties will be affected equally. The impact will be most severe on those currently dependent upon tax preference for profitability. For example, properties owned by pension funds, which are typically owned outright and produce profits without preference, will show little immediate impact on their returns. In contrast, the doctor who shelters his high income through losses generated by a real-estate limited partnership should scramble to avoid hefty increases in tax liability. The reforms affecting real estate are listed in the table overleaf and are discussed in more detail below:

Statutory rates are mostly lower
The top rate will fall from 50 percent in 1986 to 38.5 percent in

Mr. Abraham is senior economist, U.S. Economic Service, Data Resources, Inc. He has completed numerous studies for various DRI clients on the effects of tax reform.

1987 and 28 percent in 1988. Because of special provisions and the selection of the tax brackets, however, most upper middle-income taxpayers (those in the \$70,000-200,000 range) will face an effective tax rate of 33 percent, little changed from 1986 law.

The impact: A lower tax bite on investment returns, like a rising tide, raises the value of all assets. Many new real-estate purchases, however, are made at such high prices that they generate losses in the early years which are used for sheltering income from other (now similar) sources. Lower tax rates, therefore, reduce the sheltering value of those losses.

Capital-gains rates are higher
While the tax on ordinary income is generally lower, the tax on capital gains is higher in both its absolute level (the top rate goes from 20 percent to 28 percent) and its level relative to ordinary income (the 60-percent exclusion is eliminated).

The impact: Both of these changes lower the demand for investment in buildings. The higher rate itself will reduce returns because the federal government will now take a larger bite of building appreciation, putting downward pressure on market prices. The higher relative rate reduces the attractiveness of assets that provide more of their return in gains on sale than in current income flows—such as real estate.

Depreciation is less generous
New buildings or resale property put in service after January 1, 1987 will be depreciated for tax purposes over 31.5 years (27.5 years for residential property) instead of 19 years. With the switch to a straight-line from a 175-percent declining-balance method, the first year of depreciation is now worth only 3.2 cents on an investment dollar ($1/31.5 = .032$) rather than 9.2 cents ($1/19 = .092$).

The impact: You still get the same amount of depreciation allowances, but it will take longer. This will reduce after-tax cash flow during property ownership and increase risk. The effect is to slow the turnover of existing properties and make financing of new construction more difficult.

Tax shelters are eliminated
The revised tax code defines a new class of investments. In the past, the tax code permitted real-estate losses to reduce taxable income from any source, including wages and portfolio investments. Now losses from so-called "passive" activities—the ownership of rental property or limited partnerships in which the investor has no real management role—can only be used

to offset income from other passive activities. While current losses will be limited, those disallowed can be carried forward and used against subsequent income.

The impact: New partnerships must now offer a competitive return without the advantage of early write-offs. This increases the risk in real-estate projects, again reducing the incentive to build compared to investing in paper assets.

Other provisions will affect building activity more selectively
A less-generous rehabilitation tax credit will slow large renovation projects; tighter rules on the treatment of interest during construction will scale back force-account construction (that done by the company which will occupy the building); and limitations on issuing tax-exempt bonds will slow industrial relocation and the construction of public-amusement facilities.

To show why reform reduces the incentive for new construction, the less-generous tax treatment means that a building that offered the same operating income before reform now provides a lower post-tax return. Investors are likely to turn many such projects down in favor of other investments, thereby prolonging the softness in the nonresidential building market already caused by commercial overbuilding. Investors will return to speculative building when the projects promise improved cash flow. By our estimates, office rents 10 to 20 percent higher than the general rate of inflation will be required to make new construction attractive again.

Existing properties will come out pretty well, although the impact of reform varies by region, type of financing, and the financial status of the owner. A property producing a healthy flow of cash will benefit from lower tax rates. Reduced incentives for new construction, which depress supply and drive up office rents on existing properties, are also good because they make existing properties look even better to prospective buyers.

But an owner already taking a bath will find the water getting a bit hotter. Many commercial properties built in recent years suffer painfully high vacancy rates, which, together with softness in office rents, have kept down operating cash flow. Investors can support these buildings only through their value as income shelters, while eventually hoping to receive a gain upon sale. Limited current deductibility, soft buyer markets (at book prices), and higher taxes on sales get these investors coming and going. They lose from tax reform.



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Another group of losers in this reform are land owners. Just as corporations naturally attempt to pass their tax liabilities forward onto their customers (rather than have shareholders absorb the tax), developers of new structures will try to pass the higher burden from reform backward onto property owners. And they'll be successful. For example, if you own a downtown building lot that is only useful for commercial construction, you are stuck with what people will give you. The squeeze on investor returns described above will lower all bids for undeveloped land.

The more susceptible buildings are those that have benefited from this speculative development of the last four years. Offices, hotels, and apartment buildings, a segment where a correction was due anyway, are hit hardest. Stores and warehouses will benefit from a slight pickup in consumer buying and, eventually, stronger single-family development.

There'll be some downward pressure on home prices in the near term, as buyers realize they cannot afford to spend as much (before-tax) because, with lower rates, the government is providing a less generous subsidy. Rising rents and the attractiveness of a home to shelter consumer debt will strengthen this market within a few years.

The higher level of business taxes—especially on the capital-intensive industries—may temporarily slow industrial building. But the lower corporate tax rate makes up for the longer depreciation allowances on returns from investments in structures so that corporate-investment plans may favor building relative to equipment, which just lost its investment tax credit.

Why all this emphasis on tax law? In the decision to build, taxes are not the only consideration and, contrary to recent experience, should not be the pre-eminent one. But as economists insist on pointing out, what is important is the decision on marginal projects. It is not the building that has clear expectations of being profitable which is in trouble, but those that barely satisfy the required investor return; they now represent an unprofitable or more risky venture. Our statistical analysis suggests that reform will slow new construction by 6 percent below what it would have otherwise been, though with commercial building due for a correction anyway, it will be hard to separate the tax impact from secular market forces. If the downturn is as severe as we expect, Congress may well choose to revise the laws yet again, just in time for the upswing in the next cycle.

KEY PROVISIONS OF TAX REFORM THAT AFFECT REAL ESTATE

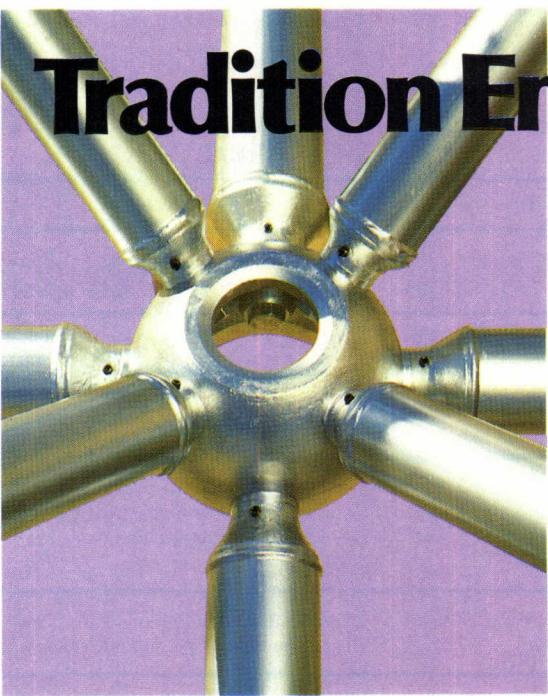
Provisions	Old	New
Individual tax rates	Fourteen rates: 11% to 50%	1987: Five rates: 11%, 15%, 28%, 35%, 38.5%; 1988: Two rates: 15% and 28%
Corporate tax rates	Graduated rates up to 46%	Graduated rates, up to 34% (to 40% in 1987)
Long-term capital gains	60% exclusion, putting top rate at 20%	No exclusions, with top rate of 28% starting in 1987
Mortgage interest	Fully deductible	Deductible for two homes up to cost basis plus home improvements, medical and educational expenses (if incurred after 8/17/86)
Government purpose tax-exempt bonds	Exempt if less than 25% benefit private entity	Exempt if less than 10% (or \$10 million) benefit private entity; plus other limitations
Industrial Development Bonds (IDBs)	Sunset dates of 12/31/86 for commercial and 12/31/88 for manufacturing	Eliminates all but small-issue IDBs, with sunset for manufacturing to 12/31/89
Volume limitations on non-government bonds	Total cap of \$150 per resident 3 separate caps	Total cap of \$75 per resident or \$250 million per state in 1987 and \$50 per resident or \$150 million per state thereafter
Depreciation	1.75 declining balance; 19 year lifetime	Straight-line; 27.5 years for residential rental and 31.5 years for commercial property placed in service after 1/1/87
At-risk rules	Exempts real-estate transactions	Exempts third-party, non-recourse debt and certain loans to equity partners
Construction period	Amortized over 10 years	Capitalized into cost basis
Rehabilitation tax	Historic building: 25%; other older buildings: 15% and 20%; 50% basis adjustment	Historic buildings: 20%; pre-1936 buildings: 10%; 100% basis adjustment
Losses from passive activities (partnership activity, all rental activity)	Passive losses can offset other income	Passive losses can offset only passive income. Disallowed losses and credits carried forward and recognized upon disposition of interest in activity. Rental property owners with income less than \$100,000 are allowed losses up to \$25,000 to be used to offset other income; phased out to income of \$150,000. Four-year phase-in period applies to existing investments, with 60% disallowance by 1988

IMPACT OF TAX REFORM ON CONSTRUCTION BY BUILDING TYPE

	Short run	Long run	Comments
<i>Highly affected</i>			
Offices	down	down	Overbuilt; due for cyclical downturn anyway
Hotels	down	down	Overbuilt; due for cyclical downturn anyway
Apartment buildings	down	down	Overbuilt
<i>Slightly affected</i>			
Stores and warehouses	down	N.C.	Stronger market demand; short-term cash flow problems.
Single-family homes	down	up	Increased home ownership; short-term price pressure
Industrial buildings	down	up	Improved net return; short-term cash flow problems



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Management: Making the architect-engineer relationship work

An engineer looks at oil for the gears from his profession's point of view

Stephen M. Sessler

It is well known that a good owner is a prerequisite for a good building. Less universally understood, however, is a corollary written by late RECORD editor Walter Wagner in 1980: "... good architecture is produced by good architects who choose good consultants."

The building design and construction process is changing rapidly. The lines between pure architecture and pure engineering blur as the technologies used to produce successful projects become more complex. Thus, the effective coordination of everyone working on a project becomes ever more important.

Many architects are quite adept at managing this coordination. Yet, the architect-engineer relationship is too often a source of frustration to them. No doubt, the architects' dissatisfaction may, at times, result from a poor performance by engineers because of the latter's weak management, scheduling problems, technical errors, or a host of other reasons.

However, the source of engineering-related problems may also lie in the relationship itself. By evaluating its working elements, we can better understand the role that architects play in setting its tone.

As an architect, you are very conscious of your interaction with your client—the owner. When that is businesslike and professional, and otherwise holds incentives for superior performance, you are motivated to do well. Consider, then, the impact of your relationships with your engineers. What motivation do you provide?

The selection process can get you started on a good or bad footing

• Decide what quality you want. In defining the engineering quality needed, match it to the quality of the project and the quality of the owner. Quality, in this context, is somewhat subjective, but can be defined for the engineers by personal capabilities, technical and management strengths, reputation, efficiency, and perhaps level of automation.

While either an architectural or engineering firm can successfully work on projects at a lower quality level than its norm, rarely can a firm perform well at a quality level above its norm. Thus, an engineering firm with primary technical proficiency in strip shopping centers or competitive developer buildings will be out of its league with a major corporate or medical facility, both of which require special expertise.

Mr. Sessler is a partner in Newcomb & Boyd, a 125-person multidiscipline engineering firm in Atlanta.

Other aspects of engineering quality to consider are sensitivity and flexibility. Seldom is there only one way to accomplish a specific goal. Engineers differ widely in their abilities to be flexible and innovative, and also in their sensitivity to the esthetic goals or standards of a project.

• Look for the right experience. It means an engineer can recognize the peculiarities of a given project type, the potential problems, and the best solutions. An engineer experienced in your project type will increase your production efficiency, and can often provide significant input on the entire project development.

Whether an engineer has worked with your firm and/or with the owner is also a consideration. In every newly established working relationship, a learning process takes place as each firm gets acquainted with the other's personnel, office procedures, management styles, and production processes. Repeat relationships minimize this initially unproductive effort.

• Match the consultant's management style with the job to be done. Good project managers prod your firm (gently or otherwise) to ensure that decisions are made in a timely manner; monitor the scope of work to be sure it stays on course; bring their firms' technical and manpower resources to bear; and perform administrative tasks in a timely and efficient way. Be sure that the project manager assigned to your project has sufficient internal authority to speak for his firm and to marshal its resources as needed. You should be comfortable with his capabilities, enthusiasm, and responsiveness.

• Make sure that everyone understands who is doing what for what fee. Rarely are fees on a project adequate to give the architect and all of the consultants the full fee that each feels is required for complete services. Fees, then, can become a source of problems if not dealt with properly. No one wins when a member of the design team loses money. However, the fact remains that the owner usually has a maximum total fee that he will pay.

Engineering fees are best determined in an open discussion—negotiation in which all of the project parameters are laid out and the architect and engineer arrive at a mutual agreement. There are strong incentives for both sides to reach an acceptable fee agreement. For the engineer, repeat business will be jeopardized if his services are not priced fairly. For the architect, the engineering fee must be sufficient to ensure the quality and service expected.

While the best engineering firms will not allow production costs to influence the service they provide once a contract is signed, others simply quit (or noticeably slow down) when the money is gone. One way for an engineer to be able to respond to all reasonable requests during both design and construction is to have a fee that includes a margin for contingency.

Factors influencing the fee include project schedule; size and complexity of the project; extent of contract-administration services; quality of contract documents; amount of predesign studies and analyses; and investigation of existing conditions. Soliciting competitive fee proposals from engineers is becoming standard practice for a few architectural firms. Whether this is good or bad depends on what they are looking for. If they want to maximize their fees by minimizing those of their consultants, it is good. But, can they sufficiently define in objective written form the factors listed above, so that the engineers' proposals truly represent competitive prices for the same specific services?

In day-to-day relationships, your active management is the key

• Assure effective liaison contact. Evaluate the way you manage engineers. Is liaison responsibility assigned to the project architect or another senior staff member? Having an inexperienced person manage your engineers can create coordination problems, redesign work, less-than-optimum solutions, and other inefficiencies. Treat the function as important.

• Foster creativity. Architects may complain that engineers lack creativity. There are several ways you can encourage and nurture it. One is to get the engineer involved very early in the conceptual phase of a project, before all the parameters are defined. Frequently, having an opportunity to discuss program requirements with the architect, the owner, and the users enables the engineer to develop innovative solutions based on insight into needs and purposes he may otherwise lose in translation.

• Make sure there's an understanding of what's going on at all times. No other aspect of the architect-engineer relationship has more impact on its success than communication. Communication takes many forms, but its purpose is the same: to convey information. Questions or misunderstandings about criteria, codes, schedules, budgets, and other design issues can be minimized by more effective communication. While letters, meetings, and telephone conversations are the basic forms of

project communication between architects and engineers, there are other useful tools for managing the information flow, such as a code summary listing all codes applicable to the project, with edition dates, and a room-by-room list of all specific and special criteria for utilities, occupancy, etc.

Not all of these forms of communication will be applicable to every job. But the goal, for every job, should be a well-documented, clear flow of information between firms. Without this, the success of a project is in jeopardy.

Generally all one-to-one communications should flow between the architectural and engineering project managers. By-passing this channel of communication frequently results in bad decisions, incomplete data, or lack of a timely response.

Another consideration is maximizing the effectiveness of each form of communication. One example of a consistently abused form of communication is the meeting. Meetings that are not focused, that are held too frequently or not frequently enough are detrimental to production efficiency.

• Take advantage of the minor incentives; they can mean a lot. Engineering credits in project publicity, referrals to other architects, and a professional approach to dealing with common job-related problems are all valid ways of rewarding and encouraging good performance.

• If you work well with an engineer, develop a preferential relationship. Such a relationship can mean shared marketing contacts and efforts, more effective coordination, and rapid project start-up ability due to the firms' familiarity with each other. This relationship works best when both firms continue to refine it.

• Be businesslike as well as professional. It is difficult for an engineer to be enthusiastic about projects on which schedules are changed or established arbitrarily, design changes are made without considering the technical implications, communications are not timely, or payments are slow or erratic. Billing and payment procedures should be discussed and agreed upon at the start of a project to avoid misunderstandings.

New burdens are constantly being placed on the architect-engineer relationship, but along with the burdens come new opportunities. A reassessment of how the architect-engineer relationship has been managed in the past and a consideration of what can be done to improve it is a very good start.



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Marketing: Change in the blink of an eye

A Society of Marketing Professional Services roundtable focuses on a profession in flux

By Joan Capelin

A keen observer of those convolutions that have brought marketing to its current state, the author reports on the SMPS convention's fourth annual senior roundtable. Its stated general aim is to advance the body of knowledge in the pursuit of sales and its particular title this year was What [changing] factors are affecting your marketing program?

In the vast and vaguely Venetian ballroom of the Fairmont Hotel in San Francisco, 10 people sit in deep concentration around a table. Fog comes and goes outside the monumental windows. Inside, the fog that surrounds the marketing of professional services is being valiently parted.

Co-moderator Stephen Kennerly, principal of architects Curtis Cox Kennerly in Philadelphia, poses the first questions to the panelists—representatives of architectural, engineering, interior-design, and planning firms who have been chosen by competitive papers. "What factors in your clients' and prospective clients' businesses are having the most significant effect on how you market," he asks? "How are these affecting not just your firm's marketing program but its organization as a whole?"

This year I detect tension right from the start: Not only are there differences of opinion among the participants, but each of their firms is in the throes of change. Uncertainty is evident even in their most carefully considered pronouncements.

The panel agrees that clients have changed

In these design firms' experience, clients appear to be buying professional services on the basis of price. Few profess to want sharing and caring [the old back and forth of creativity and personal contact]; the cost [in the new world of tightening bottom lines] has become too high.

"Some clients buy design services like a commodity," says Edward J. Peters of Seattle's Tudor Engineering. "CAD encourages this, since information [generated by the designers] can be stored by the client and used again by his own staff."

"It has long been common for commercial clients to treat design service as if it were a manufactured product," continues Peters, "because that is the only model they have for obtaining anything. Design may be the only professional service for which it is feasible to obtain

Ms. Capelin is president of Capelin Communications, Inc. in New York City, a public relations firm that consults primarily to design professionals.

significant information prior to purchase. When was the last time you asked five dentists to submit their written qualifications to you and then come to your home for competitive interviews?"

Other panelists observe that facilities managers, the new middlemen clients (RECORD, January, pages 23-25), have different priorities and less interest in how buildings express their organizations' images than did the presidents of corporations or institutions who used to work directly with their architects.

Funding looms large; projects stall for want of imaginative ways to break through financing resistance. Mergers and acquisitions, sudden developments such as those the health care sector has experienced, the segmentation of business, and the softening and collapse of certain marketplaces are also spoken about and, at times, bemoaned—as they have been throughout the three-day convention.

It's what to do about change that causes differences of opinion

Roundtable participants are trying to come to grips with the new circumstances with an obvious sense of urgency.

Suzanne Mintz of Greenwell Goetz Architects states the problem. "I can foresee the time when we are part of a highly integrated network of business-planning professionals who assist clients in significant aspects of their total business, such as analyzing organizational and office-automation needs and negotiating real estate deals, as well as designing office space and providing facility-management services. This is a far cry from our initial creative intent."

Bonnie Sloan of Metcalf & Eddy, Inc. follows with a description of how her firm has wholeheartedly adapted—how its traditional design and construction services are now only part of its project-delivery offerings. The company has gone into privatization of treatment plants, among other ventures, and its services now include project financing, turnkey design and construction, and facility ownership and operation.

Sloan is the first to speak of the risks, both legal and financial, and of the challenges that come from mixing so many different types of people and training in one firm. "Si se puede," she says; "Yes, it can be done."

Architects Gordon Beard Grimes Bahls of Portland, Oregon, fight to keep projects going when clients' funding sources seem otherwise exhausted. Says GBGB's John J. Vosmek, Jr., "It is to everyone's

advantage to get projects going and to keep them moving. So we monitor our ongoing projects in our marketing meetings. We have a business manager who contributes financing concepts—becomes the 'economic designer' on the team—and helps us take a task-force approach to stalled or slowing projects."

Voices from more traditional service organizations are heard, including architect Paul Bartlett's who represents Fletcher Thompson, Inc. in Bridgeport, Conn. "What is this tendency to provide services that have nothing to do with designing structures or buildings? This organization's mission statement talks about the 'design professions,' yet, what we're talking about here are things that have nothing to do with design at all."

SEA Consultants, Inc. of Cambridge is represented by Arnold Goldstein, an engineer given to deep reflection. "It's obvious," he says, "that design firms are changing based on capability, geography, interests—even the way the principals feel. Some of us might choose to remain design firms because we want to design; others are already taking steps into non-design services . . . Well, some clients may have educated themselves away from dependence on the outside design professional, but I don't happen to believe that, over the long term, this is something to be overly concerned with . . . Experience shows they will come back to realize that the long-term professional relationship is the way to go."

What do these marketplace changes mean for design firms?

Co-moderator Carol McConochie, a Philadelphia marketing consultant, notes the fear, confusion, and uncertainty voiced by the panelists. "I wonder whether you can pull off a consensus on solutions?" she asks them.

Architect Paul Bartlett responds: "We may become very different kinds of organizations that provide very far-ranging services and have all kinds of people that have nothing to do with what we have done before. The kinds of quality control, management, profitability, and personnel problems . . . mixing this all up together sounds interesting but tough."

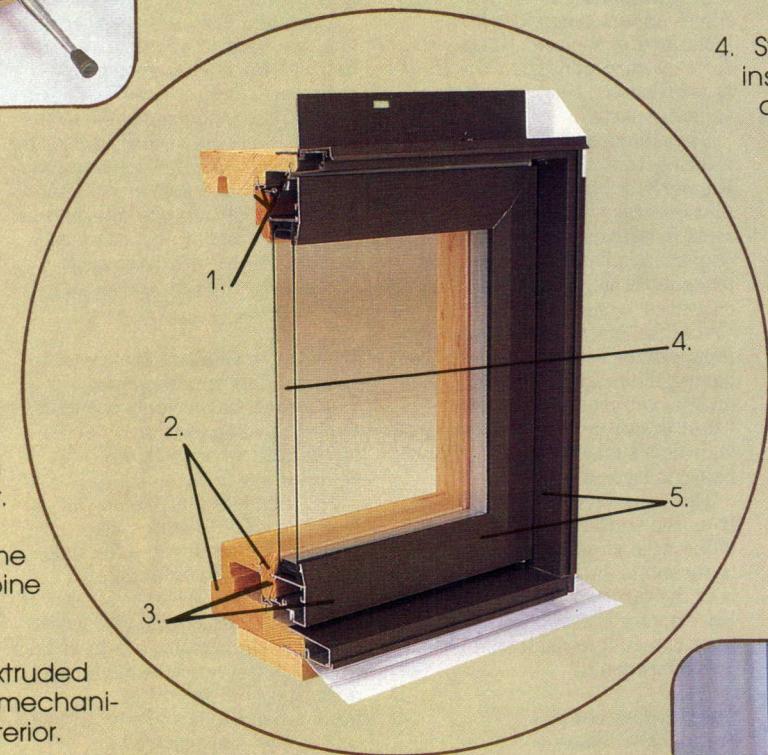
Mintz articulates what is to become one of the session's most compelling themes: that design firms will become either conglomerates or boutiques. "My firm has not been timid about changing," she says, "but making non-design functions into profit centers on their own is a whole other thing."

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"It's a very major mental step to switch from thinking of yourself as a design firm to thinking of yourself as a business-planning firm," Mintz explained. "That requires fundamental thinking at the top of the firm: What is it I want to do with my life? What are my priorities? What are my capabilities? What am I willing to hand off to other people who might have a much better handle on things that I know absolutely nothing about? And where does that put me as the owner of the company? It goes to the core: What are we?"

The session often seemed to be about psyching out the client

"What does the client really want?" is the question that hovers over the room. Another question might be: How come there is so much scrutiny of the client's needs and interests? Bob Fuller of Larsen Engineers and Architects took a stab at the answer by citing the basic change that marketing has had on design practice in the first place:

"Everybody's brochures say that we are client-centered... In different ways, we are trying to meet client needs as we perceive them. That's why we go into all these other services."

"Maybe it is the advent of marketing that has caused this," he mused. "After all, designers suffer from the so-called engineer's disease; they run around with answers to questions that nobody asked them. Marketers are willing to ask what the client wants to know. Just let the client talk; it's amazing what we learn that way."

At SEA, according to Goldstein, project managers are selected not only on the basis of technical skills, but on marketing skills, such as basic communications, as well. "The more marketing we do, including letting our clients talk," he says, "the better equipped we are all around. Marketing is the key means to information that will enable management to make the decisions it chooses to make."

All of this brought up the issue of teaching the client how to be a better client or, at the least, how he can buy services more wisely. Kennerly, observing that clients were apparently being divided into "service-oriented" and "bottom-liners," urges the panelists to describe their different approaches to each type.

"Suppose that you have won the contract and negotiated a fee for a set group of neatly defined services. You're down to your own bottom line on what you can do for what you're being paid, and you still want to do the project. And on Monday morning, the hard-bargaining client comes in a whole different person. He starts talking about grand new

avenues to explore. He talks about the environment, and his concerns for the users, and how to make the project enrich their lives. What do you do?" Kennerly poses.

Goldstein obviously feels the issue has to be addressed up front: "The client [for the set fee] has to be prepared to give up an examination of three things and do only one. He needs to understand that he gets what he pays for. It

McConochie wraps up: "'Educating the client' is a phrase that comes up all the time," she comments. "In making proposals to clients more specific or the contract negotiations more prolonged, are we educating the client or ourselves? Are we not working to become more responsive to the client's true needs and expectations rather than only what we think they may be?"



Seated around the table and recognizable to various degrees are (upper right) co-chairs Steven Kennerly of architects Curtis Cox Kennerly, and Carol McConochie of McConochie Consulting, and (continuing clockwise) Arnold Goldstein of SEA Consultants, Inc., Bonnie Sloan of design-

doesn't mean that what he gets is bad; it's just less. And it's not just clarifying your services; you must clarify the level of your services."

A popular topic was keeping proposal-preparation costs in line
Kennerly asks, if you have to define services in such detail, "aren't you in fact marketing all the way through contract negotiations? And isn't this very costly for your marketing budget?"

Many on the panel have faced this problem. More than coincidentally, many have set up extensive menus from which clients may choose specifically what services they want. There is substantial payback, in a number of ways.

At Gensler and Associates, according to Linda Cavazos of the Houston office, "We price what the client says he wants and also what we think he needs. Sometimes this doesn't work, but often it is helpful. It can make for a better project and, of course, can increase our sales."

This menu process explains exactly what the client is paying for. "We are covering ourselves," says Mintz, "and it's a better way of controlling the project in-house because the design team knows exactly what services are to be provided and not. Gone are the days of the standard AIA contracts."

the principals were brilliant. But if the firm loses, it's because the marketing people messed up."

And so the very nature of marketing must continue to change

Bartlett is struck by the elevation of marketing. "It has," he says, "been integrated into the essential management of companies. And you have to be performing a virtually continuous strategic planning process because what's out there is changing so fast. You can't do it once a year."

"Ferment, flux, chaos" are the words used by Fuller. He cautions: "We marketing people have to be very sensitive to change, because some of the things we're talking about can change in the blink of an eye. You don't want to be hanging there with a lot of services that you no longer need to provide."

Kennerly, always eloquent, puts his finger on the new role of marketing. "For the first time, marketing is the pebble that is being dropped in the pond; and it is having a considerable ripple effect. Not only is your marketing approach changing—the way you do proposals, approach clients, and deliver services—but the results of marketing are starting to change the size, quality, and make-up of your firm's design staff. And it affects management. Marketing is taking a tremendous role in the direction-finding of firms. That's a tremendous responsibility coming on us. We've been yelling and screaming that we wanted it for a long time. Here it is."

A new proactivity challenges conventional marketing wisdom

Living with risk can be tumultuous, or it can be just what the doctor ordered. Some firms will expand into new areas that have to be staffed by asset managers, economists, and lawyers. Some will provide direct funding for worthy stalled projects. Some will stick to the basics, but learn to live with what McConochie calls "creative confrontation" and "greater partner disharmony" in order to meet marketplace issues head-on.

McConochie challenges what has appeared to be marketing truths. "Maybe it doesn't matter about being proactive," she says. "Maybe what we've been talking about is how much we *can* change and not how much we *should* change. Maybe it's time for us to get rid of some of the marketing gospel."

Heresy? No one leaves the room bloodied as a result of the roundtable. All feel wiser. At the least, Sloan assures her colleagues, "You will be no less of a profession, but more of a business."

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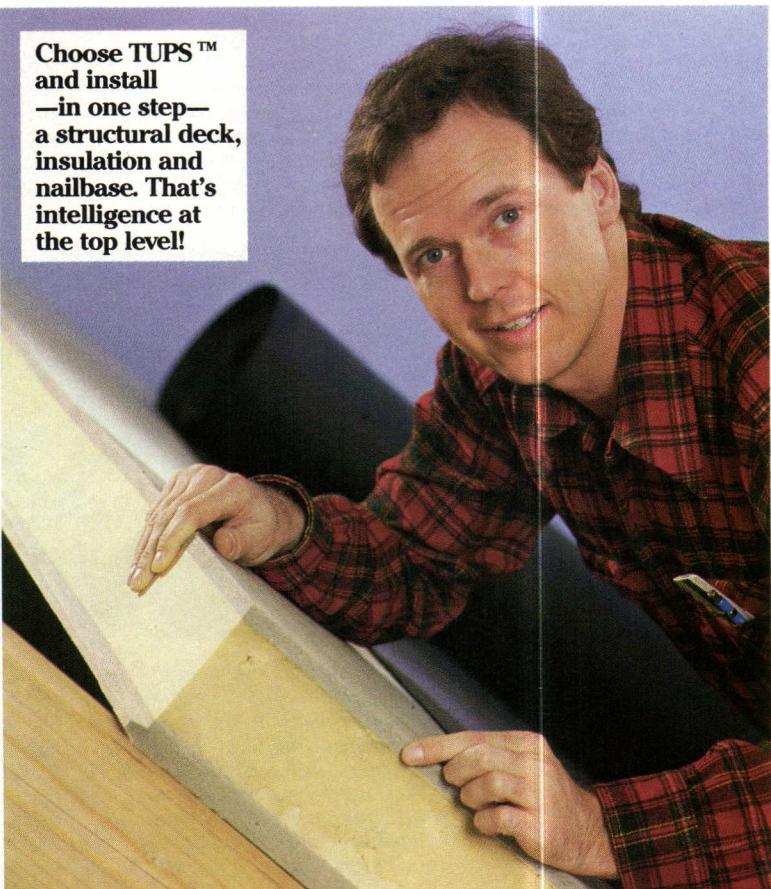
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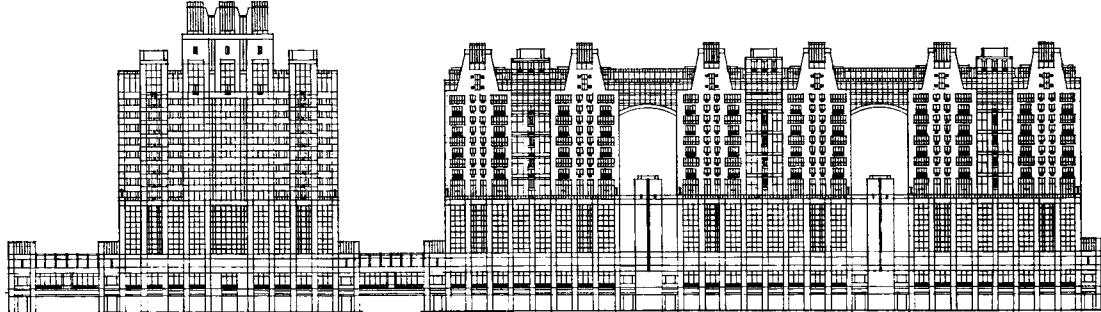
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Kohn Pedersen Fox Associates has unveiled plans for a mixed-use residential and commercial complex whose urban monumentality belies its suburban setting. Planned to span the tracks and platform of the commuter railroad depot in downtown White Plains, N.Y., Station Center will consist of three luxury condominium towers, a 212,000-square-foot office structure, ground-floor retail space, and a five-

level parking garage—all designed to occupy a limestone, metal, and glass building ensemble that is the latest manifestation of KPF's signature brand of architectural historicism. Along its eastern flank, the complex features an enclosed glass-walled arcade that will provide all-weather pedestrian connections to the station. The proposal also calls for upgrading the existing depot and embellishing

it with a new vaulted ceiling meant to evoke the grandeur of great 19th-century rail terminals. According to KPF partner-in-charge A. Eugene Kohn, the project is especially noteworthy from an urban-planning point of view: in addition to being tied directly to mass transportation, the development's overwhelmingly residential orientation is expected to bring 24-hour-a-day activity to the city's central core.

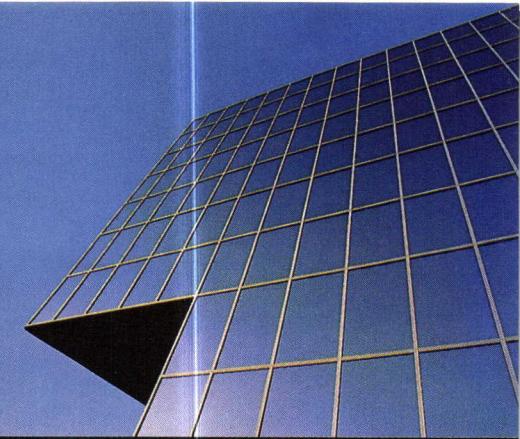
A new commercial tower will redefine L.A.'s burgeoning downtown skyline

The urbanization of downtown Los Angeles, spurred in part by the city's expanding role as a center for international finance, continues apace: witness Mitsui Tower, a new 50-story office building planned for the northwest corner of Wilshire Boulevard and Figueroa Street that will be, at 760 feet, the second tallest structure in the southern California metropolis, topped only by the 858-foot-high First Interstate Bank Building. The proposed one-million-square-foot tower has been designed by Albert C. Martin & Associates with what one might call quintessentially late-Modernist mannerisms. Sheathed in a combination of coral-colored granite, solar gray and green glass, and verdigris bronze panels, the structure will be set at a 45-degree angle to the rectilinear L.A. street grid, opening up space along Wilshire for a spacious landscaped plaza. Chamfered corners, recessed bays, and a series of four upper-level setbacks were incorporated into the design to allow for more corner offices and, in this period of revived interest in early 20th-century skyscrapers, to allude to the setback Art Deco buildings that define the city's 1920s and '30s architectural style. The tower will be crowned by a shallow, translucent glass dome, illuminated at night from within.



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News briefs

Letting the sun shine in: Toronto erects world's first retractable-dome stadium

Philip Johnson has donated his Glass House—the landmark Modernist dwelling in New Canaan, Conn., that the architect designed in 1949—to the National Trust for Historic Preservation. Johnson will continue to live at the six-building, 30-acre estate as long as he wishes, after which the Trust will maintain the property and open it for tours to the public.

James Stewart Polshek will step down on June 30 after 15 years as the dean of the Columbia University Graduate School of Architecture, Planning and Preservation. Polshek is making the move in order to devote more attention to his architectural practice, whose best-known project perhaps is the recently completed restoration of Carnegie Hall.

James I. Freed of I. M. Pei and Partners has been selected the design architect for the United States Holocaust Memorial Museum, planned for a site adjoining the National Mall in Washington, D. C. Associated architects on the project are Notter, Feingold and Alexander.

The Ball State University College of Architecture & Planning, working with Argentine architect Miguel Roca, has been selected to provide design and planning services for this year's 10th Pan American Games, scheduled for August 7-23 in Indianapolis.

J. Irwin Miller, the industrialist and philanthropist who transformed Columbus, Ind., from a typical Midwestern town to a showcase for the work of the nation's leading architects, has been named the first living American to be inducted into the Building Hall of Fame, established last year by the National Building Museum in Washington, D. C., to honor "those whose personal efforts have made a significant contribution to improving our nation's built environment."

J. Max Bond, Jr., a New York architect and dean of the City College School of Architecture and Environmental Studies, has been named the 1987 recipient of the AIA Whitney M. Young Citation, given "in recognition of a significant contribution to social responsibility."

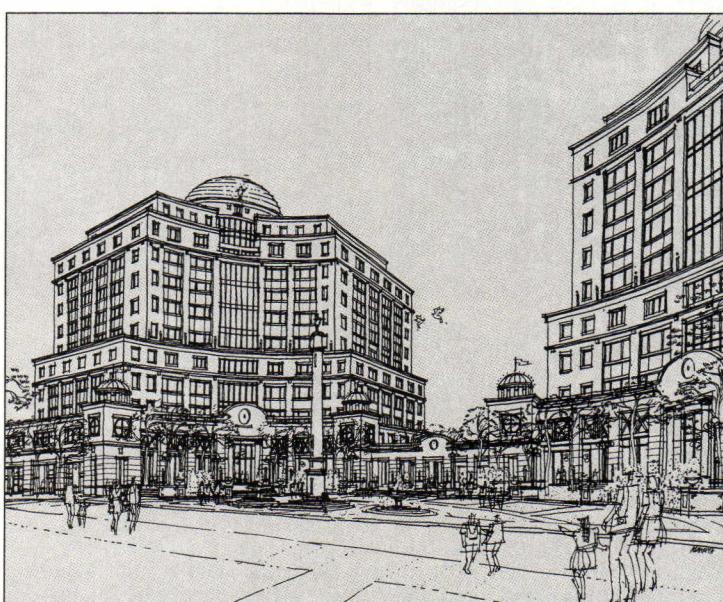
Two major manufacturers of office furnishings—Corry Jamestown and Hiebert—have merged, forming a new company called Corry and Hiebert. The merger is the latest indication of a trend toward consolidation in the American contract furniture industry.



A new town comes of age

One of the most unusual sports centers ever built is currently under construction in Toronto, adjacent to the city's landmark CN Tower. Designed by Roderick Robbie and Michael Allen of the Robbie/Adjelein/Norr Consortium, the facility consists of the world's first retractable-roof stadium—a 56,000-seat arena that will be home to the city's baseball Blue Jays and football Argonauts—and a 450-room hotel, both embedded in a single structure whose poured-in-place concrete and reflective-glass facade seems more akin to nearby downtown office buildings than to a traditional sports arena. The facility's four-piece telescoping roof is made of square tubular steel, covered with corrugated steel decking and an opaque, single-ply synthetic membrane. Total time needed to open or close the roof: about 20 minutes.

Broadway bound



Over 20 years after first village opened in the new town of Reston, Va., the Reston Land Company has selected RTKL Associates as the winner of an invited competition to design a new mixed-use downtown for the well-known planned community. RTKL's premiated entry triumphed over submissions from Skidmore, Owings & Merrill; Thompson, Ventulett, Stainback & Associates; and Kohn Pedersen Fox

Associates. The proposal's axial layout and its profusion of such architectural elements as domes, cupolas, porches, and colonnades reflect the architects' awareness of neoclassical Washington, D. C., 18 miles down the road, and the plan's conscious mix of commercial, residential, and cultural facilities is meant to reinforce the original concept of Reston as "an urban place in a rural setting."

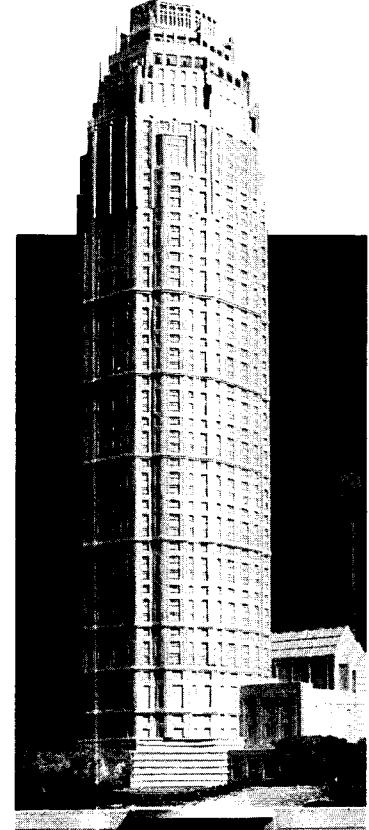
One of the first projects to respond to a 1982 ordinance meant to encourage development on the west side of midtown Manhattan, 1675 Broadway is a 35-story, green-granite office tower that will adjoin and cantilever over the recently renovated Broadway Theater, New York's only legitimate theater actually located on the Great White Way. Architects for the 675,000-square-foot tower are Fox & Fowle.



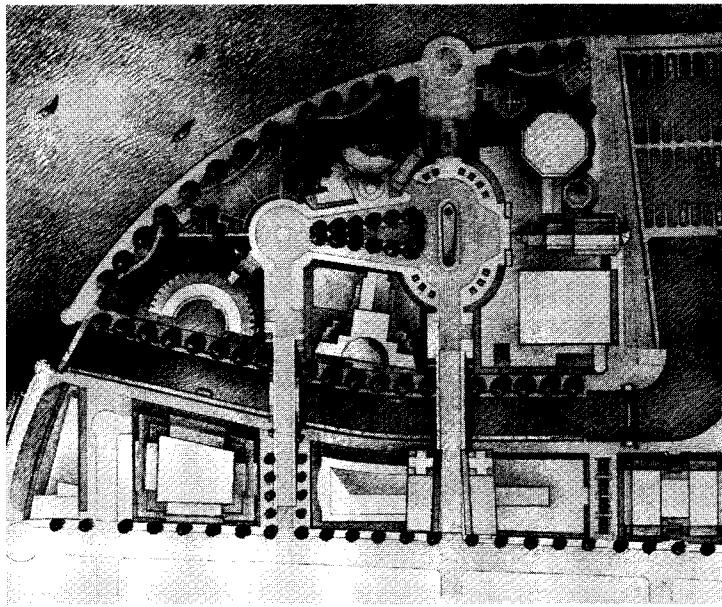
No little plans: An ambitious mixed-use scheme for Boston



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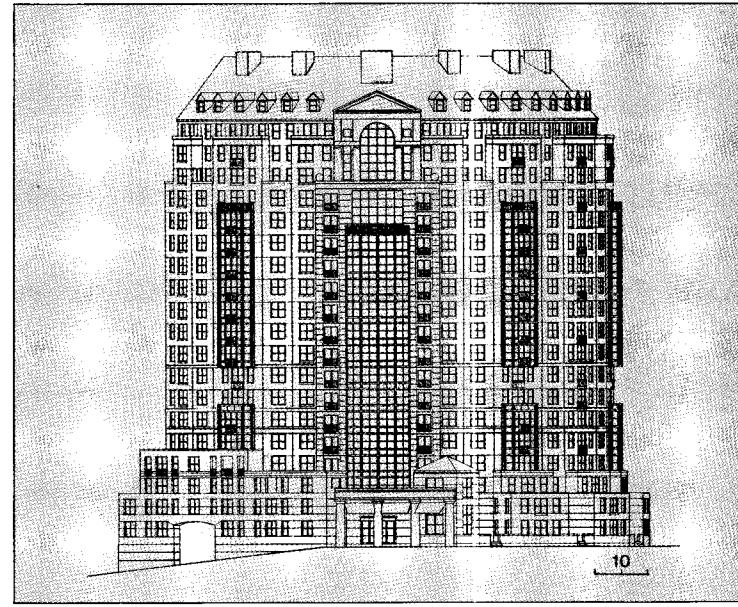
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Pending final approval by the Commonwealth of Massachusetts and the City of Boston, a new project is set to rise on the Boston waterfront that should transform the city's downtown skyline. Dubbed Fan Pier, the project is a major development by any measure: a 19-acre site with 1.4 million square feet of office space, a 50-story Hyatt Hotel, three apartment houses for upper- and moderate-income families, and a new home for Boston's Institute for Contemporary Art. The buildings will rise above a two-level garage and are to be laced together by a harborfront park, an inland square, and, most dramatically, a new canal lined with two tiers of esplanades and crossed by vehicular and pedestrian bridges.

But Fan Pier is more than just a block-buster. If executed according to recently announced plans, it will

be a major example of the current state of American urban design, shaped by some of the country's leading architects and guided by sponsors—including HBC Associates and the Pritzker family—who seem keenly aware of the esthetic and marketing advantages of architectural patronage. In the drama of its site, ambition of its master plan, and combination of name architects, the project clearly recalls 19th-century schemes for the City Beautiful.

And no wonder. Architects for Fan Pier include the offices of Cesar Pelli (developer of the master plan and design guidelines); Hammond Beeby and Babka; Frank O. Gehry; Robert A. M. Stern; Rafael Moneo; Koetter, Kim & Associates; and Venturi, Rauch and Scott Brown. What they have designed is a diverse collection of big buildings close to the flavor of



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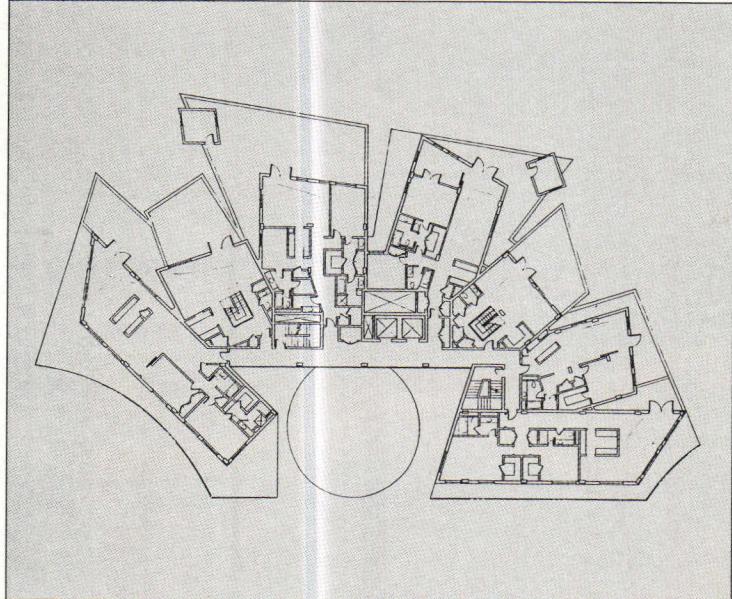
older urban downtowns that historians, critics, and the American public have embraced over the past decade—places with skyscrapers that Vincent Scully has characterized as "genial giants."

In 1984 the Pelli office was retained to develop Fan Pier's plan. Pelli had already designed a proposed hotel for the site—an abandoned stretch of landfill on the wrong side of Fort Point Channel but near Boston's explosive waterfront development—and his success at the World Financial Center in Manhattan made him a logical choice for the Boston project. In addition to writing design guidelines that called for "wedding-cake" buildings with strong street walls and compatible masonry finishes, Pelli's office had to draw up the final list of seven firms that would execute the project's individual pieces.

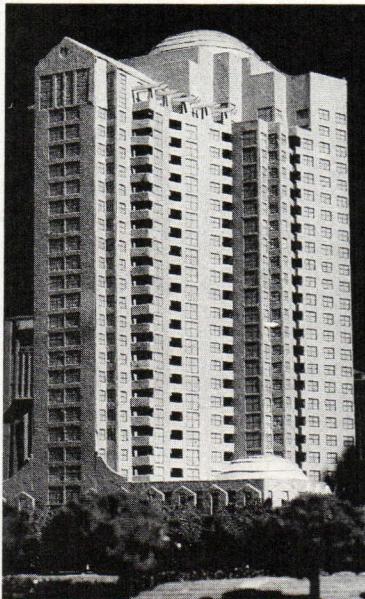
To hear the designers tell it, the collaborative process was a convivial and intellectually stimulating series of meetings, steeped in mutual admiration. The result of the group effort is a planning solution clearly orchestrated for public appeal. Outdoor spaces are dimensioned from such diverse reference as Rome's Piazza del Campidoglio, Amsterdam's canals, and, closer to home, Boston's Newbury Street. Waterfront parks, walks, and gardens connect with the city's Harborwalk system. And through the clever manipulation of the site's section, pedestrians will descend bridges and steps to the water, where they may look back upon an architecture of domes, hipped roofs, flying chimneys, and finials. With its crescent-shaped buildings, stone-clad bridges, and gables, Fan Pier's architectural allusions run from

1. Fan Pier, model view from Boston Harbor
2. Hyatt Hotel: Cesar Pelli & Associates
3. Fan Pier, site plan
4. Apartment house elevation: Robert A. M. Stern Architects
5. Typical floor plan of an apartment house: Frank O. Gehry & Associates
6. Front and rear elevations of an

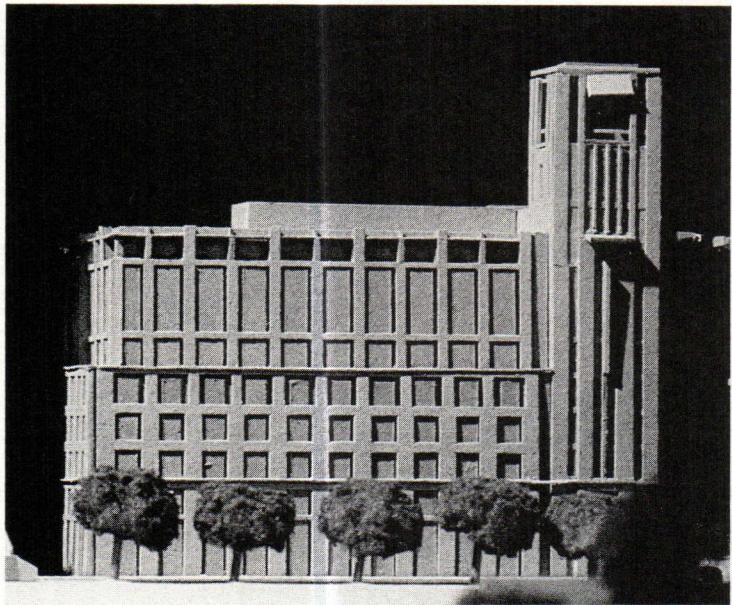
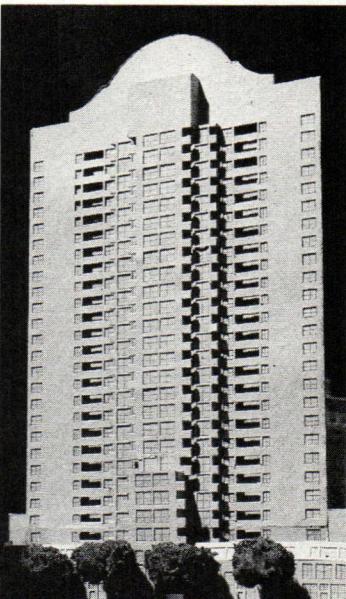
apartment tower: Venturi, Rauch and Scott Brown
 7. Office building: Koetter, Kim & Associates
 8. Office building: Hammond Beeby and Babka



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nearby Commonwealth Avenue to the Chicago River and New York's lower Broadway.

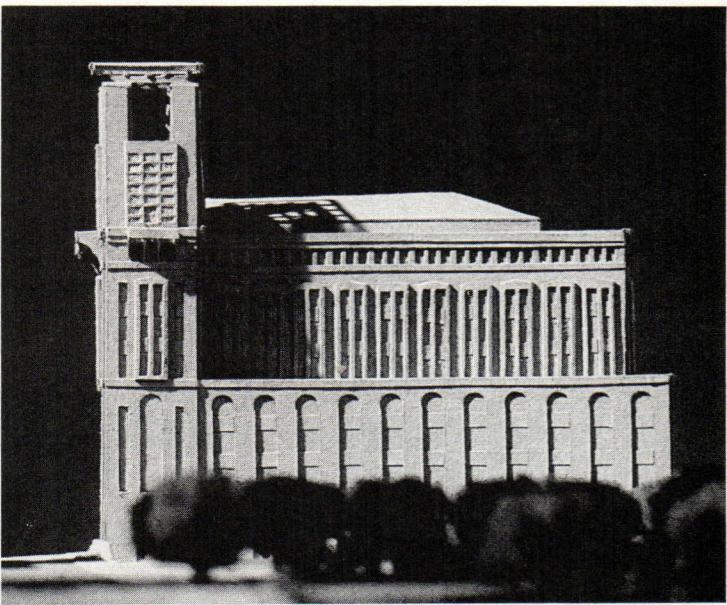
Pelli's Hyatt Hotel sets the project's tone. With its crested top and "flying buttresses," this structure recalls Raymond Hood's Chicago Tribune Tower. If recent Pelli buildings have had glass curtain walls so refined that they border on the painterly, this one is robust and sculptural, with prominent stringcourses and window enframements that vary in scale. Together with Pelli's two commercial buildings along Northern Avenue, the hotel both punctuates and frames the other lower structures, including apartment houses by Frank Gehry and Robert A. M. Stern.

Gehry's building is one of the smallest in the project and potentially the most radical.

Although its elevations are not yet

fixed, its plans are a dramatic explosion of the apartment house diagram that affords its units double and triple exposures toward the water. Close by, Stern's building is, as one might expect, more conservative—a neo-Georgian crescent that is "just like Boston's Ritz," according to the architect. The Gehry and Stern projects both emphasize the development's waterfront location with their reciprocating curves.

A bit inland, two office buildings by Koetter, Kim & Associates and Hammond Beeby and Babka form the project's gateway. Given the symmetrical massing required by the guidelines, the architects have developed structures that are distinctive, but complementary. The Koetter, Kim project is an elegant masonry-and-glass synthesis of vertical and horizontal patterns; the Hammond, Beeby and Babka



8

structure, by contrast, is stacked with tiers of arched and hooded windows—a design that owes a debt to the miles of sturdy 19th-century commercial buildings along the Boston harbor. Both structures have towers featuring sharply projecting cornices that help define a vestibulelike opening onto Fan Pier's major bridge.

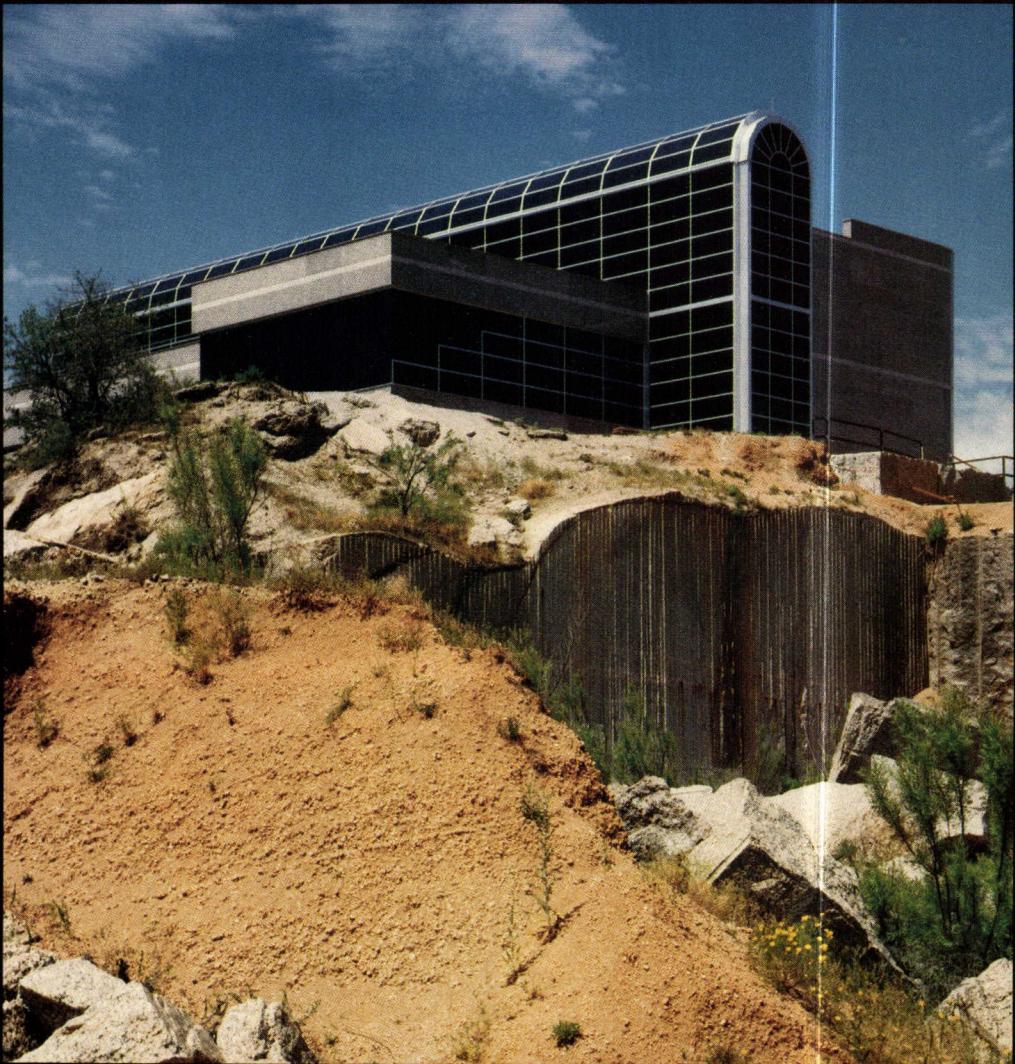
Opposite the bridge rises Venturi, Rauch and Scott Brown's tallest building to date—a 247-foot-high, wedge-shaped residential tower whose gently angled walls and narrow balconies recall the apartment houses of Alvar Aalto. (Ironically, the fathers of Postmodernism have produced one of Fan Pier's most Modern buildings.) The structure's mechanical bulkhead is a dome sliced in half both to emphasize its character as a decorative cap and to turn the building's canalside

elevation into a billboard cutout; clearly, VRSB's lessons from Atlantic City are not lost here. This may be the project with which the firm crosses the threshold between its ideas and a publicly conspicuous, viscerally enjoyable architecture.

If at this stage Fan Pier appears a bit of a world's fair, lacking a critical vernacular binder (Boston's row houses and counting houses come to mind), it nevertheless indicates a rich future for the design of American cities in Pelli's rather Baroque site plan, Gehry's apartment layouts, and the other architects' rich palette of stylistic allusions. It is too soon to know for certain, but we may eventually look upon this architectural ensemble with the same appreciation we view the work of Burnham, Adler, McKim, and others who provided the nation's urban patrimony.
Roy Strickland

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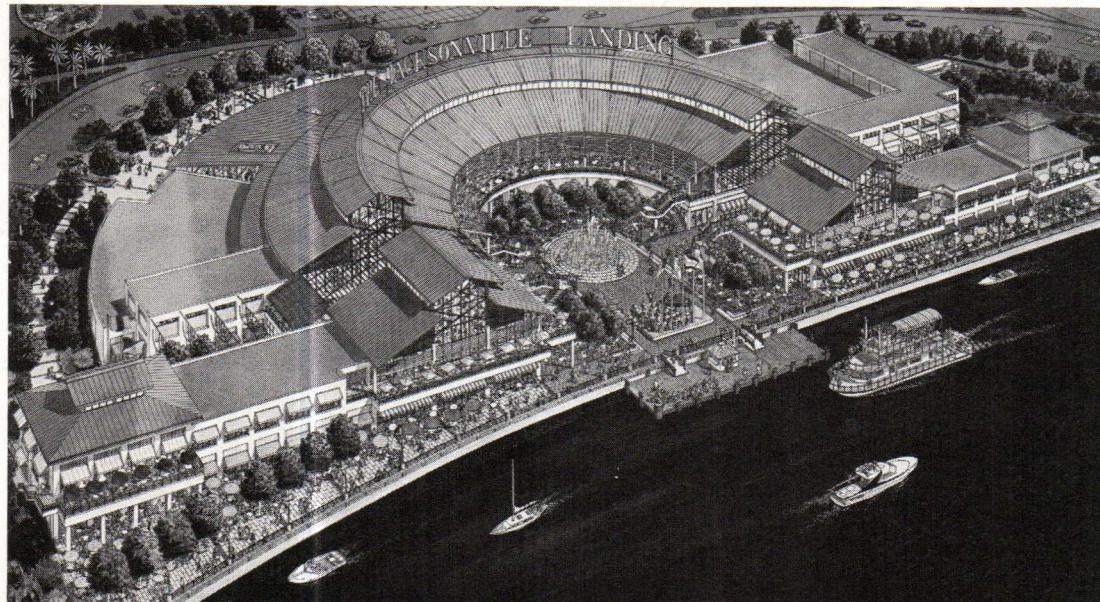
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Photo: Capitol Marble Company, Marble Falls, TX • Architects: Shepherd & Boyd, Dallas.

To market, to market: Jacksonville's waterfront agora nears completion



There seems to be no end to the American public's thirst for shopping and eating, especially in the highly successful festival marketplaces developed by The Rouse Company. This year will mark the completion of two major waterfront projects by the Columbia, Md.-based firm in Florida's two largest cities: Bayside Center [RECORD, February 1984, page 53] is scheduled to open in

April on its Biscayne Bay site in downtown Miami, and Jacksonville Landing, located in the center of the north Florida metropolis, will be finished in June. Designed by Benjamin Thompson & Associates, Jacksonville Landing will comprise 126,000 square feet of commercial space fronting the north bank of the St. John's River. Like other Rouse marketplaces, the Jacksonville project will boast over 100 shops

selling a combination of goods (60 percent) and food (40 percent). However, unlike such Rouse projects as Quincy Market in Boston and South Street Seaport in New York, which are housed partially in existing historic buildings, Jacksonville Landing will occupy new structures designed in a local vernacular style with deep overhangs and shaded areas that respond to the area's climate.

Working in circles: A new mixed-use complex on the Potomac

With its twin semicircular plazas, steep 13.5-acre site, and stepped, classically inspired buildings, Arthur Cotton Moore/Associates' latest waterfront development project—a mixed-use hotel, office, and retail complex overlooking the Potomac River in Arlington, Va.—is meant, says the architect, to exhibit the imagery of a hill town. The plan calls for preserving two-thirds of the wooded site as open space.



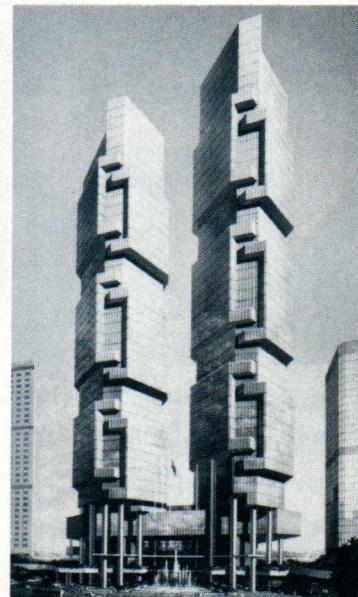
In deference to a moving context

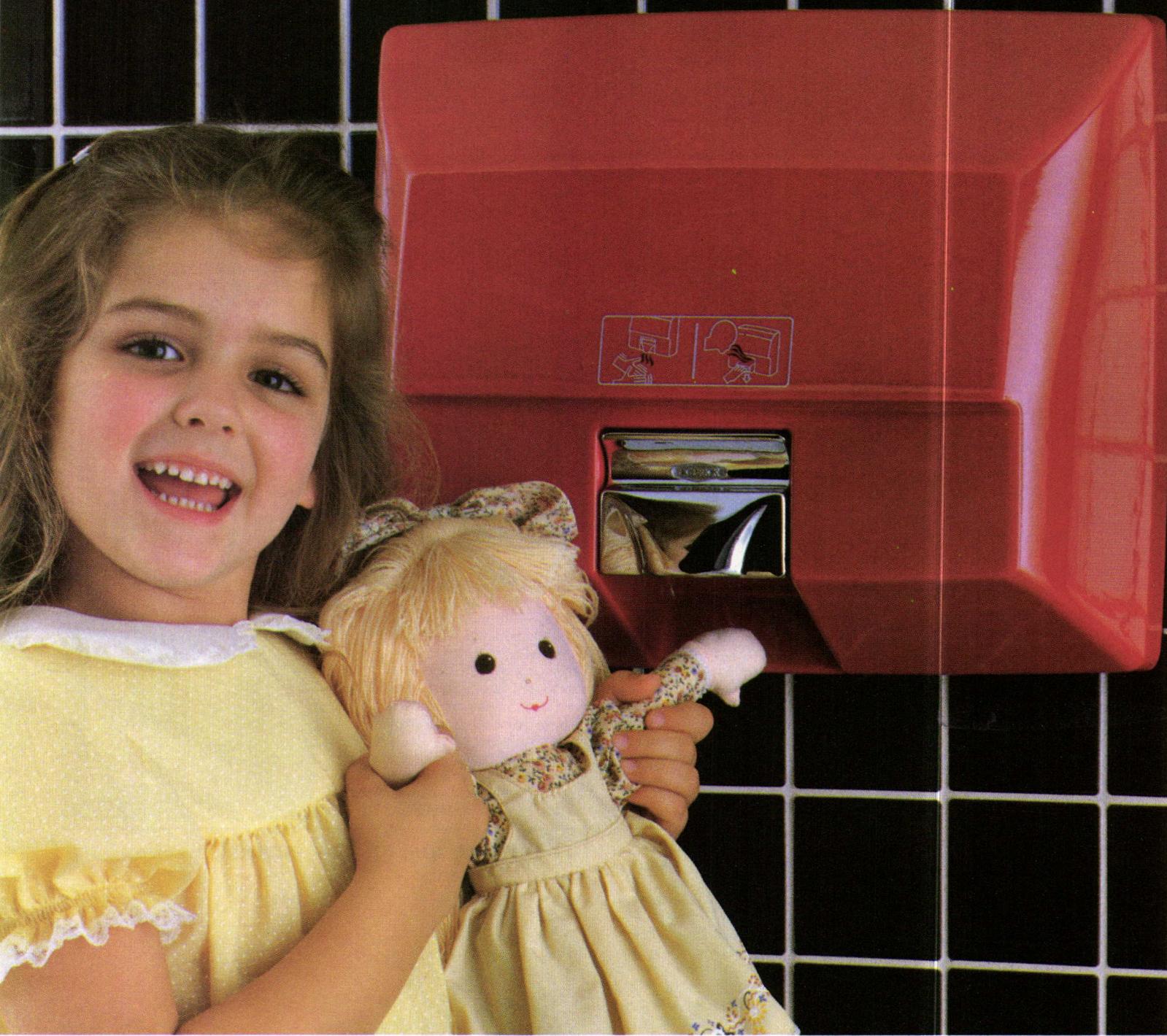


Perhaps the most unusual of the new projects rising in London's historic Docklands area is a proposed eight-unit apartment house whose design by Troughton McAslan Architects deliberately eschews the warehouse vernacular of its brick-and-stone neighbors. If the building at first seems jarringly Modernist in its wharfside context, architect John McAslan points out several historic references in the

In Hong Kong, a project of many facets

Designed by Paul Rudolph for Hong Kong's central business district, Financial Square consists of two glass-sheathed office towers, 42 and 46 stories tall, whose tripartite elevations "break down a large building into comprehensible parts," according to the architect. Each floor will be cantilevered from a central core and faceted to allow numerous corner windows. Wong & Ouyang are joint-venture architects.





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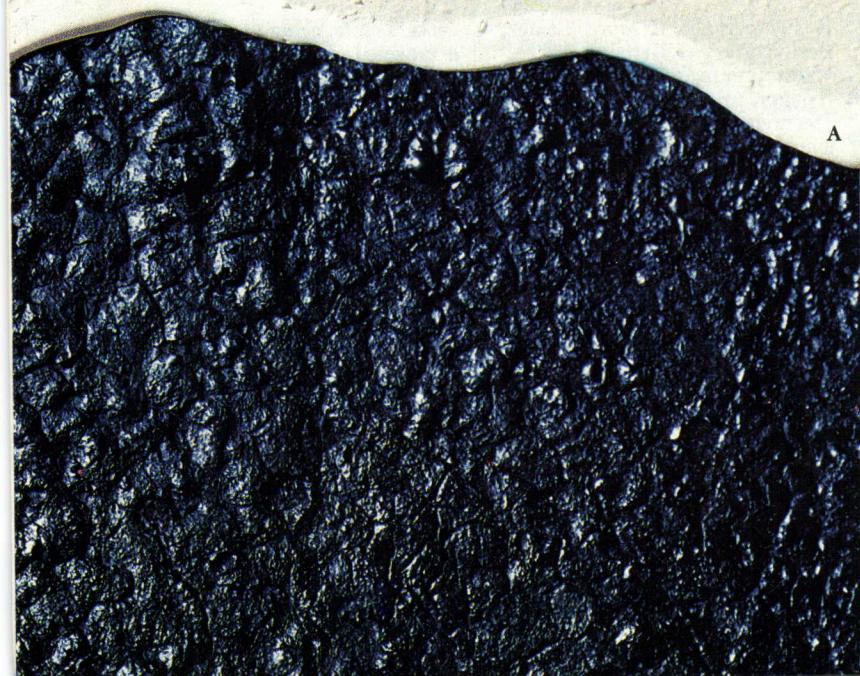
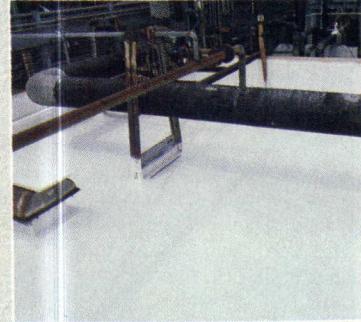
- (A) Built-up Roof: affected by quality of asphalt. Absorbs solar heat.
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Books

The Building Systems Integration Handbook, edited by Richard D. Rush. New York: John Wiley & Sons, 1986, \$89.95.

Reviewed by Anthony Fisher

Howard Roark to the contrary, architects work primarily from experience and precedent. So, when faced with such prosaic daily problems as detailing a handrail or an expansion joint, they first consult the advice of seasoned colleagues or the well-thumbed drawings of other projects. As a last resort, they turn to *Architectural Graphic Standards*, a compendium first published in 1932 and now in its seventh edition. Compiled by experienced professionals and updated at regular intervals, it has become the standard reference for American practice. But, as any architect involved in the entire design process will testify, a building is more than an assembly of interchangeable details from *Graphic Standards* or components from Sweet's catalogs.

There is an inherent logic to construction by which certain components go together, forming assemblies or building systems (as, for example, brick and block and mortar form a masonry wall). This is reinforced by contemporary practice, which is accountable to building codes and product manufacturers as well as design logic. Architects routinely rely on set assemblies of materials, whether prescribed by the UL book or a roofing manufacturer. In the design process the choice of systems generally must precede that of individual components. The operation of these systems and their interaction with other systems cannot be predicted by observation of their components alone. In this brave new world of increasingly complex building systems, *Architectural Graphic Standards* is insufficient, if not obsolete.

It is this situation that *The Building Systems Integration Handbook* seeks to address. The result of a five-year collaboration by former *Progressive Architecture* editor Richard Rush and a broad team of consultants, the handbook is, like *Graphic Standards*, sponsored by the American Institute of Architects. In his preface, Rush boldly aspires to "do for building systems what *Architectural Graphic Standards* had done for architectural detailing and component design." To note that it proves virtually impossible to present a subject so complex and conceptual in the linear,

encyclopedic format of a *Graphic Standards* is not to belittle Rush and his colleagues' achievement. What they give us, rather, is an incisive look at building systems and the ramifications of their integration in buildings. While it is not as accessible a reference book as its progenitor, it should serve as an excellent text on the subject.

The organization of the book is more suited to instruction than to reference. It consists of seven chapters, written by Rush and others and generously illustrated with photographs and precise drawings by Allen Assarsson and Darrell Downing Rippetteau. Assuming that "it is simpler and quicker to show someone how to take a mechanism apart than to explain how to put the same object together from scratch," the book begins at the end, with the complete building, and progresses backward, first to building systems, and then to their individual parts. This sequence, Rush notes, is "analytical, not synthetic," and is thus modeled more on the design than the construction process.

Rush begins, of necessity, with some definitions of the rather elusive concepts involved: "Building systems integration is the act of creating a whole functioning building containing and including building systems in various

combinations." It is, in short, building design itself. A system is defined as "a coherent set of physical entities organized for a particular purpose." For the purposes of analysis, buildings are broken down into four systems: structure, envelope, mechanical, and interior. Not coincidentally, this division parallels the professions that most often collaborate in building design. To reinforce this point, chapter two consists of a multidisciplinary roundtable discussion among structural engineer Irwin Cantor, the late architect William Caudill, mechanical engineer Joseph Loring, and interior designer John Pile. Their comments help clarify the definitions and preview the issues detailed in subsequent chapters.

To describe the relationship between systems in actual buildings, the authors further define five levels of integration: remote, touching, connected, meshed, and unified. Using these two kinds of category, the authors have devised a system of "ball diagrams" (a more sophisticated version of the familiar bubble diagram) to illustrate graphically the complex interrelationships between systems in a building. Once understood, this method can be used to analyze and compare the systems in any building.

The method is demonstrated in chapter three, which consists of 19 case studies of actual buildings chosen to encompass a wide variety of building types and the major options in building systems. The buildings range from a small trombe-wall and wood-frame apartment complex in New England to Louis Kahn's Kimbell Art Museum in Fort Worth. The number of buildings that demonstrate a concern for energy use is refreshing; conspicuously absent, however, are many of the style-conscious historicist buildings that have filled the pages of the architectural journals during the 1980s. This omission probably reflects the book's five-year production schedule (most of the buildings were completed during the 1970s, and none later than 1982) more than the esthetic predilections of the editors. But it could also give the deceptive impression that systems integration is a monopoly of '70s Modernist buildings.

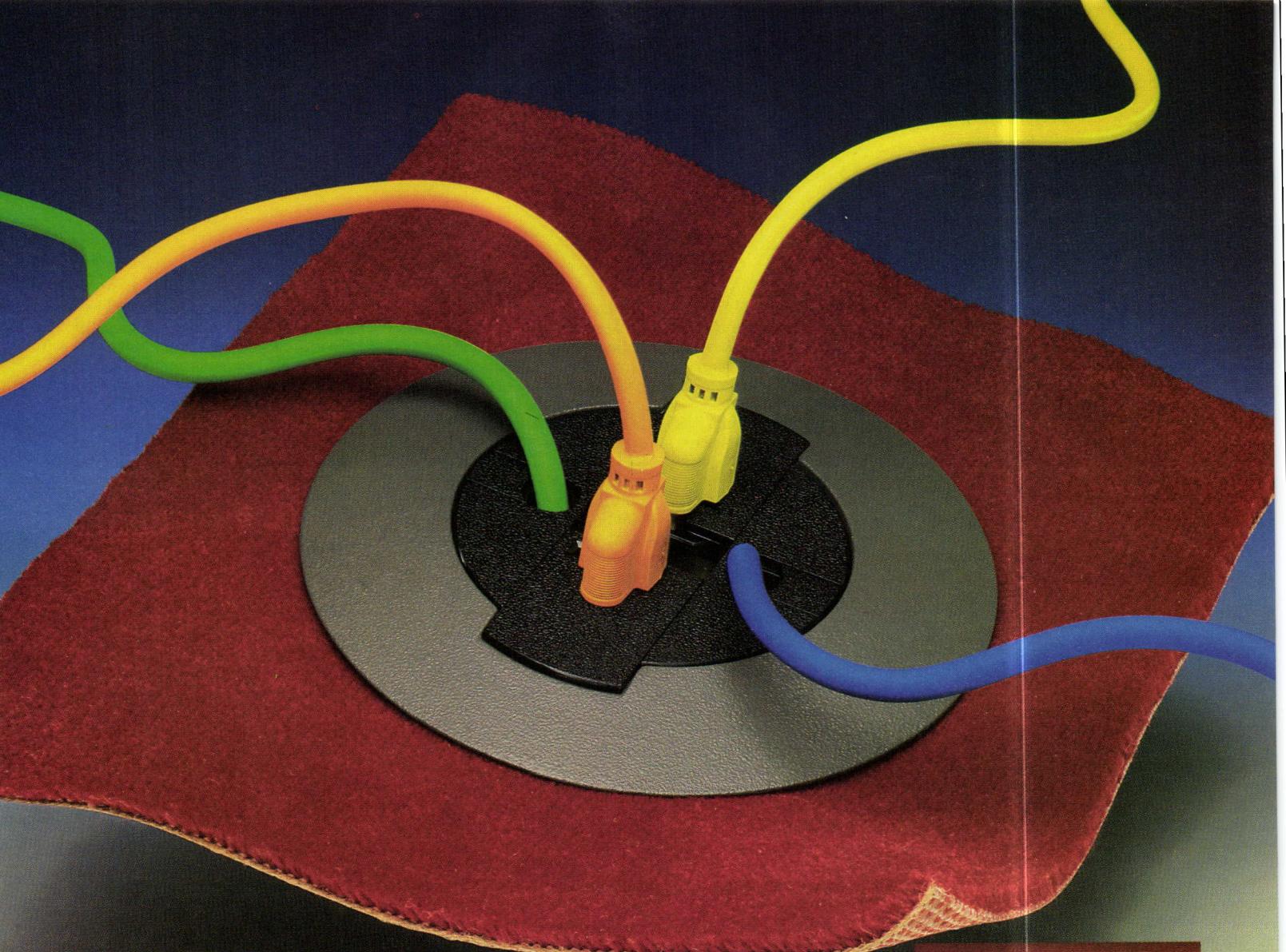
Chapter four examines 15 generic examples of the systems combinations that are introduced in the case studies, from tilt-up wall construction to tension fabric structures. While the handbook makes no claim to being comprehensive, the section does appear to cover the systems

Continued on page 167

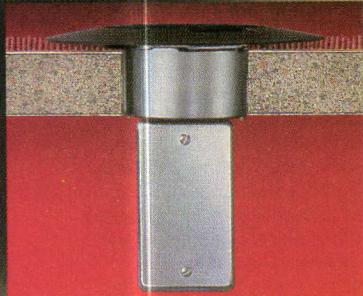


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Anthony Fisher is a practicing architect with Bower Lewis Thrower/Architects in Philadelphia.



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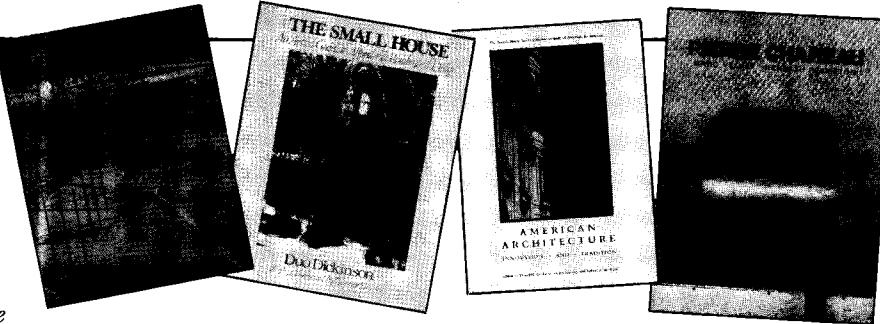
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Books



Reviewed by Julie V. Iovine

The Elusive City, by Jonathan Barnett. New York: Harper & Row, 1986, \$23.50.

If there is anyone willing to propose "a new, all-purpose city-design concept," Jonathan Barnett—an urban planner who has been involved in major development projects in New York, Pittsburgh, and other cities—is not your man. If you are seeking a practical guide to how cities ought to be planned, this is not your book, as the author suggests by his title. *The Elusive City* is too well-balanced to offer pat answers and should be read more as a historical panorama than an analysis of what went up and what went wrong with urban planning through the ages.

Barnett finds the origins of urban planning in the layout of Roman military camps, and he then develops, in choice detail, the evolution of the monumental—enclosing space through avenue and vista—have remained constant. In contrast, the garden-city plan is organized to control sprawl. Models of perfection, in this case, developed from the picturesque English-cottage village; and yet, the garden city, first proposed as a radical new type of town—self-contained, self-supporting, and green—turned out to be nothing more spectacular than a suburban satellite. The impact of Modernism on urban texture—and particularly Le Corbusier's vision of La Ville Contemporaine—is equated with the devastation wrought by the worst World War II air raids; and, as for the megastructures of the 1960s and '70s, Barnett dispenses with them as both "more comprehensive and more authoritarian" than earlier schemes, but financially unfeasible.

Where do we stand now? Barnett remains philosophical. Each type of urban-planning scheme continues to have its vital moments, but no one approach can give shape to the vast entities that are cities today. Barnett's final advice is to look not for absolute solutions but for "new ways of integrating city design with the process of economic and social change."

Julie V. Iovine is a New York-based art and architecture critic.

The Small House, by Duo Dickinson. New York: McGraw-Hill, 1986, \$34.95.

Half polemic, part promotion, Duo Dickinson's second in a series of "artful guides" to affordable design overwhelms the reader with evidence that it's time for a small-house comeback. "No longer a stopgap solution or an architect's cruel joke," the small house makes more sense than ever in a world of modest-size families, energy cutbacks, and shrinking expectations. No one needs a book on small houses to discover that size isn't everything; but, according to Dickinson, only a trained architect can transform a limited area into a space with the illusion of grandeur. In a section called "Ease the Squeeze: Rules of Thumb," Dickinson itemizes various useful techniques on how to pull it off. They include double heights, spatial variety, manipulated scale, defined axes, and single roof elements. A 25-page examination of his own small-is-beautiful house follows, and what at first comes across as little more than shameless self-aggrandizement (right down to "the extra luster provided by the latch sets") actually embodies the book's essential truth. Dickinson knows what he's talking about, and you can take notes, because he has been there and measured it. In fact, he even produces a formula for figuring "perceived" space as opposed to "nominal" space.

With a fervor absolute and a sharp eye for technical nuance, the author courses through over 30 other built dwellings, fully appreciating everything from the accommodating curves of a Turner Brooks house in Vermont or the cantilevered majesty of a "tree house" by Robert Jacklin to a short epilogue admiring the inspiring innovations on a reduced scale of Arthur Carrara.

Some of these houses are not really so small—Fernau and Hartman's Maoli House measures 3,100 square feet—but in every instance the architects faced certain restraints, either in size, site, and/or budget, and brilliantly surmounted all obstacles through ingenious design. To be sure, these houses are gems, and Dickinson sets himself to polish them mightily. And if his voice occasionally careens into obtuse jargon ("Prioritizing unlimited spatial revelry on such a scale is unprecedented in this book."), his sheer passion for the subject sweeps you right along into sharing his conviction that, in the hands of the right designer, the little house can be the house of a lifetime.

American Architecture: Innovation and Tradition, edited by David DeLong, Helen Searing, and Robert A. M. Stern. New York: Rizzoli, 1986, \$25.

Often enough, the word "symposium" conjures images of bored people saying boring things. "American Architecture: Innovation and Tradition," a symposium and exhibition held in 1983 on the occasion of the opening of the Buell Center for the Study of American Architecture at Columbia University, must have been something very different, if this collection of brilliant, sometimes ornery, and always well-informed speeches is any indication. In over 30 essays by leading practitioners, critics, and historians, the emphasis is on tradition more than innovation, which is generally accepted as a quality indigenous to all things American. Tradition, however, and especially the concept of the vernacular, is hotly debated. J. B. Jackson describes it in a way that involves experimentation by definition; Dolores Hayden thinks the word is romantically misapplied to places that were often dreamed up by commercial land speculators; and Kenneth Frampton tries to distinguish between "liberative" and "restrictive" regionalism.

Object, building, and place were the organizing themes of the symposium, with three speakers, two respondents, and a keynote lecture attached to each. The section on objects (preceded by a typically learned and emotional speech by Vincent Scully) fits into the overall discussion somewhat awkwardly. "Building," when associated with tradition, has prompted various appreciative thoughts on the skyscraper, H. H. Richardson, and Chicago, which is viewed by Donald Hoffmann as "more complex, much richer, much more romantic, and much more humane than we have been led to believe." Thomas Hines doesn't have to dig very deep to find roots for Los Angeles, while Rosemarie Bletter, in a clever rebuttal, wonders if the American Way—championing the railroad, unit production, and the pattern book—hasn't actually militated against the cultivation of regional identity.

When it comes to a sense of place, Denise Scott Brown has much to say about the colonial paradox and symbolism (reinterpreting Venturi's and her own past theories), and John Coolidge compares three public spaces of historical note. The respondents' lively arguments indicate that there is no consensus on what constitutes American tradition. Founded to explore that tradition, the Buell Center will be busy for years to come.

Pierre Chareau, by Marc Vellay and Kenneth Frampton. New York: Rizzoli, 1985, \$50.

Minor master, precursor of high-tech, French eclectic, or interior decorator, Pierre Chareau (1883-1950) defies classification, even by the relatives, former clients, professionals, and critics who have devoted considerable effort to restoring his reputation in this stunning and thorough monograph.

All there is to know about Chareau can be found here, although that is not very much. With but five houses to his name (of which only the magnificent *Maison de Verre* in Paris remains intact) and isolated pieces of furniture scattered in museums and private collections, any attempt to locate the architect and furniture designer's influence on Modernism would be doomed—a pitfall this book shrewdly avoids. Since the only other book on the man is out of print (not to mention Kenneth Frampton's essay in a back issue of *Perspecta*), this volume, organized by the grandson of the architect's favorite clients and the owners of the *Maison de Verre*, is both monumental tribute and catalogue raisonné. It begins with fond letters written by friends and colleagues who laud Chareau's inventiveness and determination to build exclusively for his clients and his own time. Chareau's fascination with "volume, its nature, its esthetic effect, and its application" is much discussed, along with his near obsession with built-in mobility, as in walls, stairs, doors, and partitions that hinge, swivel, fold, fan, and slide.

More eloquent, perhaps, than all the essays are the photographs, mostly of the *Maison de Verre*'s interior but also of many exhibition installations and furniture. Such pieces and details as "La Religieuse" (a cubist statue of a lamp with alabaster shades), a wrought-iron table with three propeller-blade surfaces, and even the circular pattern of tiles in a drum-shaped shower drain attest to Chareau's meticulous sense of form and performance.

In the most objective and acute essay, Kenneth Frampton discusses the *Maison de Verre* at length, even psychoanalyzes its male and female parts, but finally wonders if the house is really architecture or merely "a furnishing operation on a large scale." Whatever the final judgment will be on Chareau, with this book we are at least now in a position to make one.



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Mechanisms of culture: The Machine Age in America, 1918-1941

Air-King radio, 1930-33; Harold L. Van Doren and J. G. Rideout, designers.

By Carol Willis

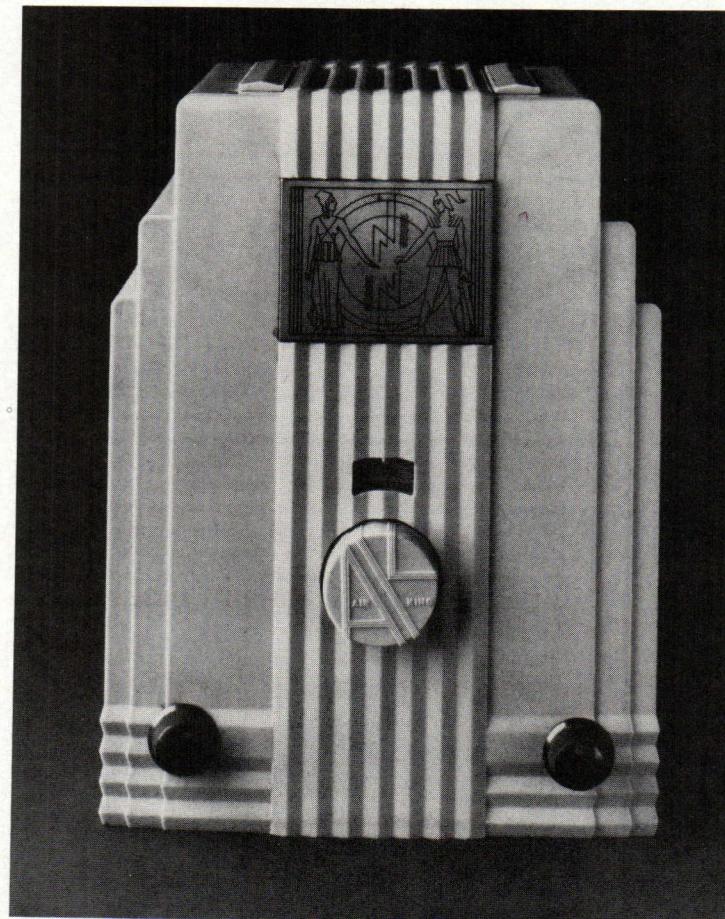
When the Japanese attacked Pearl Harbor in December 1941, nearly 30 million American households could tune in their radios to hear the breaking news. Back in November 1918, though, only a few amateur wireless operators might have overheard reports of the Armistice. Not until the autumn of 1920 was the first radio broadcast made to the public from a Pittsburgh garage. By 1922, nearly 60,000 American households had radios. The cost of an average set was still as high as \$135 in 1929, but in 1941 a small molded-plastic Philco radio was advertised for \$14.95. In the years between the wars, machines reshaped American culture, styling modernity in their own image.

The machine and its influence on art and design is the subject of "The Machine Age in America, 1918-1941," which remains on view at the Brooklyn Museum in New York through February 16 before traveling to the Carnegie Institute in Pittsburgh (April 4-June 28), the Los Angeles County Museum of Art (August 16-October 18), and the High Museum of Art in Atlanta (December 1-February 14, 1988). Conceived by Dianne Pilgrim, the curator of decorative arts at the Brooklyn Museum, and Richard Guy Wilson, a professor of architectural history at the University of Virginia, this long-awaited exhibition is at once a delight and a disappointment.

People really seem to enjoy this show. They tend to visit it in pairs or groups, and they often talk and laugh as they tour. If one listens to them, one hears stories about their mother's dishes or grandmother's linoleum ("in a museum!"). The everyday objects in these galleries, like Proustian machines, evoke memories of individual lives. People "deconstruct" the show into a thousand personal histories.

The curators intended something more high-minded. This is, after all, a tasteful museum installation, not a flea-market of material culture: objects are enshrined in glass cases and are separated as discrete works of art. The show is broad-minded, though, in its attitude toward quality, for it includes many truly tacky items and designs by anonymous, in-house company stylists. Unfortunately, by treating all artists and objects as equal, the curators ignore important distinctions between high style and popular design, upper-class clients and mass-culture consumers. For a show of this ambitious scale, their

Carol Willis is an architectural historian specializing in American architecture of the 1920s and '30s. She is the curator of "Hugh Ferriss: Metropolis," currently on view at the National Building Museum in Washington, D.C.



thesis that the machine became a "defining force" in American culture seems too simplistic.

The lobby, however, does offer a brilliant introduction. Eyes open wide as visitors enter the museum's foyer. On the right, at an angle to the ceiling hangs a bright blue and yellow monoplane; on the left, a 1935 Chrysler Airflow gleams a perfect platinum finish. Through the ornamental grilles of abstract gears, zig-zags, and spirals from the offices of the Chanin Construction Company blare the brash colors of Joseph Stella's great five-panel painting *The Voice of the City of New York, Interpreted*. Other large pieces include a mural from the WNYC broadcast studios and a radio set mounted in a disc of blue mirror-glass. Designed by Walter Dorwin Teague in 1937, it was called *Bluebird*—of happiness, no doubt, for its proud owner. This shiny array of icons makes it clear that the galleries will integrate the fine and decorative arts with industrial, interior, and product design, and that the machine will be interpreted in its broadest sense as an object, subject, process, or symbol. The lobby convinces us that there was indeed a euphoric time between the world wars aptly called the Machine Age.

But the insistence that the Machine Age was a single, coherent

period is actually the show's fatal flaw. In the exhibition as a whole and in the installation of the individual galleries, the curators have purposefully ignored chronology, mixing work of the 1920s and '30s and homogenizing the decades. While the intelligent text panels that introduce each of the sections and a superb 10-minute film presentation repeatedly emphasize the great changes that took place in American society in these years, the installation itself consistently denies the differences between the decades.

That *style* is the unacknowledged subject of this show becomes apparent in the arrangement of the main galleries. The first section, The Vertical City, evokes an air of penthouse chic. On display are Art Deco chairs and radio sets in the stepped-back shapes of New York skyscrapers, a pair of silver dancing slippers, and a mink-trimmed, gold-brocade evening coat with abstract motifs. The cubistic, faceted planes of a silver coffee service designed by Erik Magnussen, the tipsy urban images on a ceramic punch bowl by Viktor Schreckengost, and a chrome-plated cocktail shaker and glasses by Norman Bel Geddes, among other objects, make clear the importance of high-society lifestyles and prestige designers on the development of this esthetic.

The next sections—Decorative Geometry, Machine Purity, and Streamlining—deal much more directly with machine imagery and manufacture, although the categories are not neat, and some objects seem to be in the wrong section. Machine Purity, for example, contains many pieces of sleek metal furniture, but also a bulky upholstered lounge chair by Paul Frankl. The section is graced by a spectacular model for the PSFS Building in Philadelphia by Howe and Lesscze, and Richard Neutra's striking pencil perspective of the Lovell Health House. The Streamlining section includes prototype models for a teardrop-shaped motor car and an ocean liner by Norman Bel Geddes, as well as streamlined household appliances like the faithful Electrolux vacuum cleaner and the 1941 Petitpoint iron with airflow-style wings, designed to swish through daily drudgery.

Yet the socialites who danced in the silver slippers or the golden evening wrap surely never used an iron—or, if they did, it was because the Depression dramatically altered their circumstances. They are separated by both time and class from the happy housewife and her Petitpoint. Of course, one couldn't expect the curators to state this directly, but they effectively discourage any such observations by blending work of different decades and by grouping progressive designs by taste-makers like Bel Geddes and Teague with later, mass-market copies.

In the first two sections, The Vertical City and Decorative Geometry, most of the objects date from the 1920s, while in the last two, the majority are from the 1930s. Had these pieces simply been arranged chronologically, they would have revealed significant changes over the period. Designs of the '20s are more urban and upper-class, feature rich materials and traditional craftsmanship, and reflect influences absorbed from Parisian art, either avant-garde or Moderne. Designs of the '30s, by contrast, are metal, middle-class, and machine-made—or inspired by machines, with sleek lines and an image of speed or economy.

The democratization of both machines and the machine esthetic during the 1930s through advertising, marketing, and mass consumption ought to have been the clear message of the show's next sections, which are called Domesticating the Machine, Technology and New Uses of Materials, and Selling the Machine. As before, however, the installation confuses rather than clarifies these issues. The rich visual material and the vital role of advertising art—as well as its complex relationship to

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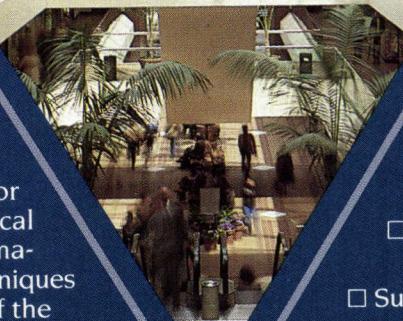


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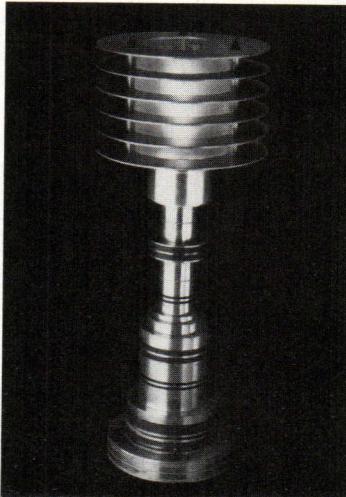
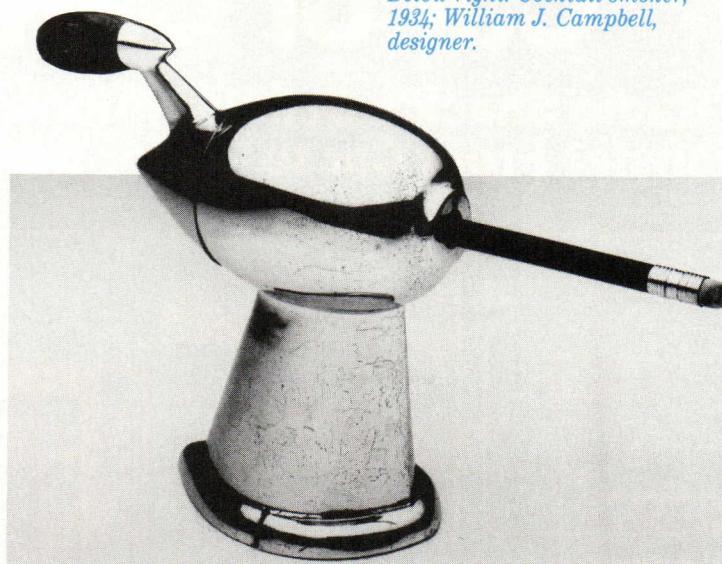
Top: Pencil sharpener, 1933; Raymond Loewy, designer.
Below left: Table lamp, c. 1935; designer unknown.
Below right: Cocktail smoker, 1934; William J. Campbell, designer.

the avant-garde—is unaccountably underplayed. The curators shrink from the subject of commercialism, even though (it is worth noting in this day and age) this show has no corporate underwriter, but is funded by the National Endowment for the Humanities and the J. M. Kaplan Fund.

Time marches on, but the show doesn't. A section dubbed The Machine in the Landscape offers an interlude of paintings, photographs, and architectural renderings dating from 1920 through 1941. Although the paintings and drawings in the exhibition as a whole are generally uninspiring, this room contains most of the show's best, including industrial landscapes by Demuth, Sheeler, O'Keeffe, and Ferriss. Organized around specific themes—World's Fairs, Visions of the Future, and The Menace of the Machine—the penultimate sections present the same mélange of fine and applied arts as the previous rooms. The final section, dubbed Emergence of a New Age Art, introduces biomorphic designs under the rationale of "humanizing the machine." These last sections seem to contradict both the curators' basic interpretation of the Machine Age as a period unified by an optimistic attitude toward technology and their emphasis on a mechanomorphic style. Does the period really end in the early '40s, as they hint, with the atomic bomb? That is the oft-cited cliché, but the popular belief in the beneficence of technology actually continued for at least two decades. What, moreover, is the "New Age Art"—a new age or a new style? Does post-war art and design reflect disillusionment by rejecting the machine? No, it doesn't.

The Machine Age is a valid concept for the period between the wars; indeed, it was the term favored by many writers of the period. Historians conventionally treat the 1920s and 1930s as contrasting decades—the Roaring Twenties and Coolidge Prosperity versus the Great Depression and the New Deal. In stressing the continuities over these years, Pilgrim and Wilson have revived a valuable model for interpreting American art and culture. But after they establish their thesis in the lobby, the rest of the rooms only reiterate it and reiterate it. The idea of the Machine Age should have been the given as the starting point for an examination of the machine as a mechanism of stylistic and social change.

How might the show have been organized to develop a more complex text? As already noted, an installation more attentive to chronology would have pointed up stylistic differences between the



'20s and '30s and demonstrated how the machine esthetic filtered down from upper-class, avant-garde artists to middle-class consumers.

The important role of industrial designers in defining and popularizing the machine esthetic should have been highlighted in a section devoted to that profession, which came to the fore in the late 1920s. Such major figures as Bel Geddes, Teague, Raymond Loewy, Henry Dreyfuss, and Russel Wright are represented in the show, and their influence can be seen in the wide range of their commissions: Bel Geddes's designs, for example include a siphon, a bedroom vanity, an automobile, and an ocean liner; Dreyfuss's include plumbing fixtures, cocktail glasses, a pitcher, and a refrigerator; Loewy's, a pencil sharpener and a locomotive. However, because the curators concentrate so much on establishing the impersonal force of the machine, they underplay the importance of forceful personalities. The influence of these leading industrial designers and of interior designers like Paul Frankl, Kem Weber, and Gilbert Rohde is evident in the products developed by corporate design departments during the 1930s.

Other rather obvious themes could be developed: a section on transportation, for example, might

embrace designs for and images of cars, trains, planes, and ships, as well as bridges, highways, filling stations, bus terminals, and airports. It might include Sheeler's photograph "Drive Wheels," Stieglitz's image of O'Keeffe's hand on a car wheel, Walker Evans's photo of an auto dump, advertisements, and the Chrysler and General Motors pavilions at the world's fairs. Another section might take electricity as a theme and gather together electrical appliances, clocks, radios, lamps, the Tesla Coil model, Ralph Steiner's photograph of power switches, Margaret Bourke-White's photo of generators at Niagara Falls, Hugh Ferriss's renderings of the great hydroelectric dams of the TVA, and government posters promoting rural electrification. An advantage of these themes over, say, Machine Purity or The Machine in the Landscape, is that in their eclecticism they describe, in a less categorical and more richly associative way, the presence of machines in the landscape of people's everyday lives, as well as in the artistic imagination.

Photographs fairly leap off every wall as the great art form of the Machine Age, and there should have been a gallery devoted exclusively to photography. This single medium brings into focus many of the major

issues of the period—the relation of man, machine, art, and money. The photographs that do appear are of stunning quality, be they the fine-art prints of Stieglitz, Strand, and Steiner; the work commissioned by industry or advertising agencies from artist-photographers like Steichen and Sheeler; the photo-journalism of Margaret Bourke-White; WPA documentary photos of Berenice Abbott; or the work of commercial professionals like Thurman Rotan. In these pictures machines appear in abstraction and in precisionist detail, as subject and as symbol, as art and as commerce.

Two photographs hung side by side in one of the galleries demonstrate the expressive power of the medium and the potential for exhibitions to inspire eloquent dialogues between images. A portrait by Ralph Steiner of Louis Lozowick includes only his head and shoulders in the lower foreground, while an overwhelming background of giant gears suggests both the artist's characteristic imagery and the whirling wheels of his brain. In "Powerhouse Mechanic" by Lewis Hine, an anonymous worker, framed within the great circular form of the engine he services, bows his head and presses his muscle against the dynamo.

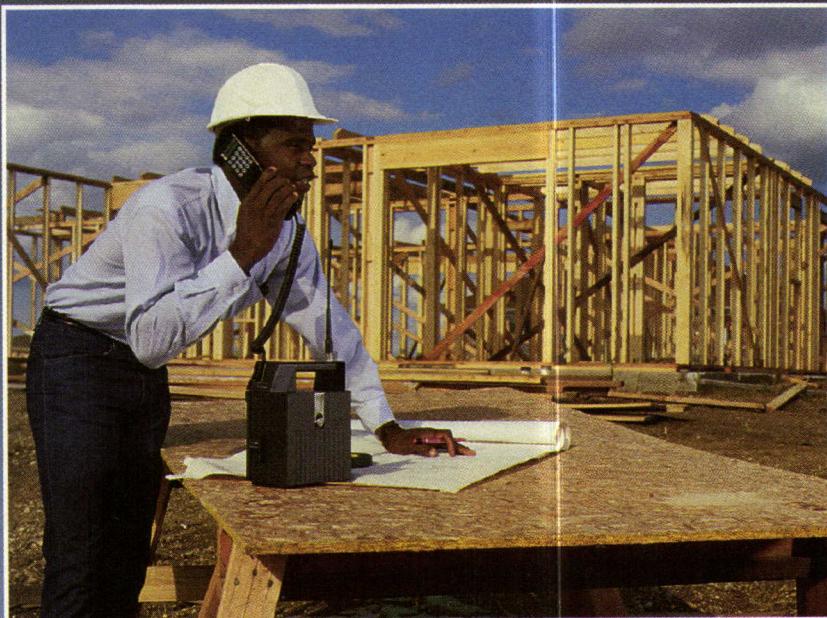
These contrasting visions of the relation of man and machine represent two of the few human figures in the exhibition and therefore remind us of man's absence. For writers of the period, the term "Machine Age" carried no positive or negative connotation: it simply described the new condition of modern life. Some social theorists regarded their increasingly mechanized society with anxiety, others with confidence, but for all, the central concern was not the machine, but man and his place in the changing world.

The central concern of this show is style—or rather styles, because art and design in the Machine Age had many influences and expressions. As a visual encyclopedia of these tendencies, the exhibition is excellent, but it fails to develop a text that explores the broader meaning of this work. For the artists of the Machine Age, modernism was the message: the machine was only the metaphor.

A well-illustrated, 376-page catalog has been published that aspires to be both a complement to the exhibition and a thorough history of the period. Written by Pilgrim, Wilson, and Dickran Tashjian, the chapters are useful surveys of their subjects, but they do not offer much in the way of new material or interpretive theories. The objections to the faults of the show unfortunately also hold for the catalog.

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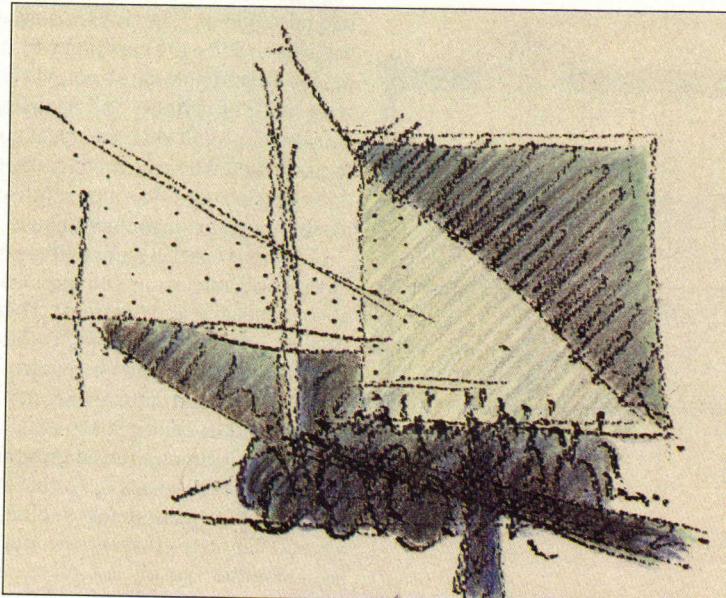
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Acts of faith

From time to time there is news of another painted Madonna that weeps real tears, another tattered scrap of cloth said to bear the traces of a long-dead saint. Whether or not the reported miracle turns out to be scientifically verifiable is, in a sense, irrelevant to its authenticity as a religious emblem. The urge to grasp the intangible is a perennial impulse, even though the longed-for connection may not require the physical presence of a wonder-working talisman. Theological symbols can run the gamut from figurative imagery to abstraction, but if they are to represent something more than historical relics for the iconographer to catalog, the faithful must continually invest them with fresh meaning. As a durable testament to shared beliefs passed on through generations, architecture can be one of the supreme religious symbols. For the same reason, however, it can also commemorate the vanity of ecclesiastical bombast, the triteness of mechanical ritual, and the emptiness of bogus fellowship.

Familiar architectural formulas may offer superficial reassurance in changing times, but fail to address the pressing concerns of contemporary life. Radical novelty may generate drama, but obscure the solid background of tradition. Liturgical reform may specify new settings and furniture for common worship, but leave their esthetic realization to individual choice. There are no quantifiable guidelines for success in this building type, no square-footage standards for meditative space, no acoustic formulas for hearing other voices. The architect of religious structures need not be conventionally religious himself, but must believe in the power of his art to nurture the faith of others.

The three projects in this portfolio illuminate very different ways of adapting venerable archetypes to present needs, of addressing the sacred *and* the profane. Grace Place, a Chicago church and community center which might be nicknamed the Loft of the Transfiguration, literally and metaphorically embodies the discovery of sanctity amid the mundane framework of urban life. A demountable tabernacle, or sukkah, installed on a San Francisco rooftop during the Jewish harvest festival of Sukkot is a three-dimensional celebration of natural and spiritual renewal, and an offering from one community to an entire city. More problematic, perhaps, because it dedicates a fundamentally religious building form to quasi-secular use, is a hotel wedding chapel in Japan that glorifies the mystic force of architecture pure and simple. *Douglas Brenner*



Chapel on Mt. Rokko, by Tadao Ando

Grace Place: Grace Episcopal Church and Community Center
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Blessing in disguise



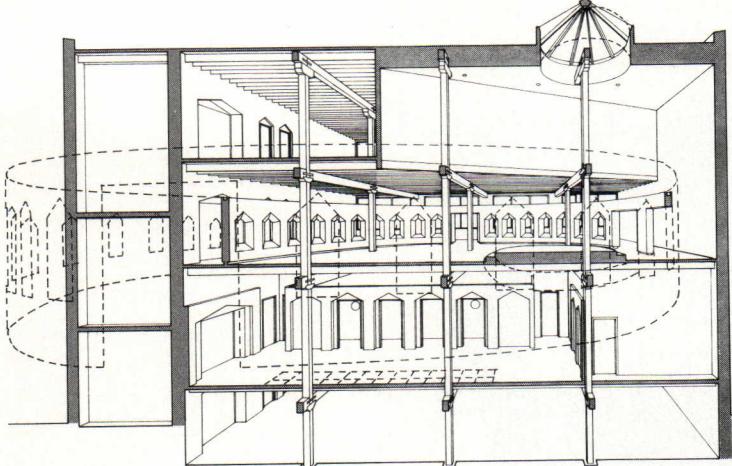
© Timothy Hursley/The Arkansas Office photos

Chicago's Grace Episcopal Church has moved house five times during the last 130 years. Like the heroine of a Victorian novel, Grace rose from humble origins in a "little wooden box" to wealth, prestige, and a series of ever-grander addresses, only to be abandoned by fashionable society, lose her worldly finery, and find herself in straitened circumstances in the Loop. There is, of course, a happy, if anachronistic, ending, which leaves Grace among the yuppies, getting her act together in a redone loft on gentrified Printers Row.

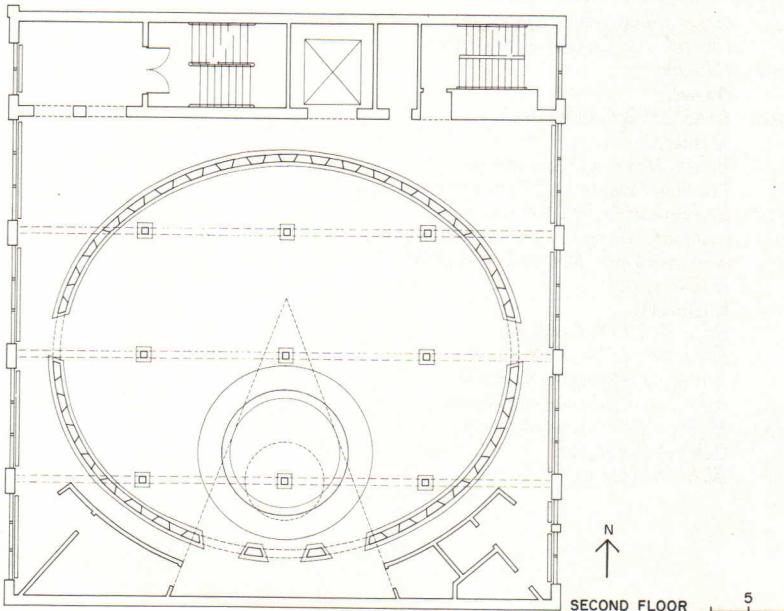
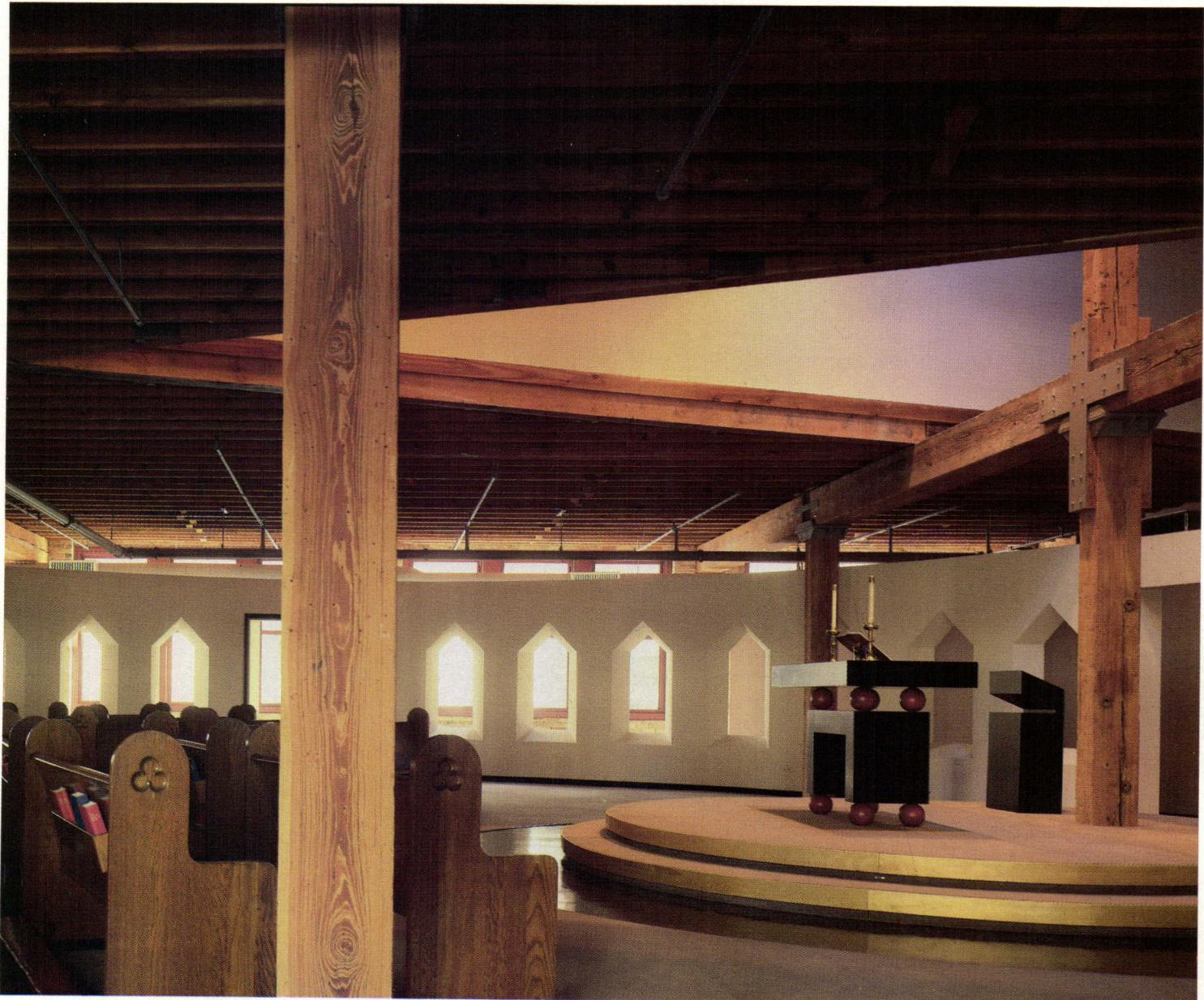
It could be a tale of almost any American city, although Grace Episcopal has been more resourceful than many urban churches in adapting to demographic and economic change. In the 1960s, having rededicated its mission to serving the downtown business community, Grace found quarters in a Loop office building. More recently, sensing the need for a ministry among the new residential population of the renovated South Loop, the church acquired its present site, a former printing plant on South Dearborn Street. Owing to zoning codes, the building is officially a community center; hence its coy, unchurchly name, Grace Place. The unconventional locale appealed to Grace's rector, the Reverend William Casady, as a tangible gesture of solidarity with neighbors who live and work in similar surroundings. The unorthodoxy seemed appropriate in other ways, as well. "We lost Sunday morning a long time ago," Casady observed recently. "Urban lifestyles today just don't fit into what the parish church used to be. Most of the people around here leave town Friday night and we're still trying to discover how to catch them during the week." So far the most successful attractions have been concerts, service-group meetings—and architecture. "People come in for some activity and then come back," says Casady. "The building does that. People are spellbound."

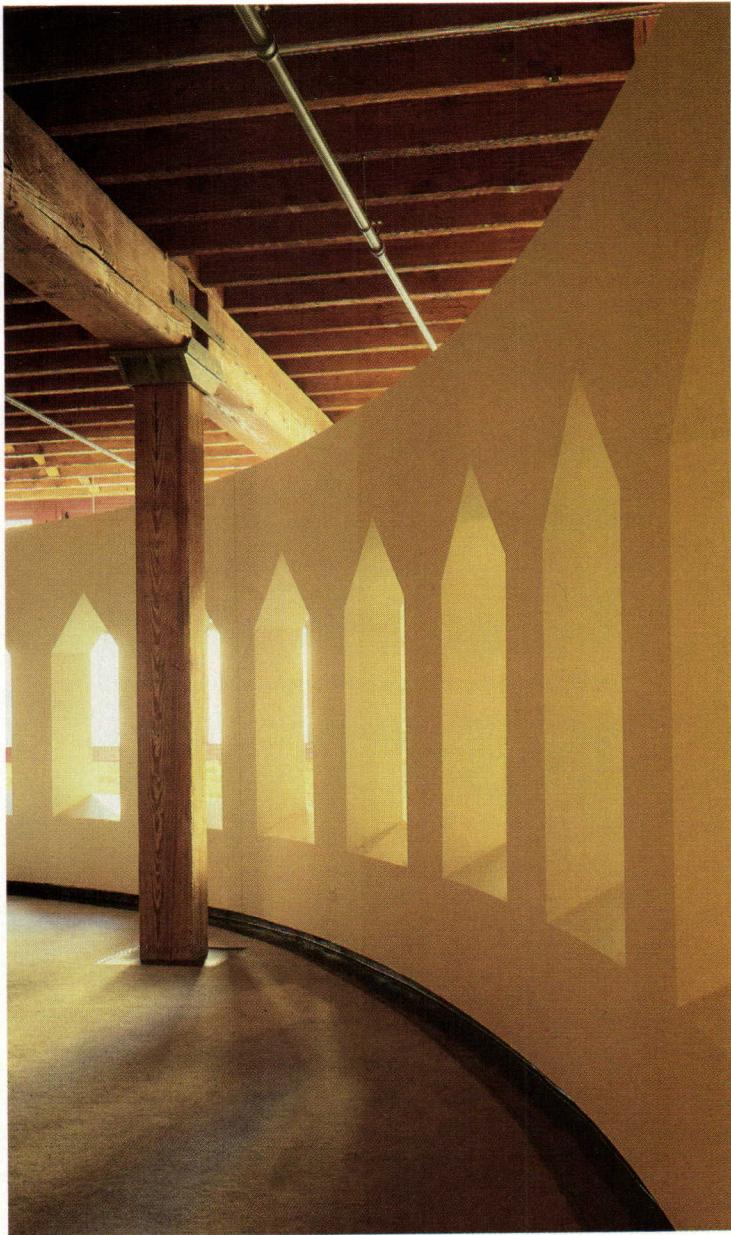
Architects Booth/Hansen & Associates first approached the renovation skeptically, despite a long-term commitment to Printers Row. Laurence Booth was a pioneer in the area, and the firm's own office is just up the street from Grace. Still, it took a leap of faith to envision a spiritual sanctum where printers used to toil. The possible pitfalls were obvious: too slick a remodeling might suggest the secular chic of trendy flats and showrooms; religious trappings too obviously "laid-on" would at best only proclaim the impropriety of the given setting, and at worst seem downright false. Booth/Hansen tidied up the exterior and replaced damaged windows, wisely leaving the bulk of the street facade intact. Inside, however, notwithstanding the soundness of turn-of-the-century structure, simple discretion was clearly not enough. Even after shabby partitions and tin ceilings had been ripped down, ink-stained floors sandblasted clean, and posts and beams revealed, the basic interior might have been just another stack of lofts awaiting sofas and potted ficus. The transformation began with the architect's brave decision to raise the sanctuary to the second story—denying easy access direct from the street, yet immediately endowing the church with an air of mystery and meditative retreat. Happily, the ground-level storefront provided an ideal location for a multiuse parish hall, visible to passersby who might be tempted to drop in (*unhappily*, the niches and checkerboard flooring installed here suggest the elevator-lobby décor of a smart apartment-house—lower photo left).

If openness is the signal virtue of Booth/Hansen's intervention downstairs, enclosure and light are transcendent powers on the floor above (opposite and overleaf). There, standing free of its brick shell, a new oval screen wall, painted white, bounds the space for worship like an ethereal Stonehenge in a hewn-timber forest. Awareness of the old building's solid armature only intensifies the magical luminosity of the aureole within. Sunlight streams onto the altar from a toplit well, and filters gently among the congregation through triangular-headed arcades. Reminiscence of Gothic ambulatories, transepts, and other traditional forms is almost subliminal. The one overtly religious symbol, a metal fishplate cross, is essential reinforcement—a serendipitous lesson Father Casady is fond of pointing out.



while implying an infinite upward vista. Booth/Hansen strove for allusive rather than literal symbolism, regarding the entire project as a parable for the immanence of the sacred in the mundane. At the same time, the designers could not resist elongating a necessary metal brace to emphasize its Roman-cross shape (its technical name, "fishplate," aptly evokes another Christian emblem).





Except for diagonal beams inserted when the skylight was cut through, all woodwork is original. New curved walls are lath and plaster, crisply edged and painted white to stand out against the worn textures and darker hues of their surroundings. Splayed window embrasures enhance the inward-looking aspect of the sanctuary. The ball-footed altar, mounted on a demountable dais, was custom-made for this space. Pews and other furniture come from earlier churches; the marble font (opposite right) survives from a chapel designed by Bertram Goodhue for a Grace Church chapel destroyed by fire in 1915. Fluorescent uplights atop the ellipse and track fixtures between the joists complement natural illumination and permit variable effects for services or concerts.

Grace Place: Grace Episcopal Church and Community Center Chicago

Owner:

Grace Episcopal Church

Architects:

Booth/Hansen & Associates—Laurence Booth and Paul Hansen, principals; Laura Weyrauch, associate; Gary Beyerl, Fritz Gale, Joan Soranno, Richard Merrifield, assistants

Engineers:

Beer, Gorski & Graff, Ltd. (structural); Westside Mechanical, Inc. (hvac); Leonard V. Stutz & Son, Inc. (plumbing); Nixon Electric Co., Inc. (electrical)

General contractor:

W. B. Olson, Inc.



Raising the harvest home

Sukkah
The Jewish Community Museum
San Francisco
Stanley Saitowitz, Architect



©Christopher Irion photos

"Ye shall dwell in booths for seven days . . . that your generations may know that I made the Children of Israel to dwell in booths, when I brought them out of the land of Egypt . . ." (Leviticus 23: 39-43). Down the millenia since the Exodus, Jews have followed this Biblical injunction by erecting temporary shelters in which to celebrate the week-long autumn festival of Sukkot (the inspiration, it is said, for the original Thanksgiving feast of America's pilgrim fathers). Customarily adorned with fruits and vegetables of the harvest season, and disassembled at the end of the holiday, the outdoor booth, or sukkah, that commemorates the tabernacles of the ancient wanderers may equally well be a rudimentary latticework frame raised above a family patio or an elegantly crafted pavilion on the grounds of a synagogue. Simple or elaborate, every sukkah embodies an archetypal dwelling in the wilderness, a symbolic role that takes on heightened meaning in the context of a modern American city. This hopeful intertwining of past and present binds the conceptual structure of architect Stanley Saitowitz's design for a sukkah on the roof of San Francisco's Jewish Community Federation Building. Barely taller than the reach of a child astride a grown-up's shoulders, the transplanted Biblical hut nonetheless makes its singular mark against a background of downtown skyscrapers and the Bay Bridge. Seen from the freeway before holiday decorations have been applied (above), the bare frame of the sukkah could be another piece of abstract sculpture on the corporate skyline; only when organic ornament is in place for Sukkot (overleaf) does the skeletal penthouse unmistakably come alive as a tabernacle for ancestral memory and faith in continuing rebirth.

Saitowitz's project was the winning entry in an invitational sukkah competition co-sponsored by the Jewish Community Museum and Skidmore, Owings & Merrill, architects of the Federation Building, which houses the three-year-old museum. Submissions from Bay Area artists and architects were judged by rabbis William Z. Dalin and Brian

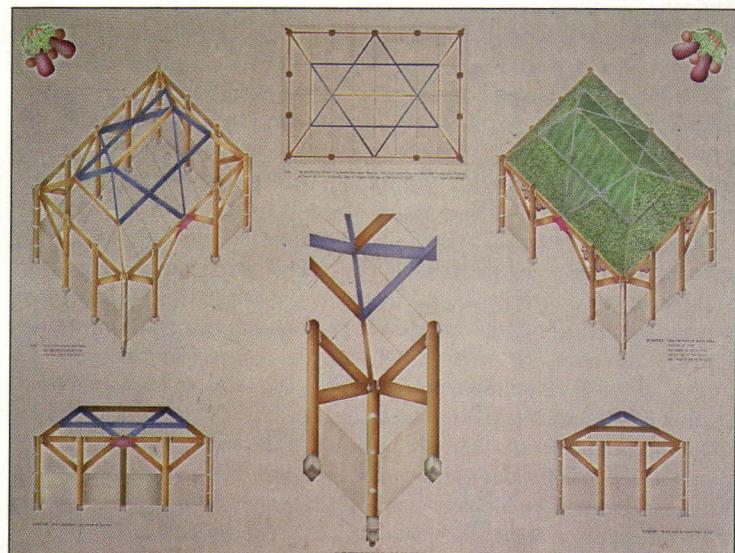
Lurie; Helaine Fortgang, director of the museum; architecture critics Barbara Goldstein and Alan Temko; and Marc Goldstein, a partner at S. O. M. The jury necessarily gave theological concerns the same weight as structural and esthetic criteria, partly because the specifics of sukkah building have been the subject of detailed analysis by venerable Jewish commentators, but also because the museum wanted a space where visitors might touch the traditions of an entire people, rather than admire the unique imaginings of a single artist.

As a boy in South Africa, Stanley Saitowitz sang Hebrew songs at Sukkot in the shade of woven leaves, ate sponge cake with wine, and shook the ceremonial *lulaf* (a palm branch bound with twigs) and *etrog* (citron), just as San Franciscans do now in his sukkah by the bay. Like the architect's memories of holidays past, Saitowitz's design ties a specific locale to universal themes of Jewish experience. Formal echoes of diagonal bridge trusses and the roof-line and triangular logo of a neighboring YMCA subtly, even playfully, relate the pavilion to an improbable contemporary setting, while references to religious texts and iconography ground the sukkah in a deeper cultural context. The openwork timber frame conforms to the 5,000-year-old idea of an impermanent structure roofed with tree branches, reeds, rushes, or sticks through which one can see the stars. Though Saitowitz was true to the letter of rabbinic law, he used geometry and color to amplify the metaphoric resonance of time-honored conventions. Posts, joists, and bracing that recall the supports of a primitive shelter also imply the trunks and limbs of schematic trees, which meet overhead to trace a star of David: the tree of life sustains the children of Israel. Every year the architect composes a new scheme of "vegetable orders" which young friends of the museum hang below the roof covering of palm and eucalyptus. Now dismantled and back in storage, the sukkah will reappear when it is time again to "take the fruit of goodly trees . . . and rejoice before the Lord."





Even though it is, by definition, impermanent, the sukkah must withstand wind and rain during its annual exposure on a San Francisco rooftop. Saitowitz incorporated four existing lamp posts as structural anchors, to which 8-in.-diameter columns are bound with metal straps. Screws connect joist hangers and sheet-metal brackets for simple assembly and dismantling of the timber frame, which is hoisted onto the roof deck. Canvas panels lashed to the uprights lend shelter from the



breeze (a special concern when Sabbath candles are alight inside) and allude to the tents of nomadic forebears. Ropes stretched over the roof star carry the sechach, or canopy of foliage. As many as 20 visitors can fit around the central table at holiday parties and study groups. Hailing the sukkah as "a living symbol of what our tradition is about," Helaine Fortgang of the Jewish Community Museum explains the building's festive purpose: "I want to engage people so that they say, 'This is wonderful. Why don't we in a simpler way build a sukkah at home?'"

Sukkah
The Jewish Community Museum
San Francisco
Architect:
Stanley Saitowitz, Architect—
Stanley Saitowitz, design architect;
Daniel Luis, Frank Wang, assistants
Construction:
Durney Brothers—Max Durney



Chapel on Mt. Rokko
Kobe, Japan
Tadao Ando, Architect &
Associates

An exchange of vows



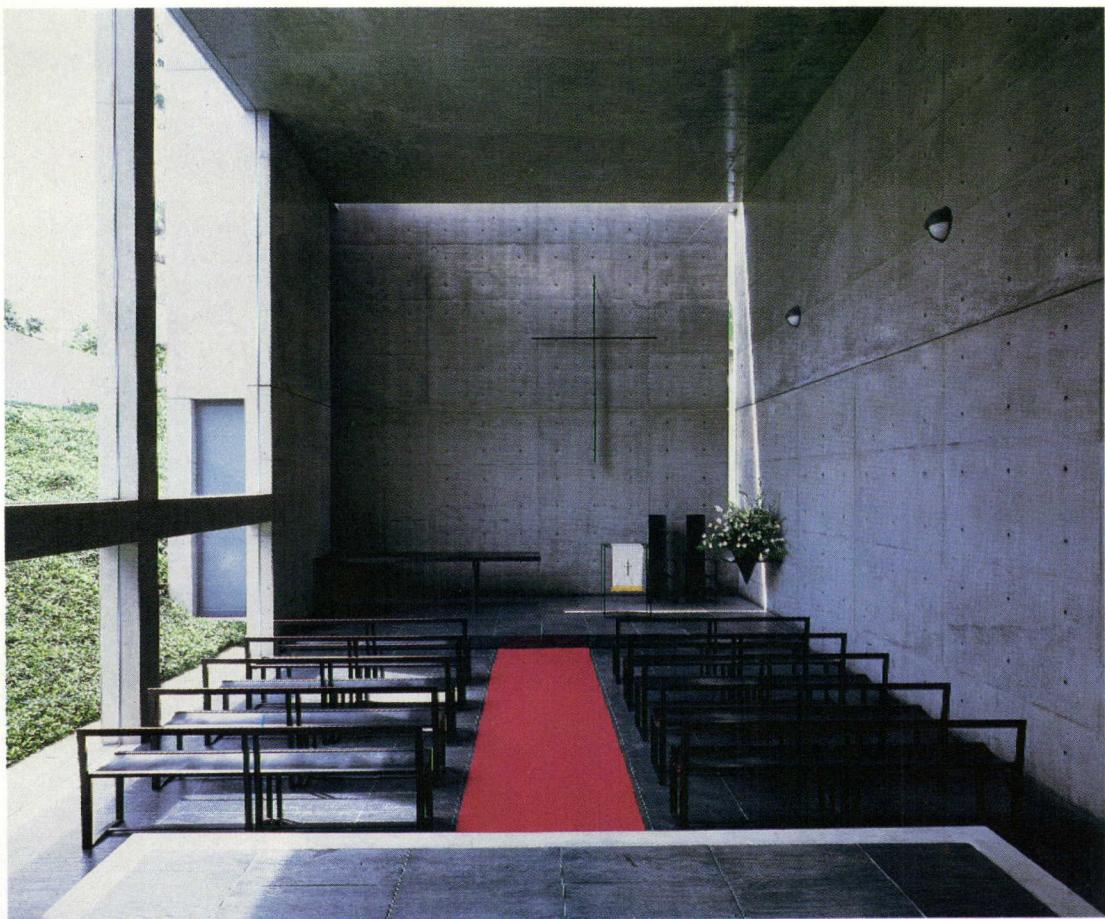
Satoru Mishima photos

Buddhism and Shinto profoundly govern the religious and philosophical world view of most Japanese, an outlook unchanged by sporadic waves of conversion to Christianity and popular interest in Western cults. A few Christian symbols figure nonetheless among the host of alien ways assimilated into everyday life in Japan, though their borrowed meaning rarely rings any truer than the commercial jollity of a department store Santa Claus on the Ginza. One of the more curious appropriations is the fashion for non-Christian Japanese couples to be married in Christian churches. So widespread is this vogue that many hotels, the usual venues for wedding receptions, have built churches next to their banquet facilities. The idea conjures up images of Las Vegas-style vulgarity, yet the actuality can be surprisingly dignified and even affecting. An unusually distinguished case in point is a non-denominational Christian chapel designed by Tadao Ando for the Rokko Oriental Hotel, on Mt. Rokko near Kobe. The hotel commissioned the 2,400-square-foot annex primarily for "bridal business," and arranged with Kobe clergymen to conduct special "ecumenical" nuptials for non-Christians, or preside over conventional rites when appropriate. No other services take place there, although hotel guests are welcome to use the chapel for private devotions.

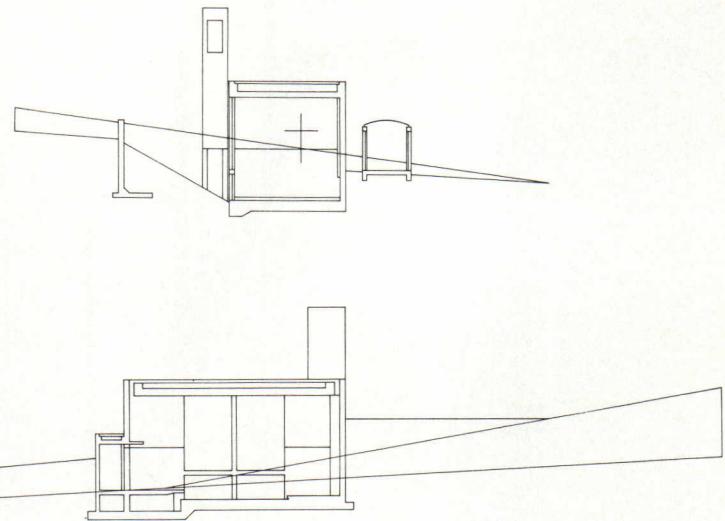
Ando's architecture has always been somewhat ecumenical in intent, uniting Japanese tradition and modern technology in elementary, often starkly abstract, relationships of geometry, space, and light. Like his master, Louis Kahn, Ando strives for palpable texture that touches on universal essences. It seems only fitting, given the eclectic cultural origins of the Mt. Rokko chapel, that Ando should have wandered even farther afield than usual for esthetic inspiration. His professed model is the Romanesque monastery of Sénanque, in the countryside east of Avignon. Ando describes his memories of a visit there in typically Kahnian terms: "The building is enfolded by a valley, and it is almost as if the site had demanded the monastery The very air of the dark interior space, enclosed simply by roughly cut stone, seems viscous. This is a sacred space forgotten by modern architecture And what makes the place sacred is the light—the limited light introduced by the small panels of stained glass set in the thick walls. In this space one can discover how to control light rigorously. The monastery at Sénanque has become the archetypal church in my mind." The specifics of the projected chapel in Japan inevitably deviated from this archetype: the site, a steep mountainside, overlooked an industrial metropolis; the building materials of choice were steel and concrete; and the program called for something quite different from the secluded retreat of a religious order sworn to chastity.

Undaunted by present contingency, Ando has clung to his own ideal. Within the limited area available in the precipitous terrain, he separates the chapel as far as possible from the hotel, using physical distance to impart a sense of contemplative removal; garden walls and an enclosed arcade further define an independent precinct. As the primary downhill approach route from the hotel, the arcade forms a transition between profane and sacred, or at least a sort of architectural rite of passage between nature and art. Frosted glass walls and vaults transfigure foliage and sky into fleeting patterns of colored light and shadow across a man-made grid. The utterly simple, boxlike mass of the chapel itself could almost be an ideogram for church and campanile translated into three-dimensional reality. Ando sustains this conceptual purity by selectively insulating the interior of the church from the landscape. The building turns its back on the spectacular view of Kobe and Osaka Bay, and the only window wider than a slit gives onto a shallow embankment and a wall. The merest glimpse of life or color—a patch of greenery, a sunbeam warming naked concrete, a bridal bouquet—seems a minor miracle inside the austere, coolly introverted chamber. Any wedding here, one feels, must seem a solemn mystic ritual, transcending boundaries of East and West or religious creed. The steel cross above the altar almost looks superfluous.





Beyond a steel door recessed in an open bay of the processional arcade, an elbow turn forms a vestigial nartheex leading to a raised platform at the rear of the nave (center photo this page). The main interior volume is a double cube of exposed concrete paved with rough Japanese slate. Ando's stated aim here was "to purify space by reducing architectural materials to naked matter." The manipulation of light to articulate a masonry enclosure, animate a simple space, and infuse a sense of directional movement bespeaks the architect's close study of Cistercian monastic churches. The tightly framed view of a walled berm, on the other hand, evokes the Japanese tradition of confined gardens implying larger landscapes (at left in top and bottom photos). Custom-made steel furniture—ranging from pews to lectern and cable-hung cross—conforms to Ando's severe esthetic. Cantilevered jardinières hold bouquets.



**Chapel on Mt. Rokko
Kobe, Japan**
Owner:
Rokko Oriental Hotel
Architect:
Tadao Ando, Architect &
Associates—Tadao Ando, principal
Engineer:
Ascoral Structural Institute
General contractor:
Ohbayashi Corporation, Ltd.

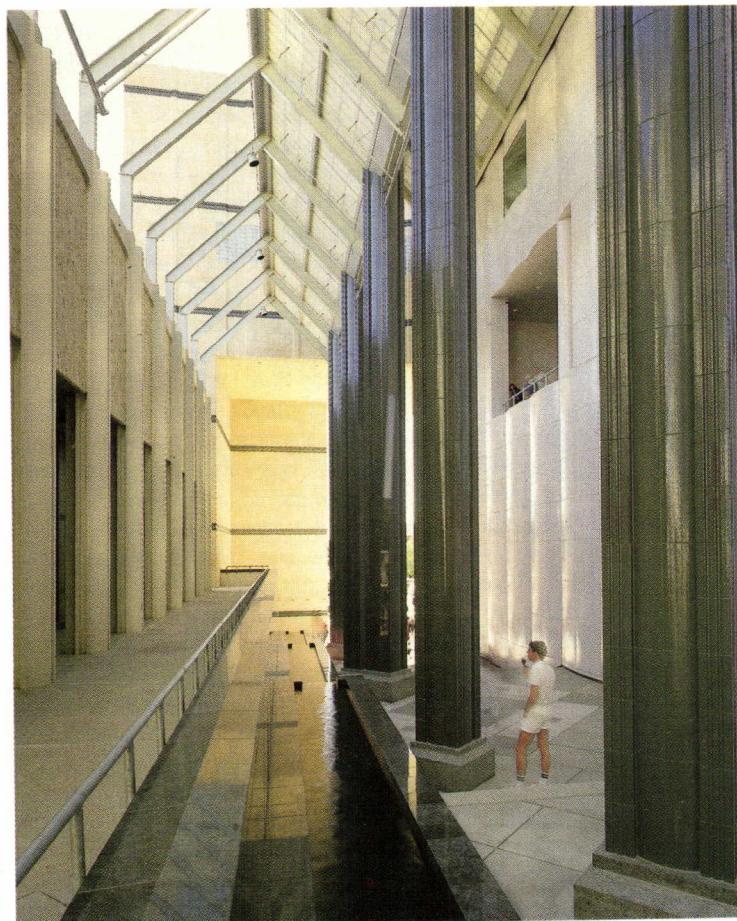


A gathering of fragments



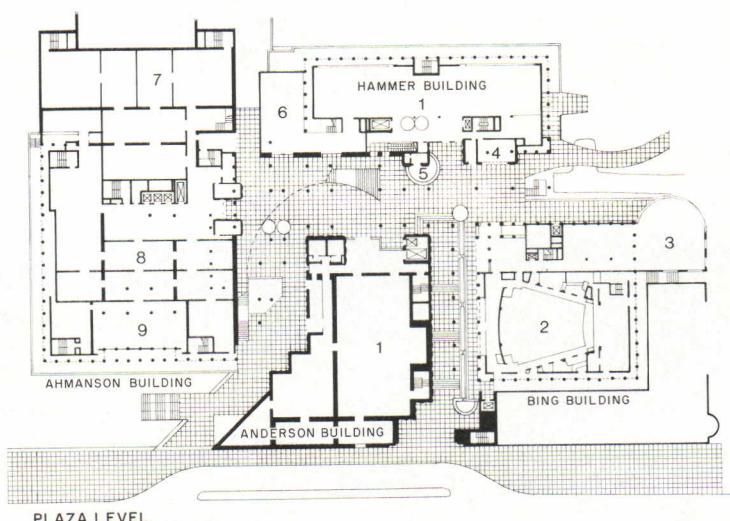
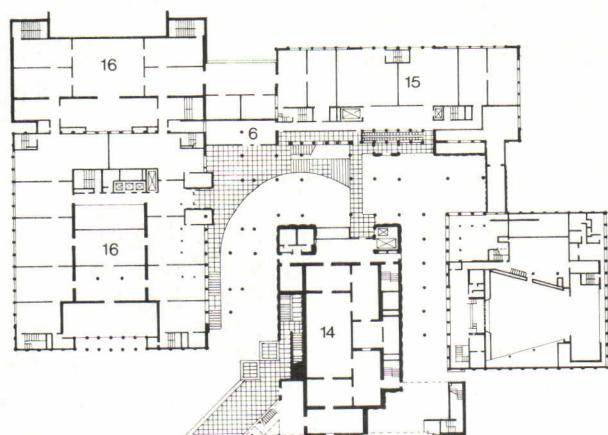
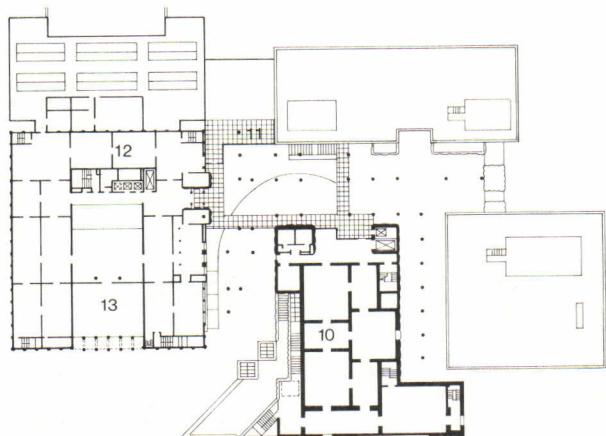
Robert O. Anderson Building
Los Angeles County
Museum of Art
Hardy Holzman Pfeiffer
Associates, Architects





The remaining segments of the original plaza between the Anderson addition and the Pereira buildings have been transformed into a plastic sandwich-panel-covered ceremonial staircase and courtyard (plans). Flanked by towering, terra-cotta-clad columns, a donor-inscribed granite fountain (middle left), and the "pillowed" wall of the new wing (bottom left), the grand entrance axis imparts the essence of LACMA's new

monumentality (opposite page). Its dramatic procession from Wilshire Boulevard past the Bing and Hammer Buildings ends in the Times Mirror Central Court (top left), a 40,000-square-foot space intended to orient the public to the reconfigured museum. Walkways elevated over the courtyard connect the Anderson Building to the collections on the upper floors of the older structures (top left and plans).



1. Changing exhibitions
2. Theater
3. Restaurant
4. Check-in
5. Information
6. Museum shop
7. Decorative arts
8. American art
9. Pre-Columbian art
10. Pre-1945 Modern art
11. Members' lounge
12. Indian art
13. Far Eastern art
14. Post-1945 Modern art
15. European paintings and Hammer collection
16. European art





"I didn't want the art to be subservient to the architecture," maintains LACMA's director, Earl "Rusty" Powell III, who held up the galleries of his former employer, the National Gallery in Washington, to HHPA as models for the Anderson Building's interiors. The architects responded to his mandate for Beaux-Arts grandeur by organizing the upper two floors of the addition into enfilades of well-proportioned rooms which house the museum's permanent collection of 20th-century European and American art. Each of the three levels is varied through different finishes and changes in natural and artificial lighting to convey a separate character. The most traditional rooms are located on the top floor, bathed in daylight from roof skylights and decorated with maple-bordered carpets and ornamental moldings (middle left). At the western corner of this level, a triangular volume lined in glass block presents a sunny spot for sculpture, made even brighter by video artist Nam June Paik's wall of TV monitors entitled "Video Flag z" (top left). Placed within its double-height space is a steep flight of marble steps that descends to the floor below. The clear sense of procession throughout the building is strengthened by views out to sprawling Los Angeles through windows on the south (middle left) and balconies on the north (bottom left) that lead to the walkways connecting the Anderson Building to the Hammer Building. On the third level, a recessed balcony overlooking the grand entrance axis provides a showcase for sculptor John Mason's ceramic "Red X" and Robert Arneson's bronze and ceramic "Way West of Athens" (opposite page).

**Robert O. Anderson Building
The Los Angeles County
Museum of Art
Los Angeles, California**

Architects:

Hardy Holzman Pfeiffer
Associates—Norman Pfeiffer, partner-in-charge; Victor Gong, administrative partner; Harris Feinn, Stephen Johnson, project managers; Pam Loeffelman, project architect; Neil Dixon, project representative; Donald Billinkoff, David Gross, David Hoggatt, Candace Renfro, Lindsay Reeds, Charles Muse, Jonathan Strauss, Jack Martin, Mark Tannin, Evan Carzis, Mike McGlone, Susan Olroyd, Dan Lincoln, design team; Edson Owen, specifications; Hilda Lowenberg, Setrak Ohannessian, construction team; Darlene Fridstein, Robin Kunz, interiors

Engineers:

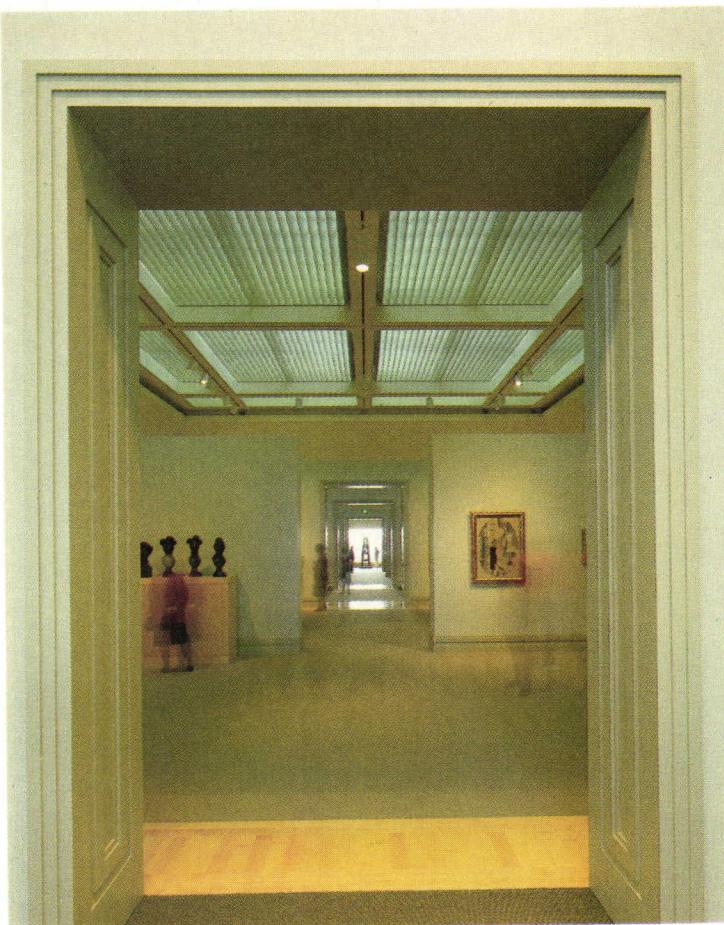
S.B. Barnes and Associates (structural); Hayakawa Associates (mechanical/electrical); Rogoway/Borkovetz Associates (civil)

Consultants:

Project Control Inc. (owner's representative); Jules Fisher/Paul Marantz (lighting); Leroy Crandall and Associates (geotechnical); Lerch Bates and Associates (elevators); Honeywell, Inc. (security); Hanna/Olin, Ltd. (landscape); Peter George Associates (acoustics); Carbone/Smolan (graphics)

General contractor:

Turner Construction Company

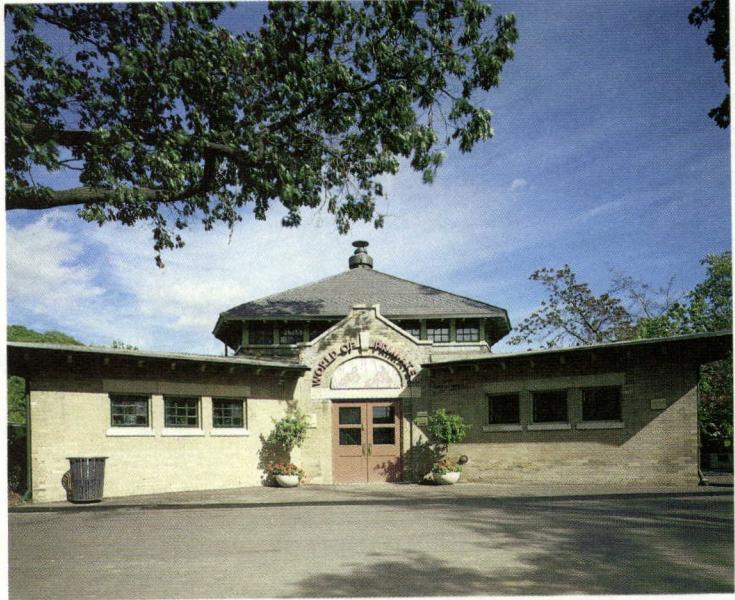




World of Primates
Philadelphia Zoo
Philadelphia, Pennsylvania
Venturi, Rauch and Scott Brown,
Architects

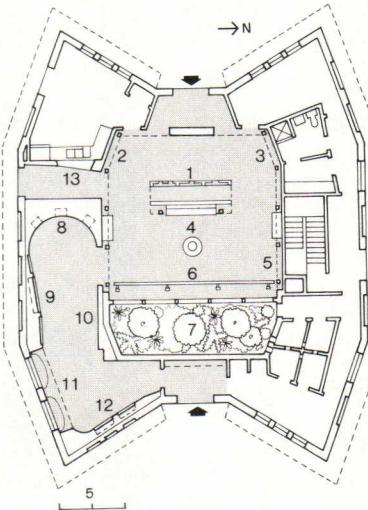
Animal house

Matt Wargo photos



Discovery house

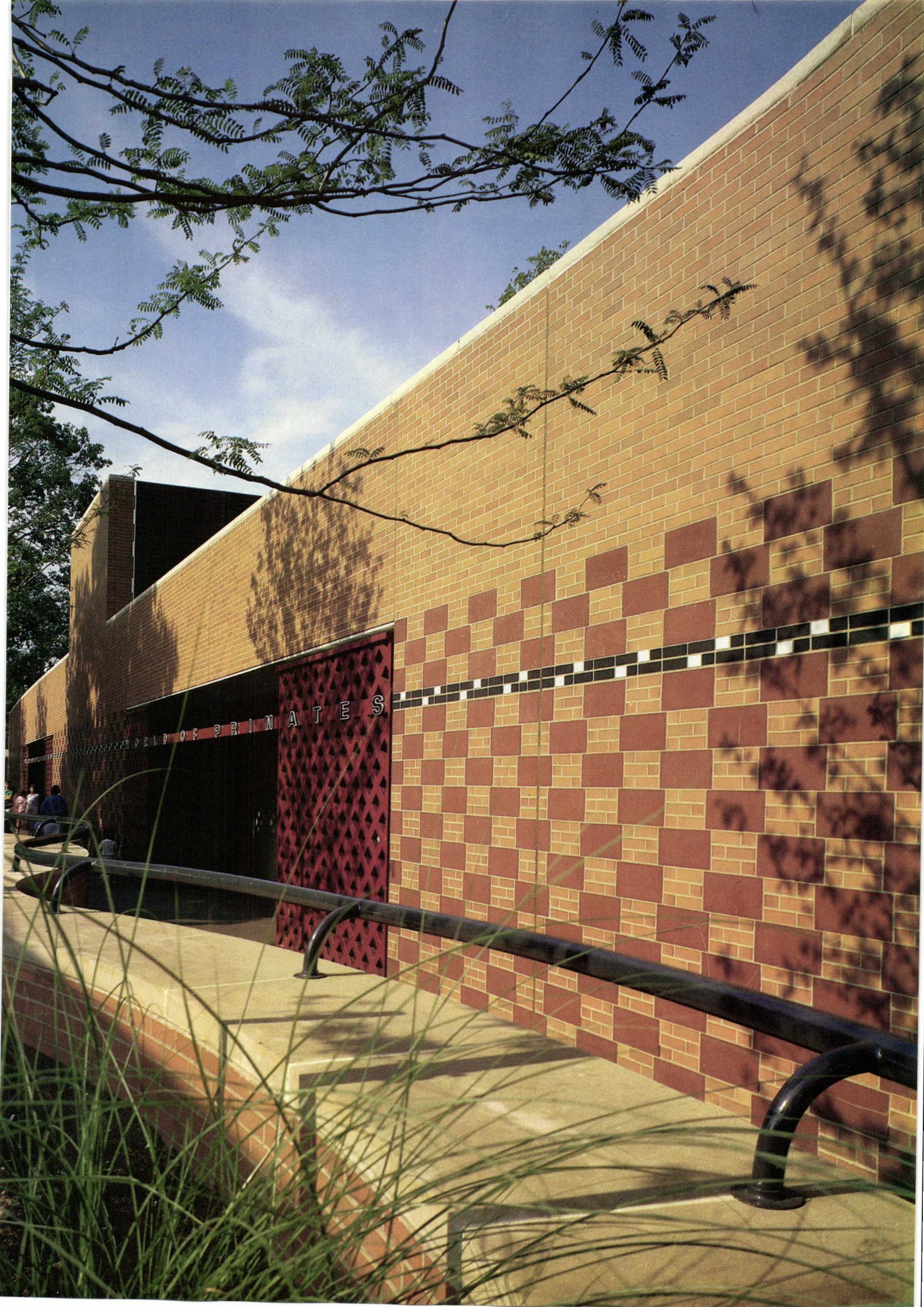
1. "You are a primate" panel
2. "Eating" panel
3. "Climate" panel
4. Seating
5. Tamarin/Marmoset panel
6. Tamarin/Marmoset viewing
7. Tamarin/Marmoset exhibit
8. Future computer video area
9. Gizzmo wall 1
10. "How do you measure up?" wall
11. Habitat viewing & "Look for" panels
12. Gizzmo wall 2
13. Food prep viewing



Opened on July 1, 1874, the Philadelphia Zoo is the country's oldest, and the first buildings on the 42-acre site in Fairmount Park included an elephant house, a restaurant, and twin gatehouses designed by Philadelphia's architectural patriarch, Frank Furness. Over the years the zoo continued its practice of commissioning the city's favorite architectural sons, although after several decades the novelty of an urban animal enclave diminished decidedly and attendance was lost to a new generation of amusement parks and Walt Disney-style extravaganzas. Reduced funds and increased operating costs forced indefinite postponement of necessary upkeep of the already outdated exhibits. What had begun as a collection of exotica gathered from around the world had deteriorated into tenement housing for the animal kingdom.

By the late 1970s the animals occupied only five percent of the zoo's space—an embarrassing statistic in an era of supposed ecological awareness. In an effort to restore the zoo's eminence and rescue its financial structure from imminent collapse, the board of directors appointed a new president in 1979; his agenda, mapped out in an aggressive 16-year master plan, is to gradually replace the legacy of rusted cages and their faux rock backdrops with naturalistic habitats more responsive to current wisdom on animal behavior and breeding patterns.

After designing a permanent installation for the Treehouse learning center at the children's zoo (RECORD, September 1985, pages 120-125), Venturi, Rauch, and Scott Brown was asked to transform a modest-size lot located in the center of the zoo into a primate preserve. Although zoo officials had visions of 21 primate species inhabiting the thickets of their latest premier attraction, with the encouragement of the architects they reduced their selection to a more manageable group of eight. By placing the new holding facility along the zoo's main walk—adjacent to the old Kangaroo House designed in 1907 by Furness's former partner, George W. Hewitt, and converted into a primate information center (photo and plan, left and photo page 125)—the architects graciously left most of the one-acre site as open territory for the monkeys' recreation. In addition, they deliberately compressed the building as much as possible—leaving sufficient space for the holding pens where the animals are kept at night—until it appears to be just an enormous billboard for the exhibit behind it. The building's flattened, shoebox profile is interrupted by a massive chimney-like projection that houses the complex of air-intake and exhaust systems which execute the 14 air changes per hour required in the pens to keep the animals healthy. The architects applied a new variation of the familiar VRSB checkerboard brick pattern to the 217-foot-long front facade, accented here by painted latticework and signage around the openings, to minimize the building's necessarily rather awkward proportions. Although the materials were selected to harmonize with the neighboring masonry Pachyderm and Carnivora houses, the sleek surfaces and burnt sienna palette actually distinguish the World of Primates as a recent entry to the zoo's architectural pantheon. Two entryways cut into the facade frame picturesque jungle views; once entered, the darkened, confined corridors imitate the glass-enclosed "animal bedrooms" that are on view. Curved balconies opposite the entrances project over the habitat and form a serpentine wall that is partly camouflaged by the lush landscape. Set into a network of waterways, the three islands that make up this ersatz rain forest have been manipulated with landscaped berms and tropical vegetation to block out other exhibits (site plan, page 122). And if this carefully constructed illusion of a wildlife sanctuary doesn't fool the gorillas, orangutans, gibbons, drills, and lemurs who are encouraged to display their "natural" social behavior to hordes of visitors, it is surely appealing to those who can meander the pathways surrounding the World of Primates and observe, at an almost fearfully close range, the ways of the wild. Karen D. Stein



1. Keeper area
2. Animal bedroom

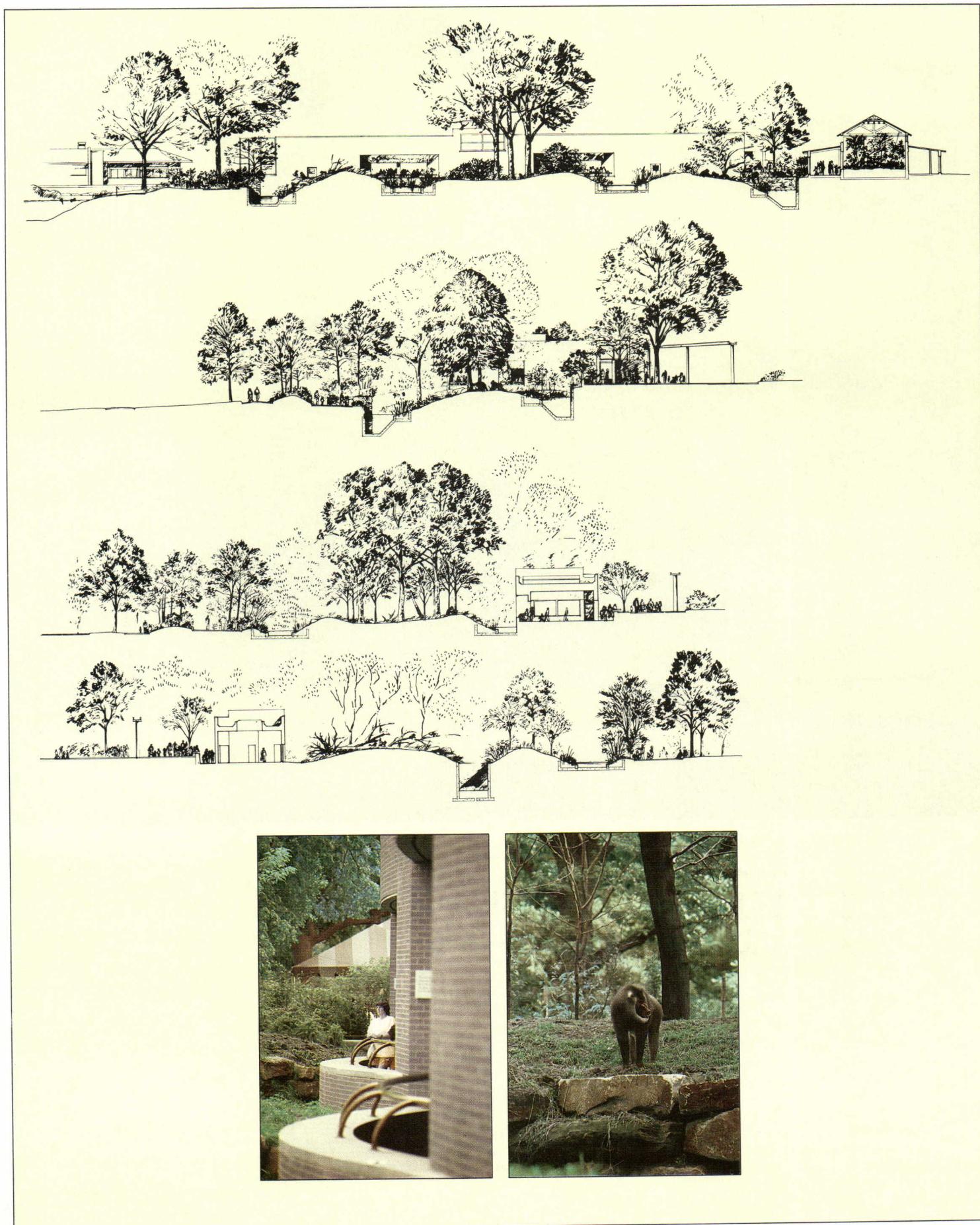
The World of Primates is separated from the main circulation route of the zoo by a curved retaining wall

species of monkeys in their new primate center, Venturi, Rauch and Scott Brown succeeded in convincing

The interior of the old Kangaroo House (designed in 1907 by Frank Furness's former partner George W. Hewitt) was transformed by Venturi, Rauch and Scott Brown into a primate information center, while its gingerbread exterior was left intact. Renamed the Discovery House, the building contains a diorama-style cage for marmosets, a species of miniature monkeys from South America. The modest budget

precluded elaborate graphics to decorate the walls, so the architects enlisted artist Dennis Aufrey to create brightly colored junglesque murals (opposite), which were painted on like wallpaper. For visitors interested in an even closer look at their anthropological ancestors, there is a life-size statue of John, the zoo's current alpha-male, who is responsible for propagating future generations of gorillas. Other

attractions include "food prep viewing," where visitors can observe the keepers as they prepare the special granola mixture that is fed to the primates (the healthful diet is said to be partly responsible for the increased longevity of primates in captivity), and a test of strength display, where visitors can measure the strength of their grip compared to that of an average-size orangutan or gorilla.



World of Primates

Philadelphia Zoo

Philadelphia, Pennsylvania

Architects:

Venturi, Rauch and Scott Brown—
Robert Venturi and John Rauch,
principals-in-charge; James
Bradberry, associate-in-charge; Roc
Caivano, project architect
(construction); Christine Matheu,
project architect (exhibition); Margo
Angevine, Rick Buckley, David Fox,

Vince Hauser, Steven Izenour, Tim

Lisle, Gabrielle London, Rick
Mohler, Willis Pember, David
Schaaf, Denise Scott Brown, Simon
Tickell, James Timberlake, Ann
Trowbridge, and Sherry Williamson,
project team

Landscape architects:

Hanna-Olin, Ltd.—Laurie Olin,
Robert Hanna, and Dennis McGlade,
principals-in-charge; Chris Allen,
project manager

Engineers:

Keast & Hood Co., Inc. (structural);
Vinokur Pace Engineering Services
(mechanical and electrical)

Construction management:

International Consultants, Inc.

Consultants:

Mary-Scott Cebul (exhibit); Grenald
Associates (lighting); Glicksman
Associates (audiovisual); Dennis
Aufiery (murals); Fred Kreitchet/
Sculpture Workshop (sculpture)



125 Summer Street Boston

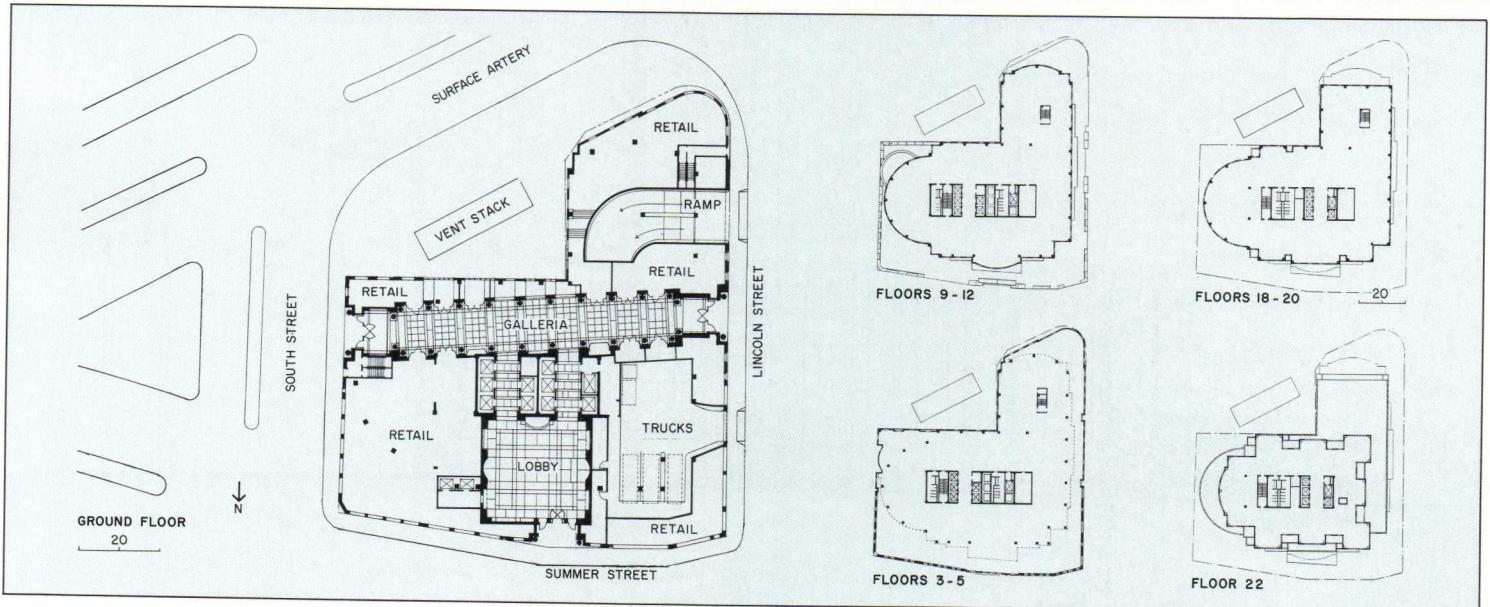
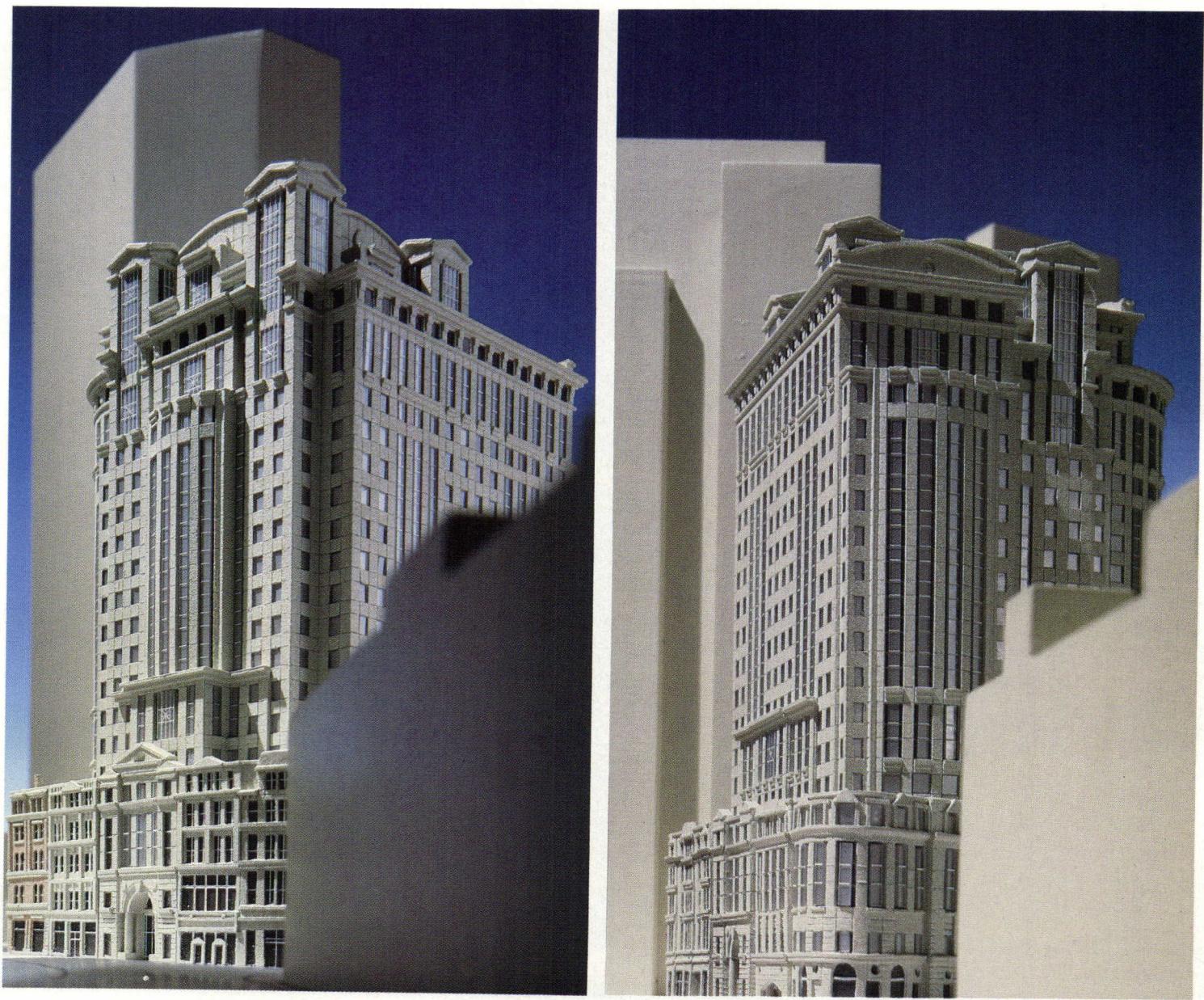


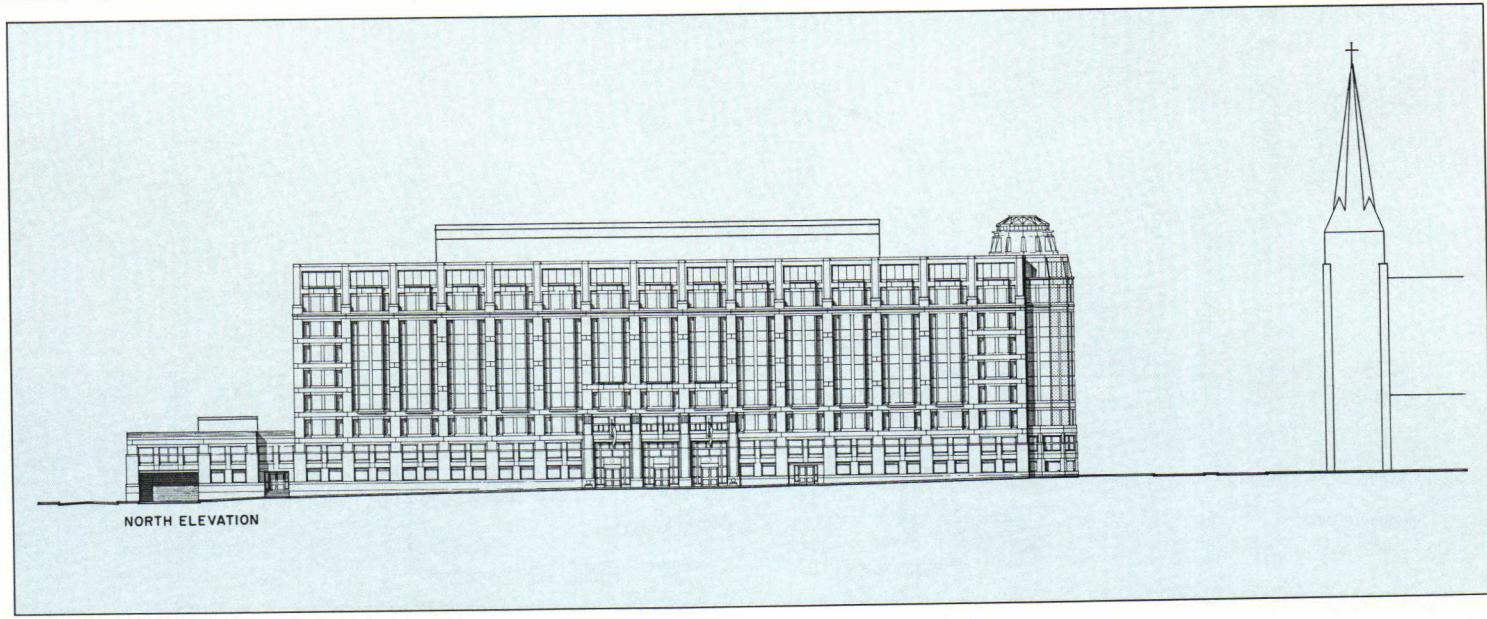
This being Boston, the site of this 22-story office building was more difficult than most—irregular, surrounded by new and old buildings in the financial district, and bounded by narrow streets following Boston's proverbial cowpaths. The location offered no straightforward axes, and viewers will see the building mostly in fragmentary glimpses between other buildings.

Partner Arthur May, who designed the Summer Street building for Perry/Jaymont Venture, identifies the site's truncated L shape as the primary design issue; the L is created as the available building area angles around a state-owned vent stack for the railroad beneath the surface artery highway on the southwest edge. Because the L demands a building shape that is difficult to resolve at the sky, May started the design process at the top with a square of four pedimented towers. Two of the towers flank the major commercial entrance on Summer Street (opposite left), and one of those becomes half of another pair that turns the corner to flank the imposing bow front (this page) that faces South Station, from which many commuters to the financial district emerge daily. The remaining two towers peek over the eaves on Lincoln Street (opposite right). A small fifth tower just above the base splices the large bulbous and a galleria entrance.

Additional design problems asserted themselves at the base of the building, where a number of five-story 19th-century buildings from Boston's former leather district still remained. The Boston Redevelopment Authority wanted the architects to retain these facades out of respect for the historic district. The Summer Street facade will consist entirely of these old buildings except for the central entrance, which replaces a two-story building from the 1950s, while the facade along the surface artery is entirely new. The old buildings were in effect excavated to within 6 feet of their surfaces and new floors carefully brought out so that old windows can serve new offices.

Materials, apart from the stone and brick of the existing facades, will combine a buff-colored granite and limestone-colored precast concrete—the flat surfaces granite, the more complex shapes, like cornices, pediments, and keystones, concrete. At one point, May toyed with the idea of hiding the vent stack with a Classical front of concrete (at left of the galleria entrance on this page), but concluded without apparent regret that the camouflage would cost too much and that the red-brick portered well with local materials.



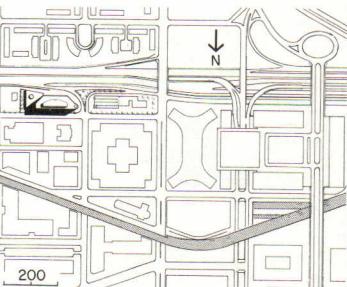


500 E Street, S. W. Washington

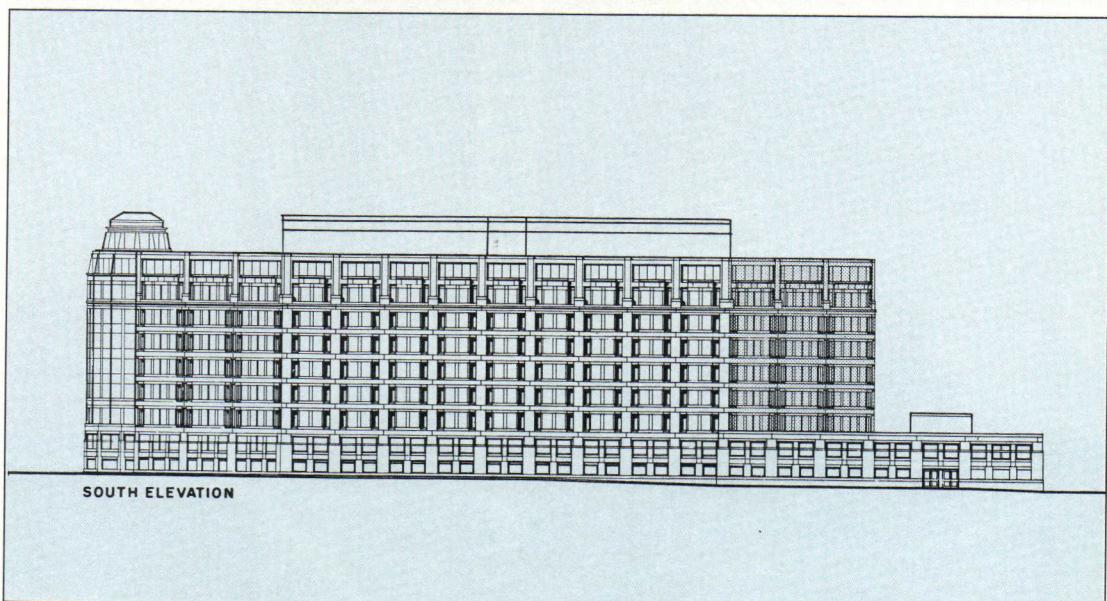
In Washington, there are, of course, no skyscrapers: Congress froze the building height at 10 stories in 1906. And the context of this nine-story spec office building is difficult to define: the last parcel in a roughly triangular urban-renewal zone designated by Congress in the 1950s, bounded on two sides by Amtrak and on the third by the Southwest Expressway, with Pei's L'Enfant Plaza complex, Breuer's double-Y-shaped HUD building, and Edward Stone's white marble Department of Transportation building as immediate neighbors, and with the Mall and official Washington north of the railroad (location plan below).

Despite its governmental Modern neighbors, however, the building's broader context is governmental Classicism, which suggested to architect Robert Evans without further ado the classic tripartite organization of base, middle, and top. Moreover, the typical federal office building of the '20s and '30s, less lavishly designed than their departmental headquarters, brought their office floors all the way down to the sidewalk—without the enlivening presence of shop windows. The developers of this building, Boston Properties, envisioned retail facilities around the entry, until the U. S. International Trade Commission became the building's major tenant. Then vivacity was sacrificed to a more appropriate institutional character (perspective at right). A granite base will wrap the two lower floors, and projecting granite bands at the third and seventh floors will define the three divisions of the limestone-colored precast concrete wall; reflective glass fenestration will screen an ITC courtroom along the sidewalk.

Observing that similar Washington buildings tend to be very long and quite repetitive, and that their designers tended to treat the ends stylistically to denote a stopping place, Evans similarly stopped the 300-foot-long facade at one end with a rounded tower and topped it with a gazebo for brown-baggers. Facing the square steeple of St. Dominic's church, the tower creates a gateway to the city across the highway exit that bevels one corner of the site.



Jerrri Smith, delineator



1201 Third Avenue Seattle

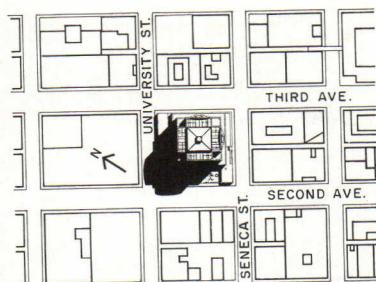


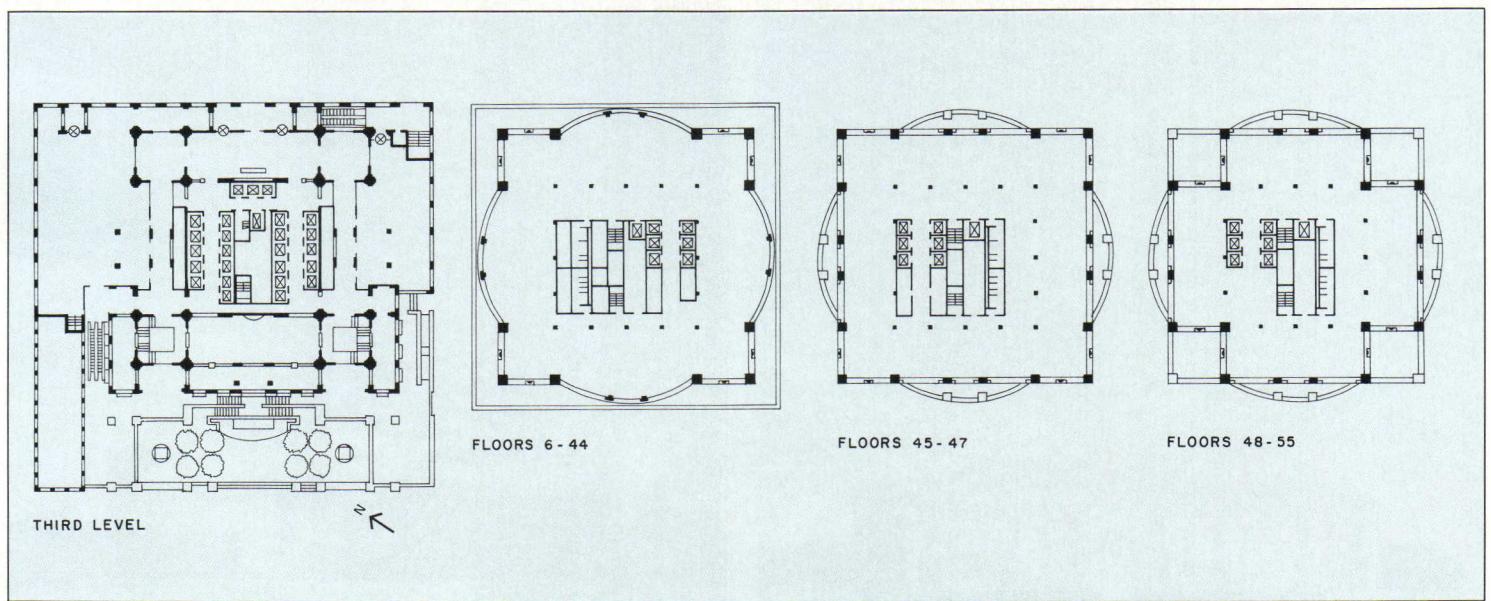
For a 55-story office tower in Seattle, designer Pedersen quite clearly drew on his ideal square for the building's shape. Nonetheless, the square form was an early choice based less on idealism than on a perceived need for multiple frontality to exploit spendid views in all directions: the Second Street front of the building faces Elliot Bay, the Third Street front faces Lake Washington and the mountains, while the sides respectively face Pioneer Square and the financial district, two areas in the process of developing toward each other to establish a linear urban pattern. This building and Venturi's projected art center will occupy the symbolic middle.

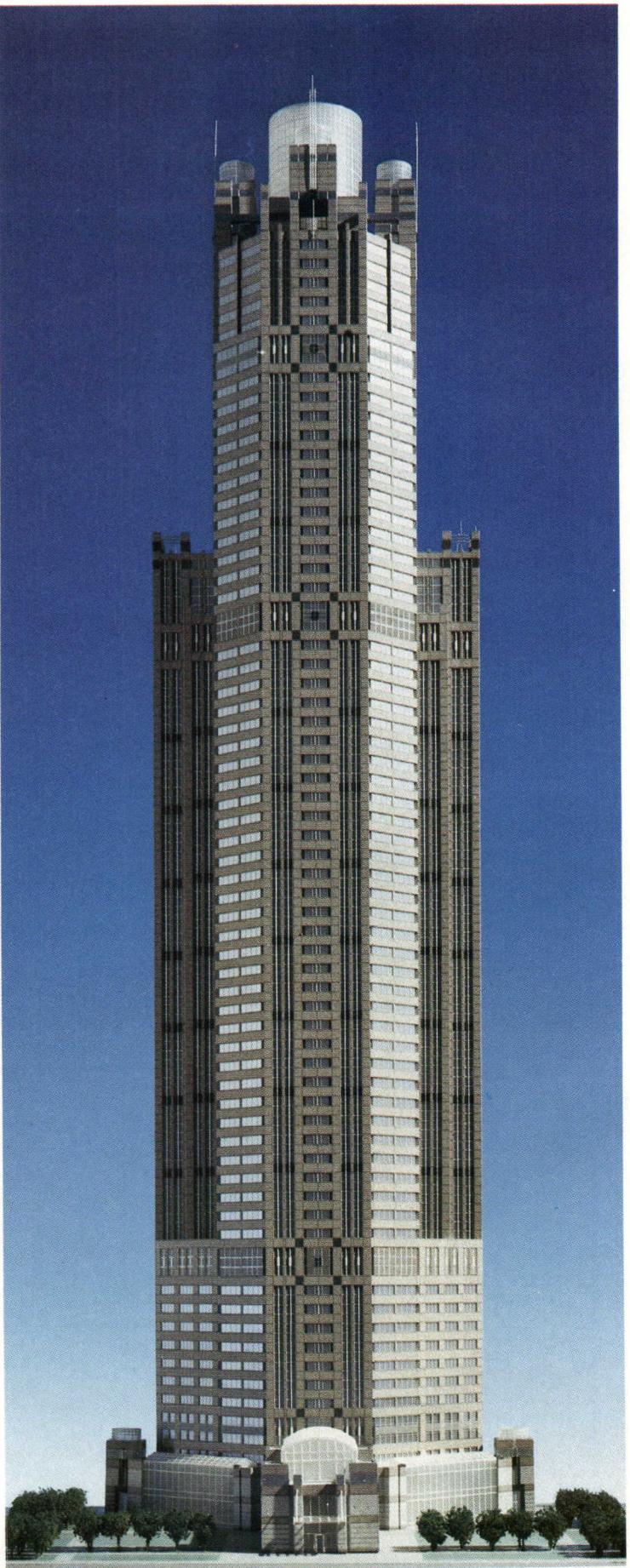
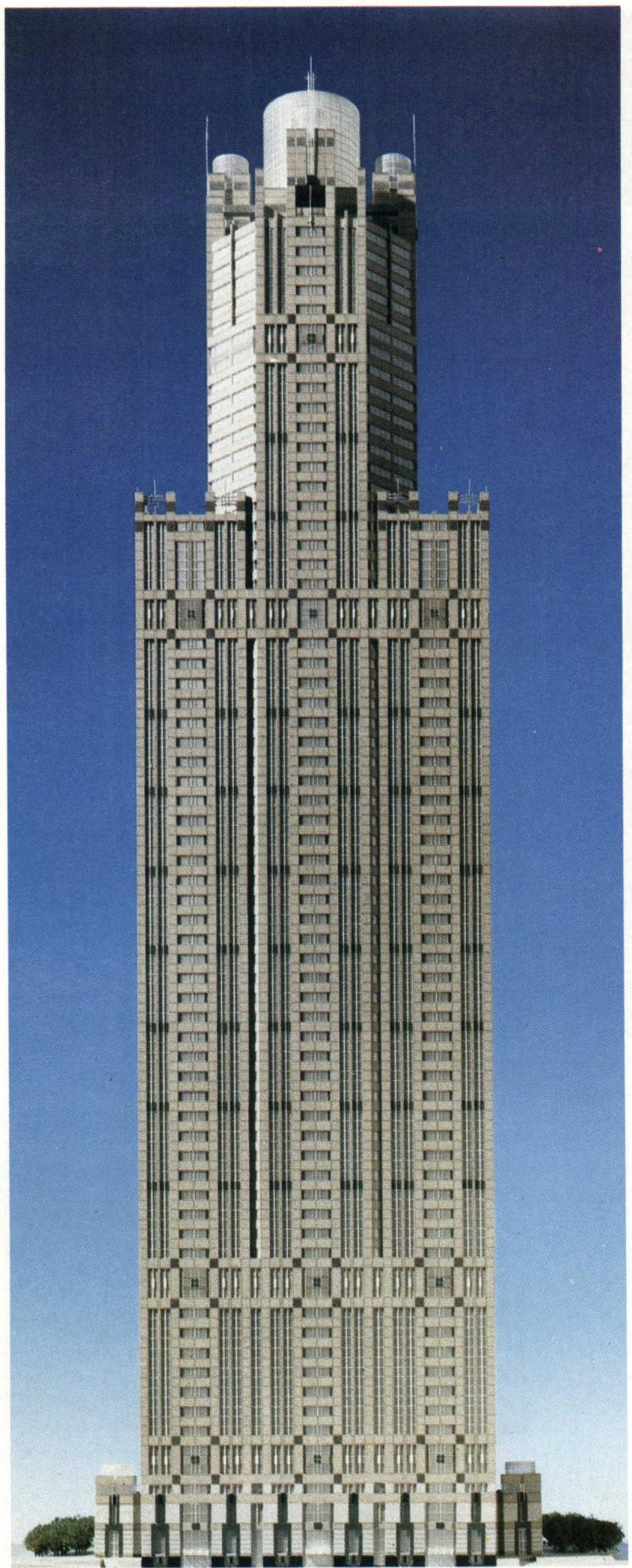
The building's base could not, however, adhere to the square plan because of a number of contextual, if nonarchitectural, conditions: the steep gradient of Seattle's streets; the different characters of Second Street, with its low-rise retail buildings, and Third Street, with its high-rise office buildings; and the existence at one corner of the landmark Brooklyn Building. The 19th-century building is retained as a kind of asymmetric pylon (at left), while two new pylons symmetrically embrace a landscaped court (opposite). The plaza was a particular insistence of the developer, Wright Runstad & Company, which has included similar amenities elsewhere for the people of Seattle, who when they get fine weather like to take advantage of it.

The apparent squareness above the base is somewhat illusory since the tower plan is sequentially inflected as it rises—from intersecting circle and square near the base, to a simple square toward the top, to a cruciform just below the peak (plans opposite bottom). Three heavy columns create 30-foot-square bays at each corner to support the structure; clad in honey-colored granite, the bays also reinforce the tower's visual squareness. The tall bow windows, which will create a vertical compositional form at the center of each face, will be green glass.

For this project, KPF is associated with the Seattle firm The McKinley Architects, who are the architects of record.





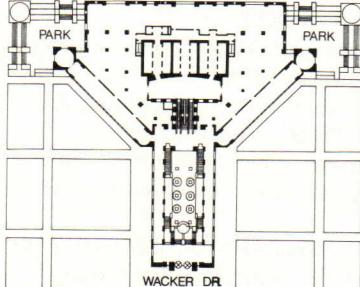


311 South Wacker Drive Chicago

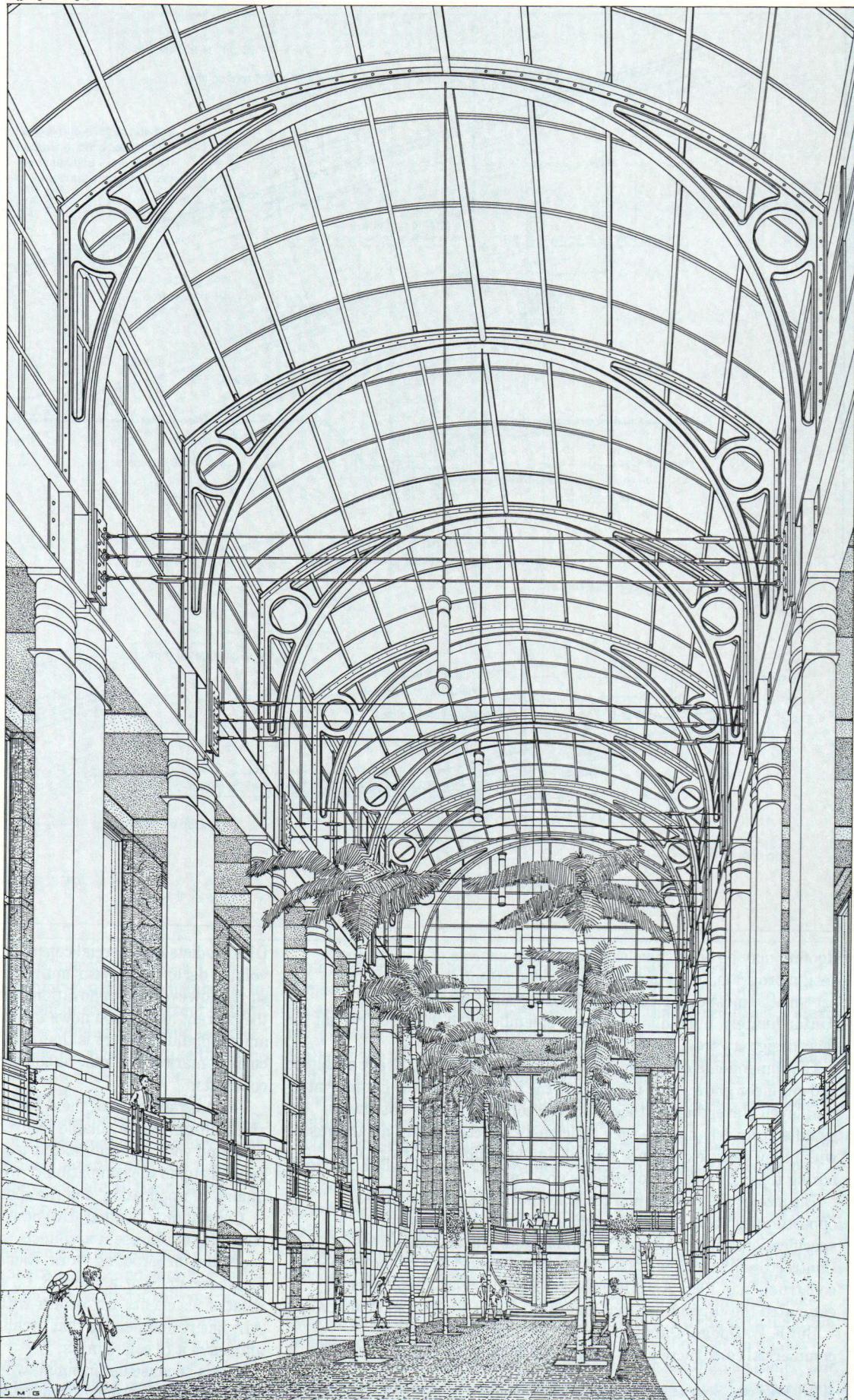
KPF's practice of defining the street line to mark the edges of the public realm proved more easily said than done in the case of this 65-story tower in Chicago; the owners, Lincoln Properties, are developing only the central part of the site now, leaving two corners along Wacker Drive for later development (site plan below). Only on Franklin Street at the "back" of the building (far left) could designer Pedersen let the tower descend flush to the sidewalk. On Wacker Drive (near left), a barrel-vaulted garden court will lead to the octagonal tower that is partly subsumed in the larger building. Narrower glass galleries affixed to the base of the Wacker Drive diagonals will allow the future buildings, whoever develops and designs them, to tie into this one; one of Pedersen's aims is to give future architects of nearby buildings adequate points of reference for proportions and alignments.

Because Chicago is the home of the steel frame, and because this context includes Sears Tower a block away, Pedersen wanted to emphasize structural verticality. More important, though, "My thesis is that the tall building needs to act as a facade," an arrangement of self-contained visual elements linked and modulated to form a cohesive whole. The tripartite organization on Franklin Street takes in not only the height but the width of the facade: each of the three major vertical components is likewise divided horizontally into three—a central dense "column" of cinnamon-colored granite spandrels and edges, and lighter outer elements of glass and thin granite mullions separated into four-story layers by horizontal bands of green marble. Vertical bands of recessed windows with dark shadowed reveals separate the larger components from each other. The tower also carries four patterned courses, each two stories high and each having three medallions defined by granite edges cornered with green marble squares.

The garden court (right) will have exposed steel columns down its sides and steel arches overhead. It will be lighted from within at night, as will the translucent glass cylinders at the crown.



Jeffrey George, delineator



New products

Made in Germany

Though VOKO is the largest manufacturer of office systems in Europe, the West German company has yet to make its mark in the U.S. VOKO executives, however, are committed to raising their low profile in America with an ambitious expansion plan that will, over the next few years, bring VOKO to a design center near you. The company made its official U.S. debut last year in Texas, with a 3,800-sq-ft showroom in Houston's Innova, designed by Professor Karl Dittert, the West German industrial designer responsible for much of VOKO's product line. Certainly one of the more impressive products on display in the Houston showroom is VOKO's *Storage Wall System* (3 and 6). Available in countless configurations and a variety of finishes, the modular floor-to-ceiling storage system and space divider gives new meaning to the old saw, "a place for everything and everything in its place." The *Storage Wall System* can be specified with anything from wardrobes, bookcases, and storage racks, to first-aid centers, hide-a-beds, and kitchens. In the systems department, VOKO offers either *ACM* (for Activity Center Modules) or *RMT* (for Reconciliation of Man and Technology). The *ACM* system (1) features connectable, but freestanding, worksurfaces and tables, pedestals, storage units, and privacy panels, and is intended for teamwork concepts, technology-intensive operations, and data- and word-processing work environments. The *ACM* system features automatic height and incline adjustments for worksurfaces and tables to accommodate either seated (perhaps in a VOKO chair, photos 4 and 5) or standing workers. Hidden horizontal and vertical multi-channel raceways provide electrical access for a broad range of electronic equipment. *ACM* storage modules include underdesk and desk-height attached and mobile pedestals, full-height storage cabinets, and *Super Drawer*, a storage module that combines vertical, lateral, and shelf filing into a single unit that doubles as a space divider. The *RMT* system is a steel-based, radius-edge sandwich-construction system with 4-in.-thick acoustical panels (2). It integrates desks with automatic-incline tables, privacy panels, storage modules, and paper-flow technology. *RMT* offers numerous wood, laminate, fabric, and painted finish options, and the panels are available in a variety of widths, heights, and surface materials. VOKO U.S., Inc., Houston.

Charles K. Gandee
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Tom Crane photos



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2

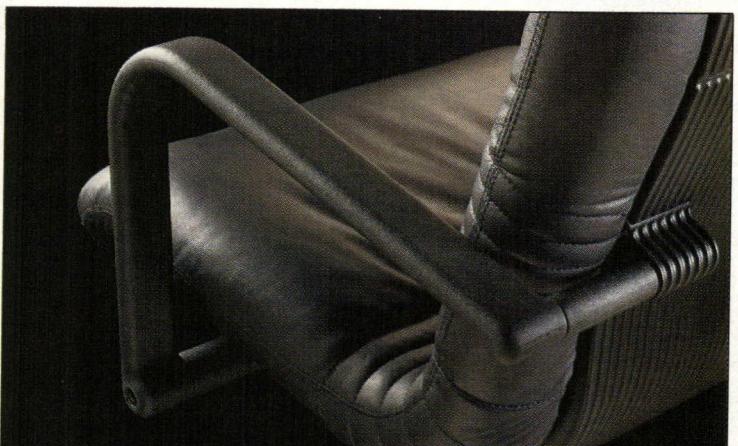
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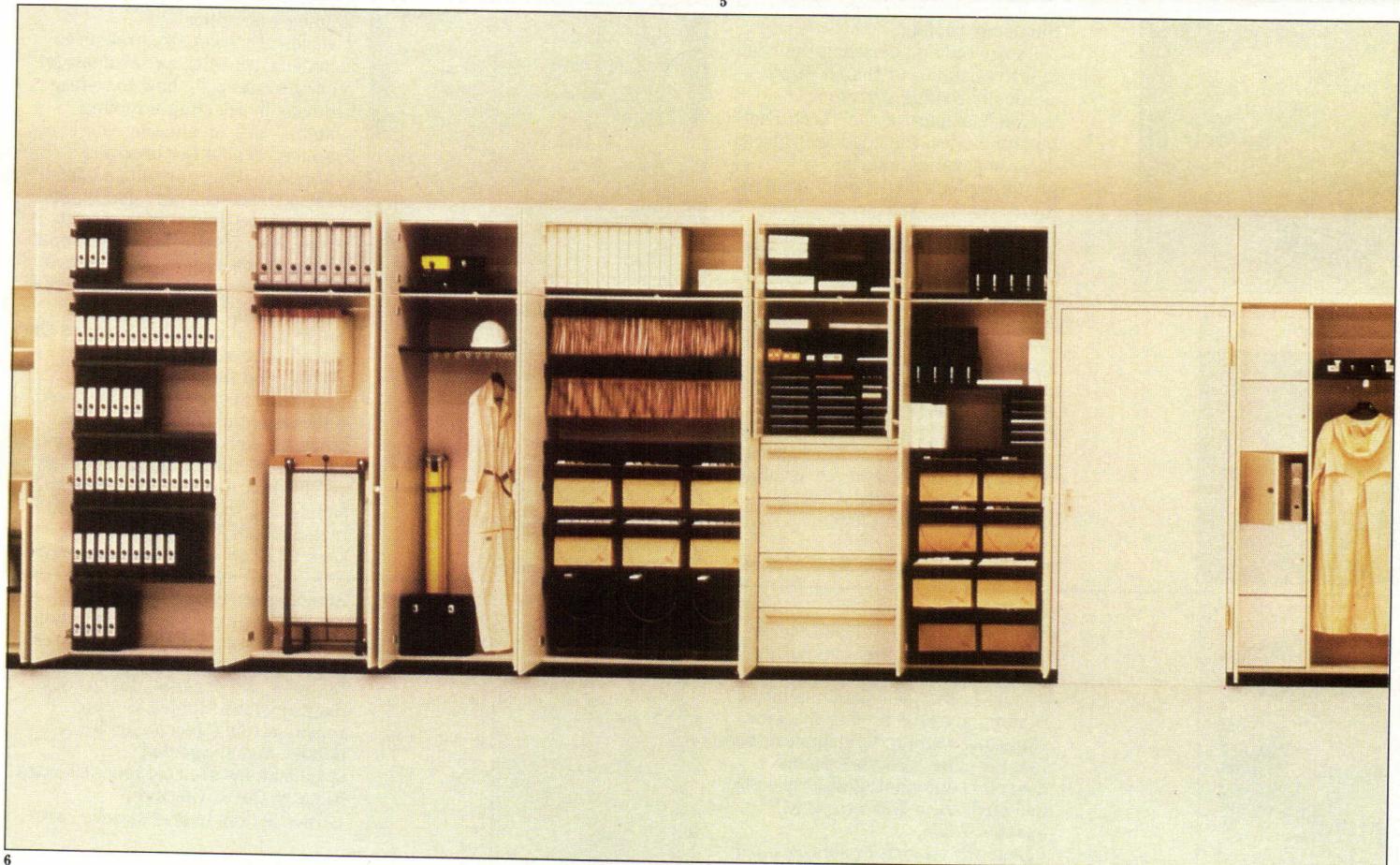
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Product literature

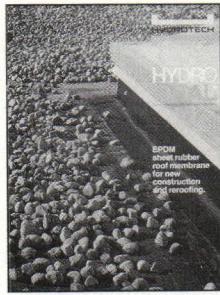
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Pre-engineered roofing

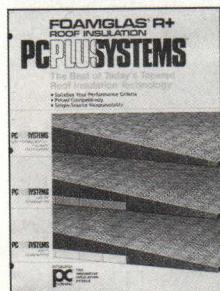
The *Versigard PE* pre-engineered roofing system designed for metal roofs is featured in a 4-page brochure. The literature includes product descriptions, a discussion of assembly options, flashing, edge options, and assembly diagrams. The Goodyear Tire & Rubber Co., Akron, Ohio.

Circle 400 on reader service card



Rubber roof membrane

A 4-page color booklet highlights the manufacturer's *EPDM* sheet rubber roof membrane for new construction and reroofing applications. Detailed product descriptions are included, along with application and performance information. Photographs and specifications are featured as well. American Hydrotech, Inc., Chicago. Circle 406 on reader service card



Roof insulation

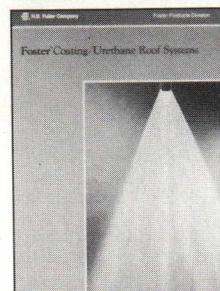
A 4-page color brochure describes the manufacturer's *Foamglas R+* tapered roof insulation series. Performance criteria, physical properties, average R-value charts, general product descriptions, and installation information are included in the brochure. Pittsburgh Corning Corp., Pittsburgh.

Circle 401 on reader service card



Rubber roofing

A 12-page color brochure features rubber roofing systems intended for commercial and industrial applications. Included is an analysis of roof systems under a variety of conditions, including structural movement, ponding water, deterioration, and environmental factors. North American Roofing Co., Inc., Carmel, Ind. Circle 407 on reader service card



Urethane roof system

The *Foster* coating/urethane roof system, designed for use with sprayed-in-place urethane foam, is highlighted in a 6-page color booklet. The literature includes photographs of site applications, an insulation efficiency comparison chart, and product specifications. H. B. Fuller Co., Houston, Tex.

Circle 402 on reader service card



Roofing systems

The manufacturer's roofing and waterproofing systems' catalog reviews general requirements, special conditions, roof and flashing specifications, and special applications for built-up roofing systems. Also included in the 32-page brochure are waterproofing and dampproofing systems. Koppers Co., Inc., Pittsburgh. Circle 408 on reader service card



Single-ply roofing

A 6-page bulletin detailing the wind uplift resistance of the *Hi-Tuff* single-ply roofing system is available as part of the "Tech Fact" bulletin series. Included are velocity diagrams, rating charts, photographs, and detailed technical information. J. P. Stevens & Co., Inc., Northampton, Mass.

Circle 403 on reader service card



Roofing warranties

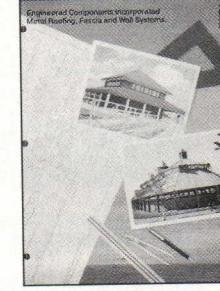
A series of pocket-size brochures includes such titles as "evaluating roofing systems," "how to reduce the risks in selecting a roofing system," and "evaluating single-ply systems." One other brochure evaluates roofing warranties based on inspection services, quality, and the manufacturer's track record. Tellex, Inc., North Branford, Conn. Circle 409 on reader service card



Membrane roofing

A 12-page color brochure describes the manufacturer's *Derbigum* multireinforced modified bitumen roofing membrane. Installation information, application photographs, product descriptions and specifications, and performance data are also included. Owens-Corning Fiberglas Corp., Toledo, Ohio.

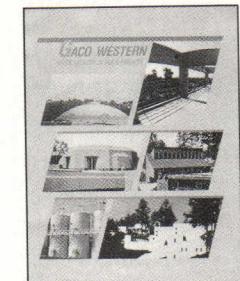
Circle 404 on reader service card



Metal roofing

A 20-page color catalog features the manufacturer's line of metal roofing, fascia and wall systems for commercial, industrial, and residential construction. The brochure includes detail drawings, hat and channel framing members, and flashing for roof and mansard panels. Engineered Components, Inc., Stafford, Tex.

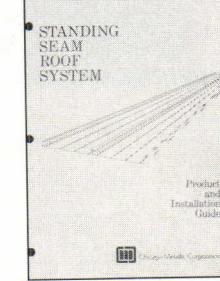
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Roofing

The *GacoFlex* line of elastomeric coatings is featured in an 8-page color brochure. The literature discusses between-slab membrane roofing, inverted roofing systems, single-ply roofing, fluid-applied, and foam roofing. Cross-sectional diagrams and photographs are also included. Gaco Western, Inc., Seattle, Wash.

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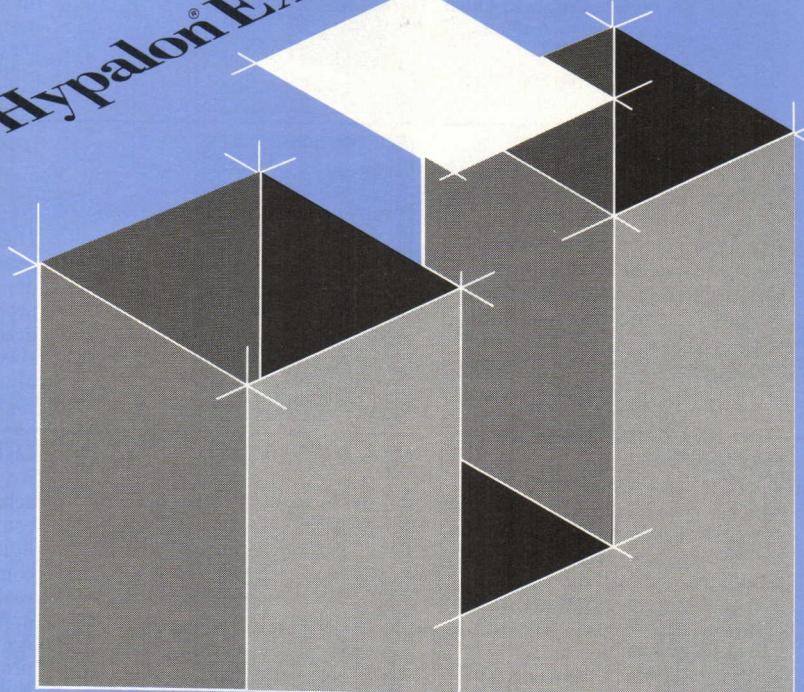


Standing-seam roof system

An 8-page product and installation guide highlights the manufacturer's standing-seam roof system. Product features and benefits, dimensional diagrams, load tables, design considerations, recommended details, and suggested specifications are reviewed. Chicago Metallic Corp., Chicago. Circle 411 on reader service card

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Project authorship will be concealed.

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New York, New York

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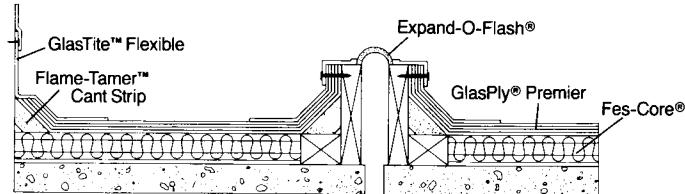




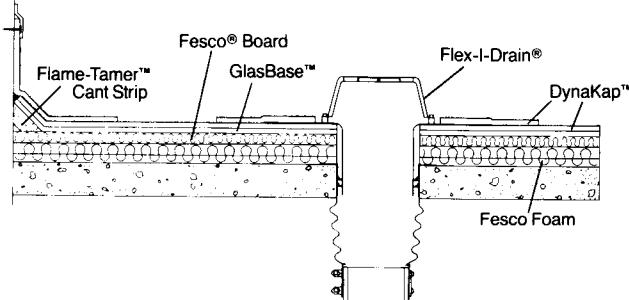
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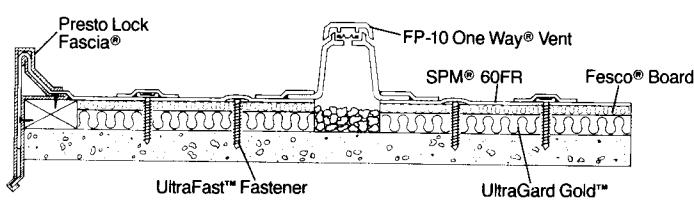
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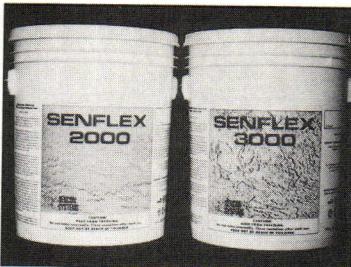


Image courtesy of
Ragan Design Group



Accessible water cooler

Designed with help from a user survey, the EBFA-8 cooler features a molded wrap-around pressbar that can be operated by a light downward touch on front or side. The pliable bubbler is closer to the front of the cooler for easier access. Standard finishes are gray, beige, walnut, sandalwood and almond vinyl; stainless steel and bronzetone may be specially ordered. Elkay Manufacturing Co., Oak Brook, Ill. Circle 301 on reader service card



Exterior insulation coatings

Two finish options have been added to the Sencon hard coat, mechanically attached exterior wall system. Both products are flexible, weather- and ultraviolet-resistant, and available in a variety of factory-blended colors. Coatings may also be used over masonry, concrete and stucco. Sencon Systems Inc., Northbrook, Ill.

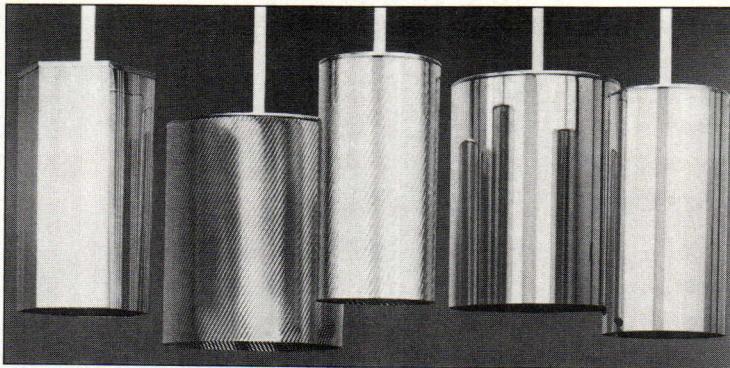
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Glass-top table

From this maker's contract line, the Graffiti dining table has a hand-worked ash wood pedestal base with mother-of-pearl button inlay. The table is 29-in. high with a half-in.-thick, 60-in. round, bevel-edge glass top. IPF International, Paterson, N.J.

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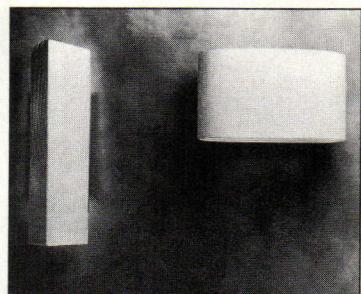
Commercial fixtures

Suggested for restaurants, banks, hotel lobbies and other commercial applications, Spec Deco lighting designs include smooth, round swirl, and hexagon-shaped brass cylinders. Fixtures have an interior

reflector of diffuse aluminum, and accept both high-pressure sodium and flood lamps. Lights may be pendant or ceiling-mounted.

Benjamin Division, Thomas Industries Inc., Sparta, Tenn.

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Wall fixtures

Designed by Dennis Higgins for contract applications, wall-mounted fixtures diffuse light from standard incandescent bulbs through polyester-covered perforated aluminum shades. The vertical Jav light is particularly suitable for tight space requirements. Lazin Lighting Inc., New York City.

Circle 305 on reader service card
Continued on page 161

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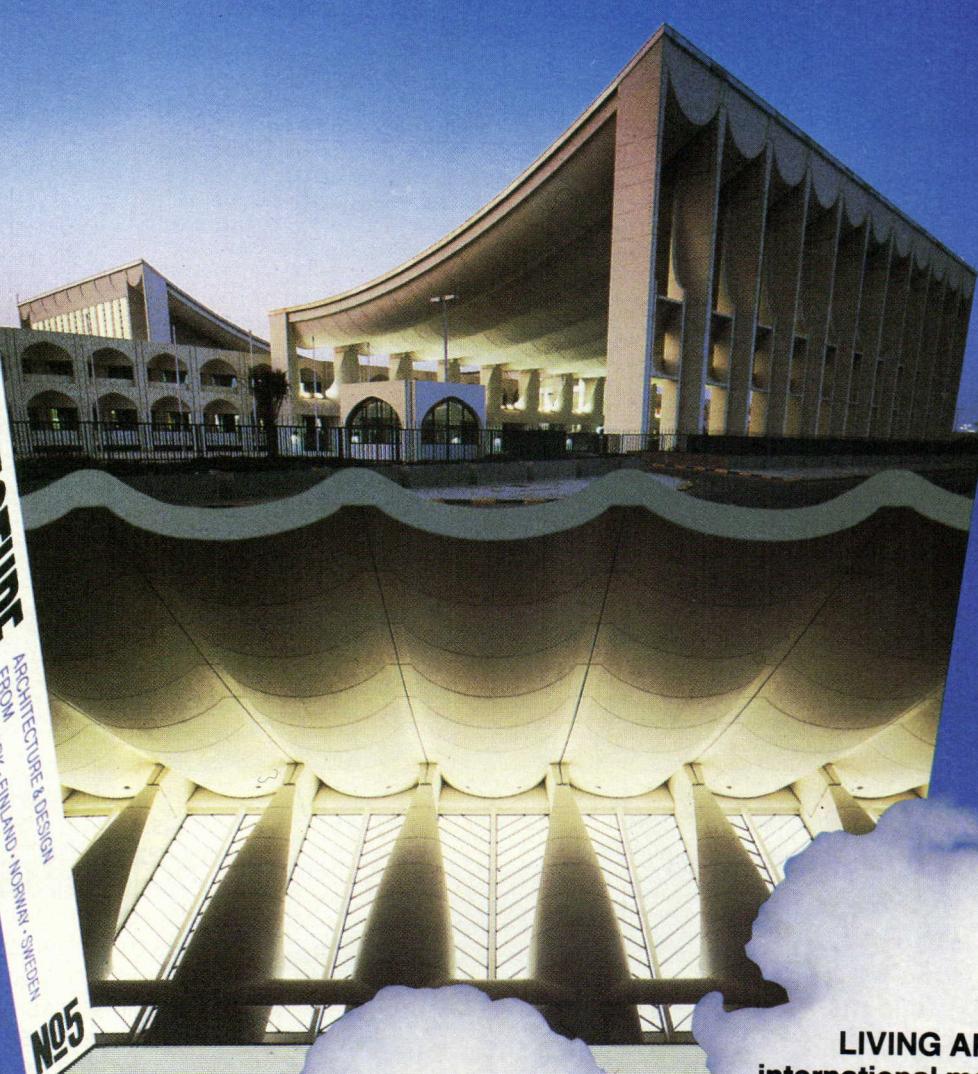
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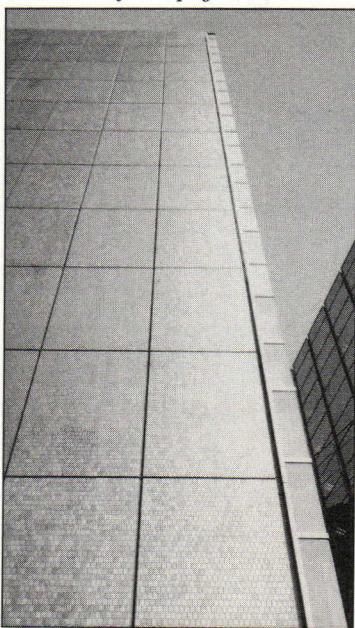


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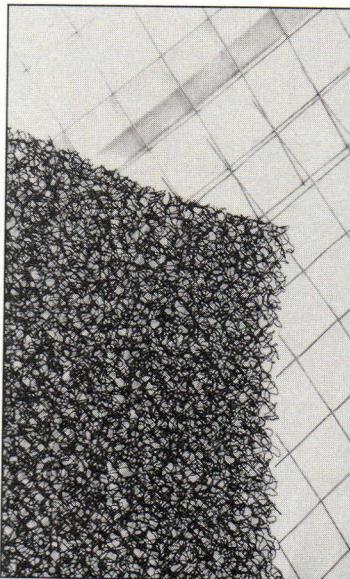
Circle 73 on inquiry card



Porcelain glazed tile

Manufactured in Japan for this maker's *World Collection*, Reflecta iridescent porcelain tile can be used on walls and counters indoors, or set in panels for an exterior cladding application as shown here. The 2- by 4-in. product is supplied in 0.97 sq ft sheets or as loose tile for hand set methods. Glaze colors available include Aurora (pictured), Bright Pearl and Smoked Chrome. American Olean Tile Co., Lansdale, Pa.

Circle 311 on reader service card



Sound reduction matting

An open, compression-resistant nylon product, Enkasonic matting creates a sealed air barrier, shutting off transmission of impact and airborne sounds when installed under ceramic tile, hardwood, vinyl tile and other flooring. Its thinness is said to make the matting ideal for floor/ceiling designs that must meet rigid sound rating requirements. Geomatrix Systems, BASF Corp., Enka, N.C.

Circle 312 on reader service card



Workstations

Specifically for data and word processing equipment requirements, DataGroup Series modular workstations may be ordered with full end panels as shown. Also pictured is the Storage

Center lateral file unit, with radius drawer fronts. All stations are available in a number of enamel finishes compatible with this maker's pedestal and file units. Office Specialty, Chicago.

Circle 313 on reader service card

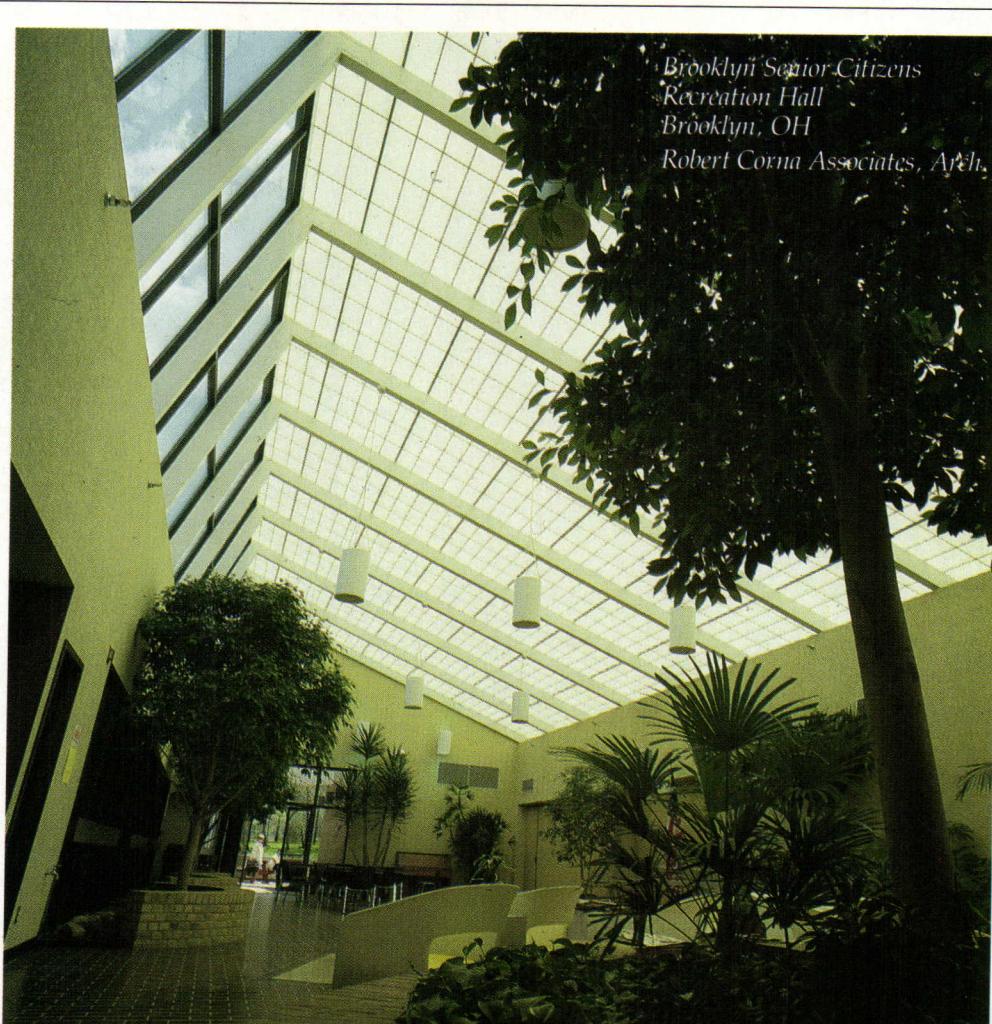


Lounge seating

A lower, wider and deeper version of the *Urbane* chair, this Club Chair can be specified for lounge, restaurant or lobby areas. The birch frame is available in any of 7 finishes, including gray, red and green stains designed to coordinate with this maker's textile line. Donghia Furniture, New York City.

Circle 314 on reader service card

Continued on page 165



Brooklyn Senior Citizens
Recreation Hall
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Robert Corna Associates, Arch.

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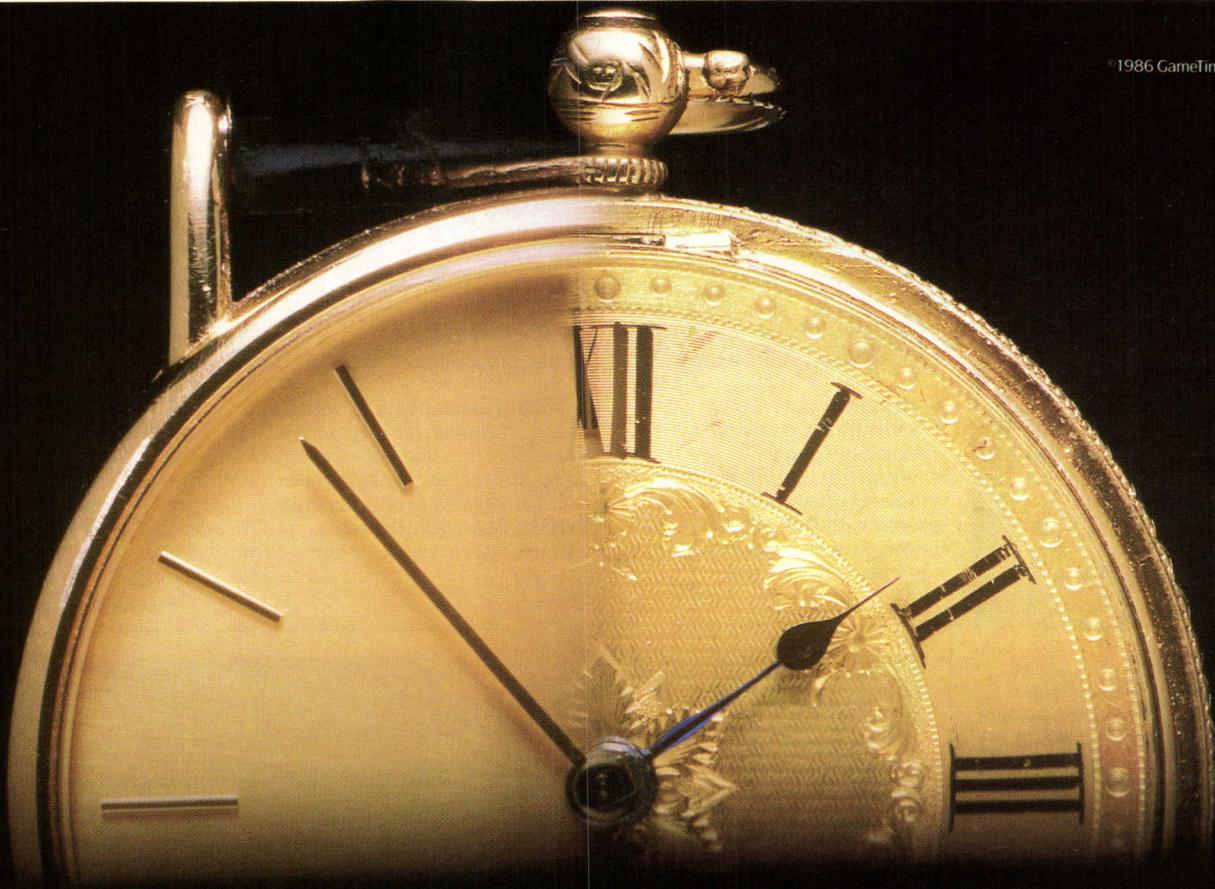
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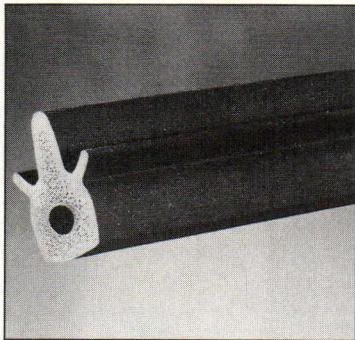
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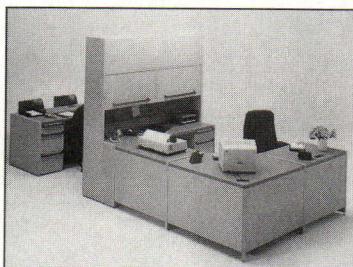
•ULTRUM•



Glazing seals

Now commercially available, foam-processed *Santoprene* thermoplastic rubber has improved thermal capabilities over the solid product, and can be precolored to match a range of design and appearance requirements. The glazing seal profile pictured was made 5 percent oversize to provide positive sealing in a formed aluminum channel where tolerances can vary. Monsanto Chemical Co., St. Louis.

Circle 315 on reader service card



Steel office furniture

The *Stratum* line allows the user to add layers of color and function to the foundation of a freestanding desk: bridges, cabinets and display shelves are said to provide panel-hung storage and variety without the panels. The height-adjustable worktop has two wireports, each with outlets and access to an under-desk trough for wire storage. GF Furniture Systems, Inc., Youngstown, Ohio.

Circle 316 on reader service card



Building board

A cement-based building board, *Minerit* comes in both multi-purpose and non-combustible forms, each offered in a number of thicknesses and panel sizes. The board is impact-resistant, and can be coated with natural stone for use as an exposed aggregate architectural panel. Sanspray Corp., Santa Clara, Calif.

Circle 317 on reader service card



Tile flooring

Slip-resistant unglazed ceramic tiles are recommended for use in hotel lobbies, lounges, and pool areas. The quarry tiles do not require sealing. *Metro Quarry* and *Ironrock* are available in a total of 15 colors; tiles from each line can be combined in floor installations. Metropolitan Ceramics, Canton, Ohio.

Circle 318 on reader service card



Sprinkler heads

Pictured are three sprinkler head types available for all commercial and industrial ceilings: recessed bulb (left), which extends 1/2-in. below the ceiling; standard chrome pendant bulb model; and a custom

matched concealed-head sprinkler. Decorative heads work with standard 175 lb sprinkler systems, and are rated at 135 and 200 degrees. Firematic Sprinkler Devices, Inc., Shrewsbury, Mass. Circle 319 on reader service card

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Observations continued
commonly encountered in practice. The focus is sharper still in the fifth chapter, which looks at 25 specific products ranging from protected membrane roofing and wood trusses to energy-management control systems, all of which play a part in the preceding examples. Each of these chapters is well served by plans, details, and building sections, each paired with ball diagrams. Equally important for didactic purposes, the book is exhaustively cross-referenced, allowing the user to locate applications of specific systems and components, and vice-versa.

The sixth chapter provides a basis for evaluating the success or failure of the products, systems, and buildings discussed in the preceding chapters. The authors judge performance using six criteria—spatial, thermal, acoustical, visual, air quality, and building integrity—that form an essential critical framework for evaluating the available integration options. At first glance, a high degree of integration would appear to be ideal, and Rush cites the archetypal mud-and-thatch house as the epitome of coordinated systems. Here, structure, envelope, mechanics, and interior are truly unified, in that the same earth walls provide support for the roof, protection from rain, moderation of temperature extremes, and a finished interior surface.

However, the complex programs and technologies of contemporary buildings make such a high degree of integration virtually impossible to achieve, and it is not always even desirable. Although a unified level of integration might be possible between two or perhaps three systems (as in a tilt-up slab building, where structure, envelope and interior may be unified), a price must be paid in terms of future flexibility and expansion. Moreover, the close coordination of design disciplines required may be at odds with fast-track design and construction schedules. Conversely, while a low level of integration (as in a curtain-wall building, where the envelope is largely independent of the structure and interior finishes are not be installed until later) may be inefficient in its redundancy of materials and "dishonest" in its expression of structure and function, it is more amenable to both fast-track schedules and future changes.

The final chapter is a detailed primer on the theory used throughout *The Building Systems Integration Handbook*. Only time will tell whether this theory, with its matrices and ball diagrams, will prove to be an oddity developed for this book and thereafter forgotten. Unwieldy at first, it seems, after careful scrutiny, to be a valuable tool of analysis. The same can be said for the handbook as a whole, which should endure as both a reference and an instructional text. With the exception of the section on specific products, which is far from comprehensive, its value is not at the detail level of a *Graphic Standards* but at the conceptual design level. Read and digested, it can change the way architects look at and design buildings.

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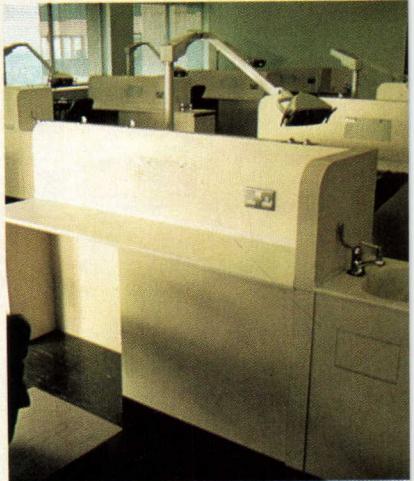
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Fireman's Fund Employers Insurance Company, De Pere, WI, shows how CORIAN custom-fits a wide variety of creative designs. Champ Parish Raasch & Associates, architects.



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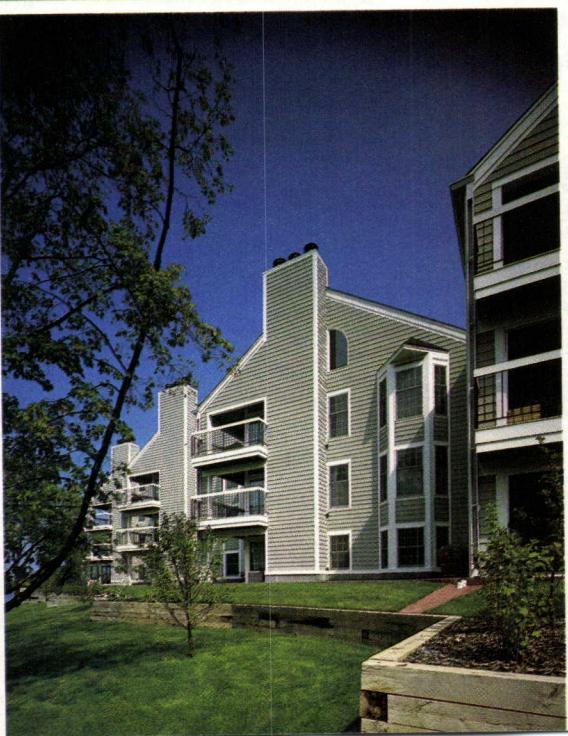
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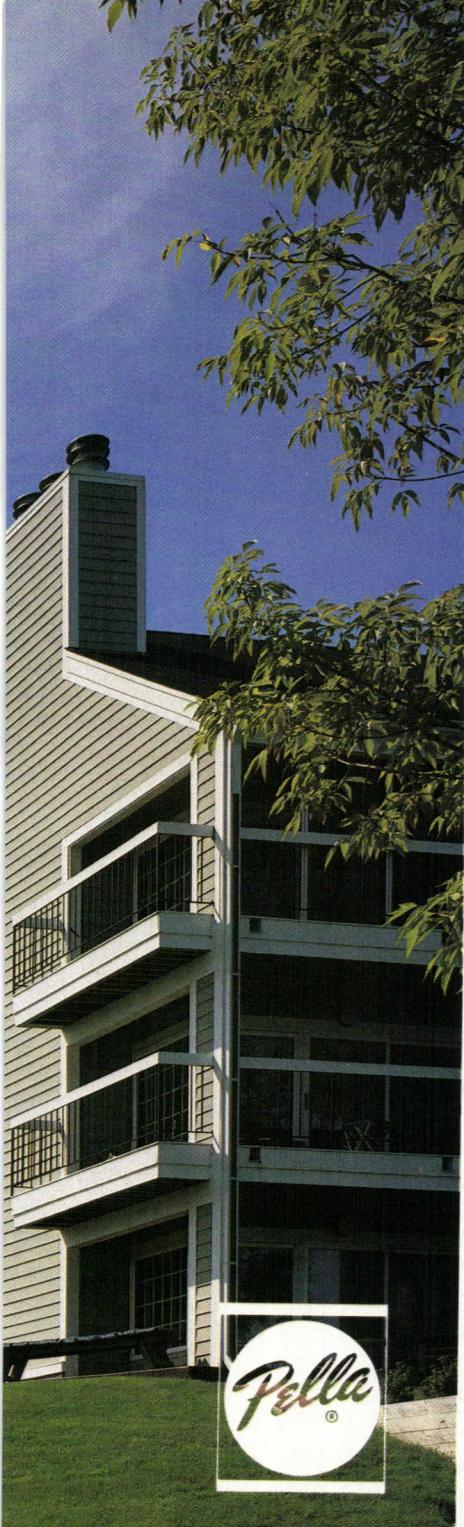
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Pella standard and custom windows and doors.

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Excelsior Bay Gables Condominiums
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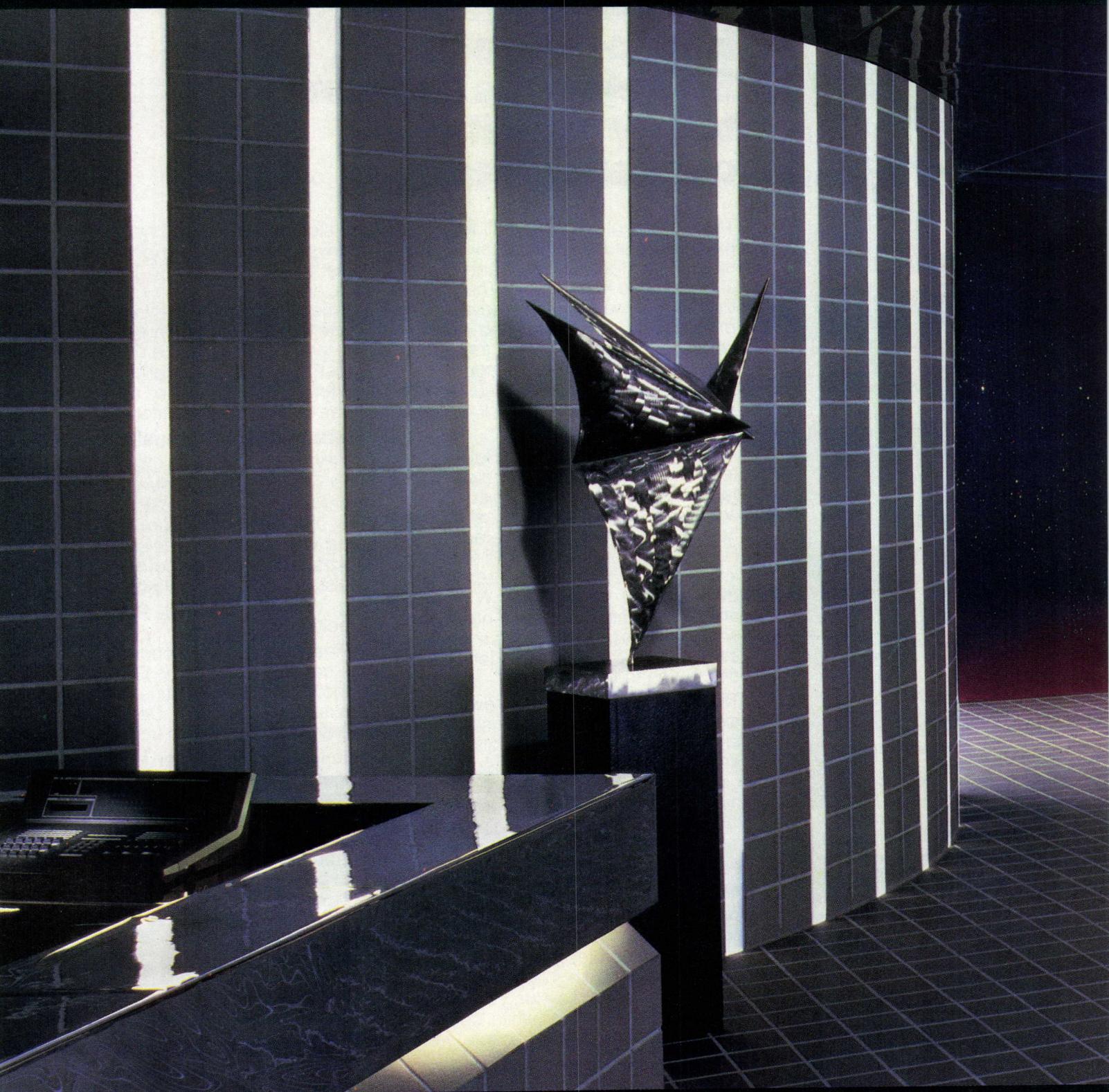
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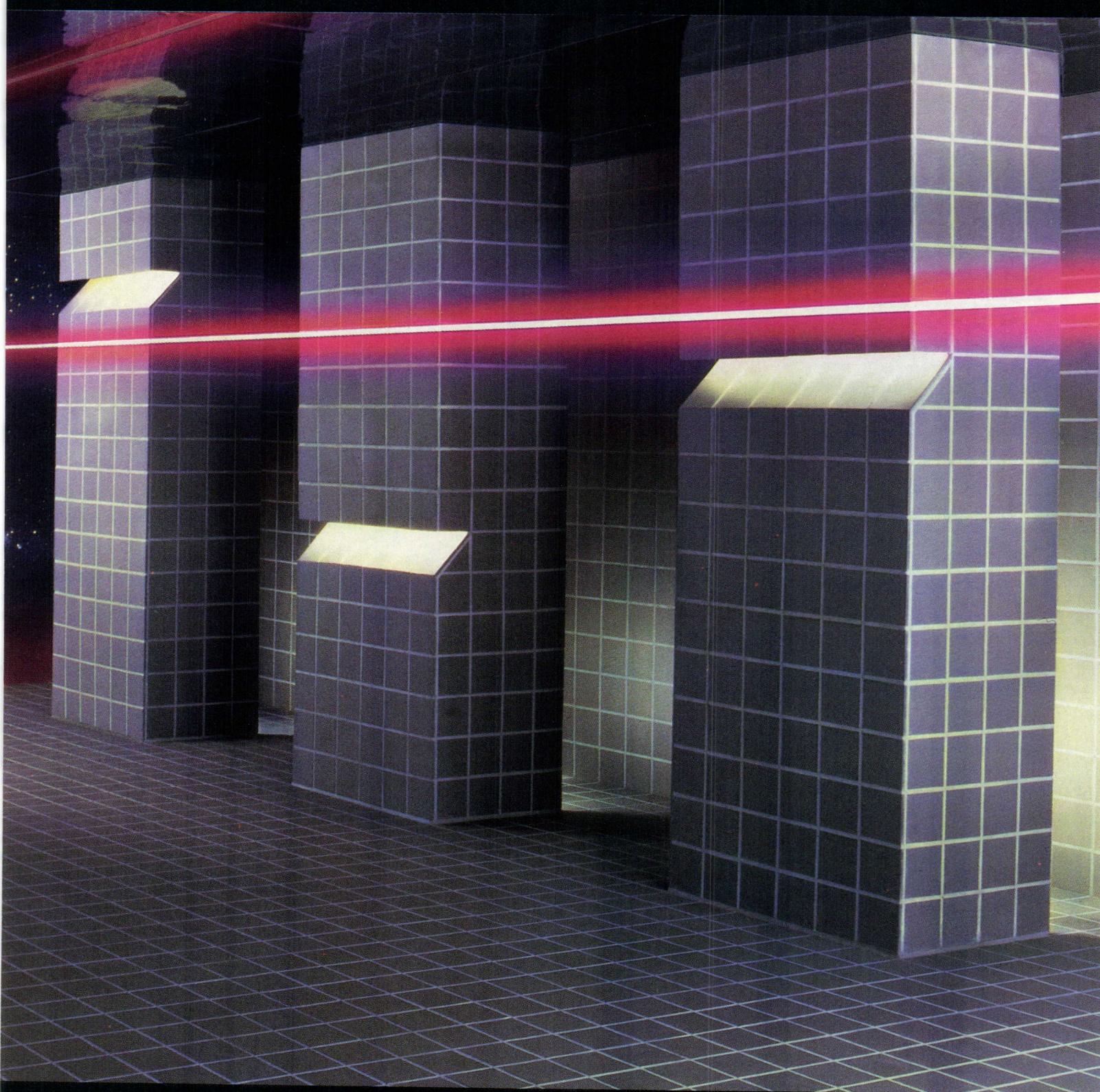
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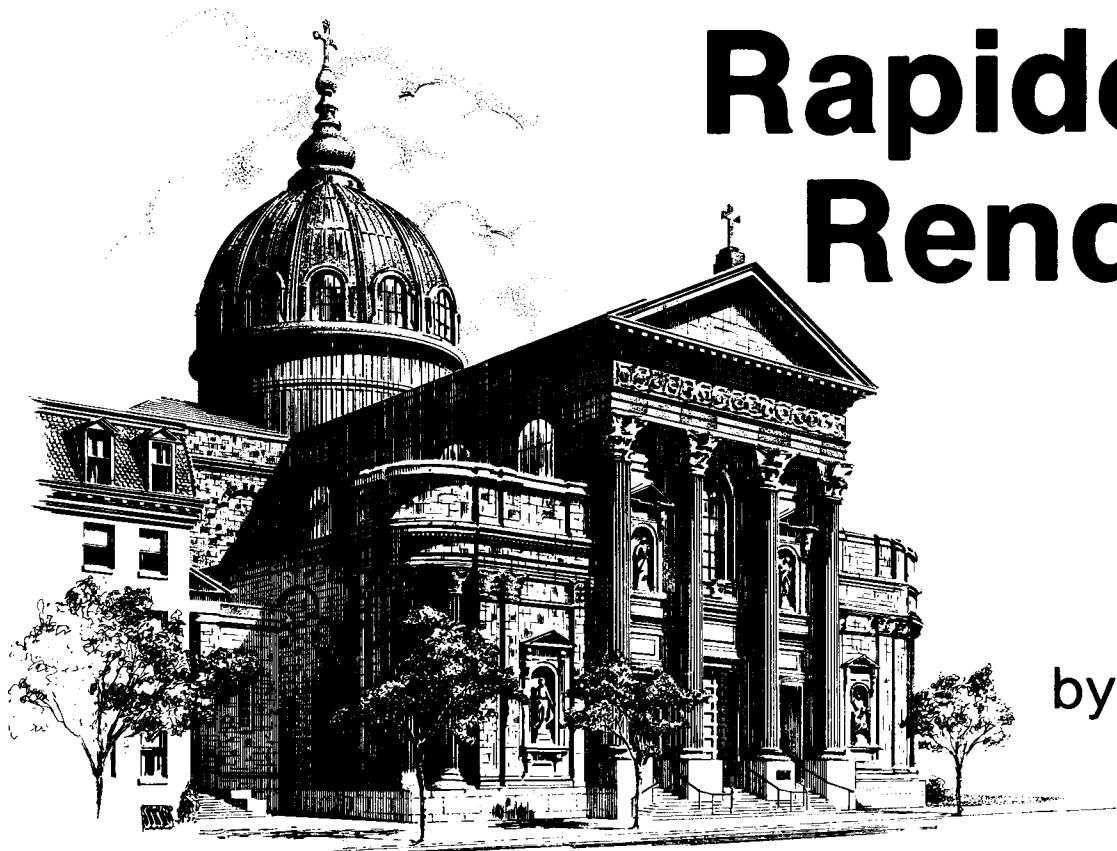
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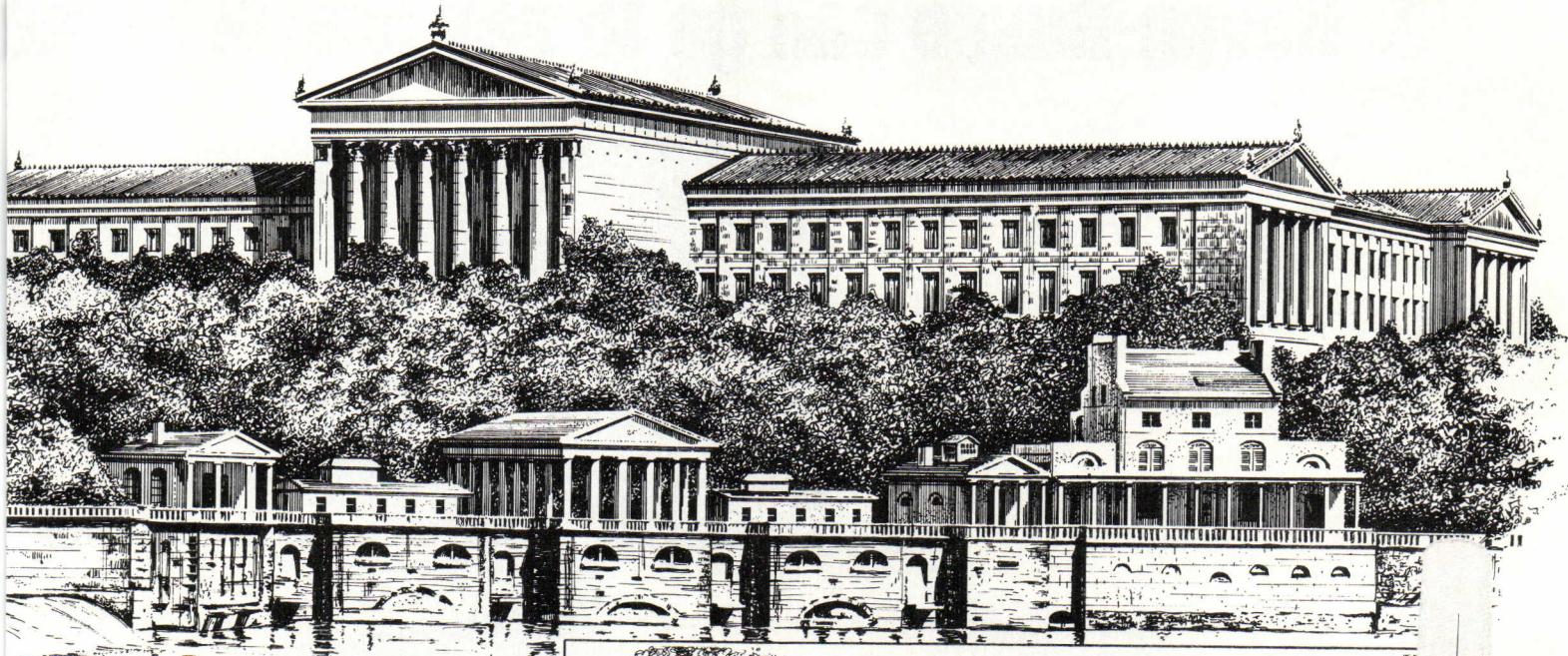
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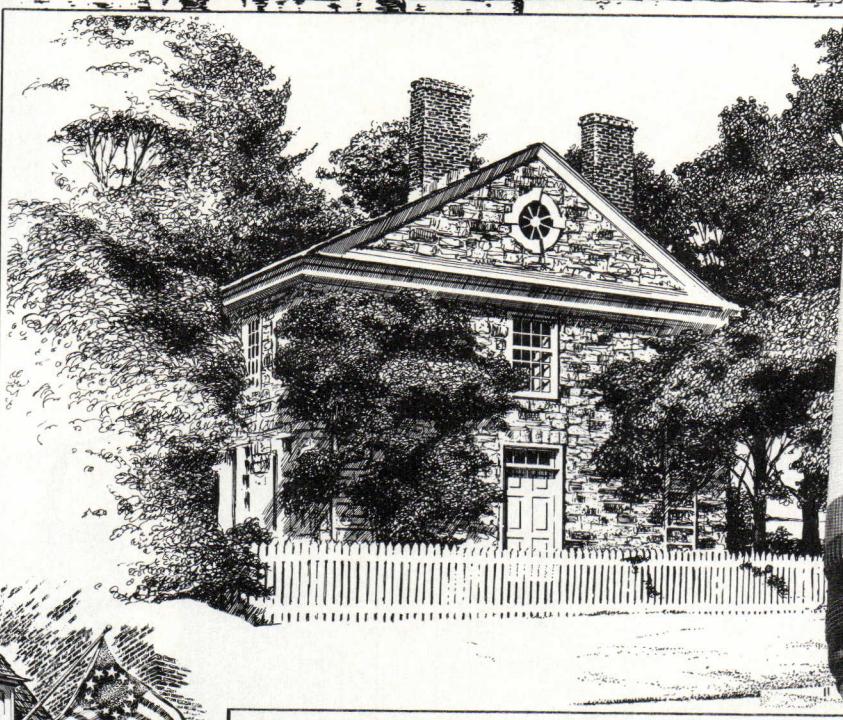
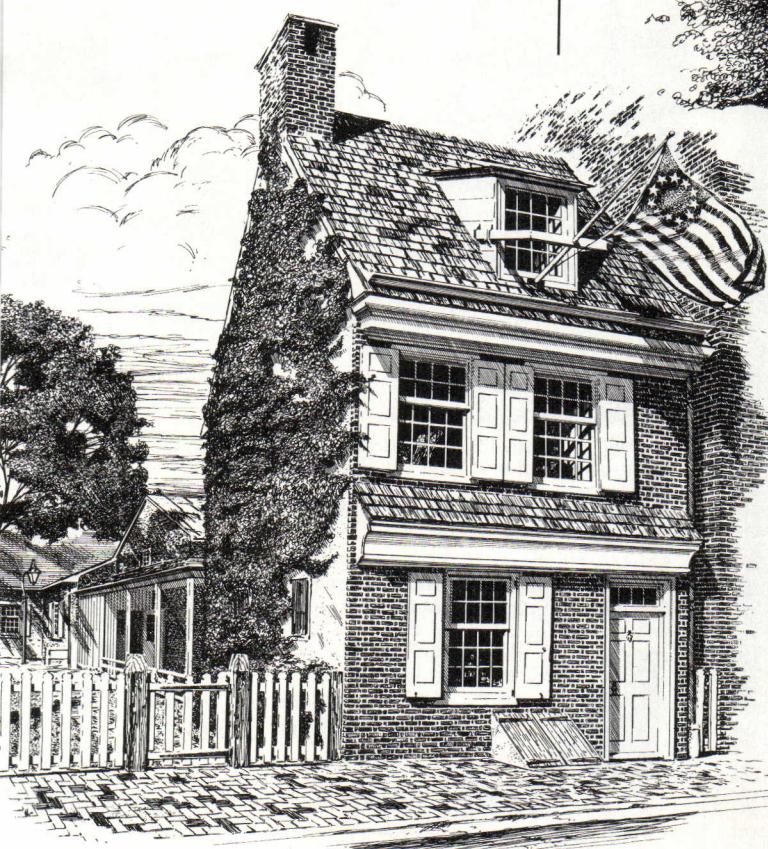


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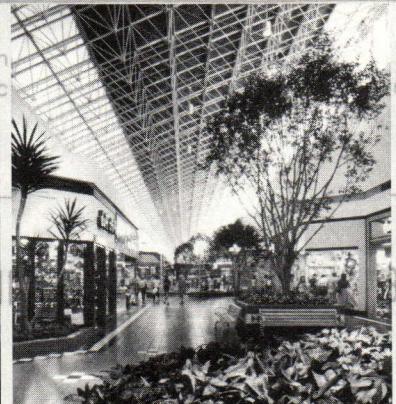
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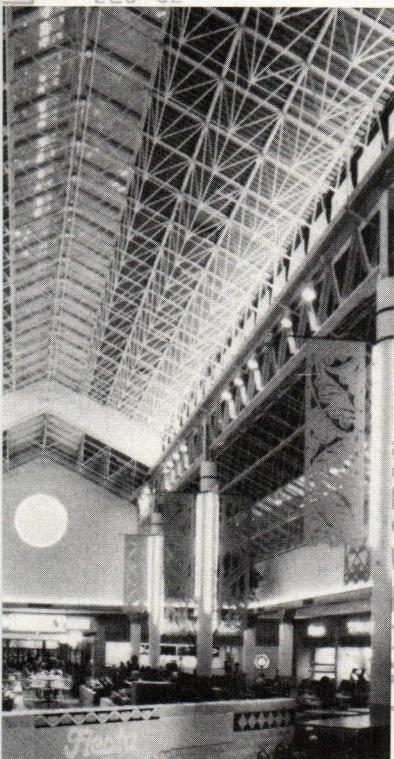
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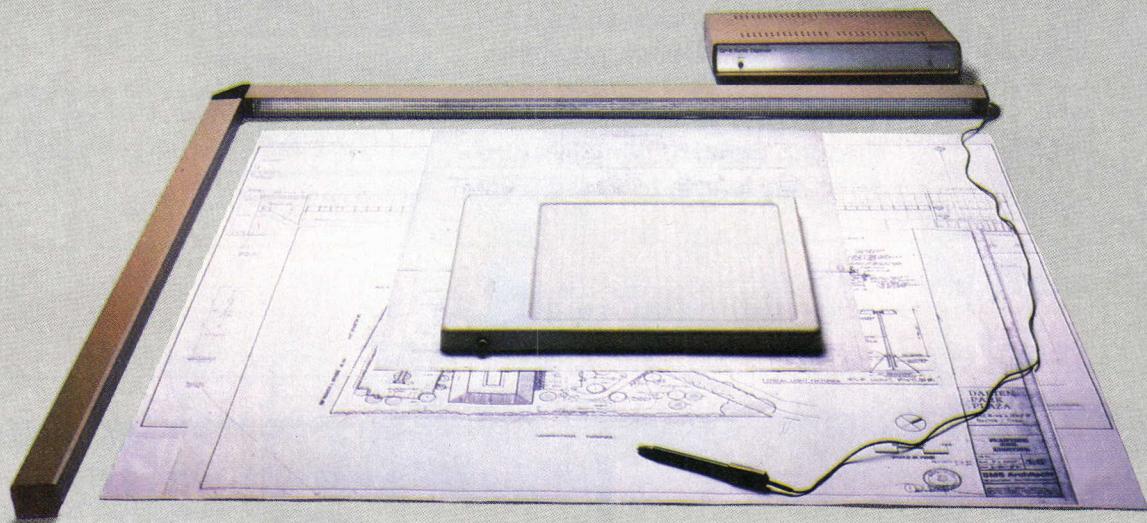
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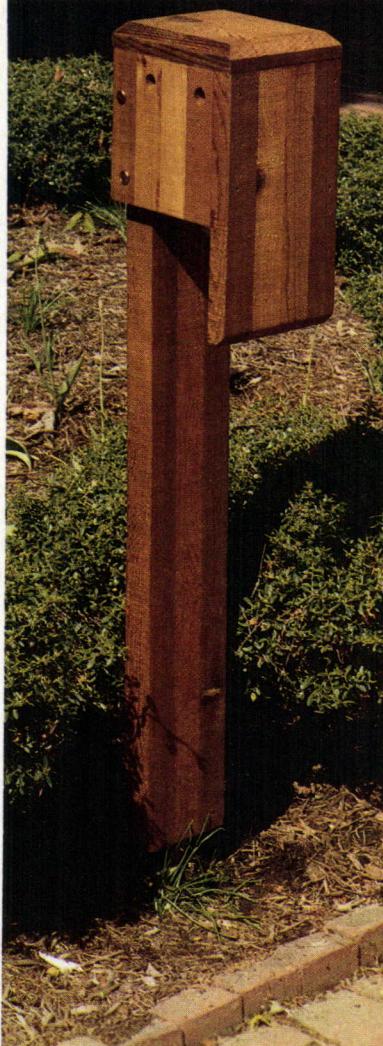


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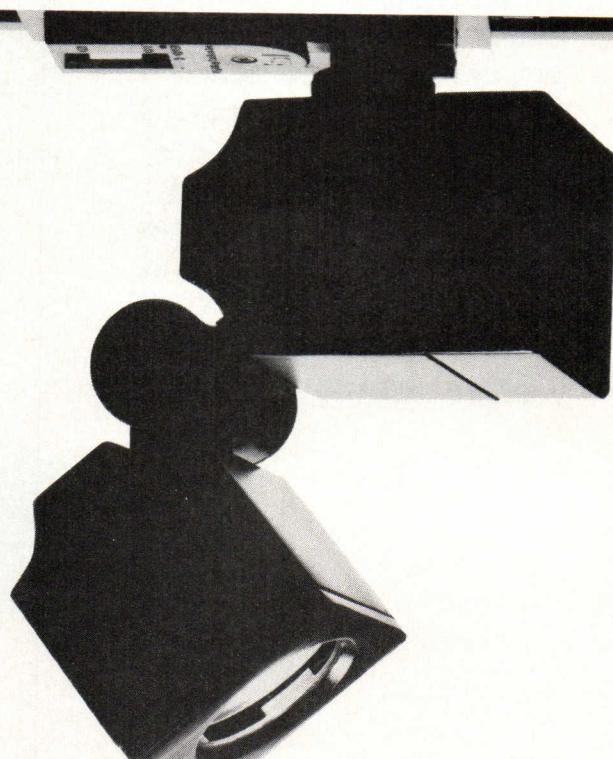
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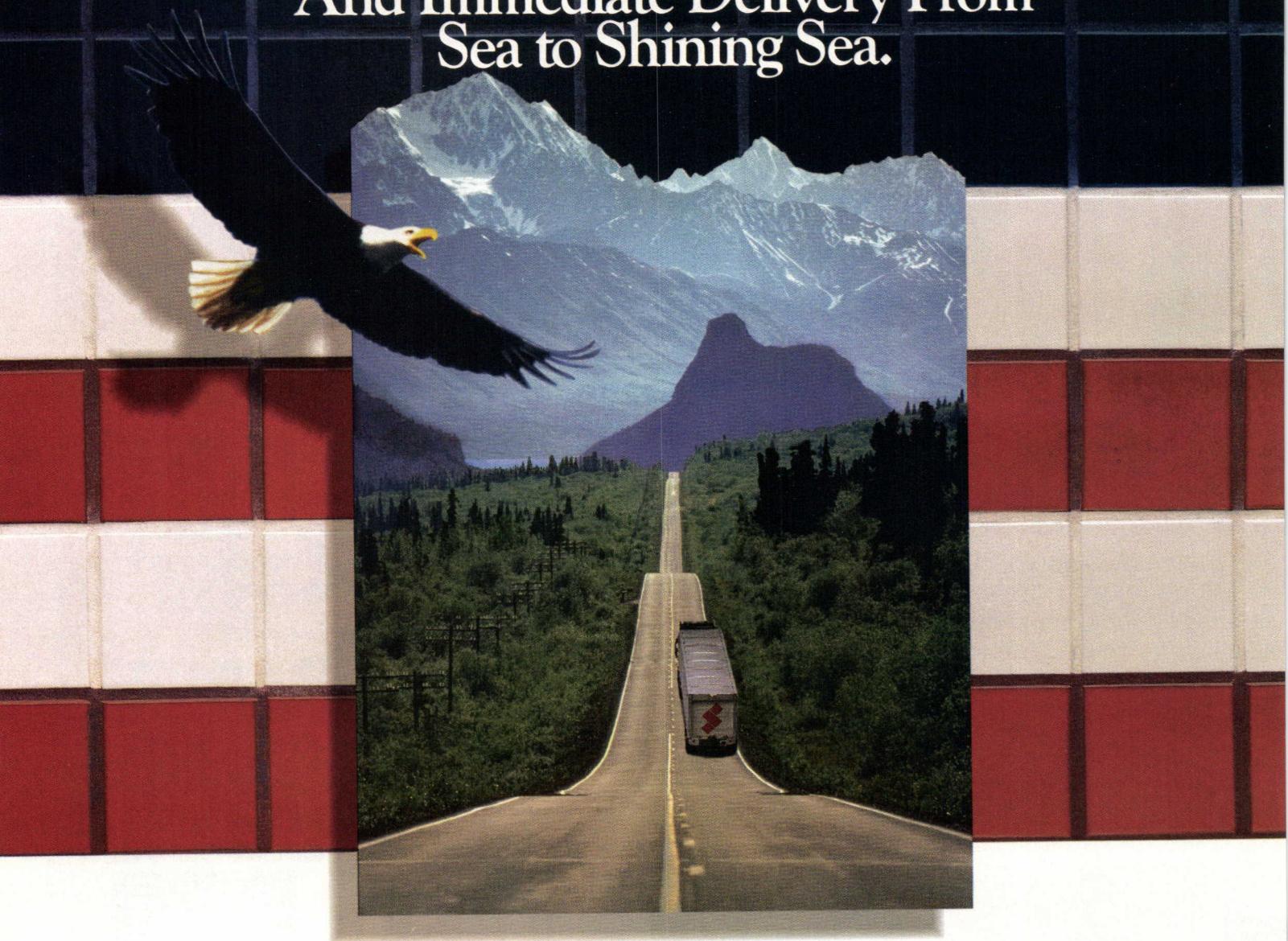
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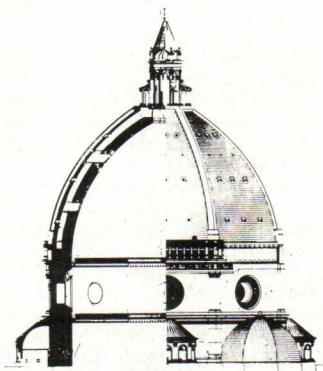
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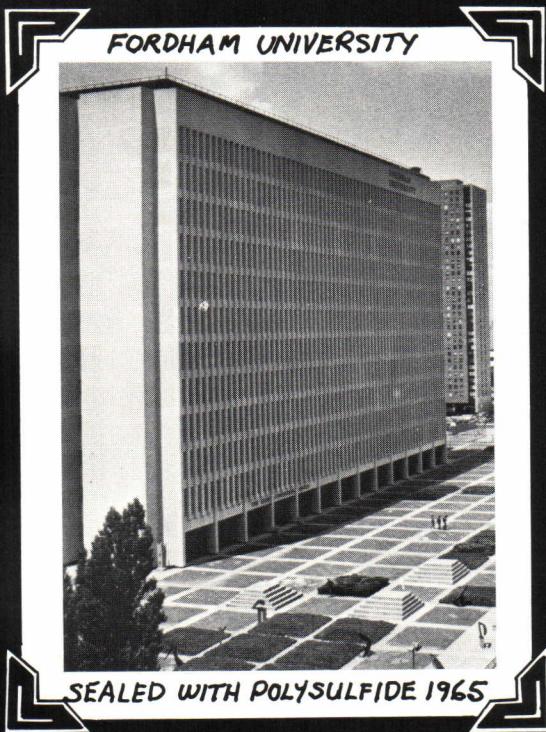
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Los Angeles County Museum
Hardy Holzman Pfeiffer Associates
Pages 110-117—Terra cotta: Gladding McBean. Waterproof deck surfacing: Mer-Kote Products, Inc. Glass block: Pittsburgh Corning Corp. Granite: Cold Spring Granite. Northern Pink Buff Minnesota stone: Vetter Stone Co. Aluminum windows and sliding doors: Kawneer. Roll shades: Sol-R-Veil. Tempered glazing: Granite Glass; Falconer. Porcelain panels: California Metal Enameling Co. Stainless steel: Aetna Sheet Metal Inc. Outdoor light fixtures: Kim Lighting. Roofing: Carlisle Corp. Tempered glass entrance: Brite-Vue Glass Systems. Skylights: Carmel Architectural Sales. Glazing: Kalwall Corp.
Pages 118-119—Ceramic tile flooring: American Olean. Lighting fixtures: Edison Price; Solux. Maple flooring: M. F. Bolster. Carpeting: BMK-New Eastern Carpet, Inc.; Patrick Carpet Mills; Bloomsburg Carpet Mills. Diffusers: Tuttle & Bailey. Automatic sprinkler system: Hyundai. Drywall: Flintkote.

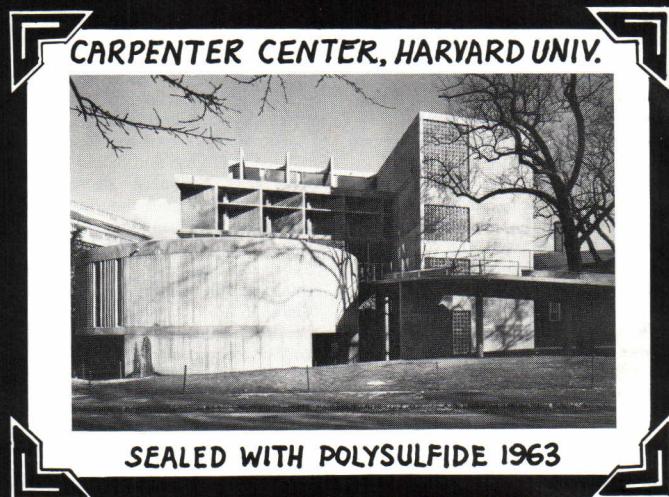
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Primate House, Philadelphia Zoo
Venturi, Rauch and Scott Brown
Pages 120-123—Roofing: Supradur Mfg. Co. (Supra-Slate). Membrane roofing: Celotex Corp. (Celo-Glass IV Ply). Louvers: All-Lite Co. Flue covers: Pittcon Industries, Inc. Rooftop hvac: Industrial Valley Controls, Inc. Fixed windows: MC Metalcraft Co. Glazing: Globe Amerada Glass Co. Railings: EVM Iron Corp. Entrance: Richards-Wilcox Mfg. Co. Motorized doors: Victor C. Smith, Inc. Hinges: Hager Hinge Co.; Folger Adams Co. Closers: Dorma Door Controls, Inc. Locksets: Yale Security Products. Brick: Hanley Brick Inc. Glazed brick: Burns & Russell Co. (Spectra Glaze II). Signage: Cutler Sign Co.; Spencer Industries, Inc.
Page 125—Paint: Benjamin Moore & Co.; Tnemec Co., Inc. Bench: The Sculpture Workshop. Tile flooring: American Olean Tile Co. Murals: Dennis Aufiero.

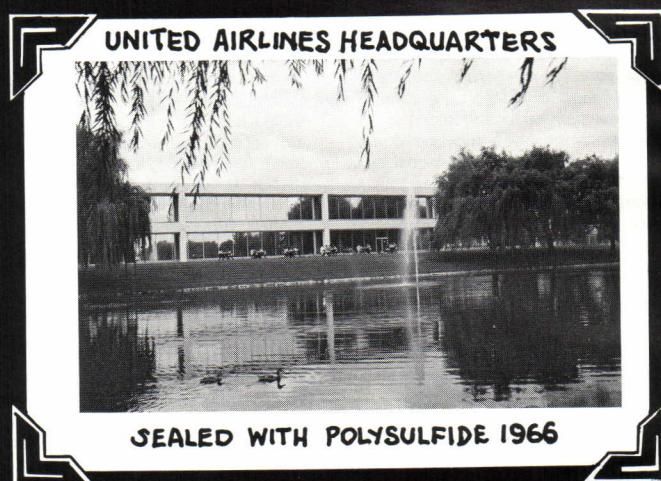
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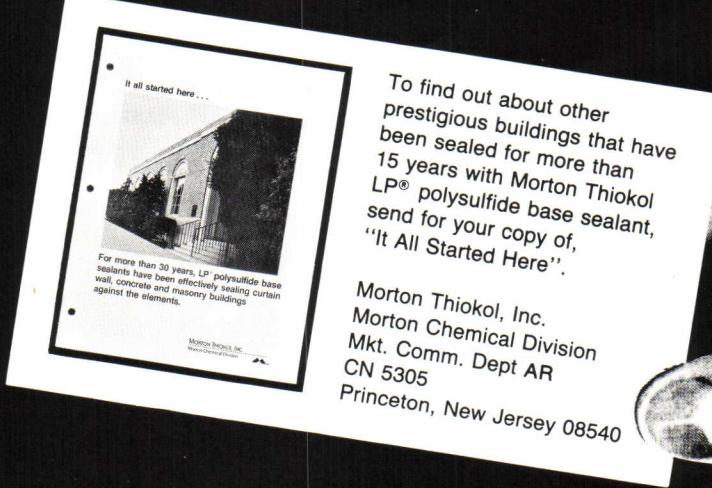
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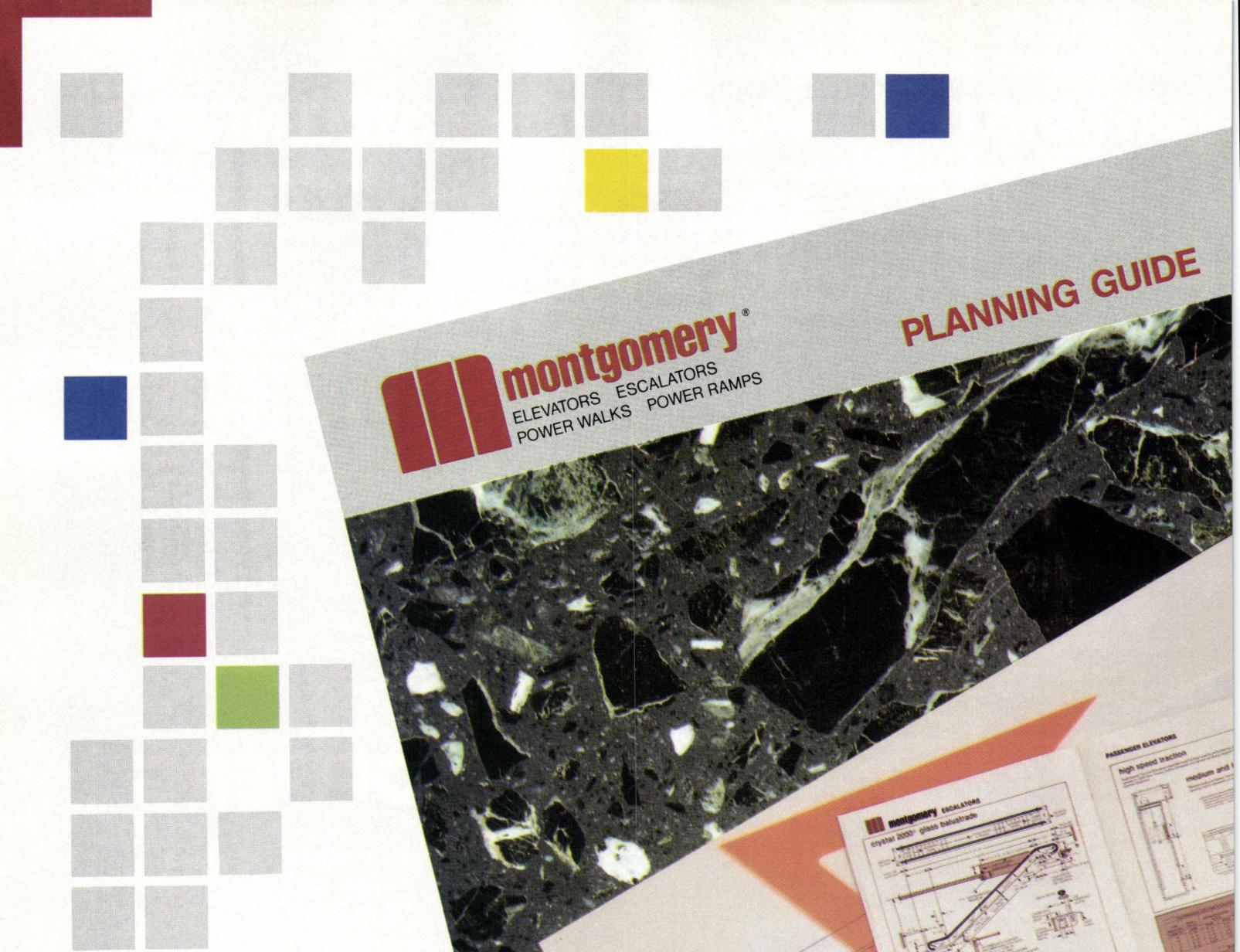
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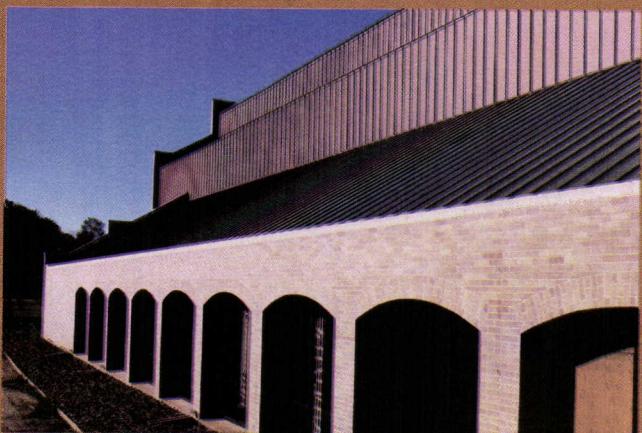
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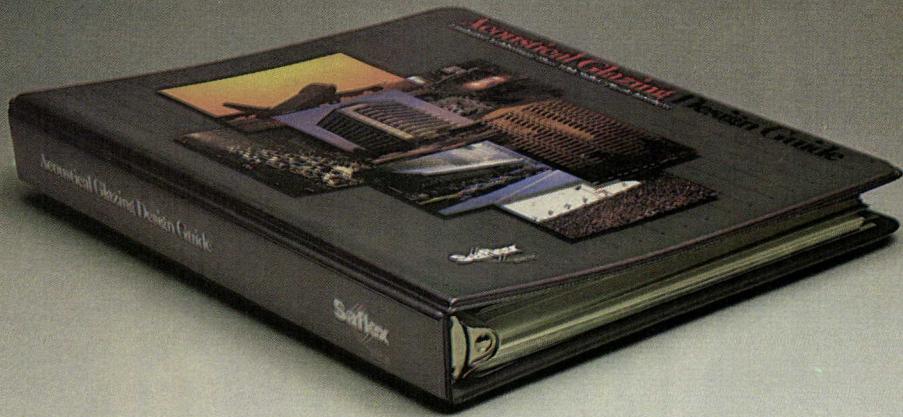
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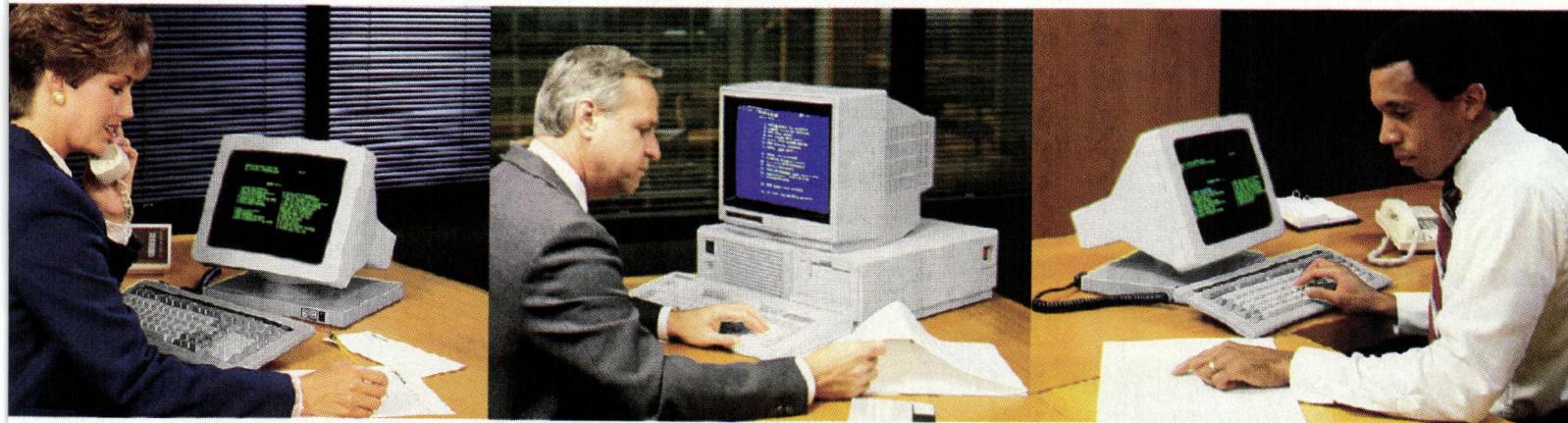


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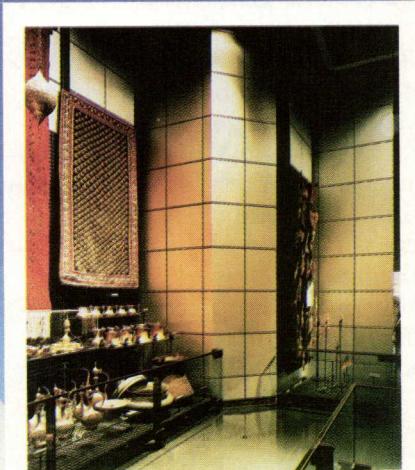
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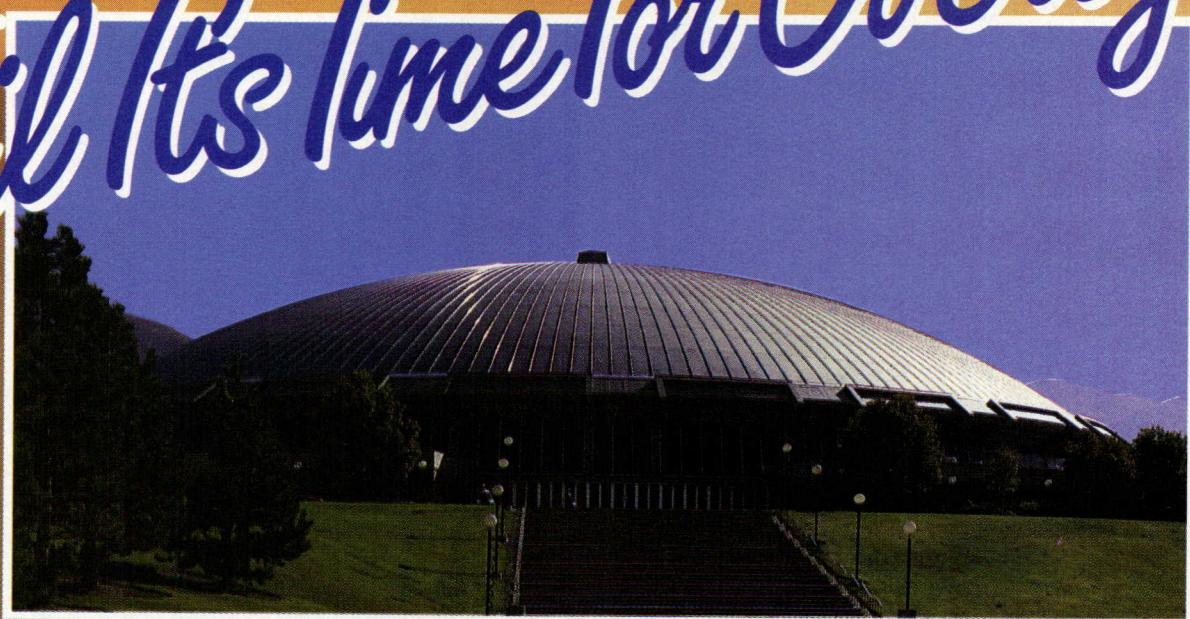
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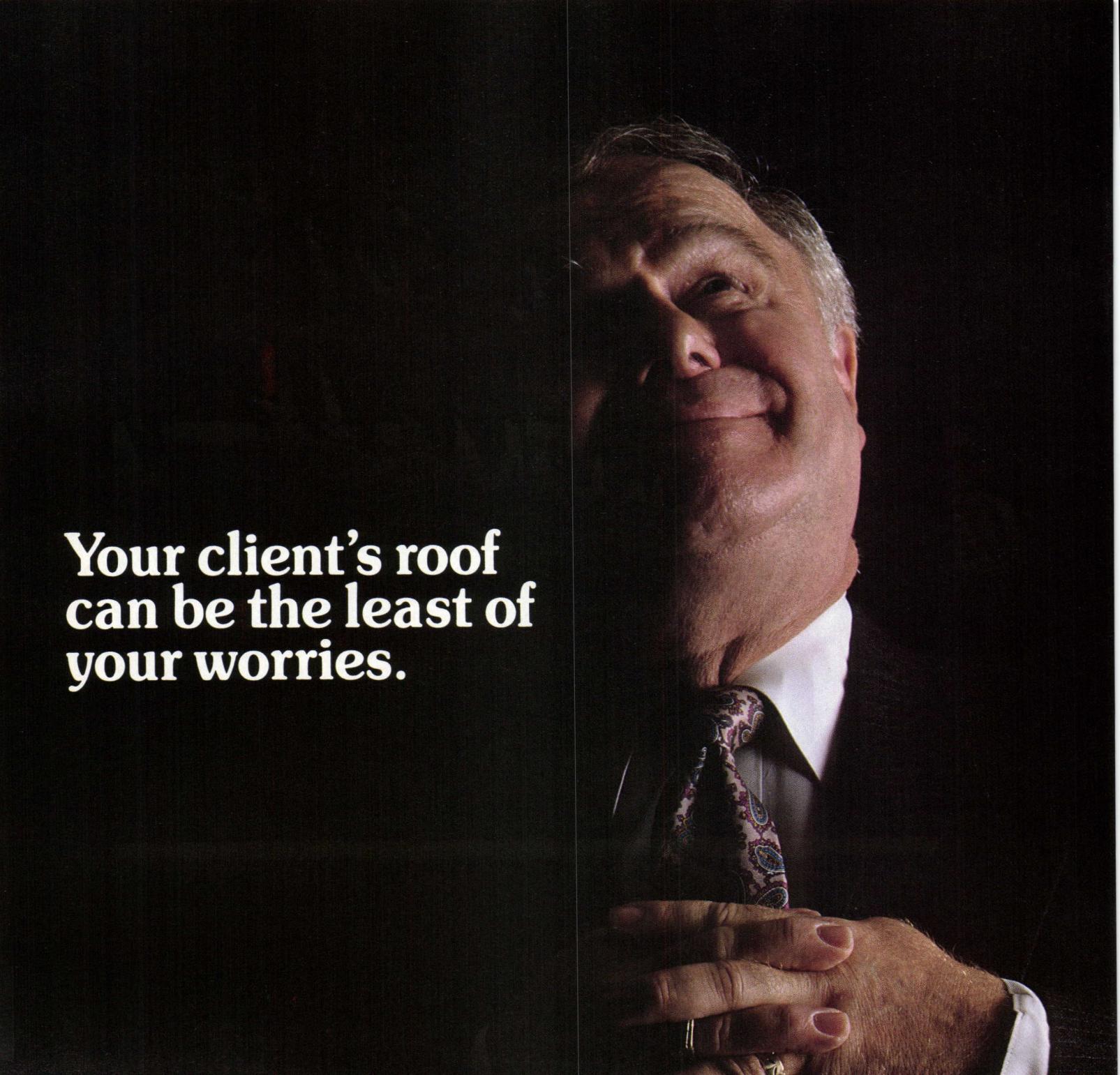
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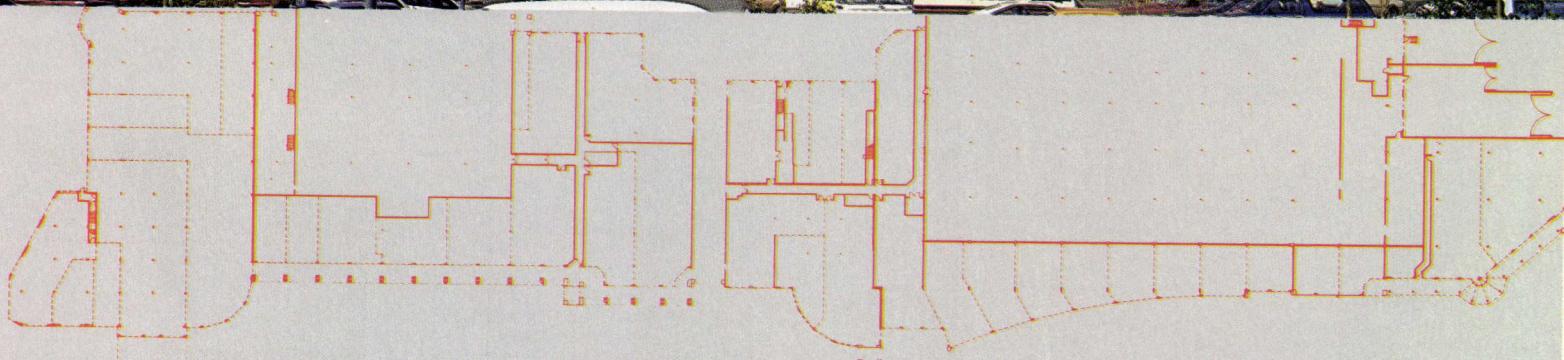
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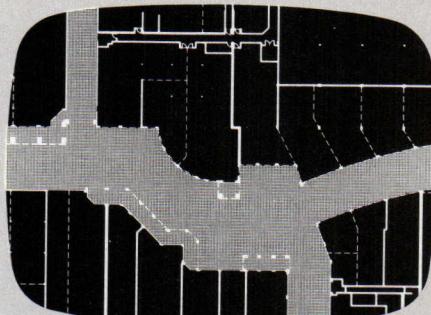
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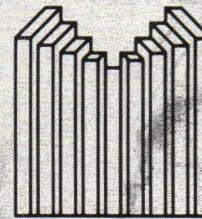
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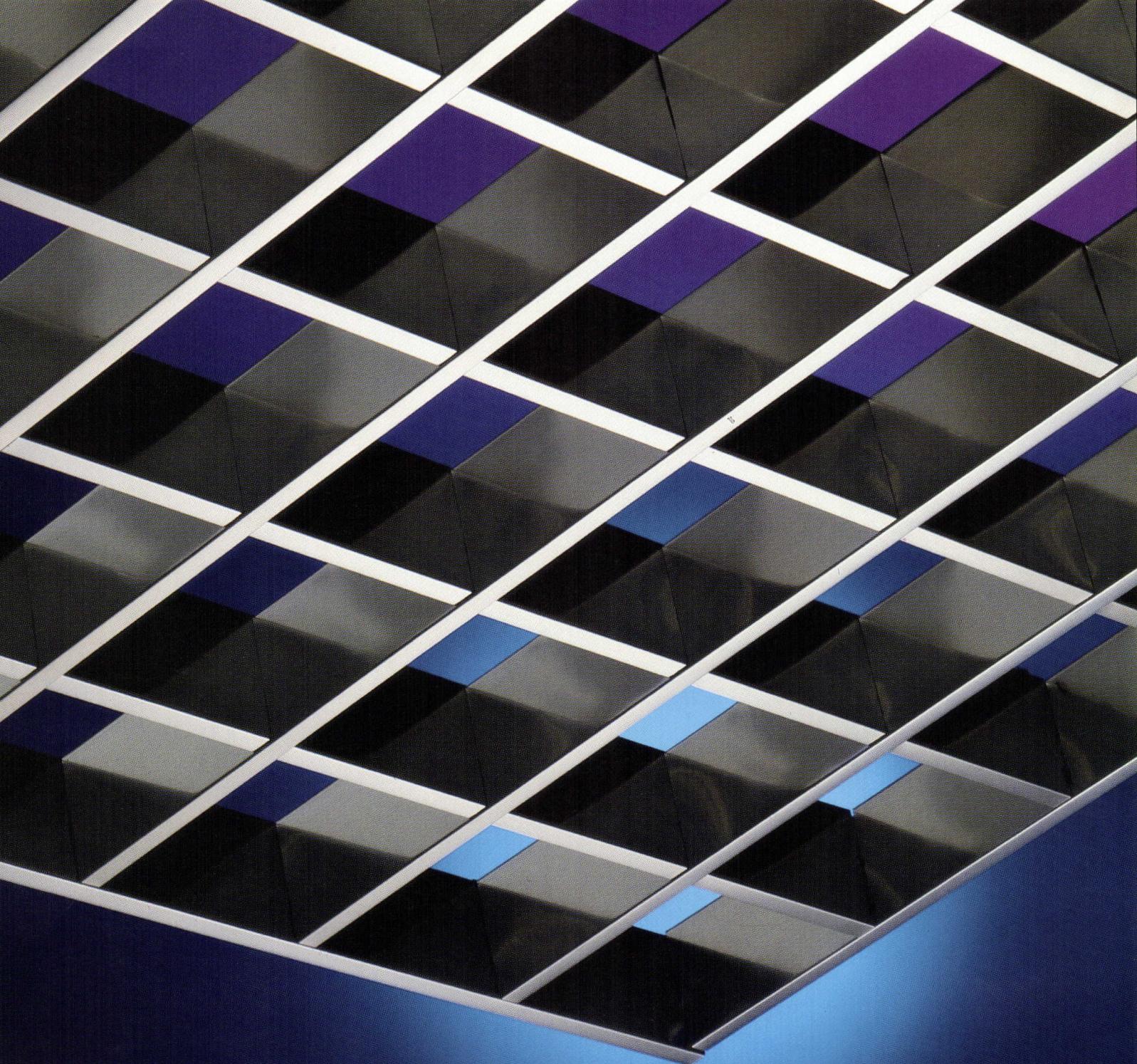
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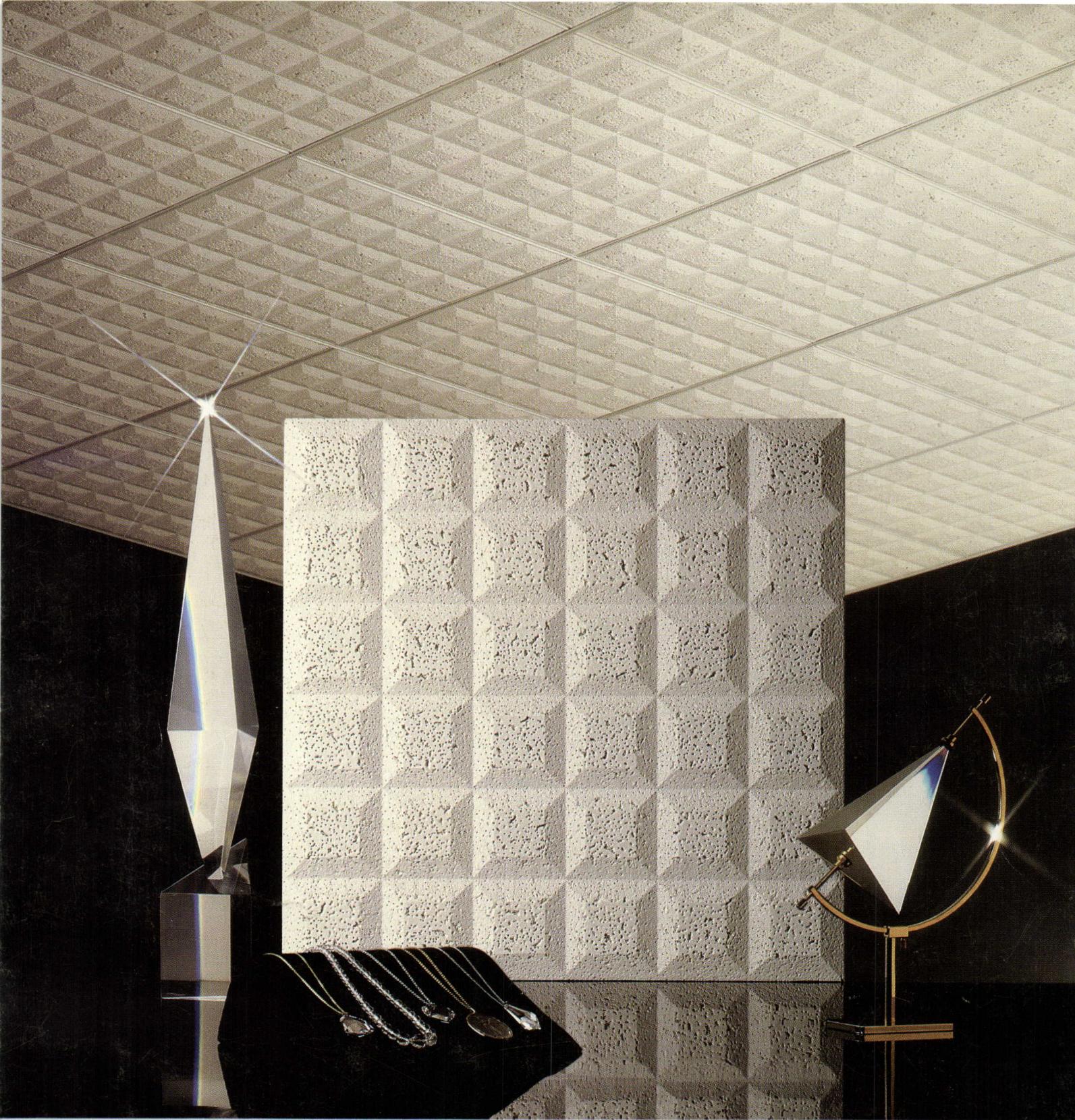
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