



THE YESHIVA PORAT YOSEPH, BY MOSHE SAFDIE, UNDER CONSTRUCTION IN JERUSALEM  
THREE HOSPITAL PROJECTS, BY KAPLAN & McLAUGHLIN  
THE MILFORD, CONNECTICUT JAI ALAI FRONTON, BY HERBERT NEWMAN  
BUILDING TYPES STUDY: SMALL OFFICE BUILDINGS  
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# ARCHITECTURAL RECORD

APRIL 1978

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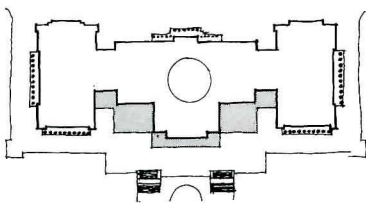


## Letters to the editor

Jean Paul Carlhian, advocating further work on the West Front of the Capitol and challenging the profession to produce a fitting design, asks, "Why should the Capitol be frozen to its 1891 configuration? Why should it not be seen for what it is, an unfinished building?"

The Capitol, as Carlhian asks us to view it, would be an ever-evolving pile, accepting accretions devised by the most creative minds of succeeding generations. Or is that what he really means? Doesn't he really just want to build up the central part with new, expertly designed Beaux Arts elements to make the whole more majestic, and then call it quits? I suspect the latter, that he believes the building could become a complete symbol at this time.

Let us examine, in terms of symbolism, what would happen to the Capitol should the West Front be extended. The proposal which the Architect of the Capitol has submitted to Congress—remember the Congress can do whatever it wants, not subject to review by anybody—calls for extension of everything between the Senate and House wings by from 20 to 60 feet (the elevation accompanying Carlhian's article mistakenly showed only the center extended). This, as the plan on this page illustrates, would flatten the facade and make much less distinct the articulation—the symbolic expression—of our bicameral system.



What could be more historically symbolic than the last remaining exterior element of the original Capitol, in place for 150 years? Carlhian ridicules Bulfinch's design as having "nothing classical about it," and he decries "the shocking anomaly of placing such a gigantic dome and broad drum on top of so narrow a portico." To the contrary, there is in this contrast between Bulfinch's and Walter's work a powerful contradiction worthy of a Michelangelo. The composition is dramatically symbolic of our growth.

No, my esteemed friend Jean Paul, the Capitol is complete, and it needs no face lift. It is alive with symbolism,

and on it one can read our history. To cover up the original work completed in 1820 would deprive us of the very core of our heritage.

*George S. Lewis, FAIA  
New York Chapter  
American Institute of  
Architects*

Concerning Jean Paul Carlhian's recent article on the future of the United States Capitol's West Front, I support the approach of open-mindedly considering the alternatives available for resolving our West Front question. History and tradition in a dynamic society do not preclude creativity and imagination. Meaningful commitment requires circumspection. Our Capitol deserves our most sensitive consideration of the future as well as the past.

*William Morgan, FAIA  
Jacksonville, Florida*

Jean Paul Carlhian's article on the West Front of the U.S. Capitol reminds me of best-selling Washington novels in which the President is a transvestite, has an affair with the Speaker of the House (a former fashion model), and is finally forced to seek political exile in Trieste. Fascinating stuff, but what actually goes on in this city, alas, is somehow a little different. It would take as much of your space as Carlhian took to clarify the many subtle and not so subtle misapprehensions in his piece. Let me therefore make just two points:

Neither the Senate nor the House is unduly crowded in the Capitol building itself. If they were, the Architect of the Capitol would hardly be permitted to have his own expansive offices there. Successive West Front expansion proposals, furthermore, would have provided for more urgent needs than tourist cafeterias (more efficiently available in the nearby National Visitors Center), conference rooms and auditoria (which no one asked for), and so-called hideaway offices (which Miss Elizabeth Ray's celebrated confessions may now have made politically a little less desirable). The desperate need is for more office space for staff and their paper work. Providing that space is primarily a matter of rational space allocation and office management and possibly expansion of the three House Office Buildings (the Senate has one under construction). Just precisely what is needed might be revealed by an office space inventory which has never been made. The whole Capitol space problem is now at last being studied, however. Until that

*continued on page 56*

## Calendar

## APRIL

**14-16** Second Annual Preservation Convocation, "Historic Preservation: the Profession," sponsored by the Preservation Alumni of Columbia University; at the Graduate School of Architecture and Planning of Columbia University, New York City. Contact: P.A.C.U. Conference Committee, c/o Mrs. Cynthia Goldsmith, Historic Preservation Program, Graduate School of Architecture and Planning, Columbia University, New York, N.Y. 10027.

**19,21** "The Hospital Based Medical Office Building," sponsored by the American Hospital Association; at the Adams Hotel in Phoenix on the 19th, and the Sheraton-Houston Hotel on the 21st. Contact: Yoko B. Kojima, American Hospital Association, 840 N. Lake Shore Dr., Chicago, Ill. 60611.

**20-21** "The Government Official and AE contracting," sponsored by COFPAES, the American Public Works Association, the American Society of Consulting Planners, and the National Institute of Government Purchasing, in conjunction with Catholic University's School of Engineering and Architecture and School of Law; New Orleans. Contact: Arnold Prima, Administrator of Government Affairs, the American Institute of Architects, 1735 New York Ave., N.W., Washington, D.C. 20006.

**24-26** Supplemental State Energy Conservation Program, sponsored by the Association of Energy Engineers and the American Institute of Industrial Engineers; at the Sheraton Atlanta Hotel. Contact: Register, American Institute of Industrial Engineers, 25 Technology Park/Atlanta, Norcross, Ga. 30092.

## MAY

**1-2** Seminar, "Using Proven Design Technologies for Energy-Efficient Building Envelopes, Lighting, HVAC," sponsored by ARCHITECTURAL RECORD; Marriott's Essex House, New York City. Program will be repeated June 1-2 in Chicago, and July 10-11 in Los Angeles. Contact: ARCHITECTURAL RECORD SEMINARS, 1221 Avenue of the Americas, New York, N.Y. 10020, Phone: 212/997-3088.

**21-24** The American Institute of Architects National Convention, held at the Dallas Convention Center.

## JUNE

**14-16** NEOCON X, International Congress on Interior Environment, Merchandise Mart, Chicago. Contact: NEOCON X, Suite 830, Merchandise Mart, Chicago, Ill. 60654.

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER)

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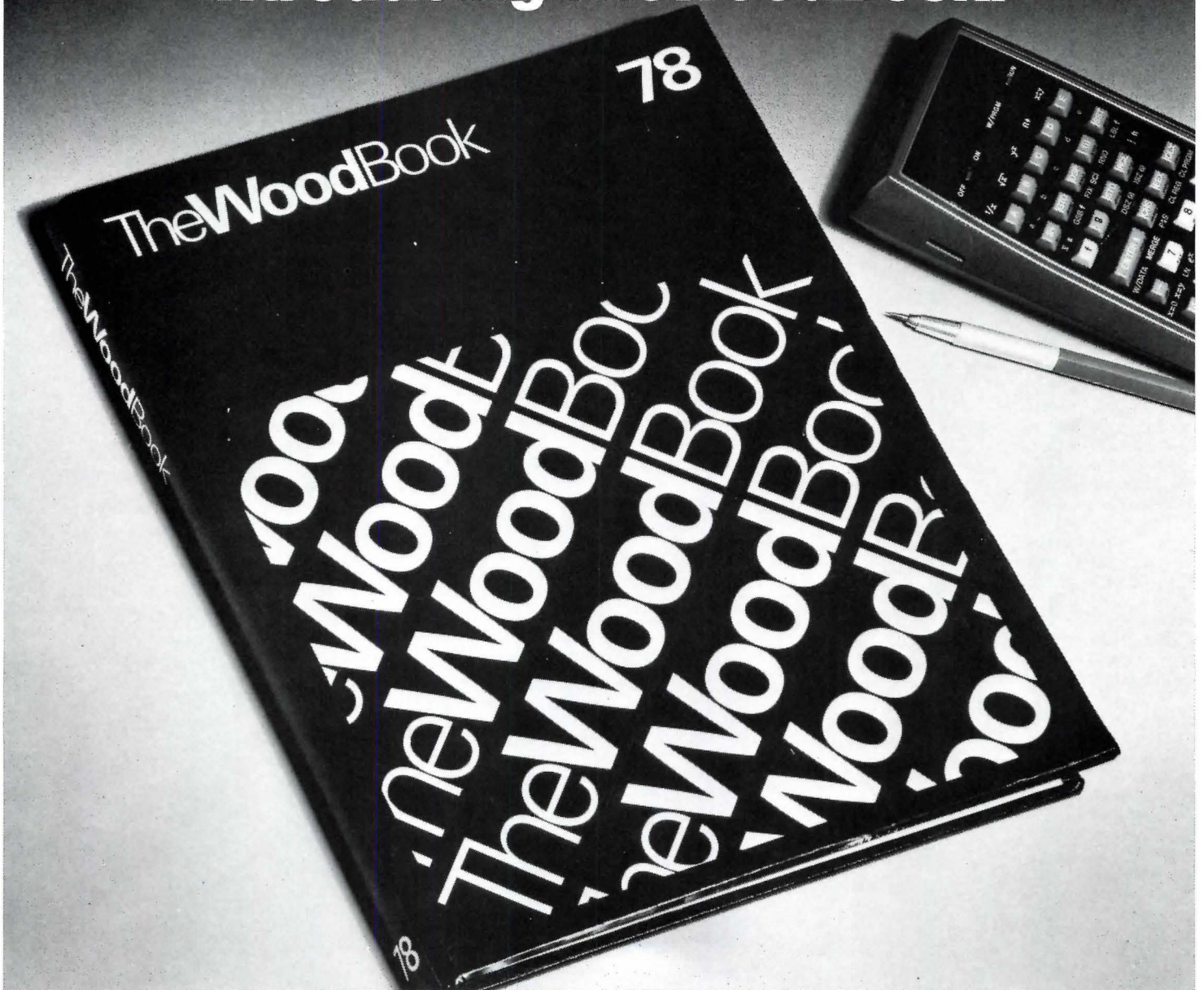
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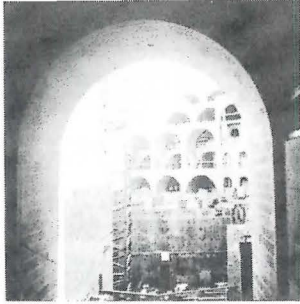
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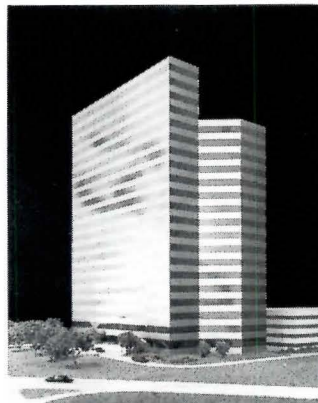
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**The Fed's tactics to rescue the dollar may hurt housing**

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**95 Three hospital projects by Kaplan & McLaughlin**

A consistent approach, rather than a consistent style, marks these hospital designs by a distinguished San Francisco architectural firm. The approach is described in an essay by Herbert McLaughlin, who notes that hospitals should be not "more dramatic, but more pleasant; we need statements about joy, not about technology."

**103 Three projects by Moshe Safdie in Jerusalem**

A design for the Western Wall Precinct, a new Yeshiva and a redevelopment project at Mamilla in downtown Jerusalem show how the Israelis are using the symbolic power of architecture and the techniques of city planning to make one city of Jewish and Arab Jerusalem.

**115 Contemporary farm house is abstraction of local architecture**

Oscar Padjen has designed a big, sophisticated house to have an air of pleasant modesty and great comfort.



©Steve Rosenthal

**119 Milford Jai Alai: festive building for the "merry festival"**

Architect Herbert Newman's design for a jai alai fronton in Connecticut has many design lessons for any project where the goal is to make the visitor feel involved—for the building itself is "a festival."

**BUILDING TYPES STUDY 514**

**125 Small office buildings**

Considering F.W. Dodge's forecast of a 10 per cent increase in the growth rate of new office space in 1978, the fact that a large proportion of the new space will be in many more smaller office buildings means a very large increase in the number of upcoming commissions. Both the probable national regions for such commissions and the design factors that will influence the commissions are explored in this Study.

**126 Medical Plaza Office Building**

Plantation, Florida  
by architect Donald Singer.

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**141 Structure and lighting give excellent performance at a fronton**

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**NEXT MONTH IN RECORD**

**Building Types Study: Buildings for culture**

U.S. citizens are spending more and more time in performing arts centers, museums and art galleries. The buildings now being constructed to exhibit the performing and visual arts as well as the artifacts of science and history are sometimes included in multi-purpose structures and often are additions to existing museums. Altogether the new buildings are smaller, less monumental and less pretentious than they were in the fifties and sixties. The best of them fit modestly and well into their surroundings.

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## Some random reflections on regionalism

Last week I had the pleasure of once again serving on the custom-house jury for the HOUSING/AIA Homes for Better Living Competition, which is the largest housing design competition in the country. And two very encouraging things happened: 1. After the "first pass"—independent study by each of the five jurors of each of the entries—over half of the houses survived because one or more of the jurors thought it should receive careful group discussion. This is, in my experience, a very high percentage of houses to receive at least one vote to "discuss this one as a possible winner." And it suggests to me that the level of design skill and care going into houses may be trending in some good and innovative directions. Encouraging thing number 2: There was no "design pattern" or "in" kind of design discernible to any of us. For example, in previous years, such juries have seen quantities of "white boxes" of varying degrees of excellence, and this year there were only a handful. Only one, in the end, received an award.

It was that major change in the character of the entries that got us thinking about "what was happening"—and it didn't take us long to realize that the submissions that remained on the table when all the dust had settled (there were 13 winners from the just-over-200 entries) were almost all singularly appropriate for their sites and *their part of the country*. The winners will be properly announced in HOUSING next month—but I don't think I'm tipping any hands by reporting that among the winners there was a wonderful desert house, a number of houses that are *real* New Englanders, a couple that really wouldn't have made much sense anywhere but in the California woods, and a house that had to be in Chicago.

And that led to some wondering about regionalism.

There's just no doubt that we're seeing a new pluralism in design—as more and more architects search for alternatives to "the rules of design"; as more and more architects search for a design discipline (or disciplines) that will stir broader emotional responses.

And there's just no doubt that one of the strongest set of images and associations that many people carry around are regional images and associations. A lot of good architects for a very long time have used those regional images and associations as the base upon which to design.

That's pretty easy in some parts of the country—like (to use the easiest example) Cape Cod. In fact it's so easy there that the design

disciplines of the Cape Cod houses (which are, quite properly, very different from good Rhode Island or Vermont or Maine houses) have been badly misused all over the country.

But then, when you come to think of it, there are regional images and associations everywhere—not just New England (which has several separate traditions) and California (which also has several separate traditions) but probably almost everywhere (if you know the area well). Preston Bolton and O'Neill Ford (to name the two Texas architects I know best) have been designing houses and larger buildings that have a great deal to do with the fact that they are in Texas. And in an issue of *North Carolina Architect*—devoted to a first-rate series of articles on regionalism—Fayetteville architect Dan MacMillan argues that "North Carolina is distinct. It's certainly distinct from South Carolina and Virginia."

What makes for regionalism? Surely response to the local environment, use of indigenous material, reflections on local character. New Englanders and—I'm told in the *North Carolina Architect*—North Carolinians are tight-fisted, which leads to a kind of spare architecture. Charles Hight, dean of the College of Architecture at the University of North Carolina-Charlotte, argues that the future of regionalism "does not lie in bold, broad brush strokes or in simple answers, but rather in more intricate directions . . . relating any new buildings or building complexes to a district's or region's unique spatial and visual ordering systems; involving users in the design and planning processes in order to understand the unique cultural values and needs of the inhabitants; and responding to the issues of energy and ecology pertinent to each region." Dean Hight is surely correct—the proper development of regionalism within a contemporary framework is much more than any simplistic cribbing of details (from New England widow's walks to Southern white columns). Conversely, there are design principles that are much more important functionally than they are geographically—a beach house pictured in the *North Carolina Architect* located at Nag's Head looks and is clearly planned very much like the beach houses I know along the Connecticut coast—as well it should.

At any rate—no conclusions, just reflections. And a growing conviction that in regional characteristics and traditions and images are the roots of a contemporary architecture to which people *will* respond.

—Walter Wagner



**Contracts for new construction remained at near-record levels in January**, reports the F. W. Dodge Division of the McGraw-Hill Information Systems Company. Residential contracts were up 31 per cent over last January—"only slightly below the record December pace, despite severe winter weather in many parts of the country," commented Dodge chief economist George A. Christie. Offices and retail buildings shared equally in the 63 per cent gain in commercial building contracts, while industrial building gained 11 per cent. Nonbuilding construction, stimulated by a large New England nuclear plant and by Federal public works spending, increased 65 per cent.

**The American Bar Association is likely to recommend a "price-as-a-factor" approach to A-E selection** in its model code for local and state government procurement of design services. Details on page 34.

**The recently published National Heritage Program recommends the creation of two new preservation agencies** and the establishment of assistance funds for the conservation of both the natural and built environments. The Task Force that wrote the report was appointed by the Department of the Interior. Details on page 37.

**Los Angeles County has published a 20-year master plan for development**, calling for urban in-fill of developed areas and for a "moderate" growth rate. Details on page 34.

**The Society of American Registered Architects has adopted a resolution permitting its members to advertise.** While the ARA laid down no rules governing the nature of architectural advertising, it intends "to review [members'] advertising periodically and offer constructive comments wherever necessary." The Society has re-elected Jerome Salzman, F.ARA, president for a one-year term, and has elected Richard E. Shields, F.ARA, president-elect.

**William L. Slayton has been named Deputy Assistant Secretary of State in charge of foreign building operations.** Mr. Slayton was for eight years executive vice president of the American Institute of Architects. At the State Department, he will have responsibility for the construction and maintenance of U.S. facilities abroad.

**The Construction Research Council now has under review the first of its series of performance specifications: *Integrated Ceiling Subsystems [for] Office Buildings.*** The CRC, founded in 1975 under the aegis of the Building Research Advisory Board, is a private nonprofit association which numbers among its members major private and public building owners and users. For information: CRC, 1000 Vermont Avenue, N.W., Washington, D.C. 20005.

**HUD has issued two booklets as part of the Historic Preservation Loan program.** "Historic Preservation Loans" describes qualifications and procedures for FHA-guaranteed loans. The other publication, "Guidelines for Rehabilitating Old Buildings," carries the subtitle "Principles to consider when planning rehabilitation and new construction projects in older neighborhoods."

**California's Department of Health has compiled a facilities survey list for accessibility for the handicapped.** The document, the product of a six-month study by a team of architects under the direction of Ronald R. Lowry, AIA, is designed to facilitate building evaluation for compliance with various codes, regulations and statutes.

**Secretary of Transportation Brock Adams has nominated Dulles airport to the National Register of Historic Places.** A 50-ft widening of Eero Saarinen's 15-year-old terminal building, recently approved by the Federal Aviation Administration, is expected to come under immediate review by the Advisory Council on Historic Preservation.

**The AIA has elected 11 Hon. AIAs:** Sarah Booth Conroy, writer/editor for architecture and design at *The Washington Post*; Robert Gutman, sociologist and professor, Princeton University; Patrick K. Harrison, secretary, Royal Institute of British Architects; Suzanne Keller, sociologist and professor, Princeton University; Florence Cawthorne Ladd, assistant dean at MIT's School of Architecture and Planning; William B. Moore, Jr., vice president and general manager, Reynolds Architecture and Building Products Division; Marilyn Wood, choreographer of urban "celebrations"; Jane Dougherty, executive secretary, Washington (D.C.) Metropolitan chapter, AIA; Inez Kirby, executive secretary, Dallas chapter, AIA; and George L. Wildgen, executive director, Arkansas chapter, AIA.

**The firm Minoru Yamasaki & Associates has established a full-tuition scholarship for architecture students** at Lawrence Institute of Technology, Southfield, Michigan. The school may elect to award the scholarship, which must be renewed yearly, to a single student or may divide it among two or more.

**For a projected book on multifunctional buildings, architect Eberhard Zeidler seeks examples** from other architects who have worked on such projects. The book is being prepared for the series Documents on Modern Architecture, published by the German house Kramer Verlag. For information: Eberhard Zeidler, Zeidler Partnership/Architects, 98 Queen Street East, Toronto, Ontario M5C 1S7.

## Los Angeles County master plan addresses area problems of suburban sprawl and middle-class out-migration

The County of Los Angeles has published a new master plan designed to guide its development and the quality of life for its 7 million inhabitants through the turn of the century.

Two key elements in the plan call for 1) the channeling of development to those areas already urbanized, in order to halt further sprawl, and 2) a moderate growth policy based on natural increase in population.

Over the next 20 years, the county expects to add about 125 sq mi (80,000 acres) to its present 4,083 sq mi, both with in-fill and expansion. The projected population growth is slightly greater than 700,000.

One of the major goals of the new plan, says Owen Lewis, chairman of the Regional Planning Commission, is to "stem the tide of middle- and upper-income families moving out of the county."

Norman Murdoch, the county's planning director, says, "The plan has been designed to achieve what we found the people want—jobs, a strong economy, clean air, a clean environment."

Among the major proposals of-

fered in the master plan:

- Concentrating higher density housing throughout the urban area, in or near major regional centers. (High-density apartment living, however, is not seen as a predominant life-style. Instead, emphasis will be on medium-density twin-houses and townhouses, with small lots.)

- In-filling by-passed vacant or agricultural parcels—42,000 acres—located within the existing urban area.

- Focusing low-density residential development on 38,000 acres adjoining or outside the existing urban area. (Most of the activity will be directed to north county spots that are not yet fully developed, such as the San Gabriel, San Fernando, Antelope and Santa Clarita Valleys, and the Malibu-Santa Monica Mountains area.)

- Recycling 43,000 acres within the urban area by converting low-density land use (mostly garden apartments) to medium- and high-density use.

- Channeling new commerce to the county's 111 mercantile and business districts. (N.B. for the disbelieving: Los Angeles County, by its own reckoning, encompasses 111 mini-downtown

commercial districts.)

- Promoting more intensive use of industrial sites.

Between 1940 and 1970, more than 4 million people and 2 million jobs were added in Los Angeles County, and 700 sq mi were put into urban use. All this expansion has generated a certain amount of public dismay, with critics calling for no-growth, or at least low-growth, policy.

The new master plan, say its writers, "neither forces out-migration nor does it significantly encourage in-migration."

For decades, in-migration has been responsible for the county's explosive growth. But between 1970 and 1975, there was an estimated net out-migration of 320,000. "Since 1975," the plan says, "there has been a strong indication that this trend has altered but not reversed. Thus, the projections assume some continued out-migration, but at a declining rate for most of the forecast period."

Based on shrunken population projections, new housing construction is expected to add 552,000 units by the year 2000. Some 400,000 of these will

be medium- and high-density units, while 152,000 will be low-density.

The plan also notes that, while most people have found "good housing," escalating costs have severely limited the ability of some groups to afford decent dwellings. Virtually all new single-family housing—a prime consumer of vacant land—is being built for the upper-income market. And the cost of buying a house has doubled in the last five years, with \$84,200 the average sales price last year.

The plan urges a search for suitable sites for lower-income housing, which it defines as having a 1975 market value of \$20,000 or less. It suggests the utilization of surplus and abandoned schools and other public and institutional sites, tax delinquent properties, and areas within older commercial sites.

After public hearings, which were scheduled to start at the end of February, the plan will be revised by the county's Regional Planning Commission, and then the Board of Supervisors will take final action.—*Barbara Lamb, World News, Los Angeles.*

## COFPAES debates ABA's local procurement code

A suggestion that state and local governments select architects and engineers with an eye toward the low bidder is likely to be included in code proposals being prepared under Federal sponsorship.

This "price-as-a-factor" approach will probably be an option included in a model procurement code being prepared by the American Bar Association. The first alternative, according to preliminary thinking, is the traditional A-E selection method: discussion of price once selection based on competency is completed.

Organizations representing A-Es have campaigned hard to discourage the ABA from including the price-factor option in its formal proposal. They worry that offering local governments such an option will eventually erode even the Federal policy on A-E selection under the Brooks Law.

In their latest attempt to head off the Bar Association's recommendations, the A-Es—through the Committee on Federal Procurement of A-E Services (COFPAES)—recently fielded a panel of debaters to square off against a contrary-minded group during ABA's annual convention in New Orleans.

The lead for construction designers was taken by architect Walter A. Meisen, who forcefully argued against consideration of fee at any point prior to selection. Mr. Meisen, a former high official in the General Services Administration and now Washington vice president of Daniel, Mann, Johnson & Mendenhall, said, "When price is considered a factor, it becomes the dominant factor."

He also contended that it is the

owner, not the designer, who suffers if selection is based on fees. To meet fee competition, designers will be forced to cut corners and drop "alternative analysis," Mr. Meisen said.

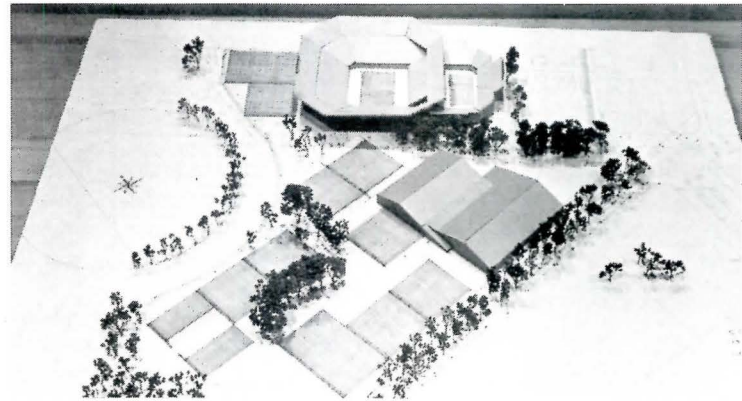
The opposite view was argued by Hugh Nichols, a former Maryland State Assemblyman who wrote that state's price-as-a-factor law. He said procurement officers ought to be able to choose A-Es just as they do other service offerors. He cited the procurement of aerospace research and hardware, which would, of course, involve consideration of price.

At the end of a three-hour debate, the ABA committee chairman F. Trowbridge von Bauer said he was unpersuaded by the A-E argument. He said it was necessary, in his view, to bring marketplace pressures to bear on the A-E selection.

The ABA has been working on the model law for more than two years. The Federal Law Enforcement Assistance Administration (LEAA) has put up nearly \$1 million for the work. The aim is to evolve a system that is more efficient and more graft-proof.

The model has gone through two drafts, and a third is due out this month. Once it is completed, ABA plans to campaign for its adoption by all state and local jurisdictions.

Already, ABA has lined up nine jurisdictions to adopt the early draft model so that practical experience can be gained. These are the states of Kentucky, Tennessee, Massachusetts, New Mexico, and Louisiana, plus the cities of Louisville, Knoxville, Baltimore and San Diego.—*William Hickman, World News, Washington.*



## For big-time tennis: Wimbledon and— Flushing Meadow?

Whatever sentimental regrets may be felt by tennis fans, the U. S. Open will no longer be played in Forest Hills. The phenomenal popularity of tennis as a spectator sport has made the stands at the West Side Tennis Club, traditional home of the international championship event, inadequate to the crowds, and the 1978 Open will take place this August in new surroundings at Flushing Meadow.

The new USTA National Tennis Center will occupy a 15-acre section of Flushing Meadow Park, which was the site of both the 1939 and 1964 New York World's Fairs.

The new facilities, now under construction on what architect David Kenneth Specter calls "the fastest fast-track in history" for June completion, will include two stadiums, a clubhouse with indoor courts, and 25 additional outdoor courts.

Spectator stands—the center court seating 21,000, the other seating 6,500—will occupy the totally redesigned Singer Bowl (later the Louis

Armstrong Stadium) built for the '64 Fair.

Nine air-conditioned indoor courts will occupy two pre-engineered buildings flanking the club house. The two-level "core" building will house locker rooms and lounges, restaurants, offices, a bank and a post office, and is intended for year-round operation.

The outdoor courts will be carefully disposed to preserve trees already on the site, including a crescent-shaped grove of sycamores that were planted for the '39 Fair.

Under an arrangement with the city's Department of Parks and Recreation, the United States Tennis Association will build, operate and maintain the center and will have exclusive use of the facilities for 60 days of the year. During the remaining 10 months, it will be available for rental.

The structural engineer for the center was the Office of Irwin Cantor, New York City, and the landscape architects were the Schandelbach-Braun Partnership, Philadelphia.

## RESTORE program trains workmen in renovation

The Municipal Art Society of New York, for many years actively engaged in raising the consciousness of New Yorkers to the value of preserving the city's architectural heritage, has now turned its attention to raising the mechanical skill required if the task is to be accomplished.

The Society calls its RESTORE/Restoration Skills Training Program "the first program created with the express purpose of upgrading the restoration skills and preservation technology of the skilled mechanic."

The 30-week program was developed by RESTORE director Jan C. K. Anderson, and is taught by a team of architects and technical consultants with expertise in the field of architectural conservation.

The curriculum includes a series of lectures on the repair, restoration and replacement of stone, brick and terra cotta, as well as workshops in the field. Classroom subjects range from the philosophy of architectural preservation to such technical material as the chemical consequences of various cleaning and coating techniques.

The program won early approval and support from both unions and contractors, who recognized changing patterns in the market for construction skills and their own interest in improving the knowledge of their journeymen. Sponsors of the program, in addition to the Municipal Art Society, include the Pointing, Cleaning and Caulking Union, Local 66, affiliated with the International Union of Bricklayers and Allied Craftsmen; the Building Waterproofers' Association; the International Masonry Apprenticeship Trust, BAC, MCAA; and the Mechanics Institute, an evening technical school in Manhattan.

Mrs. Anderson says that RESTORE hopes to offer the course again next year, and reports that groups in other parts of the country have expressed interest in establishing similar programs for other trades.

## Mrs. Kreps hails success of public works, Round II

The Federal government believes its \$6-billion local public works program is doing what it was intended to do: create jobs in areas of high unemployment, supply communities with needed public facilities, and nourish a new class of minority entrepreneurs in the construction business.

This view was offered by Commerce Secretary Juanita M. Kreps in a recent report to Congress, in which she declared that the program is "meeting its objectives."

Mrs. Kreps is particularly pleased because the success of the program's Round II is exceeding that of Round I, which was completed last year. For the second Round, a higher proportion of the funds has been targeted at the

areas of highest unemployment and the funds are being distributed to communities of all sizes, rather than being concentrated in large and medium-sized cities.

The average size of projects declined to \$469,000, compared with \$952,000 in Round I. Because smaller projects normally require less construction time, the result of this decrease has been to accelerate the economic stimulation of construction spending.

The Round II program, which offers 100 per cent grants to state and local governments for a wide variety of projects such as libraries and firehouses, requires that 10 per cent of the contract price be awarded to businesses owned by minorities.

Mrs. Kreps says the goal is being exceeded. As of December 31, by which time some 55 per cent of the contracts had been awarded, Commerce data indicated that 14 per cent was being awarded to minority businesses. The status report stresses that this is a preliminary estimate, and the final figure may be somewhat lower.

Construction contractors have become bitter about the minority program, arguing that it undercuts the traditional system of low-bid awards for public construction. A delegation from the National Construction Industry Council recently offered some alternative suggestions for aiding minority businesses, allowing them to offer bids that would be competitive and obviating the quota system: exempt minority contractors from the employer's share of the Social Security tax or from the prevailing-wage requirement of the Davis-Bacon Act. Another proposal would offer tax incentives to private building owners who employ minority contractors. — *William Hickman, World News, Washington.*

## NSPE ethical ban appeal argued before High Court

Any day now the Supreme Court will hand down its decision in the Justice Department's case against the National Society of Professional Engineers, in which Justice charges that the Society violates the antitrust laws by including an anti-competitive bidding ban in its code of ethics.

The case was argued before the Court this winter. It is on appeal from the U.S. District Court for the District of Columbia and the D.C. Court of Appeals. The Justice Department prevailed in the lower courts.

During the oral arguments, Supreme Court Justices quizzed NSPE Special Counsel Lee Loevinger about the appropriateness of the Society's ban against one engineer's supplanting another once a job is awarded. The Justices also questioned whether the Society's by-laws would permit "simultaneous negotiations" with several engineering firms, all of whom would submit prices. — *William Hickman, World News, Washington.*



## Eames's house singled out for AIA's 25-Year Award

Charles Eames will receive the Twenty-Five Year Award from the American Institute of Architects for the design of his own house in Pacific Palisades, California. The annual award, limited to buildings at least 25 years old, honors design of enduring significance.

The significance, and the continuing influence, of Eames's house derives largely from his elegant application to residential design of off-the-shelf struc-

tural components—steel decking, prefabricated trusses, and industrial glazing, among others.

The extent of the house's influence on the designer's compeers has been greatly amplified by a film made by the architect—Mr. Eames is, of course, no slouch as a graphics designer or film-maker, either—and seen widely by both practitioners and architectural students.

## BLS forecasts an oversupply of new graduate architects

Five architectural graduates will be competing for every three job openings by 1985, a study from the Labor Department's Bureau of Labor Statistics implies. The BLS figures forecast a long-term continuation of architect supply exceeding client demand.

The Bureau expects 47,000 newly graduated architects to enter the profession as registered architects during the period 1977-1985.

These new architects will have to compete for nearly 28,000 positions that the BLS expects will be available—about 12,000 new jobs added by economic growth, more than 15,000 others opened by death, retirement or other separation from the profession.

By subtraction: an oversupply of 19,000 architects by 1985.

The American Institute of Architects, in its newsletter *Memo*, takes

issue with these figures, especially BLS's estimate of 47,000 new architects joining the profession in the period 1977-1985. Relying on NCARB projections, AIA expects that 24,300 architects will be registered within the period. With an additional 3,100 professional degree graduates, the total would be 27,400 new architects by 1985—or rather fewer than the 28,000 openings forecast by BLS.

The difference in BLS and AIA predictions, the Institute explains, lies in their differing definitions of an architect. The BLS figure, says AIA, is inflated by the inclusion of graduates of four-year non-professional schools.

AIA's final riposte: "Even if there is an oversupply, what is wrong with having a degree in architecture?" — *William Hickman, World News, Washington.*

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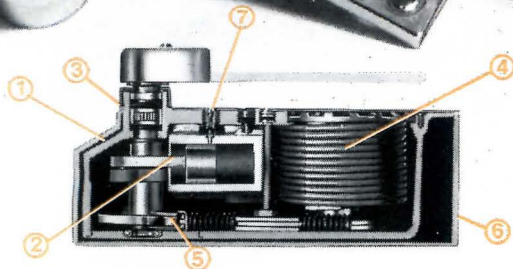
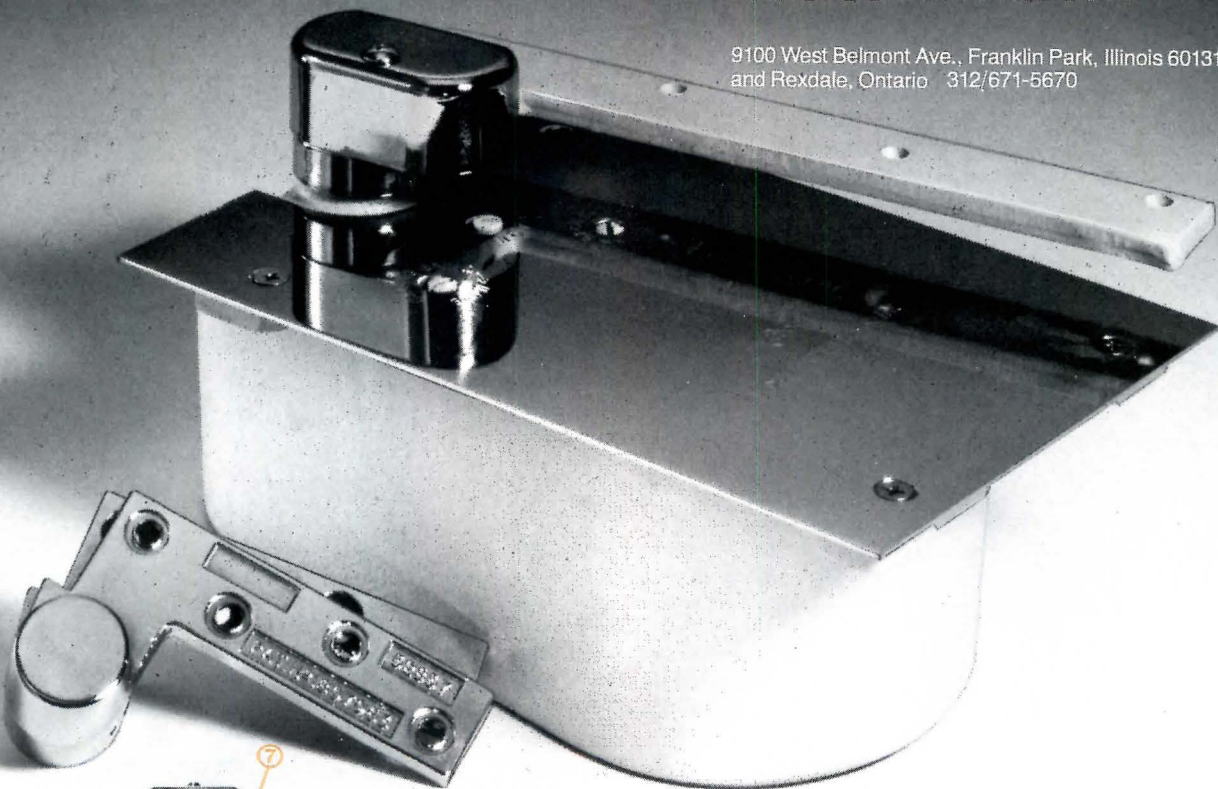
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### LIT architectural school receives Usonian house as a gift

One of Frank Lloyd Wright's Usonian houses—the Gregor S. Affleck house, built at Bloomfield Hills, Michigan, in 1941—has been given to the Lawrence Institute of Technology in Southfield, Michigan.

Although LIT plans to maintain the house as a residence, it will also ensure that it is available to the college's 1,100 architectural students "for examination and study." Karl H. Greimel, dean of LIT's School of Architecture, says, "The opportunity to experience firsthand one of Wright's most noteworthy accomplishments is an academic encounter without equal."

The house demonstrates some of

the classic elements of Wright's Usonian designs—open plan, cantilevered structure, ship-lapped siding, radiant heating.

The Afflecks were moved to approach Wright by their admiration for Falling Water. As a reminiscent token of this admiration, the Affleck house also sits above moving water, and Wright provided an open well in the entrance hallway overlooking a small stream that seasonally flows beneath the house.

The donors of the house, the son and daughter of the Afflecks, were Mrs. Karl F. Lutomski and Gregor P. Affleck.

### Heritage task force recommends new agencies, new funds

The National Heritage Trust Task Force has completed a six-month study on the consolidation of Federal efforts to identify and protect both our natural and built environments.

The Task Force, appointed by Secretary of the Interior Cecil B. Andrus following the President's Environmental Message of 1977, was composed of representatives of some 55 private organizations and state and Federal agencies.

A major recommendation in the recently published National Heritage Program is the establishment of two new bodies to reorganize present Federal offices:

- The Heritage Conservation and Recreation Service (HCRS), described as "the Federal focal point for evaluating and coordinating the conservation of the nation's historic and national heritage," will unite the National Natural Landmark Program, the various programs of the Office of Archeology and Historic Preservation (which now falls within the authority of the National Park Service), and the Bureau of Outdoor Recreation.

- The Council on Heritage Conservation, an independent Federal advisory body, will be the reconstituted and expanded successor to the Advisory

Council on Historic Preservation.

One of HCRS's responsibilities is the administration of the National Register of Historic Places, which presently lists "districts, sites, buildings, structures and objects . . . significant in American history, agriculture, archeology and culture." The new program would add three new categories to this Register: neighborhoods, cultural landscapes, and networks, the last defined as "a series of related sites, such as a series of canals, lighthouses, trails or monuments located in a dispersed pattern on the landscape."

As for preservation money—HCRS will be responsible for the establishment of an Endangered Building Revolving Fund, and will conduct, within the next two years, studies on other possible financial aid programs: 1) further tax incentives to encourage the private preservation of heritage resources, 2) a National Bank for Historic Preservation, and 3) a National Heritage Fund for projects ineligible for existing grant programs.

Secretary Andrus has approved the implementation of the National Heritage Program, and has named Chris Delaporte, director of the former Bureau of Outdoor Recreation, to head it.

### UN Center for Human Settlements will operate from Nairobi

*United Nations endeavors to create a working organization to provide technical and financial support for the task of sheltering the world's people will come to fruition with the establishment of the Center for Human Settlements at Nairobi. Eric Carlson, with the UN Habitat and Human Settlements Foundation in Nairobi, reports on the administrative and financial structure of the new Center, and next month will describe the physical structure planned to house its offices.*

HABITAT finally came to rest in Nairobi as the result of the UN General Assembly's efforts to resolve the framework of an international program for Human Settlements, and particularly to decide upon its Headquarters' location. Mexico, New York, Gabon and Vienna had been among the contenders for the headquarters site.

The General Assembly decided, however, that the new UN Center for Human Settlements should be located in proximity to the UN Environment Program (UNEP), which (also by decision of the General Assembly) has been based in Nairobi since 1973. The new Center will have a separate governing body, the United Nations Commission for Human Settlements, which consists of 58 governments. This Commission was elected by the UN Economic and Social Council in January, and planned to hold its organizing meeting in New York City early this month. Its first "substantive" meeting will be held in early 1979.

Fundamentally, the new Center will combine the posts and budgetary resources of the UN Center for Housing, Building and Planning (UNCHBP), now located in New York at UN Headquarters, and those of the UN Habitat and Human Settlements Foundation, whose governing body up to now has been that of the UN Environment Program (UNEP). The UNCHBP will move to Nairobi during 1978, and the Habitat Center will be provided with space and facilities by the Kenyan Government. Eventually, the Habitat Center will be situated in a new permanent \$25-million UNEP headquarters building north of Nairobi, in Gigiri, where the temporary UNEP headquarters function at present. The projected UNEP headquarters building has been authorized by the UN General Assembly.

The Human Settlements Commission will be an independent body of the UN, reporting through the Economic and Social Council. It is expected to deal in a more comprehensive way with action required for planning, organization and financing for shelter and improved environments for both urban and rural areas.

The Commission will have the following main objectives:

- to help countries and regions increase and improve their own efforts to solve human settlements problems;
- to promote greater international co-

operation in order to augment the availability of resources of developing countries and regions;

- to promote the integral concept of human settlements and to encourage a comprehensive approach to human settlements problems in all countries, and to strengthen cooperation and co-participation in this domain among all countries and regions.

Habitat, the Center for Human Settlements, will provide substantive support to the Commission, execute human settlements projects, provide the focal point for a global exchange of information about human settlements, establish and maintain a global directory of consultants and advisers, and implement programs until they are shifted to regional organizations.

The Director of the UN Audio-Visual Information Center on Human Settlements—which is located in Vancouver and has wide responsibilities for the distribution and utilization of the 230 films and other materials produced for the HABITAT Conference—will report to the executive Director of the Commission. There will be close links between the Center and the UNEP, and during the period 1978-1980 a significant portion of all posts in the Center will be assigned to the regions for work on regional human settlements questions.

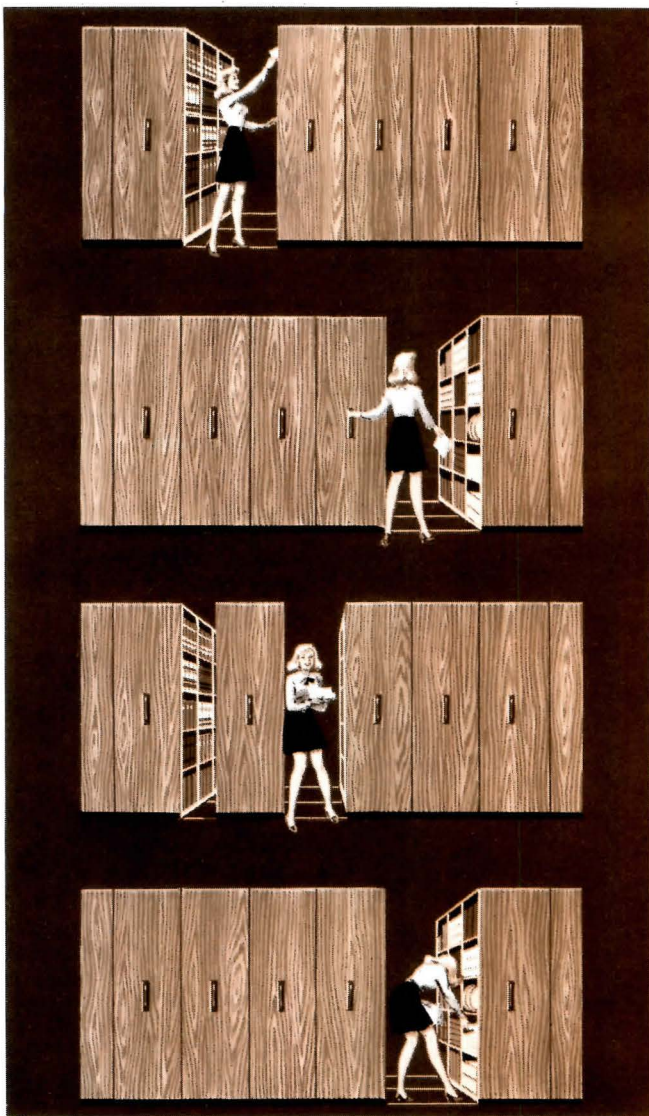
The regional commissions, each of which will have a secretariat unit, are expected to establish regional inter-governmental committees to deal with human settlements matters. At both global and regional levels it is expected that close cooperation will be sought with universities, research and scientific institutes, nongovernmental organizations and voluntary groups.

The United Nations Habitat and Human Settlements Foundation becomes part of the Habitat secretariat, but retains its terms of reference as set forth in the General Assembly resolution that created it in December 1974, except that the new Commission, not UNEP, will be its governing body.

At its 1977 session, the UN General Assembly confirmed the lending authority of the Foundation. In amendments to the UN Financial Regulations, the General Assembly also authorized limited borrowing authority for the Foundation for its reimbursable seeding operations, the lenders being governments, governmental agencies and inter-governmental organizations. Only the Foundation's resources, not other assets of the UN, can be used to repay such borrowings and the interest charges. The General Assembly has appealed for funding for the Foundation and called for a pledging conference to be held in 1978 if the initial target of \$50 million is not met.

The primary function of the Foundation is to provide "seed capital" in the form of technical and financial assistance to help countries improve human settlements.

*To be concluded in May.*



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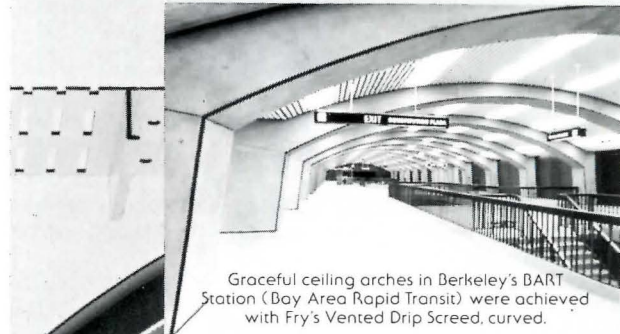


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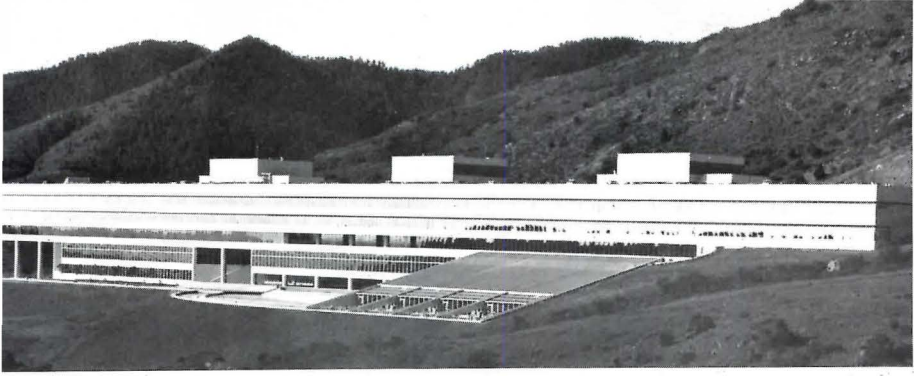


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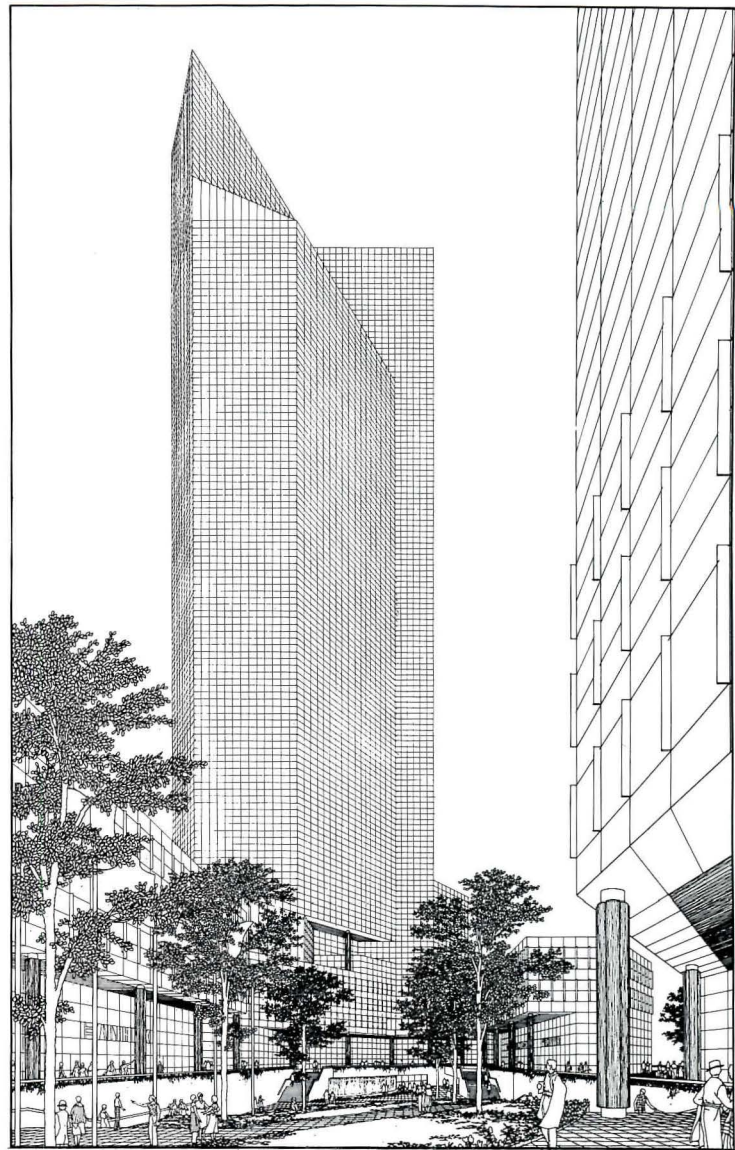
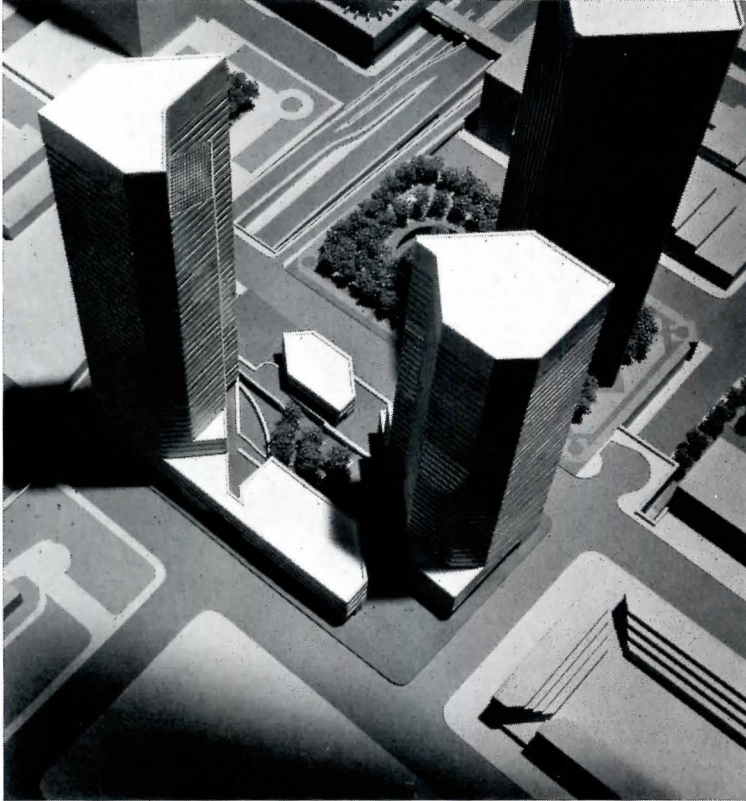
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## Twin Towers planned for Los Angeles urban renewal area

For a major site in downtown Los Angeles, architects Kohn Pedersen Fox Associates have designed for developer Robert Maguire Partners a pair of office buildings, Twin Towers Bunker Hill. The complex composition of diagonals corresponds to the diagonally sited Security Pacific building across the street, and

the left between the towers serves as a gateway to that building's sunken plaza and to a pedestrian network connecting open spaces and buildings in the vicinity. The towers will share a sunken plaza, as well as retail and recreation facilities. The curtain wall will be bright aluminum and green glass.

*Louis Checkman*

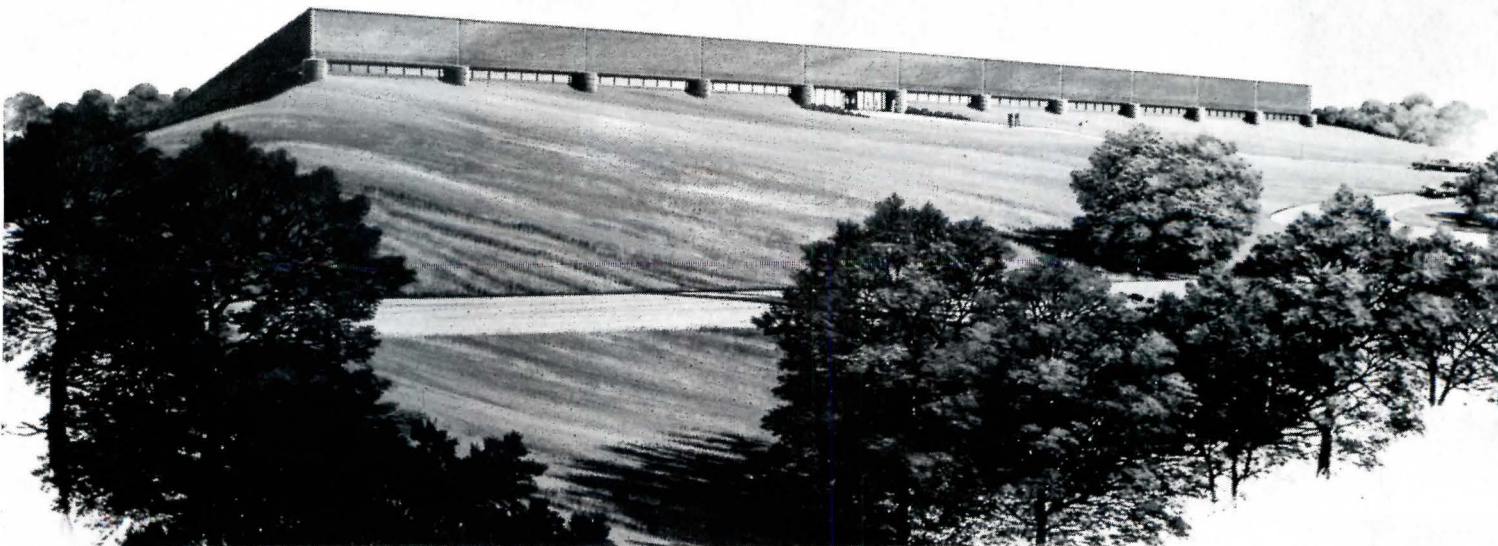


## Four-foot earth berm will provide insulation for Massachusetts semi-conductor plant

To maximize natural insulation and minimize hvac costs, architects Shepley Bulfinch Richardson and Abbott, Inc., have sunk the new facilities for the Digital Equipment Corporation

up to their window sills in an earth berm, which extends about 4 ft above floor level. The \$12-million, 225,000-sq-ft plant in Maynard, Massachusetts, combines specialized

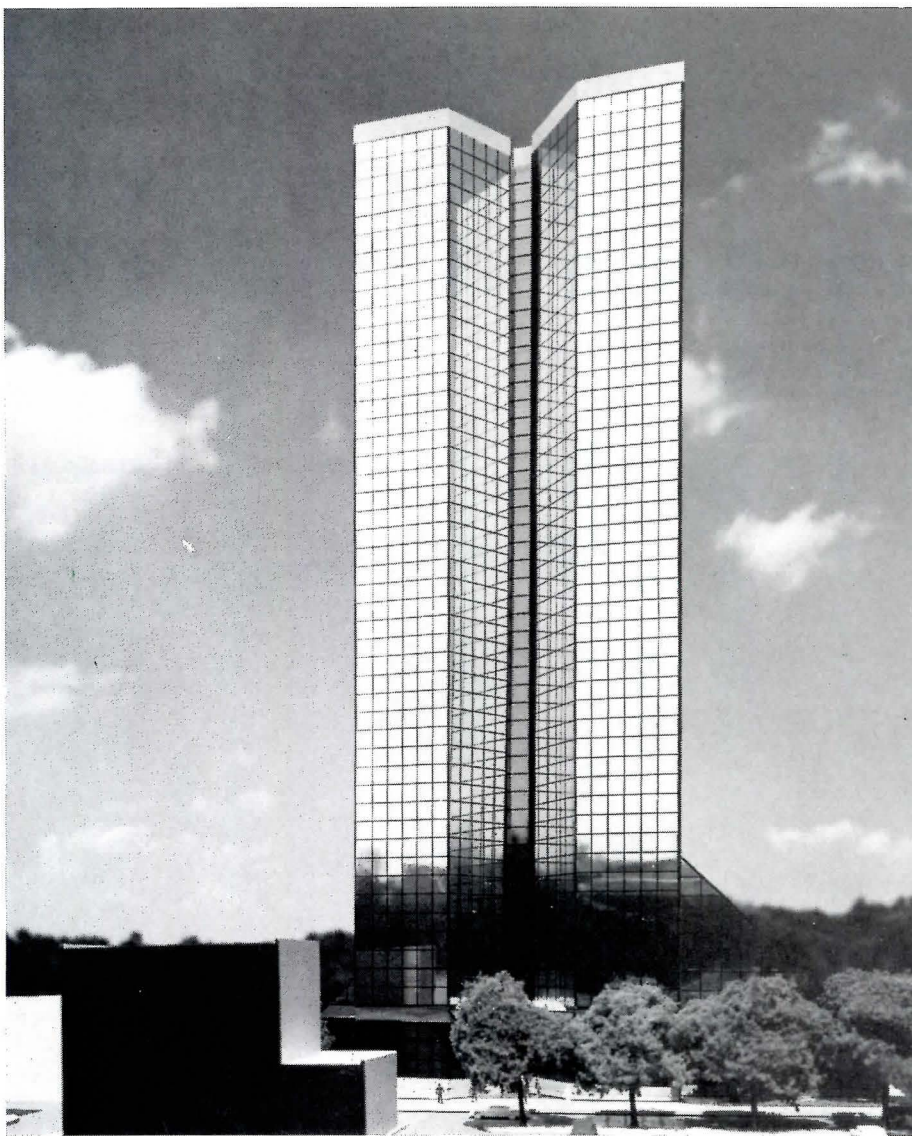
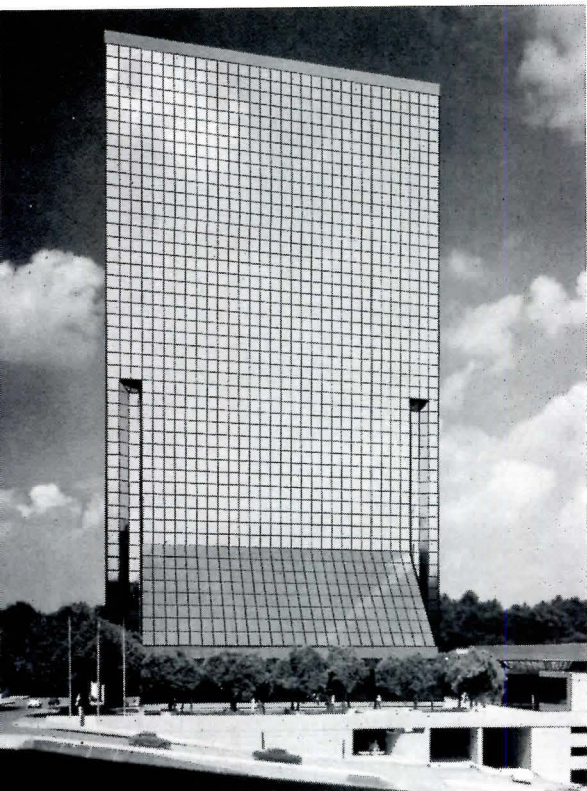
manufacturing areas for the fabrication of semi-conductor wafers with administrative and engineering offices, a computer center, cafeteria and kitchen, as well as parking for 875 cars.



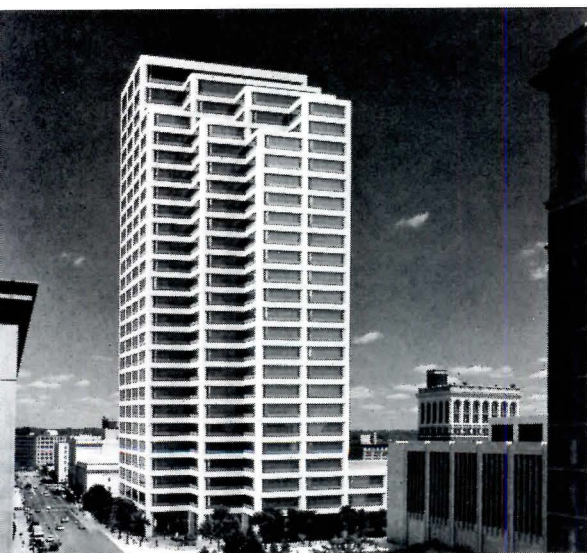
**Reflective banking tower rises in Knoxville**

The 27-story United American Plaza, now under construction in Knoxville, Tennessee, is expected to become the financial center of the region. Designed for Knoxville Properties, Ltd., by Atlanta architects Carry Cooper Associates, the office tower will have a five-story slant-roofed atrium at its base,

framed by deep niches in the sheer glass wall. The atrium will house a banking lobby. A 23,750-sq-ft landscaped plaza will offer open space to pedestrians in the city's crowded downtown business district. Estimated cost is \$17 million, and completion is scheduled for the end of this year.



A. Alan McGee



Hedrich-Blessing

**Cincinnati offices adapt the Chicago window**

Wide double-glazed bay windows will furnish an undulating wall for the 26-story Central Trust Center, new headquarters for Central Bancorporation now under construction in Cincinnati. Designed by the Houston office of Skidmore, Owings & Merrill, in association with Cin-

cinnati architects Baxter Hodel Donnelly Preston, the tower and a 500-car garage are the first elements in a projected complex comprising the tower and three lower commercial and office buildings. The developers are the joint venture firm Central/Hines Limited.

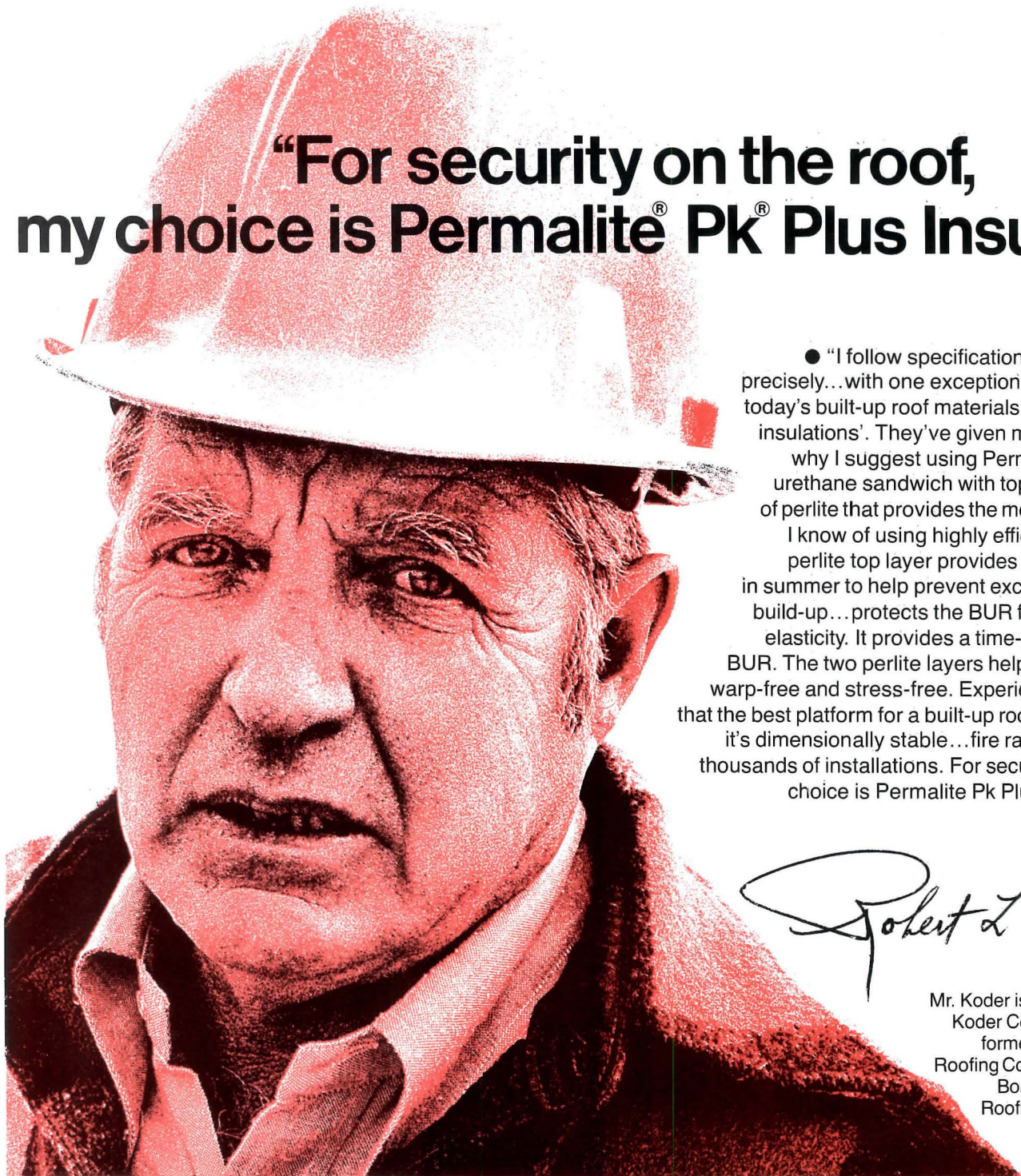
**Chief tenants of 3D/International Tower will be its architects**

3D/International Tower, to be built at Houston's City Post Oak urban center, will become the headquarters of the A-E firm 3D/International upon its completion in spring 1979. The plan of the tower is described as an "angled S" with setbacks at the

top four floors, a configuration developed for its visual interest and to yield a variety of corner offices. Alternating ribbons of stainless steel and chrome reflective glass will form the curtain wall. The developer is Gerald D. Hines Interests.



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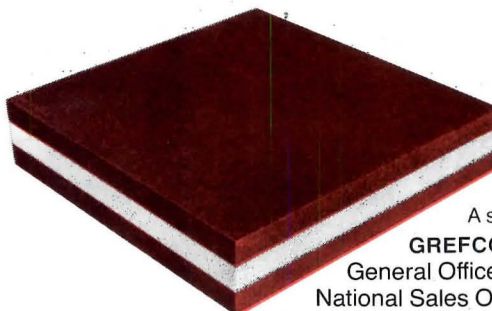


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## An eyewitness report, and more

SUPERMANNERISM, by C. Ray Smith; E. P. Dutton, \$9.95

Reviewed by McCain McMurray



Charles Moore's house, New Haven, Connecticut, 1967.

If the current crop of books on the subject is any indication, there is currently a burning interest in the assessment of the nature of today's architecture in relation to the traditions of the recent past. This seems to signal the need to make sense out of present disparities and to form them into some understandable body of thought—or at least one that we can bandy about. Another possibility is that someone may well think he or she has an idea too good to keep from us. C. Ray Smith thinks he has such an idea. It is that there are similarities between 16th-century Mannerists and a group of contemporary American designers whose work began to splash across the pages of the print media in the 1960s. The groups from each epoch both share an interest in the manipulation of an established order to produce tension, conflict, and what Samuel Johnson called the yoking of opposites by violence. But Smith shows us that the current crop of artists has gone one step further, because of changes in 20th-century perceptions of space and scale. He calls the new movement "Supermannerism" and observes that the term "denotes the movement's broader design vocabulary: a vocabulary expanded to include the vernacular, the anonymous, and such elements of our ordinary life or culture as comic books."

The book describes some of the attitudes which the author calls a new "inclusive aesthetic" or a "new design movement." As a critic C. Ray Smith was an indefatigable editor of *Progressive Architecture* magazine and has contributed to numerous other architecture, art, and design publications. Thus he is in a position to know very well what he is talking about. His background also contributes to the readable journalistic style of the book which tends always to keep the pace up—sometimes perhaps at the expense of the more complete conclusions that might be drawn.

The book has two parts. The first is a description of the cultural, social, and architectural climate which produced the Supermannerist movement. Smith credits the exploration of outer space as the pivotal point in the beginnings of a new consciousness of architectural space and scale. The "revolutions" of the

1960s helped further to liberate the expressions of personal feelings and therefore to establish the acceptance of "inclusiveness" in the design disciplines. This inclusiveness seemed to parallel the attitudes of society at large and of the simultaneity of our culture which Marshall McLuhan called "allatonceness." Two works which began to act as liberating forces from the tradition of Modern architecture were Eero Saarinen's TWA Terminal in New York and Philip Johnson's Roofless Church in New Harmony, Indiana. As the architectural climate became more permissive, the influence of the Supermannerist movement began to be felt more fully. The catalyst, Smith contends, was Louis Kahn, "the supreme teacher, the magical Pied Piper of the Supermannerist band," and "the most mesmerizing and liberating teacher of architecture in the United States through the 1950s." His personal magnetism enabled his students to confirm their own feelings in the search for the essence of the problem at hand. Smith's catalogue of those strongly influenced or taught by Kahn becomes the principal cast list of the Supermannerist movement: Robert Venturi, Charles Moore, Hugh Hardy, and others.

The second part of the book catalogues the specific qualities the author attributes to the Supermannerists—permissiveness, spontaneity, ambiguity, whimsy, superscale, layering, historicism, and decoration. Each of these qualities is well illustrated in the text and further documents the points made about the Supermannerists in the first part. One example which illustrates many of the attitudes of the Supermannerist movement is the Faculty Club of the University of California at Santa Barbara by MLTWMoore-Turnbull. The work is like "a section through modern history," Smith says; "there, amid the pristine modern lighting fixtures and neon banners, hangs a nineteenth-century Louis Philippe crystal chandelier; on one wall are pictures of the Beatles in icecream-cup portraits and on the opposite wall are stuffed rams' heads from an old hunting lodge;

Knoll dining room furniture nestles under a Moorish carved-wood ceiling; Jacobean furniture and a quasi-Gothic German Renaissance fireplace are juxtaposed to a layered construction of two apparently different structural systems." This work "gets it together aesthetically."

It is arguable that the book characterizes the aesthetic implications of these phenomena without delving into the corresponding substantive issues, and this omission leaves our understanding of the movement somewhat lacking. The group of designers and architects described are surely also interested in the human experience of their work and in the multiplicity of that experience. They are as interested in the allusion in their work itself as they are in the historical influences which produce those allusions. They are also interested in the actualities of the site, the user, the economic conditions, the desires of the clients, and in challenging the preconceptions held by other designers and by society. They take the liberty to express their feelings in often personal ways.

On the other hand, the strength of the book is that it is an engaging and invaluable commentary on contemporary architecture which anyone interested in the subject should read. It functions most effectively as a documentary of the events of the 1950s and 1960s and of the resulting architecture of the present. While the history may sometimes seem a bit easy, it still serves to set up the context for the description of the Supermannerist movement.

The vitality of Supermannerism as a "new design movement" still remains to be seen. But much information about it is provided here by an eyewitness reporter, one who was there. Time will prove the accuracy of his reports.

### Plant selection as a fine art

INTERIOR PLANTSCAPING: BUILDING DESIGN FOR INTERIOR FOLIAGE PLANTS, by Richard L. Gaines; *Architectural Record Books*, \$22.95.

Reviewed by Dan Kiley

Other than the title "Interior Plantscaping," which sounds clumsy and odd, this book is essential to the education of the professional architect, landscape architect, interior designer, and lay person interested in growing plants indoors. It covers in detail interior plant selection, preparation, installation, and care. An entire chapter is devoted to acclimatization for both light and "root/mass/soil" as well as a suggested specification for handling this material. The dangers of overwatering and fertilization are explained, especially in preparing plants

continued on page 45

McCain McMurray is a recent graduate of North Carolina State University and editor of Volume 25 of *The Student Publication of the School of Design*, and works as an architect in Raleigh.

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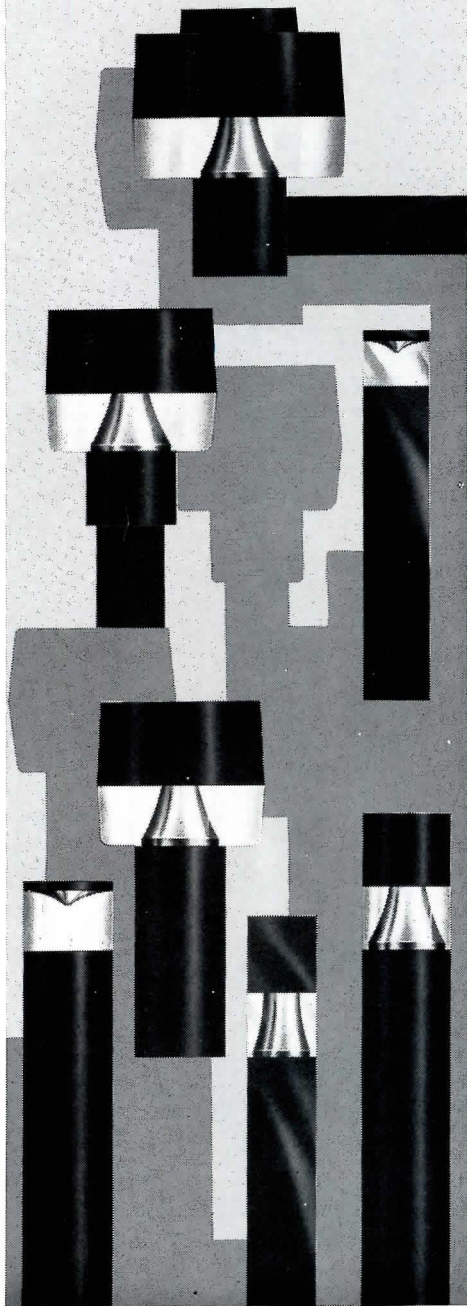
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to be moved from mild zones to interior conditions farther North. For instance, the author points out the dangers of a plant's being over-fertilized and harboring soluble salts out of proportion to the soil mass. The remedy he gives is thoroughly to drench the root ball so that these salts are leached out. He produces tables for the acceptable levels of soluble salts for various soil types. He also gives the fertilization requirements under various light intensities for eight to twelve hours a day. The list includes most of the common indoor plants like Ficus, Schefflera, palms, and ferns.

The chapter on light is very revealing and explicit, pointing out that every plant has a "Light Compensation Point." "No plant can survive indefinitely at its compensation point for one reason: under such conditions, there is no photosynthesis to offset the respiration that will continue during dark periods. Hence the actual minimum light intensity at which any species of plant can survive has to be greater than the plant's light compensation point." The fact that very little research has been done on this subject, though, leaves the designer still in the dark for many plants he would like to use.

There is in the book a good discussion of light measurement techniques, light duration, and the fact that we should not think in terms of minimums but rather in terms of how much light we can supply—at least twelve to fourteen hours a day for several days a week. The lower the intensity, the longer the exposure per day. But with the energy crisis, how can we justify artificial lighting just for plants?

The chapter on lighting covers in detail the "dark period." It covers as well light quality or color type, the light quality of various lighting methods including incandescent, fluorescent, and special plant lights. In the fifth chapter, a photo identification section shows a list of over 70 varieties of plants in categories for low, medium, and very high light. This list covers the usual "rubber plant" types, which is fine as far as it goes, but the designer also needs a much longer list. There is a need for continued research to open up a much richer palette.

It is odd that Mr. Gaines does not include in his bibliography that very exhaustive encyclopedia of tropical plants, A. B. Graf's *Exotica*, first published in 1957, which provides information on thousands of species and varieties, and Frits Went's classic *The Experimental Control of Plant Growth*, published in 1957 as well.

Mr. Gaines assumes that plants are essential in the interior environment, that they are expected by people, and that interiors should be designed to accommodate them. But beautiful interiors can be designed either with or without plants, and the cost of providing the proper conditions—light, heat, and moisture—may well rule out the use of them in the near future, or at least limit their use to species of the lowest light requirements. Technical constraints aside, nonetheless, the selection of plants for their structure, texture, leaves, flowers, and suitability for the way they are to be used in a building is still a fine art.

Dan Kiley is a partner in the firm of Kiley Tyndall Walker, landscape designers and architects, in Charlotte, Vermont.

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◀ *The Owens-Corning Energy Conservation Award. "Triangles," a Steuben crystal sculpture that captures and reflects light from multiple triangular planes.*



study is completed and proves otherwise there is no rational reason to tamper with the Capitol other than to repair the consequences of neglect.

My second point concerns Mr. Carlhian's suggestion "to take up history's gauntlet and proceed with an altogether new West Front, conceived along late twentieth-century lines of thought. . . ." Something along the lines of Brasilia, perhaps? Or the Supreme Court building of Chandigarh? Or the Albany Mall? What is wrong with this suggestion, if indeed it is serious, is what is wrong with the architectural profession today: It misjudges the needs and values of people. Because of this misjudgment, architects have such minimal constructive influence on "the total man-made environment" which they set out to re-design earlier in this century. The American people have had it with vast public expenditures for ripping up buildings—they love to see them replaced with abstract monuments to architecture for architecture's sake. The historic preservation movement is in large part motivated by the fear that polite old buildings will be replaced by modern bullies. If Mr. Carlhian had interested himself in the present mood of the American people and their representatives on Capitol Hill he might have spared us (and himself) this long and naive discourse of his delusions. The Representative or Senator, if one could be found, who introduces his West Front Rebuilding bill is not likely to survive the next election.

*Wolf Von Eckardt, Hon. AIA  
Washington, D.C.*

Your article on the West Front of the Capitol accurately portrays the dilemma of decision to be addressed. I commend you for the public service of history and information it provides.

*Jay Solomon, Administrator  
General Services Administration  
Washington, DC*

Congratulations to Jean Paul Carlhian for his superb statement of the issues raised by the proposals to rebuild or extend the West Front of the U.S. Capitol. He has, indeed, thrown down the gauntlet to the profession. Surely our generation can rise to this challenge and reinterpret the classical tradition for our time, just as our forefathers did in theirs. This potent legacy produced the unrivaled masterpieces of Ictinus, Appollodorus, Alberti, Michelangelo, Sansavino, Francois Mansart, McKim, and the work of Latrobe, Walters and Thornton *et al* at the Capitol. These buildings still move and inspire us, and a visit to the new extension to the Frick Museum in New York will reveal that the tradition is alive and well.

Because no clear-cut solution is apparent, I suggest we would do well to consider using the system of "idea competitions" developed by the Scandinavian countries for such situations. The purpose of an idea competition is investigative—to evaluate a series of solutions with an eye to selecting an architect rather than choosing a final design. The best offerings of the profession could be studied, the most promising further developed and then compared with the plans to rebuild the Bulfinch facade and Carlhian's brilliant proposal to complete Thomas U. Walter's last plan.

*Allan Greenberg, Associate Professor  
University of Pennsylvania*

Re: Paul Rudolph's apartment in the January 1978 issue: We are dying to know whether the platform was constructed around the piano legs or if the piano was dropped in from above afterwards. It seems a strange indignity to the pianist to have to crawl to the bench. Is there a place for his legs?

*Al Carciofi  
Princeton, New Jersey*

In his review of Reyner Banham's book 'Megastructures' in your October 1977 issue, William Schacht refers to the *Wohnberge* project of 1928 which, he said was "attributed to Walter Gropius." Mr. Schacht explained this expression to me as having arisen from a rather vague report on it in the book which suggested that Walter Gropius had "disowned" this design because it did not coincide with his more rational approach to architecture.

This is nothing but a figment of Mr. Banham's imagination. Walter Gropius never disowned this design, on the contrary, he picked it up again after 10 years in 1928, when commissions in architectural offices were very scarce, to work it out more fully.

It was discovered by Professor Reg. Isaacs of the Harvard School of Design, my husband's biographer, when he investigated all the plans he had brought over from Germany and stored in the Busch-Reisinger Museum of Harvard University. He brought the designs to Gropius' attention and asked him why they had never been published. He was told that

they had first been sketched in 1919 during a time right after the war when architects were out of work all together but had decided to keep their spirits up by designing future utopian structures which, they knew, had no chance to be built at that time.

In 1919 my husband was asked to take over the School of Fine Arts and the Kunstgewerbeschule in Weimar which he united to become the 'Staatliche Bauhaus.' This work absorbed all his attention and the designs for 'Wohnberge' as he called his megastructure were stored with all the rest of his former work.

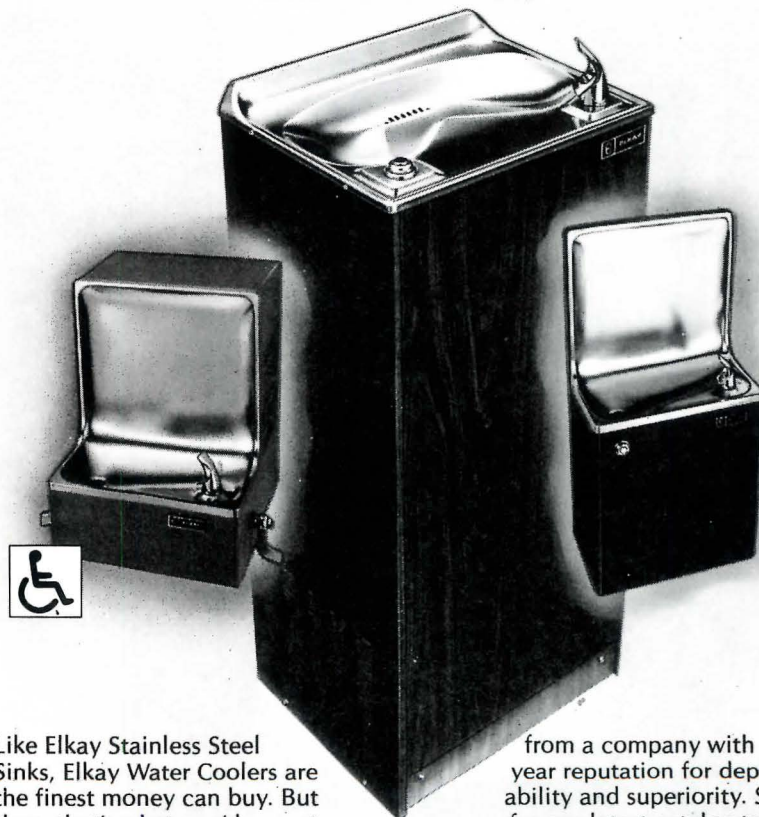
After ten years of extensive experience with the solutions of low-cost housing problems in Germany and after having also observed the Marxist efforts in Russia in this field, he finally recovered his old design and began working on it again.

It received a totally new interpretation because Gropius visualized a complete change in the social order, a change that would bring about equality of the sexes and would make the individual instead of



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the family the basic cell of the state. Floor plans were arranged to accommodate individuals who, as he put it, 'were living in a work or love relationship,' with or without children and since he assumed that parents would largely be away at work outside the home one whole floor was given over to children's activities, Kindergarten or day-care facilities. In fact, the design envisaged a situation which only now, after fifty years, is beginning to establish itself in our urban centers, but without finding appropriate housing accommodations. The structure was to be connected with the general transportation system by rapid transit lines from inside the building.

The fact that this design was never published has its reason in the ever increasing Nazi power at that time. The Nazis would have abhorred the whole idea and would have attacked Gropius as a destroyer of the German family.

Mrs. Walter Gropius  
Lincoln,  
Massachusetts

Richard Francis, educator, traveler, lover of architecture reports on a recent trip he made through Russia and northern Europe. Excerpts from his letter follow:

"... The surprise hit of the tour was the mammoth art exhibit in Berlin, "Trends of the Twenties," sponsored by the Council of Europe. Covering four museums, it was the most extensive display of Constructivism I have ever seen (or ever will see). The entire second floor of the Modern Museum was devoted to architecture. What a delight to see such good photographs and schematics of all those famous buildings no longer standing. And to see blow-ups of the Chicago Tribune competition—not just the five finalists, but all those Germans who submitted visionary plans as well was worth the visit alone . . . .

Moscow was pure cultural shock. But read Hendrick Smith's book *The Russians* and everything he says that I experienced is true. At the Moscow

Bookstore (which a few of us got to only with great difficulty), I purchased *Soviet Architecture of Today* (1960s-70s). Beautifully done it would retail for at least \$45 here; I paid \$15 there. It is instructive because I visited a number of those buildings in Moscow and Leningrad; the gulf between the idealized photos and the actual structures is shocking. The beautifully designed Hotel Leningrad is so badly built and maintained that it is a crime . . . . The Hotel Russia in Moscow is unspeakable: pretentious as well as ugly. Yet the Russians are very good at restoration, and Leningrad is about two to three years away from a really glittering debut as one of the most exquisite cities in Europe . . . . If Leningrad is day to Moscow's night, Helsinki is paradise after purgatory. An architect's dream. There are all those buildings and names one has learned at school! And like the desk clerk, very ordinary Finns can tell you who designed what, and their pride is manifest in what they have achieved . . . .

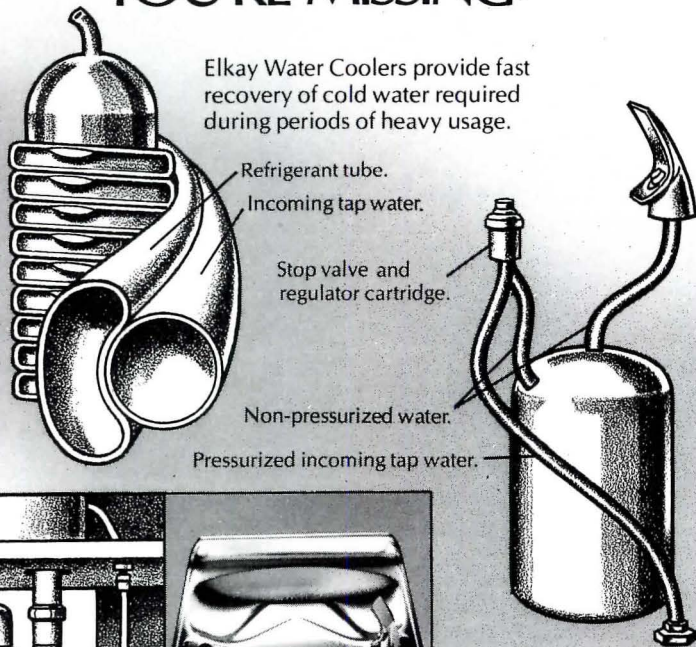
Lindgren's Olympic stadium in Helsinki (quite near my hotel—the elegant Hesperia, designed by ESKA Lehesmaa) had scaffolding around that extraordinary tower (though I just looked at my films and the shots taken from a slowly moving bus reveal the incredible fluidity of the horizontal mass, best seen by a runner). I had lunch in the Savoy restaurant with friends; it's still exactly as Aalto designed it in 1937, with the exception of two Aalto hanging lamps from the fifties in two inner corners. The seafood was absolutely superb—it deserves its reputation as one of the best restaurants in Helsinki. To stand on the roof of Ervi's town center tower at Tapiola and watch the rapidly moving clouds spurt over the Gulf of Finland on a brilliant sunlit day was to realize the inadequacies of a city like Seattle in an almost comparable location. And so it went. More and more impressions. My shots inside the Suomalainens' Rock Church are, like those of Aalto's Mt. Angel library, a sheer testimony to the Finnish way with natural light. Finally no pictures, not even mine, can do justice to Aalto's Finlandia Hall. It is a fitting and just memorial to a man who understood what the human component of architecture is. With its eloquent understatement of elegance it makes all other cultural centers look even more tawdry than they are.

Stockholm was the great surprise as an urban center (though its architecture is heavy-handed compared with the Finns). The new airport (like Tegel in Berlin) is a brilliant example of the use of industrial design vocabulary for public space (though when used in the new Sheraton hotel it is cold and sterile). However, it does not have the finesse of the Helsinki airport . . . ."

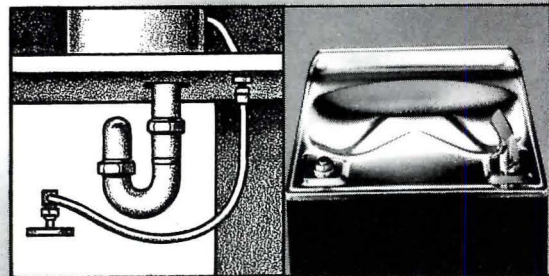
Richard Francis  
Bellingham, Washington

P.S.: The Sirens' beautiful chapel at Otaniemi, (Finland) burned to the ground last spring but will be rebuilt.

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### Erratum

Thank you for your excellent coverage of the Willits-Hallowell Center at Mount Holyoke College November 1977.

Unfortunately, Joseph Molitor, was credited for the interior photograph. This credit should have gone to Edward Jacoby, of the Architectural Photography Group.

Merle T. Westlake  
Hugh Stubbins and Associates, Inc.,  
architects  
Cambridge, Massachusetts

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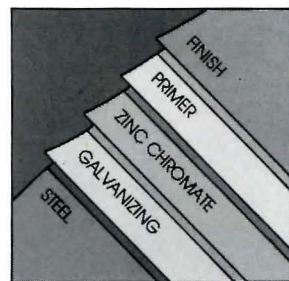


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## CRS invests in computer-aided drafting to streamline production

Among the more clever architects practicing today are those who are bothered by the amount of time that goes into non-creative, repetitive tasks around the office. One of those tasks is drafting, especially the repetitive drafting that can consume thousands of manhours during construction document preparation. One solution is to let machines do this mechanical work, the thesis being that not only can machines do the work more quickly, they also will not become bored or tired and make mistakes. (Most architects could probably trace their biggest headaches to errors and omissions in their documents.) The machine, a computer with drawing capability, is quite expensive; but it does exist, and for those architects and engineers with considerable capital, it is one new production tool to free design professionals for design activities.

The Houston-based architectural firm of Caudill Rowlett Scott is very pleased with its four-month-old Computer-Aided Drafting (CAD) system. Drafting productivity is up, as is drawing accuracy, and it appears that the two-and-one-half-year payback on the firm's half million dollar investment may be faster than anticipated. The era of pencils and drafting boards is nearing an end at one of the country's largest architectural firms.

How did all this come to be?

CRS's carefully deliberated move into computer-aided drafting began in 1976 within the firm's Corporated Technology Committee, a group of senior architects and engineers responsible for evaluating the applicability of new building and production techniques to CRS projects. (This committee is evidence of CRS's steady devotion to streamlining architectural

practice.) These individuals appointed a task force specifically to look into computer-aided drafting—which has been used for some years by electronics engineers to draw printed circuits. CRS's immediate goals were to: 1) improve drawing quality; 2) improve profitability on design development and construction document phases; and 3) reduce workload fluctuations.

Although, vendors state that CAD systems can be justified by firms with 10 full-time draftsmen, to appreciate the impact that computer-aided drafting can have on a firm such as CRS (which employs 75 full-time draftsmen of a total of 300 persons), one must look at some statistics the task force developed. Figure 1 (page 67) shows the breakdown of the firm's annual drafting-related labor consumption, divided primarily between the drafting-intensive design

development and construction document activities, and spread over four disciplines: architectural design, and structural, mechanical and electrical engineering. The CRS task force found that, although computer-aided drafting has had limited usefulness in architectural firms, equipment capability has been increasing at a rate that will put its drafting usefulness to architects and engineers at 100 per cent by 1980. At the same time, the operating costs of such equipment have been going down, from \$250 per user-hour in 1960 to the present \$15 per user-hour at CRS. Figure 2 (page 67) shows CRS's anticipated drafting productivity increases for the next seven years. The firm reports that in just a few months of operation, real productivity increases are ahead of these projections. Electrical work shows more productivity on CAD than architectural design because electrical plans are symbolic; less precision is required to locate outlet boxes.

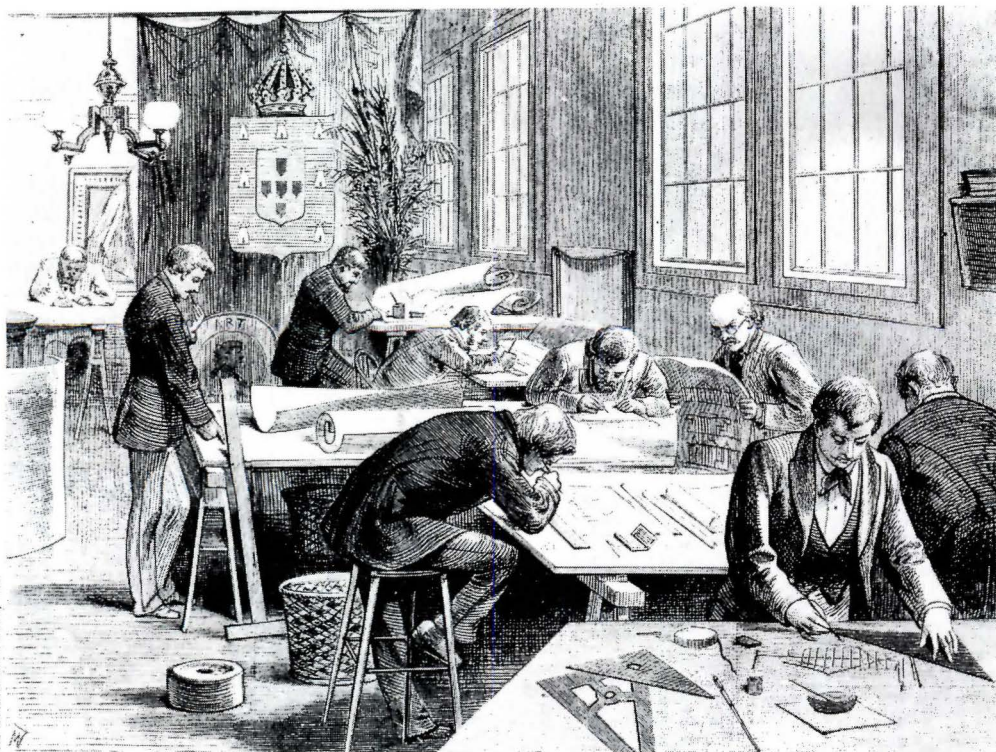
### CRS researched the system suppliers for 11 months

CRS budgeted \$20,000 to investigate 12 suppliers of computer-aided drafting equipment. Over a period of 11 months, the task force headed by CRS vice president, Gerald Pfeffer, interviewed users of existing CAD equipment, and cut the list of suppliers to six, who had equipped several large consulting engineering firms, and design-build companies. CRS gave these companies conventionally produced architectural, structural, electrical, mechanical and plumbing "benchmark" drawings to duplicate by computer. Only one supplier, Autotrol, responded to the problem completely, and did so accurately (see comparison on page 69), thus earning the contract to equip CRS. (One likely reason the other suppliers did not comply with the test may stem partly from previous relations with smaller design firms that did not ultimately purchase equipment.)

A nine-month implementation plan ensued. Selecting a supplier and negotiating a contract took approximately one month; during the four-month manufacturing period, CRS remodeled a 1200-square-foot portion of the office to accommodate the equipment. In all, the renovation cost approximated \$25,000, for mechanical and electrical improvements.

Autotrol's contract called not only for equipment and the special A-E programs (software), but the training of CRS's system operators, who underwent two weeks of day-and-night instruction. (However, the system is

Architects' drafting office, 1876. Planning department for Philadelphia Centennial Exposition. Woodcut.



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considered relatively simple and can be operated by "non-computer" people, i.e., architects and engineers.) All CAD projects are processed by these persons, to eliminate scheduling problems that might arise if all professionals in the firm had access to the computer. Each operator must be proficient in all disciplines so CRS can shift personnel as needed.

Software, which is the strong point of these suppliers, is Autotrol stock for the most part. CRS did require some options, including metric capability, three-dimension capability, the ability to do quantity take-offs, and the ability to convert drawings for other flatbed plotters, should CRS's malfunction. (Much of the hardware offered by suppliers of CAD systems is quite standard. What distinguishes these companies is their software offerings.)

### Instead of working at a board, the draftsman plots his drawings on a CRT unit

CRS's system (see photos at right and drawing, page 69) consists of a central processing unit (containing a UNIVAC mini-computer, tape and disc drives), a digitizer, a flatbed plotter, and three user stations each comprised of a CRT and keyboard. Up to 12 stations eventually can be added to the present computer, but CRS will maintain a total of eight stations by 1983, working round the clock. In effect, 24 people plus CAD will be doing the work of 75 people today. However, CRS concedes that a complete shift from live draftsmen to computer may never occur because of work scheduling problems. Some personnel will be needed to fill in for the machine when it is fully taxed.

CAD works this way. After completing design, an architect or engineer enters his drawings into the computer by "drawing" them directly onto the CRT screen, using programmed signals for straight, curved or broken lines, etc. Pencil, straightedge, and triangle are now electronically available to the operator. A set of thumb wheels control X and Y crosshairs on the screen, that act in essence, as a pencil point. Each discipline's frequently used details and symbols (for such items as duplex receptacles) are stored in the computer, and can be included in the drawing by simply selecting them from the "menu" keyboard adjacent to the CRT. Each discipline or portion of a discipline can have its own menu with up to 300 such commands; the symbols are printed on a sheet of paper that is placed over the buttons on the keyboard. To change, for example, from an electrical menu to a mechanical menu is as simple as changing the paper overlay, and typing a new set of instructions into the computer.

All the drawing information is registered electronically and stored on discs if the drawing is work in progress, or on tape reels for long-term storage (tape reels are less expensive than discs). The discs can each store up to 100 full-size drawings, while the tape reels can store up to 1000 drawings each. Precision on the electronic drawings is at least 10 times more accurate than hand drawings. The system can recognize a point anywhere within 1/1000 of a real inch, and store it precisely.

At each station, draftsmen can create,

Figure 1

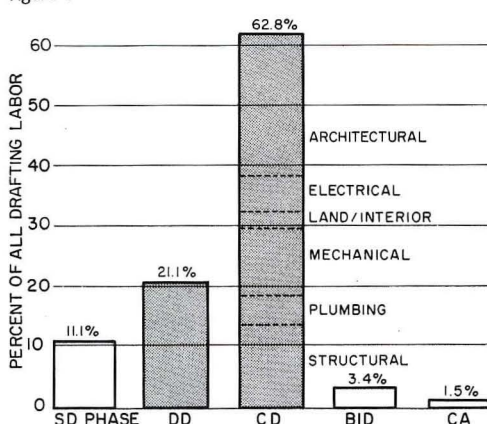
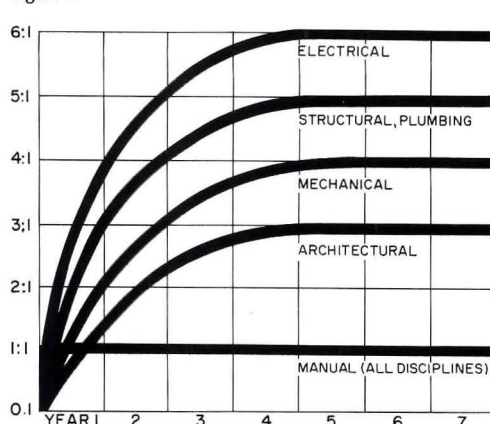


Figure 1 shows the percentage of drafting labor expended per year by CRS personnel in the various project phases. Note that nearly 84 per cent of the firm's drafting is in the design development and construction document phases (shaded areas), a situation that would be most likely be typical of many

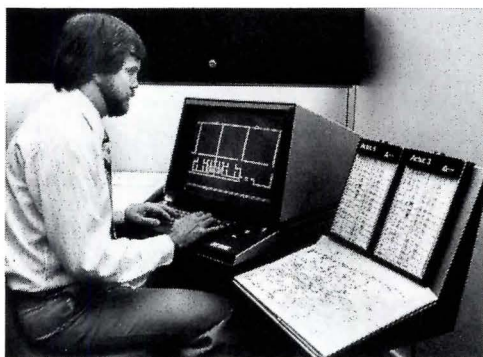
Figure 2



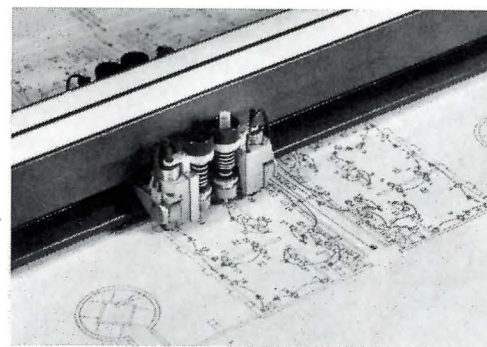
firms. Figure 2 shows the projected drafting productivity increases anticipated by CRS over the next seven years. The greatest productivity is expected in the electrical area because of the highly symbolic nature of electrical plans. Problems of scale and precision are less than in architectural design.



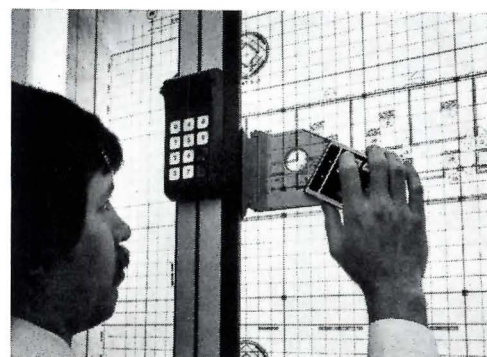
Central processing unit



CRT workstation with menu keyboard



Pen plotter



Digitizer

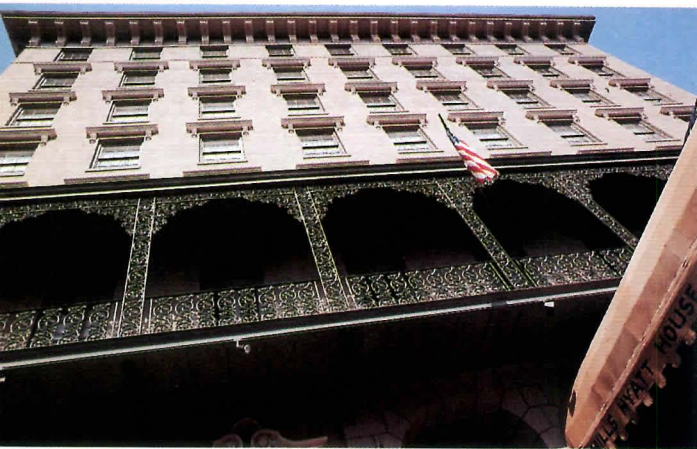
review and modify all of the drawings used during construction, taking advantage of the computer's speed and accuracy to ensure that all drawings are complete and coordinated. Architects can work at any scale on portions of the project because the computer will convert the finished drawings to any uniform scale desired. All the work can be maintained in this electronic state until actual drawings are required. Check prints, if needed, can be produced quickly on an electrostatic plotter attached to the computer, but finished drawings are obtained with the pen plotter which can draw at speeds up to 20 inches per second on tracing paper, mylar or other materials. CRS

states that even the most complicated plan can be produced in 60 minutes or less

The time savings attributed to CAD are tremendous according to Mr. Pfeffer.

"A designer will be able to complete sketches during the day, go home, and in the morning see the completed drawings for his or her approval," he said.

There are other advantages. All past CRS projects can be stored—with details—for quick recall and evaluation. In fact, Pfeffer points out that CAD lets CRS designers easily track the use of all standard details. If one proves poor, it can be quickly eliminated from all other projects in design.



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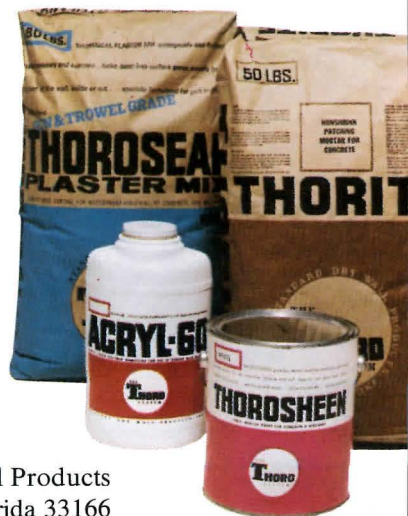
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The digitizer or "sensitive drawing board" as Mr. Pfeffer calls it, permits architects to trace existing drawings into the system's memory. This ability is particularly important in renovation work, and has permitted CRS to gradually phase pre-CAD projects into the system.

The system is also compatible with the overlay drawing technique (described in RECORD, July 1976, pages 55-58), whereby the various disciplines that must be carefully coordinated work on overlays that will be combined photographically in a single drawing for printing. The CAD system not only accommodates this activity, it also bypasses some of the photography phases. Any modifications to architectural base drawings, for example, are immediately available via the CRT to other disciplines such as the mechanical engineer. In one instance recently at CRS, an architect completed modifications to his plans on a Wednesday, necessitating changes to 30 plumbing and electrical drawings. The finished CAD drawings with all changes went to the printer by Friday afternoon.

What's more, the CAD system has the potential to keep a bill of materials as it draws, which CRS hopes will add to the firm's estimating ability. Further down the road, the system will do on line energy conservation analyses during design, and check for code compliance. As Mr. Pfeffer points out, the system could eventually be used for more design work, perhaps in 18-36 months. Mr. Pfeffer sees the day when CAD—given data from the AISC handbook—will be sizing beams; it may also be used to improve net-to-gross ratios. But as yet it is not a design or programming tool.

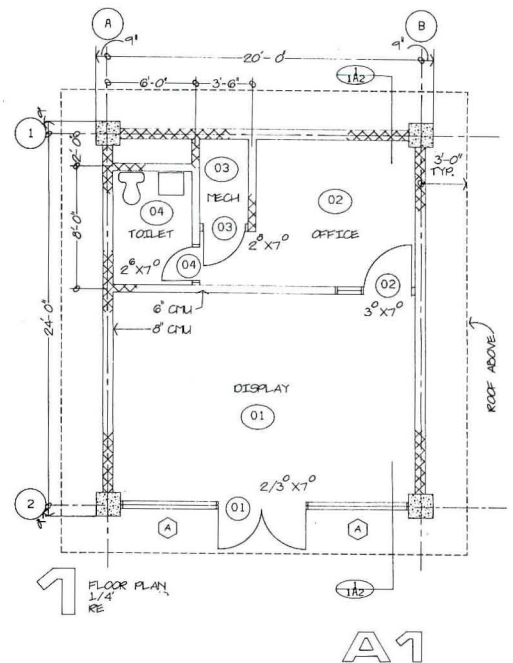
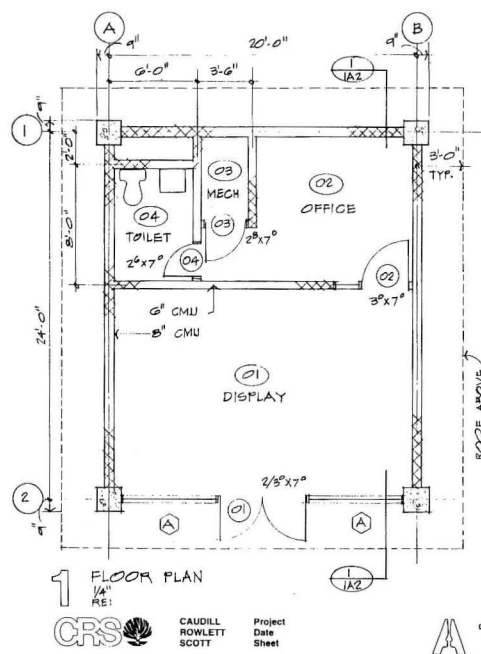
However, another CAD user—a large engineering firm—reports success in concrete design. Using FORTRAN (a computer language that stands for formula translation), the firm loaded its computer with basic design information for an elevated roadway. The computer proceeded to calculate the width, angles and curves of the road, and draw up plans that included the placement of reinforcing steel. The firm claims a 30:1 increase in productivity for this portion of the project by joining the calculation and drawing capacities of its computer system.

It is hard to find anything bad to say about CAD. When asked what its single biggest drawback might be, Jerry Pfeffer said the drawbacks have nothing to do with the CAD system itself. The problems so far are in efficiently scheduling the flow of work to the computer.

Because CAD can be hooked up to similar systems anywhere in the world, CRS president Paul Kennon sees the day when high quality drawings can be rapidly transmitted via long lines or satellite to offices here or abroad.

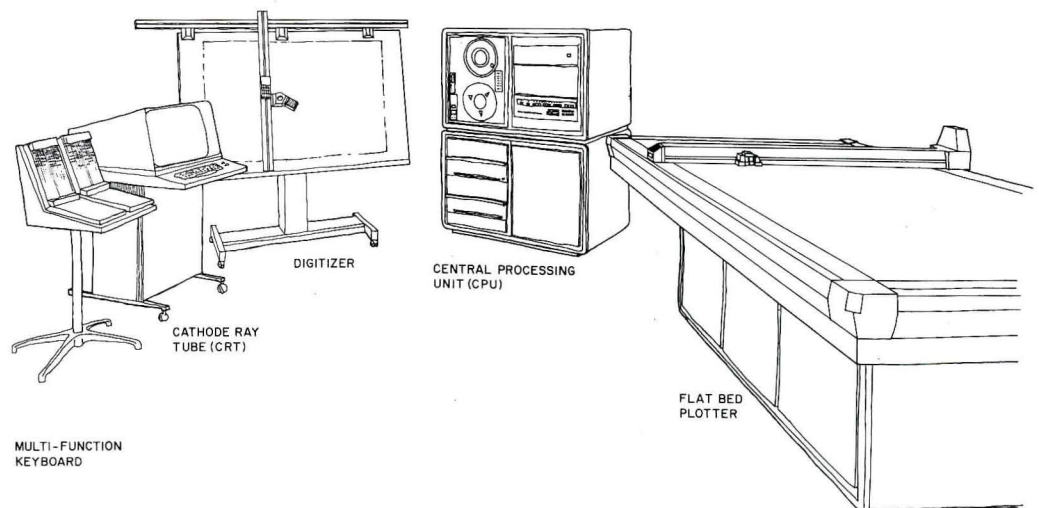
#### For smaller firms, the potentials of CAD may remain remote for some time

Although Autotrol, one of the largest suppliers of CAD equipment to A-E firms, foresees excellent growth opportunities in selling to architects and engineers, the firms purchasing such systems will probably remain the larger ones. As to the potential for several firms using the equipment on a timesharing basis, an Autotrol



The drawing at left above is one of several conventionally drawn plans that CRS gave CAD suppliers to duplicate on their systems. The drawing above right is the Autotrol sample, accurately duplicated, and including the lettering and architectural notes. Precision on the CAD drawing is said to be

within 1/1000 of an inch, or 10 times more accurate than pencil drawings done by hand. The basic system components, below, plus two additional CRT stations, require 1200 square feet of space at CRS. Eight stations operating on three shifts will duplicate the work of 75 draftsmen by 1983.



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marketing spokesman said the idea was quite unfeasible; the state of the technology is not suitable.

Still, the architectural and engineering market is "tremendous" according to one Autotrol representative, who cites annual growth of Autotrol installations in design firms as near 100 per cent. Another Autotrol employee says the A-E market is just being penetrated, although he concedes that it may be saturated quickly. Some 35-40 per cent of the company's total sales are to architectural and engineering firms, primarily the large engineering firms specializing in process industry facilities like oil refineries. Autotrol spokesmen

suggest that a strong effort will continue with CAD suppliers to eliminate the current drawbacks to wider application of the equipment, particularly in smaller design firms. But for the time being, suppliers expect the initial cost of obtaining a CAD system to remain fixed at relatively high levels. Some improvement in costs may occur in an increased number of workstations that can be added to the basic system for the same amount of money.

At present, Autotrol's software research and development is concentrated where present users are requesting more capability: primarily in pure architectural design, specifically in space planning.



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## The increasing Federal role in land use control

The public's heightened awareness of the effect of land use practices on social objectives and environmental protection has led to feelings that local land use controls are inadequate to deal with the full range of modern development-related problems. As might be expected from their origins in the "obvious" inadequacy of local control mechanisms, Federal programs have the greatest impact on the rapidly developing fringe of urban areas, and on issues that transcend municipal boundaries, areas where traditional local controls are weakest. Of course, in the core cities, inadequate financial resources are the basis for a greater Federal involvement. This article deals with: 1) the major types of Federal programs that affect development; 2) the approaches for determining if a given project may be subject to Federal requirements; and 3) EPA's powers under the Clean Air Act Amendments of 1977.

by James A. Sharp

For analytical purposes, it is useful to divide Federal programs into three categories:

**Grant programs:** The largest category, in terms of money spent, is the grant programs. These are not regulatory in nature, but projects applying for capital grants must meet eligibility criteria. In addition, some capital grants, and most grants for program planning or administration, are dependent upon the development or enforcement of specified regulatory provisions in state or local ordinances.

The best known capital grants program is the HUD block grant program under Title I of the Community Development Act of 1974. However, other grant programs may be more significant in terms of their indirect effect; for example, the highway funds administered by DOT and sewage treatment funds administered by EPA. Both DOT and EPA programs are major determinants of the location, timing and extent of private development.

It is important to note, that an increasing number of Federal planning grants are used to finance state and multi-jurisdictional agencies that traditionally have had little experience in land use matters. Whether by design or accident, this creates a definite similarity of interests between these state and regional agencies and the Federal departments that fund their various operations.

Also under the Federal "grants" category are subsidy programs. These include the various insurance, mortgage purchase and guarantee programs, administered primarily by HUD, which promote private capital formation and investment in real estate; and the various income tax incentives and disincentives to real estate investors found in the Internal Revenue Code.

**Conservation programs:** These programs generally identify a specific property or site and apply special rules to govern activities affecting it. Sometimes these rules apply only to Federal

activities, but frequently they extend to private projects as well. Examples of this type of program are the Historic Preservation Act of 1966, the Endangered Species Act of 1973, the Flood Disaster Protection Act of 1974, and the Corps of Engineers dredge and fill permit programs under Section 404 of the Water Pollution Control Act.

**Direct regulation programs:** With regard to private real estate development, EPA permit programs under the Clean Air Act and the Federal Water Pollution Control Act are probably of greatest significance. Only portions of these Acts can be included in this category since both provide planning and administrative grant funds, and the Water Act contains a major capital grant authorization, under Section 201, for sewage treatment facilities. However, the regulatory provisions in these Acts are of greatest importance, and if fully implemented, have the potential for determining the size and location of any major development, public or private.

Commercial and residential real estate projects can be affected by the provisions of the Clean Air Act because they are considered to be sources of air pollution. Pollution occurs as a result of operating furnaces and boilers, and because development projects attract automobile traffic.

A commercial or residential real estate project is a source of water pollution because of both its sanitary discharges and its storm water discharges. Such discharges require a permit if they outfall directly from the property, but they can be regulated even if they pass into publicly owned storm or sanitary sewers.

There is another class of requirements which may constitute a separate category, but which will be included here. These are the numerous "consistency" provisions that tie the various Federal grant and regulatory programs together.

### Determining the applicability of Federal requirements to a particular project

The preceding outline of program categories is intended not only to describe the general types of Federal programs that could affect private development, but also to provide a basis for determining whether a particular project is subject to any Federal requirements. The approach outlined below will at least help to identify the right questions.

1. Federal regulations are designed to fill local regulatory vacuums. Therefore, if the project is located in an area with fairly comprehensive local ordinances it is less likely to be affected. Additional assurance can be gained if the project is located in an already developed area, and if it is not radically different in size and type from other development in the area.

2. Determine the sophistication of state and local environmental control programs. The more advanced they are, the more likely it will be that their programs have received Federal approval. This means that permits or approvals can be relied upon to be in conformity with, or an acceptable alternative to, any Federal requirements.

3. Finally, examine the site and the type of development proposed. The various categories of Federal programs affect developments in different ways so it is possible to decide which, if any, of them may apply in a given case.

The grants category is usually applicable only if public money will be involved in the project. This can include direct financial assistance, guarantees, or insurance. The need for additional roads, water or sewer services can also trigger this kind of Federal involvement.

It should be kept in mind that even though Federal grants may not touch a project directly, if a development depends upon future growth in an area, the planned expenditure of Federal highway, transit, and sewage treatment money can be critical to its ultimate success.

The "conservation" category of programs are site related and do not depend as much on the kind or size of development contemplated as on its location. For example, is the site within the 100-year floodplain; is it a wetland; does it have historical or archeological significance? If the answer is yes, Federal assistance may be precluded or a permit may be required to construct the project.

The category of direct regulations is not site related but applies to the size and type of development rather than to the specific site characteristics. In other words, what kind of

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effect, particularly pollution effects, will the project have on its surroundings. Such effects include outfalls for storm and sanitary sewers, emissions from combustion sources, and traffic generation. Once the pollution effects of a project are recognized, it is fairly easy to determine whether a Federal permit program exists and whether the project will be subject to review.

If these three steps are followed, it is possible to accurately estimate the degree of Federal involvement and the kinds of requirements that are likely to be imposed.

#### **EPA's Clean Air Act and the future of Federal land use control**

In fact the history of the Clean Air Act, from the Air Quality Act of 1967 through the Clean Air Act Amendments of 1977, is a classic example of the way a major Federal program can evolve from modest beginnings. The Air Quality Act of 1967 was designed to give grant and technical assistance to state and local air pollution control agencies.

With the Clean Air Act Amendments of 1970, the grant concept was supplemented by a conservation approach (a shift from the first to the second of the categories of Federal programs described at the beginning of the article). The National Ambient Air Quality Standards (NAAQS) were established and state or local pollution control activities were subjected to Federal supervision. In addition, just to ensure that the more stringent pollution controls to be imposed in the areas with NAAQS violations would not produce massive movement of industrial activity to areas with cleaner air, EPA was given direct regulatory authority over major new industrial sources (a minor, "necessary" shift from the second to the third program category).

Finally, in the Clean Air Act Amendments of 1977, Congress passed a requirement that air quality must be protected by EPA from "significant deterioration," even in areas where the NAAQS are being met. The net result is that every area of the country is classed as either a "non-attainment" or a "non-deterioration" area, and the allowable increase in pollution levels, if any, is an increment fixed by Federal statute (thus completing the shift to the third program category).

EPA has virtually unlimited authority to accomplish its objectives. If the state or local agencies are uncooperative, EPA can impose its own regulations, prohibit any further major industrial development, limit the size of sewage treatment plants, and in some cases, cut off highway funds. This is in addition to the usual enforcement procedures and the requirement that Federal actions be in conformity with any EPA approved plan.

However, the application of this regulatory authority to commercial and residential real estate will probably not be direct, at least not on a large scale. Such an attempt by EPA would create a severe political backlash. This is the value of the sanction and consistency provisions which can encourage cooperation without direct regulation. They give EPA the flexibility to tailor enforcement to the political context of a state or locality.

EPA learned the value of a flexible enforcement approach in its only attempt, so far, to implement direct regulation of non-industrial development. The "indirect source" regulations, published in February, 1974, required an EPA permit for any large-scale development that would have more than 1,000 parking spaces (2,000 outside metropolitan areas). While 16 states eventually adopted their own indirect source programs, there was enough resistance from some of the remaining states that Congress has specifically prohibited EPA from *requiring* indirect source controls in the future. EPA is only permitted to regulate Federally assisted indirect sources and to enforce indirect source regulations voluntarily adopted by the states.

In fact, while land use control potential was the objective of several provisions of the Clean Air Act, there is no explicit reference to land use or development controls. The only exception is the reference to "emission density zoning" and implies planning the density and location of development on the basis of its generalized emissions.

The potential land use control significance of the Clean Air Act provisions only becomes apparent when the alternatives that will be available to the states are considered. First, vast areas of the country have existing violations of the NAAQS. At one point last fall, EPA declared that the entire area east of the Mississippi was considered a "non-attainment" area. They later changed this to all metropolitan areas with populations in excess of 100,000. In the remaining areas, the "non-deterioration" increments prohibit large increases in pollution levels. Second, since 1970, pollution control efforts have focused on industrial sources and automobile emissions. These types of controls are now almost fully implemented.

Since additional industrial and automobile controls are unlikely to yield significant results, the only remaining sources of "controllable," or at least preventable, pollution are the growing aggregates of commercial and residential development. States or localities that want to retain any options for additional industrial growth will be forced to institute controls on non-industrial development in order to meet EPA requirements.

#### **Washington shows no signs of relinquishing development regulation**

It will become increasingly important for developers and planners to account for the effects of Federal land use programs. The political situation in Washington is favorable to a continued expansion of Federal influences, from grant programs to new and expanded conservation programs, and where appropriate, to direct regulation. The speed of this process will depend upon the development of politically acceptable focuses for Federal involvement, such as energy, wetlands, or farmland preservation. The extent of Federal influence will ultimately depend upon the degree of acceptance by state and local governments.

Whatever the speed or extent of new Federal initiatives, the Clean Air Act represents a remarkably sophisticated approach and will

probably serve as a model for future Federal land use programs.

The following is an outline of current EPA authority under the Clean Air Act, including the relevant statutory sections and Code of Federal Regulations (CFR) provisions:

1. EPA establishes "guidelines" for the states to follow in preparing non-deterioration plans. (Guidelines are found at 40 CFR, Part 51) EPA then approves the final state submission (Section 110 (a)).

2. The voluntarily submitted state plans, as approved by EPA, are published as Federal regulations (40 CFR, Part 52). These regulations are then enforceable by EPA as Federal law (Section 113). Once approved the regulations can only be amended by the state with EPA permission (Section 110 (a)).

Even if a state changes or repeals an EPA approved regulation, EPA and citizens' groups can still enforce the regulation as originally submitted until EPA approves the change.

3. In the event the state refuses or fails to submit an adequate plan for attaining the NAAQS, EPA can take the following action:

For non-attainment of any NAAQS: a) promulgate and enforce adequate regulations to replace or supplement the state proposal; b) prohibit the construction, after June 30, 1978, of any major stationary source; c) limit sewage treatment grants under section 201 of the Water Act to serve only the existing level of development.

For non-attainment of the NAAQS for automobile-related pollutants only (carbon monoxide, photochemical oxidant, etc.): a) prohibit any grants under the Clean Air Act after July 1, 1979 or July 1, 1983; b) prohibit any grants of highway funds by DOT after July 1, 1979 or July 1, 1982.

4. Where a plan for attaining the NAAQS has been approved or promulgated (either state or EPA regulations), the following consistency provisions apply: a) no Federal agency shall "engage in, support in any way or provide financial assistance for, license or permit or approve any activity that does not conform to a plan . . ."; b) any agency with programs that have "air-quality related transportation consequences" shall give priority to implementation of approved plans.

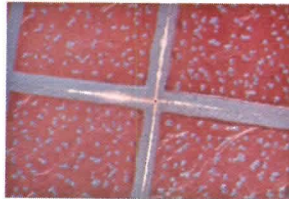
5. With regard to prevention of significant deterioration: a) if a state or locality fails to adopt an adequate plan for two pollutants, particulate and sulfur dioxide, EPA may prevent the construction of any major industrial source in that year; b) for carbon monoxide, photochemical oxidant, hydrocarbons and nitrogen oxidants, EPA is to develop control strategies within two years, and state and local agencies are compelled to adopt them. These control strategies may include "emission density requirements." If the state or local agency fails to adopt an acceptable control strategy, EPA has the same authority as it would have for non-attainment of a NAAQS under item 3 above.

Mr. Sharp is counsel for the National Realty Committee, Inc., Washington, D.C.

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# How Mannington solved a flooring dilemma – moisture and its effects.

Moisture under a floor can cause mildew, rot and discoloring. A reoccurring problem with resilient flooring since its introduction over a century ago.



*When moisture is present under a floor, this is the result.*

Two years ago, Mannington solved the problem of moisture by introducing Classicon® with Aquabar®.

**We set out to put a stop to mildew, alkali and mold.**

Jack Wiley, Mannington's director of research explained. "In the laboratory we screened almost a hundred possible barrier products. Finally we came up with Aquabar to repel the attack of moisture.\*"

"Test floors were installed in various parts of the United States. These replaced previous floor coverings (even some of our own) that had failed due to the action of moisture in less than nine months.

"A year later with a 100% success record we felt we had a satisfactory product to combat the moisture problem. We now offer a two-year warranty against moisture, the only such warranty in the industry."

\*Excluding Hydrostatic Pressure.

**Classicon. It goes where the others can't.**



Woodland Country Day School in Jericho, New Jersey, had a moisture problem. Every time it rained, water seeped through the walls and across the floor. Headmistress of the private school, Gail Stanley, elaborated. "The tiles we had put down were coming up and we had constant mold and mildew on the floor.

"Now with Classicon we have had no problems with water since the floor was put down two years ago. The flooring still looks as good as new."

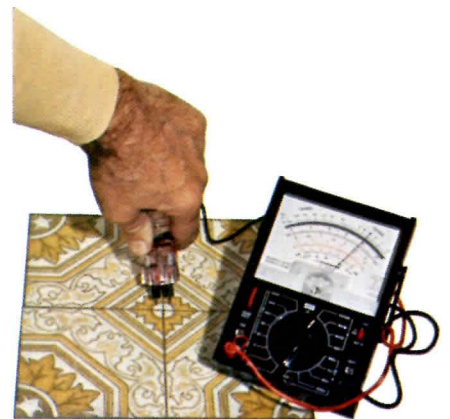


Eugene Dietman, building manager of a New Jersey Masonic Temple, had a moisture problem in the banquet room that made it practically unusable. After Classicon had been installed for 18 months, Mr. Dietman said, "We've had no water problems. It has proved easy to clean and keep in good shape. An adjacent banquet room still has water problems and we plan to install Classicon in there, too."

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# The Fed's tactics to rescue the dollar may hurt housing

Question: What do the sheiks of Araby and the gnomes of Zurich have to do with the homebuilders of Peoria? Believe it or not, there's a connection, though it's a complicated one. It involves oil, balance of payments, exchange rates, inflation, the Federal Reserve, and everybody's favorite jawbuster, disintermediation. The net result of this interplay is a tighter domestic credit market that bodes ill for housing finance, if not for commercial and institutional building in 1978. Here's a somewhat abbreviated explanation of a complex credit situation.

In case you hadn't noticed, the dollar has been slipping in world money markets (see Chart 3). More than anything else, this problem—like many others—goes back in part to our insatiable appetite for oil.

Last year we bought some \$45 billion of petroleum from foreign producers, and it takes a hefty increase in our exports to balance this off—a lot more, in fact, than world economic conditions would support. With most industrialized nations taking even longer than the United States to recover from the recession of the mid-Seventies, their potential to buy our goods and services has been quite limited. The result: in 1977 we found ourselves in the unaccustomed position of being a net importer to the tune of \$9 billion.

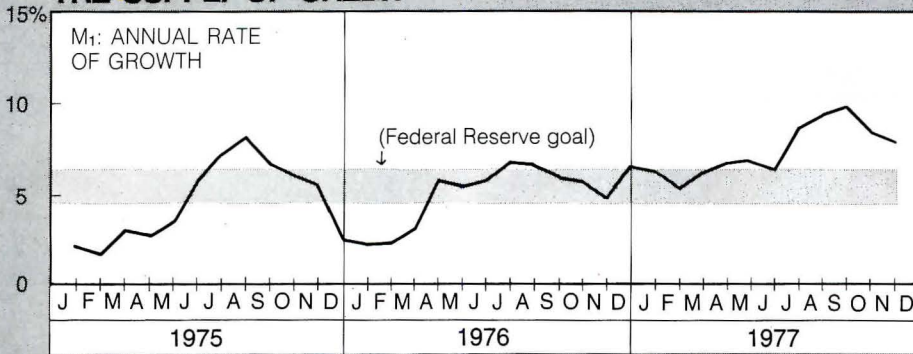
When one nation winds up with more commodities, other nations wind up with credits—dollar credits in this case. But who wants to take payment in a currency that's being eroded by inflation at a rate of 6 per cent a year? Only nations with even worse inflation—that's who. Right now, many European nations—partly because of their still-depressed economies—are experiencing *less* inflation than we are, so foreign exchange rates must compensate for this difference.

To quell what it considers "disorderly" exchange rate movements, the Fed raised its discount rate early in January, setting off a chain reaction. Since the discount rate is the rate the Fed charges its member banks, they (the commercial banks) took the hint and boosted their prime rate to 8 per cent. Subsequent links in the chain of events are expected to be: 1) higher interest rates here in the United States, which should provide the incentive for foreign investors to put more funds in dollar-based securities, thereby offsetting the trade deficit; and 2) Fed action that should emphasize that Washington is quite serious about controlling inflation.

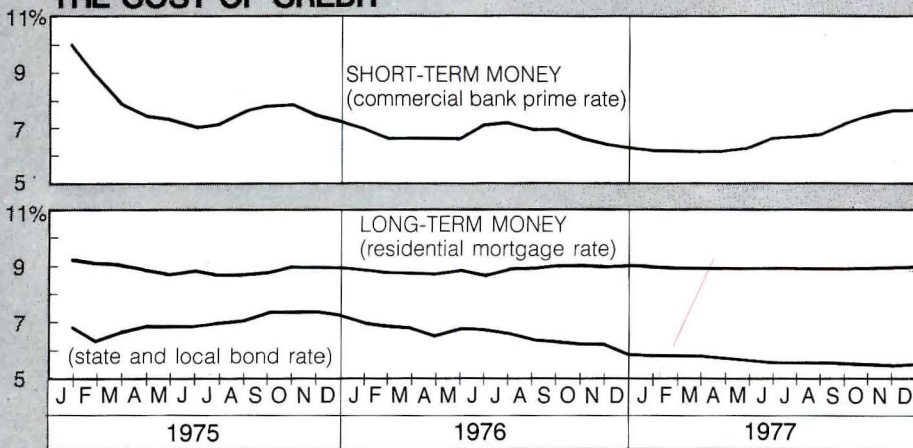
An undesirable side effect of this rescue operation by the Fed is to aggravate the already tight domestic credit market. It wasn't long after short-term interest rates moved above and beyond the top rate paid on savings by the thrift institutions that the volume of saving predictably dropped off. That's an ominous sign for housing finance, but it's not as likely to curtail commercial and institutional building in 1978.

George A. Christie  
Vice president and chief economist  
McGraw-Hill Information Systems Company

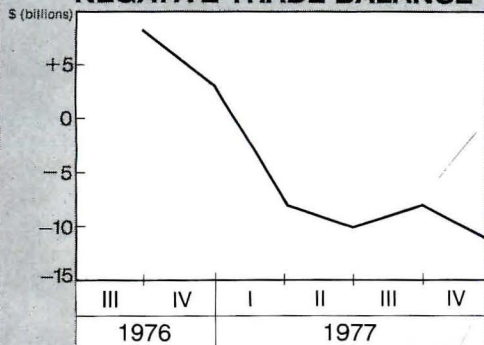
## THE SUPPLY OF CREDIT



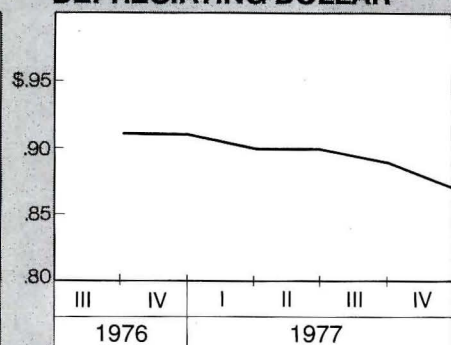
## THE COST OF CREDIT



## NEGATIVE TRADE BALANCE



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**total-perimeter weatherstripping** provides weathertight seal around entire window.



# THREE HOSPITAL PROJECTS BY KAPLAN/ McLAUGHLIN

**Hospitals should become not more dramatic,  
but more pleasant. We need statements about joy,  
not about technology**

Joshua Freiwald



**F**or years the hospital has in a sense been a neglected building type that few architects who fancied themselves "good" would often attempt or even be given. Hospitals have been regarded as workman-like buildings—factories for health that were impossible to make into places that were enlivening and humane. The main aspect of the problem has been one of function, the functioning of a highly complex facility; somehow, in a perverse way, to try to do a good looking building seemed to be to show off, to deny the function as if the two things were possibly antithetical. Some well-known firms with a reputation for design did handsome buildings as hospitals in the 1950s. The most elegant building around at the time seemed to be Lever House, so what was reproduced in hospitals was the basic massing from it. These embody what is known as the "matchbox on a muffin" prototype. It is a prototype which does not work very well simply because it doesn't allow the building to grow and change.

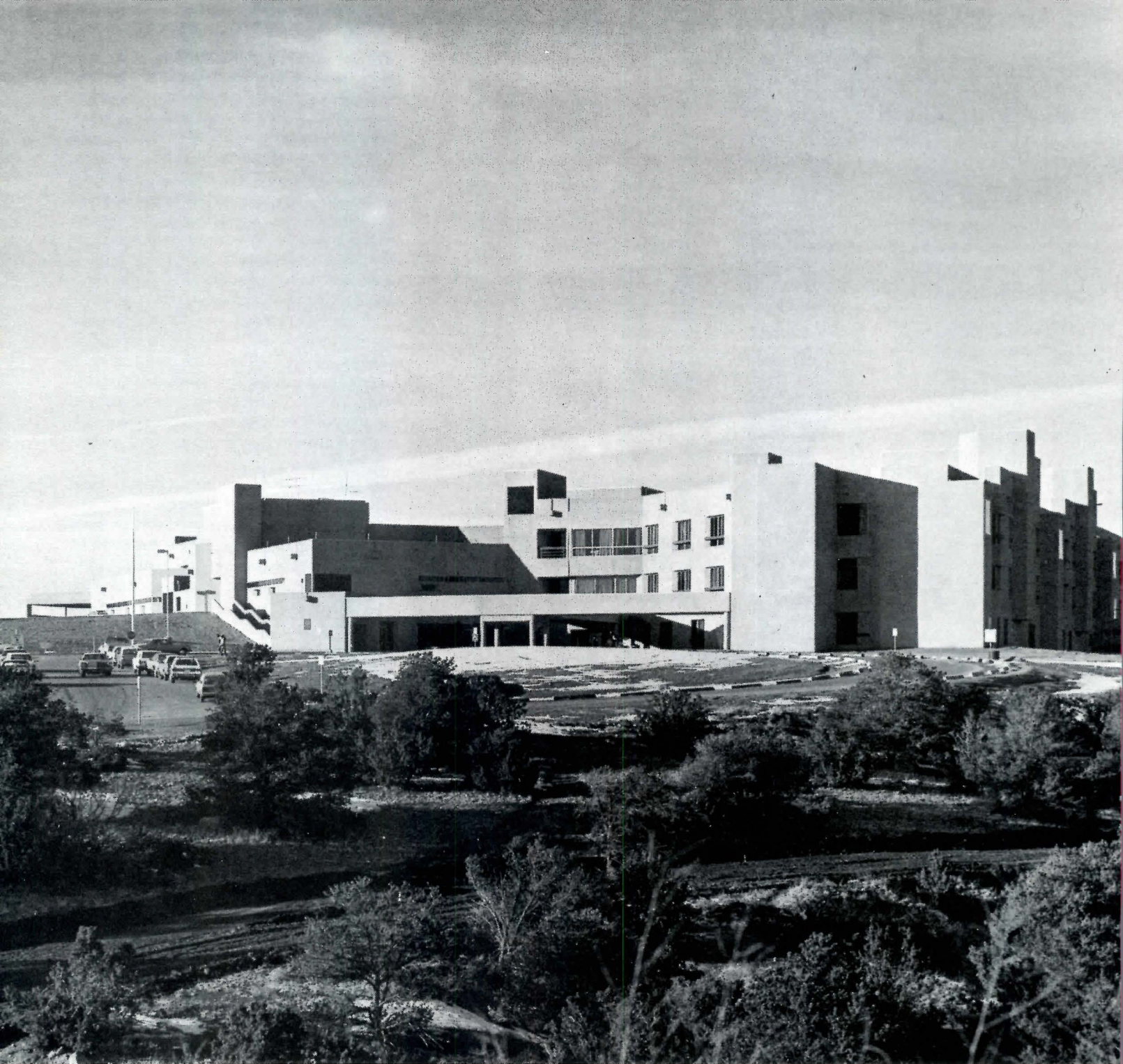
The basic urge of the architects of these and other hospitals in the East and the Midwest has generally been to turn out technical masterpieces. The assumption has been that they should therefore look like factories, and this idea still tends to dominate the Eastern and Midwestern image of hospitals. The West Coast version, by contrast, tends to be derived not so much from the image of a Lowell, Massachusetts, as from an Orange County suburban office park, with white, crisply rectilinear buildings.

Thus the design of hospitals in the recent past has been influenced in varying proportions by at least three stereotypes—that they should be ugly and not "good design;" that, alternatively, they should ape the technological forms of "high style" architecture; or that they should replicate the lighter and more relaxed image of Southern California.

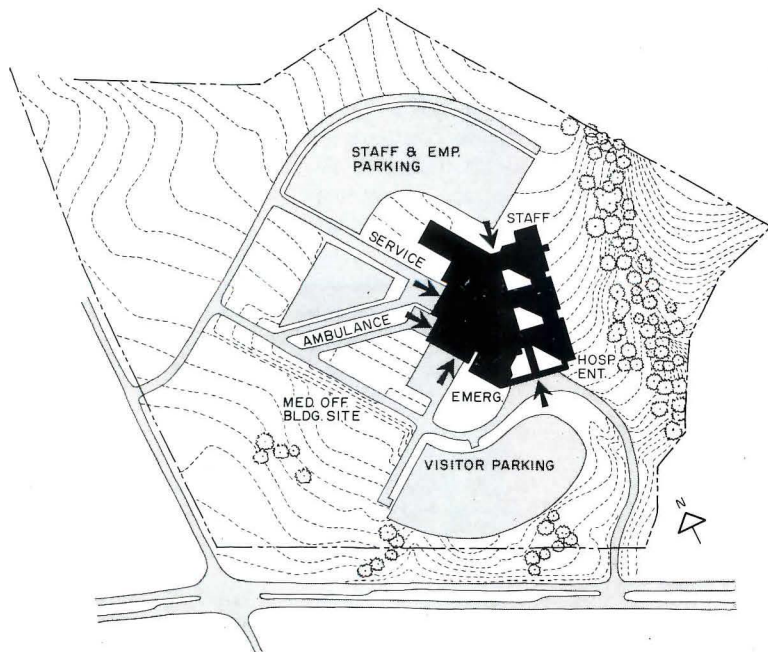
In order to be able to do good hospitals it is necessary to break through both these stereotypes, and others, and the first way to begin to do this is simply to recognize that there *are* stereotypes. Another quality that one has to bring to the design of hospitals is a degree of open-mindedness. This building type—more than any other—should be designed around the assumption that there *will* be change, alterations, and later additions. There will even be demolition. Acceptance of the certainty of change to the building is often a very difficult thing for contemporary architects to accept. We are trained to do clear, freestanding buildings, and we seem ill-at-ease with a self-effacing building that just fits into a city space.

When, for example, we were doing our work at Emanuel Hospital in Portland, shown on the following pages, we funded a study of hospital obsolescence. We were struck by the phenomenon of the so-called interstitial floor. An interstitial floor is a large floor reserved purely for ductwork and mechanical equipment between the occupied floors of a hospital. The rationale of its existence—ostensibly, at least—is that there is a lot of change to mechanical systems in hospitals, and a great deal of maintenance to them. This kind of floor system makes changes and maintenance easier.

*continued on page 102*



Joshua Freiwald photos

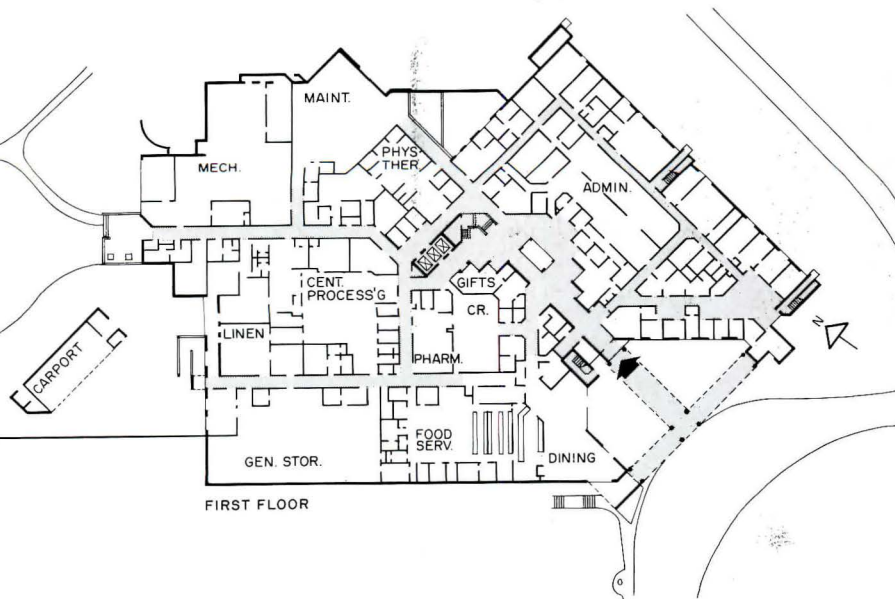
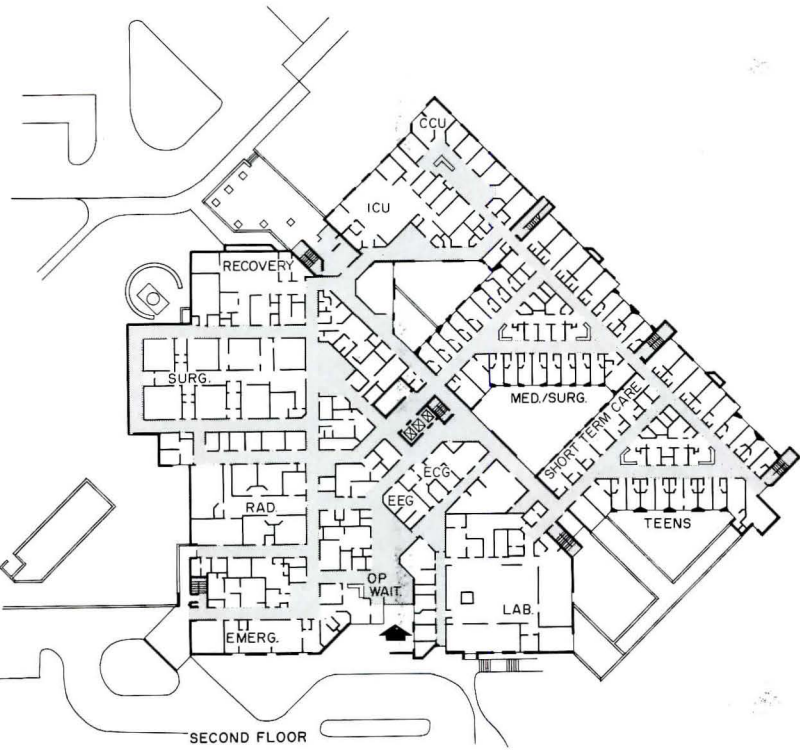
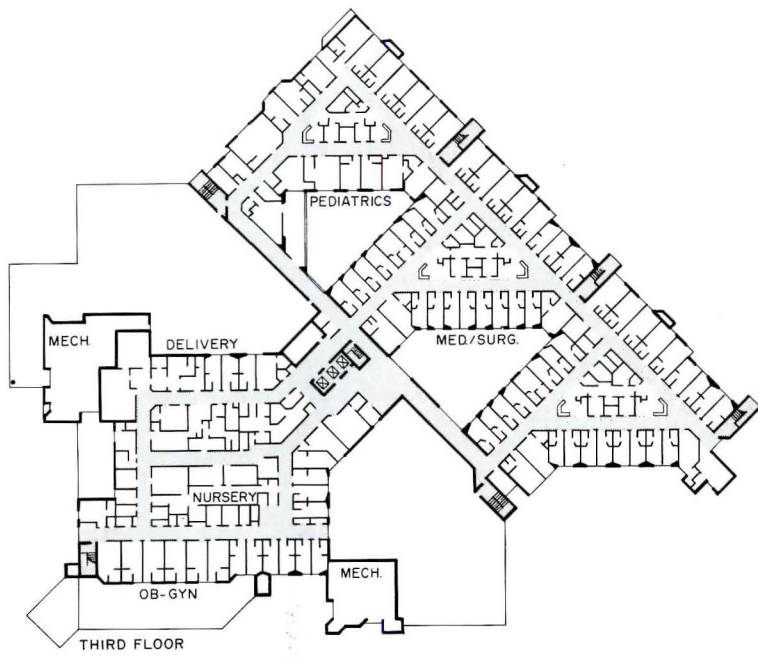


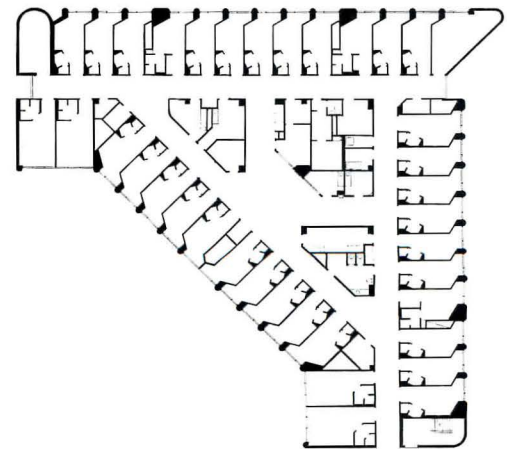
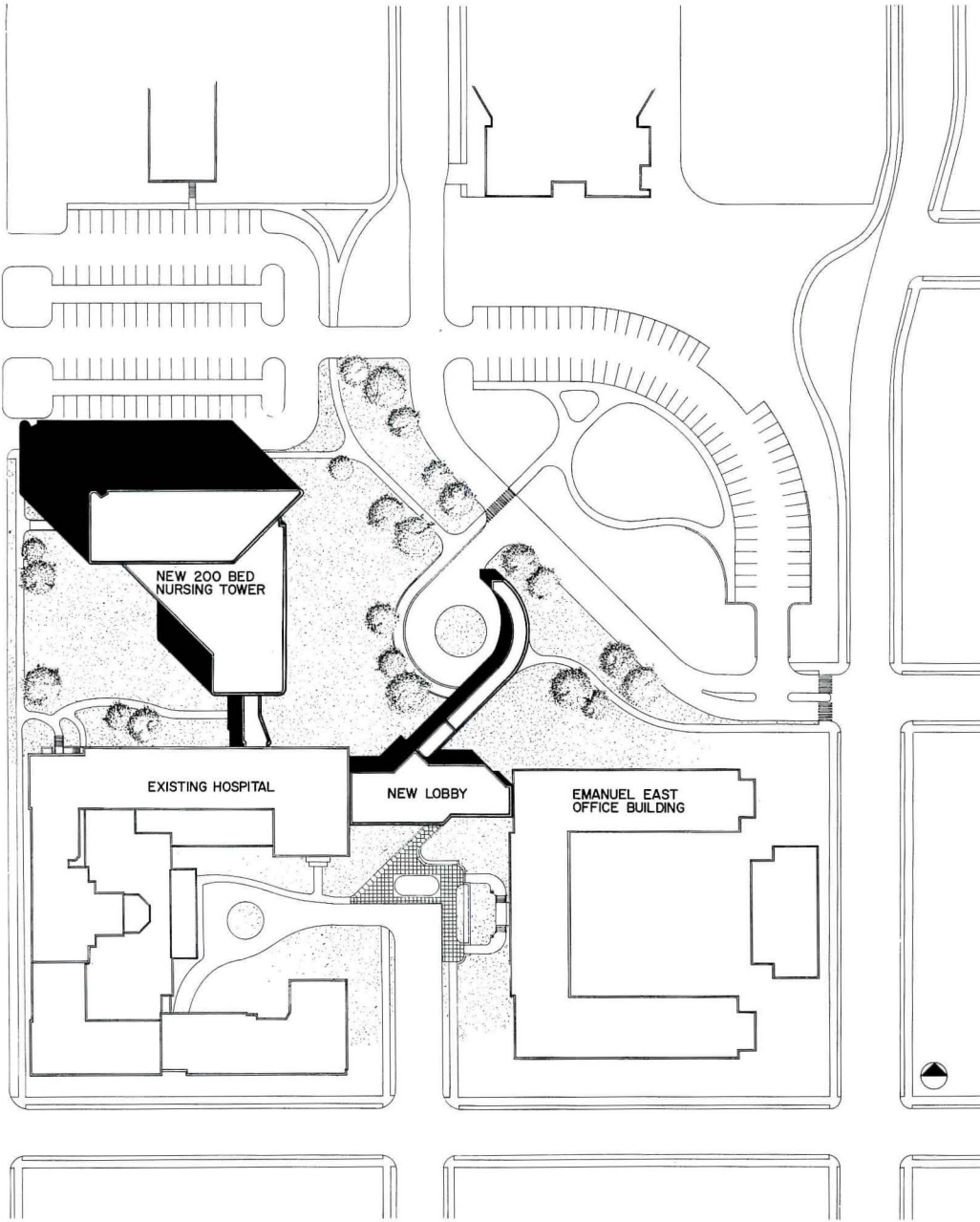
## ST. VINCENT'S HOSPITAL, SANTA FE

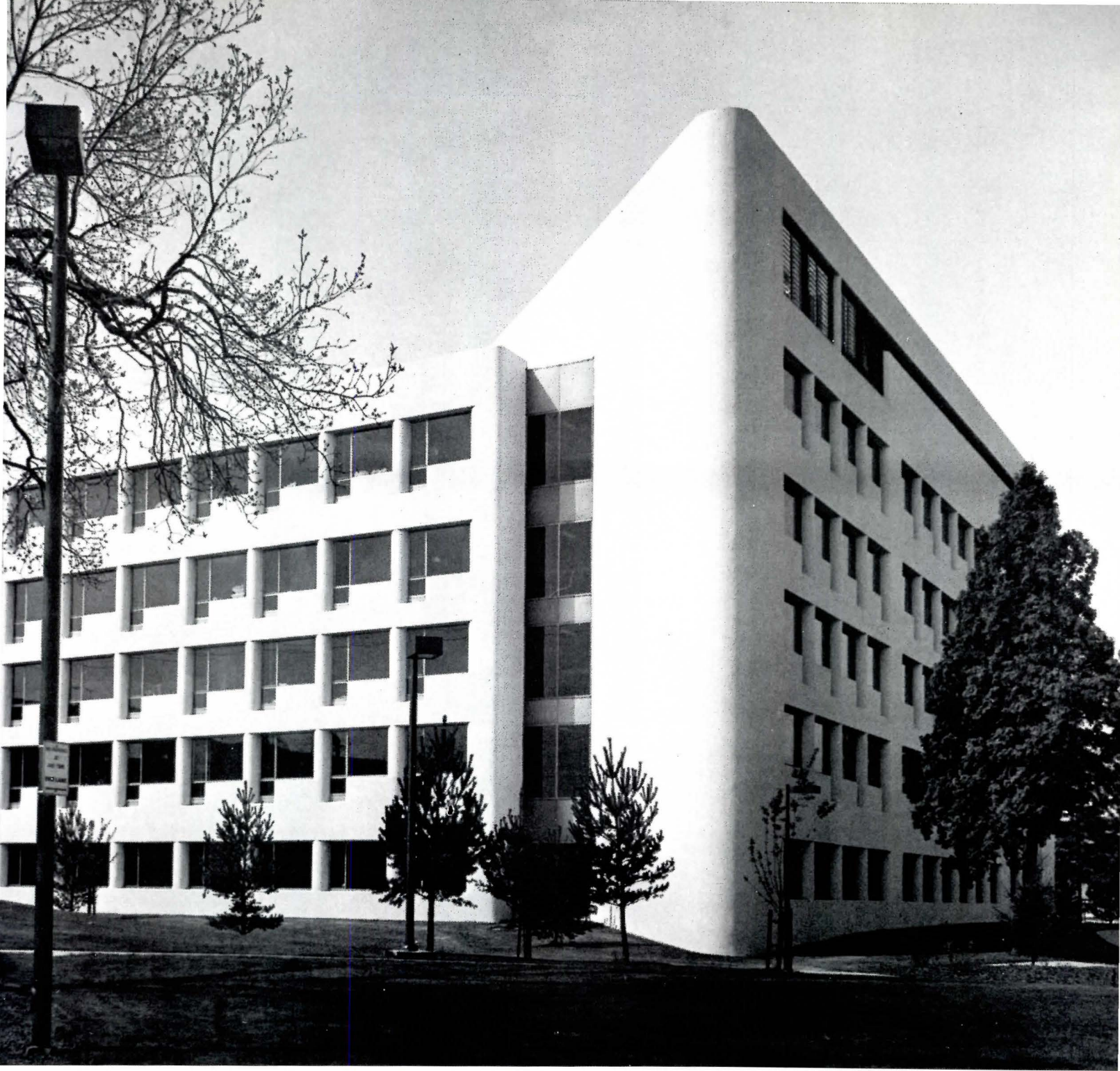
This hospital, described more fully in the accompanying essay, is a series of rooms arranged along internal pedestrian "streets." Primary among the design objectives was the provision of pleasant waiting areas for patients and their families (opposite page) and the creation of a building profile that would fit into Santa Fe's vernacular and scale, even though the new hospital is about twice as big as any other building in town, with the exception of the old hospital which it replaced. On the outside, the building takes its stylistic cues from the massing of early Spanish mission churches done in adobe, but here rendered in more permanent materials. The architect

describes the effect as "painterly"—an irregular and almost random composition of pieces of the building's volume. It is an effect, too, which, in addition to being in key with its special place, also accommodates expansion.

ST. VINCENT'S HOSPITAL, Santa Fe, New Mexico. Representatives for the client: *George Boal and Mikkel Kelly*. Architects: *Kaplan & McLaughlin*—project architect, *John Kibre*. Associate architect: *Phillipe Register*. Engineers: *Ken DeLapp* (structural); *Bridgers & Paxton* (mechanical); *Uhl & Lopez* (electrical). Consultants: *Marshall Associates* (food service). Construction manager: *McBro*.





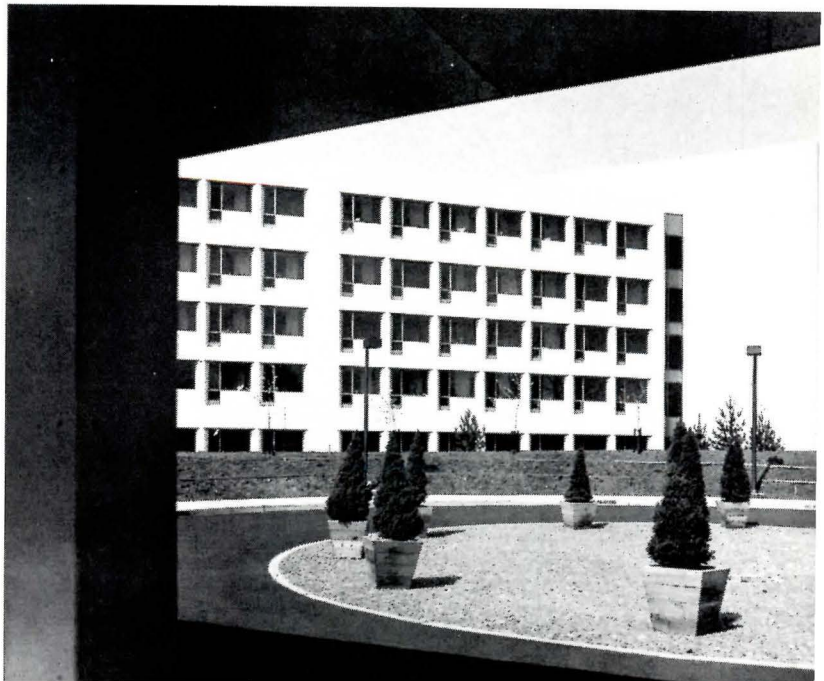


## **NURSING TOWER, EMANUEL HOSPITAL, PORTLAND**

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The new nursing tower for Emanuel Hospital is the greater of two additions made by Kaplan & McLaughlin (the smaller being the new lobby shown along with the rest of the site in the plan on the opposite page). The triangular plan of the tower is shown on the left, as is the special configuration of the single nursing station on each floor—an arrangement that was developed through research with the hospital's nursing staff. The station itself is unusual in that it was designed as an open space with movable furniture, since research showed that the one area of a nursing floor in which change took place most often was in the nursing station itself. The building is

simple, efficient, and handsome; its shape and scale and materials are independent of the adjacent building to which it is delicately connected—a decision which the architects felt preferable to superficial copying. EMANUEL HOSPITAL NURSING TOWER, Portland, Oregon. Client representatives: *Paul Hanson, Roger Larson, and John Grotting*. Architects: *Kaplan & McLaughlin—project architect, John Boerger*. Associate architects: *Newberry, Schuette & Wheeler*. Engineers: *Rose, Breedlove & McConnell* (structural); *Morrison, Funatake & Associates* (mechanical); *Grant Kelly & Associates* (electrical). General contractor: *Todd Building Company*.







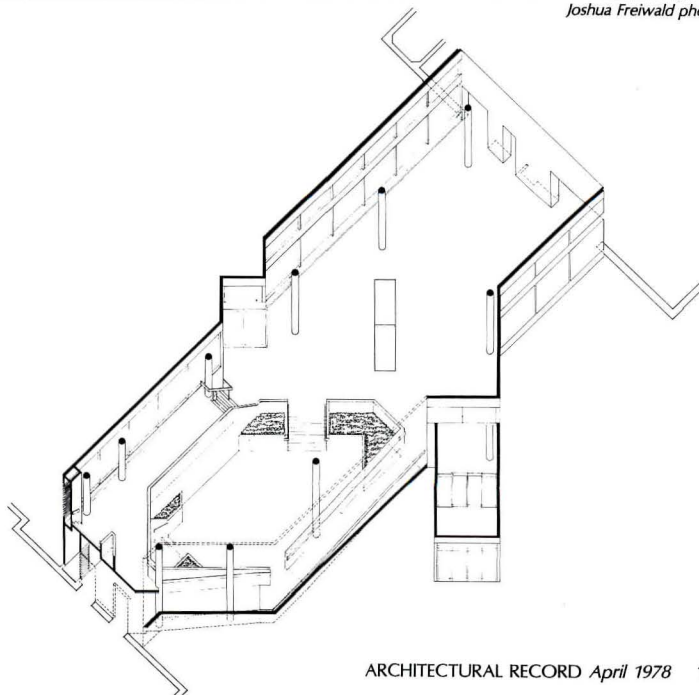
Joshua Freiwald photos

## LOBBY FOR EMANUEL HOSPITAL, PORTLAND

This new building provides a lobby between an older nursing-school building and an existing hospital. The nursing school was renovated for hospital administrative functions, and, when these were removed from the hospital, its medical facilities were expanded. The design, according to the architects, is an attempt to do a self-effacing link which is independent of the esthetic of the two buildings it connects. It is two stories at one end because it connects to the old nursing school at two levels, whereas it only touches the main hospital building at one level. It is designed—unlike waiting rooms near intensive care units, where families often wait for 24 to 48 hours—

to be a pleasant place where people come and go. Open office planning has been used in the admitting-office end of the new lobby (left). There so far appear to have been few problems of confidentiality.

EMANUEL HOSPITAL LOBBY, Portland, Oregon. Client representatives: *Paul Hanson, Roger Larson, and John Grotting*. Architects: *Kaplan & McLaughlin—project architect, John Boerger*. Associate architects: *Newberry, Scheutte & Wheeler*. Engineers: *Rose, Breedlove & McConnell* (structural); *Morrison, Funatake & Associates* (mechanical); *Grant Kelly & Associates* (electrical). General contractor: *Donald W. Drake*.



But we suspected that it really didn't, and the inquiries we have so far made seem to substantiate that suspicion.

Rather, what we have observed is that the aspect of a mechanical system which requires maintenance on a continuing basis tends to be the fans. They are most easily dealt with if they are located in an easily accessible fan room, which can, of course, either be located on the roof or in a fan room at the same floor level as everything else. In terms of other aspects of change, very little else happens. So where did the notion of the interstitial floor come from? Perhaps it came from the architect's instinct for monumentality, system, and order, from what Paul Rudolph used to refer to as the "exalted engineering phase" of contemporary architecture, which occurred in the early 1950s. What architects seem to have done for hospitals (or wanted to have done) was to use longer spans, and the longer spans eventually created a truss. So what do you do with the truss? You make an interstitial floor.

But the reality of a hospital is that there is seldom any space larger than 20 feet by 20 feet, with the exception of the occasional auditorium, and the typical dimension of a space in a hospital is 10 by 12 feet. Hospitals are really a bunch of walls and a maze of rooms. The column hardly acts as a major event; time and again we have seen that they do not interfere with change. Shape does.

It was clear from the results of the obsolescence study for Emanuel Hospital that the kind of change that most often happened was addition—almost endless addition—with minor modifications to existing areas, and these occurred in a random way that made demountable partitions almost useless and not cost effective.

To be a good hospital designer, you have to be optimistic about your ability to do good buildings, you have to be aware of the stereotypes that can dominate architectural design, you have to be analytical, you have to be aware of the fact that your building is likely to be altered, and you have to be iconoclastic. The central theme of our concept of hospital design is that hospitals are like villages. What one does on a completely new hospital job is to design the street system, the corridor system, the circulation system. Make that work, make it generous, and make it flexible—because it is likely to be the most permanent element of the design. St. Vincent's hospital in Santa Fe (shown previously) is very much organized around the concept of a main street. (A typical problem of its design is that we became—as you can in designing a hospital—so subsumed in the technical problems and in molding the exterior that the street on the second floor is somewhat unrealized; it could have been richer, and should have had alcoves and skylights.) We evolved the notion of doing a design which was to a certain extent divided in half by a major street. On one side are most of the nursing units, which our obsolescence study has indicated would tend to look the same, function the same, and take very little addition—it is extremely hard to add on to a nursing unit, and it is very seldom done. On the other side of the street we placed those func-

tions which tended to be tightly related in terms of traffic between them: the surgery, laboratory, radiology, and emergency room in particular. These departments were arranged so that they were all on exterior walls and were planned so that individual rooms could be tacked onto that. It was our assumption that this was what would happen in the future.

Though we were perhaps too timid in our development of the second-story spine, we did focus a great deal of attention on the lobbies both in the emergency room and elsewhere, and we worked hard on their ceilings. It has been interesting that the elevators—which are normally a source of continual complaint in a hospital—are not in this case. It seems that they are barely used. We tried to make the stair between the second floor (which is the major populated floor of the hospital) and the first floor (which is where the front lobby and the cafeteria are) as attractive as possible, and apparently we succeeded. The hospital is designed to take a horizontal addition up and down the circulation spine; we do not know when the additions will be made, but we feel confident that the building will respond gracefully to them when this does happen.

Our two new projects at Emanuel Hospital in Portland, which have been accompanied by a string of remodelings, exemplify the other end of the hospital problem, the one that St. Vincent's will face after twenty years. Emanuel is an excellent hospital which was cramped for space in almost every department. They could not afford to pay for an entirely new replacement of the surgery, radiology, laboratory, and nursing units which the master plan we did for them called for. So we evolved a strategy in which we added a nursing tower on one side of the building (which gave them the new beds they badly needed), and we linked the main hospital building by means of a new lobby with an existing nursing-school building which was substantially unoccupied after the nursing school was closed down, again, for economic reasons. We then used the space, vacated by administration and other departments in the main hospital when they moved to the former nursing school, to expand the laboratory and radiology areas. Surgery was slightly remodeled and continues to be able to function well. The second project was a nursing tower. Like St. Vincent's in Santa Fe (which cost slightly less than \$50 a square foot), it was an unusually inexpensive project at approximately \$52 a square foot, bid in 1974. The shape is triangular—a shape that we used at St. Mark's Hospital in Salt Lake City, to our knowledge the first triangular nursing unit in a general hospital. It has since that time become an extremely popular form, because it generates a good deal of exterior area for a relatively small core.

At our office, we have a strong philosophy of design, but not a philosophy of style. We attempt to do contextual buildings that do not look the same but which, I hope, have a common thread in terms of their approach to the problem, which is one of carefully analyzing the available prototypes and stereotypes, examining the essence of the situation at hand, and sharing with the client this knowledge.

—Herbert McLaughlin and James Diaz



# JERUSALEM:

**A new setting for the Western Wall, a yeshiva in construction, and a redevelopment project near the Old City at Jaffa Gate—three projects designed by Moshe Safdie to help bind together Jewish and Arab Jerusalem into one city in the hope that it will never be divided again**

*by Mildred F. Schmertz*



In the ten years since they captured East Jerusalem—including the Old City—in the Six-Day War, the Israelis have been trying to integrate it with West Jerusalem. Weaving together once more the city torn in two by the 1948 War of Liberation, they have built interconnecting roads; are extending the fingers of their park and greenway network into East Jerusalem and around the walls of the Old City; and have constructed five residential neighborhoods beyond the eastern perimeter of the recombined city. Further, the Israelis are rebuilding the Jewish Quarter within the walls of the Old City to affirm their presence there.

Two projects now under consideration in Jerusalem directly interconnect the Old City with West Jerusalem. They are both designed by Israeli architect Moshe Safdie. The Municipality of Jerusalem hopes to construct his scheme for a new and monumental setting for

the Western Wall (popularly called the Wailing Wall) on the boundary between the Jewish and Arab quarters of the Old City. And recently approved by the Municipality of Jerusalem, after undergoing relentless political opposition, is Safdie's master plan for the redevelopment of Mamilla. Centered upon the Old City's Jaffa Gate on the boundary of East and West Jerusalem, it is at the very core of the reunited city. Nearing completion in the Jewish Quarter is a major rabbinical college, the Yeshiva Porat Yoseph (cover).

The sketch at left by Safdie is a section showing the plaza in front of the Western Wall when it was a narrow space confined by the Moghrabi Quarter. The 19th-century lithograph above also shows the worship space when it was small and intimate. In 1967 the Moghrabi Quarter was bulldozed by the Israelis to enlarge the space for worship.



DIRECTION OF  
CHRISTIAN QUARTER

ARAB QUARTER

JEWISH QUARTER

DOME OF THE ROCK

TEMPLE MOUNT

THE WESTERN WALL  
(WAILING WALL)

EL AKSA MOSQUE

MOGHRABI GATE,  
BARKLEY GATE  
BELOW

ARCHAEOLOGICAL  
DIGGINGS

DUNG GATE

OLD CITY WALL  
BUILT IN 16TH CENTURY  
BY SULEIMAN  
THE MAGNIFICENT

SITE OF YESHIVA  
PORAT YOSEPH  
NOW NEARING  
COMPLETION

DIRECTION OF  
ARMENIAN QUARTER

**The Western Wall—  
in space and in history**

In 1972, Israeli-born architect Moshe Safdie was commissioned by the Municipality of Jerusalem and the Corporation for the Development of the Jewish Quarter in East Jerusalem to devise a plan for the open space and adjoining neighborhood in front of the Western Wall in the Jewish Quarter of the Old City in East Jerusalem. It is the most holy of places for the world's Jews. Although Israeli leaders don't like to say so in public, the present setting for this monument does not meet their aspirations for the Jewish nation's most important Holy Place.

For centuries the Wall had been hemmed in by tightly interwoven small dwellings, some dating back to 1320, which were known as the Moghrabi Quarter. The little space used by the Jews who had come from distant lands to pray there is remembered as a narrow, shaded, intimate place only 40 feet by 120 feet, in which the Wall itself appeared to reach to the sky and the ancient stones seemed awesome, yet close.

Under Jordanian rule, only a few Jews among the tourists from Western countries had access to Judaism's most sacred place. Almost at the instant the Wall was liberated, the Israelis ordered that routes be cleared to the Old City by which every Jew in the world would come. Soon after, the Moghrabi Quarter was bulldozed to create a plaza large enough to contain the expected crowds. The space cleared measures 240 feet by 660 feet, not including the archaeological area to the south.

The Western Wall could now be seen from many angles and distances across the vast and dusty new square, but for many who remembered the Wall as it had been, it looked disappointingly different. It seemed diminished and, for some, less holy.

The sanctity of the Western Wall to Judaism arises from its nearness to the site of the Holy Temple of Solomon on Temple Mount at the heart of the Old

City. The Wall itself is the south-western portion of the rampart surrounding this ancient religious site which has been a great Islamic sanctuary (except for a Crusader Kingdom interval) from the 7th century to the present. Dominating the immense terrace of Temple Mount are the Mosque of Omar and the El Aksa Mosque, placed on axis with each other within a Moslem courtyard and garden surrounded by broad squares overlooking the Judean hills. Altogether they form one of the most beautiful architectural compositions in the world.

When Safdie began designing the forestage to the splendid backdrop of the Western Wall and Temple Mount, the square looked even worse than it had when the bulldozers finished, five years before. Since the site of the Old City of Jerusalem has been inhabited for at least four thousand years, archaeologists can't keep their hands off it, and the precinct of the Western Wall is one of their favorite digs.

By 1972 they had turned up four early Moslem buildings of the Omayyad Period (A.D. 660-750), including two palaces. Digging down layer by layer they had found Byzantine, Roman, Herodian, and pre-Herodian chambers and an Herodian street built shortly after 37 B.C. They had excavated to the foundations of the Old City wall built partly on Herodian and Mameluke remains by Suleiman the Magnificent from 1537-1541. They had exposed ten lower courses of the Temple Mount wall built by Herod. And much more.

The Archaeological Mission and Jerusalem's Mayor Teddy Kolek desired that some form of controlled public access to the sites be established.

The Western Wall Precinct is defined by the Wall itself to the east, the Old City wall and Dung Gate to the south, the Jewish Quarter rising steeply to the west, and the 14th-century Mahkamah building, sacred to the Moslems, to the north. Safdie began to plan the foreground for the Wall by

selecting those existing streets, neighborhoods, gates and buildings which should—because of their historic importance, their beauty or their key location—influence his design.

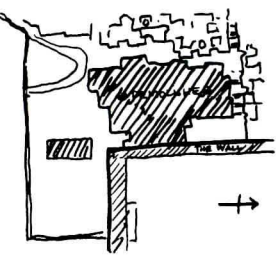
The first of these is the Herodian street partially excavated by the archaeologists which borders the Wall and lies 30 feet below the level of the present plaza. This, he thinks, should become the lowest level of a new amphitheater-like plaza (section below).

The second is Barkley Gate (in sketch at bottom left), which was one of the principal entrances to the Herodian temple on Temple Mount. Presently unexcavated, it is located only a few feet above the Herodian street and connects through a 2,000-year-old underground stair to the courtyard of the Temple Mount. It could once more become an entrance, taking the place of the Moghrabi Gate above it.

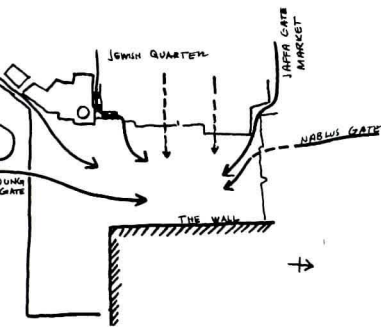
The third element selected by Safdie as important to his design is Dung Gate—the only inelegantly named portal of the Old City's nine. The others, clockwise, are the Zion, Jaffa, New, Damascus, Herod's, Lion's, Golden and Sealed. Now the entrance closest to the Western Wall area from beyond the Old City walls, in Old Testament times it was the collection point for the city's refuse. Safdie believes that the Dung Gate and its approaches should be transformed into a handsome and practical entrance to the Western Wall Precinct.

Since the plaza presently lacks toilets, first aid, restaurants, snack bars and tourist shops, Safdie's design calls for such facilities to be concentrated within a smaller plaza, immediately inside Dung Gate.

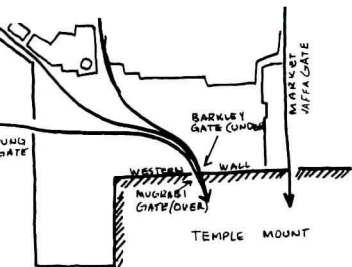
The fourth link between the Western Wall precinct and the rest of the Old City is the Arab market street, which forms a direct connection from Jaffa Gate to the narrow streets leading through the Jewish Quarter to the Wall. Finally Safdie has related his scheme to the 35-acre Jewish Quarter itself.



The pre-1967 condition at the Western Wall



Pedestrian approaches to the Western Wall Plaza



Pedestrian approaches to Temple Mount

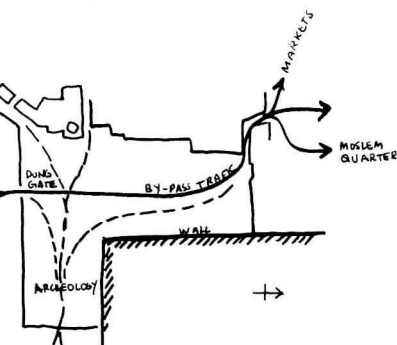
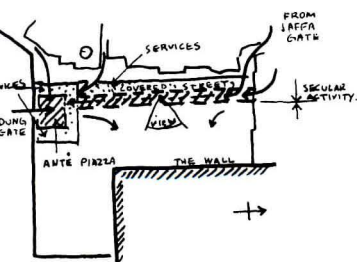
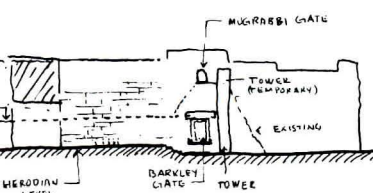


Fig. 5

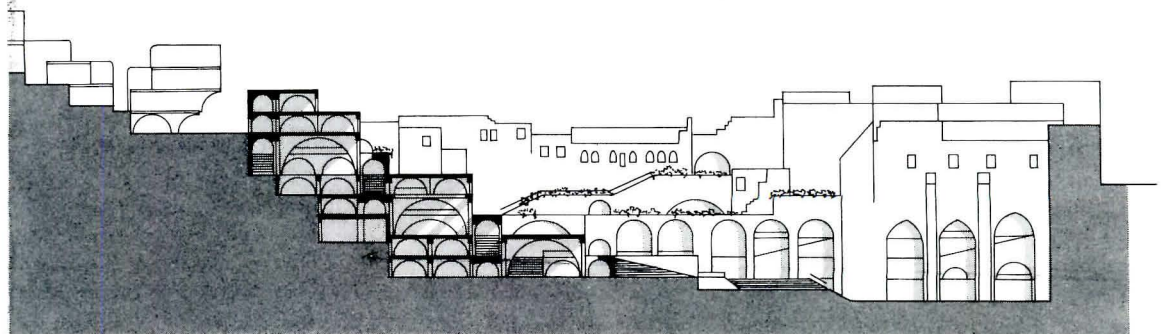
Cross traffic unrelated to the Wall or Temple Mount



Proposed channeling of traffic



Elevation of the Wall



Toward the west of the proposed plaza and visible in the model photos (below and opposite page) will be terraced institutional buildings forming the crown of the amphitheater. One of these is the Yeshiva Porat Yoseph (cover and overleaf) already nearing completion to the south. The architecture of the institutions and that of the terraces will be integrated in form and material so that there will be little demarcation between them. Safdie believes that the terraces will success-



fully accommodate groups of different sizes. Small groups will assemble on the lowest level with a sense of intimacy and seclusion; larger groups will fill the successive levels rising upwards and each will have a good view of the Wall. The amphitheater form will restore the sloping topography which

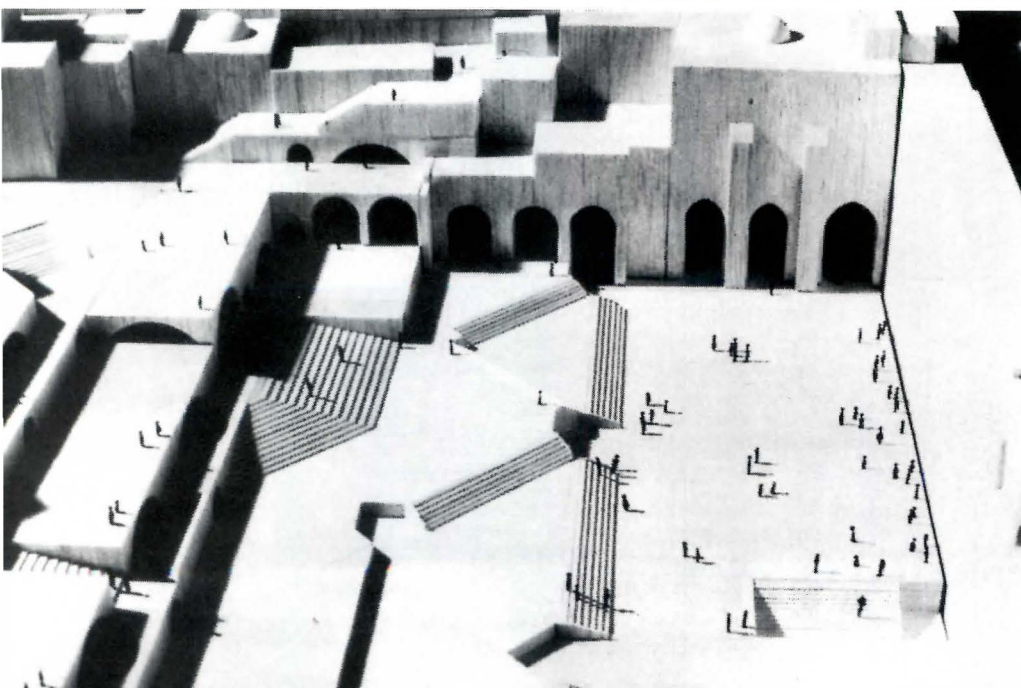
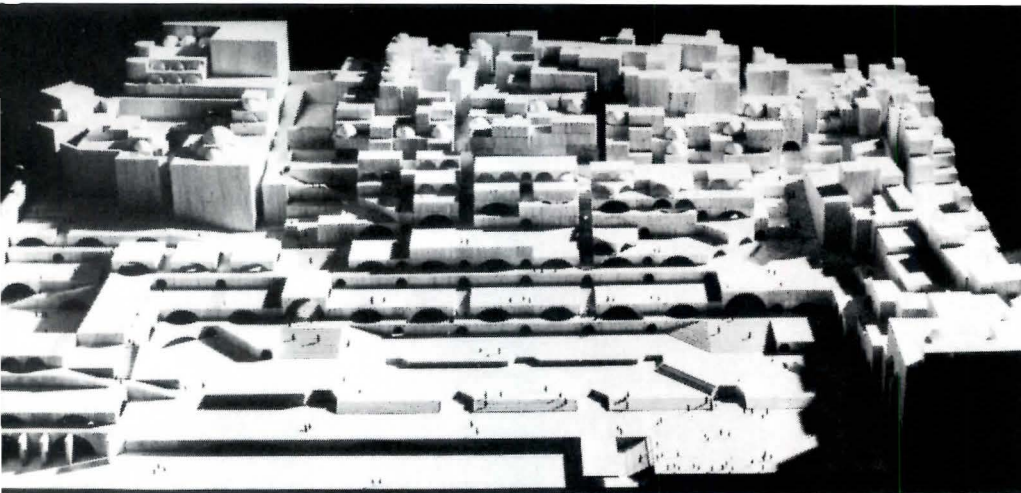
once existed between the Jewish Quarter and the Wall as far back as in Herodian times. The terraces rising upon it, thus enhancing its importance and defining its scale as the centerpiece of a religious and civic design worthy of Jewish aspirations.

**The design solution and its rationale**

The Jewish Quarter is located upon a cliff parallel to the Western Wall about 30 feet above the plaza (top left). Safdie owns an 800-year-old house on the cliff edge of the Quarter and the view from his terrace (opposite page top) includes Temple Mount, the Western Wall and its plaza below. While designing the Wall's new foreground he has an ideal chance to observe how the present one works. He finds that the pilgrims form groups with different needs.

At times there are only a few people in the area privately praying and meditating as they seek closeness to the Wall. At other times groups of several hundred pray together or perform ceremonies. These need a separate area to enhance their group feeling and to keep them from disturbing the solitary worshippers. On great occasions—High Holidays or national mass rallies—tens of thousands of people gather together. They need to be able to see the Wall over each other's heads to strengthen their sense of where they are. The present plaza, since it is still an undesigned space meets none of these criteria.

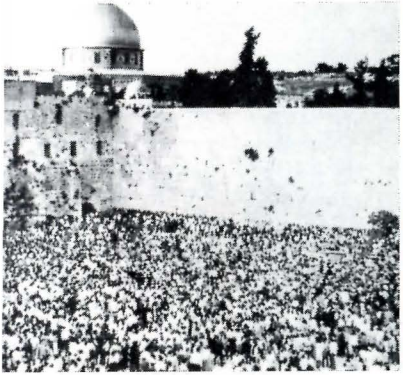
Safdie proposes to excavate the present plaza down 30 feet to the Herodian level at the Wall. He will construct a series of terraces rising from this level to the crest of the Jewish Quarter to the west. These terraces, which will be widest near the Wall and become successively narrower as they step upward toward the Jewish Quarter, will form an amphitheater overlooking the Wall.



Photos courtesy Moshe Safdie and Associates

Safdie's amphitheater concept is an imaginative answer to the archaeologists' problem of how best to exhibit their findings to the public. It makes the most of the fact that various periods are found on different levels. Today's worshippers at the Wall stand on top of Omayyad, Byzantine, Roman, Herodian and pre-Herodian structures. Obviously these layers cannot be exhibited one directly on top of another period by period, nor each period be fully restored. Safdie propos-

Wolfgang F. Schmertz

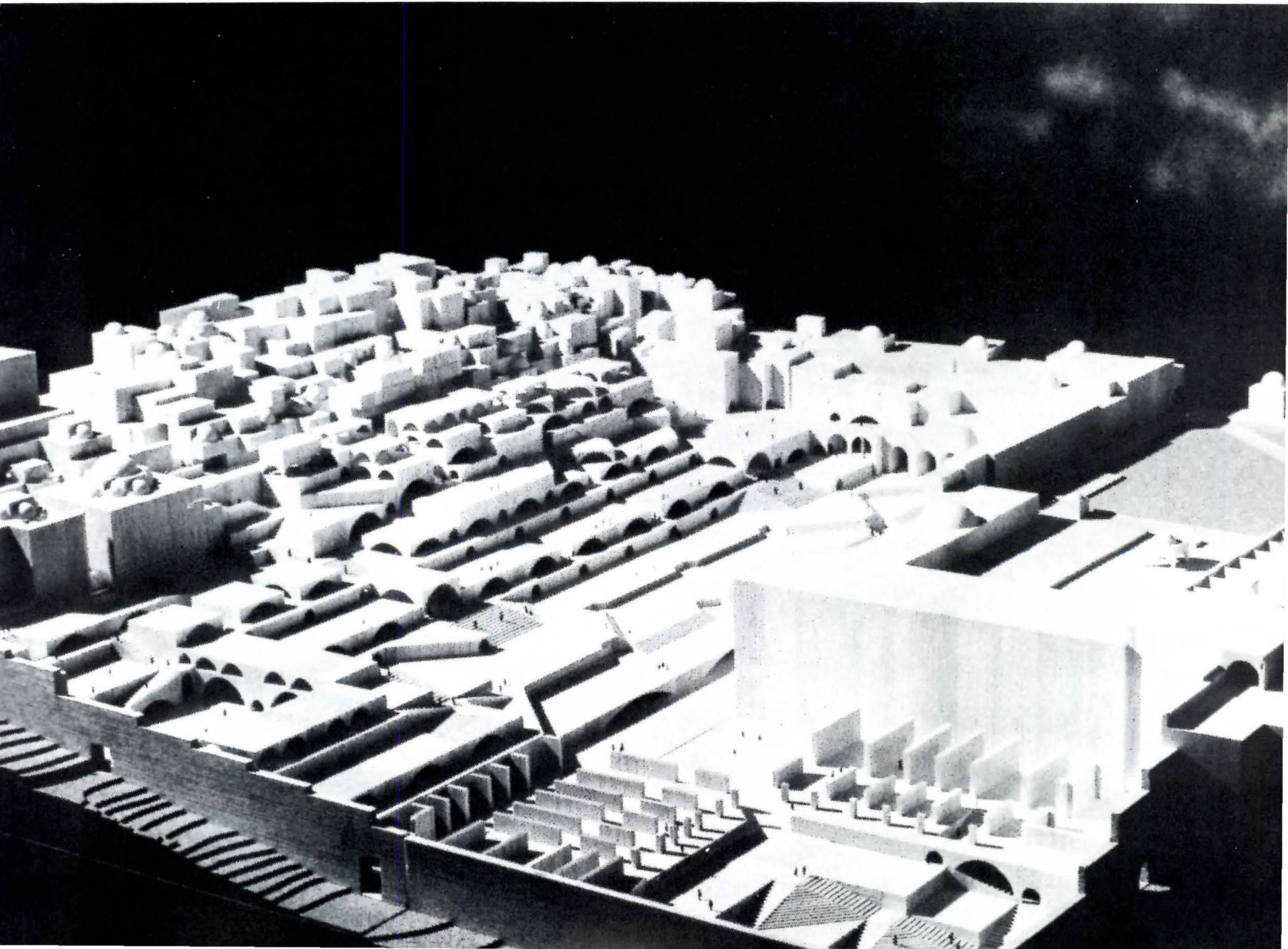


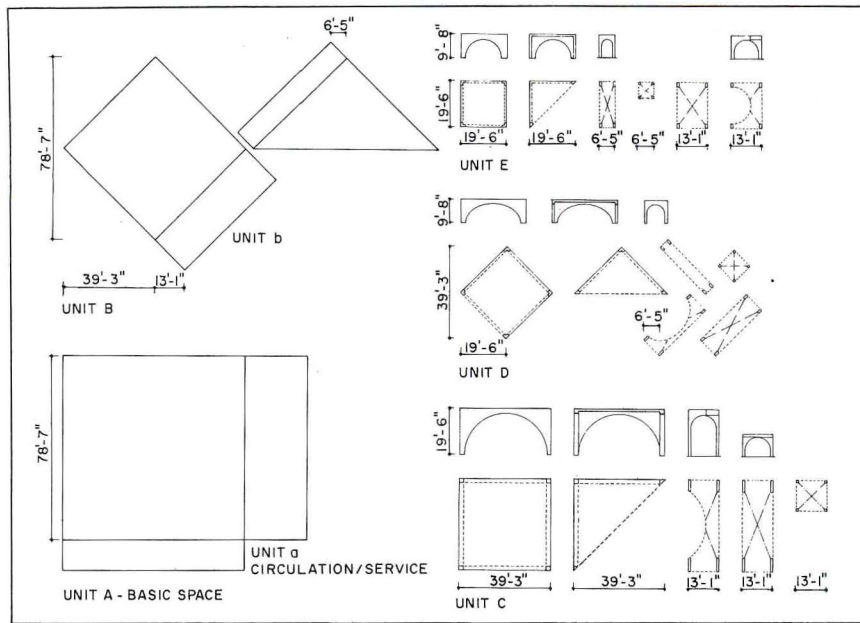
es that portions of each excavated era be partially restored within the amphitheater terrace concept, with a terrace for each period. Thus the pre-Herodian and Herodian structures would be visited under the lower terraces. The visitor ascending to the middle terraces would find Roman and Byzantine

restorations underneath. At a higher level, at least one Omayyad palace would be restored. The precise levels of the terraces would be established to accommodate the archaeologists' discoveries. Since the terraces gradually ascend to the cliff edge where the Jewish Quarter begins, they would

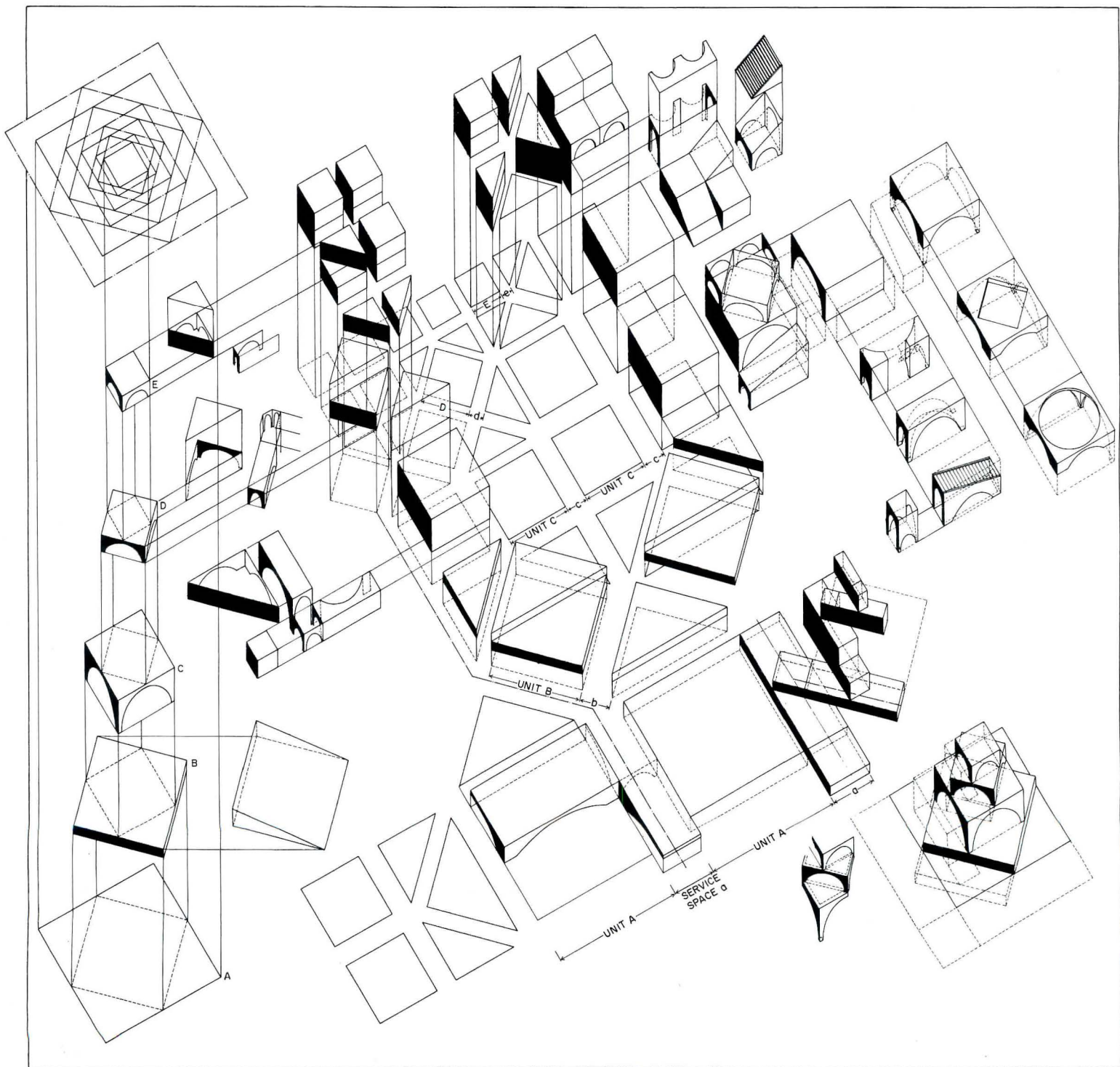
unite the Quarter with the Wall in a dramatic and memorable way. The area available for public assembly in the Quarter would be greatly extended. Taking advantage of the amphitheater form, Safdie has designed several stately flights of stairs descending terrace by terrace from the

main street of the Quarter to the Wall. One of the terraces will conceal an arcaded pedestrian street through which Arabs and others on their way to the Moslem market street by way of Dung Gate, can bypass the precinct of the Wall and the Jewish Quarter. This arcade would overlook the Wall





Although old, handmade Islamic pottery, metalwork and textiles adorn his office and home, revealing a yearning love for the art of people who didn't know they were artists, Safdie's work is firmly anchored in the techniques of industrialized prefabrication and standardization for mass production. His love of handicrafts reflects his belief in the pre-eminence of craft, whether by hand or by machine. The Western Wall Precinct would be built of industrially prefabricated parts within the carefully worked out vocabulary of geometric shapes and sizes shown below. The Yeshiva Porat Yoseph (shown in recent construction photos on the opposite page, cover and overleaf) combines stone and concrete wall construction with an intricate system of modular precast concrete arch segments and plastic domes based upon the same geometric system.





*Lee English photos*



### Rebuilding a Yeshiva for the Jewish Quarter

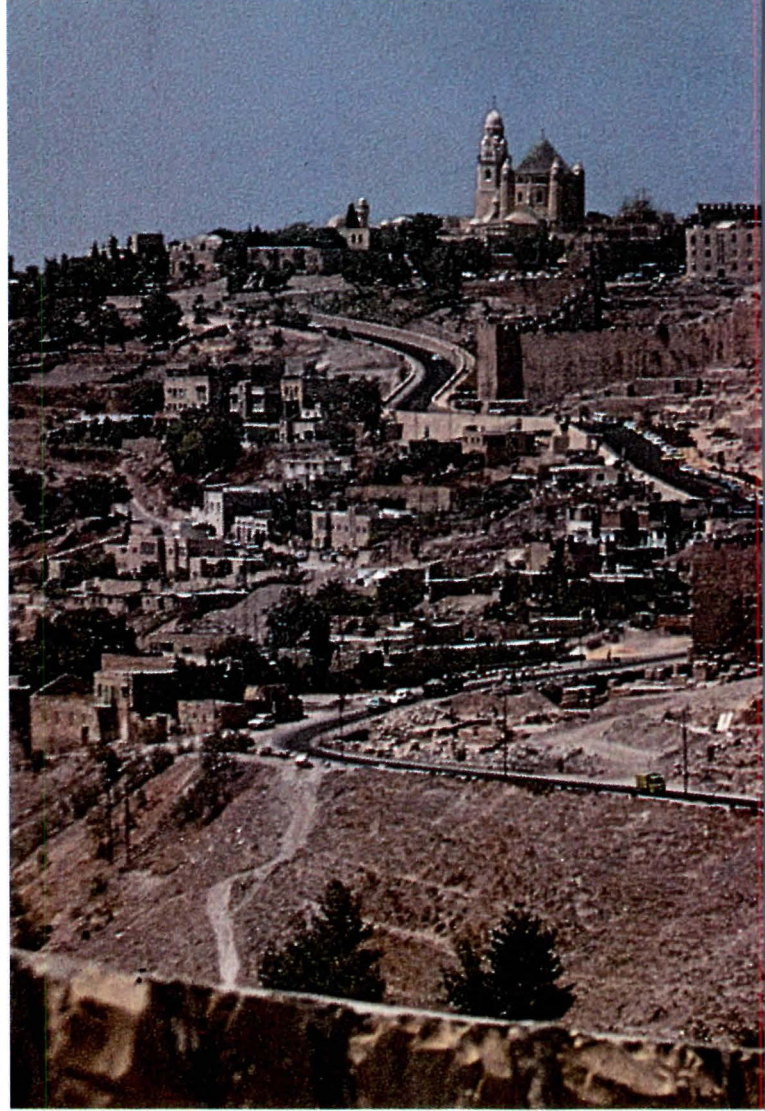
The Jordanians destroyed many of the numerous synagogues and rabbinical seminaries of the Jewish Quarter in the 1948 War of Independence and razed most of the rest of them during their 19-year occupation—after they had driven out the sector's tiny civilian Jewish population to be evacuated to Israeli-held West Jerusalem.

Since the Jews reclaimed their sector along with the rest of the Old City at the end of the Six-Day War, the Municipality of Jerusalem and the Corporation for the Development of the Jewish Quarter have been intensively rebuilding it. The most notable structure to be constructed so far is the nearly completed Yeshiva Porat Yoseph (below and right), a rabbinical college and Sephardic synagogue. Paid for in part by U.S. Jews and matched dollar for dollar by the Israeli government, it covers the site of the old Yeshiva which went up in flames in May 1948. Since Safdie was already at work on the Yeshiva when he was invited to design the Western Wall Precinct, he has had a unique opportunity to bring the two projects into harmony.

"From the outset," said Saf-

die, "I tried to design the building in such a way that it would form a continuous whole with the rest of the Old City, but I nevertheless wanted to use contemporary building methods with all their potential. The Jerusalem bylaws demand that all exterior building surfaces, that is, both walls and roofs, be built of stone. In order to resolve this dilemma, I chose a dual system for building. Ten-foot-thick stone walls enclose the site and define the major zones of the building. The stone walls carry all the continuous linear and vertical services within the structure as well as all the passages, staircases, and light shafts. Within the spaces created by the stone walls is a second and completely contemporary construction system of precast concrete arch segments. The precast element, 10 feet high and 10 feet in horizontal reach, can form rooms 20 feet, 40 feet, 60 feet, 80 feet, or 100 feet square. As the rooms become greater in area, they become higher."

The precast elements will have translucent plastic domes. The synagogue chamber within the Yeshiva will be lit by domes located above giant prisms, which will break the sun's rays into a full spectrum of colors.





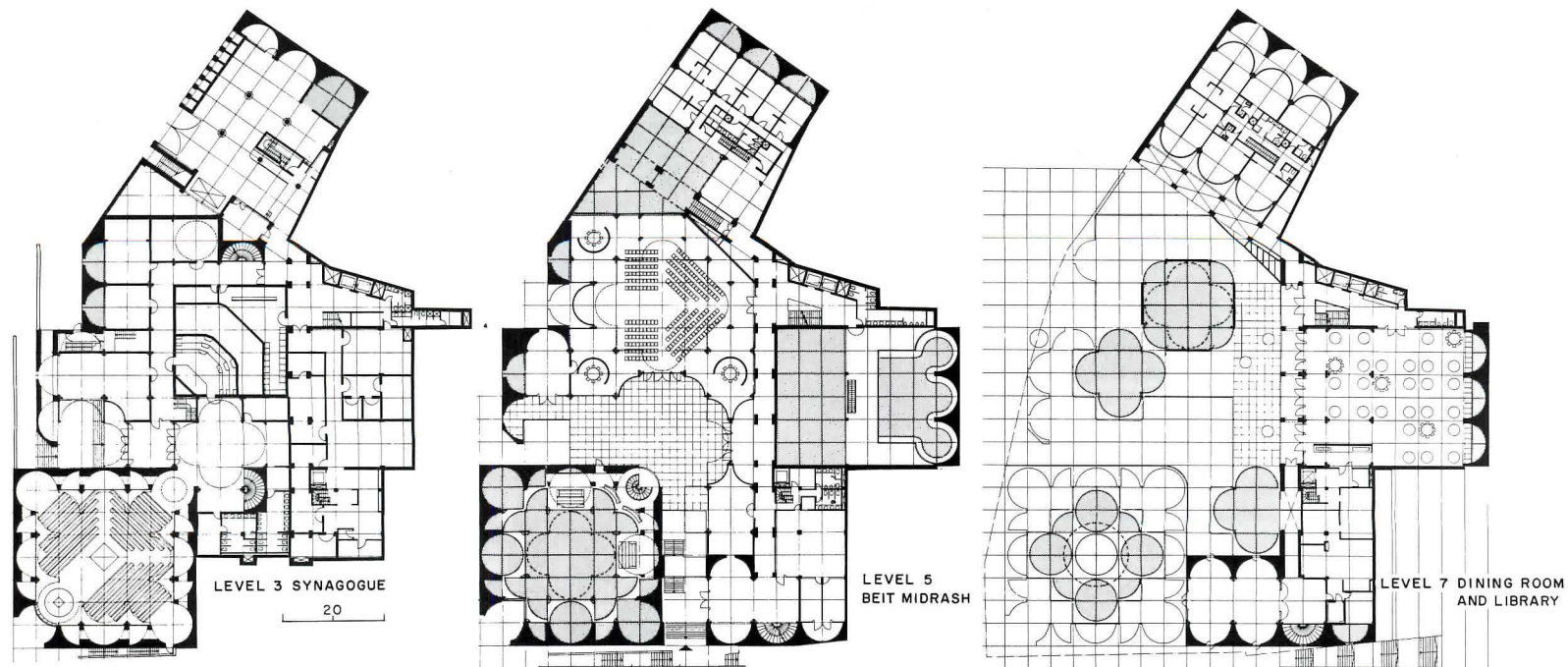


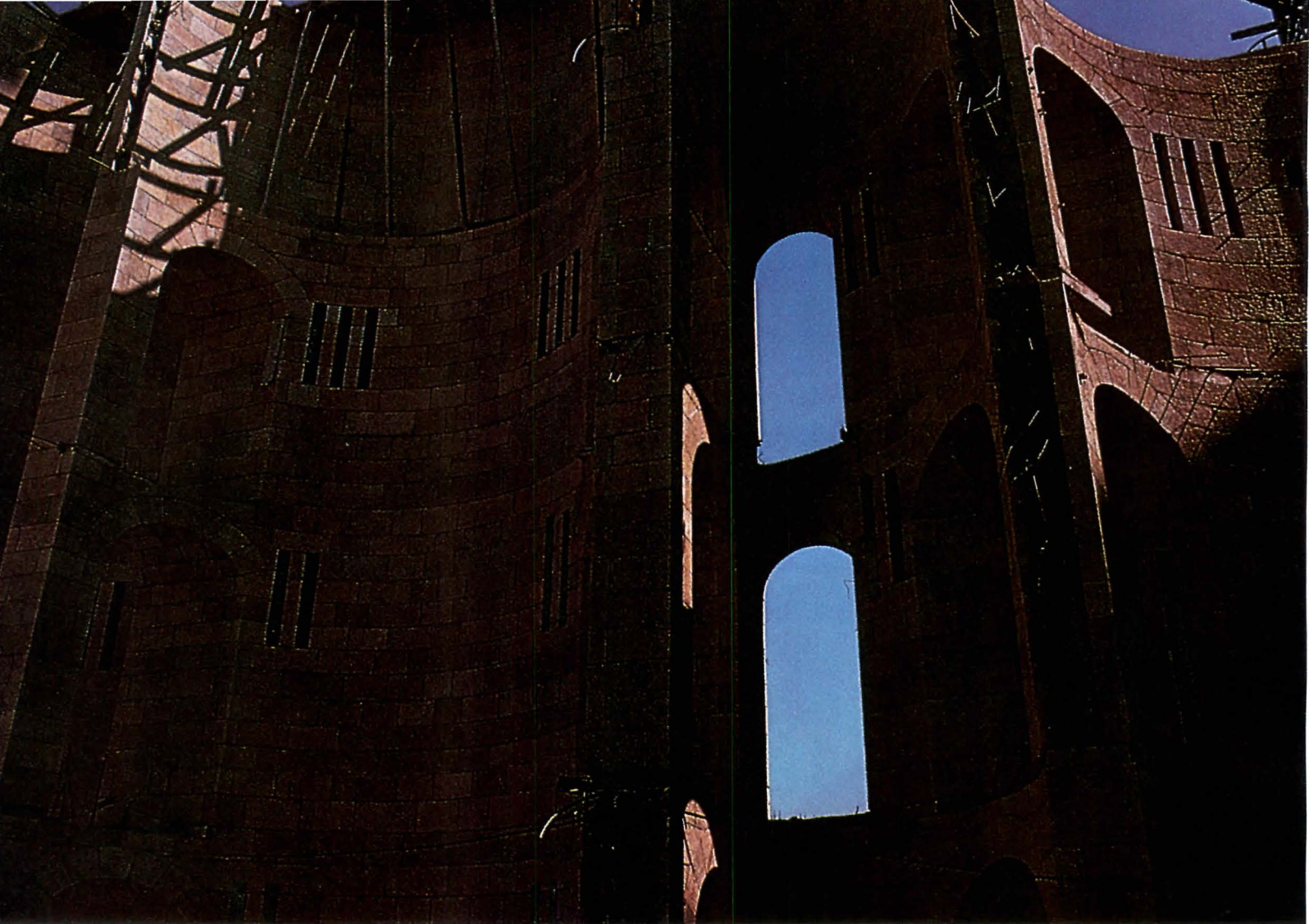
Lee English photos

View of the Old City from the Mount of Olives. The Yeshiva, hugging the steep cliff of the Jewish Quarter, appears just behind the El Aksa Mosque on Temple Mount. None of its translucent plastic domes are yet in place. The Western Wall Plaza, not visible, lies in the valley between the Jewish Quarter and Temple Mount. The Yeshiva dominates the Jewish Quarter and holds its own as a monument in relation to the Islamic mos-

ques. Yet with great subtlety it answers in the affirmative the fundamental question Safdie asks himself and becomes a part of the solution of the problem he has set for himself in Jerusalem. In contemplation of the terraced and domed houses of the Jewish Quarter, the splendid walls of Herod's Temple with the Islamic mosques above them and the Turkish city walls of Suleiman the Magnificent—places of living and worship on the scale of a

house, a temple, and a palace—Safdie asks: "Can one create a contemporary vernacular and re-establish the basic values of this environment? Can one build continuity from the old to the new? Can one unite the scales of all life's activities? It seems, here in Jerusalem—the city of all men, a place of holiness, of love and longing—that to mend its scars and restore its vitality might be the fulfillment of a dream of reconciliation for all mankind."

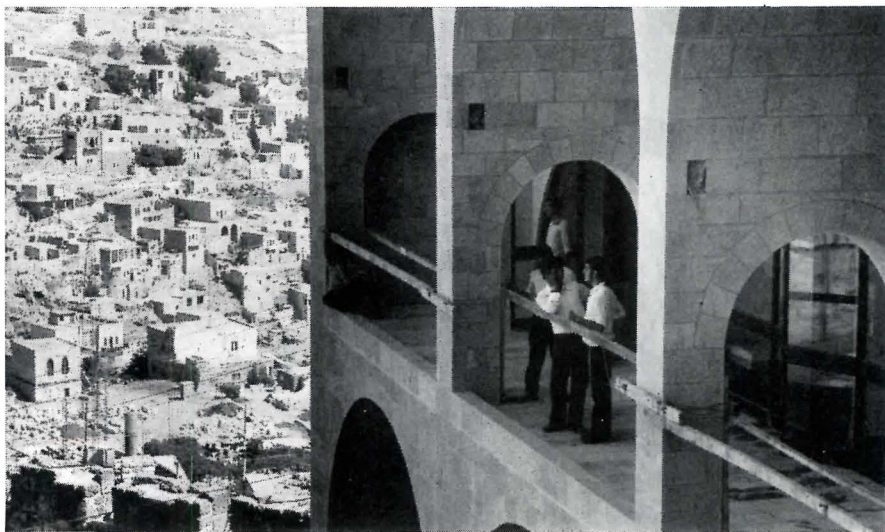


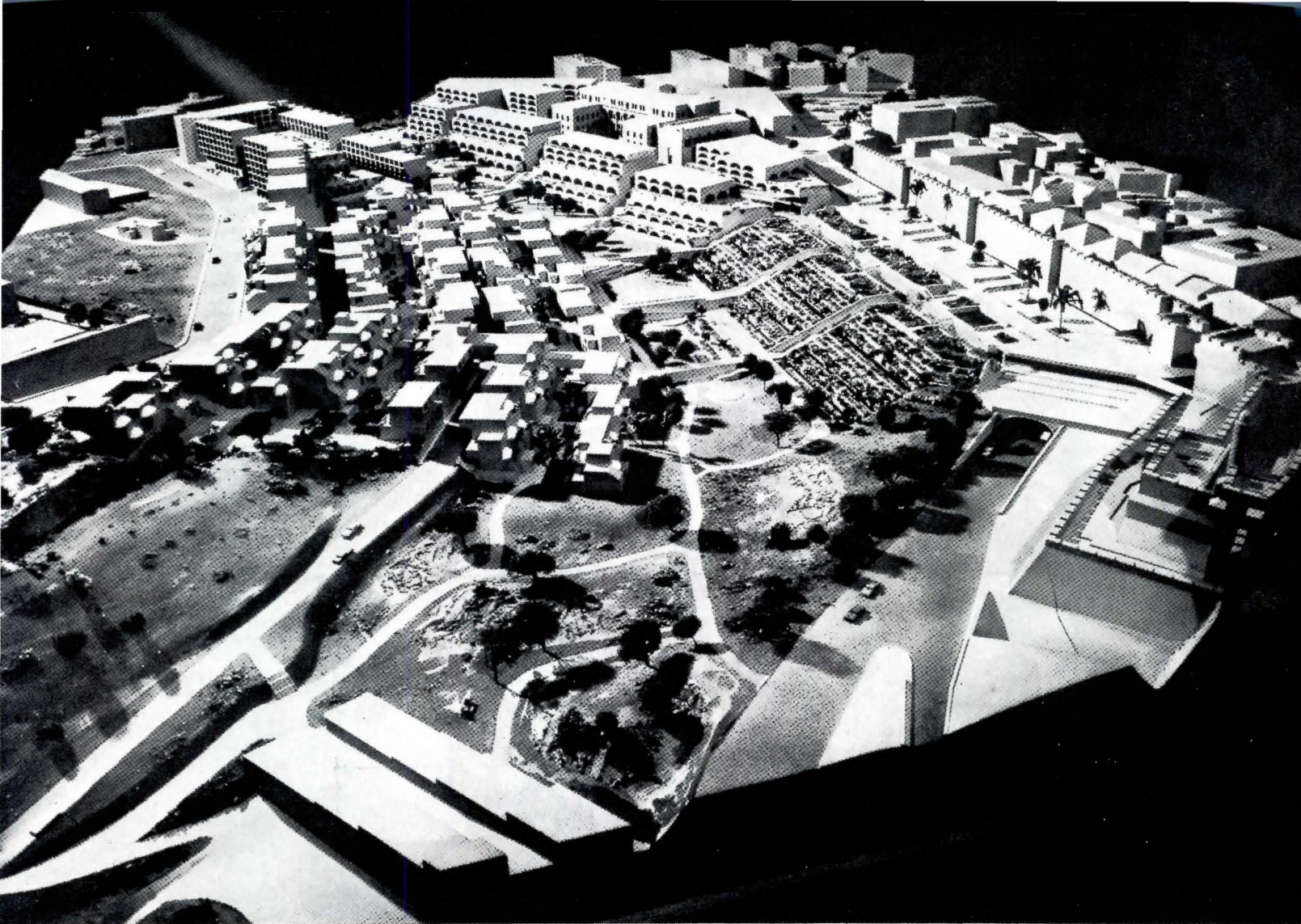


*Within the Yeshiva is a public synagogue for 400 people shown above in construction. Safdie, photographed on one of the Yeshiva's terraced roofs lives and works in Jerusalem and Montreal. The rabbinical students on the Yeshiva balcony can see Temple Mount, the Western Wall, the Old City walls and an Arab village (included in the picture) beyond. The steps adjoining the Yeshiva lead down to the Western Wall plaza.*



*Lee English photos*





Photos courtesy Moshe Safdie and Associates

**Mamilla: downtown redevelopment at Jaffa Gate**

According to Eliezer Ronen, managing director of KARTA, the Central Jerusalem Development Company: "If you want the Old City to become a Disneyland toy—treat it as a 215-acre museum. Don't tie it into modern Jerusalem. Surround it completely by gardens, as some of the planners in this town want to do. But the Old City is not a museum. It is a place where Arabs and Christians and Armenians and Jews live and work. It has cafes and restaurants, an Arab bazaar and Jewish shops. And visitors and pilgrims to the Western Wall, synagogues, mosques and churches. Today 800 cars come each Saturday to Jaffa Gate. Three years from now there will be 1,000 cars. If we don't put the cars underground we will have to put down 50 acres of asphalt right at the core of Jerusalem."

Ronen is clearing the site and getting ready to begin the \$150

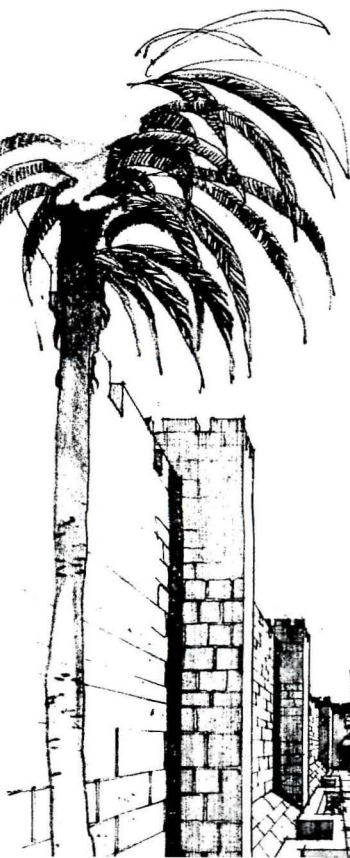
million Mamilla Redevelopment Project covering 30 acres in the pre Six-Day-War no man's land (overleaf) at the Old City wall.

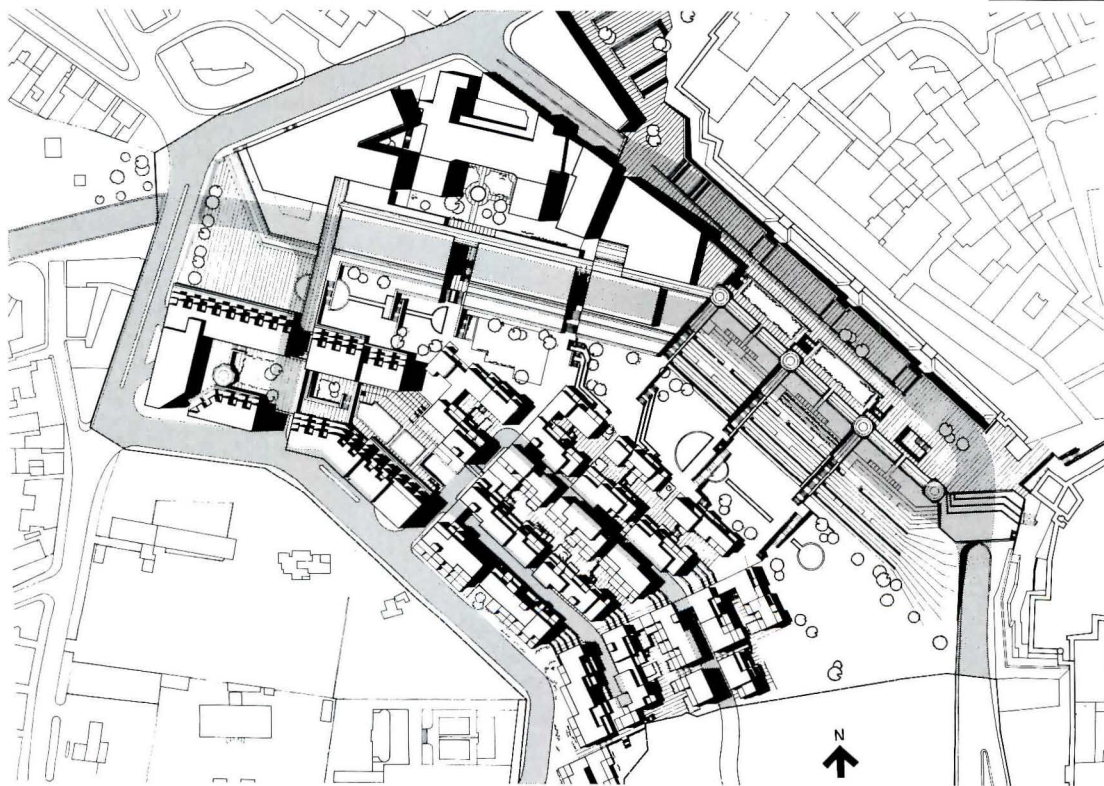
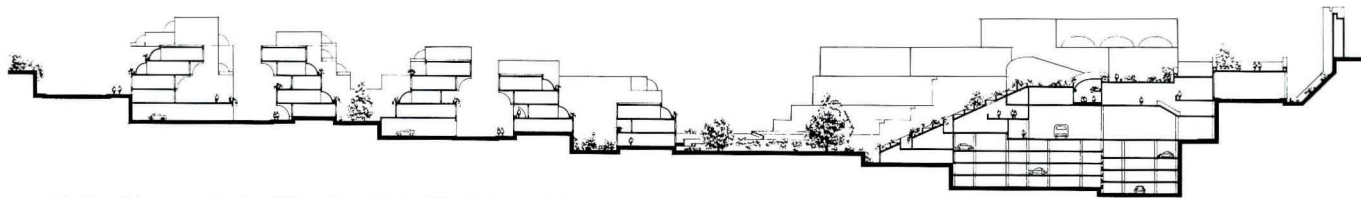
No urban renewal project in the world will occupy a site more rich in history than Mamilla at Jaffa Gate. Since biblical times, three roads to Jerusalem have converged there. The first comes eastward to the Old City beginning from the sea at the port of Jaffa, south of modern Tel Aviv. The second approaches northward from Hebron, and the third north-eastward from Gaza. For centuries Jaffa Gate was the only entrance to Jerusalem from the West. At the Gate is the Citadel, a fortress first built by Herod and rebuilt by the Crusaders, Mamelukes and Ottomans.

KARTA was formed in response to the concern of Mayor Teddy Kollek and some of his planning consultants that rapid uncontrolled development would destroy the character of Jeru-

salem. High-rise hotels and apartment buildings constructed in West Jerusalem had begun to spoil the city's magnificent views, particularly from Temple Mount. Jerusalem's planners, while they wished to encourage development, were looking for ways to channel it into projects which were in better scale with the beautiful city's modest buildings built close together, hugging the contours of the hills and valleys.

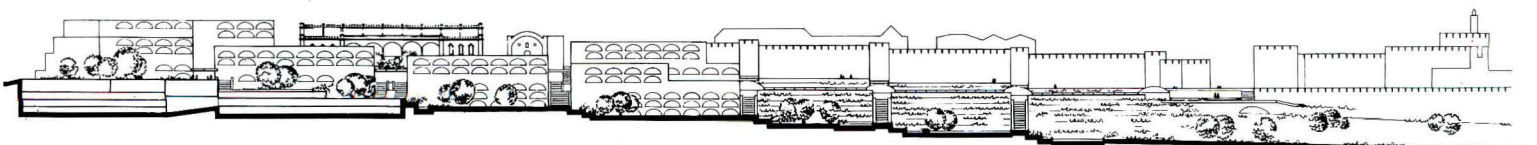
The Mamilla Redevelopment Project (above) as designed by Safdie with the French town planner Gilbert Weil, has no buildings over eight stories above ground level. In spite of this low profile which will not compete with the Old City wall, the complex will bring much needed commercial, hotel and apartment space to the center of Jerusalem. Private developers will be sought to build 350,000 square feet of shops in a pedestrian retail mall; another 350,000 square feet of office





space in four connecting low-rise buildings; two seven-story hotels comprising 600 rooms; 350 terraced garden apartments; four and a half acres of gardens; and a 2,400 car underground garage. The existing road system would be redirected and tunneled under the development.

Ronen believes that in addition to joining the Old City and West Jerusalem physically to become one city, the Mamilla project will bring the Jews and Arabs closer. "In Mamilla we will have 200 Jewish and Arab shopping stalls intermixed. Maybe the cafes and stores and shops in Mamilla will be meeting places where Jews and Arabs will begin to do business together. Putting them together in commerce. It may be the beginning of something."





© Steve Rosenthal photos

# CONTEMPORARY FARM HOUSE IS ABSTRACTION OF LOCAL ARCHITECTURE

With quiet, discerning good grace, this house echoes many basic forms of older Massachusetts farm complexes in the vicinity: an amalgamation of white walls, shed and pitched shingle roofs, connected functional units, lean-to's, and the like (see next page). By using these neighborly qualities, architect Oscar Padjen has given a big, highly sophisticated house an air of pleasant modesty and great comfort. With today's residential design esthetics bouncing from—at the extremes—extolling the ordinary (often ugly) to a (sometimes flippant) readaptation of the esoteric and exotic, this house is a satisfying reassurance that there are always many ways to shape a good building. —Herbert L. Smith, Jr.

Among the many, varied interests of the owners of this big farm house is nature-conservation—which includes the development of a herd of buffalo in a ranch that extends to fences edging the lawn. This is but one of the understated amenities of a remarkable home sited high on a knoll overlooking 670 acres of marshes, woods and farmland. The top of the hill has been kept relatively clear to make the most of views of these surrounds.

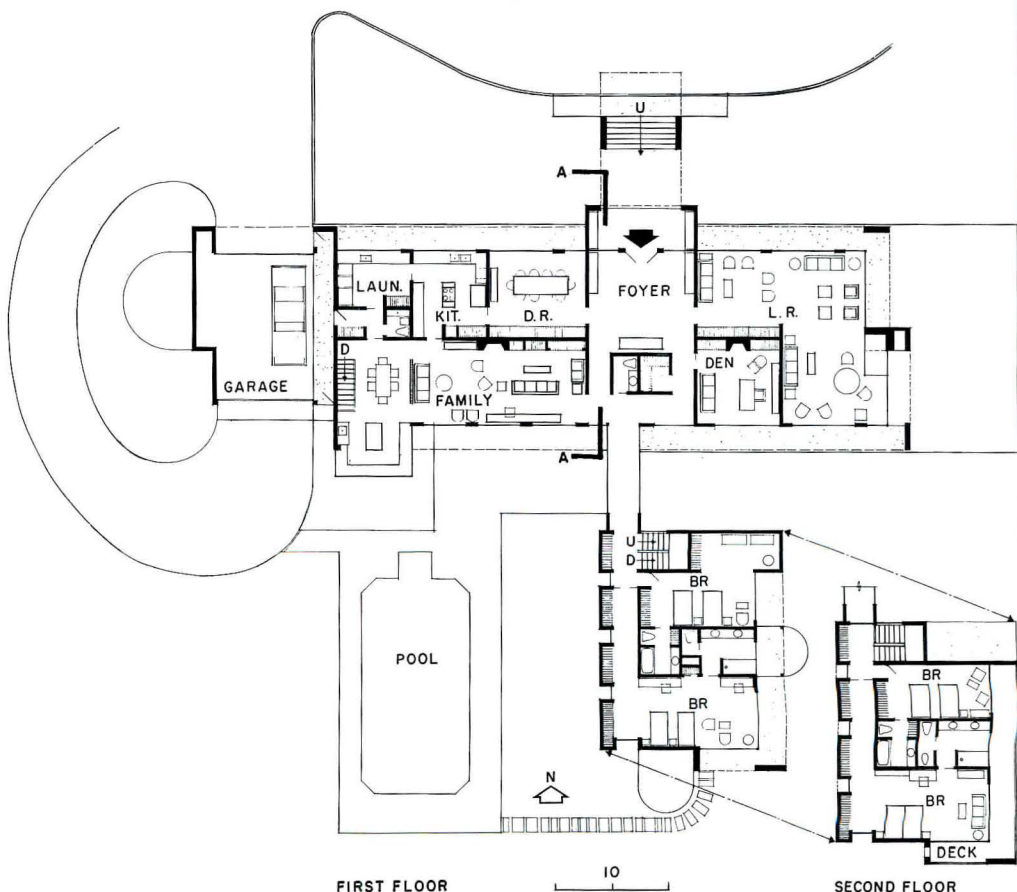
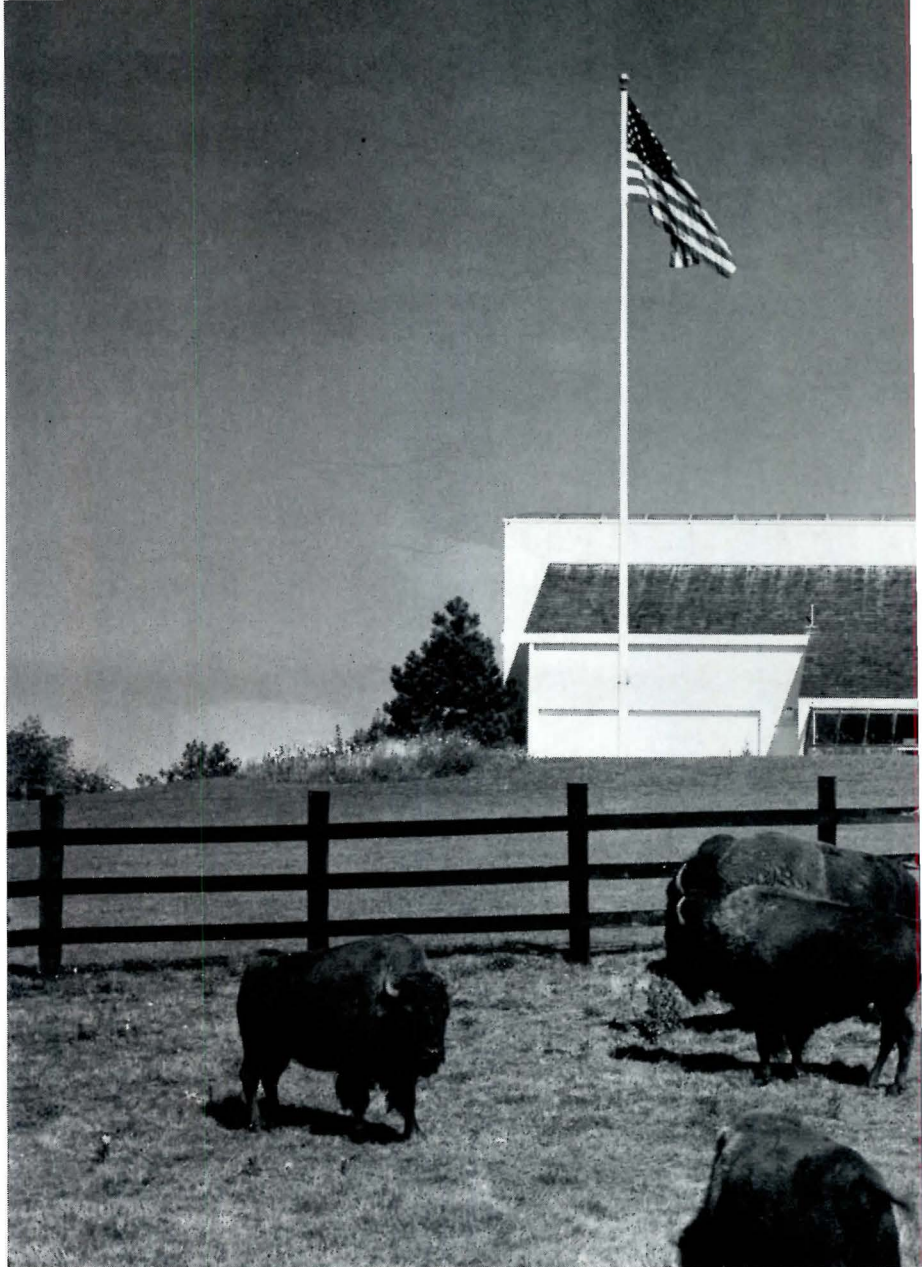
Designed for a sizeable family (two college-age boys at home, a number of young, married children away, and many young grandchildren—all of whom visit often), the house has generous spaces that can be opened together for entertaining very large groups (all doors slide into pockets), and cosier corners and furniture groupings for a few. All rooms were planned to adapt to rearrangements of existing furniture and collections, and have neutral finishes: exposed wood ceilings, stained off-white; floors of slate or carpet; walls of painted wallboard or grass cloth.

For added quiet and privacy, the bedrooms are separated from living spaces by a glass-enclosed loggia, and the guest bedroom includes a nursery area for infant guests. A full basement under both wings contains general storage, rooms for collections, work areas, a game room and equipment space.

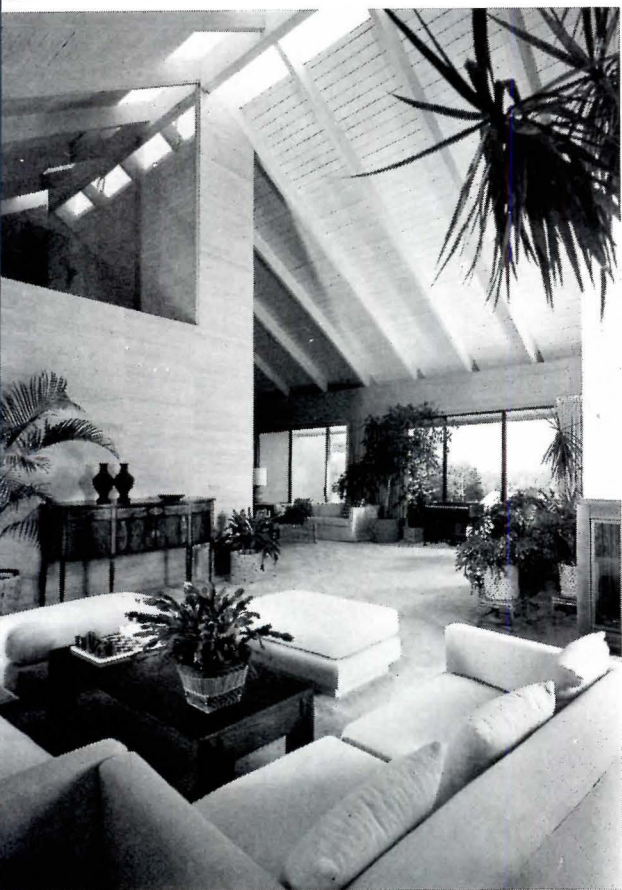
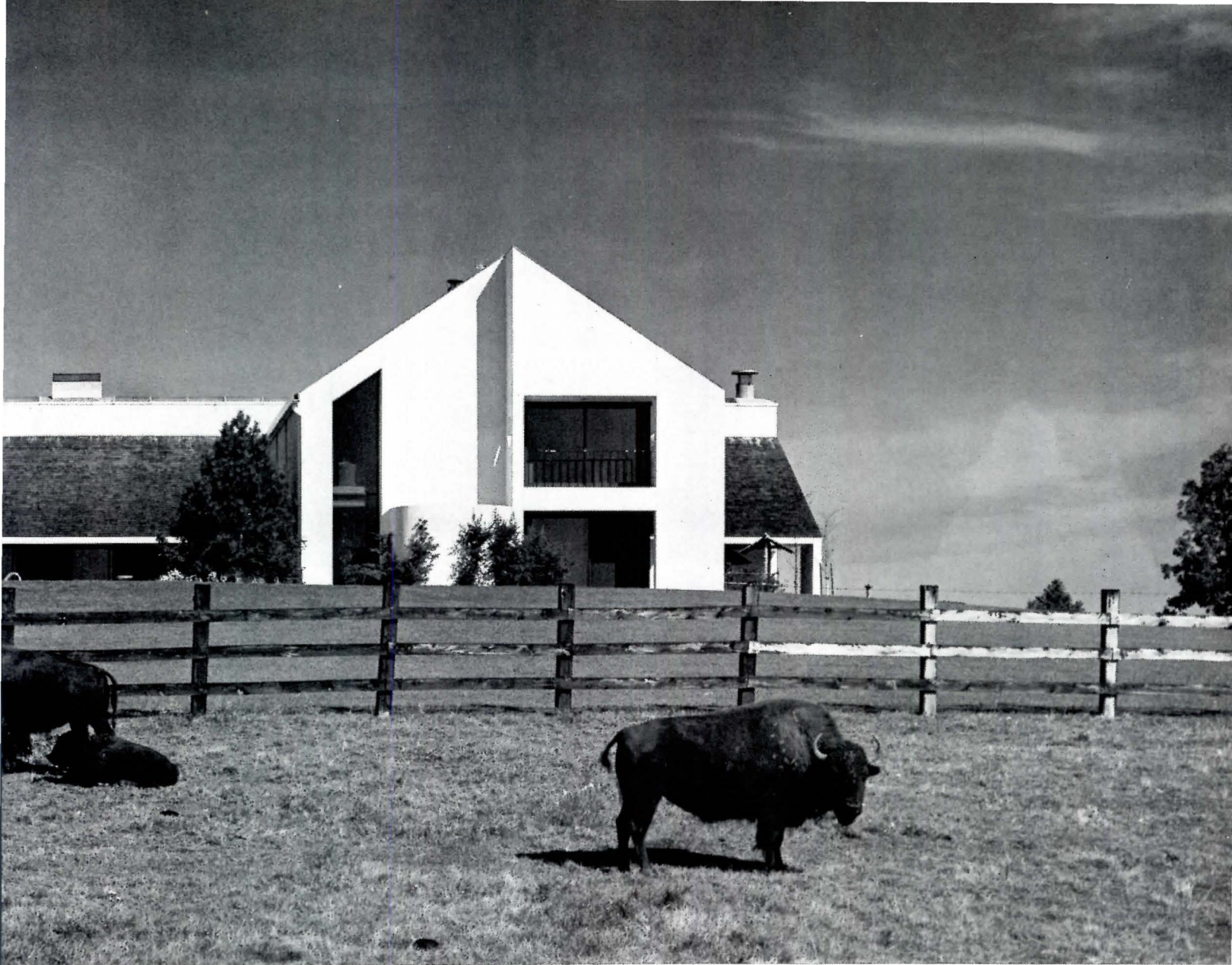
Most of the windows are sliding glass doors (all with overhangs to shield them from direct sun) to open all major rooms to outdoor terraces, lawns or balconies, and to utilize prevailing winds for cooling and ventilation. The entire house is well insulated and has oilfired forced air heating and air conditioning.

Among the planning refinements to preserve the view is the depression of the driveway to keep cars out of sight as they arrive at the front *porte cochère*. At large functions, a shuttle service is provided to parking areas at the farm roads below. For family use, the attached garage has doors at each end to provide a covered circular drive-through. There are three semi-circular slat-fenced yards adjoining the house—two for on-grade mechanical equipment, and one off a bath to provide a private garden. The house is wood-framed, with the first floor of precast concrete deck, and stuccoed on the exterior.

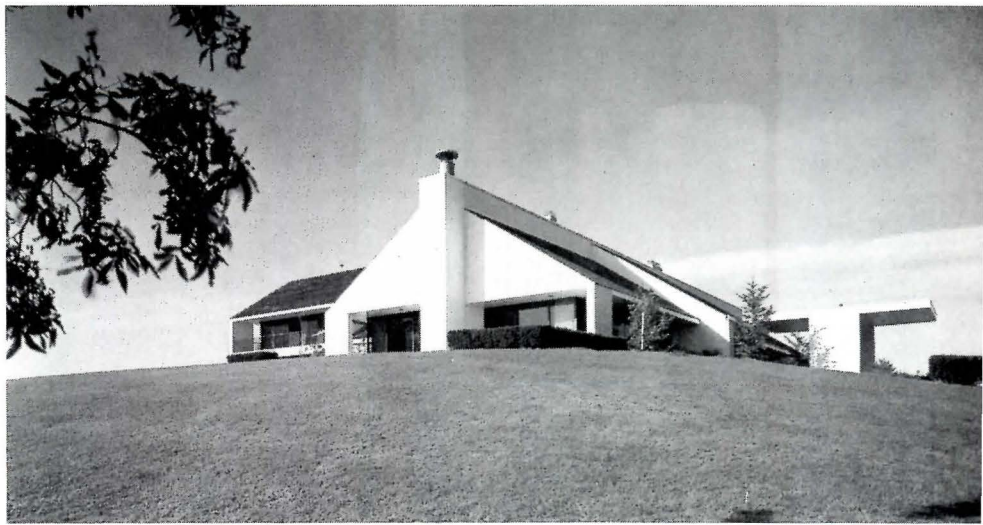
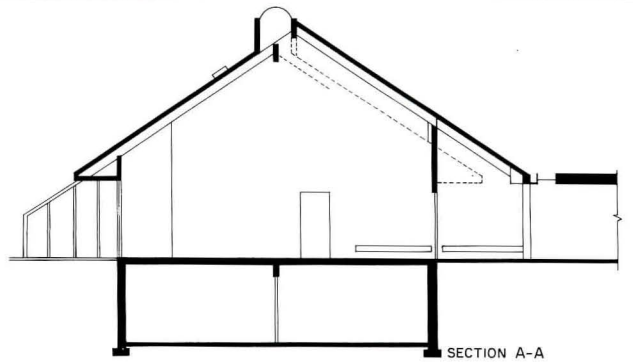
The various, carefully considered, modulations of the exterior are visually anchored and unified by a strong, white, central "wall" created by the projecting skylight ridge and abutting chimney. All-in-all it is a house that works well, looks just right, and is very suited to relaxed, comfortable living.

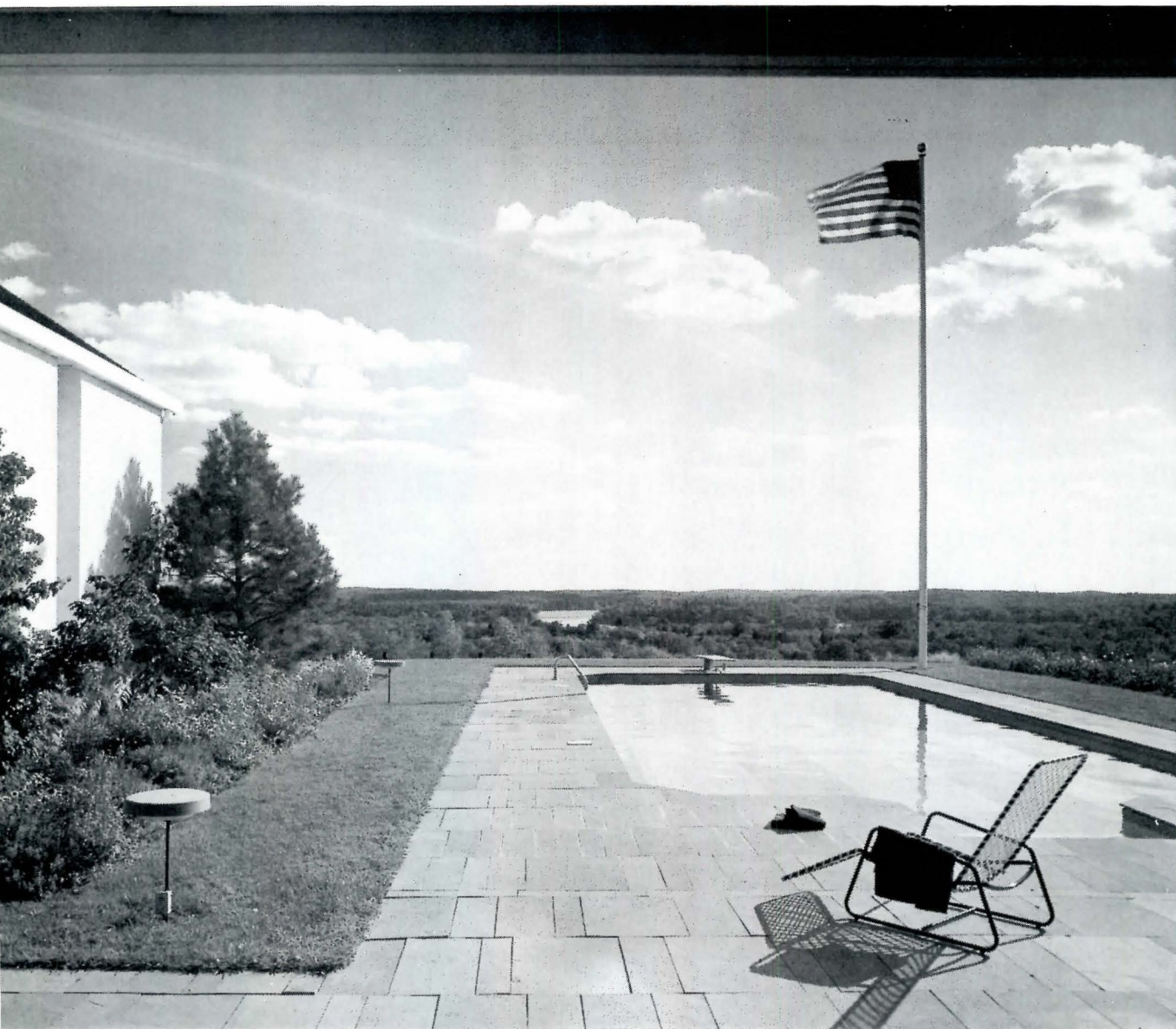


MEANS RESIDENCE, Essex, Massachusetts. Owner: Augustus Means. Architects: Oscar Padjen Architects, Inc.—project architect: Oscar Padjen; associate: William Roos. Engineers: Robert Rumpf (structural/foundations); EDE Engineers (mechanical). General contractor: Earl Phinney.

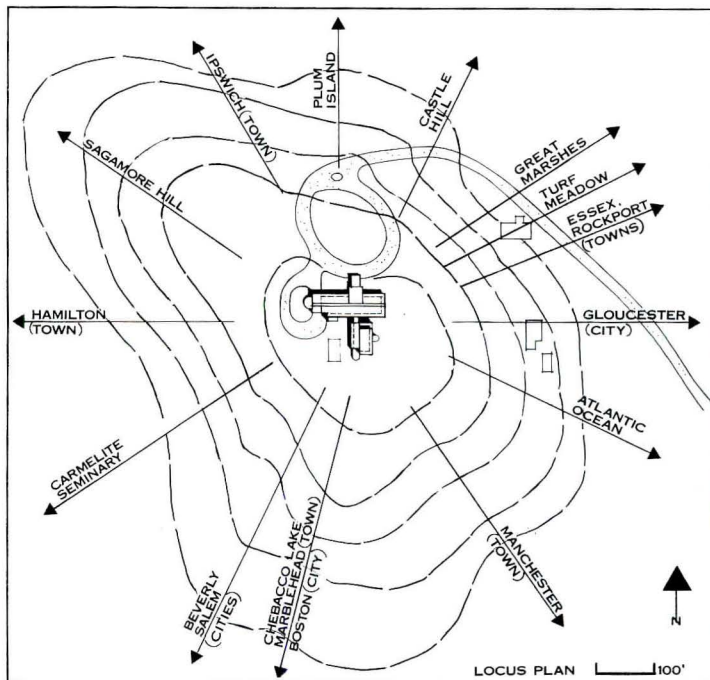


Devices to abet light, space and openness abound in the house, from the ridge skylight over all living areas (left and in section through foyer, right) to big, sheltered walls of gray insulating glass. For added sun control, walls to the west have minimum, protected openings.





From the top of one of the higher hills in Essex County, Massachusetts, the Means house is planned for the remarkable views in all directions, as can be seen from the family room (above) and from one of the bedrooms (left).







Norman McGrath photos

# MILFORD JAI ALAI: FESTIVE BUILDING FOR "THE MERRY FESTIVAL"

Jai alai means (in Basque) "merry festival." Jai alai is one of the oldest ball games, evolved from a kind of handball played in the Basque provinces of Spain during the seventeenth century; and the incredibly fast and demanding game has long been popular in Spain, France, Italy, the Philippines, Mexico, Cuba and Florida. Traditionally, the game was played as part of a joyous public gathering on holidays and special occasions. Connecticut—as the result of a legislative decision reached only after considerable controversy—now permits pari-mutuel wagering. And jai alai—the only sport where betting on the performance of men (rather than, say, horses or dogs) is legal—has taken Connecticut by storm. The Milford fronton (as the building or court used for playing jai alai is called) is not the first installation in the state (that credit goes to a Bridgeport installation)—but it's surely the "most festive" and usually jammed with people. Approaching the fronton on the parkway from New York (Milford is near New Haven) no motorist can fail to miss seeing the colorful banners waving from the roof of the hillside building. And everywhere, as architect Herbert Newman says: "The design concept attempts to create an urbane, festive environment which is colorful and fun." And from the moment one turns over the car to an attendant in a bright red jump suit under the bright yellow main entrance canopy (above) that color and fun and the sense of "merry festival" is everywhere. . . . W. W.

At Milford Jai alai there are two main entrances—the valet parking entrance shown on the previous page and in the photos right, and a secondary entrance for those who park their own cars (lower photo). Connecting those two entrances is the “galleria”—best seen on the level 1 plan. This grand space is the key both to the functioning of and circulation within the whole facility—and to that sense of festivity.

From the main entrance level, the gallery steps up two levels corresponding to the slope of the site and the spectator grandstand. This space can be seen in the vertical photo on the next spread, and several other pictures suggest its importance to the plan. Moving through the space under colorful banners, visitors can (see plans) move into a 250-seat restaurant and bar to their right, or into betting lounge number 1 to the left. Beyond that, the first step of an escalator leads up to an intermediate level, with a small bar to the right and betting lounge number 2. The second flight of escalators leads to level 3. Off its lobby there is the secondary (self-park) entrance; to the right a 10,000-square-foot International Room which offers refreshments and closed-circuit television displaying the games via a 12- by 15-foot rear projection screen; and to the left, betting lounge number 3.

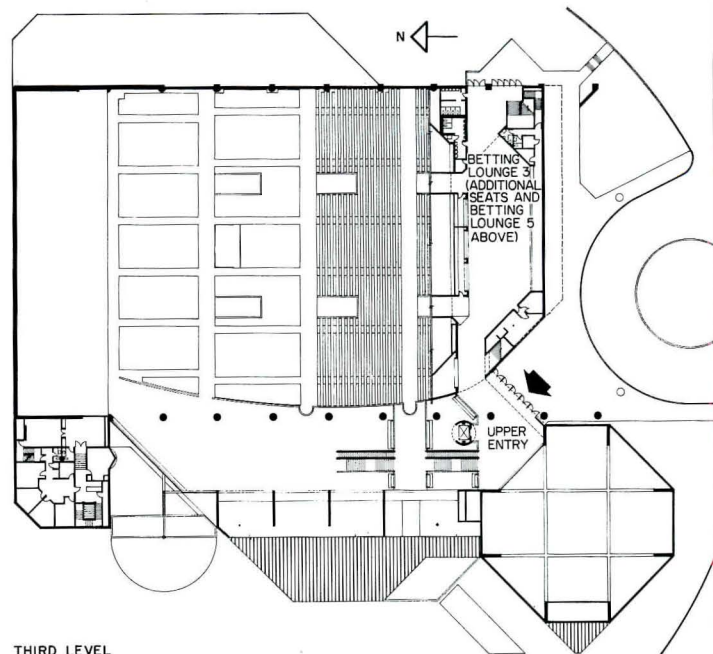
The grandstand (unless you really take a long way around) can only be entered via one of the betting lounges (clever, what?) tucked under grandstand seating above. From these broad spaces—with betting windows on one side, concession stands on the other—the seats of that level are reached by vomitoria. Conversely, from any seat in the grandstand, it is a very short walk to the pari-mutuel window of your choice. (The typical “game” in jai alai takes 12 minutes, and the 12 games played each night are separated by 15 minute intervals—long enough to place your next bet.)

The grandstand (top photo, next page) seats 4800 in an unobstructed space 180 feet wide. This space is spanned by exposed steel trusses 30 feet on center which cantilever 60 feet beyond the grandstand space to form the roof of the galleria and restaurant spaces and extend beyond as a sunshade. The seats slope up following the contours of the hillside site. The focus of everything, of course, is the playing court—180 feet long, 50 feet wide, 48

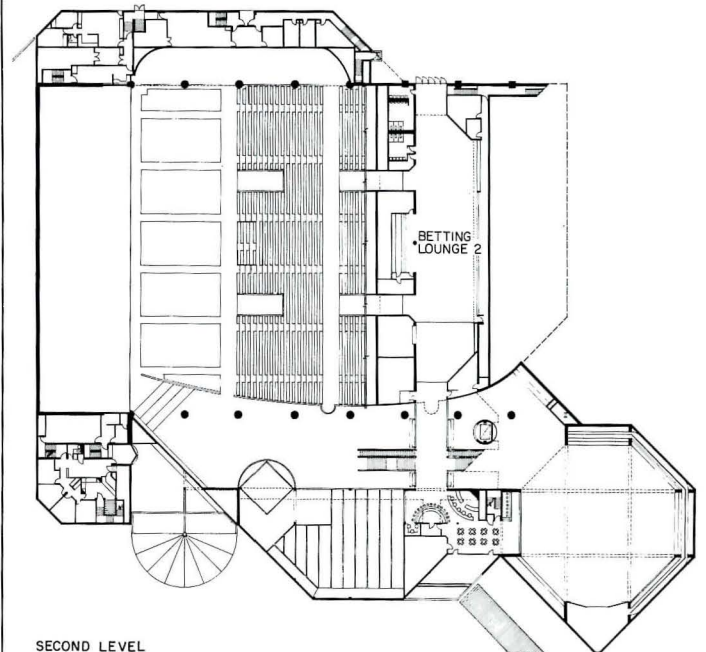
feet high, bright green, and lighted to a level of 176 footcandles at the center of the court. The unique and ingenious lighting—conceived by consultant Sylvan Shemitz—is totally indirect, avoiding any glare in the eyes of the players when they look up. It utilizes 60 luminaires, 30 on each side of the court at six-foot intervals, which create an asymmetric distribution of light washing the ceiling plane uniformly. Details of the system are described in detail in this month’s Architectural Engineering Section, beginning on page 141. Also covered there are three other engineering/construction features that contribute greatly to the design success of the building: 1) the beautifully integrated structural system by engineer (and former Yale dean of architecture) Herman Spiegel, 2) the extraordinary accomplishment of the general contractor in pouring the court surfaces plumb and smooth in one pass, and 3) the innovative use of “Dryvit”—an insulating exterior finishing system with integral signing and supergraphics.

There are of course special and specialized areas which the architect had to work into the complex: the offices, players’ rooms, and the pari-mutuel department. Given the large amounts of money handled each night, this area is of course highly secure, and its circulation is entirely separate from the public. But in the public spaces, the mood created by architect Newman’s planning and design is “the festival”: the noise and excitement of the fans in the grandstand pours into the great galleria and even into the bars and restaurants beyond. So everywhere in the building the excitement and color of the game is heightened by the excitement and color generated by the design.

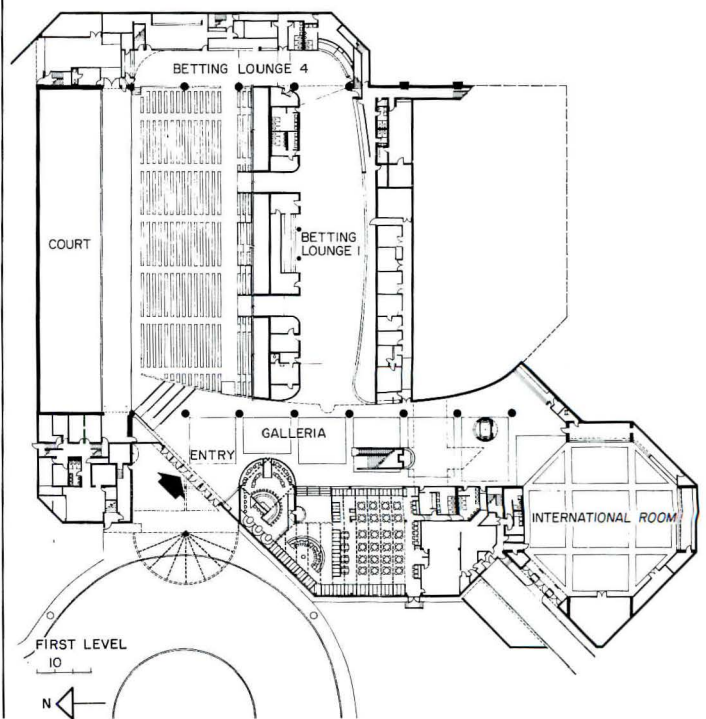
MILFORD JAI ALAI, Milford, Connecticut. Owner: Saturday Corporation. Architects: Herbert S. Newman Associates, AIA, PC—Herbert S. Newman, partner-in-charge; project architects: Glen H. Gregg, partner and William P. Newhall, associate; Don Cosham and Joseph Schiffer, associates; Robert Godshall and Jan Van Loan, assistants. Engineers: Spiegel & Zamecnik, Inc. (structure and foundations); Helenski Associates, Inc. (mechanical and electrical); Bolt, Beranek and Newman, Inc. (acoustics); Sylvan R. Shemitz & Associates, Inc. (lighting); CMA Partnership (landscaping); Mary Ann Rumney, Graphic Design (graphics). General contractor: George B. M. Macomber Company.



THIRD LEVEL



SECOND LEVEL



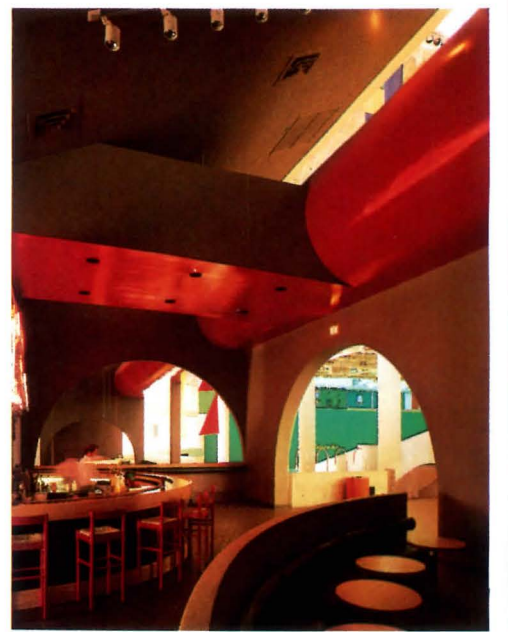
FIRST LEVEL

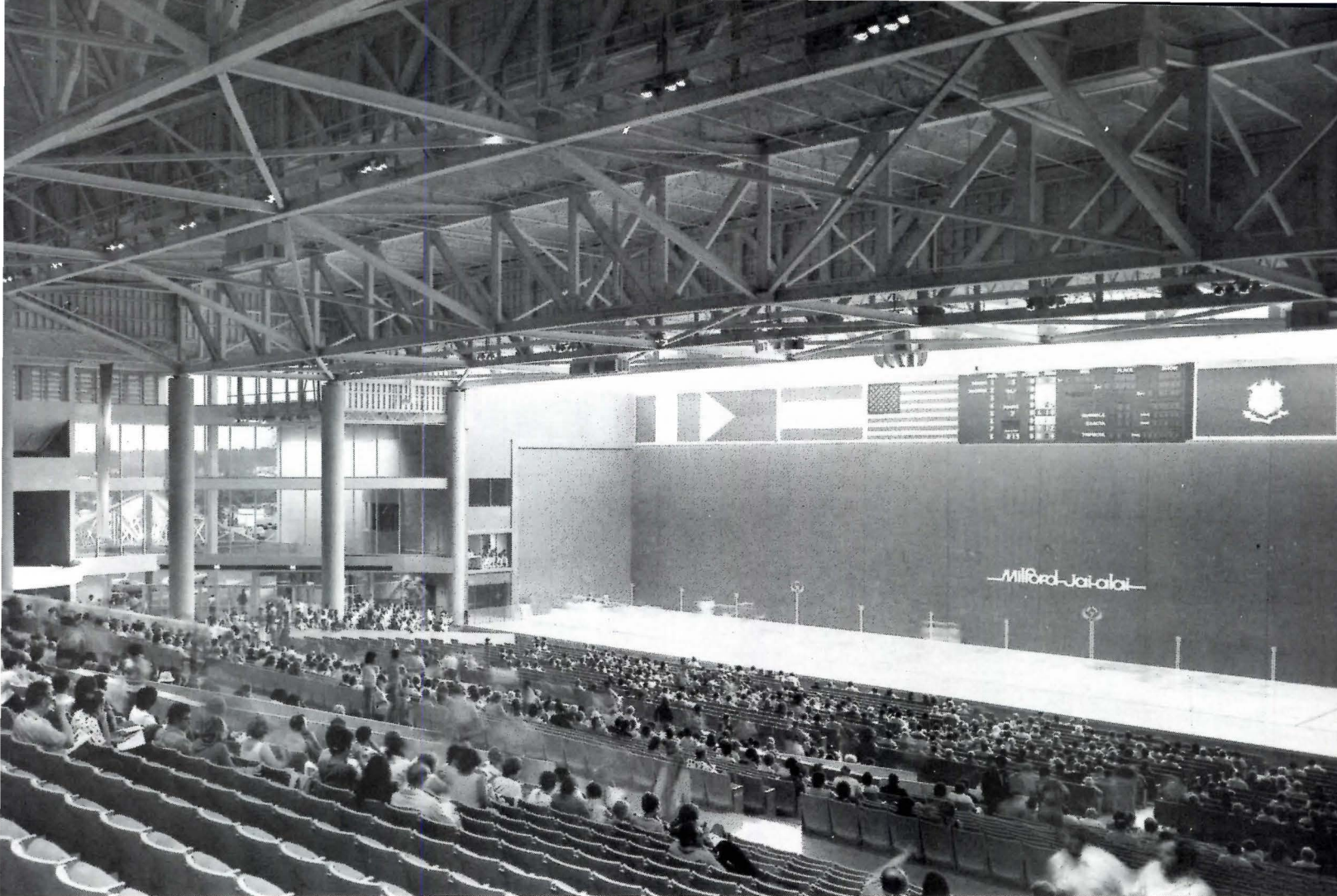


The main entrance to the Milford fronton is under a bright yellow translucent canopy supported on a wood truss system. Its open glass wall offers approaching visitors a sense of the brightness and color inside. The photo below shows the elevation at the rear of the grandstand, with its secondary entrance from the self-parking area. This view expresses the huge trusses which span 180 feet

across the grandstand-playing court area (from right in photo) and then cantilever another 60 feet beyond the column line to roof the galleria and restaurant areas. At the far left in the photo is the International Room (see plan). The plan is described in detail in the text opposite. The 150,000-square-foot building is on a 21-acre site with parking for 2000 cars set on terraces of the hillside. Building cost: \$9.2 million.

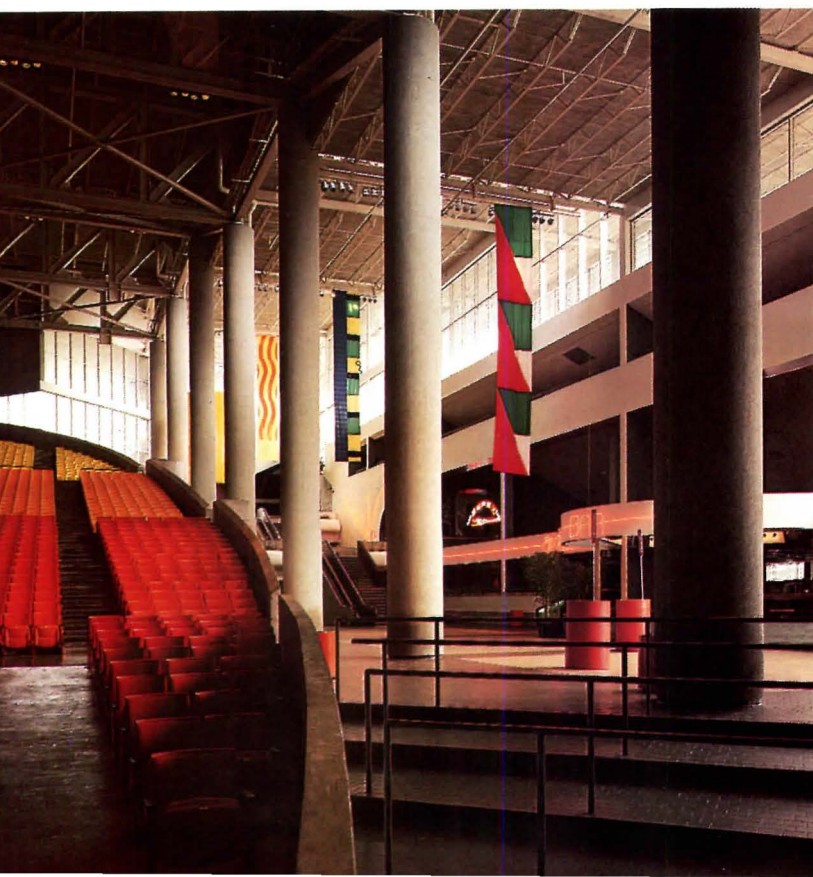


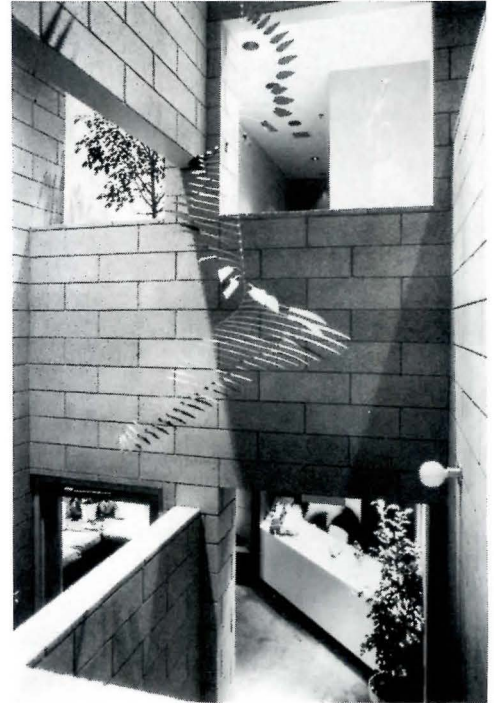




*Inside, all is color and brightness and festivity. At far left, the great galleria, as seen from the main entrance, with the escalators to the upper levels at the rear. The yellow cylinder offers alternate elevator travel. Neon is used not just for signing (as at the entrance to the bar and restaurant at the right) but in stylish supergraphics throughout the space. A section of the bar, sheltered from but still open to the*

*crowds and color and noise outside, is shown near left. Above, is the 4800-seat grandstand, which is as wide as the 180-foot playing surface. Below, photos show how the grandstand space opens to the galleria, so those moving around "feel as if they are standing in a street next to an open stadium of cheering fans." Below right: A view from an upper level of the restaurant.*





*The snack-television room is under a separate space frame roof. At right, details of the administrative offices, showing the same attention to detail and color and graphics that characterizes the main spaces. The photo below shows the main galleria as seen from the upper-level secondary entrance. The sparkling lighting and neon supergraphics enhance the color supplied by the finishes throughout.*



# SMALL OFFICE BUILDINGS

## Thoughtful design for a booming construction field

Despite the fact that there do not seem to be many really large downtown office buildings entering construction these days, the nation's new office space is currently growing at an accelerating rate. If this space is not going into the highly-visible urban gargantuans of the near past, where is it going? A lot of it is going into the smaller office structures that are proliferating in suburban and even rural areas. And whether designed for speculation or to fit particular occupants' needs, such buildings offer the architect some new challenges and encouragements.

Those smaller office structures will be a major contributor toward the 10 per cent increase in the growth rate of new office square footage that is predicted by F.W. Dodge for 1978. And that increase should be of special interest to smaller firms. For the predicted 1978 total of 135 million square feet of new construction will be distributed into many more new commissions of smaller size than existed at the peak of office construction when such buildings were often really big.

Oh yes, there has been a recent decline from the vintage years of 1969 when 71 million square feet were built in the Northeastern part of the country alone, and 1973 when 77 million square feet were built in the South. But the national construction dollars to be spent on office buildings in the next year still total some \$5 billion.

Of the four major areas of the country, the South (where

construction pressure has caused the greatest inflation) will continue to have the lion's share of such new buildings, although it will have the smallest increase in the rate of growth. The West will have the next greatest number of new square feet, and the largest increase in the rate of growth. The Midwest follows next, and the Northeast will have the smallest number of new square feet (less than a third of the number at the 1969 peak).

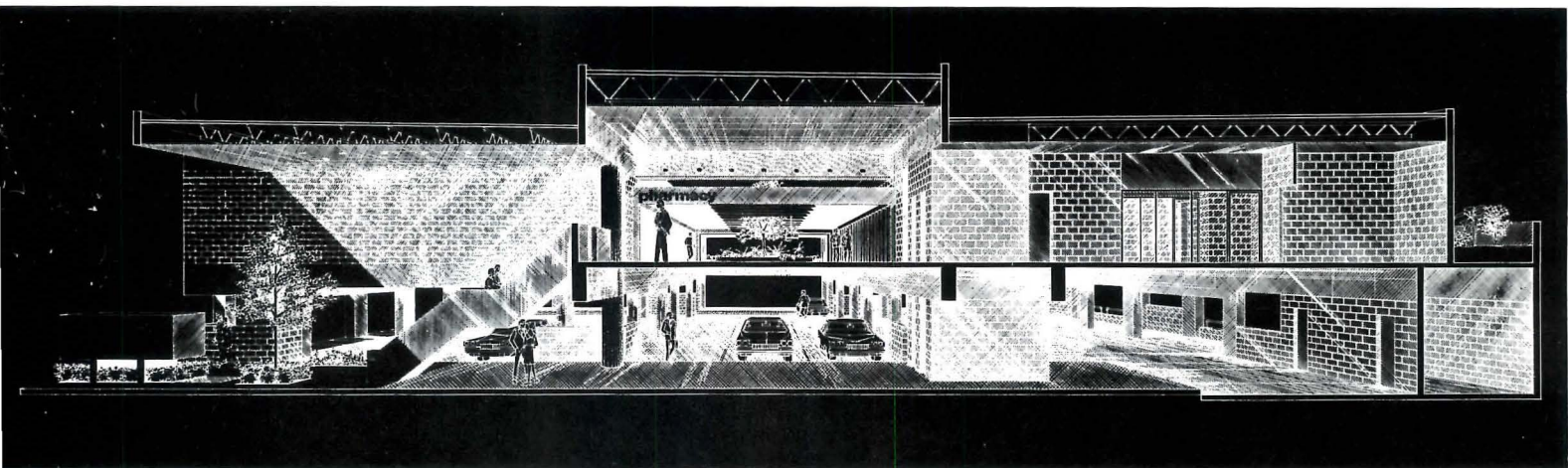
It is worthwhile to think about the design potential. Often removed from the compatibility of similar structures in urban centers, the smaller office buildings present new challenges to the designer, if they are to be successful in both the roles of representing and/or attracting new tenants and of bolstering the neighborhood's stature. Too often in the past, such structures have been uneventful "packages" surrounded by parking lots, designed to meet the client's programs in the most minimal way. But the successful building will have a unique design that accommodates its program *and* recognizes where it is.

Seven smaller office buildings featured on the following pages are each designed to fit a particular program on a particular site. Some of the sites, such as that for Francisco Bay, were difficult because of potential environmental problems. Others presented more predictable problems, but all required great finesse to fill the necessary role of neighborhood compatibility.

—Charles King Hoyt

Medical Plaza/Dan Forer photo





## AN URBAN PRECEDENT FOR AN EMERGING COMMERCIAL AREA

Contrary to the usual automobile-oriented commercial development outside smaller towns across the nation, Medical Plaza Office Building in Plantation, Florida, is a firm presence that relates closely to the sidewalk, and thereby gives definition to the community fabric.

On a corner lot with only 62,400 square feet of area, architect Donald Singer was able to achieve a building that was 20 per cent larger than local building codes (specifically, the parking-to-floor area ratio) would have otherwise allowed. He designed the building to be elevated over the parking spaces, and cars can

therefore cover most of the site. By utilizing the area's normal construction techniques—concrete frame with concrete block infill on the first level, concrete block bearing walls with lightweight steel joists on the second—Singer was able to keep construction costs competitive with the usual costs for the typical one-story-lost-in-the-parking-lot commercial construction nearby. (Another factor in the cost savings was the cantilevering of the concrete frame.) Total costs for the 30,000-square-foot building were \$1,500,000. The owner has a very visible presence, and a larger structure in the bargain. He also has the bonus of a parking area shielded from the area's hot sunlight. And the town has a handsome building that may point the way toward a more urban, more pedestrian-oriented core.

At the same time, Medical Plaza does recognize the realities of the current highway

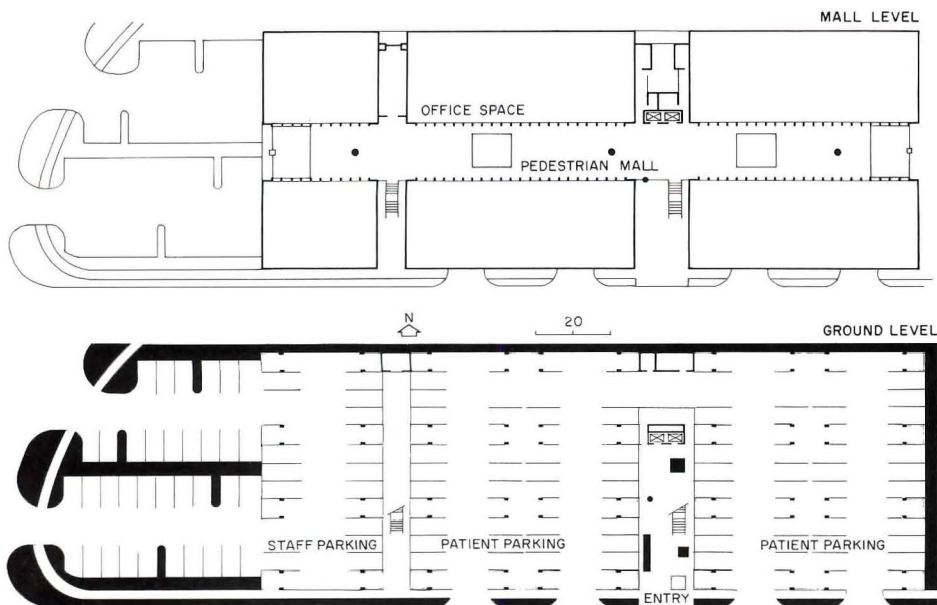
culture. It is horizontal and makes a strong sculptural statement that can be "read" by passing motorists. Part of the sculptural quality is related to the absence of windows on the street walls. Instead of looking at moving automobiles, tenants face an open central pedestrian way at the second floor, which gives access to the offices on both sides. The owners occupy about 35 per cent of the space, and Singer has designed their offices (see photos of interiors).

MEDICAL PLAZA OFFICE BUILDING, Plantation Florida. Owner: *Medical Plaza Associates*. Architect: *Donald Singer*—project team: *Donald Singer, Craig Barry, Carlos Mindreau, Charles Reed Jr., Pam Reiser*. Engineers: *Jenkins & Charland (structural); C. E. Bailey & Associates (mechanical/electrical)*. Graphics consultant: *Bugdall Graphics*. General contractor: *Fisher-Payne Construction*.





Dan Forer photos





## AN ENCLAVE OF GREEN SPURS FUTURE DEVELOPMENT

Two four-story office buildings have recently been completed to designs by architects Robinson and Mills in what had been a primarily light-industrial section of San Francisco's waterfront. The irregular and attenuated site stretches along the inland side of the city's waterfront freeway—the Embarcadero—where parallel railroad tracks further increase the environmental problems.

But the speculative project is well suited for visibility, and—according to the architects—transfers the concept of the suburban "office park" to downtown. Indeed, 50 per

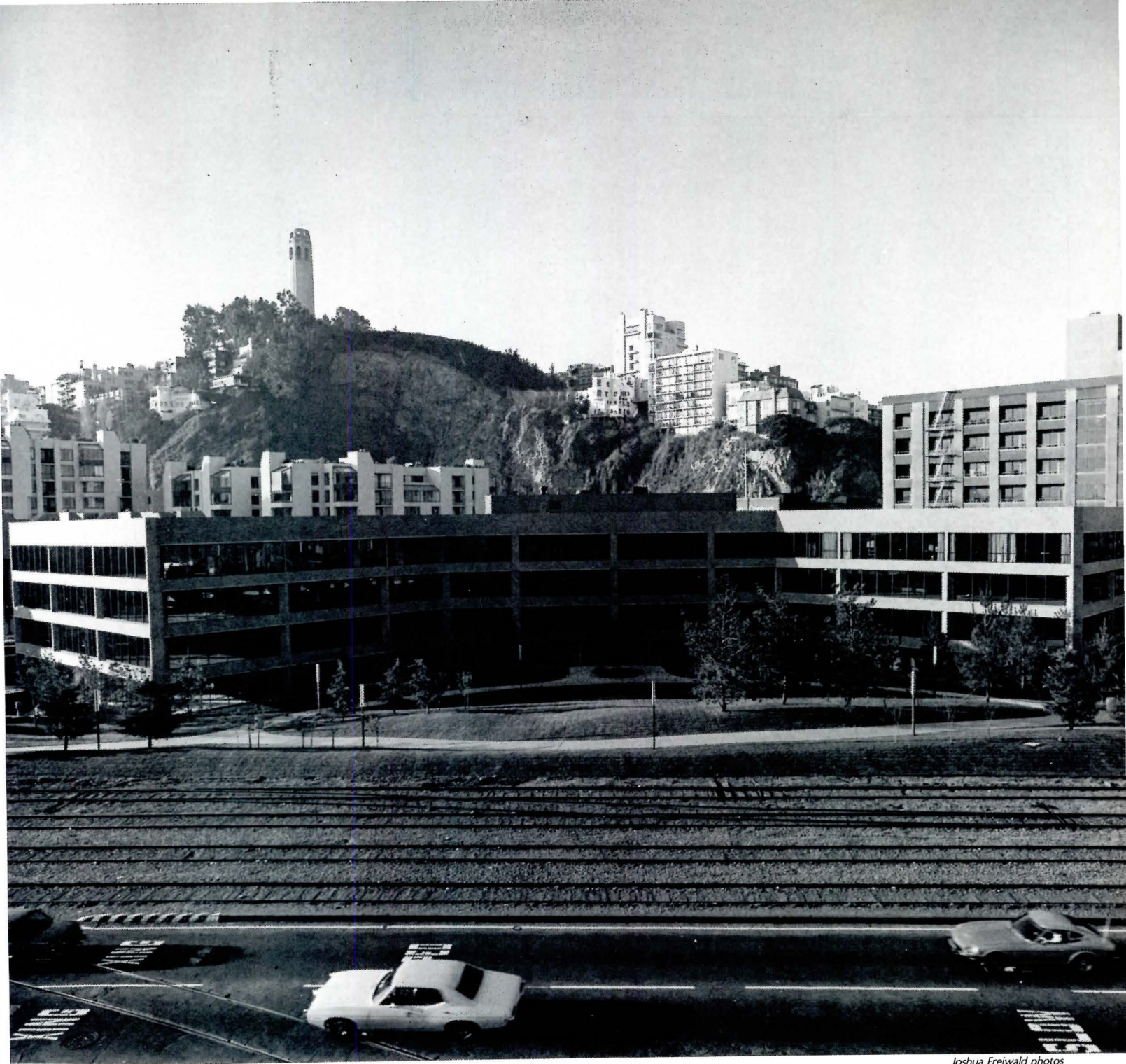
cent of the site is devoted to greenery, and the result accomplishes two purposes. First, the landscaping creates a welcome oasis that defines the buildings as a special place. Second, the trees and lawns anticipate and encourage a proposed greenbelt development for the piers on the opposite side of the freeway.

Consistent with the automobile-oriented concept of an "office park," a garage at the southern end of the site provides direct access from the various parking levels to corresponding office floors. But the buildings do not deny their community context. Indeed, they are designed as a reflection of the vernacular used for the earlier loft buildings that surround them—the cladding is brick, and the facades are boldly horizontal with wide large-scale openings. The structural systems are poured-in-place concrete.

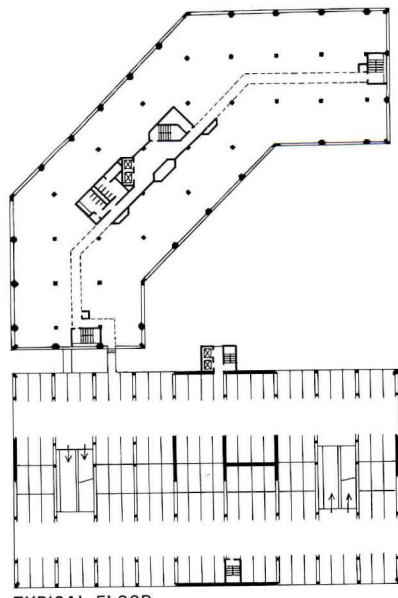
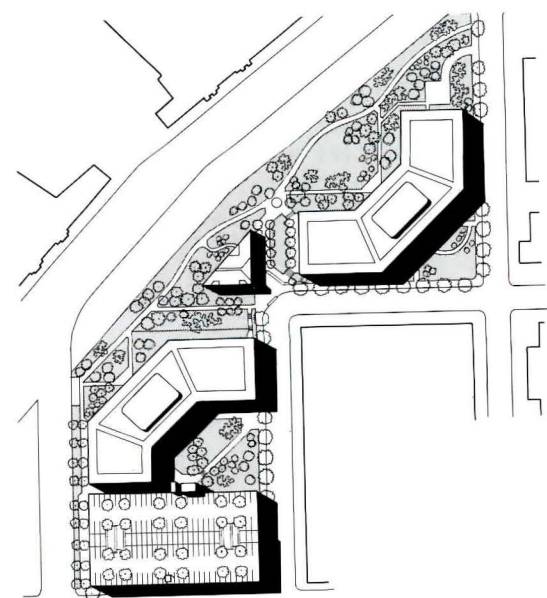
Besides the savings derived from straight-

forward construction techniques, further savings were derived by making the two office blocks economically repetitive in plan; the great variety in the project's over-all appearance was achieved simply by turning the blocks so that they are always seen from differing angles and by siting to enclose varying outdoor spaces. A two-story restaurant building is planned for a location between the two office structures.

FRANCISCO BAY OFFICE PARK, San Francisco, California. Owner: *Francisco Bay Office Park Partnership*. Architects: *Robinson and Mills Architecture and Planning—partner-in-charge: C. David Robinson; project architect: Samuel Hanna; design team: Glenn Bauer, Phil Faccenda, John Pihl, John Sinclair, Fred Stark*. Engineers: *Raf T. Desai Associates (structural); Lowney-Kaldveer (foundation/soils)*. Landscape architects: *Baronian and Danielson*. General contractor and cost consultant: *Webcor Builders, Inc.*



Joshua Freiwald photos



TYPICAL FLOOR





## A NEW FACE FOR AN EXISTING MANUFACTURING FACILITY

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For a manufacturer of highly specialized equipment such as space-age propulsion backpacks, architect David W. Osler has designed new offices that stretch across the front of an existing production facility to provide a tranquil—if not appropriately futuristic—image to the public. (In this case the public includes high government officials who come to inspect the products, which are often purchased for military use.) The concept of a public face created by a distinctly different office wing in front of

manufacturing facilities may not seem the best of solutions in all-new construction, but here—in the case of an existing plant—the concept makes great good sense.

Osler designed the building to project into an existing pond on the site, and to thereby create a sense of drama for both the building's setting and for the entrance. An entry walkway is adjacent to the pond, and appears to be a bridge, which is parallel to a high wall screening the manufacturing area from public view. The wall also carries the company's signage.

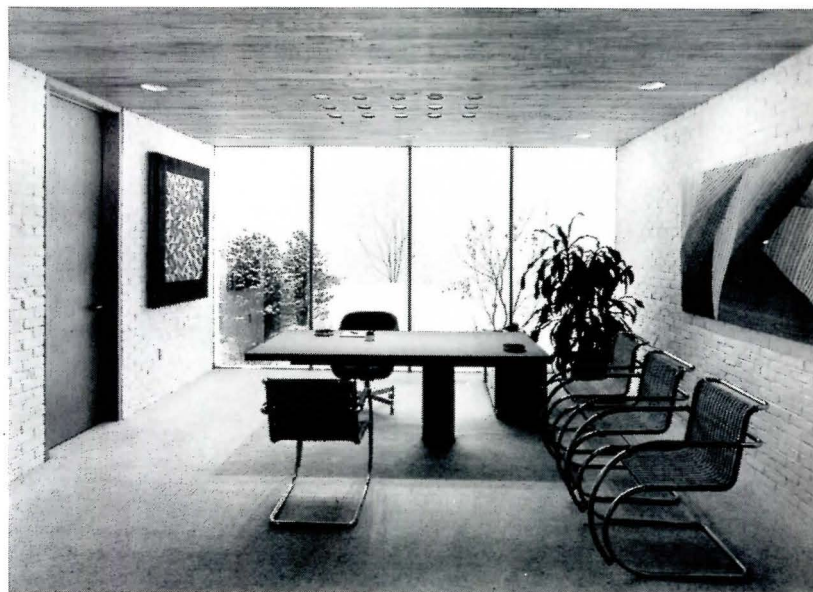
Although appearing to be one sculptural entity, the new building is divided in function into two distinct parts, separated by the glass-roofed display area and a walled garden included in the apparent volume of the building. The reception area and executive offices occupy the one-story portion of the structure nearest the main entrance, and accounting and

engineering offices along with mechanical spaces occupy a two-story element at the farthest end. Both the president's office and the display area have views of the garden.

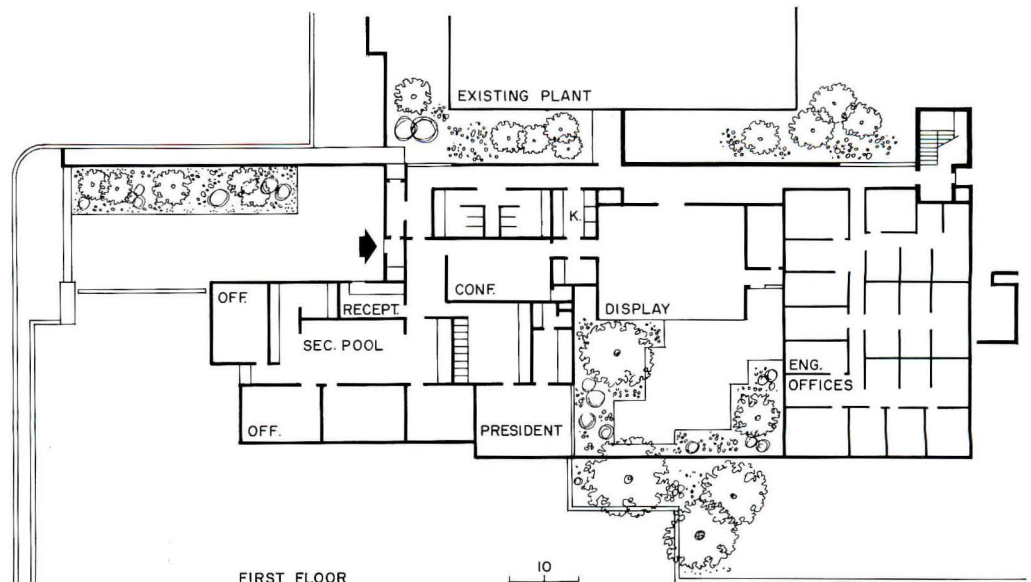
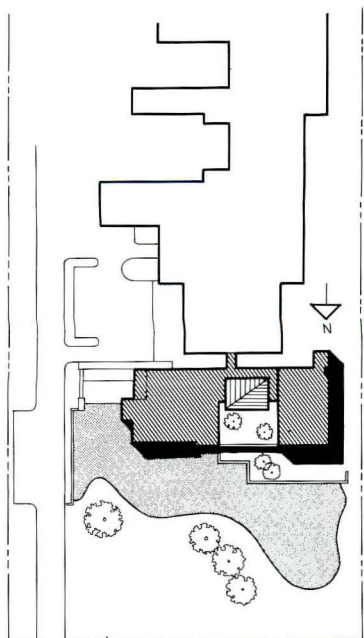
The structural system is brick cavity wall with lightweight steel joists. The cavity walls have exposed concrete-block backup in the production offices and exposed brick backup in the executive wing. All masonry surfaces inside and out are painted white. The brick paving of the entry walkway is carried through the building to the display area.

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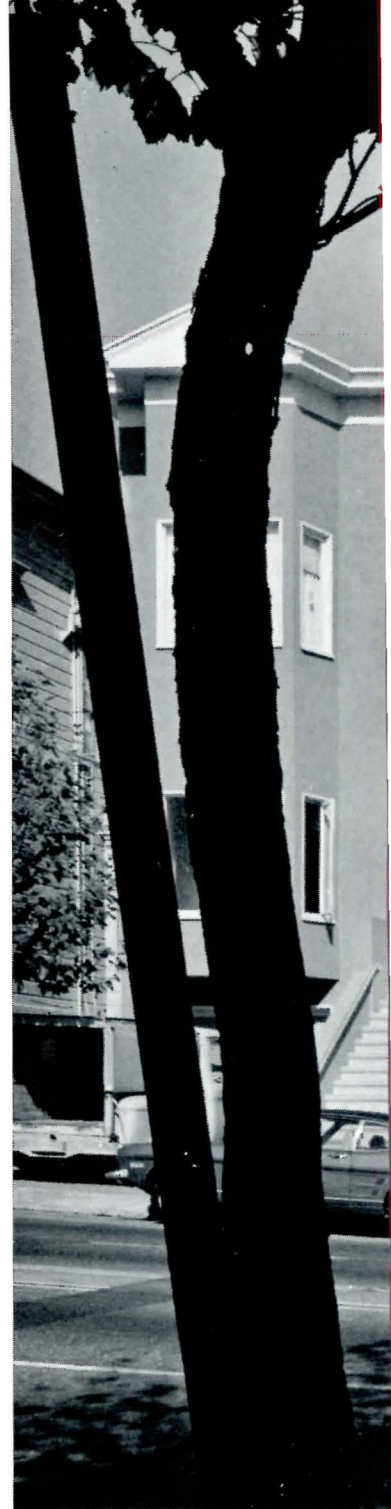
WILLIAMS RESEARCH CORPORATION EXECUTIVE OFFICE BUILDING, Walled Lake, Michigan. Architects: *David W. Osler & Partners, Inc.* Engineers: *Robert Darvas (structural); Donald Pon (mechanical); Neil Adams (electrical).* Landscape architect: *Charles Cares.* General contractor: *Western Construction Company, Inc.*



Balthazar Korab photos



FIRST FLOOR



## A PUBLIC AGENCY THAT FITS INTO A RESIDENTIAL NEIGHBORHOOD

Contrasted to the designs of some other projects in this Study, architects Bull Field Volkman Stockwell's design for San Francisco's Children's Home Society does not have to establish a desirable neighborhood precedent. Instead, it fits into a pleasant existing neighborhood by not asserting its identity, and by respecting an existing small-scale pattern that has been established by the vertical rhythms of adjacent Victorian houses. Such a "quiet" design was desirable for the client, a nonprofit group that did

not want any sort of attention-getting image because of the very nature of its functions. The Children's Home Society is an adoption agency which places orphans all over California, after first interviewing both the children and the prospective foster parents in this headquarters building.

Accordingly, the organization's headquarters contain among the most specialized offices in this Study. The rooms are used for not only administration but for the interviews and for meetings between the parents and children.

Aside from the relatively small size of the enclosed building (some 7,500 square feet), the small-scale vertical image is further reinforced both by the indentation of the structure at its corners and by projecting laminated "fins" which screen the sun and make interior shades or curtains unnecessary. Another way in which the visual size is diminished is the progressive

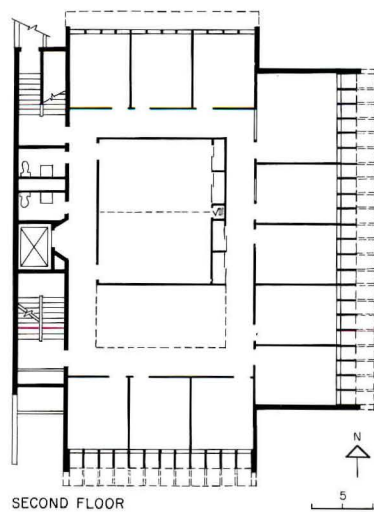
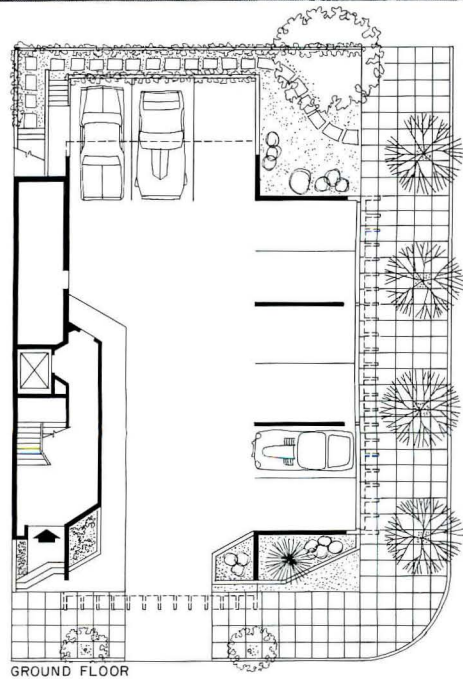
setback of the lower floors, which is a function of the way in which the Society's program was distributed.

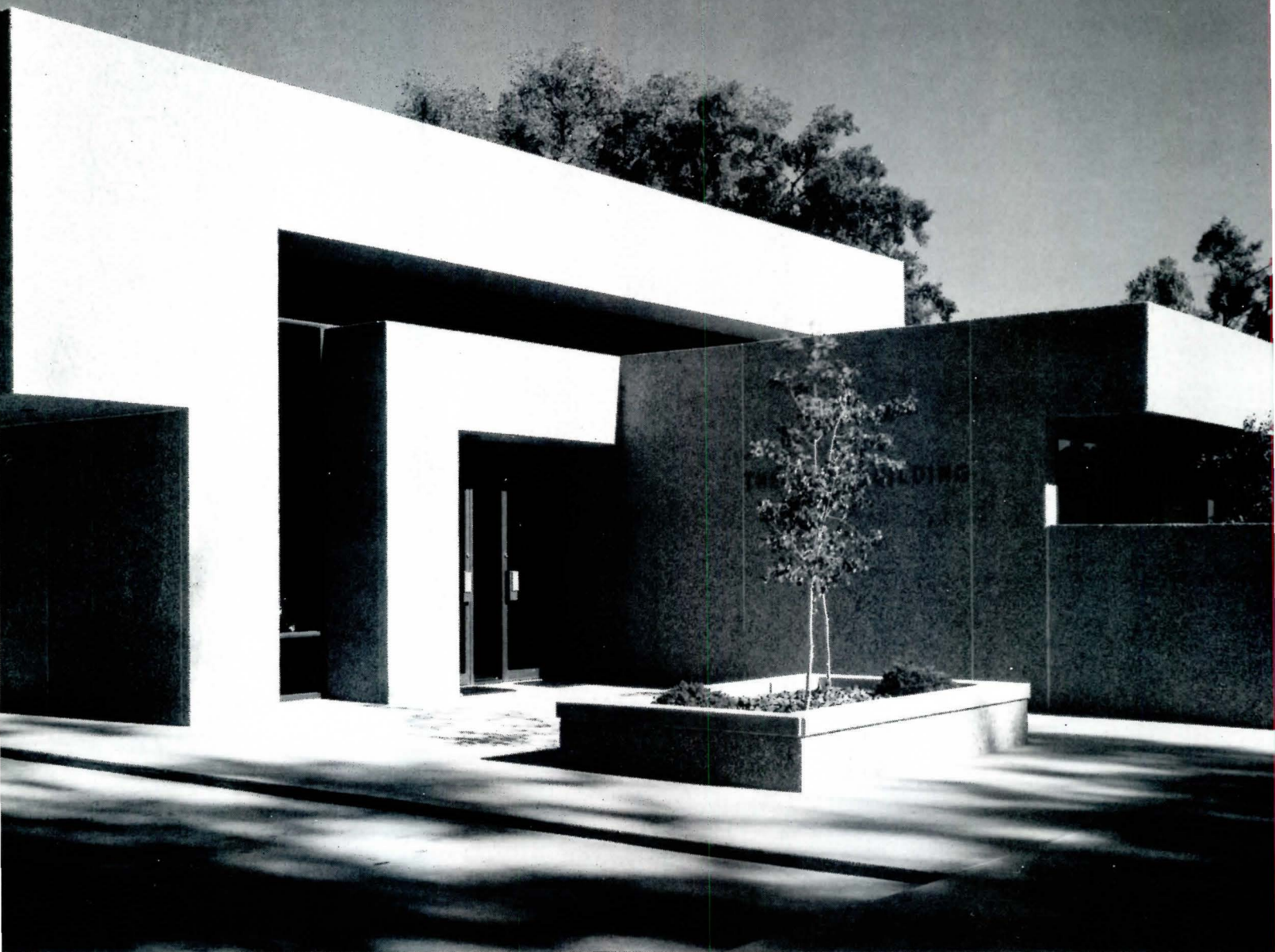
But perhaps the most dramatic contribution to the existing fabric of the neighborhood is the way in which parking is accommodated at the ground level under the enclosed structure instead of in open spaces that would have left a "hole" in the continuity of the adjacent buildings' fronts. The building is finished in redwood siding—a material chosen to reinforce the residential image desired. The redwood is treated with a dark stain.

CHILDREN'S HOME SOCIETY OF CALIFORNIA, San Francisco, California. Architects: *Bull Field Volkman Stockwell*—principal-in-charge: *Henrik Bull*; associate: *Herand M. der Sarkissian*. Engineers: *Hirsch & Grey* (structural); *Marion Cerbatos and Tomasi* (mechanical/electrical). General contractor: *Elvin C. Stendell*.



Philip Molten photos





## A UNIFYING ELEMENT IN A LOOSELY-KNIT ROADSIDE ENVIRONMENT

The Law Building in Greeley, Colorado was designed by architect Larry Steel to house separate offices for six lawyers who share common support facilities, like a reception area and a library—a common design problem in cities and towns across the country, as such sharing is now a common way to cut costs.

But the most interesting common factor with some of the other buildings shown was

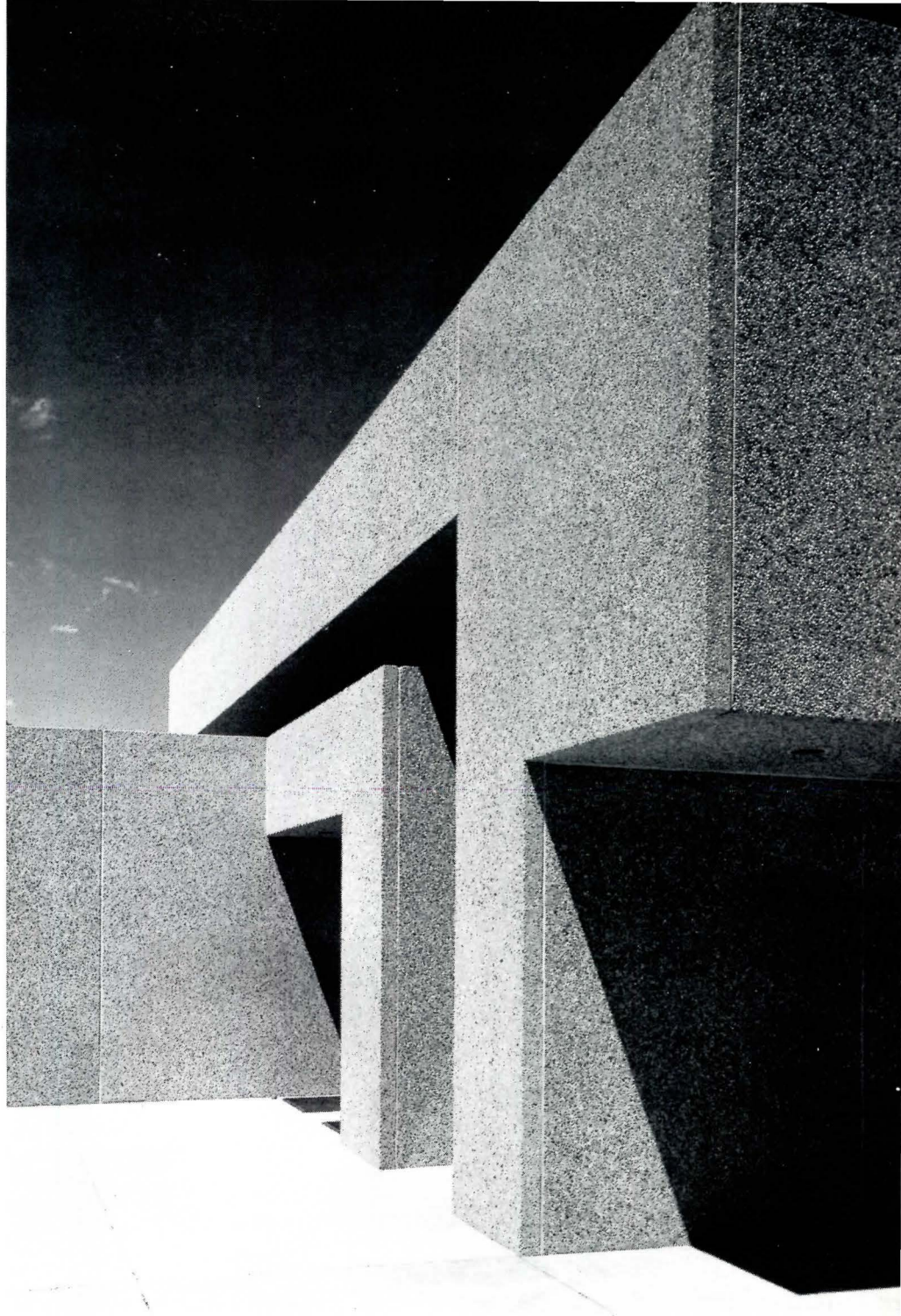
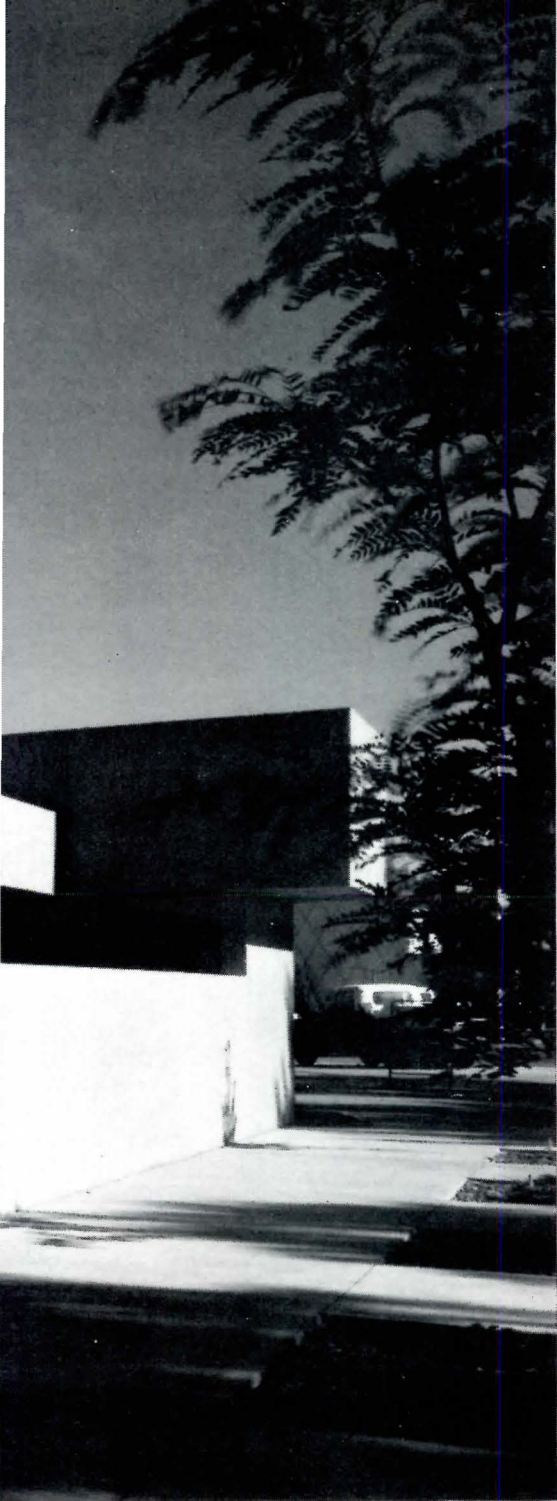
the difficulty in using the site for the intended purpose. Fronting on a major street with an alley along one side, the 9500-square-foot parcel seemed lost in a "sea" of asphalt and automobiles; there was a large parking lot at the rear and a service station on the side opposite the alley. It was hardly a promising environment in which to create a professional image for the tenants.

By careful siting, architect Steel solved the identity problem, and managed to produce a unifying element in the neighborhood as well. The 4400-square-foot building was planned along one side of the site, so that its parking spaces could be entered from the adjacent alley and be removed from immediate view. The strongly sculptural form of the building was placed up against the sidewalk to form a low-scaled urban presence. Part of the sculptural quality of the building was achieved by

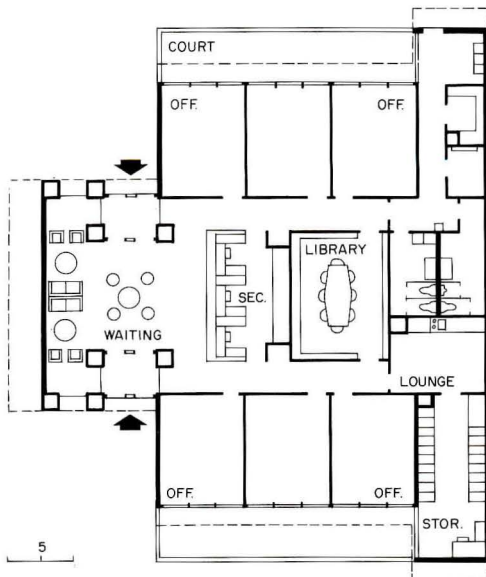
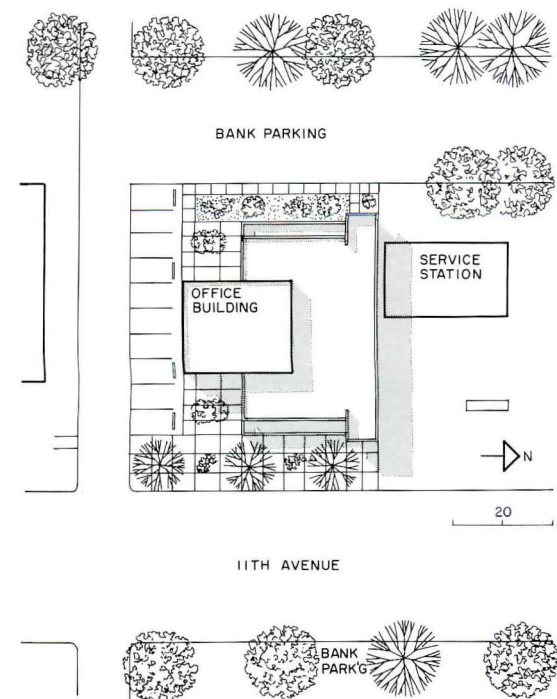
restricting windows visible from the exterior, and thereby allowing the large unbroken planes of the precast concrete sheathing. (The project has received awards from the Precast Concrete Institute as well as the American Institute of Architects.) The restriction of windows was possible, because architect Steel "turned the building inward." Central spaces are lit by clerestory windows, and the lawyers' own offices face two open courts surrounded by high walls that appear from the exterior as part of the building's volume.

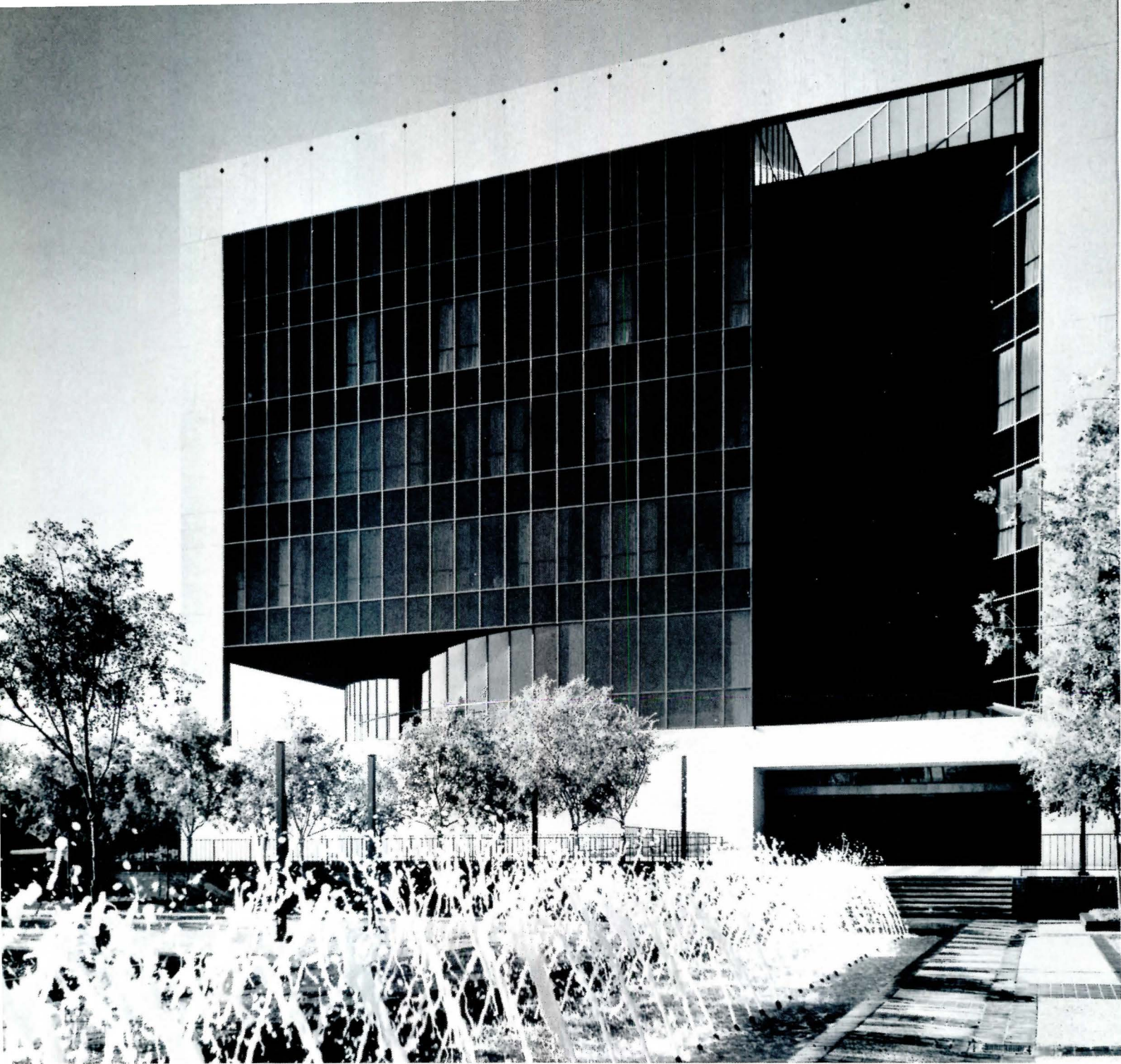
THE LAW BUILDING, Greeley, Colorado. Owners: *Althoff, Colwell, Kinkade, Kuechenmeister, Roy and Shelton Attorneys at Law*. Architect: *Larry E. Steel*. Engineers: *Russell M. Miller (structural), Empire Laboratories, Inc. (soils); Rice, Marek, Harral & Holtz, Inc. (mechanical/electrical)*. Landscape architect: *Glen Becktholdt*. General contractor: *Lobar, Inc.*





Ted Edeen photos





## A CATALYST FOR SENSE OF PLACE AT THE TEXAS STATE CAPITOL

The design—by architects Kenneth Bentsen Associates—for the new 189,600-square-foot Texas Law Center responds to a very special and sensitive site—one block away from the venerable State Capitol Building in Austin. While recognizing the role of the new building itself as part of the capitol complex, the architects also dealt with the site and its environs in a way that recognizes that role. The site of the new building had been occupied by a one-story Law Center structure built in the 1950s,

and the site of the current plaza had been an asphalt parking lot for the capitol. By arrangement with the state government, a sunken 270-car garage for use by both the government and the Law Center was built below a new plaza, which may one day serve as urban open space when similar buildings are built around it.

Aside from its context in the capitol complex, the Law Center answers a number of program demands. The large plaza and the ground floor of the building are designed for large gatherings. (There are currently 30,000 members, making the organization the second largest in the United States.) The second floor is designed as a conference center, and the upper floors house the organization's day-to-day functions of administration, continuing education, research, reference and the distribution of printed information.

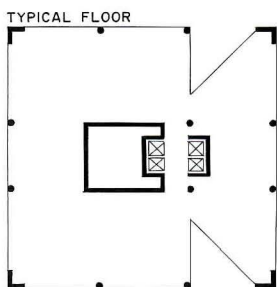
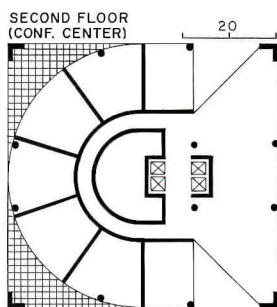
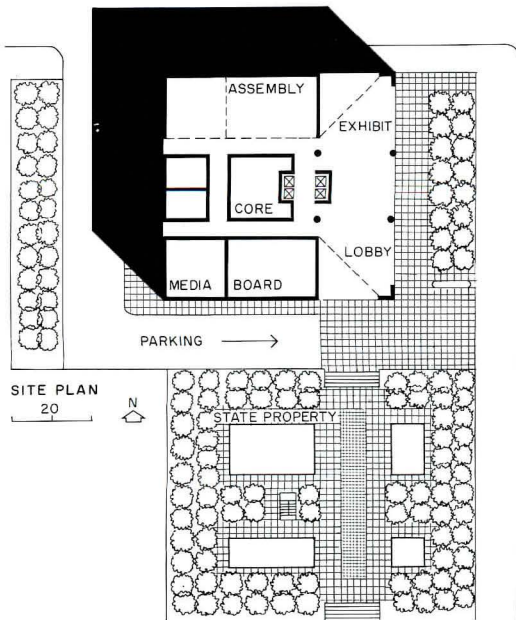
The concrete six-story structure is de-

signed to carry an additional four stories when expansion is needed. When the expansion occurs, the red granite panels of the parapet (which forms the top part of the building's visual "frame") are designed to be raised to the new roof. The various indentations of the dark glass skin are designed to provide skylights in the ground floor lobby and balconies off the second floor conference center. The total construction cost was about \$31 per square foot.

TEXAS LAW CENTER, Austin, Texas. Owner: *State Bar Association*. Architects: *Kenneth Bentsen Associates*. Engineers: *Walter P. Moore & Associates (structural)*; *Frank G. Bryant & Associates (foundation/soils)*; *Chenault & Brady (mechanical/electrical)*. Consultants: *ISD, Inc. (interiors/graphics)*; *Quantity Survey Bureau (costs)*. General contractor: *Robert C. Gray Construction Company*.



Balthazar Korab photos





## AND A BUILDING WITH ONLY CONTEXT OBLIGATIONS TO THE WOODS

The Harbert Construction Corporation headquarters outside of Birmingham, Alabama, has no man-made environment to influence its design by architects 3D/International. Aside from the obvious problems of providing utilities and access to a building in the middle of a 3000-acre wooded site, the basic siting problem was to provide compatibility with nature. The primary interest to the designer therefore lies in the internal planning and in the successful way in which the structural volume

has been distributed and finished.

Because of the large site, the building could have been attenuated to allow direct outside views from any point within its 50,000-square-foot floor area. But the problems of construction, energy usage and communications would have been obvious. The architects' answer in this case was to place the two halves of what could have been a very long and thin two-story building side by side, and to separate the two by a glass-enclosed courtyard. All of the occupants have a view, but some of the views are a surprise: a seemingly urban landscaped "mall," instead of the natural woods.

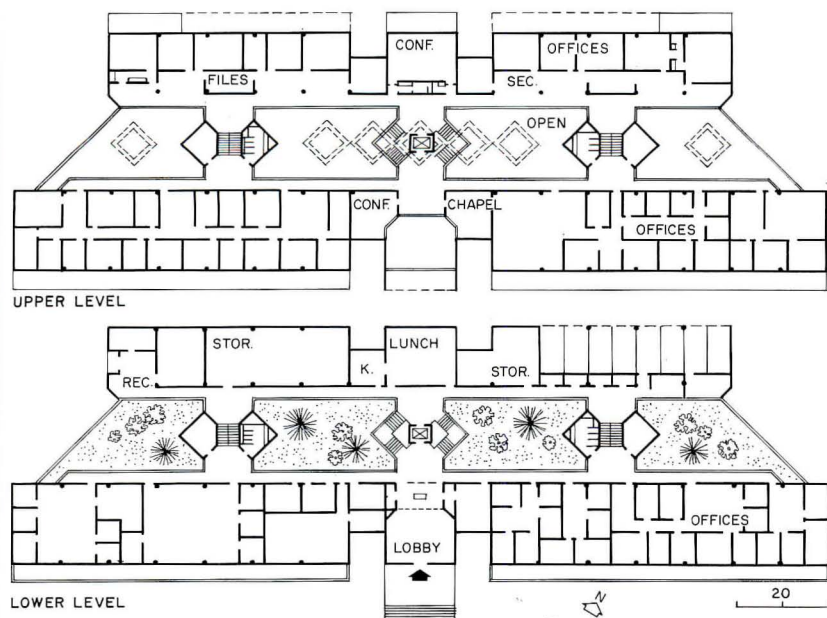
The building's interiors are urbane. Many of the offices are distributed in open areas, with wide separations between clusters of partitioned desks to assure privacy. The rich interior finishes range from polished stainless steel columns to granite to wood with natural

finishes or dark red lacquering. The building's exterior is clad in sheets of weathering steel, which have been carefully detailed to produce an aggressively three-dimensional appearance—especially in both the projecting main entrance canopy and spandrels.

HARBERT CONSTRUCTION COMPANY CORPORATE HEADQUARTERS, Birmingham, Alabama. Owner: *Harbert Construction Company*. Architects: *3D/International (formerly 3D/Neuhaus + Taylor)*—project director: *Charles Burgess*; project designer: *R. Patrick Sweeney (assisted by 3D/1 Architecture/Graphics)*; construction representative: *Raymond Liu*. Engineers: *Ellisor Engineers (structural)*; *Law Engineering (foundation/soils)*; *Brady & Anglin Engineers (mechanical/electrical)*. Consultants: *Acousti Engineering Company (acoustics)*; *Harland Bartholomew & Associates (landscape)*. General contractor: *F. R. Hoar & Son, Inc.*



*Gordon H. Schenck Jr. photos*





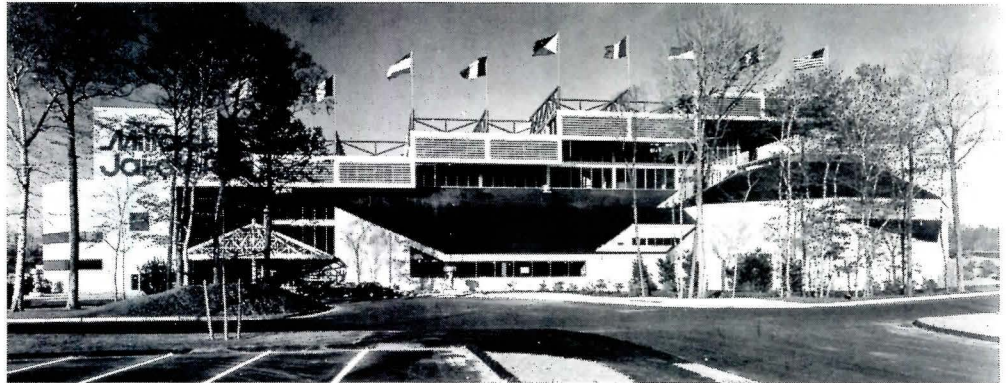
The interior atrium, with its diagonally placed and granite-sheathed stair towers, provides an alternative to views of the woods that surround the building. Similarly, the polished surfaces of the stainless steel columns and lacquered panels provide an urbane contrast to the weathering steel exterior cladding. Much of the office space is planned without high partitions, and generous space allotments allow for wide separations between desks.



## Structure and lighting give excellent performance at a fronton

The playing court at the Milford (Connecticut) Jai Alai (described on pages 119 to 124 of this issue) excels in its column-free sight lines, in the fitness of its architectural expression, and in its integrity as a total system.

The focus of the building, of course, is the playing court—180 ft long, 50 ft wide, and 48 ft high, painted grass green and lighted to 175 footcandles at the center. The owner wanted a "fast" court which demands that playing surfaces be crack-free, and plumb as well, for true bounce and rebound. In jai alai, the goat-skin ball—after being hurled against the front wall at speeds up to 150 mph—is played off both the long side wall and the rear wall, as well as the floor. Because of the hard impact of the ball on the front (serving) wall, its surface is 8-in.-thick granite blocks attached to a reinforced concrete structural wall. For the side and end walls, a low-slump concrete was used to avoid honeycombing and to provide a dense, smooth surface. Special attention was paid to the construction and bracing of the



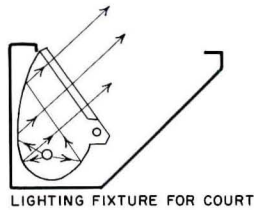
formwork to prevent spreading. This approach saved money compared with the usual practice of applying a wearing surface of Gunito to cast-in-place walls. The concrete mix for the floor utilized expansive cement to avoid cracks.

The ingenious court lighting, conceived by consultant Sylvan Shemitz, is totally indirect, avoiding any glare in the eyes of the players when they look up—obviously a tremendous

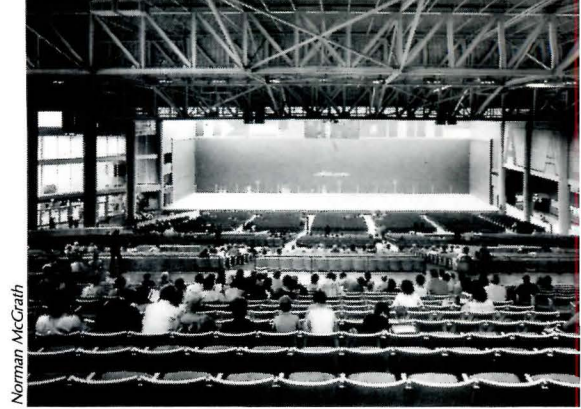
improvement over the conventional method of downlights in metal cages. The ceiling is washed by 60 luminaires, 30 on each side of the court, which, because of their asymmetric distribution, light the ceiling plane uniformly. Each luminaire has a 1500-W tubular high-intensity-discharge (HID) lamp, protected by heat-, impact-, and UV-resistant glass. The protective wire screen between the court and



Robert E. Fischer



A system of 60 luminaires, half on each side of the ceiling, wash the surface to produce 175 footcandles of glareless illumination at the center of the court. The luminaires, a design of Sylvan Shemitz, light the surfaces evenly by means of their asymmetric distribution. The luminaires use 1500-W metal halide lamps.



spectator area was not left as bare metal, but was painted black to prevent a veiling effect that would have resulted from reflected light.

Stability was the main design problem for the structural engineers, Spiegel & Zamecnik. And the challenge was to do this at a good price. First of all they had to knit together the disparate parts so the building would act as a unit to resist wind and possible earth tremors (though small in magnitude, this activity is continual in New England, and must be considered in structural design).

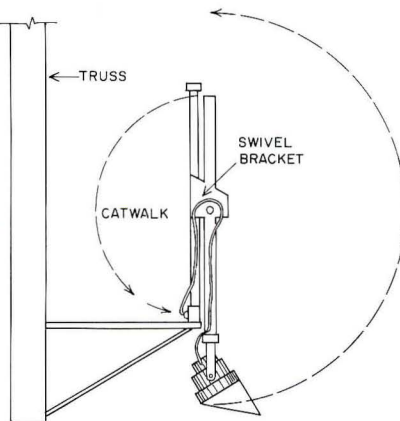
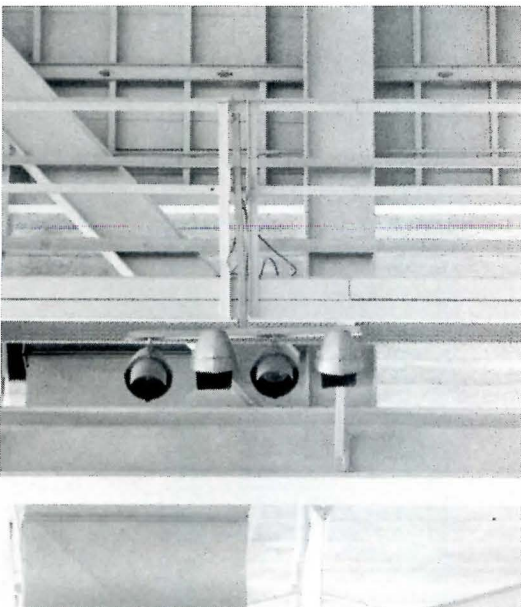
Wind load is transferred from exterior walls through the truss system to shear walls. The truss network is stiffened by struts and cross-bracing in the vertical plane and cross-bracing in the horizontal and sloping planes between trusses. To transfer wind loads effectively from the truss network to the shear walls (end walls of the court) in the longitudinal direction, the engineers designed a special connection of steel plates welded to the bottom chord of the truss that abuts the shear walls, and rebar welded to these plates that are embedded in the concrete of the shear walls. In the transverse direction of the building, cross-bracing at each end of the building is tied to the long shear walls via anchor bolts recessed in pockets formed in the walls.

Because the structure sits on a pile of fractured rock, and because the engineers wanted resistance to earth tremors, it is tied together at grade level by three tie beams in the transverse direction, and by a continuous footing around the circumference.

The engineers saved money with the columns which were built up from two W 24 rolled sections with flanges butted and stitch welded together (3-in. welds, 2 ft o.c.). Stiffeners were used at the base of the columns to keep down the thickness of the base plate.

Since the columns were tall (some are 65 ft in the Galleria), architect Herbert Newman wanted them to appear massive. But because concrete columns the size he wanted (4 ft dia.) would have been costly, the designers decided to use the steel columns described earlier enclosed by tubular fiberboard forms which were coated with Dryvit synthetic plaster (also used on the exterior of the building). On the long side where columns mesh with a masonry wall, the semicircular shape was made with gypsum board over steel furring channels.

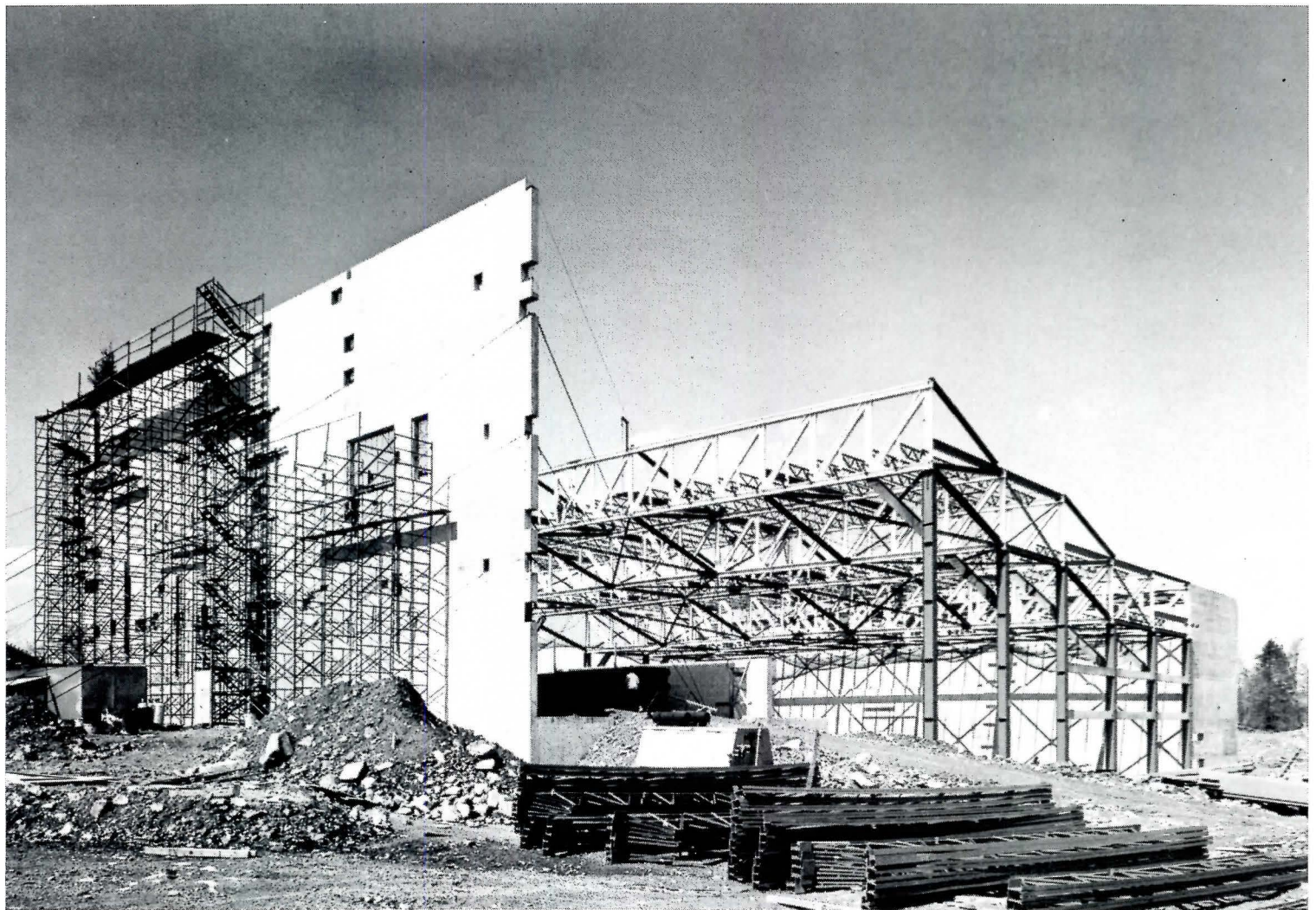
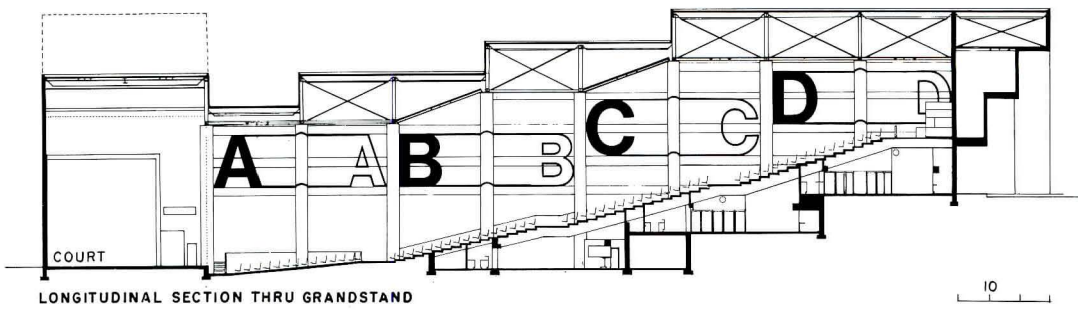
Total length of the trusses is 240 ft, fabricated in three sections for transportation to the site. Span over the grandstand is 180 ft. Span over the Galleria is 40 ft. Trusses then cantilever 20 ft beyond the glass wall on the front (west) face to support aluminum-louvered sun screens.



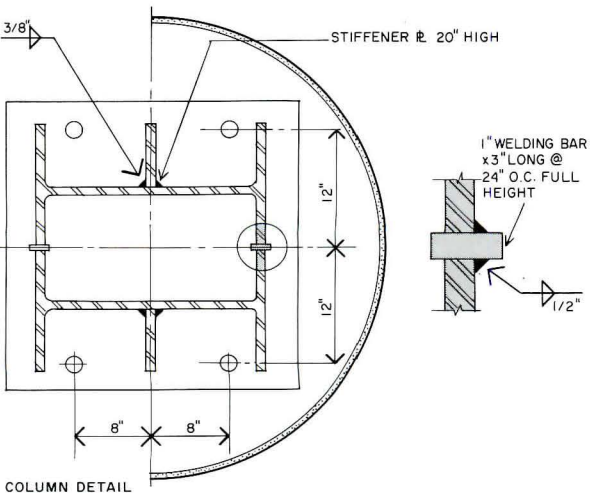
For ease of maintenance, the luminaires for the grandstand area are mounted in groups of four on a T-bar that can be swiveled to an upright position for relamping luminaires.



Because the site is sloped, the architect, Herbert Newman, designed a stepped building that minimized volume and created visual interest. The enclosing walls of the court and the back wall (see below) serve as shear walls to resist wind. Mechanical equipment is located in the structure that hangs behind the wall; it also has access for a future balcony.



C. T. Albutus



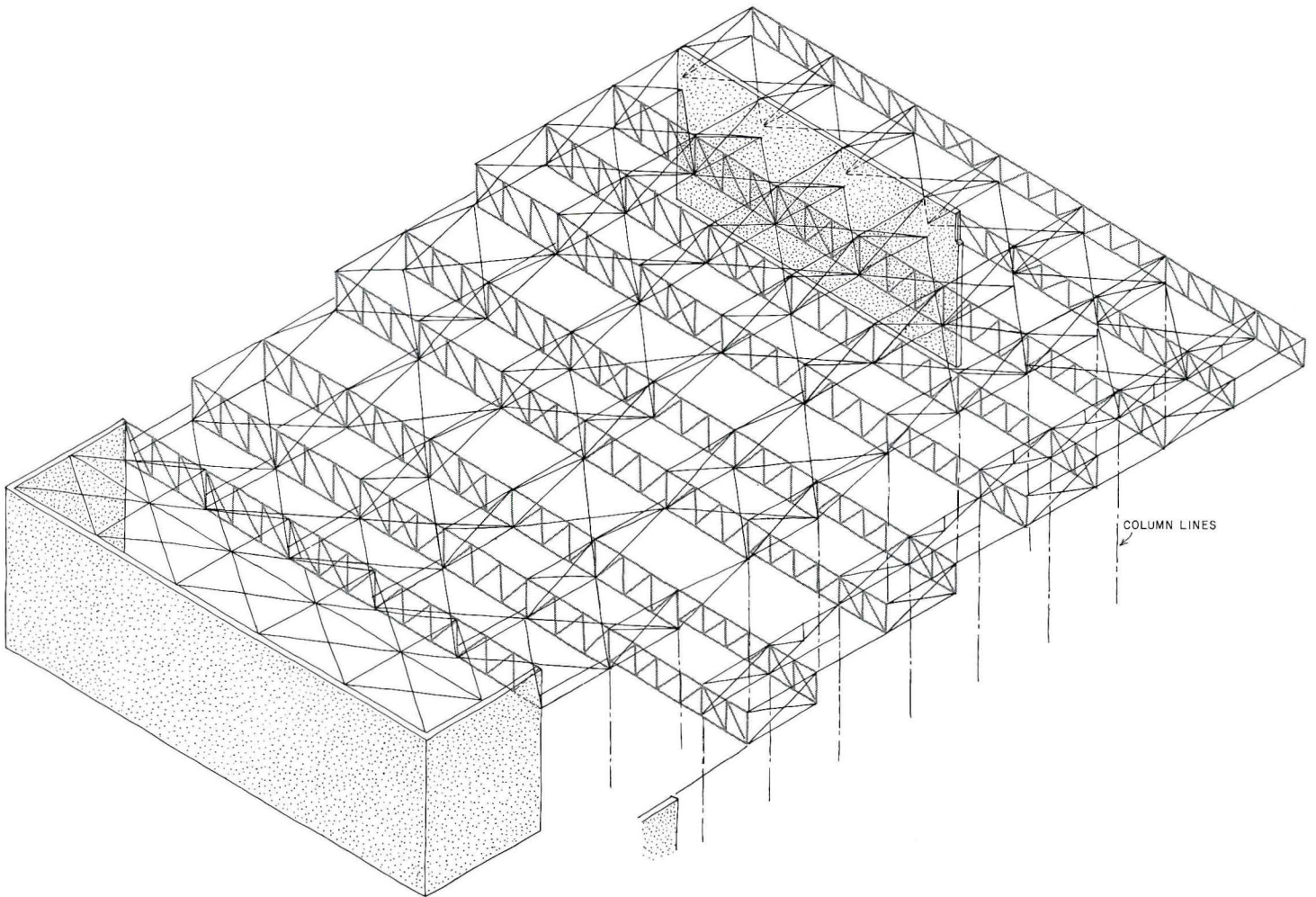
Columns are steel, but were enclosed in 4-ft-diameter tubes to create a more hefty look. The engineers, Spiegel & Zamcnik, cut column cost by using two W 24 rolled sections

that were joined by stitch welds, providing a column that is very strong and stable. Stiffeners were used at the bottom of the column to keep down the size of the bearing plate.

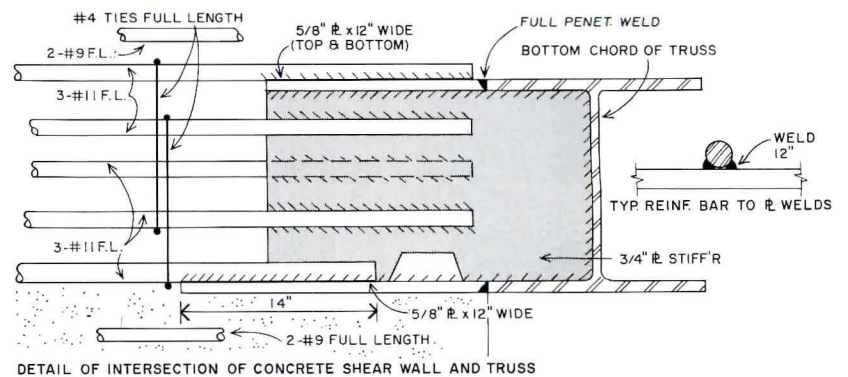




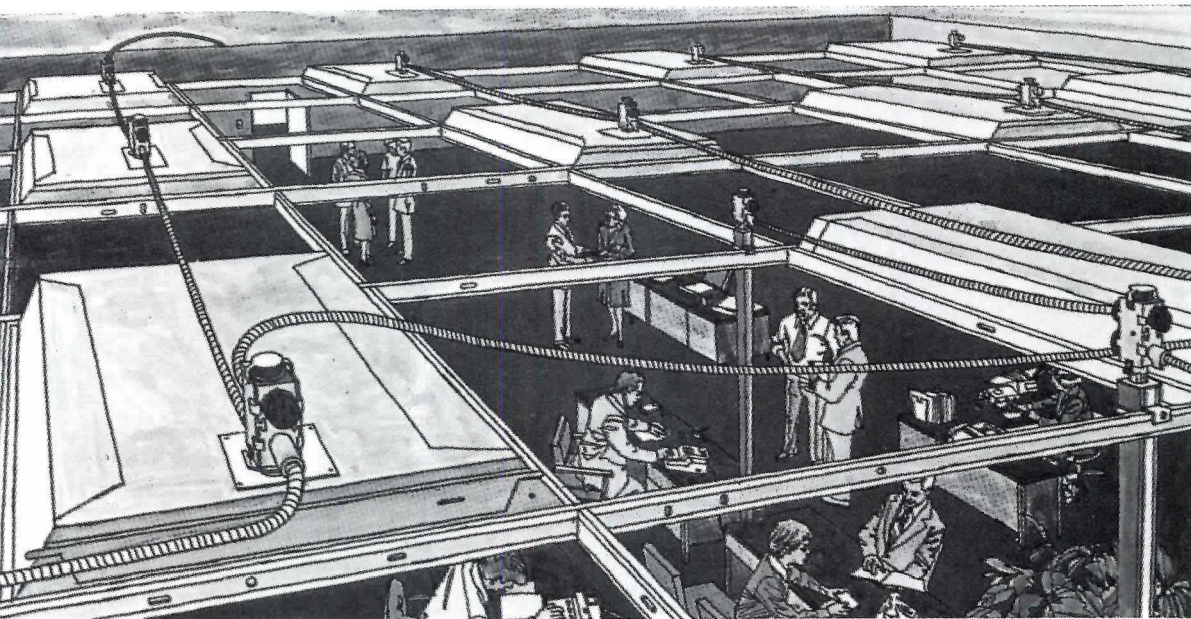
Wind loads are transferred to shear walls by struts and diagonal bracing. In the longitudinal direction, forces induced in the structure by wind are directed in stepped fashion through the compression members between trusses. In the transverse direction, the structure works as a diaphragm to transfer loads to the long shear walls.



To ensure effective transfer of wind load from the truss abutting the shear walls into them, a special detail of welded plates and rebars was developed by the engineers. A pair of plates is welded to the flanges of the bottom chord, and a stiffener is welded to them and to the flanges and web of the truss chord. Rebars welded to the plates and stiffener extend full length into the walls.



For more information, circle item numbers on Reader Service Inquiry Card, pages 219-220



## Modular branch circuit wiring offers flexibility

*Modular Wiring* offers the flexibility of quick, inexpensive branch-circuit wiring changes. Key to the system are factory-assembled cable sets, offering an unrestricted choice of circuiting and switching at each lighting fixture or power outlet, because of a five-face connector cable assembly. The 20-amp cable sets are compatible with both lighting and power applications. Voltage and functional polarization of plug components protects against improper installation. ■ Dual-Lite, Inc., Newtown, Conn.

circle 300 on inquiry card



## Indirect store lighting saves on operating costs

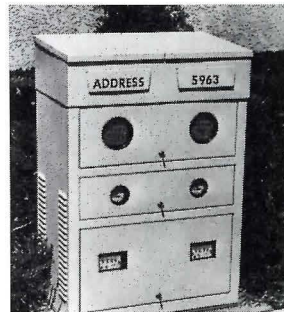
The principal feature of this new system is an optical chamber that projects light from two different lamps upward, and spreads it out across the ceiling before reflecting it back into the lighted area. The optical chamber uses a combination of GE *Lucalox* high-pressure sodium and *Multi-Vapor* metal-halide lamps. Combining the golden-white light of one lamp with the

cool white light of the other offers a good color balance, plus high efficiency according to the maker. The lighting units can be mounted on top of gondolas and display racks, permanently mounted on walls, or suspended from the ceiling. A freestanding merchandise lighting fixture is shown. ■ Specified Products, Inc., Milwaukee, Wis.

circle 302 on inquiry card

## Utility pedestal reduces homebuilding costs by serving two units

Pedestal houses electric, water and gas meters, plus the telephone fused terminal post connector, and cable TV, while at the top there is a 1-cu ft mail box for each dwelling. According to the manufacturer, construction savings are achieved by reducing the amount of trenching needed, and the amount of wire and pipe used for utility hookups. Fur-



thermore, the pedestal eliminates the need for temporary power. A benefit to the homeowner is the ability to terminate electric power and gas at the curb. The pedestal complies with recent postal regulations calling for urban mail delivery to be made at the curb. ■ Utility Component Pedestal Corp., Las Vegas, Nev.

circle 301 on inquiry card



## Freestanding, modular workstations are shipped knocked-down

Available in antique white with matching vinyl edging, or in oak with brown vinyl edging, this group has end panels 30, 48 and 60 in. high for attachment to work surfaces 60, 48, 36 and

24 in. long, and either 30 or 24 in. deep. Units are easily assembled in the field. ■ OMNI Products, Vernon, Ala.

circle 303 on inquiry card  
more products on page 153



**"SINCE WE'VE STARTED USING GAF'S COLD-APPLIED MINERAL-SHIELD® ROOFING, OUR SALES HAVE GONE THROUGH THE ROOF."**

Howard & Dick Charbonneau  
Charbonneau Contracting Corporation  
Round Lake, N.Y.



"The day after we started using Mineral-Shield, we practically gave away our old hot roofing equipment," says Dick Charbonneau. And his brother, Howard, adds:

"I can't understand why anyone would use anything else. Mineral-Shield is much more profitable than hot roofing. While material costs are similar, Mineral-Shield roofing goes down faster. You need less manpower. Less setup time. And less equipment. There are no hot carriers or kettles to mess with. Mineral-Shield roofing is a cold spray process, so you don't lose time because of burns and accidents. And you don't have to worry about things like slope limitations or maintaining critical temperatures."

When asked about blisters and fishmouths, Howard replied, "I've practically forgotten what they look like. They're virtually eliminated with Mineral-Shield roofing."

"Our customers rave about Mineral-Shield's white granule surfacing," says Dick. "They not only like the way it looks, but they like the way its high reflectivity helps keep air conditioning costs down." And he concludes:

"After applying over 4½ million square feet of this roofing, I know what I'm talking about. The hard and cold fact is that GAF® Mineral-Shield® roofing is here to stay."



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 Please have a representative call.

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ROOFING**

TA

For more information, circle item numbers on Reader Service Inquiry Card, pages 219-220

**FIRE-RETARDANT HARDWOOD** / Retardant-treated particle-board and veneer cores are offered in a line of fire-retardant hardwood plywood for architectural-grade interior panels. A color brochure gives fire classifications and construction details; also covered are non-fire-retardant wall panels and industrial plywood for cut-to-size uses such as case-work. ■ Algoma Hardwoods, Inc., Algoma, Wis.

circle 400 on inquiry card

**ALUMINUM MAINTENANCE** / A voluntary guide specification describes in detail safe and practical ways of cleaning, maintaining and protecting architectural anodized aluminum, both newly installed and weathered surfaces. The guide recommends that the cleaning of aluminum be integrated with window and other cleaning schedules for efficiency and economy, with a wipe-on protective coating applied after maintenance to preserve the aluminum. Entrances, store fronts, window and door frames, curtain walls, mullions, handrails and hardware are covered by the guide. Price: \$2.00 a copy. ■ Architectural Aluminum Manufacturers Assn., 35 East Wacker Dr., Chicago, Ill. 60601, Pub. No. 609.1.

**ROOF INSULATION AND DRAINAGE** / Design and estimating guidelines for selecting and applying the *Fesco Dri-Deck* roof insulation and drainage system for flat roofs are now available. Considerations affecting drain placement on roofs are explained in the guide books. ■ Johns-Manville, Building Systems Div., Denver, Colo.

circle 401 on inquiry card

**TRENCH DRAINS** / Various types of drains for use in garage facilities, manufacturing plants, ramps and other traffic areas requiring drainage are described and illustrated in an eight-page manual. Specifications include dimensions and grate openings for each of the 15 lines shown, with options and alternate materials. Special, extra-heavy-duty grates are also discussed. ■ Josam Mfg. Co., Michigan City, Ind.

circle 402 on inquiry card

**SECURITY SCREENING** / A 12-page color brochure explains the role of X-ray security screening systems in combination with metal detectors and explosive detectors for industrial and commercial use. Photos show an on-location screening sequence in an office lobby and at a factory exit, with actual X-ray pictures demonstrating the effectiveness of the units. Such advantages of low-dose X-ray screening as high-volume capability, privacy, compactness of machines, and safety of items screened are described. ■ Philips Electric Instruments, Inc., Mahwah, N.J.

circle 403 on inquiry card

**PERIMETER LIGHTING** / Product bulletins introduce the "Straight & Narrow" perimeter lighting systems, available in bottom shielded, upper shielded and unshielded configurations. Described as low in energy consumption, economically priced, and easy to install, the "Straight & Narrow" fixtures use standard components to provide uniform, comfortable illumination. ■ Neo-Ray Lighting Systems, Inc., Brooklyn, N.Y.

circle 404 on inquiry card

**LANDSCAPING IRRIGATION** / A six-page catalog supplement provides product photos, operating features, and performance data for new landscape irrigation system controllers and timers. ■ Rain Bird, Glendora, Calif.

circle 405 on inquiry card

**PRE-WIRED OFFICE PARTITIONS** / A color brochure describes pre-wired "Movable Walls," showing how the snap-in, quick-disconnect system of flexible metal electrical conduit brings power into each panel supplying virtually any office machine and lighting requirement in an office installation. Each component of the UL-listed wiring system is described and illustrated. ■ Steelcase Inc., Grand Rapids, Mich.

circle 406 on inquiry card

**LOADING DOCK REPLACEMENT** / Set-in loading dock ramps—two hinged-lip ramps and one fully automatic hydraulic type—are shown in a four-page product folder. These steel box structure ramps are said to be fast and inexpensive to install, either in existing or new dock facilities. ■ Serco Engineering Corp., London, Canada.

circle 407 on inquiry card

**COMMERCIAL FLOOR COVERINGS** / Fully-illustrated with color photographs of each flooring pattern and colorway, an eight-page catalog presents the *Aristocon*, *Classicon*, and *Architect's Choice* lines of no-wax, vinyl-asbestos resilient flooring products. Said to be especially stain-resistant, these floor coverings are suitable for medium-, and light-commercial, as well as residential, applications; all conform to Hill-Burton requirements for flame spread. Installation and maintenance suggestions are included. ■ Mannington Mills, Inc., Salem, N.J.

circle 408 on inquiry card

**AUTOMOBILE SHOWROOMS** / Photographs of automobile dealerships all over the country are used to illustrate the variety of floor plans and architectural treatments possible with the pre-engineered building system described in a color brochure. Features such as speed of erection, predictable cost and ease of future expansion are discussed in the literature. ■ Butler Mfg. Co., Kansas City, Mo.

circle 409 on inquiry card

**SECURITY GLASS** / The Metropolitan Toronto West Detention Centre (Moffat, Moffat & Kinoshita, architects) is featured in a color brochure illustrating this manufacturer's line of laminated security glass products. Glass used included several types of *Penal-Gard*, *Armolite* bullet-resisting glass, and *Secure-Gard* alarm-wired glazing. Performance, dimensional and test data are given. ■ ASG Industries, Inc., Kingsport, Tenn.

circle 410 on inquiry card

**CONTRACT CARPETING** / Books containing actual samples of three commercial carpet series are available to the design professional. These are "Cherryvale, 7" a deep cut-pile *Antron III Nylon* (19 colorways); the "Falcon" series in *Zefran*, a tightly tufted loop pile in 13 earth-tone shades; and "Barrister," also in 13 earth-tone colors, with a *Zefran* pile in a cut-pile and loop pattern. ■ Saxony Carpet Co., Inc., New York City.

circle 411 on inquiry card

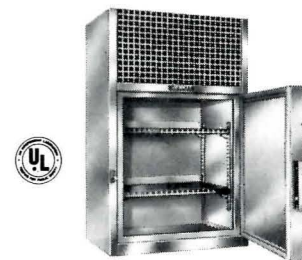
**ARCHITECTURAL PORCELAIN** / A color chart contains 28 "Terra Cal/Nature Tone" colors and 32 semi-gloss/semi-matte colors for procelain-on-steel, laminated, veneer and insulated panels. The literature also has suggestions for specifying procelain enamel colors and glass, as well as information about independent sources for test results, weatherability and color permanence. ■ Alliance Corp., Alliance, Ohio.

circle 412 on inquiry card

more literature on page 161

# WE FIT IN

## STAINLESS STEEL WALL MOUNTED REFRIGERATORS, FREEZERS



**WM-CW\*** series eye-level, wall mounted refrigerators are offered in 4 sizes featuring cold wall cooling systems with push-button defrost and automatic reset. Two removable, adjustable stainless steel shelves are provided. Front mounted grille removes easily for servicing.

**WM-1-CW** Capacity—1.5 cu. ft. (45 ltr.)

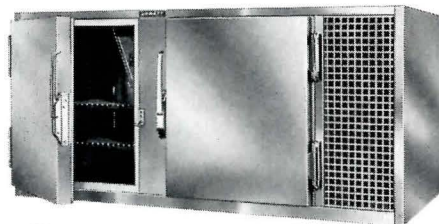
**WM-2-CW** Capacity—2.3 cu. ft. (65 ltr.)

**WM-3-CW** Capacity—3.2 cu. ft. (95 ltr.)

**WM-4-CW** Capacity—4.3 cu. ft. (125 ltr.)

**WM-3-F-CW** freezer is available only in a 3 cu. ft. (85 ltr.) capacity and has a manual hot gas defrost.

Capacity—3.0 cu. ft. (85 ltr.)



**WM-BC** series space saving, double-door, wall-mounted refrigerators are available in 2 sizes. Furnished with 4 stainless steel shelves, they have a blower-coil cooling system with automatic off-cycle defrost and a condensate evaporator. Condensing unit is easily serviced by removing front mounted clip-on grille.

**WM-7-BC** Capacity—6.6 cu. ft. (190 ltr.)

**WM-10-BC** Capacity—9.6 cu. ft. (275 ltr.)

\*With explosion proof interior.

Jewett also manufactures a complete line of blood bank, biological, and pharmaceutical refrigerators and freezers as well as morgue refrigerators and autopsy equipment for world wide distribution through its sales and service organization in over 100 countries.



For more data, circle 69 on inquiry card



# See the New Decor Sprinklers from Viking

You won't believe their size, their beauty,  
their price. So we'll send you one free.

Decor is the first miniature sprinkler made by an American manufacturer. It's tiny. It's handsomely styled. And it's offered in pendent, upright, or sidewall models. Each comes in satin or polished chrome; natural or polished brass. With a choice of flush or recessed escutcheons. The glass bulbs are color coded for six temperature ratings. And unlike some glass bulb sprinklers, these are fast-acting—not slow. Their price is equally attractive: more than most link and lever models, but less than the flush or concealed sprinklers you've been using.

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"See us in Sweet's Catalogs"

For more data, circle 70 on inquiry card

**GLASS-SHADED LAMPS** / A hanging lamp, a 28-in.-high table lamp, and a 53-in.-high floor lamp are offered with cone-shaped glass shades in green, "cognac", or white. Lamp bases are available in polished chrome or polished brass. All models have three-way sockets, and can take up to a 150W bulb. A 48-page catalog describes these and other fixtures in the manufacturer's product line. ■ Laurel Lamp Mfg. Co., Inc., Newark, N.J.

circle 329 on inquiry card

**CERAMIC TILE INSTALLATION** / Using one coat of Scotch-Clad waterproofing 30-mil thick in place of sheet-type membranes, the tile installation system shown saves labor time and eliminates depressed slab requirements and heavy grout beds. The self-leveling deck coating cures within 24 hrs to a tough, flexible waterproof membrane with good elongation and recovery properties; excellent impact, abrasion and chemical resistance; and good adhesion to properly prepared concrete or wood floor surfaces. Thin-Set tile adhesive is applied by notched trowel (top right photo), and primed ceramic or quarry tile is set in place. Floors can be used 48 hrs after installation has been completed. ■ 3M Co., Adhesives, Coatings and Sealers Div., St. Paul, Minn.

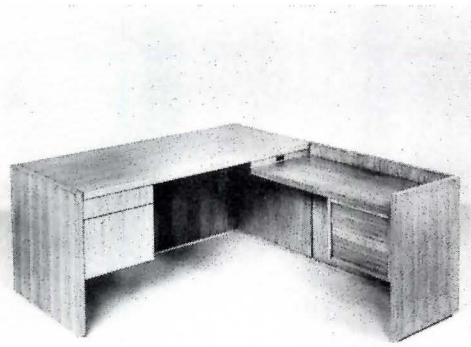
circle 317 on inquiry card

**NOISE-ISOLATION HANGERS** / Kinetics Model AF isolation hangers are designed to reduce the transmission of objectionable noise between building structure and suspended ceilings, lights, ductwork, electrical equipment, exhaust fans, piping, or other mechanical equipment. A plated, reinforced steel bracket, which takes up to a #9 wire or a 1/4-in. bolt, encloses a fiberglass resilient element. This isolation pad is a precompressed, high density matrix that provides viscous damping by controlled air movement or flow between fibers. Resiliency will not deteriorate with time. Two model hangers are available, with a load range of from 20 to 200-lbs. ■ Peabody Noise Control Inc., Dublin, Ohio.

circle 328 on inquiry card

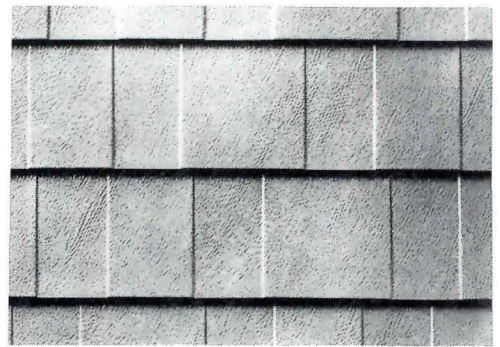
**DRAFTING TABLES** / Seven different sizes of drafting surfaces are available in the "Stylelist" line of tables; all tops are finished in cool green to ease eye strain. The "Stylelist" drafting table is said to be economically priced, and has a rigid tubular steel base, adjustable floor levelers, and a tilt angle design that locates the top pivot point towards the front edge of the table, minimizing changes in front elevation when the tilt angle is changed. Table shown includes a reference shelf available with each size top. ■ Mayline Co., Inc., Sheboygan, Wis.

circle 316 on inquiry card



**OFFICE FURNITURE** / Pictured is one version of the *Multicube* series of architecturally styled desks and credenzas offered in rift-cut oak or walnut veneers. More than 80 different units are available in the *Multicube* contract office collection. ■ The Gunlocke Co., Inc., Wayland, N.Y.

circle 327 on inquiry card



**TEXTURED ALUMINUM SIDING** / Said to combine the appearance of wood shingles with the maintenance advantages of aluminum, *Shingl-Wood* siding is offered in a wide range of colors. The siding comes in 12-ft lengths, and requires no special installation methods. ■ Alcan Aluminum Corp., Cleveland, Ohio.

circle 330 on inquiry card  
more products on page 155

# COMPARE

## You can't buy a better insulating glass unit...here's why...

Seal: our own exclusive Polyseal® system incorporating a combination of the finest pressure sensitive and low permeability sealants.

Glass: quality glass, meets or

exceeds requirements defined in Federal Specifications.

Spacer: roll formed Lock Seam aluminum tubing. Custom manufactured in house by Twin Pane to assure complete quality control.

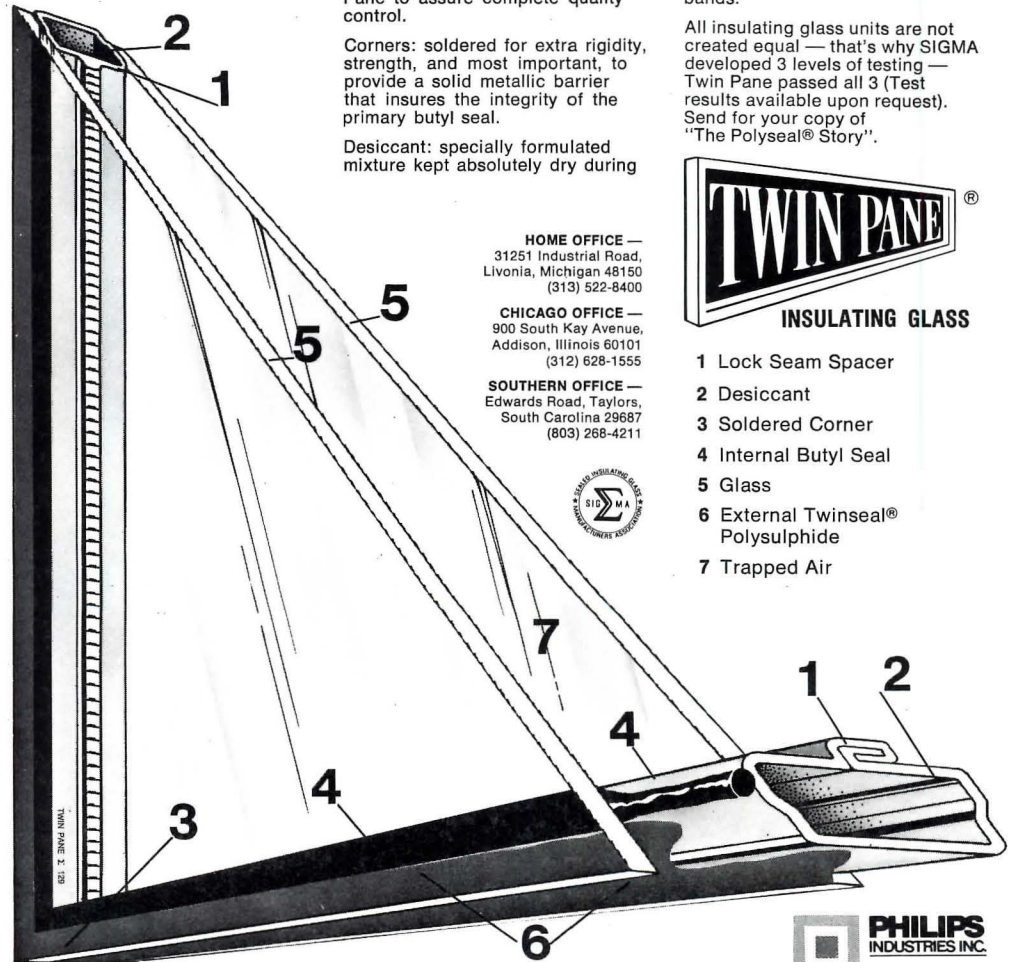
Corners: soldered for extra rigidity, strength, and most important, to provide a solid metallic barrier that insures the integrity of the primary butyl seal.

Desiccant: specially formulated mixture kept absolutely dry during

fabrication assures complete dehydration and vapor-free performance.

Edge protection: Twin Pane construction does not require bands.

All insulating glass units are not created equal — that's why SIGMA developed 3 levels of testing — Twin Pane passed all 3 (Test results available upon request). Send for your copy of "The Polyseal® Story".



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900 South Kay Avenue,  
Addison, Illinois 60101  
(312) 628-1555

**SOUTHERN OFFICE** —  
Edwards Road, Taylors,  
South Carolina 29687  
(803) 268-4211

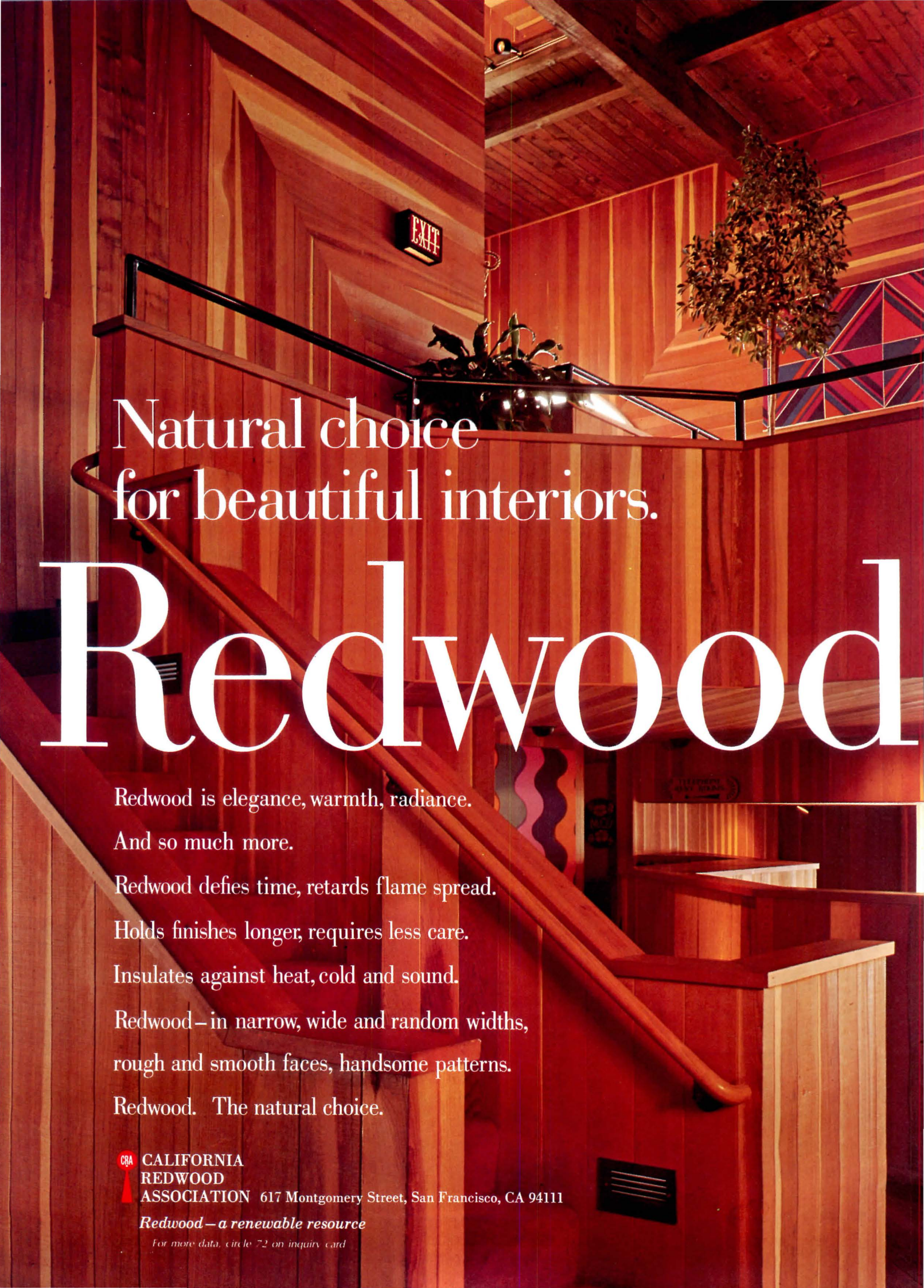


**INSULATING GLASS**

- 1 Lock Seam Spacer
- 2 Desiccant
- 3 Soldered Corner
- 4 Internal Butyl Seal
- 5 Glass
- 6 External Twinseal® Polysulphide
- 7 Trapped Air



For more data, circle 71 on inquiry card



Natural choice  
for beautiful interiors.

# Redwood

Redwood is elegance, warmth, radiance.

And so much more.

Redwood defies time, retards flame spread.

Holds finishes longer, requires less care.

Insulates against heat, cold and sound.

Redwood—in narrow, wide and random widths,  
rough and smooth faces, handsome patterns.

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*Redwood — a renewable resource*

*For more data, circle 72 on inquiry card*



**ENERGY-SAVING FLUORESCENT** / A "Super High Output" lamp has been added to the energy-saving *Econ-o-watt* line of fluorescents: the "F96T12CW" lamp uses 14 per cent less energy than the standard SHO lamp. Although it provides somewhat less illumination, the lamp actually produces more lumens per watt than other fluorescent types. *Econ-o-watt* fluorescents are suggested where lighting levels already exceed IES recommendations, and where energy savings are important. ■ Westinghouse Electric Corp., Lamp Commercial Div., Bloomfield, N.J.

circle 322 on inquiry card

**HVAC CONTROLS MONITOR** / The "Error Detection and Indication Package" shown here is intended to work with the manufacturer's *EPTAK* microprocessor hvac/security/life safety management systems to provide early warning of system degradation. The package locates and indicates, by LED indicators and audible alarms, the region of system malfunction, whether internal or external to the control system. The system monitor consists of two plug-in modules and necessary software, and costs less than \$600. ■ Eagle Signal Div., A Gulf + Western Co., Davenport, Iowa.

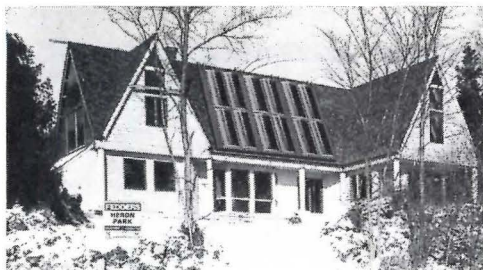
circle 331 on inquiry card

**LIGHTWEIGHT SPACE FRAME** / A 3000 sq ft roof structure was constructed from 120 5-ft sq modules on site in less than two days. The triangular space frame components consist of 1 5/8-in.-sq, 12-gauge electric-welded mechanical tubing, both straight and "S" shaped, coated with *Empigard* polymer/metallic finish, as well as connecting plates. Assembled with specially-designed nuts and bolts, the units can be field-fabricated on the ground, or in place at the job site, into standard 4-ft or 5-ft modules. These modules are then joined to form roof units of various sizes and spans. Assembly time is said to be much faster than many presently used roof construction methods. ■ Power-Strut, Van Huffel Tube Corp., Warren, Ohio.

circle 310 on inquiry card

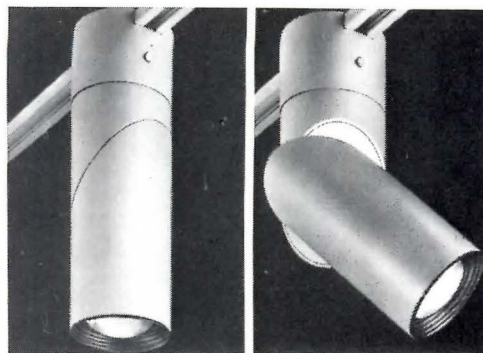
**FOUR-WAY LOCK** / The Israeli-designed *Mul-T-Lock* offers horizontal and vertical door protection with one turn of a key: the four-way safety lock installs inside any door, and releases as many as six steel bolts in four directions. These control the top, sides and bottom, while the front of the door is secured by three bolts of 10 mm thickness each. The lock cylinder is replaceable only from the manufacturer; the mechanism itself is protected by steel plates against *jimmying* or *forcing*. Installation in existing doors is done using special drills and guides, and is said to take less than 90 minutes with no damage to either door or frame. ■ *Mul-T-Lock* of New York, New York City.

circle 313 on inquiry card



**SOLAR-ASSISTED HEAT PUMP** / The roof-mounted solar collector panels shown here, part of a solar hydronic heating system, combined with a *Flexhermetic II* heat pump as an additional source of heat, provide warmth for this 3200 sq ft house in New Jersey. Designed by W. Richard Wilson of Architectural Partnership to take full advantage of direct solar heating through large glazed areas facing south, fewer solar panels are required. ■ Fedders Corp., Edison, N.J.

circle 312 on inquiry card

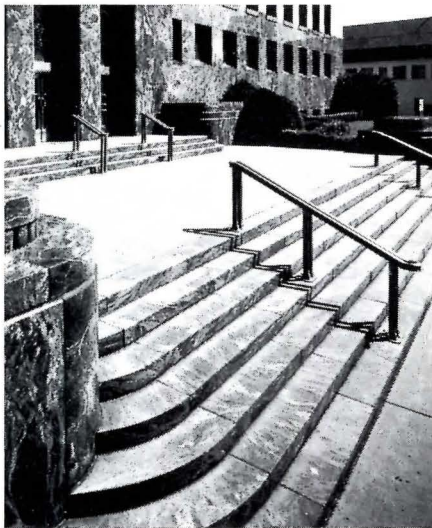


**TRACK LIGHTING** / The *GeoMetrik* fixture is an integrated unit that fits flush to the ceiling or wall, with posts, harnesses, wires and connectors completely hidden. Aiming and shape of the fixture are adjustable: both base and lamp housing swivel as shown. ■ TrakLiting, Inc., City of Industry, Calif.

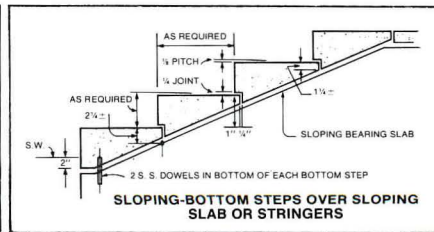
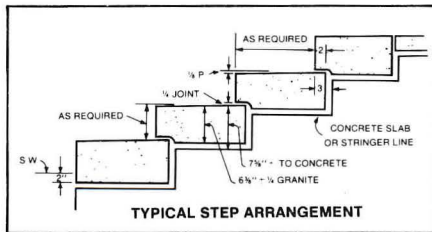
circle 323 on inquiry card  
more products on page 157

# Granite.

## Tough enough to take the thunder of 10 billion feet.



Architect: Tinsley Higgins Lighter & Lyon, Des Moines, IA



What else but granite can take 38 years of wear and weather without fading, staining, or showing measurable wear? That's what made Cold Spring granite the ideal choice for the Banker's Life Insurance Building when it was built in Des Moines, Iowa, in 1939. And that same unique combination of beauty and unsurpassed durability make it ideal for today's floors, facades, core walls, steps, malls and walkways — wherever you need maximum durability that's virtually maintenance-free.

For more information, plus a free copy of our 16-page, full color catalog showing all 18 Cold Spring colors available, call toll free **800-328-7038**. In Minnesota, call (612) 685-3621. Or write to the address below.



**Cold Spring Granite Company**, Dept. AR-4 202 South 3rd Avenue, Cold Spring, MN 56320

For more data, circle 73 on inquiry card

# On September 1, 1978, our structural shapes and H-piles will take on new dimensions

## improved production scheduling for us ...better service to you

The new dimensions for W and HP Series will conform to the new standards of the American Society for Testing and Materials and the American National Standards Institute.

Bethlehem will begin rolling its wide-flange structural shapes, H-piles, and S24 and S20 American Standard Beams to a new series of profiles effective September 1, 1978.

The changeover will affect virtually all of our presently available W and HP Series structural sections, but only the S24 and S20 sections of the American Standard Beam series. The new wide-flange series will have 11 fewer sizes than are currently available. The number and nominal weight of H-pile sections will not change.

The new series will continue to provide the same range of capacities as are available in the currently produced series. In fact, the dimensional changes in some of the sections will result in small improvements in certain properties.

### Why the change?

The primary reason for the change is to enable our rolling mills to produce a larger number of different weight beams without interrupting

production to change rolls. In other words, the changeover makes certain key dimensions common to more sections. Less downtime to change rolls will allow us to improve rolling cycle time and our production scheduling...and that means better service to you.

### A one-step transition

In the best interest of our customers, Bethlehem's changeover to the new series will be accomplished at one time. We will redress the mill rolls for nearly 200 profiles in time to begin production on September 1, 1978.

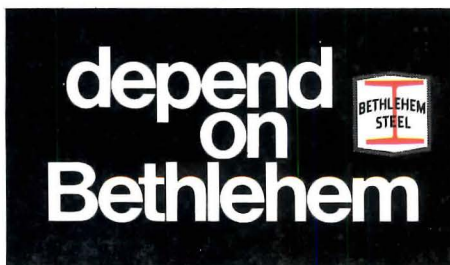
We're trying to make this transition as smooth as possible for our

customers. That's why we're making this announcement well in advance of the changeover date. By doing so, we hope that many applications requiring the currently produced sections can either be ordered and rolled before April 1, or that there will be time to anticipate, schedule, and work designs around the change.

But we recognize the transition will cause some problems...and here's how we can help.

We have a variety of interim design and engineering aids and tables prepared specifically to help you during the changeover period. Our Sales Engineers will be in a position to furnish you with copies of this material, or answer questions you may have regarding the new profile series. You can get in touch with a Bethlehem Sales Engineer through the Bethlehem sales office nearest you. Bethlehem Steel Corporation, Bethlehem, PA 18016.

TELEPHONE:

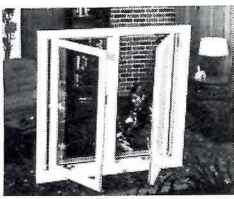


Ask for Sales Engineer  
Atlanta (404) 522-4918  
Baltimore (301) 685-5700  
Boston (617) 267-2111  
Buffalo (716) 856-2400  
Chicago (312) 664-5422

Cincinnati (513) 381-6440  
Cleveland (216) 696-1881  
Detroit (313) 336-5500  
Houston (713) 659-8060  
Los Angeles (213) 726-0611  
Milwaukee (414) 272-0835

New York (212) 688-5522  
Philadelphia (215) 561-1100  
Pittsburgh (412) 281-5900  
St. Louis (314) 726-4500  
San Francisco (415) 393-4800  
Seattle (206) 285-2200

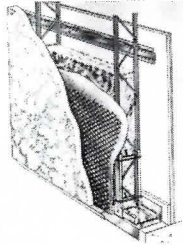
**CASEMENT WINDOWS** / Constructed of treated



wood with insulating glass bedded in a flexible vinyl glazing channel, the "Uni-Case" window may be specified for either casement or awning application. All exterior wood parts are factory primed; interior surfaces are unfinished, "stain-grade" wood. When installed as an awning unit, the "Uni-Case" opens out; the casement version swings open a full 90 degrees. ■ Malta Div., Philips Industries Inc., Malta, Ohio.

circle 318 on inquiry card

**POLYETHYLENE-BACKED LATH** / "Poly-Backed

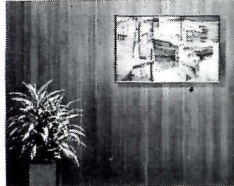


Metal Lath" allows lath and film barrier to go up at the same time, saving labor costs for machine-applied plaster in interior partition and curtain wall construction. The transparent film prevents the plaster from blowing

through the "Junior Diamond Mesh" lathing, and also acts as a weathertight barrier to prevent vapor-condensation problems in curtain walls. The system requires no new techniques or tools. ■ United States Gypsum Co., Chicago, Ill.

circle 306 on inquiry card

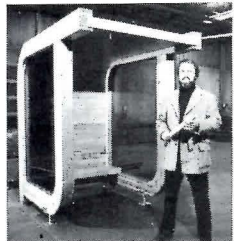
**INTERIOR PANELING** / Available in 3/8-in. nominal



thickness, this clear-grain solid wood paneling is said to provide the warmth of natural redwood at an economical price. Each mixed-grain redwood panel is reversible: one face is saw-textured (shown), the other, surfaced smooth. The edges are eased with a tongue-and-groove pattern, and allow blind nailing. Panels may also be face nailed or glued. ■ The Pacific Lumber Co., San Francisco, Calif.

circle 308 on inquiry card

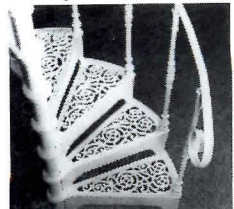
**WOOD TRANSIT SHELTERS** / Designed by Joseph



Kinnebrew IV to fit both the landscape and the architecture of the city of Grand Rapids, Mich., the bus shelter shown is framed completely in wood, and is said to be priced competitively with existing shelters. Using laminated timbers extensively, the shelter provides protection, comfort, durability and ease of maintenance; it is approved for UMTA funding. ■ Scyma Corp., Grand Rapids, Mich.

circle 315 on inquiry card

**ANTIQUE-STYLE STAIRCASES** / Reproduction cast



iron spiral staircases are available in both Georgian and Victorian designs, in a wide range of diameters and baluster styles for any height stair. Units are shipped knocked down from the distributor, and are said to be easily re-assembled. This firm also handles a line of cast iron reproduction furniture, stoves, accessories and lighting posts. ■ Steptoe & Wife Antiques Ltd., Toronto, Ontario.

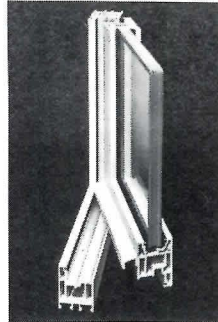
circle 309 on inquiry card



**BIRCH VENEER CABINETS** / A hand-wiped stain finish produces a new, deep-toned color in the *Gold River* line of birch kitchen cabinets. A top coat of catalyzed alkyd urea seals and protects the finish. This beveled-edge cabinet style is available in 80 different sizes of base and wall units, most with self-closing doors and drawers, and adjustable wall cabinet shelves. ■ International Paper Co., Portland, Ore.

circle 325 on inquiry card

**PVC WINDOW SYSTEMS** / Developed in West



Germany and in use in Europe for 20 years, rigid PVC window systems are now available in the U.S. The window is multi-chambered, with all joints and sections fused together to form a one-piece solid frame and sash. The air locked into the individual chambers is said to provide added insulation against temperature changes, prevent condensation, and greatly reduce sound transference. An internal baffled drainage system assures effective weepage. Window profiles interchange to fit most design or construction requirements, including renovations. ■ Dynamit Nobel of America, Inc., Northvale, N.J.

circle 326 on inquiry card  
more products on page 159

**Atlanta's C & S Bank protects money. All-weather Crete insulates the bank and the money.**

When it comes to roof deck protection, Atlanta's C & S Bank has it! All-weather Crete insulation. The insulating dry fill that's compacted in place. No seams. Just one monolithic blanket that's sloped to the drains providing thermal protection as well as positive water drainage. All-weather Crete, applied by licensed applicators, is one of those unique building materials that provides the architect with an outstanding, trouble-free roof deck insulation, the contractor with a fast job (no curing time with All-weather Crete), and the owner with a maintenance-free roof deck that protects and saves fuel costs year after year after year. Get the facts — see why most of this nation's outstanding architectural achievements utilize All-weather Crete for roof deck and plaza insulation. Contact Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525, (312) 735-3322, or see Sweets for the address of your local applicator.



C & S Bank, Atlanta • Aeck Associates, Inc., Architects • Alexandre Georges, Photographer



For more data, circle 74 on inquiry card

# Everybody's cheering this "draft dodger"

Fuel savings of up to 33 1/3% are reported after installation of draft-free replacement windows with AllianceWall porcelain panels.

A one-inch insulated AllianceWall porcelain-on-steel panel provides approximately as much insulation as a 12-inch brick wall. That's why building managers are replacing excessive glass areas with these energy-saving insulated panels. When used in conjunction with new type aluminum and/or wooden replacement windows, they save loads of precious fuel. Some customers report savings up to 8<sup>C</sup> per month, per square foot of floor space after panels and replacement windows have been installed. Shown here are three typical examples. Write or phone for complete information and prices.

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(216) 823-1605

*For more data, circle 75 on inquiry card*



**HOME-HEATING FIREPLACE** / Lightweight and adaptable for do-it-yourself installation, the *Lighthouse* fireplace combines with existing forced-air heating ductwork to supply heat throughout a house. Unheated outside air is used to support combustion; an internal damper controls the amount of air, increasing or decreasing the fireplace flame level. A self-contained heat exchanger removes thermal energy from the hot combustion gases; air from the cool air return duct is forced over this heat exchanger and circulated throughout the house by the existing forced air furnace fan. The *Lighthouse* plenum contains a thermister connected with the central thermostat, so that the main furnace operates only when the fireplace is not lit or when it is unable to supply all the heat required. The unit permits a variety of flush, recessed or through-wall installations; the UL-listed fireplace requires no special insulation or floor reinforcement. ■ Lighthouse Fireplaces, Inc., Peoria, Ill.

circle 319 on inquiry card

**EQUIPMENT ENCLOSURES** / Field labor required to erect hvac equipment enclosures is said to be significantly reduced by the special hinge joint assembly on the *Uni-Housing* system panel. The presealed, insulated joint allows panels to easily lock together, forming air tight, structurally sound, full-length seams. As shown in the photo, each panel is installed by lifting it to a vertical tilt position, raising it 2-in. to engage the hinge joint assembly, and slamming the panel closed. Acoustical performance of the fully insulated enclosures is said to be excellent. ■ United Sheet Metal, Div. of United McGill Corp, Westerville, Ohio.

circle 320 on inquiry card

**MICROFICHE READER SYSTEM** / Described as the first "works under the counter" microfiche reader, this "Cube" unit, shown in its own specially-designed work station, can also be dropped into a desk, counter top, teller station, etc.—wherever the operator must be an integral part of the system. The cube, measuring 18-by 18- by 22-in., contains carriage, lens, and an optical system employing an inverted light path. An image rotation option offers two-way viewing for sharing information or data. Protective glass over the screen makes it virtually impossible to wipe out the display with ambient light. The price of the microfiche reader and its total built-in work station is under \$1500. ■ Data View, Inc., Menomonee Falls, Wis.

circle 311 on inquiry card



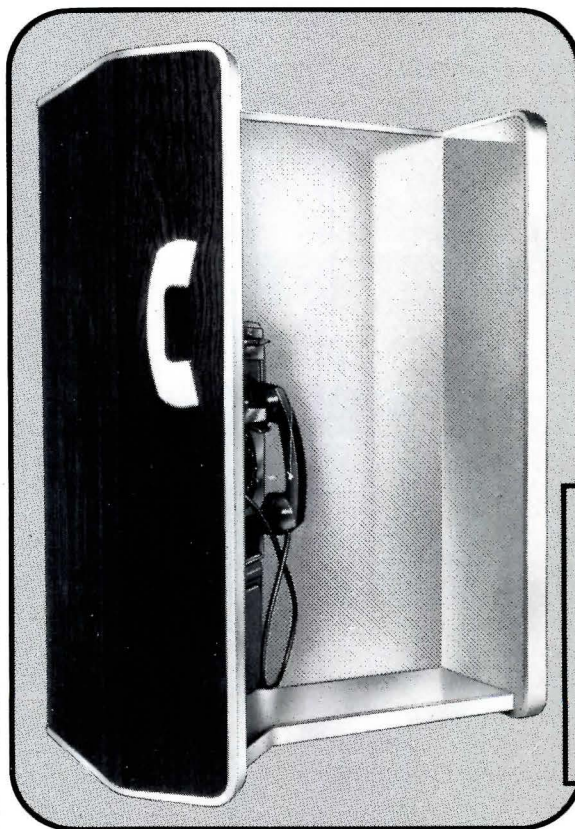
**LOW-PROFILE BUILDINGS** / The "Skyline" series of pre-engineered steel buildings offers the designer a variety of roof, floor plan, and column spacing options in structures of 20,000 sq ft or more. Open-web bar joists replace purlins to attach roof components, permitting wider free spans and a total building width of up to 600 ft. Basic construction methods are compatible with tilt-up, masonry and other collateral walls; the virtually flat roofs can be either built-up or steel panels. ■ Marathon Metallic Building Co., Houston, Texas.

circle 335 on inquiry card

## Compatible Quiet

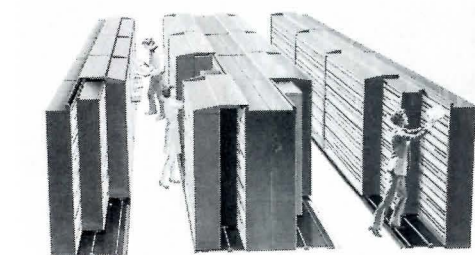
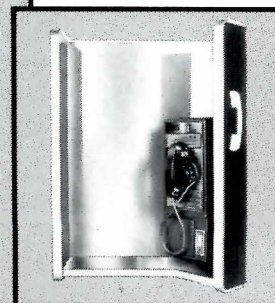
### The New ADCO 20-L ACOUSTI-CALL® Booth

*Compatible* because it is versatile. The 20-L accommodates coin telephone mountings at either the 54" universal coin slot height or the regular height. And exterior finishes include walnut wood grain; beige or blue textured enamel paint on steel; plus stainless steel, aluminum or plastic laminate options.



*Quiet* because of its sound-absorbing stainless steel acoustical interior panels. And because no one knows more about telephone booth design than ADCO.

Designate 21-L for right side mounting.



**HIGH-DENSITY FILING** / The *ThinLine* Roll-Away Tri-File shown above consists of modules of 36-in. wide filing units arranged in rows, three deep. The rear row is stationary, and is one filing unit longer than the two in front. Units in middle and front rows roll aside to provide full access to all tiers. This arrangement allows many people to work at the files independently, using the permanent aisles for arm's length access to the open-shelf lateral filing system. A variety of tier sizes and containers is available to hold virtually any kind of material, including letters and documents, hanging computer printouts, tape reels, etc. ■ Supreme Equipment & Systems Corp., Brooklyn, N.Y.

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World's Largest Manufacturer of Telephone Booths

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So why waste time getting drainage systems piece by piece. Get everything you need from one place, at the same time—on the same truck. From Tyler.

For more information Write Tyler Pipe, Box 2027, Tyler 75710.

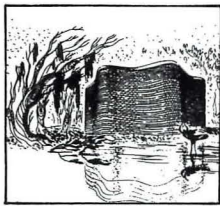
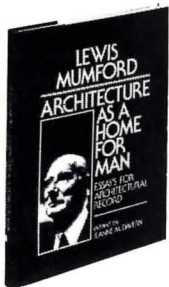
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**FLUORESCENT LIGHTING** / Each of ten different lighting configurations in the "Quad Fluorescent System" is described in an illustrated catalog. Individual quads lock together to form runs of almost any length, strengthened by extruded yokes placed internally at regular intervals. Product literature describes plans for ceiling and wall illumination, with either a low-brightness parabolic louver or a prismatic lens for complete lamp shielding. Full dimensional and photometric data are included; typical surface-, stem- and wall-mounted layouts are shown. ■ Lightolier, Jersey City, N.J.

circle 413 on inquiry card

**VINYL WIRING DUCT** / Three different UL-listed wiring duct styles are described in a four-page product brochure: duct sidewalls with open slots, closed slots, and round holes. Featured is the "Y-R-LOC" open-slot duct and clip system for industrial wiring. ■ Taylor Electric, Inc., Marble Falls, Texas.

circle 414 on inquiry card

**WATER HEATERS** / A full line of gas, electric and oil heaters and storage tanks is briefly described in a four-page brochure. Included are residential and commercial water heating equipment; hydronic boilers; pool, spa and hot tub heaters; and food waste disposers. Special emphasis is placed on products which meet ASHRAE standard 90-75 for "Energy Conservation in New Building Design." ■ A. O. Smith Corp., Kankakee, Ill.

circle 415 on inquiry card

**AXIAL FLOW FANS** / Designed for primary air, forced draft, and induced draft fan applications for utility and large industrial power plants, variable pitch, axial flow fans are said to offer high operating efficiency over a wide range of boiler loads. An eight-page color brochure describes CEMAX fans, and outlines features intended to minimize problems involved in the service of coal-fired power plants. ■ C-E/MHI Fan Co., Windsor Locks, Conn.

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**MATERIALS HANDLING** / The *Hy-Lift* hydraulic lift moves pallets and random loads of 3 tons or less up or down 20 ft; a product brochure illustrates material handling from floor-to-floor, dock-to-basement, dock-to-second floor, multi-level storage and mezzanine space utilization. Units are said to be easily installed exactly where needed, inside or outside new or existing buildings. ■ Pflow Industries, Milwaukee, Wis.

circle 417 on inquiry card

**SOLAR COLLECTION PANELS** / Flat plate collector panels for solar systems to heat building interiors and domestic hot water supplies are described in an eight-page booklet. Three different collector types, designed to accommodate various framing and performance requirements, are discussed: collectors are modified by altering glazing, piping, and other components. The booklet answers common questions about solar systems, including topics of cost and reliability; diagrams illustrate design features, and color photos show solar collectors in place. Authorized distributors and agents are listed. ■ PPG Industries, Pittsburgh, Pa.

circle 418 on inquiry card

**DRAFTING EFFICIENCIES** / Drafting furniture designed to increase productivity by bringing the work to the draftsman without his bending or leaning is described in two "Drafting Room Economies" booklets. ■ Hamilton Industries, Two Rivers, Wis.

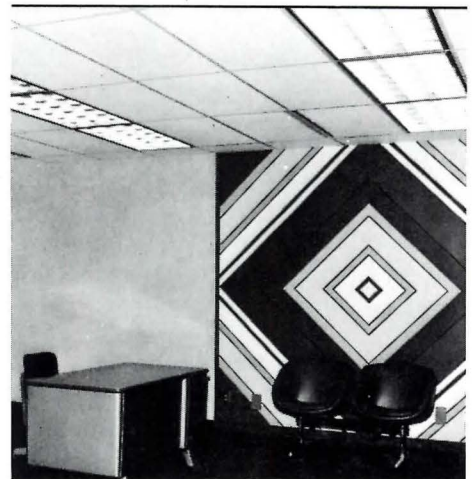
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more literature on page 163

# AZTEC

45 Aztec low temperature electric radiant ceiling panels used for perimeter heat, combine with a variable air volume system to *save energy* and increase comfort in the Huffman District Office of Alabama Power Company in Birmingham.

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# "Ceco helped us finish this job five months ahead of schedule ...they're pros"

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**PAPER HANDLING SYSTEM** / Comprised of six simple trays that hold every size paper from punched cards to computer printouts, the *Paperflo* system for organizing office paperwork is described in a color brochure. Information is provided about how the employee, the manager and the company can increase productivity and reduce paperwork costs; photos show the *Paperflo* in actual office installations. ■ Steelcase Inc., Grand Rapids, Mich.

circle 420 on inquiry card

**ACCESSIBLE LAVATORIES** / An illustrated catalog features a full line of washroom vanity cabinets designed for easy wheel chair clearance and convenient use of mirror and waste receptacles by handicapped persons. Product description includes material and construction details, standard accessories, dimensional data and installation instructions. All consoles meet or exceed ANSI specifications for accessible facilities; towel, waste and soap systems are built into the cabinet. ■ RAR Enterprises, Houston, Texas.

circle 421 on inquiry card

**AIR HANDLING SILENCER** / The *Slimshield Quiet-Vent* silencer/louver for air conditioning systems and equipment is described in a four-page product bulletin. Said to be ideal for installation in limited spaces, the 4-in.-deep silencer/louver has good noise reduction characteristics in all octave bands, with a 9 dB reduction in speech frequencies. Technical data presented includes self-noise power levels, face-adjustment factors, and aerodynamic performance of the *Slimshield* unit. ■ Industrial Acoustics Co., Inc., Bronx, N.Y.

circle 422 on inquiry card

**EMERGENCY SHOWERS** / Illustrated catalog fully describes more than 125 different eyewashes, drench showers, laboratory sprays, and decontamination stations, including 18 new products, all of which meet or exceed OSHA requirements. Special emphasis is placed on emergency drench shower/eyewash combination units where the product can be modified by simply substituting shower heads, valves, or piping. Drawings, photos and text provide complete technical information on each item; flow data is given for both eyewashes and drench showers. ■ Western Drinking Fountains, Glen Riddle, Pa.

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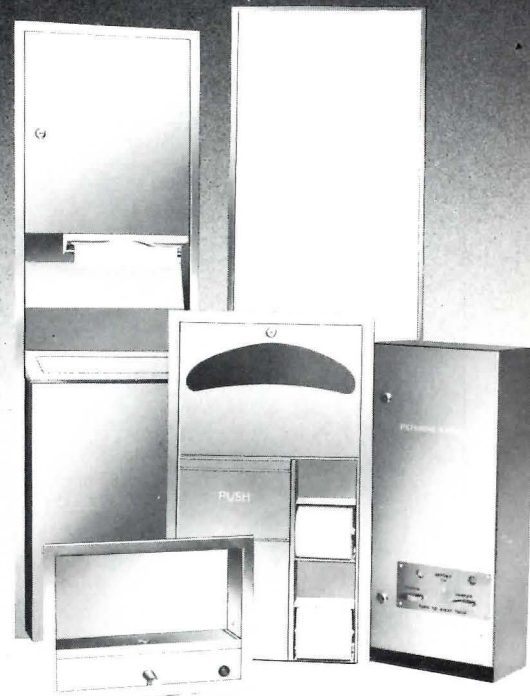
**HIGH DENSITY FILING** / A color brochure describes in text, drawings, and specifications the *ThinLine* roll-away *Tri-file* and *Bi-file* systems, which allow for high-density capacity, yet keep all folders within arm's reach. These modular cabinets are designed for maximum space utilization in the storage of letter and legal size correspondence and folders, X-rays, EDP hanging suspension binders, tape reels, books, etc. ■ Supreme Equipment & Systems Corp., Brooklyn, N.Y.

circle 424 on inquiry card

**CONDENSING UNITS** / Air-cooled condensing units, for use in commercial and industrial refrigeration and air conditioning applications, are described in a color brochure. Typical specifications for condensers of from 15- to 100-tons are given; larger capacities are available for special industrial applications. Air-cooled units are completely factory piped, wired, and tested, and come with a control system. Said to be ideal for low ambient temperature use, these units are especially suitable for areas of limited or restricted water supply. ■ Vilter Mfg. Corp., Milwaukee, Wis.

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There are many decisions to be made when remodeling a washroom. One of the most important of these is what washroom equipment to specify. You want units that are attractively designed, durably constructed and easy to use — like the Parker units shown. To make your washroom even better the second time around, choose stainless steel units from Parker's complete washroom equipment line.

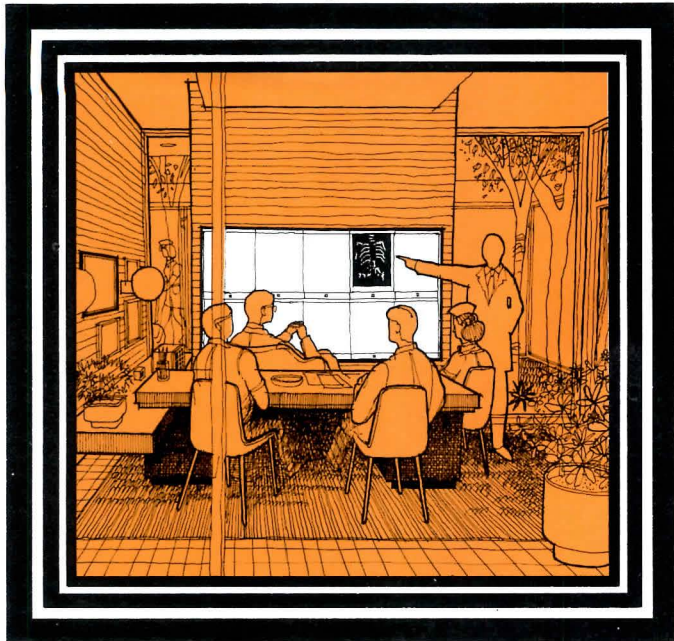
**S** See our catalog in Sweets.

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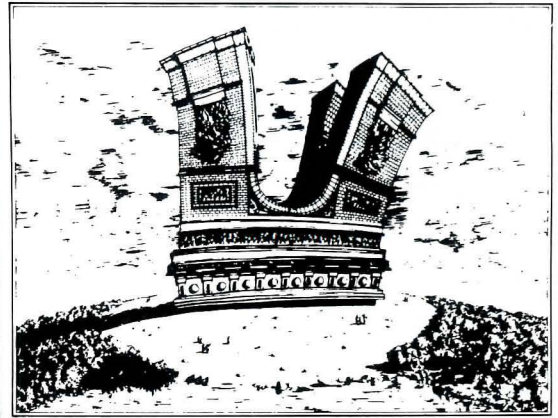
Note: Units may be ganged side-by-side & are catalogued up to six units wide with continuous diffuser or stacked one-over-one up to multiples of six-over-six. Installed either surface mount or recessed.

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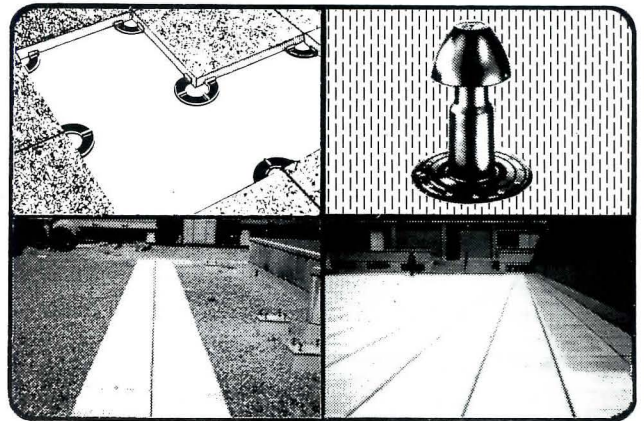
a book of drawings by DAVID MACAULAY,  
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\*Publishers Weekly

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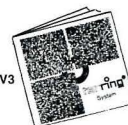
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**Offices opened**

J. L. Bates Associates Architects announce the opening of an office at 160 Newton Road, 404, Virginia Beach, Virginia.

Carr Daigle Hathaway Architecture Planning have opened an office at 7 Parker Place, 2600 South Parker Road, Suite 371, Denver, Colorado.

The Eggers Group have announced the opening of an office at 2115 Hamilton Avenue, Trenton, New Jersey.

Gove Associates, Inc. have opened three new offices at 517 Bartlett Street in Lansing, 106 South Broadway in Cassopolis and 219 Paw Paw Street in Paw Paw, Michigan.

Ellen Harland has established a new private architectural practice with offices at 423 West San Francisco, Santa Fe, New Mexico.

Michael Lisek and Carl R. Klimek announce the formation of Lisek & Klimek Architects & Planners, 407 South Dearborn, Chicago, Illinois.

Sam Listi and George Outlaw have announced the formation of Listi/Outlaw, 2697 North Loop West, Houston, Texas.

Matteo Nardini Architect & Associates' new office is located at 26868 Highway # 189, Agua Fria Mini Mall at Blue Jay, California.

Cesar Pelli has started a new architectural firm, Cesar Pelli & Associates, 1056 Chapel Street, New Haven, Connecticut.

Parsons Brinckerhoff announce the opening of a new office named Parsons Brinckerhoff Quade & Douglas, Inc. located at Suite 960, Dexter-Horton Building, 710 Second Avenue, Seattle, Washington.

Sieco, Inc. announce the opening of a branch office located at Watterson City Towers, 1930 Bishop Lane, Suite 406, Louisville, Kentucky.

Merle A. Simpson, announces opening of offices at 3605 Katy Freeway, Suite 104, Houston, Texas and 801 Quince, Suite B, McAllen, Texas. The firm name is Merle A. Simpson, AIA., Architect Robert S. Simpson, Associate Architect.

Norbert Turkel announces the formation of THE TURKEL COLLABORATIVE, Architects and Planners, 210 East 52nd Street, New York, New York.

James Tyler and Stephen Woolley have formed a new partnership called Tyler and Woolley, Architects, 710 Wilshire Boulevard, Suite 401, Santa Monica, California.

Henry James Weber, has announced the formation of James Weber & Associates, 530 Howard Street, San Francisco, California.

**Firm changes**

Richard Elliott has been promoted to vice president of Archi + Tekton, Inc. and will head the Albuquerque office.

Barton-Aschman Associates, Inc. have elected Don Wiski as vice president and John Mullan as director of the Minneapolis office.

Daniel H. Lare has been named director of landscape architecture for Benham Blair & Affiliates.

Herman Blum Consulting Engineers announces the appointment of Marks W. Reid as vice president of finance.

Marcel Breuer and Associates, Architects announce that Mario Jossa has been made general partner in the firm.

Cannon Design, Inc. have added eight new members to their staff. They are: David Baker, William Simons, Anthony Pulaski, Lance Dickes, Lynn Rice, Jon Henson, Neil Levitt, and Richard Watson.

Daniel, Mann, Johnson & Mendenhall announce that Michael Franklin Rossi has been named senior projects architect for architecture and urban design.

Einhorn Yaffee Associates announce that Andrew Prescott has been named a principal. The firm name is now Einhorn Yaffee Prescott, P.C.

Hal Ayote has been named an associate in the firm of Fletcher, Finch, Farr and Associates.

Fraioli Blum Yesselman of New England has appointed Francis A. Vernile as vice president and Richard Gossoo as senior vice president.

John DeBello, William Dix, Jr. and Michael Kihn have been named associates of Geddes Brecher Qualls Cunningham.

Genova Associates announce the staff addition of Neal Butler as an executive officer.

Glaser/DeCastro/Vitols Partnership announce that Eric Pfeufer and Julia Smith have become associates in the firm.

Golemon & Rolfe, Architects have made the following promotions: Harry Golemon has been elected president and chairman of the board of directors; Charles Kerner, executive vice president;

Albert Golemon, senior chairman of the board; Jason Frye, vice president; L. David Godbey, secretary; Joe Richards, treasurer and Paul Hoag, lead design architect.

Gove Associates have named John Caton as a new associate in the firm.

Peter Krasnow has been named an associate in the firm of Gruzen & Partners.

H2L2 Architects/Planners is incorporating all non-architectural services under a new subsidiary called H2L2 Design, Inc.

Jasper Hawkins, Jr., Thomas Lindsey and Harry Wilson, Jr. have formed Hawkins, Lindsey, Wilson Associates with offices in Los Angeles, California and Phoenix, Arizona.

Theodore M. Heesch, Inc. announce the appointment of Doyle Wayman as vice president and managing officer and welcomes the new additions of David Quinn, Ronald T. Wedemeyer, project archi-

*continued on page 215*

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# Making Connections

## 1978 International Design Conference in Aspen June 11-16

Design may address the largest social issues and the smallest mechanical details. Design conferences have traditionally emphasized either human values ("blue sky") or professional problems ("nuts and bolts"). This conference will focus on the connections between the two—the interfaces between people, and between people and things.

The Conference format provides for Interdisciplinary Shop Talk. Participants will include scientists, corporation executives, inventors, writers, creators of films and television shows, and of course design professionals of all kinds. They will establish and examine connections by means of visual presentations, lectures, demonstrations, films, seminars, workshops, and special events.

But the most important connections of all are the ones to be made by conferees during the week in Aspen and in their professional lives thereafter.

Ralph Caplan

Andrea Baynes

Program Chairpersons

Some of the conference topics:

Design Entrepreneurs  
The Media as Connective Tissue  
How Animals Design Themselves  
The Business of Design (and the Design of Business)  
Political Connections  
Design and the Human Body  
Varieties of Partnership

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Please fill in and return  
with registration fees to:

IDCA  
c/o The Bank of Aspen  
P.O. Box "O"  
Aspen, CO 81611

I am enclosing:

\$175 registration fee ( )  
\$100 fee for additional member of household ( )  
\$ 75 student fee (proof required) ( )

Fee covers access to all conference  
programs and literature. No food or lodging  
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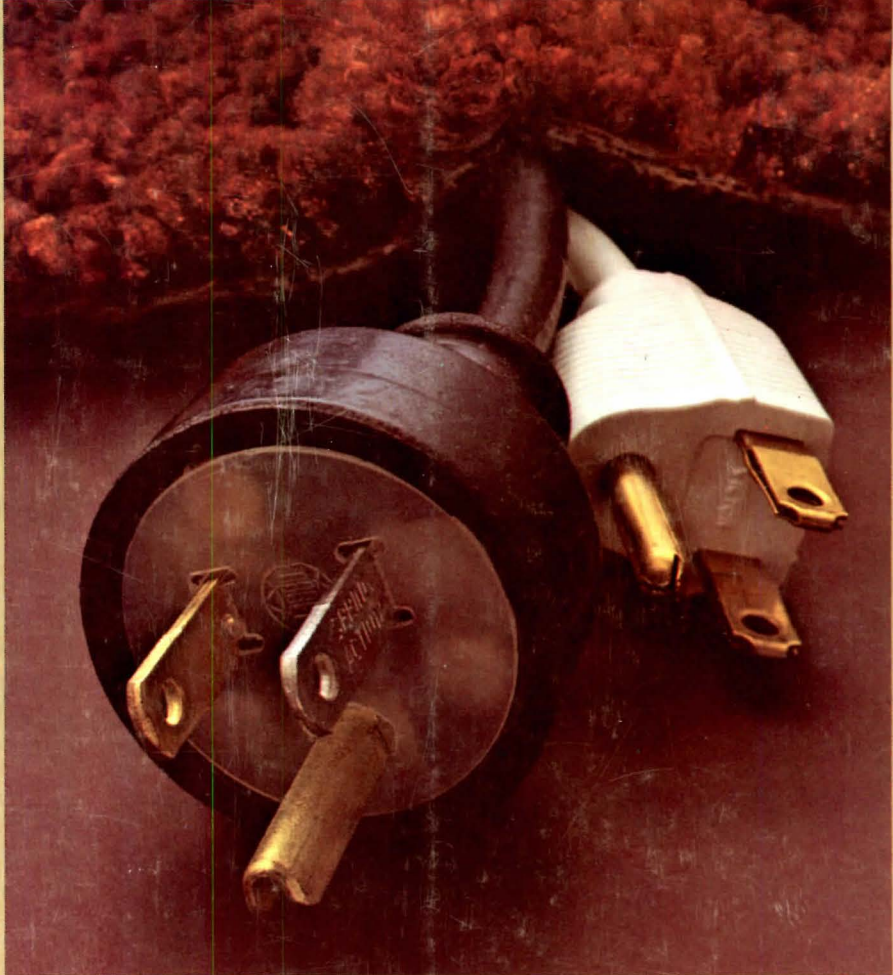
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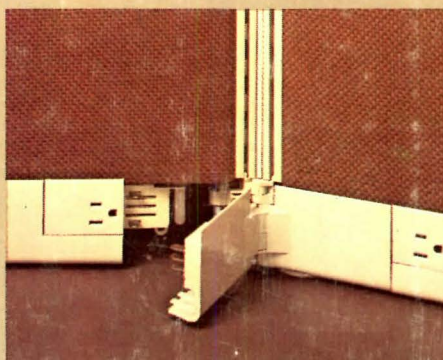
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