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BUILDING TYPES STUDY: HOUSING FOR COMMUNITY GROUPS AS DEVELOPERS/OWNERS

TWO BUILDINGS BY JAMES STEWART POLSHEK AND ASSOCIATES

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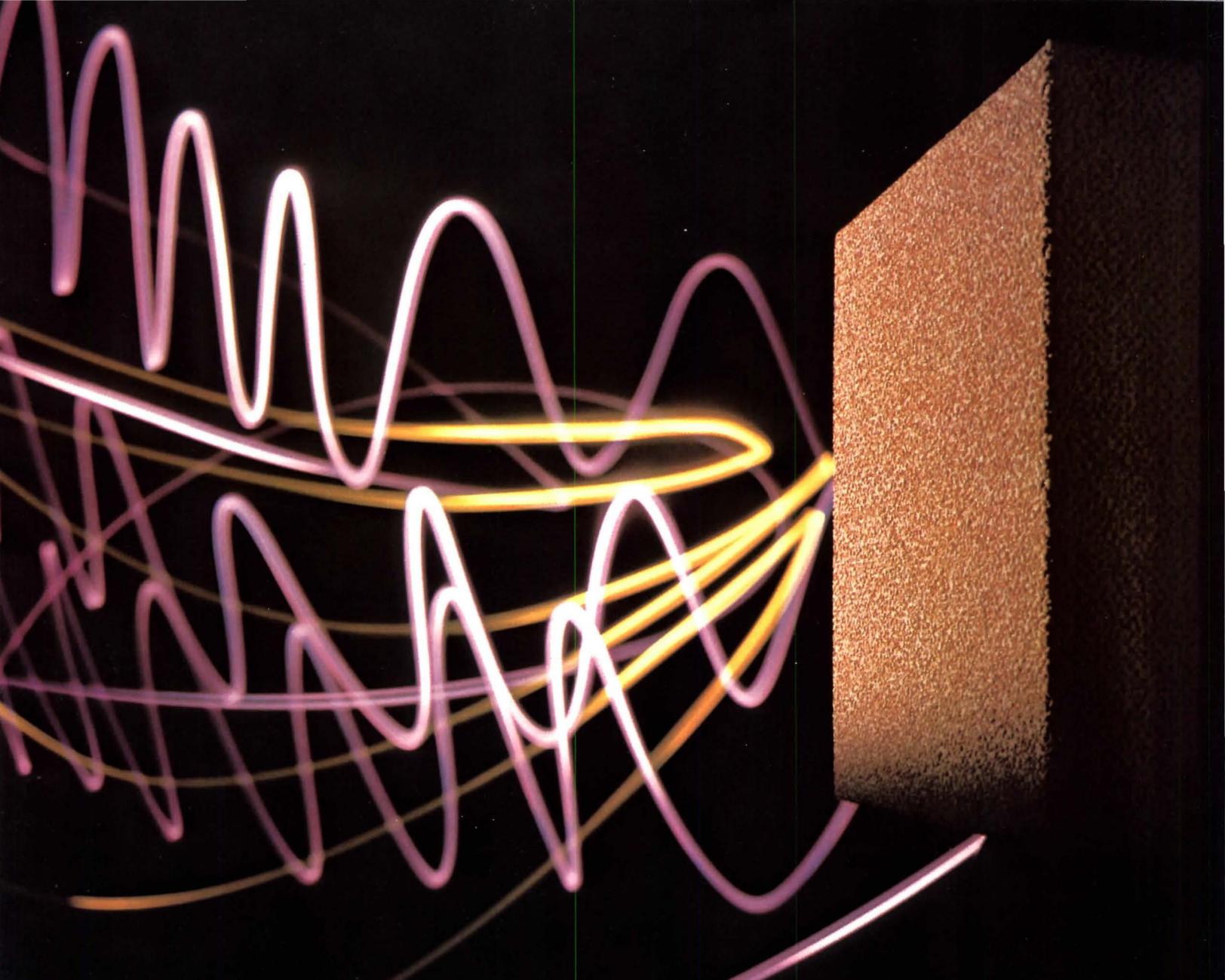
ARCHITECTURAL RECORD

FEBRUARY 1978

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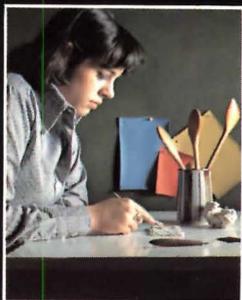
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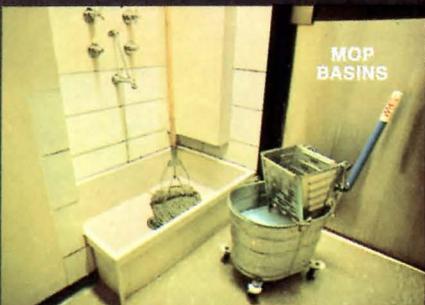
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Letters to the editor

I appreciated very much your recent story on the Faneuil Hall Marketplace, but I wish to add a few facts about this project that were not included.

First, there was never any possibility that these buildings would be demolished. In fact, the market buildings were included in the Waterfront Urban Renewal Plan in order that they be saved and restored. Not to include them would have meant that these buildings would have been sandwiched between two large-scale renewal projects and thus would have been prime candidates for acquisition (and perhaps demolition) by private developers. Without belaboring the point, then, let me point out that the Waterfront Urban Renewal Project proposed by the Boston Redevelopment Authority in 1962 specifically called for restoration of the buildings.

Let me add that a lot of people in Boston and elsewhere had grave doubts that the BRA would ever be able to save the buildings, let alone restore them.

There were two other crucial points in the long and arduous history of this project when the commitment of the BRA and Mayor Kevin H. White made it possible for this project to go forward, doubters be damned.

The first turning point of which I speak occurred when the Van Arkle-Moss-Thompson team could not obtain financing and were de-designated as developers for the Market's restoration project. Even though BRA had no designated developer for the project at that point, we still went ahead with the exterior restoration of the buildings. To expend public funds for restoring buildings when there was no developer to carry out the project seemed rather foolhardy to some people. I think it showed the BRA's courage and wholehearted commitment to restoration.

The second turning point, in my opinion, came when the Rouse Company was having difficulty in obtaining the financing to go ahead with the project. At that point Mayor White began to lobby banks and lending institutions on behalf of the Rouse Company. The Mayor's lobbying has sometimes been described as arm twisting, a charge he would never deny. He wanted badly to see the project go forward and he used the full weight of his office and his considerable powers of persuasion to obtain help in obtaining the financing for the Rouse Company.

None of this is meant to diminish in any way the contributions of the Rouse Company, Ben Thompson, Tad Stahl, Roger Webb and the many other people who worked together to see this project through, including the many members of the BRA staff, past and present, who spent considerable time and energy on the Market project. However, I think those facts should be included in any history of this project.

Robert F. Walsh
Director

Boston Redevelopment Authority

Regarding your November editorial, architects should, of course, continue to improve their abilities to serve their clients, but most are too busy to avail ourselves of the veritable flood of continuing education courses by universities from both far and near.

The objective of the AIA is to avoid professional stagnation. The goal of NCARB is essentially the same. The architectural practice of an individual tends to become specialized, and the architect's requirements are more specific than generally encountered in the academic world. Rather than expending the time and money generally associated with a continuing education course, the practitioner might prefer to select his own time and method of demonstrating the up-dating of his professional ability. He might submit a current subject to the authorized accrediting board. Upon receipt of approval of the subject, one of several courses might be followed. Perhaps the architect might submit a paper on research or prototype work that he would prepare pertaining to his chosen subject; or he might submit a photographic treatise of the subject. Such data would be of interest to the profession if published in an architectural magazine.

It is suggested that the method of demonstrating increased proficiency be optional.

Cameron Fairchild & Associates,
architects
Houston, Texas

Erratum

In its report on the development of Pennsylvania Avenue in Washington, D.C., (November 1977, page 34), RECORD inadvertently misnamed the former executive director of the Pennsylvania Avenue Development Corporation John M. Woodbridge, FAIA. Mr. Woodbridge has recently returned to San Francisco to resume the private practice of architecture.

Calendar

FEBRUARY

16-18 The Second National Passive Solar Heating and Cooling Conference and Workshop, sponsored by the Mid-Atlantic Solar Energy Association; University of Pennsylvania, Philadelphia. Contact: Linda Knapp, Coordinator, Mid-Atlantic Solar Energy Association, Department of Architecture, Graduate School of Fine Arts, University of Pennsylvania, Philadelphia, Pa. 19104.

MARCH

13-15 Conference, "Energy Management in Office Lighting," sponsored by the General Electric Company; Nela Park, Cleveland, Ohio. Contact: Manager, Lighting Education, GE Company, Nela Park, Cleveland, Ohio 44112.

15 Info Fair/Chicago, sponsored by the Illinois Chapter of the American Society of Interior Designers; Expocenter/Merchandise Mart, Chicago. Contact: Dorothy Eastline, Info Fair Coordinator, ASID, 620 Merchandise Mart, Chicago, Ill. 60654.

30-31 Conference, "The Marketplace for Architectural/Engineering Services—New Directions," sponsored by the Committee on Federal Procurement of AE Services; Roosevelt Hotel, New York City. Contact: Donald A. Buzzell, COFPAES Federal Programs Conference 1978, c/o American Society of Civil Engineers, 345 E. 47th St., New York, N.Y. 10017.

APRIL

9-13 "Design Atlanta" contract residential market, sponsored by Designer Products Ltd., Atlanta, Georgia. Contact: Tom Drum, Chairman, Designer Products Ltd., ADAC Space 49, 351 Peachtree Hills Ave., N.E., Atlanta, Ga. 30305.

24-26 Seminar, "Planning Office Environments," sponsored by the University of Kansas Regents Center; Hilton Plaza Inn, Kansas City, Mo. Contact: The University of Kansas Regents Center, 9900 Mission Rd., Shawnee Mission, Kans. 66206.

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, July 10-11 in Los Angeles. Contact: ARCHITECTURAL RECORD SEMINARS, 1221 Avenue of the Americas, New York, N.Y. 10020. Phone: 212/997-3088.

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

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Quotations on reprints of articles available. Every possible effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

EXECUTIVE, EDITORIAL, CIRCULATION AND ADVERTISING OFFICES: 1221 Avenue of the Americas, New York, N.Y. 10020. Other Editorial Offices: 425 Battery Street, San Francisco, Cal. 94111.

PUBLICATION OFFICE: 1221 Avenue of the Americas, New York, New York 10020. Second-class postage paid at New York, New York 10001 and at additional mailing offices.

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ASSOCIATED SERVICES/McGraw-Hill Information Systems Co.: Sweet's Catalog Files (General Building, Engineering, Industrial Construction and Renovation, Light Residential Construction, Interiors), Dodge Building Cost Services, Dodge Reports and Bulletins, Dodge/SCAN Microfilm Systems, Dodge Management Control Service, Dodge Construction Statistics, Dodge regional construction newspapers (Chicago, Denver, Los Angeles, San Francisco).

THIS ISSUE is published in national and separate editions. Additional pages of separate editions numbered or allowed for as follows: Western Section 32-1 through 32-2. POSTMASTER: PLEASE SEND FORM 3579 to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 430, Hightstown, N.J. 08520



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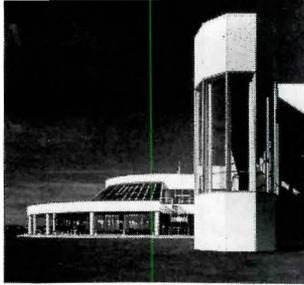
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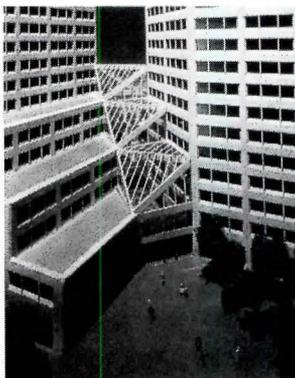
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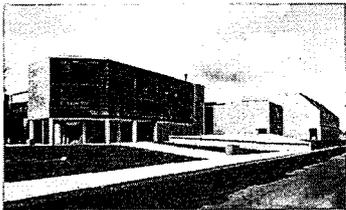
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Organizing to eliminate personnel peaks and valleys
Houston-based CM Associates, Inc. uses a simple computer program to plan manpower needs two years into the future.

FEATURES

95 The industrial esthetic: two buildings by James Stewart Polshek and Associates
Both a college physical education building and a municipal vehicle facility show a high level of architectural sophistication in the use of such normally industrial materials as metal siding and heavy-duty sash. As the architects were pioneers in the industrial idiom, it is interesting to see the development of the idiom that time and experience have brought.



Edmund Stocklein

103 A Building of Paris
The Georges Pompidou National Center of Art and Culture has been open a year, perplexing and possessing Paris. But what possesses the building? Designed by Piano + Rogers, this manifesto of metabolic theory also draws upon some of the primary impulses of the last century, and will likely satisfy whatever nostalgia the next century may want to indulge for our own period.

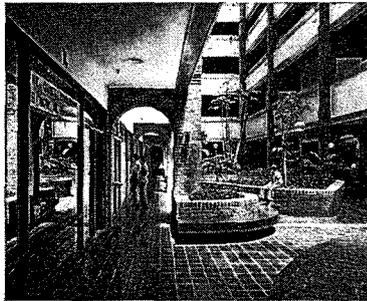
115 "Place, Product, Packaging" by Richard Oliver and Nancy Ferguson
A look at four popular American building types—fast-food restaurants, diners, gasoline stations, and museum-village restorations—to see what they show about the art of design and, from that, what they show us about ourselves, our pasts, and our futures.

121 On the Wisconsin prairie, an office building for AAL
John Carl Warnecke & Associates have designed a building of strong individuality and meticulous detailing for a fraternal insurance association in Appleton.

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79 Housing
Architect John Sharratt's advocacy planning of the sixties has led in the seventies to his design of an impressive number of mixed-income housing and commercial facilities built by the low-income communities as developer/owners. Through this success Sharratt is doing additional housing work not sponsored by poor communities.

80 Recycling the Mercantile Wharf Building
This handsome granite landmark on the Boston waterfront has been remodeled into a mixed-income development.



Steve Rosenthal

82 Madison Park
This mixed-income housing was designed by Sharratt for the Lower Roxbury Community Development Corporation, to replace an urban renewal project which would have destroyed their neighborhood.

84 Mission Park
After a long battle against the construction of a Harvard Medical School hospital complex on the site of their homes, the Roxbury Tenants of Harvard formed a limited partnership with Harvard and Citicorp to construct 774 units of re-location and mixed-income housing in conjunction with the new medical facilities.

88 Villa Victoria
Another low-income community in Boston's South End threatened by "urban removal" has succeeded in building its own housing.

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128 A number of significant and innovative product applications (particularly in daylighting) contributed to the over-all success of the AAL building.

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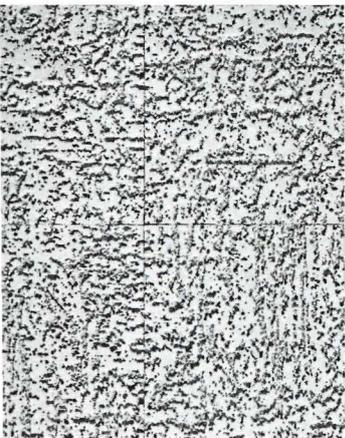
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NEXT MONTH IN RECORD

Building Types Study: Shopping Centers
While the nation's shopping centers have flourished in recent years—often at the expense of downtown shopping areas—there is now a trend toward revising the central retail districts. Examples of four center-city retail complexes will be featured in March, each a creative design solution to the specific problems.

The unique surface design of the Armstrong Highspire Travertone ceiling combines with snug-fitting joints to create a near-monolithic look. This distinctive image is the most recent addition to the Travertone family.



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Growing evidence of growing interest in good design: case examples from government and industry

Last month on this page I wrote about the hope that this year—given at least modestly better economic anticipations—we could spend more time thinking about improving the quality of design in what we build. It's encouraging to note that interest in quality design is evident in two other areas with which any design professional is also concerned—graphic design and product design.

The encouraging graphic design progress comes from the Federal government. As you probably know, under a program spearheaded and funded in part by the National Endowment for the Arts, various Federal agencies have been given staff counsel and assistance in upgrading the standards of graphics used by the agencies—sometimes by in-house designers, sometimes by consultant designers—under the over-all direction of Jerry Perlmutter, Coordinator of Federal Graphics. A number of agencies have made effective use of this program—including the Comptroller of the Currency, the American Revolution Bicentennial Commission, the U.S. Department of Labor, the National Oceanic and Atmospheric Administration, GSA, NASA, the Internal Revenue Service, the U.S. Information Agency, and the Postal Service. These and about a dozen other Federal agencies have now developed or are in the process of developing unified visual communications systems as part of the Federal Design Improvement Program. An excellent booklet on "Design Standards Manuals—Their Meaning and Use for Federal Designers" has just been published, based on a presentation by designer Bruce Blackburn (of Danne & Blackburn, Inc., New York design firm and former partner in Chermayeff & Geismar Associates). In the booklet, published by Superintendent of Documents and intended primarily for in-house designers of Federal agencies, Blackburn—using his firm's work for the Bicentennial and NASA as examples—argues the case for a good design program formalized in a manual: "[A manual] indicates a level of design and an attitude towards design. It helps all designers within the agency or working for the agency to solve a design problem *within the context of a greater goal than their own* . . ." Blackburn's presentation was made to a Studio Seminar for Federal graphic designers held in November: one of a series of such meetings which are clearly having an impact in raising design

consciousness (and the quality of design) within all the government agencies. In January, the Federal Design Information and Education Project sponsored a seminar on a different subject: "Halls and Walls"—a study of the problems and state of the art of Federal office building interiors, to which were invited all agency administrators and "interior and space design decision-makers." Strongly backed by GSA Administrator Jay Solomon, this program of top-level professional counsel, seminars, and publications seems to me strong evidence of strong and growing commitment to good design within government—and that's all to the good. . . .

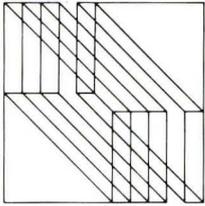
On the product design side, the encouraging news comes from Martin Friedman, president of Formica Corporation. He recently named a design advisory board of top-level architects and interior designers "to meet regularly with Formica's director of design to advise on the design and application of Formica's products. . . ." Additionally, the corporation will finance a "Designer Grant Program"—cash grants to individuals for specific design programs (the first grants are for the design of a line of bedroom furnishings, a cabinet storage system, and a line of office furnishings—all laminate applications). The company will also hold an International Seminar on Design with the active participation of its new advisors. Mr. Friedman's reasoning in establishing the advisory board seems just right: "We at Formica feel strongly that the nation's building industries have not utilized the skills and insights of the American design community as fully as they might. . . . For years, our industry has prided itself on its technology. And there is reason to be proud. But technology is only half the equation [right on, Mr. Friedman!]. The other half is the human factor . . . and that's where the designer and the architect are vital to the way we live now, and how we'll live tomorrow. . . . We believe the designer is best qualified to help us blend technology and design and shape the future."

And that seems a pretty strong commitment—perhaps one that might profitably be studied by a lot of corporations which supply not just the building industry—but a lot of other industries.

Growing evidence of growing interest in good design! And hooray for that!—W.W.

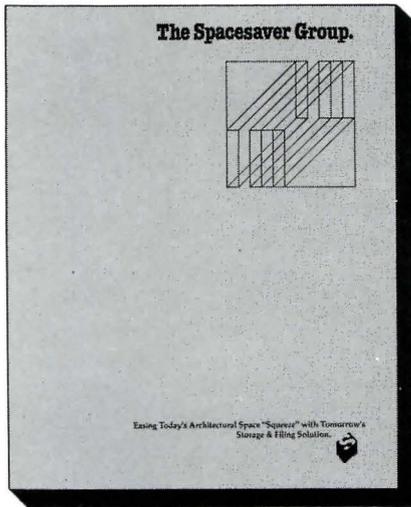
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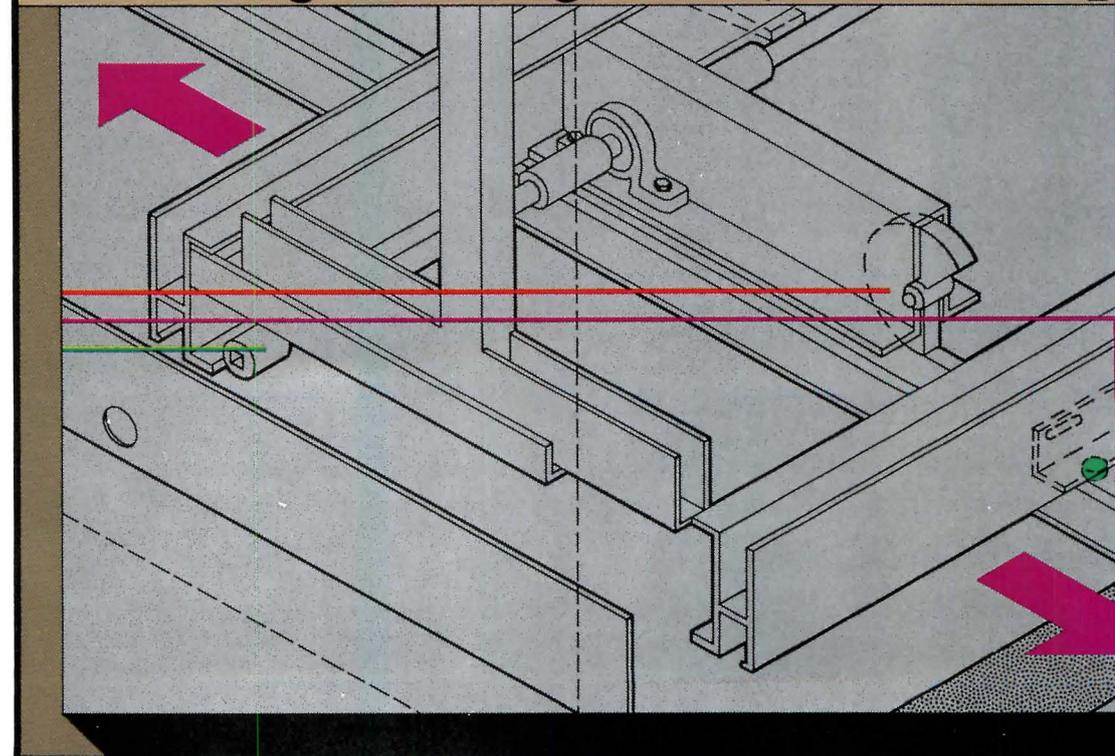
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November contracts for nonresidential building totaled \$3.1 billion, 17 per cent up from November 1976, according to McGraw-Hill Information Systems Company's F.W. Dodge division. "In sharp contrast to the pattern of recent months," observes Dodge chief economist George A. Christie, "when commercial and industrial building set the pace in the nonresidential sector, November's gains were concentrated among publicly financed projects—schools, public administration buildings and recreational facilities, suggesting that Round II of the Public Works Act is beginning to have its stimulative effect." The first 11 months of 1977 showed gains of 26 per cent in commercial and industrial building, 3 per cent in institutional building, and 40 per cent in residential building.

The Public Buildings Service has named David R. Dibner, FAIA, Assistant Commissioner for Construction Management. Mr. Dibner was with the Grad Partnership of Newark, New Jersey. Details on page 35.

AIA's 1978 Architectural Firm Award will go to Harry Weese & Associates of Chicago. The Institute also announces the award of ten AIA Medals. Recipients include Richard Haas, artist; David Macaulay, author; Nicholas R. Solovioff, artist; Dr. August Komendant, structural engineer; architect Robert Venturi for his book *Complexity and Contradiction in Architecture*; Robert Royston, landscape architect; Stanislaw Nowicki, educator; architect John Portman, Jr., for innovation in hotel design; Frederick Gutheim, author; and the National Trust for Historic Preservation.

Architectural firms are enjoying the effects of 1977's improved business in construction, according to a survey taken by the American Institute of Architects. Architectural commissions increased 15 per cent over the 1976 level, and firms are adding personnel, the Institute's regional directors reported. Details on page 37.

President Carter proposes a permanent increase in the investment tax credit to 10 per cent. The credit would apply to buildings as well as to equipment. Details on page 37.

Carl L. Bradley, FAIA, will receive the AIA's 1978 Edward C. Kemper Award, given for significant contribution to the Institute and to the profession. President of the Fort Wayne, Indiana, firm Archonics Inc., Mr. Bradley has been active in AIA affairs since he was a student, and was a founder of the Indiana Society of Architects.

The National Institute of Building Sciences has named Bertrand Breymann its vice president for planning, programs and research. A lawyer and an engineer, Mr. Breymann was most recently a real estate developer in Chicago, and earlier worked with Inland Steel on the School Construction Systems Development (SCSD) project. NIBS has also moved into its permanent offices at 1730 Pennsylvania Avenue, N.W., Suite 425, Washington, D.C. 20006.

The competition for the design of Alaska's new capital city has been won by two San Francisco firms: Bull Field Volkman Stockwell Architects and Sedway/Cooke Planning Consultants. Details on page 40.

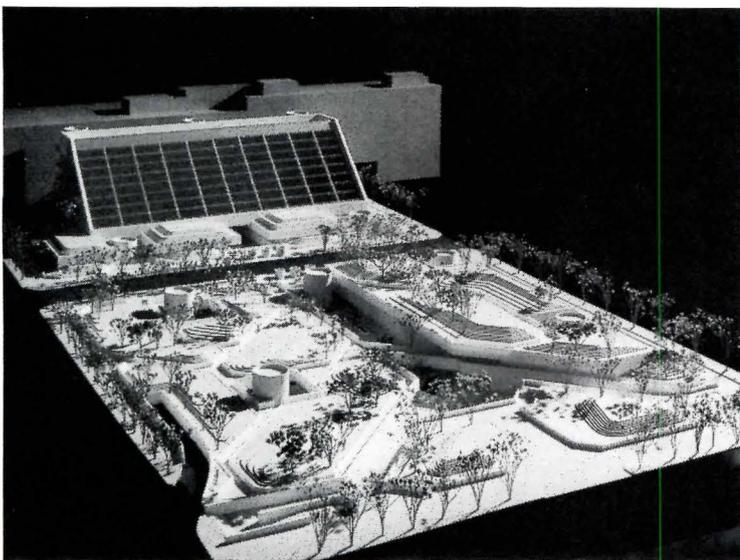
ARCHITECTURAL RECORD will conduct three seminars on building techniques for energy efficiency, to be held in New York City, Chicago and Los Angeles in May, June and July. Details on page 34.

Listings are sought for the Directory of Minority Architectural and Engineering Firms, which is published jointly by the American Council of Consulting Engineers and the American Institute of Architects. Inclusion in the directory is free, and submissions are due by March 1. For details about required information, queries should be directed to ACEC, 1155 15th Street, N.W., Washington, D.C. 20005 (202/296-5390).

The New York Urban Coalition has published the first issue of a new quarterly—*Neighborhood: the Journal for City Preservation*. Major articles in the 45-page magazine include a profile of a self-help housing project in New York City's South Bronx, recommendations for a program to solve the problem of landlords' abandonment of welfare housing, and an interview with Rene Dubos. The journal, which was supported in large part by a grant from the International Paper Corporation, will be distributed to community organizations, local planning boards, housing professionals, government officials and corporate executives. Copies are available without charge from Linda Gelman, New York Urban Coalition, 1270 Avenue of the Americas, New York, New York 10020.

For an exhibit on graphics and signage, the Society of Environmental Graphics Designers seeks American projects developed in the past two years. Slides for initial review should be submitted no later than March 15. Material and inquiries should be directed to John R. Berry, Smith, Hinchman & Grylls Associates, 455 West Fort Street, Detroit, Michigan 48226 (313/964-3000).

The "Innovations in Housing" competition offers a \$5,000 prize for a design emphasizing both energy conservation and plywood construction. The winning design will be built and published in *Better Homes & Gardens*, which sponsors the competition in company with *Progressive Architecture* and the American Plywood Association. Deadline for entries is March 15. For information and entry forms: "Innovations in Housing," P. O. Box 2277, Tacoma, Washington 98401.



California premiates energy-efficient state building

In another effort to spur energy conservative design in California, winners have been selected for the California State Energy-Efficient Office Building competition. The first place winner is Benham Blair & Associates, an Oklahoma City-based firm with offices in California.

Sim Van der Ryn, California state architect, set up the competition (co-sponsored by his office and the State Energy Commission) because, as he says "government can, and should, play an important role in encouraging innovative energy-efficient design."

A prominent site was selected on 3.5 acres in downtown Sacramento, close to the historic Capitol building and a key location in the proposed Capitol area plan.

The Benham Blair solution provides for an integrated system of already-proven devices and design techniques. Its plan calls for 240,000 sq ft of office space (a program requirement) to be divided between an above-ground office building and additional below-grade offices. The dominant visual element of the design is the office tower, a six-story triangle with a 45-degree south-sloping wall filled with solar collectors. Across from the office tower, landscaped plazas will be interwoven with 40 to 55 residential units (another program requirement).

The energy-conscious design integrates the underground offices and the solar-assisted refrigeration and heating systems. The architects believe that the building's energy requirement will be approximately 20,000 Btu/sq ft/year, a remarkable 88 per cent energy saving compared to 175,000 Btu/sq ft/year consumed by conventional office buildings. This low energy consumption is primarily due to the placement of more than two-thirds of the office underground.

In Sacramento the major comfort problem is related to cooling. Hot summer days, however, are usually accompanied by dry, cool nights. During the summer, cool night air will be used to flush out the building, effectively lowering the temperature; and

year-round the cool air will be used to chill water for heating and air-conditioning systems.

Interior design amenities for the underground offices include an open-air landscaped mall, cutting the site lengthwise to permit light and air to filter into the building. In addition, open-plan offices will center on courtyards open to the sky.

The competition was organized into two stages, with the best six initial design solutions, selected in stage one, returned to the architects for refinement and development. Benham Blair & Associates received a \$10,000 award as first prize. Members of the jury were Leonard Grimes, Jr., chief of the California General Services Administration; Dr. Alan D. Pasternak, Commissioner of California Energy Resources Conservation and Development; Mr. Van der Ryn; William Caudill, FAIA, of the Houston architectural firm CRS; engineer Fred Dubin, of New York City; and, as professional advisor, William Zick, AIA.

According to Mr. Van der Ryn, there were a few "off the wall" entries, but only 41 out of 200 architects who registered for the competition completed the first stage.

One of the strongest criticisms heard about the jury of six was that it was predisposed to work done by small firms. Reinforcing this critical view, Mr. Van der Ryn had said in a public statement, "History shows that most innovation comes from small organizations and individuals." There were other reports, however, that at least one member of the jury worried that small firms could not stand the costs necessary to meet the rigorous program requirements.

Other competition winners are: second prize—the ELS Design Group; third prize—Sam Davis and a design team from the University of California, Berkeley. Awards of merit went to Gluth-Quigley Architecture; Marvin Buchanan and a design team; Dommer & Frederick/Bull Field Volkmann Stockwell joint venture. —Janet Nairn, *Architectural Record*, San Francisco.

Developer abandons plans for Boston's Park Plaza

The proposal for the development of Boston's Park Plaza is evidently dead.

In mid-December 1977, Mortimer Zuckerman, chairman of Boston Properties, Inc., withdrew from the \$150-million renewal project, complaining of political delay. The original proposal, offered seven years ago, was revised after citizens' groups protested its likely effects on the Common and Boston Public Garden across the street. The developers offered a considerably scaled-down design by Davis Brody Associates earlier last year (see RECORD, February 1977, page 37).

Writing to Mayor Kevin White, Mr. Zuckerman and his partner, Edward Linde, described their decision as irrevocable, and said, "The City Council's delay on Park Plaza has destroyed the last bit of our confidence in the public approval process necessary for this project. Consequently, we have reluctantly made the only prudent decision, which is to terminate any further interest in Park Plaza and to concentrate our efforts elsewhere."

Mr. Zuckerman reported that his firm had lost \$1,791,000 on the development project. The Boston Redevelopment Authority has since, however, voted to return the firm's \$100,000 deposit.

And in early January of this year, BRA voted to advertise for a new developer of the Park Plaza project. —Paul Giguere, *World News*, Boston.

RECORD panels will cover design for energy efficiency

The first in a series of continuing education programs has been scheduled by ARCHITECTURAL RECORD for May 1-2 at Marriott's Essex House in New York City. Titled "Proven Design Technologies for Energy-Efficient Building Envelopes, Lighting, HVAC," the seminar will be repeated June 1-2 at Water Tower Hyatt House in Chicago, and on July 10-11 at Century Plaza in Los Angeles.

Charles E. Hamlin, RECORD associate editor in charge of the seminars, says that the programs, designed for architects, engineers and building owners, will focus on the application of cost-effective approaches to energy efficiency in the design and operation of both new and renovated buildings. Discussion will have special reference to the new ASHRAE 90-75 guidelines for improving energy performance in buildings.

Members of the faculty for the program will include:

- Jack Beech, vice president and chief mechanical engineer with Joseph R. Loring & Associates, New York City. Mr. Beech will offer new tools for calculating system loads and selecting equipment, with emphasis on systems that have demonstrated their effectiveness in use.

- John L. Kmetzo, senior consultant with EE Linden Associates, New Canaan, Connecticut, and formerly director of systems engineering for Rockefeller Center. He will present a program on building controls and renovation for energy conservation.

- John E. Flynn, author and professor of architectural engineering at the University of Pennsylvania. A building lighting expert and a student of the effects of lighting on human behavior, Mr. Flynn will conduct a session on the ASHRAE 90-75 lighting design standards, and will present an analysis of various lighting layout options and the selection of luminaires and light sources.

Attendees successfully completing the seminar program will receive 1.4 Continuing Education Units (CEU) as established under guidelines issued by the National Task Force on the Continuing Education Unit. (According to a formula devised by the National Task Force, which was composed of a group of American colleges and universities, one CEU represents 10 contact hours of participation in an organized continuing education program.)

NSPE fashions local code for design procurement

The National Society of Professional Engineers' Government Practice Group has developed a procurement code suggesting methods that local governments should use in the selection and compensation of architects and engineers.

The model code follows many of the provisions of the Brooks Law, which covers A-E selection by the Federal agencies. It stresses selection on the basis of qualifications and the payment of "fair and reasonable" fees.

NSPE thinks that the suggested model could be used by private owners and construction companies to develop a "fair and equitable method of procurement." Competitive price bidding, NSPE says, "cannot result in proper consideration of creative professional work."

The model code was written to provide alternative ways of procuring engineering services depending on the size and staff of the agency. "The salient point," a cover letter for the code says, "is to maintain a spirit of objective negotiation so that a thorough understanding of the work can be reached between the consultant or firm and the owner."

The American Bar Association is also developing a model procurement code for state and local governments. It has received Federal funds to do so.

A preliminary draft of the ABA document offers three alternatives for A-E selections: one similar to the Brooks Law, another through competitive price bidding, and a hybrid calling for price competition on "routine" projects. —William Hickman, *World News*, Washington.

PCI honors nine buildings in annual awards program

In its 15th annual awards program, the Prestressed Concrete Institute honored four bridges and nine buildings, among them four office buildings, a commercial building, an industrial building, a subway station, a bathhouse and a correctional institution. The award winners included:

Alagco Batch Plant/Shop, Anchorage, Alaska (1)—CCC/HOK, Architects and Planners; Anderson-Bjornstad-Kane-Jacobs, Inc., structural engineers. (The concrete plant, of load-bearing precast panels as long as 58 ft, was cast and erected in 3½ months. Comments the jury, "... a beautiful enclosure, which harmonizes with its mountain setting...")

DuPont Circle Metro Station, Washington, D. C.—Harry Weese & Associates, general architectural consultants; De Leuw, Cather & Company, general engineering consultants. (See RECORD, mid-August 1974, page 96).

Federal Correctional Institution, Butner, North Carolina (2)—Middleton, McMillan, Architects, Inc.; Frank B. Hicks Associates, structural engineers. (Commented the jury, "Designer and precaster have used the varied shapes, sizes and conformation of precast products for visual relief—even excitement—while achieving the fundamental goals of security and economy.")

Federal Office Building and Courthouse Complex, Eugene, Oregon—WEGROUP pc/Architects & Planners; Frank Honey and Associates, Inc., structural engineers.

Mallinckrodt Corporate Center, St. Louis—Hellmuth, Obata & Kassabaum, Inc., architects; Sverdrup & Parcel and Associates, general coordinator and engineer.

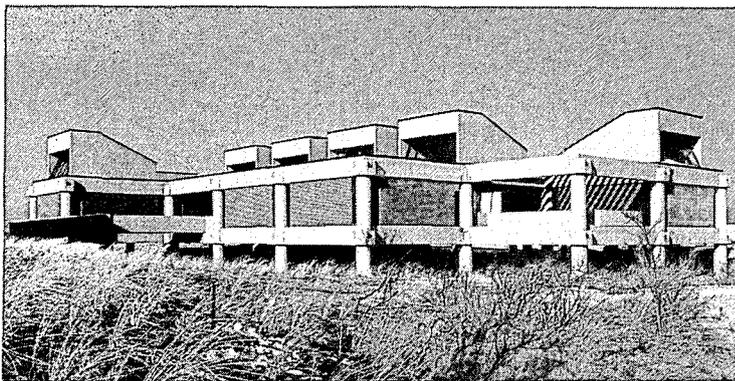
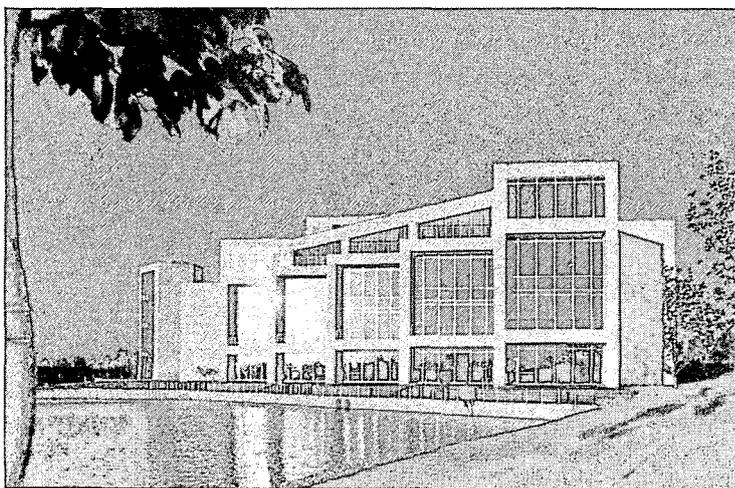
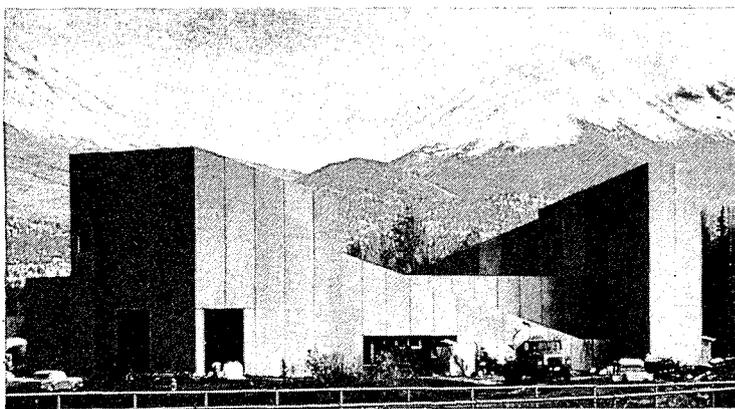
Metropolitan Life Insurance Company, Midwestern Head Office, Dayton (3)—Lorenz & Williams, Inc., architect/engineer. (Long spans and ease of construction satisfied client's need for flexible space, early occupancy and economy. Said the jury, "The complex forms are both disciplined and exciting.")

Nizny Building, Dayton—Windstandley and Associates, Inc., structural engineers.

Southwest Division Office, Safeco Insurance Company of America, Richardson, Texas—Iconoplex, Inc., architects; Datum Structures Engineering, Incorporated, structural engineers.

West Beach Bathhouse, Indiana Dunes National Lakeshore, Chesterton, Indiana (4)—Howard Needles Tammen & Bergendoff, architect/engineer. (For bathing facilities that receive 3,400 visitors daily, off-site fabrication prevented damage to the delicate dune site. Said the jury, "Precast concrete construction protected the fragile setting, fits its topography, and will resist climatic rigors.")

Receiving a special award was the Georgia World Congress Convention Center in Atlanta, designed by architects Thompson, Ventulett, Stainback



& Associates, Inc., and structural engineers Armour and Cape, Inc.

Bridges receiving top awards were Kipapa Stream Bridge, Honolulu, T.Y. Lin, Hawaii, Inc., structural engineers; Parke County Bridge #9726, Indiana, Beam, Longest & Neff, Inc., general consultants; Rulison Bridge in Rifle, Colorado, Eldorado Engineering Company, structural engineers; and (classified as a bridge) Seattle Freeway Park,

Lawrence Halprin and Associates, architects, and Washington State Department of Highways, structural engineers. Special awards went to the Hattie Street Bridge in Marinette, Wisconsin, Owen Ayres & Associates, structural engineers; and to West 9th and 10th Street Bridges in Austin Texas, Bovay Engineers Inc., design engineer.

GSA seeks submissions for its Design Awards

The General Services Administration has announced its third GSA Design Awards program, undertaken to honor contributions to excellence in Federal design.

Making the announcement, GSA Administrator Jay Solomon said, "This program is broader than most of its kind and reflects GSA's concern with all aspects of those elements that together create human and environmentally responsible buildings and cities."

Mr. Solomon's claim of breadth for the competition is borne out by a list of projects honored in earlier awards programs: research projects, repairs and alterations, historic preservation, adaptive use, works of art, interior design and landscaping, as well as building design. Other suggestions offered by GSA for possible submissions, which must be connected with a GSA project, include systems, barrier-free design, graphics, research and management.

Winners, selected by an interdisciplinary panel of professionals, will be announced in April. Entries are being actively sought by GSA's regional offices, and in addition firms, organizations and individuals may request announcements from J. Walter Roth, AIA, Acting Director, Professional Services Division (PCD), Public Buildings Service, GSA, 18th and F Streets, N.W., Washington, D.C. 20405 (telephone 202/566-0669).

Deadline for entries is March 24.

At PBS, Dibner will take on construction management job

David R. Dibner, a New Jersey architect and author, has been named head of the General Services Administration branch that has direct control over agency relations with construction designers. He will be Assistant Commissioner of the Public Buildings Service for Construction Management, a post last held on a full-time basis by Walter A. Meisen, another architect, who has since gone into private practice.

Mr. Dibner, 51, has been with the Grad Partnership of Newark since 1966. In 1971 he was named president of Grad-Hoffman Inc., a land-planning subsidiary, and at the same time was a vice president of Walker-Grad Inc., an interior design service firm.

He is author of *Joint Ventures of Architects and Engineers*, a McGraw-Hill book published in 1972, and has written about architecture for newspapers and magazines.

Mr. Dibner received a Bachelor of Architecture degree from the University of Pennsylvania in 1949, and is a Fellow of the American Institute of Architects.

He contributed to the design and construction of such projects as the James Forrestal Building in Washington,

continued on page 37

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D.C.; IBM data processing headquarters in White Plains, New York; Hess Oil corporate headquarters building in Woodbridge, New Jersey; and the Xerox corporate office building in Webster, New York.—*William Hickman, World News, Washington.*

FDA issues warning on mercury vapor lamps

Warnings about potential hazards posed by mercury vapor lamps have been sent to 68,000 architects, building managers and school and state officials by the Federal Food and Drug Administration pending the agency's planned issuance of mandatory safety standards.

The FDA says the lamps pose a severe hazard if the outer globe is broken, permitting ultraviolet radiation to escape. Severe eye irritation and skin burns can be caused by damaged lamps at distances of up to 30 feet, the FDA claims, while repeated exposure has been known to lead to skin cancer.

The FDA hopes to have mandatory standards proposed in the next few months. Lamps that shut off automatically when the outer globe is broken will probably be mandatory in all but secluded areas where human contact is unlikely.—*Michael Mealey, World News, Washington.*

Survey on business outlook shows architects optimistic

The economic recession that architects experienced in recent years has apparently bottomed out. Regional directors of the American Institute of Architects, surveyed for a year-end report on the economic health of the profession, say business picked up sharply in 1977, and they forecast a continuation of this trend in 1978.

The AIA reports that the dollar volume of architectural commissions increased an average 15 per cent in 1977 over the previous year, and that many firms are adding professional personnel.

Other construction designers are also enjoying business gains. The American Consulting Engineers Council polled its member firms and discovered 32 per cent seeing 1977 an excellent year—and 43 per cent declaring it good. Only 8 per cent said business was bad, while 17 per cent said it was average.

Fifty-four per cent of the 900 consulting firms responding to the ACEC survey said the new year would be even better than the old, while only 6 per cent thought it would be worse. Forty per cent say that 1978's business level will be unchanged from 1977's.

The AIA survey shows that business advances are particularly noticeable in the South, Southwest and California. AIA directors in Texas report that local Institute offices are receiving calls from firms looking for staff rather

than from unemployed architects looking for jobs. The employment gain, however, does not appear as steep in the New England states and the Midwest.

A major new practice area is in the energy conservation field, the AIA survey indicated. And if ACEC members are correct, 1978 will mark a major shift toward more business in energy conservation—enough to offset a predicted reduction in water and sewer work. The respondents said water and sewer work accounted for 20 per cent of their work in 1977, but they see this dropping to 17 per cent this year. Meanwhile, energy conservation, which accounted for 5 per cent of the 1977 volume, is expected to zoom to 12 per cent in 1978.

Architects expect most of their new business in 1978 to come from commercial buildings and housing development, as well as from increased demand for energy conservation audits and designs.—*William Hickman, World News, Washington.*

Carter's tax bill will propose 10 per cent investment credit

President Carter wants to change the tax laws in a way that will encourage companies to modernize and expand their industrial plants and office facilities. If he is successful, the new laws may be a boon for the construction industry.

The President proposes three changes in the law governing the investment tax credit (ITC):

- make the ITC a permanent 10 per cent to replace the present system, which worries businesses by its off-on nature;
- apply the investment credit to buildings as well as to equipment within the buildings;
- permit companies to offset up to 90 per cent of their tax liability, instead of restricting them to the present 50 per cent ceiling.

Legislative handicappers expect the President's proposals to be approved, perhaps with some modifications. Changes would probably be retroactive to January 1, 1978.

The main opposition to the fattened ITC provisions is expected from Congressmen representing Eastern and Midwestern districts. Their fear: encouraging business to build will mean quickening the flight of business to the suburbs and to the fast-growing Sunbelt areas of the country.

President Carter's whole tax package has other good news for business. It proposes that the current corporate tax rate of 48 per cent be reduced in two steps to 44 per cent, with the first two points coming off this year and the others in 1980.

International corporations, however, would not enjoy as many tax benefits as they now do if the Administration's plan is accepted by the Congress.—*William Hickman, World News, Washington.*

Karachi plans extension for its central business district

An international team of architects and planners has completed designs for a 14-acre mixed-use complex in downtown Karachi. Members of the team included Eva Vecsei, of Eva Vecsei/Don Hanganu, Architects, of Montreal; Yasmeen Lari, of Lari Associates, Architects and Planners, of Karachi; and John Schreiber, of John Schreiber/Ron Williams, Architects, Landscape Architects, also of Montreal.

The Karachi Development Authority, concerned about the dangerous level of overcrowding and decay in the core of the city, whose population now numbers nearly 5 million, acquired a site near the existing business district and adjacent to Drigh Road, the major traffic artery. The Authority further specified its needs: 850,000 sq ft of office space, 190,000 sq ft of retail space, a 300-room first-class hotel (to complement an abundance of high-priced de luxe hotels now under construction in Karachi), a convention/conference center of 2,300 people, a 600-seat cinema, and 200 residential units, as well as parking for 1,135 cars.

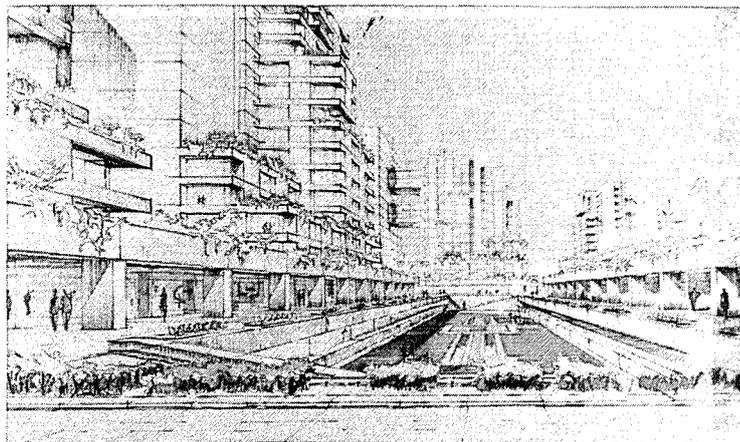
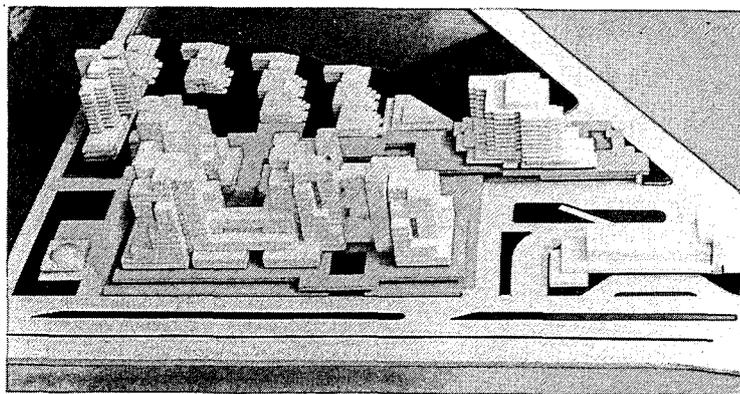
As designed, Karachi City Center will strictly segregate vehicular and pedestrian traffic and will focus on a large sunken pedestrian court surrounded by arcades sheltering shops and cafes (see rendering below). On the Drigh Road edge of the site, these retail floors become a podium for four office towers, which will screen the inner court from vehicular noise and dust. The architects see the large public court, with its amplitude and quiet, as a contemporary interpretation of the great Mogul gardens.

The government offices that will occupy the office towers required great flexibility for future expansions and changes. Although the office towers are distinct, each having its own elevator core and its own configuration, the entire office complex will in fact be continuous and interlinked. The towers connect at lower levels, extending horizontally to permit large single-tenant occupancy on one level. Bridges at selected upper floors add to the flexibility of available office space. The sense of spatial continuity is further enhanced by the several openings in floor slabs within the 20-ft structural grids; thus two or more floors becomes visually parts of the same office.

This arrangement not only gives a variety of possible floor plans, but also opened possibilities for sculptural expression on the facade. Maximum glazing occurs in the shaded bays, and minimum glazing at the exposed corners.

The housing program reflects a general preference for low structures over high-rise apartments. Set in a pedestrian residential park, the three- and four-level apartment blocks will contain two- and three-bedroom units, with receding terraces open towards the prevailing breeze. As an economic safeguard, however, the design incorporates one 15-story apartment building, which will have a residential car-park at its base. This apartment tower will occupy a rear corner of the site, on a line with the new mosque on Drigh Road.

The estimated cost of the center is \$110 million.

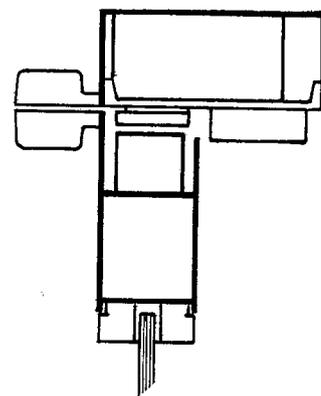


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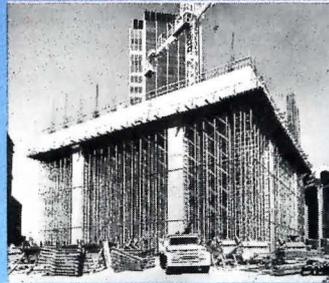


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One-way joist floor system was used throughout. Eye pleasing ribs are in an alternating pattern perpendicular or parallel to the shear walls and spandrel beams.

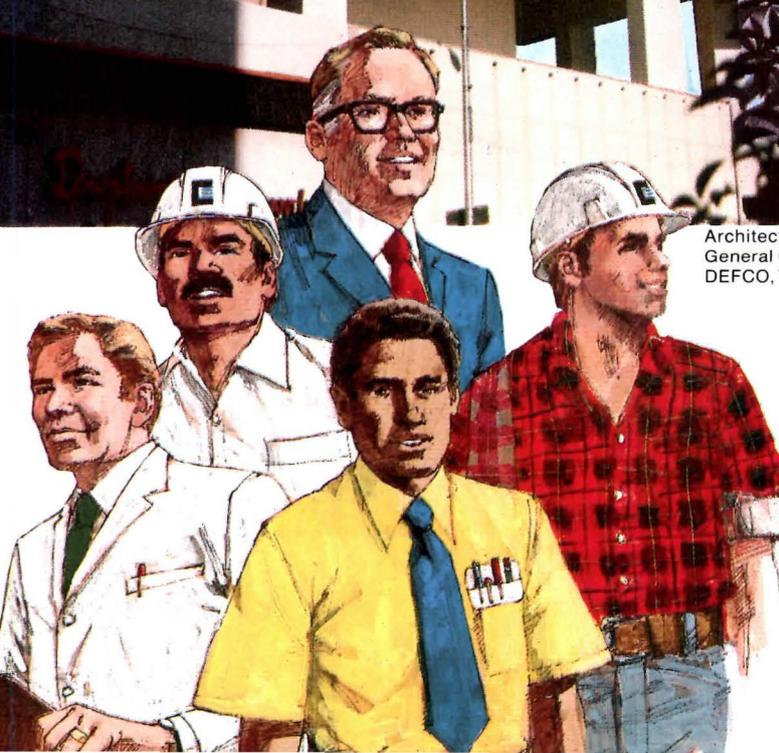
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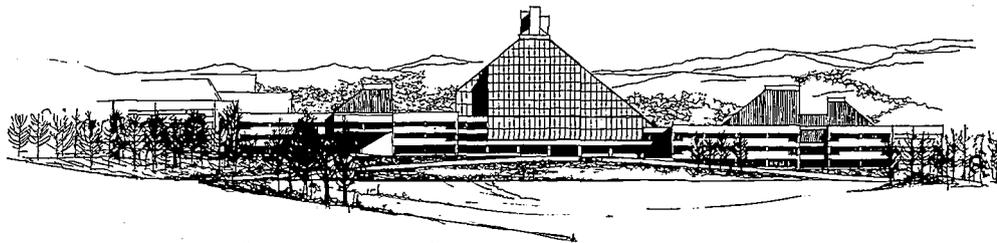
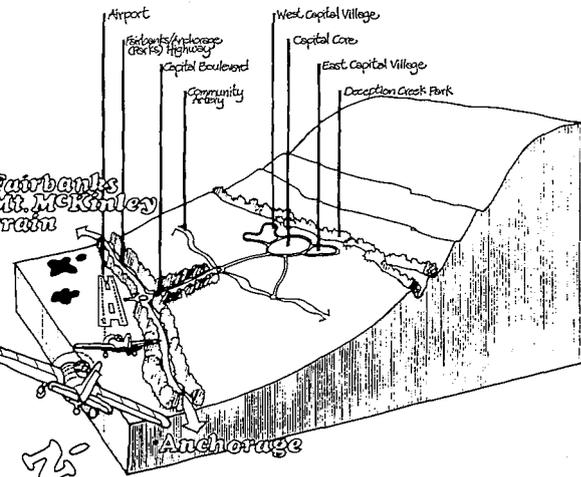
Steve Rosenthal

the runner-up design, accompanied by an elaborate visual presentation, was offered by Paul Friedberg & Partners—Benjamin Thompson & Associates. It was intended to "poetically symbolize the three strongest [site] determinants: sun, snow and light. . . ." Facing south but not sited on the ridge, the proposal would integrate the ridge and Decep-

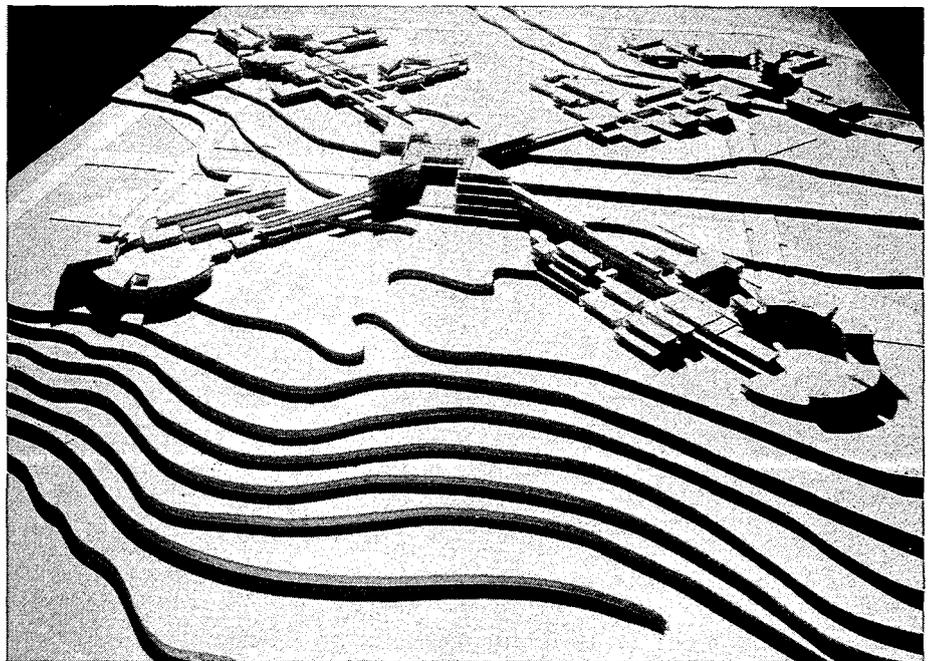
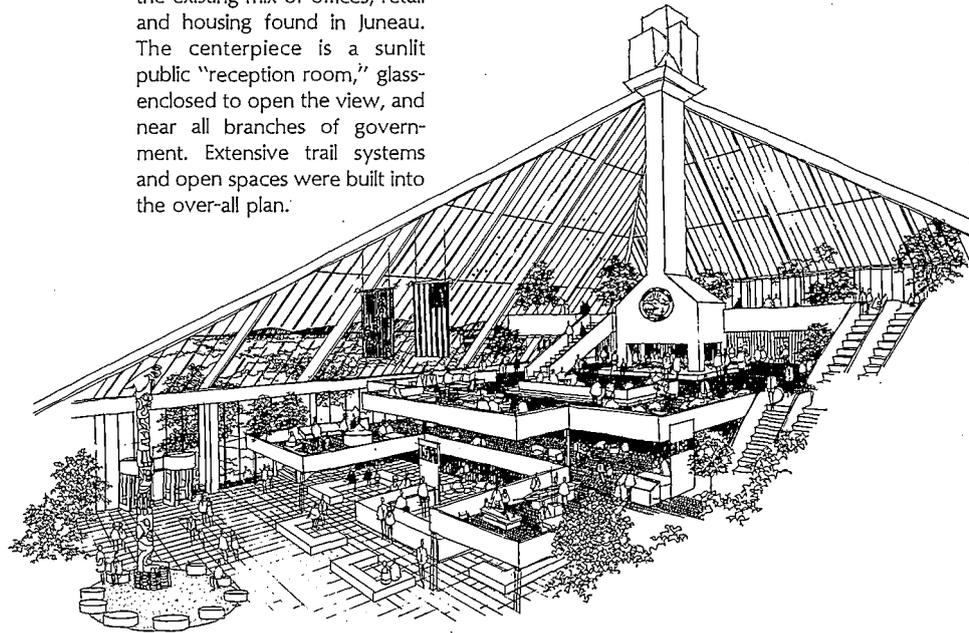
tion Creek into an extensive greenbelt and open-space network. To maintain a moderate profile, no building would be over six stories high. The city's focus would be the government complex, combined with a multi-level "wintergarden"—a major weather-protected space that would link the Capitol with a shopping arcade containing 60 per cent of all retail space.

a low-key approach to the problems, Maynard NBBJ Alaska emphasized workable phasing of three elements—a capital city core and two residential district centers. Each district contains four neighborhoods. In the belief that clustering all the

government services would create too massive a complex, government buildings other than legislative, executive and judicial branches were spread out along the periphery, and separated still further by an inner greenbelt.



In an effort to carry out the concept of Alaskan villages, Sasaki Associates organized villages around a centrally located capital center district. This center compares in character with the existing mix of offices, retail and housing found in Juneau. The centerpiece is a sunlit public "reception room," glass-enclosed to open the view, and near all branches of government. Extensive trail systems and open spaces were built into the over-all plan.



In the most dissimilar solution proposed by the five finalists, Lane-Knorr-Plunkett with EDAA, Inc., and William Pereira Associates offered a megastructure that shouts high technology. It is also the only design that would have been sited

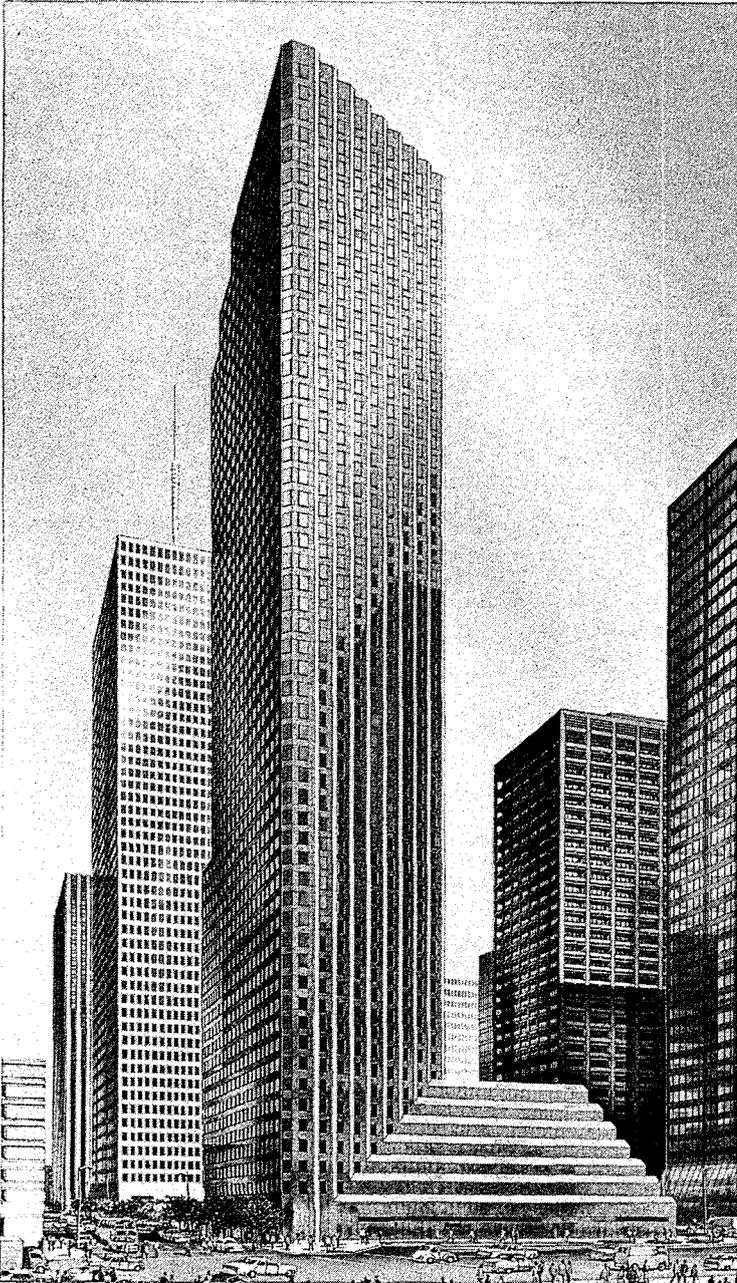
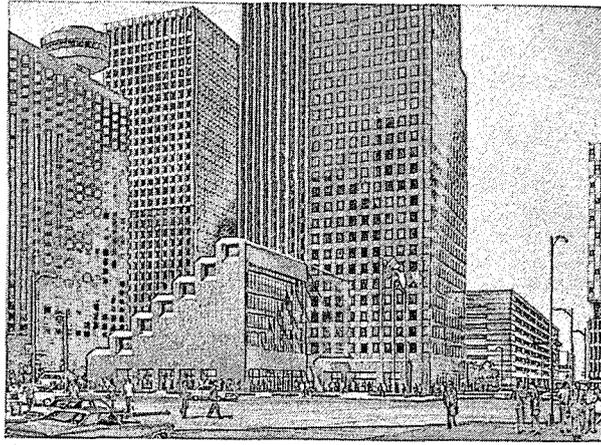
north of Deception Creek to optimize natural drainage and sun control from the south. A well-defined and intense urban core one mile in diameter would be composed of primary office, retail and commercial facilities, along with the Capitol

offices and a major park. Radiating from the core are four arms that define housing, secondary convenience shopping and social "activity plazas." Open space between the arms would be maintained as in-town wilderness.

Two developments by Gerald Hines, one from SOM San Francisco for Houston . . .

At 55 stories, the tower at the First International Plaza will become Houston's tallest building when it is completed in 1980. Designed by the San Francisco office of Skidmore, Owings & Merrill, with 3D/International of Houston as associate architects, the office tower will house the headquarters of the Houston Oil & Minerals Corporation, and the adjoining seven-story wing will contain the lobby of the project's other major tenant, First International Bank of Houston. The lower building, whose seven horizontal stepped levels

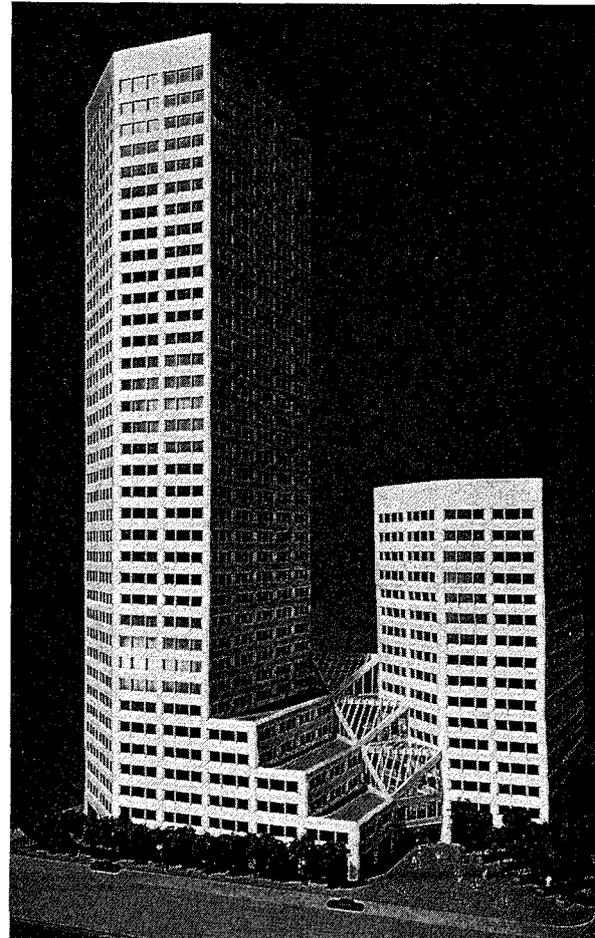
nestle into corresponding vertical steps on the tower's south-east wall, will have virtually no glazing on its south face, while the north face will be almost entirely glass. Each tower floor will have 12 exterior and three interior heating and cooling zones. Exterior materials will be pink Spanish granite and reflective glass. Parking for 1,500 cars will be provided in the complex. Developers are Gerald D. Hines Interests, and PIC Realty Corporation, a subsidiary of the Prudential Insurance Company of America.



. . . another from SOM Chicago for Minneapolis

One Pillsbury Place will combine two office buildings and a glass-roofed eight-story atrium on a one-block site in downtown Minneapolis. Developed by the First National Bank of Minneapolis and Gerald D. Hines Interests, the complex was designed by the Chicago office of Skidmore, Owings & Merrill. The taller of the two buildings—the 36-story Pillsbury Tower—will contain 843,000 sq ft, about half of which will be occupied by tenants in the 16-story FirstBank

Center will be the bank and First Bank Systems, Inc., a regional bank holding company of which First National of Minneapolis is the largest affiliate. Light-colored stone and bronze-colored double glazing will facade the buildings. The complex will also provide underground parking for 500 automobiles and connection with the city's new work of pedestrian "skyways." Site clearance got underway in November, and the developers expect primary tenants to move into the buildings during the summer of 1980.



Offices opened

Allen R. Carney, AIA, announces the opening of his office for the practice of architecture, located at 6000 Grand Central Avenue, Vienna, West Va.

Angelo Francis Corva announces his new practice of architecture, with offices at 159 Great Neck Road, Great Neck, N.Y.

Lance R. Kraemer, architect, has established his own firm, located at 112 Mary Street, Doylestown, Pa.

Ronald W. Ford and E. Harley Holmes, Jr. have formed a partnership for the practice of architecture and planning, located at 7800 Ash, Prairie Village, Kan.

George Hoover and Karl Berg announce the formation of an office located at 1535 19th Street, Denver, Colo.

Marie Louise Laleyan, AIA announces the formation of her own firm, Laleyan Associates, with offices at 414 Mason Street, San Francisco, Calif.

Robert A. Little, FAIA will resume his own practice, under the name of Robert A. Little, Design and Architecture, 5 Pepper Ridge Road, Cleveland, Ohio.

Lawrence H. Mason and Peter N. Da Silva have formed the firm of Mason, Da Silva Associates, 205 Lexington Avenue, New York, N.Y., to practice architecture.

Suu-dda K. S. Patkar, architect, announces his new practice, located at 50 Bridletowne Circle, Unit 21, Scarborough, Ont.

Richard W. Snibbe, FAIA, James A. Lachner and Herbert Schwartz announce the opening of their new office at 77 Irving Place, New York, N.Y., for the general practice of architecture.

Kump Associates is pleased to announce the formation of Sprinkle, Lynd & Sprague architects, located at Palo Alto, San Francisco, Calif.

TRA and R. Dan Farr announce the establishment of the firm of TRA/Farr, Architects, Engineers, Planners. The offices are located at 313 E Street, Anchorage, Alaska.

Charles Weaver, Mark Weglarz and Charles Zucker announce the formation of a partnership. The new firm name will be Weaver Weglarz Zucker located at 1208 North Calvert Street, Baltimore, Md.

Firm changes

Anshen & Allen is pleased to announce the appointment of Jack Bing Wah Ken, AIA as an associate in the firm.

Welton Becket Associates has appointed five members of its staff to the position of vice presidents: Coriolana Simon, director of public relations; Livius S. Bogdan, senior project director; Nabih Youssef, director of structural engineering; Benjamin Borkon, director of production; Pierre Cabrol, senior project designer.

Burt Hill Kosar Rittlemann Associates will become Burt, Hill & Associates, Architects.

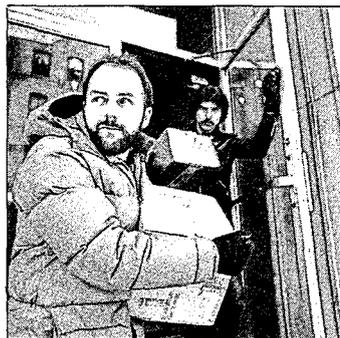
Dames & Moore, Consultants have announced that Glenn R. Cass has joined the firm as a staff acoustical engineer.

Day & Zimmermann names Lawrence M. Suwak to the post of vice president, business development for the engineering and construction division.

Gerald D. Klein has been elected a general partner in the Omaha-based architecture and engineering firm of Dena Larson Roubal and Associates.

Environmental Design Consultants has joined Downing/Leach & Associates. Their new name will be Downing, Leach Environmental Design Consultants, 2305 Broadway, Boulder, Colo.

Continued on page 193



Bad guys finish fast

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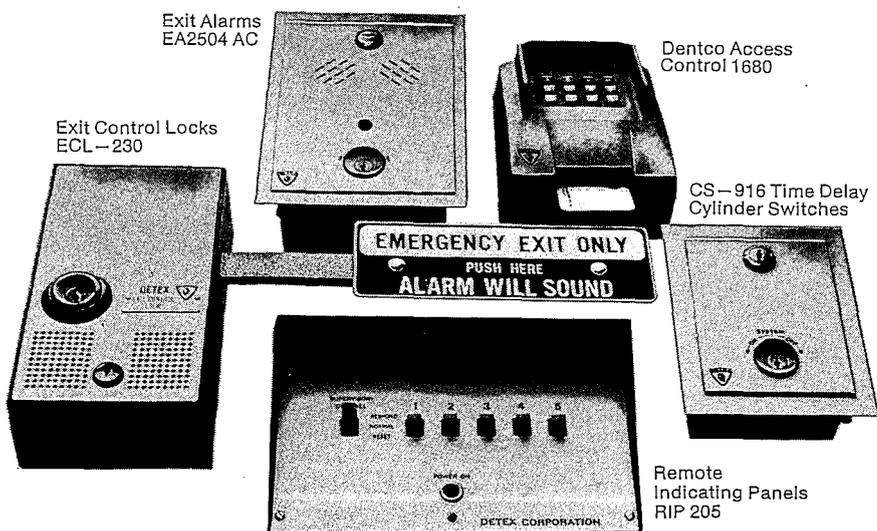
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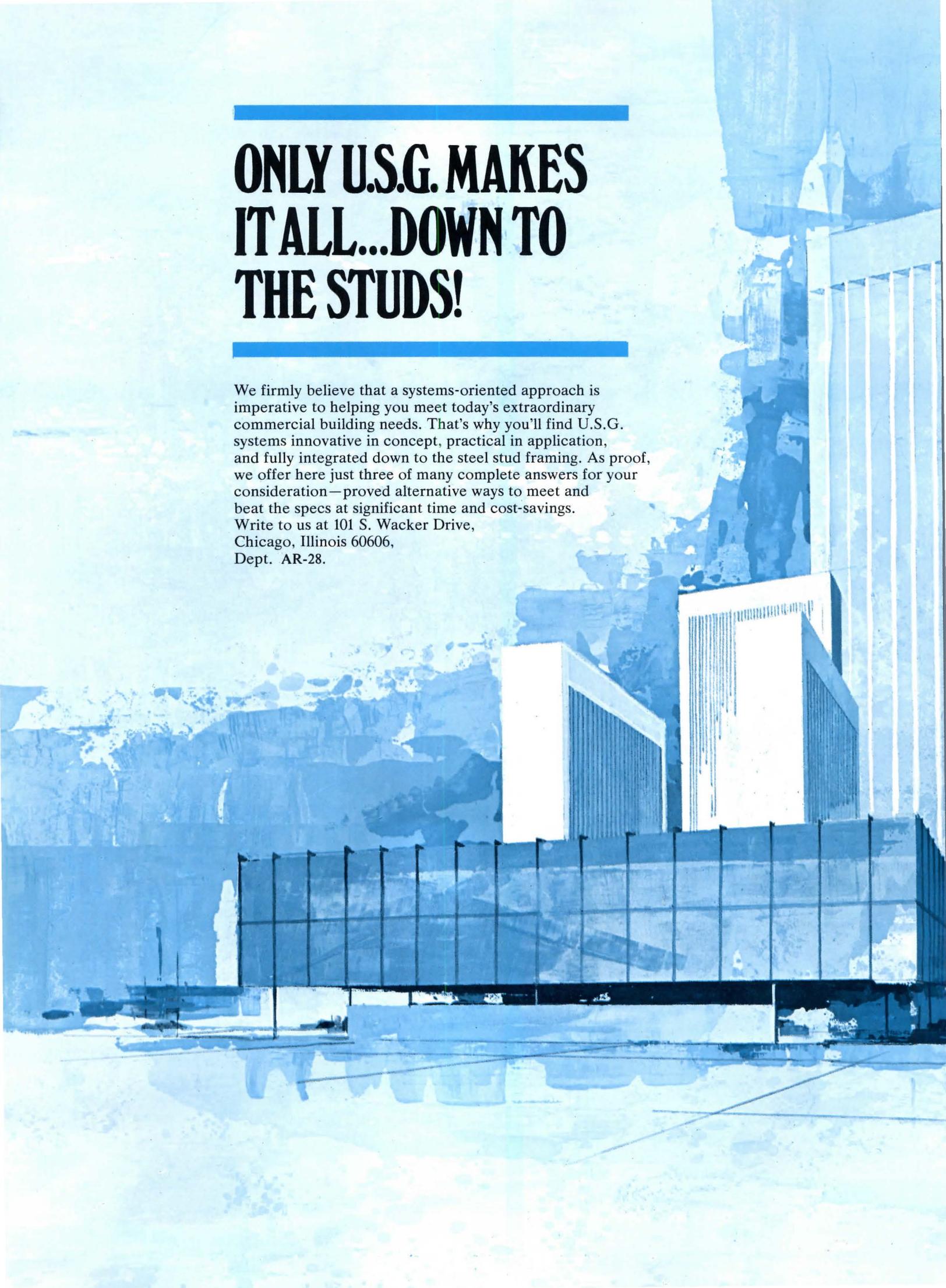
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Organizing to eliminate personnel peaks and valleys

Frequently, a design firm realizes that in order to complete a project an increase will be required in existing personnel. The difficult task is to accurately judge the number of additional personnel required for each discipline in order to complete the project on schedule. Intuitive reactions are often only partially accurate, and unfortunately, it frequently happens that by the time personnel shortages are realized, the schedule has progressed to a point where it is impossible to recoup lost time. At that point project delay sets in. But by identifying both the available design resources for each discipline and the personnel required to complete each project phase, it is possible to determine the daily manpower demand over the life of the project. Here is a process used by a construction management firm to project its manpower needs on specific projects, to project long-term needs throughout the firm, and to staff up or down without trauma.

The "Manpower Management System" described here and in effect at the Houston-based construction management firm, CM Associates, Inc., is both an outgrowth of their computer-aided schedule control system and procedures developed to effectively manage critical construction materials for a number of current projects. In these situations where materials for a project were either difficult to procure or fundamental to the construction process, an accurate forecast of the required quantities and the dates when they were needed was necessary if the projects were to remain on schedule.

In the design process, the critical resources are time and personnel. The profit on a project can be severely affected by a slippage in manpower productivity, and the corresponding

increased overhead expenses. It was this need to accurately forecast personnel demand which led to the development of the Manpower Management System.

The first use of the system was on the King Abdulaziz Military Academy located in Riyadh, Saudi Arabia. The project is being designed by the joint venture firms of Caudill Rowlett Scott and McCaughy, Marshall, and McMillan. CM Associates, Inc. is providing estimating, scheduling, and consulting on construction, material logistics, and procurement. The project is being built for the Ministry of Defense and Aviation in Saudi Arabia under the auspices of the United States Army Corps of Engineers.

The scope of this project involved the design of 80 separate major facilities with a design schedule of approximately two years.

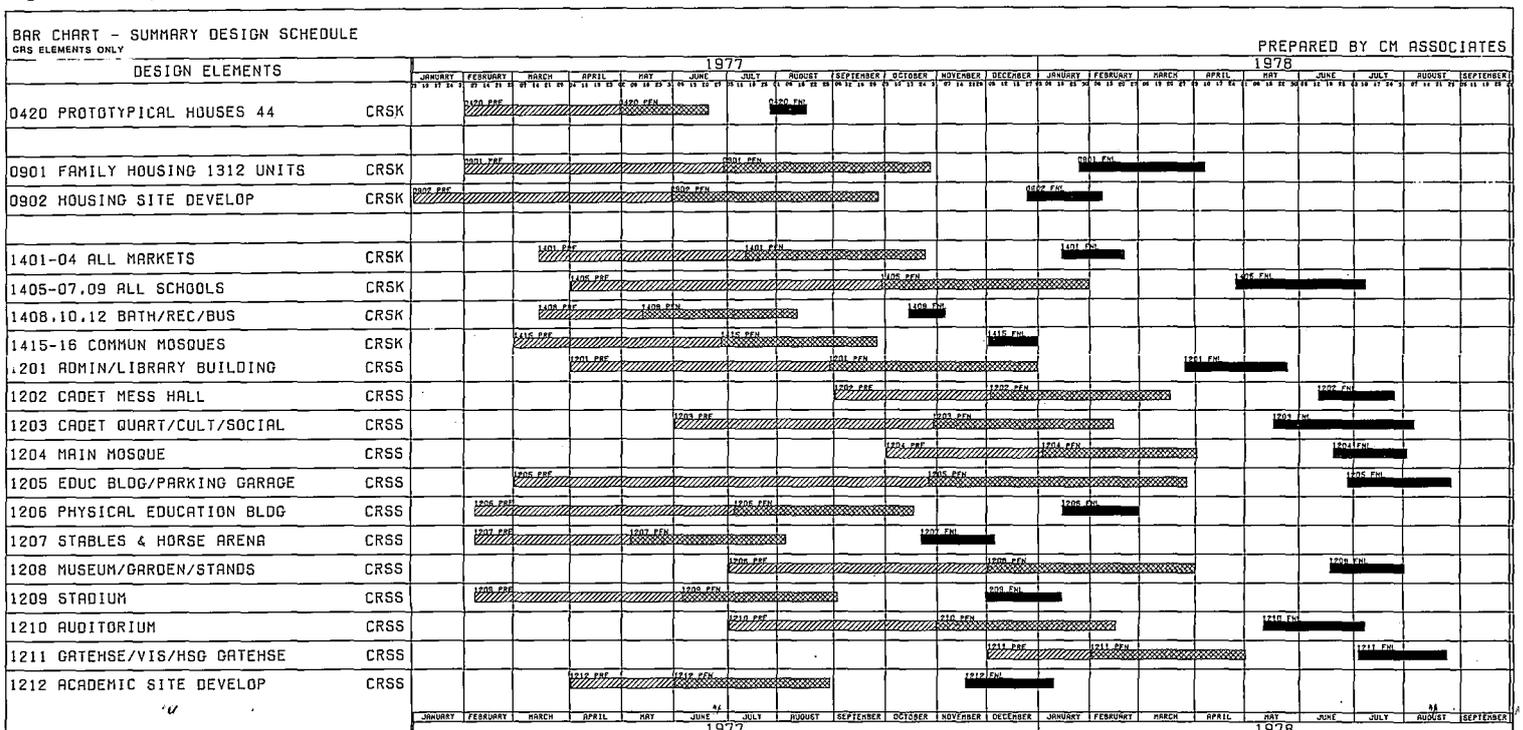
An accurate projection of the manpower requirements was obviously necessary to avoid a radical staffing up or down of the project design teams in order to meet contractual completion deadlines. (CM Associates, Inc. employs 120 professionals.) But the concept can be applied to almost any size office with more than one current project.

Start by determining the manhours for each project phase

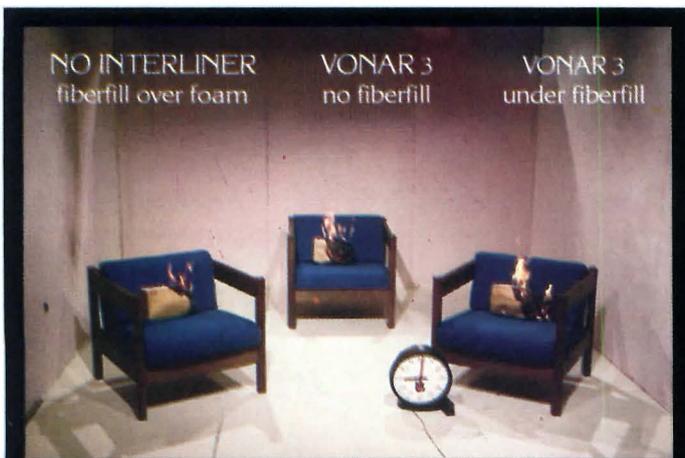
Prior to the start of each new job, the project team analyzes the contract requirements and determines the design, technical, and management personnel manhours—including consultants—required by each discipline to complete each project phase. If the project will involve multiple design teams, the requirements of each team should be identified. Contractual obligations and submission deadlines for each level of design are reviewed, and a project design schedule is prepared reflecting the design steps and identifying the necessary interdisciplinary relationships. This detail design schedule and those of other projects in the firm are used to prepare a rough bar chart (Figure 1 below) summarizing the start and finish of the design phases for all projects.

Based on production schedules and

Figure 1. PRE=preliminary. PFN=pre-final. FNL=final



In this flammability test, the chairs with VONAR 3 interliner were not consumed.



Time: One minute into the test.
Identical ignition sources nearly half consumed.



Time: 3 minutes.
Standard chair (left) involved.



Time: 8 minutes, 30 seconds.
Chairs with VONAR 3 are out.
Chairs used for this test commercially available from Thonet Industries, Inc.

Test Results

Two sheets of newspaper crumpled in a paper bag were placed on each cushion touching the back cushion, then ignited.

After three minutes, the paper fires were out, but the standard chair continued to burn, producing large quantities of flame, heat and smoke. The chairs with VONAR* 3 were only slightly involved in flame.

At eight and one-half minutes, the standard chair was consumed. The fires in both chairs with VONAR 3 had gone out. As a result, those chairs sustained relatively little fire damage and produced far less heat and smoke.*

Comfort and Flammability Performance

The chairs for this test were identical except for the use of VONAR 3 and fiberfill. All were made with identical wool/nylon upholstery fabric, standard polyurethane foam in the seat and back cushions, and wood structural parts. But the left and right-hand chairs had a layer of polyester fiberfill directly under the fabric for added comfort. The center and right-hand chairs were constructed with a layer of VONAR 3 interliner as an envelope around the polyurethane foam in the seat and back cushions.

As the flames heated the VONAR interliner, heat-absorbing moisture and flame retardants were released. Then the VONAR formed an insulating char on the chair parts in contact with the ignition source. Result: in limited ignition situations such as this, VONAR prevents or reduces the likelihood of ignition of upholstered furniture as a unit. Should ignition occur, VONAR reduces the burning rate.

To determine what a difference VONAR can make in your furniture or future specifications, use the coupon or write: DuPont Company, Room 36062C, Wilmington, DE 19898.

*DuPont registered trademark for interliner made by licensed manufacturers according to DuPont specifications.

**The test described here does not demonstrate that all furniture using VONAR interliners will perform in this manner or will not burn under all actual fire conditions. The test was not conducted to assign "numerical flame spread ratings" to any material involved. The results

show only that specific types of chairs, which used VONAR interliner properly, performed as indicated under the test conditions. Since DuPont does not make furniture or make or install interliner, we assume no responsibility for furniture performance. Consult your furniture supplier for flammability information on a specific furniture style.

Mail to: DuPont Company, Room 36062C, Wilmington, DE 19898.



Please send me:

- further technical data and test results.
- a list of furniture manufacturers using VONAR.
- a list of licensed manufacturers of VONAR.
- have salesman call.

Name _____ Phone _____

Title _____ Company _____

Address _____

City _____ State _____ Zip _____

Application _____



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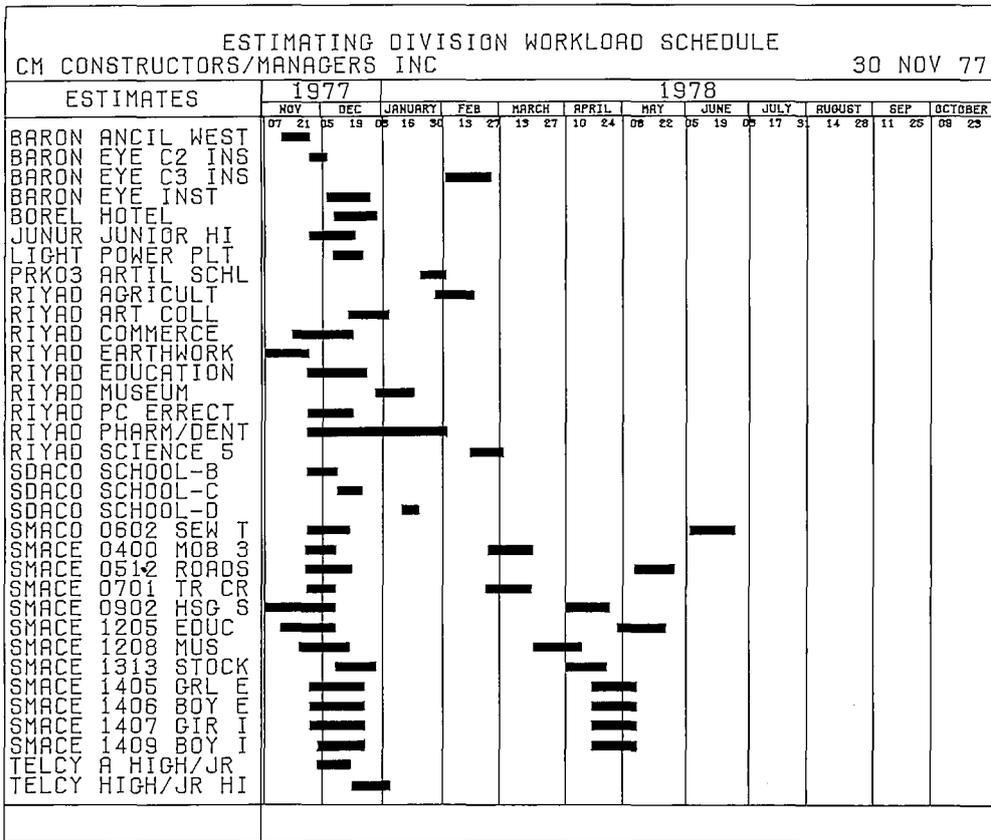


Figure 2. The computer-generated bar chart shows the estimating function of the hotel project in Figure 3 in the context of the total estimating department workload over an eight-month period. By analyzing such information, management can predict the impact of new work on the existing work before committing to a production schedule with a new client. The same type of information can be produced for all disciplines. With regular updating of work progress, the system can forecast staff needs before they are urgent.

known technical requirements, CM Associates, Inc. uses a simple computer to stack all this information and forecast the manpower requirements by month or pay period over approximately two years. The computer then charts this information, giving a quick view of the peak and valley personnel conditions that would exist if the projects progressed independently (see Figure 4, page 63.). The computer lays this information over a line representing the available personnel, showing immediately that in some months, there will be under-utilized staff, while in other months, there will not be enough staff. The former situation means low productivity and more overhead, while the latter means job delays, overtime, or both.

By determining both the project design requirements and the total manpower availability within a given time period, it is possible to use a computer to determine the design schedule that maximizes the available resources within the given phase completion requirements.

The computer can continuously even out the workload

At CM Associates, Inc., project managers tell the computer how much time is available for a particular phase, and when the work must be completed. If for some reason, the computer cannot shuffle the total amount of work and still meet the time and manpower requirements for all the projects, it will tell the project

managers to re-think some of their project parameters.

Periodic updating of the available resources and the design schedule status allows on-course corrections that may be required due to project acceleration, delay, or changes in the available manpower.

The principles that are involved in the management of a single project can be applied to both the small project as well as the larger, more complex design task. By identifying the total firm manpower availability, it is possible to project the manpower demands over the life of all the jobs within the firm as well as individual ones. With regular updating of design progress, resource availability, and completion requirements, the system can accurately fore-

CM ASSOCIATES, INC., THE TRANSOCO TOWER, SUITE 2200, 2700 POST OAK ROAD, HOUSTON, TEXAS 77027, (713) 622-5030

SCHEDULE CONTROL SYSTEM ESTIMATING DIVISION WORKLOAD SCHEDULE

SCHEDULE REPORT - TYPICAL ESTIMATING DIVISION JOB SCHEDULE UPDATE # 1 DATA DATE: 22NOV77

NETWORK ID: CCMGT001 SEQUENCE: PIIN # 46 REPORT DATE: 04DEC77

LINE	WORK ACTIVITY DESCRIPTION	CONTRACT CODE	ORG	REM	%	F A P L Y	L A T E	F L O A T
NO	NO	DUP	DUP	COMP	START	FINISH	START	FINISH
2051	2052 0 FALLS HI RP INITIALIZE HOTEL	BOREL	1	1	%	05DEC77S	06DEC77	05DEC77 06DEC77 0
2052	2053 0 FALLS HI BP FAMILIARIZE ARCH HOTEL	BOREL	1	1	%	06DEC77	07DEC77	06DEC77 07DEC77 0
2052	2054 0 FALLS HI BP ESTIMATE LEVEL FC HQ BUILDING TYPE	BOREL	1	1	%	06DEC77	07DEC77	12DEC77 13DEC77 4
2052	2055 0 FALLS HI RP BP BIDPACK FC HQ	BOREL	1	1	%	06DEC77	07DEC77	07DEC77 08DEC77 1
2052	2056 0 FALLS HI RP ACTION EST HOTEL	BOREL	1	1	%	06DEC77	07DEC77	16DEC77 19DEC77 8
2053	2057 0 OFFICE HI RP QUANTIFY ARCH HOTEL	BOREL	8	8	%	07DEC77	19DEC77	07DEC77 19DEC77 0
2054	2058 0 FALLS HI RP QUANTIFY STRU HOTEL	BOREL	4	4	%	07DEC77	13DEC77	13DEC77 19DEC77 4
2055	2059 0 FALLS HI RP QUANTIFY MECH HOTEL	BOREL	7	7	%	07DEC77	16DEC77	08DEC77 19DEC77 1
2056	2060 0 FALLS HI RP QUANTIFY ELEC HOTEL	BOREL	7	7	%	07DEC77	16DEC77	08DEC77 19DEC77 1
2061	2062 0 FALLS HI BP PRIMARY RUN HOTEL	BOREL	1	1	%	19DEC77	20DEC77	19DEC77 20DEC77 0
2062	2063 0 FALLS HI RP EST DIV REV HOTEL	BOREL	1	1	%	20DEC77	21DEC77	20DEC77 21DEC77 0
2063	2064 0 FALLS HI RP PROJ MGR REV HOTEL	BOREL	1	1	%	21DEC77	22DEC77	21DEC77 22DEC77 0
2065	2066 0 FALLS HI RP FINAL REVSN ELRC HOTEL	BOREL	1	1	%	22DEC77	23DEC77	22DEC77 23DEC77 0
2065	2067 0 FALLS HI RP FINAL REVSN MECH HOTEL	BOREL	1	1	%	22DEC77	23DEC77	22DEC77 23DEC77 0
2065	2068 0 FALLS HI RP FINAL REVSN STRU HOTEL	BOREL	1	1	%	22DEC77	23DEC77	22DEC77 23DEC77 0
2065	2069 0 FALLS HI RP FINAL REVSN ARCH HOTEL	BOREL	1	1	%	22DEC77	23DEC77	22DEC77 23DEC77 0
2070	2071 0 FALLS HI BP PRINT HOTEL	BOREL	1	1	%	23DEC77	27DEC77	23DEC77 27DEC77S 0

Figure 3. The Manpower Management System is used here to schedule the estimating functions for a hotel project. The "Float" column at the extreme right

of the print-out indicates the number of work days a particular start date could slip and not effect a delay in the project.

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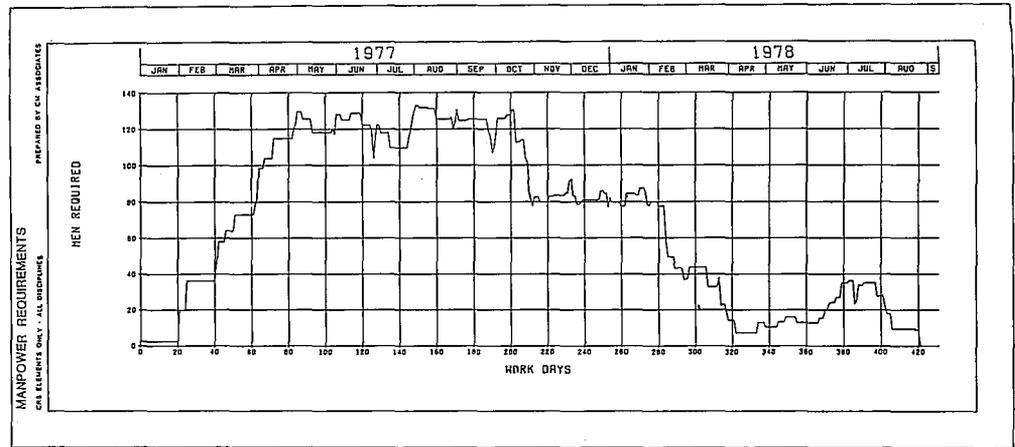
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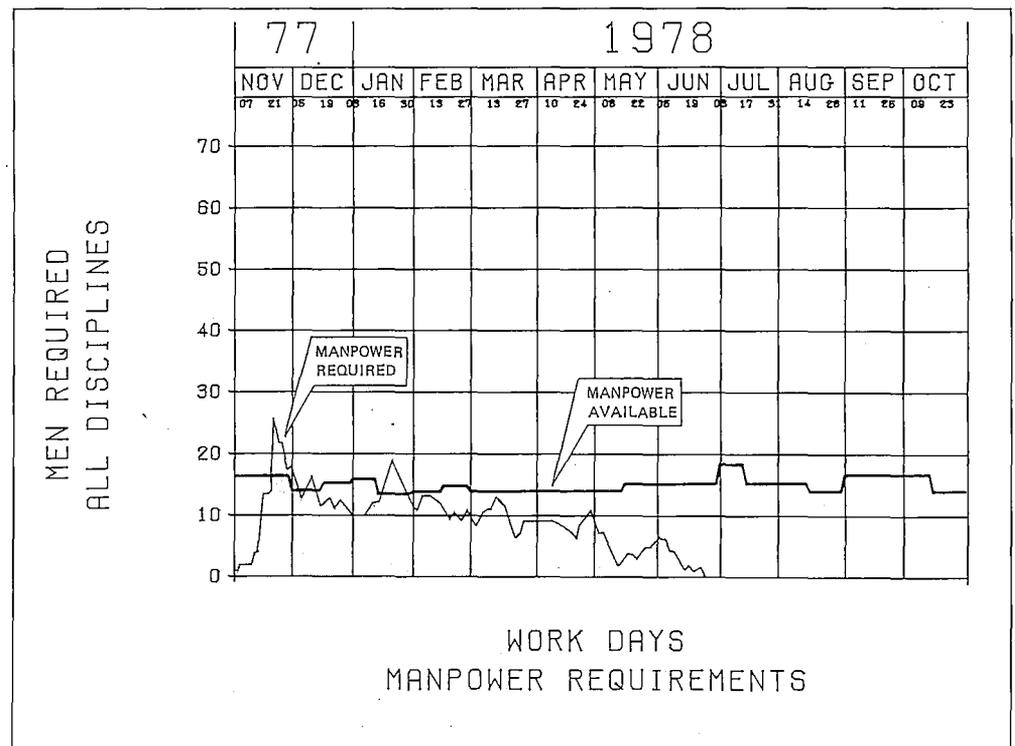
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Figures 4 and 5. Based on production schedules and known requirements, CM Associates, Inc. uses a simple computer to forecast manpower requirements over approximately two years. The computer then charts this information, giving a quick view of

the peak and valley personnel conditions (above) that would exist if the projects progressed independently. The computer lays this information over a line representing the available personnel, showing where under-utilization of staff will occur (below).



cast future manpower needs before they become critical. It is also possible to analyze the impact of a new project on the existing resources of a firm before committing to a production schedule. In the same way that slippages in manpower productivity increase overhead expenses, the need to hire additional personnel or retain outside consultants also can reduce profits.

Setting up the procedures takes approximately one week

Approximately \$80 in initial computer time, and one week for analyzing project requirements, is needed to enter a new job into the Manpower Management System. In order to tap the program, which can be sold to other firms by CM Associates, Inc., a user needs only a low-speed terminal and a telephone.

In summary, the process is as follows:

1. Analyze contractual obligations of the project and required submission deadlines for all phases.
2. Determine design requirements and

personnel necessary to complete each phase.

3. Prepare (by computer) a preliminary design schedule based on the previously identified contractual obligations, submission deadlines and interdisciplinary requirements.

4. Project manager should determine the technical manpower (such as senior project architects) for each discipline necessary to complete each design phase.

5. Forecast manpower requirements for each discipline as well as for the total project. A computer-generated graph is helpful to visually indicate the project requirements.

6. Compare the project requirements with the manpower resources available to the design team. Identify undesirable personnel peaks and valleys.

7. Revise schedules as necessary to minimize undesirable fluctuations in the design team.

8. Note periods when excess personnel will be available for other assignments, or when additional manpower will be necessary to maintain schedules on a firm-wide basis.

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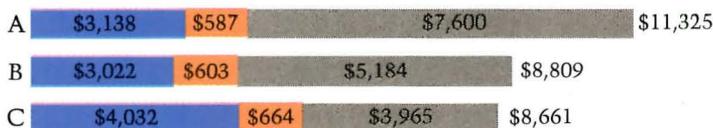
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 Cleaning and Relamping	
 Energy Costs (@ 5¢ per KWH)	

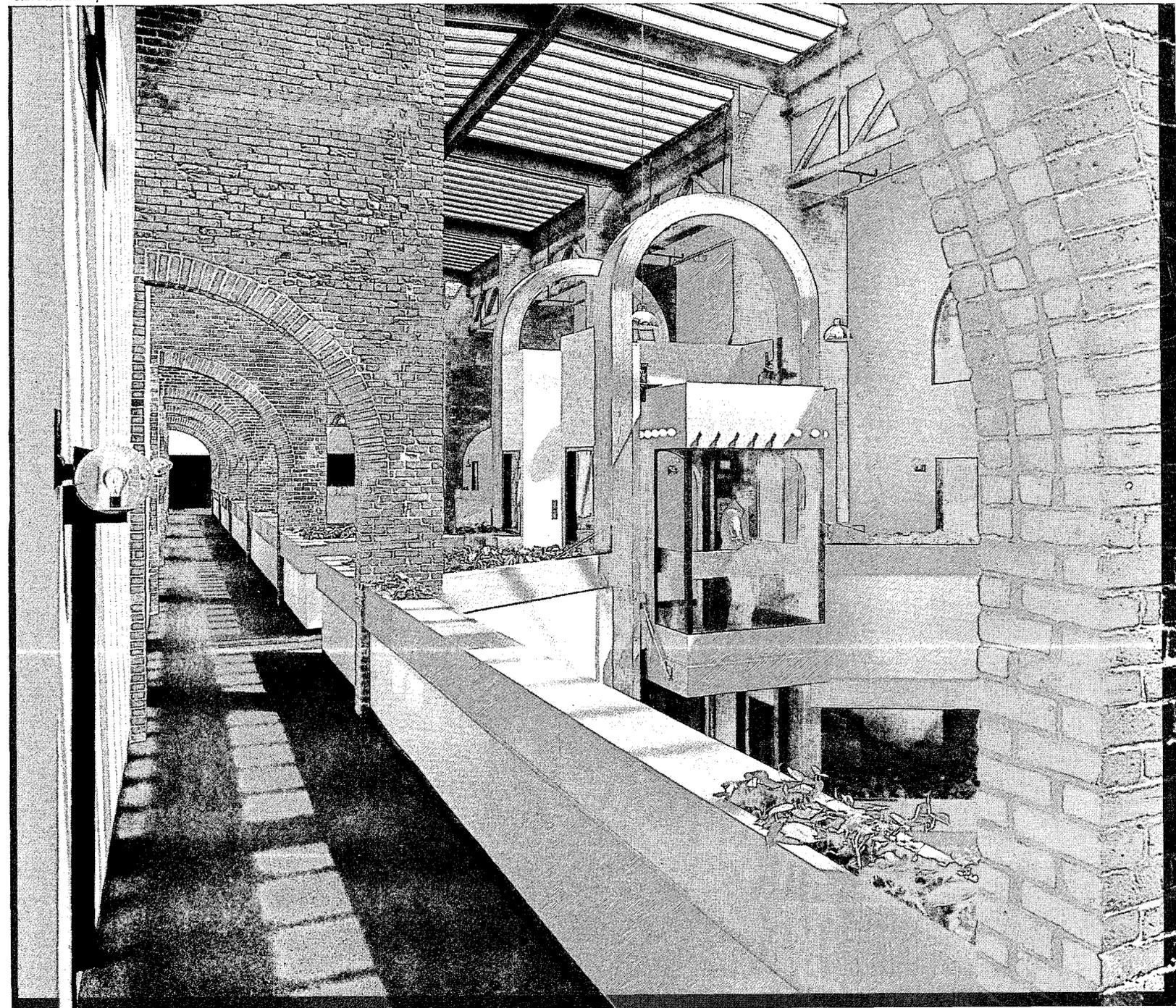
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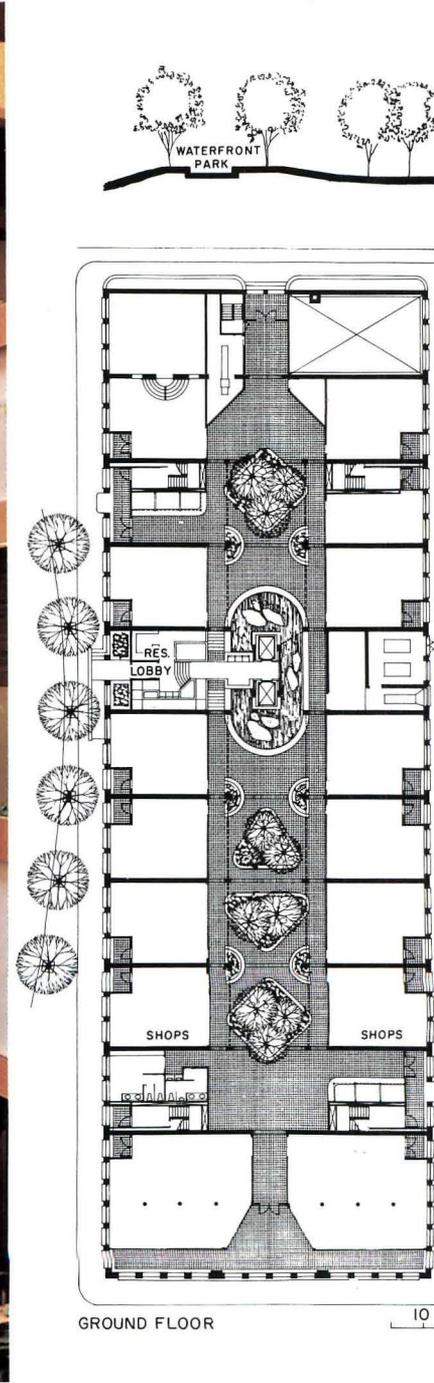
HOUSING

Advocacy planning, a phenomenon of the sixties, has all but disappeared in U.S. cities. Redevelopment agencies have since learned to talk to community groups, they now permit them to participate to some degree in planning, they relocate those to be evicted, and in general treat resident groups well enough to keep them from taking strong adversary positions. More than ten years ago, however, when architect John Sharratt began to volunteer his time and technical skills to the beleaguered citizens of Boston's Lower Roxbury, Mission Hill and South End, it was a different story. Because these lower-income communities lacked the money and skills to defend themselves and because their areas were the most deteriorated and least expensive to acquire, they became the first victims of the BRA's efforts to find in-town sites for higher-income housing, highways, consolidated schools, hospitals and other forms of institutional expansion. Unified by crisis and aided by their churches and a few philanthropic organizations, they welcomed Sharratt's offer to help keep them from being evicted and dispersed. This study focuses upon the achievement of these communities in building well designed and constructed mixed-income housing and commercial space for themselves and others. It begins, however, with the Mercantile Wharf Building renovation (below) a job won by Sharratt in an open design-development competition. — *Mildred F. Schmertz*

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GROUND FLOOR

10

Re-cycling the Mercantile Wharf Building on the Boston waterfront into mixed-income apartments

The Mercantile Wharf Building, unlike the projects to come in this study, was not developed by one of Boston's poor communities. Nevertheless, it is linked to them.

Sharratt got the job to renovate the Mercantile Wharf Building by winning a developer/architect competition sponsored by the Boston Redevelopment Authority in 1972. The successful developer was Peabody Construction Company, which earlier built "Torre Unidad" for the elderly in Vivendas La Victoria in Boston's South End, designed by Sharratt (pages 88-91). The excellent collaboration between Sharratt and Peabody led to their joint proposal.

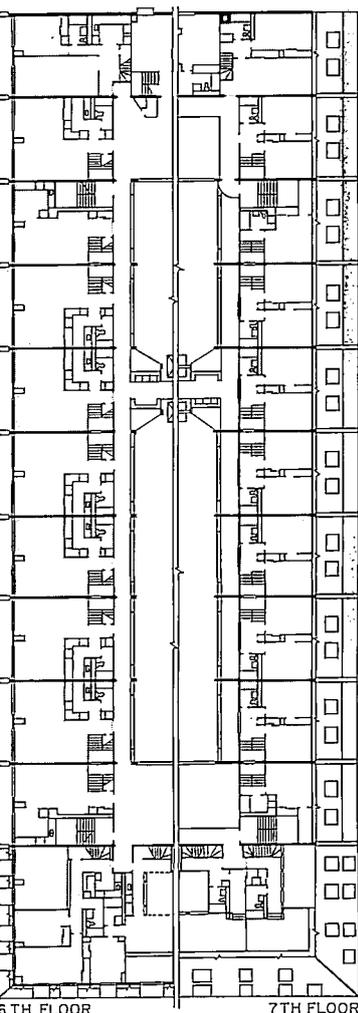
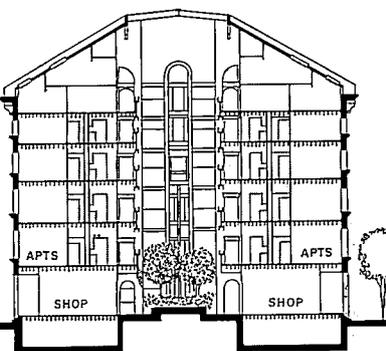
The BRA had opposed Sharratt as "a trouble maker" during his early years as an advocacy planner. By 1972, however, leading officials of the BRA were calling the remodeled row houses of Vivendas La Victoria (page 89) "the best residential rehabilitation in the city." And by the time Sharratt won the competition to rehabilitate the Mercantile Wharf Building, the BRA had begun recommending him to developers.

The BRA did no preliminary work on the building to get it ready for the developer. According to Sharratt: "it was full of dead animals, garbage, and rusted-out appliances—but it was very solid and well built." Originally designed in 1857 by Gridley James Fox Bryant in the French Second Empire Style, it once housed shipchandlers and sailmakers.

Sharratt's design preserves the original character of the building from the outside. Inside he has carved out a spectacular six-story atrium with a skylight extending its entire length. Two glass enclosed elevators descend to a pool.

The building contains 121 apartments ranging from duplexes and triplexes with lofts and skylights to one-bedroom apartments. Thirty-six of the apartment units are leased at market rents. Forty-two are for moderate-income and forty-three are low income. The subsidy program is HUD Section 707, and HUD Section 236.

MERCANTILE WHARF BUILDING, Boston, Massachusetts. Owner: *Mercantile Associates*. Architects: *John Sharratt Associates, Inc.*—project architect: *John Sharratt*; project manager: *Robert Meeker*. Consultants: *Engineers Design Group, Inc.* (structural); *William R. Ginns* (mechanical); *Sam Zax* (electrical). General contractor: *Peabody Construction Co., Inc.*



Sharratt began as an advocacy planner in the Madison Park neighborhood of Lower Roxbury

John Sharratt began working with the Lower Roxbury community before he had his own firm. "I was working as a regular architectural employee—first with TAC and then with Catalano and Belluschi. But I was interested in finding ways to build better housing for people of low incomes. I joined a group in Boston with similar concerns called Urban Planning Aids. They were young people starting out as transportation planners, sociologists and architects—a good group. I decided to give my evenings and weekends to the problems this group was attacking. There was no money to pay us."

UPA and Sharratt knew that Boston's poorer communities were far less able than middle-income groups to resist the destruction of their neighborhoods by large-scale projects. "In the sixties," says Sharratt, "the plan-

ners never touched the upper middle-class neighborhoods which had plenty of volunteer lawyers to defend them. They pushed their highways and their over-size schools into the poor communities, where people don't have the time or skills to defend themselves."

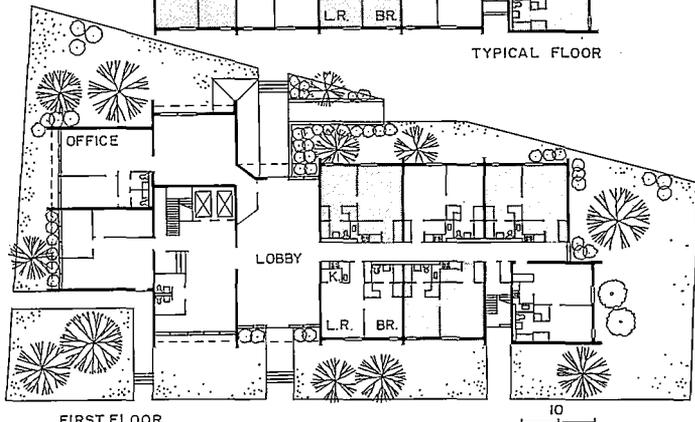
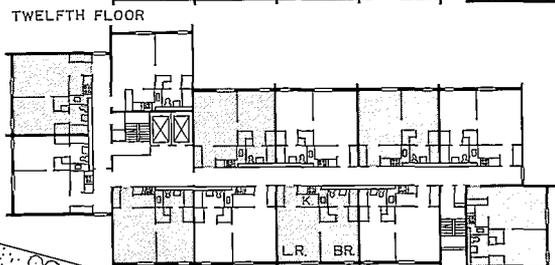
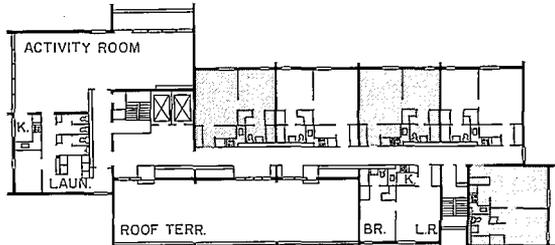
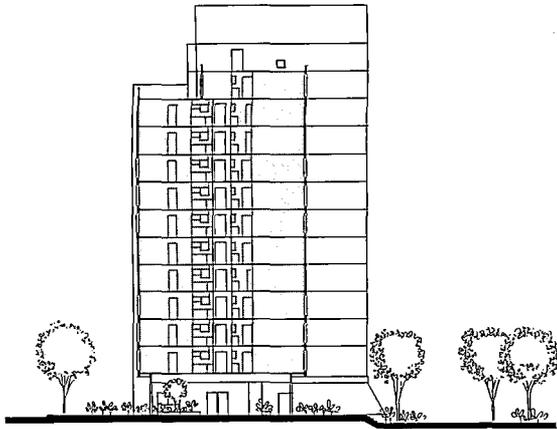
UPA had a request for help from a predominately black group in Lower Roxbury, 400 of whose homes were about to be demolished to make room for a 5,000-student high school. No relocation housing in the neighborhood was to have been provided—in fact, as Sharratt says: "There was no longer to be a neighborhood." The construction of two major expressways also threatened the community's future. Their situation was clear: the residents of Lower Roxbury were being robbed of everything that made for commu-

nity life—their homes, neighbors and churches—without representation, participation, consent or compensation.

Sharratt and the UPA helped get the community organized and assisted them in presenting to the Renewal Authority alternatives to the proposed high school and the expressways. Says Sharratt: "We asked the city why the school needed to be that big—did it really need 56 acres? I showed them how they could put the school on 15 acres leaving 16 acres for housing—some to be renovated and some new—and additional acres for other amenities. The agency planners would do all kinds of little studies on land use with figures to prove we were wrong, so we did even more drawings and models and diagrams to prove that we were right. Finally we got the city to shrink the high school to

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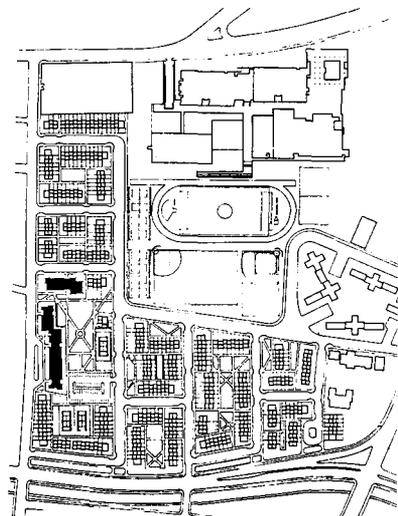
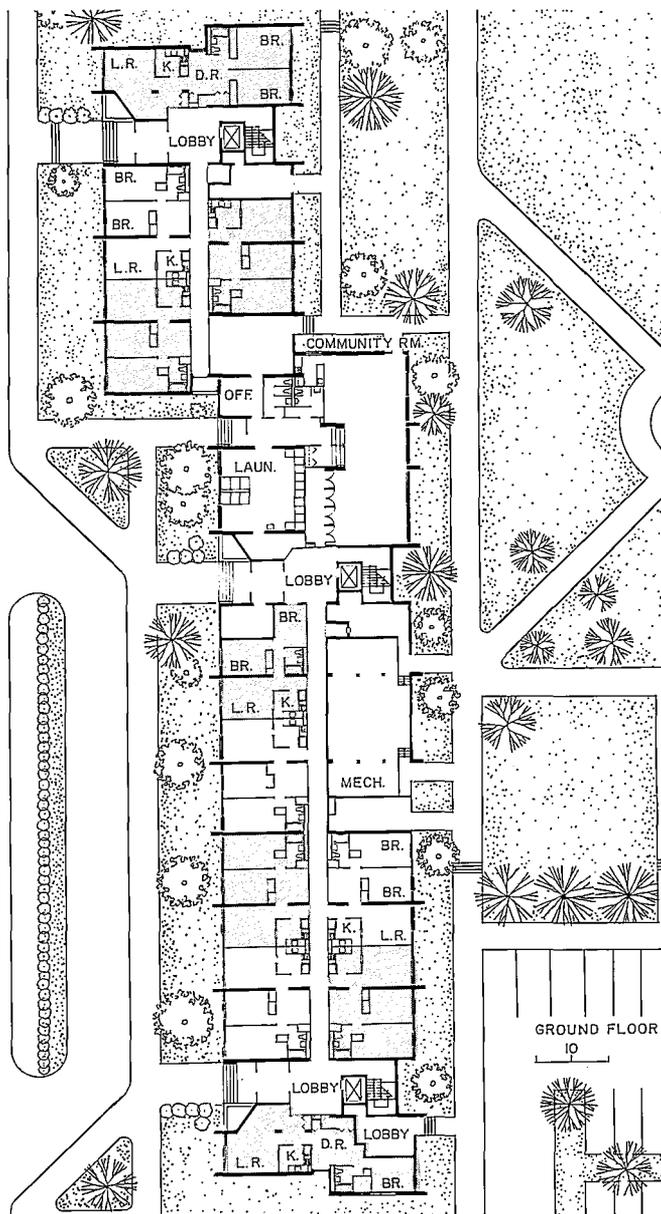




provide enough room for housing. Our victory was essentially political. The Boston politicians at last realized that this strong and vocal group of people who were against them could become an active constituency if they were treated right."

The Roxbury residents formed themselves into the Lower Roxbury Community Corporation (LRCC) and decided that they should develop and own their own housing. The BRA finally agreed and designated them developers for a 15-acre parcel contingent upon BRA approval of the development team. The LRCC overcame one further hurdle by persuading the BRA that Sharratt—who had not ingratiated himself with the agency during the years of fighting—be commissioned by the community as their architect.

HAYNES HOUSE, SMITH HOUSE, TOWNHOUSES OF MADISON PARK, Boston, Massachusetts. Owner: Lower Roxbury Community Corporation. Architects: John Sharratt Associates, Inc.—project architect: John Sharratt; project manager: Liviu Brill. Associated architects for Haynes House and Smith House: Samuel Glaser and Partners; for townhouses: Glaser/ de Castro/ Vitols. Consultants: Brown-Rona, Inc. (structural); Haley and Aldrich, Inc. (foundations); R.G. Vanderweil Associates, Inc. (hvac); Harris Associates (plumbing); Goodall-Shapiro Associates (electrical). General contractor for Haynes House and Smith House: George B.H. Macomber Co., Inc.; for townhouses: John B. Cruz Construction Co., Inc.



LRCC has been developing its project for eleven years. 263 units are complete with another 120 units in construction. Just begun are another 100 units on land once designated by the urban renewal planners as "future expressway." (The two expressways are now streets). LRCC is considering acquiring a neighboring public housing project built in the forties and renovating it. All phases of the housing development were financed through the Massachusetts Housing Finance Agency with HUD Sections 221d3 and 236 interest subsidies, and HUD rent supplements for the elderly and very-low-income residents. The residents of LRCC now own 10 million dollars worth of mixed income housing.

A community group with the help of its architect comes to terms with a mighty university

In the early 1960s Harvard University and other major institutions began large-scale real estate acquisition programs in a section of Boston known as Mission Hill. It was a community of moderate incomes composed of Irish Catholic, German and a smaller number of black and Spanish-speaking families.

Beginning in 1964 Harvard having bought the houses in the neighborhood began to rent to transients instead of families. Rents increased and maintenance deteri-

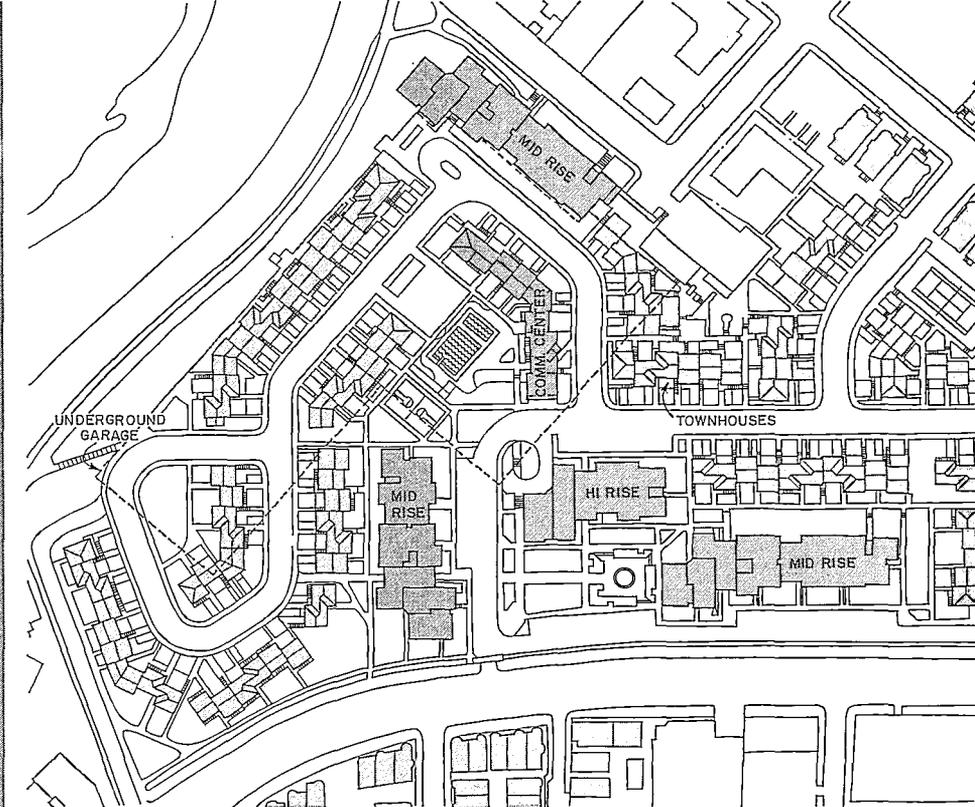
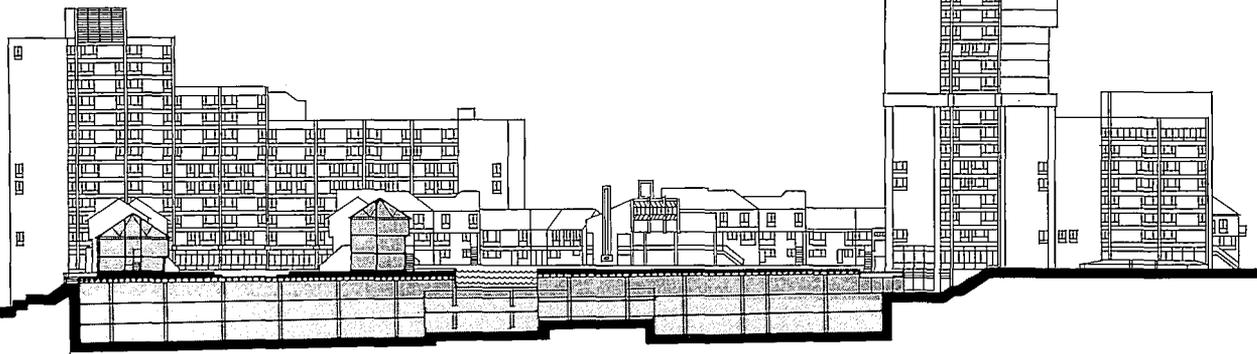
orated. Families were finding it difficult to remain. In 1968 the University announced its plans to build a new hospital complex. Harvard intended to evict the tenants of 182 apartments and tear them down by 1971.

Then came the Harvard student strike of 1969. The University's poor treatment of the Mission Hill community was one of the major issues of the strike. The students visited the neighborhood and helped the residents organize into a group which was to

become the Roxbury Tenants of Harvard (RTH).

At this time John Sharratt volunteered his technical skills to the community to help them analyze their problems and to find solutions. He helped them produce a 300-page document entitled "Stop Harvard" amply illustrated with photographed evidence of poor maintenance—water dripping through light sockets, ruin and rot. The booklet also contained the community's proposed master plan, prepared by





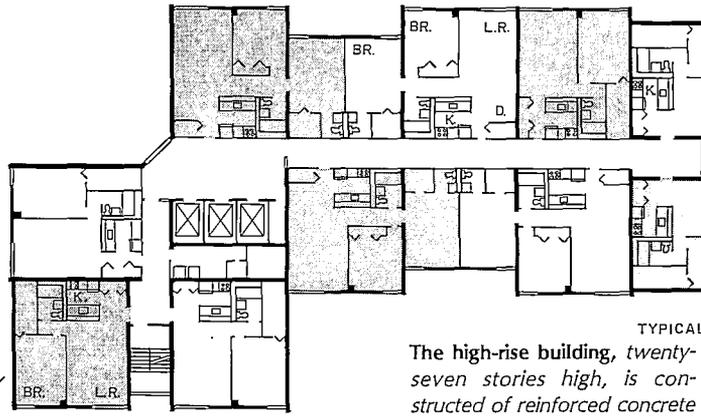
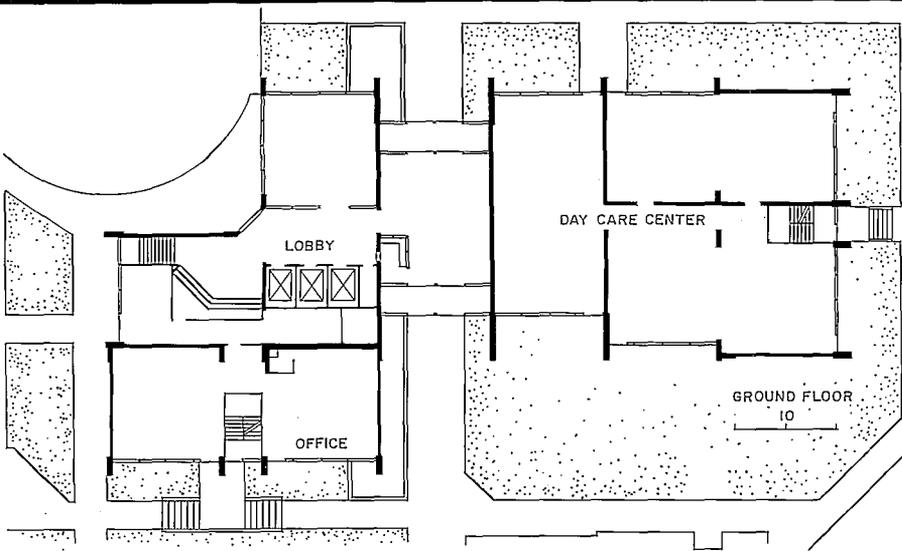
Sharratt and suggestions for negotiated terms with the University.

Only after RTH had demonstrated its ability to attract the attention of the media and its willingness to disrupt the daily business of the University, did Harvard begin to take them seriously. Negotiations with the Harvard Corporation began and by 1970 an agreement between Harvard and RTH provided that: first, the University should provide adequate repair and maintenance of the existing housing; second, a specified area within the site should remain a community residential area; third, RTH and/or their designate should sponsor and develop new housing on land currently owned by Harvard known as the Convent Site; fourth, Harvard University should assist RTH in securing the required financing and subsidization programs to guarantee rents all exist-

ing tenants can afford; fifth, Harvard should help to provide community facilities. Thus, after a year of effort, the neighborhood was not only saved but it had a future. Shown at left is the recently completed mid-rise building, with the high-rise, still under construction at the rear.

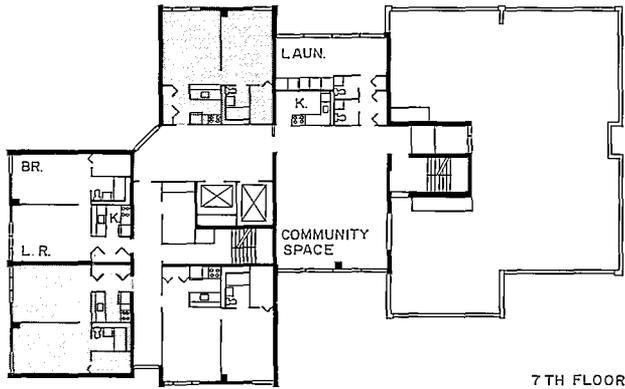
MISSION PARK, Boston, Massachusetts. Owner: *Mission Park Corporation*. Architects: *John Sharratt Associates Inc.*—project architect: *John Sharratt*; project manager: *Robert H. Egan*. Associated architects: *Glaser/deCastro/Vitols Partnership*. Consultants: *Brown-Rona Associates, Inc.* and *Cleverdon, Varney and Piek (structural)*; *Goldberg Zoino, Dunningcliff and Associates (foundations)*; *Atkinson Engineering Inc. (mechanical)*; *Goodall Shapiro Associates (electrical)*; *H.W. Moore Associates (site)*. General contractor: *George B.H. Macomber Co.*

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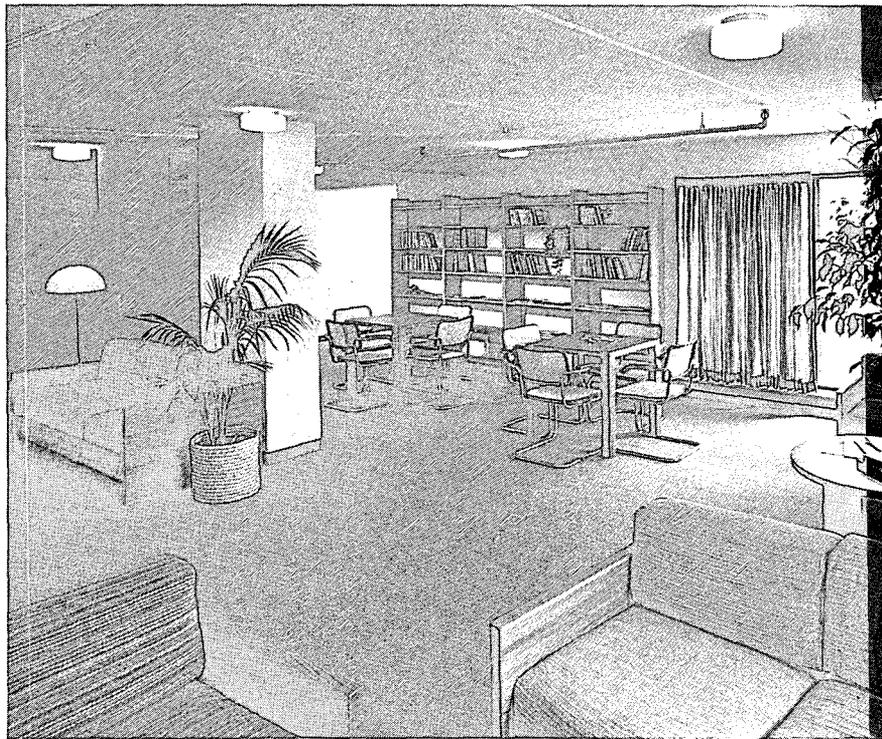


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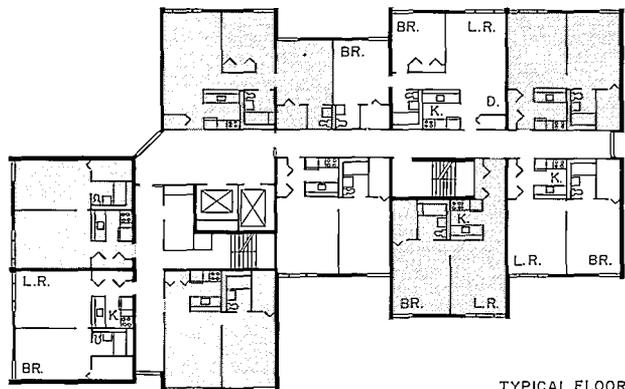
The high-rise building, twenty-seven stories high, is constructed of reinforced concrete for the lower nine floors and precast concrete for the upper floors with brick for the infill panels. It is shown in construction (opposite page). The plans above include a typical floor and the main floor with its community room and day care center.



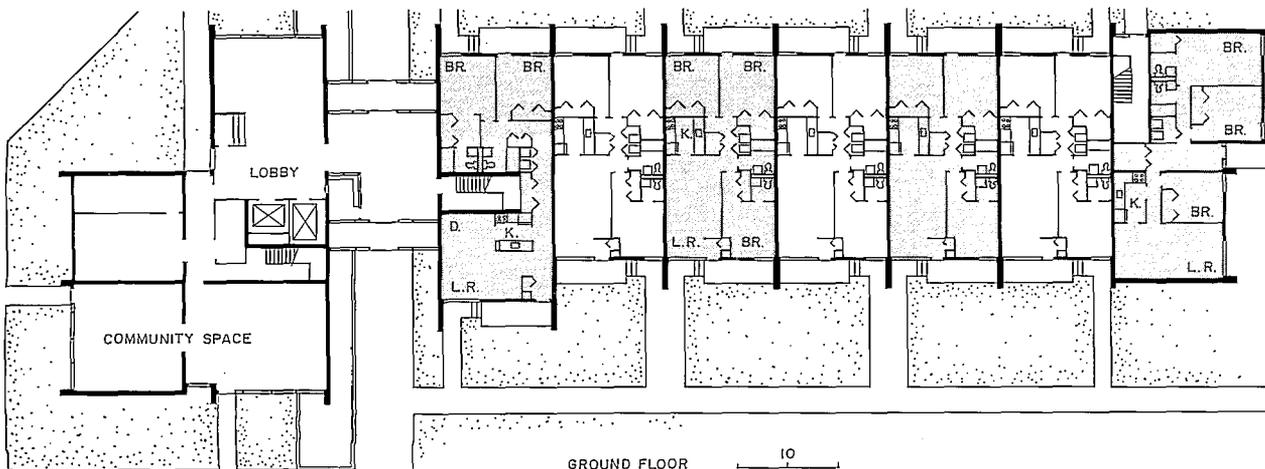
7TH FLOOR



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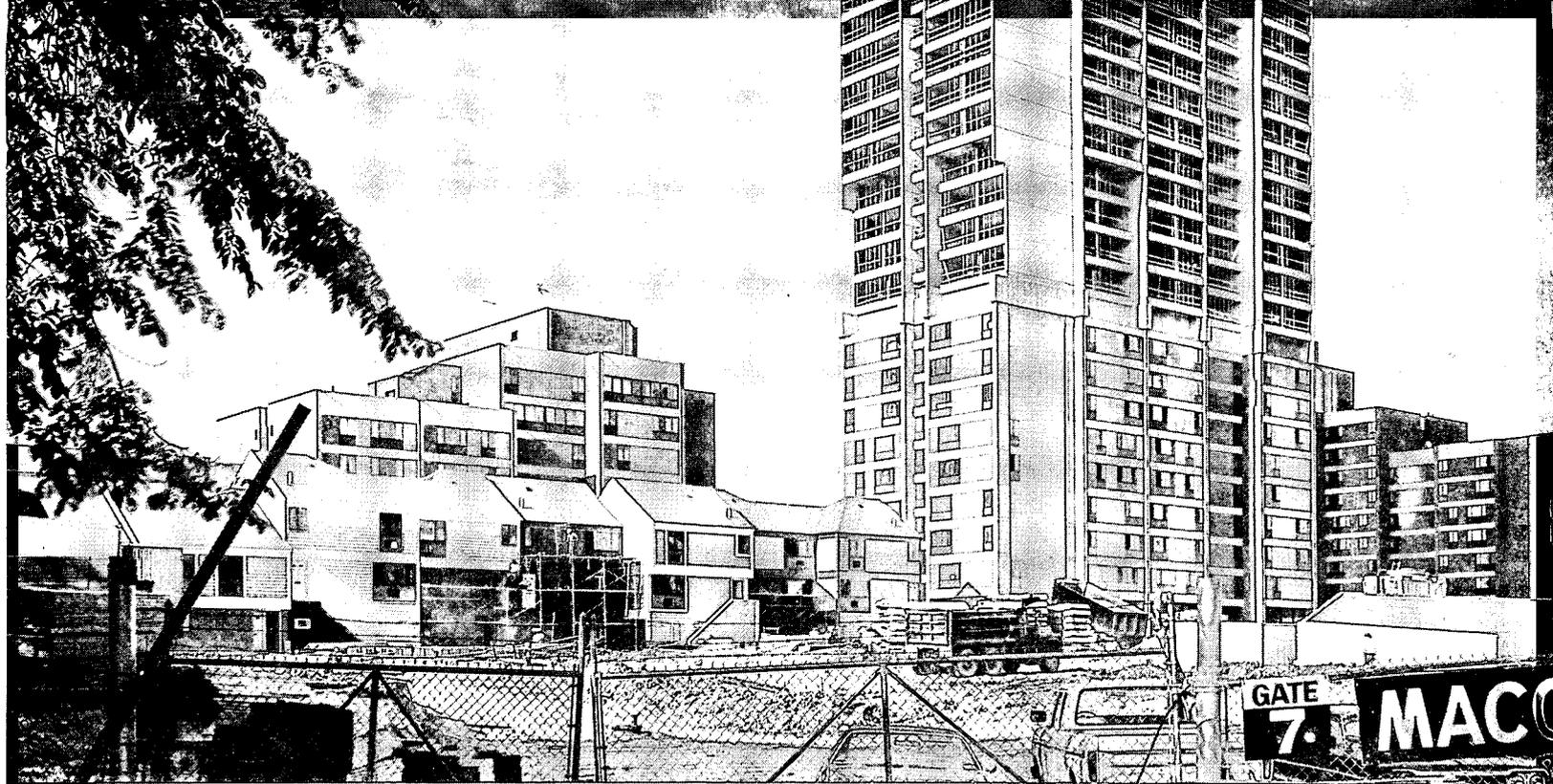


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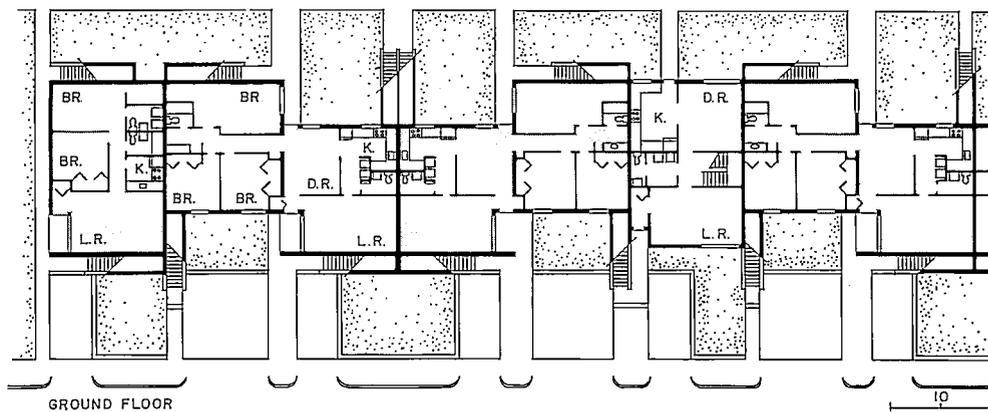


GROUND FLOOR

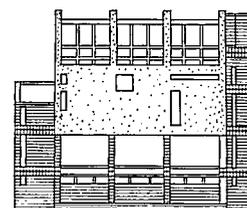
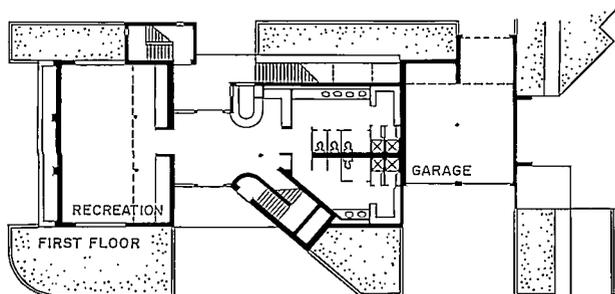
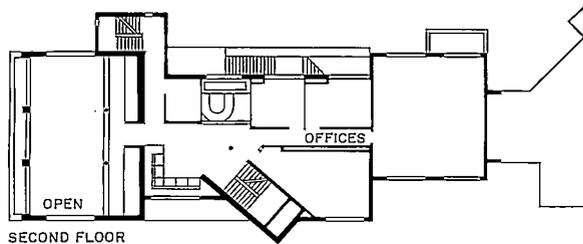
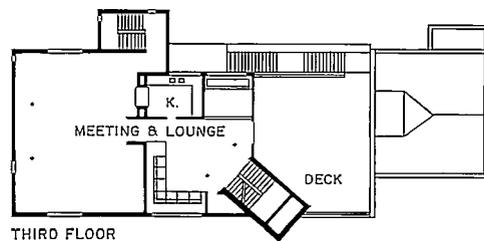
The mid-rise building steps up from four stories to thirteen. It is constructed of masonry load-bearing walls and precast concrete floors with brick as the exterior material. Shown above is a community room within the structure.



The townhouses are wood-frame construction with brick and wood shingles as the exterior material. They are being constructed over a 1,274-car underground garage of precast concrete. Available to all the residents in the high-rise, mid-rise and townhouses are dishwashers, disposals, a swimming pool, tennis and basketball courts, six play areas for small children, a formal plaza with a fountain and extensive landscaping.



The community building, (right) has not yet been constructed. It is at the heart of the project which will eventually comprise 775 units of housing, 40,000 square feet of medical office space and 6,000 square feet of neighborhood shops and recreational facilities. The construction loan for the entire project was provided by the Massachusetts Housing Finance Agency and the permanent loan by the State Street Bank and Trust Company. Thirty per cent of the units are low income, 65 per cent are for moderate incomes and 15 per cent are for market income. Subsidies are provided under HUD Section 221-4 Mortgage Insurance and HUD Section 8, Rent Subsidy. The developer is Mission Park Associates, a partnership between RTH, Citicorp of New York City, and Harvard University.





A Puerto Rican group in Boston's South End builds 492 units of housing and plans to build 435 more in their own development Villa Victoria

In 1965 the residents of a Boston neighborhood, which had been designated by HUD as the "South End Urban Renewal Area," were in great need of help. The HUD plan called for the total demolition of the area. The low-income housing and stores were to be replaced with upper-income housing and various institutional uses.

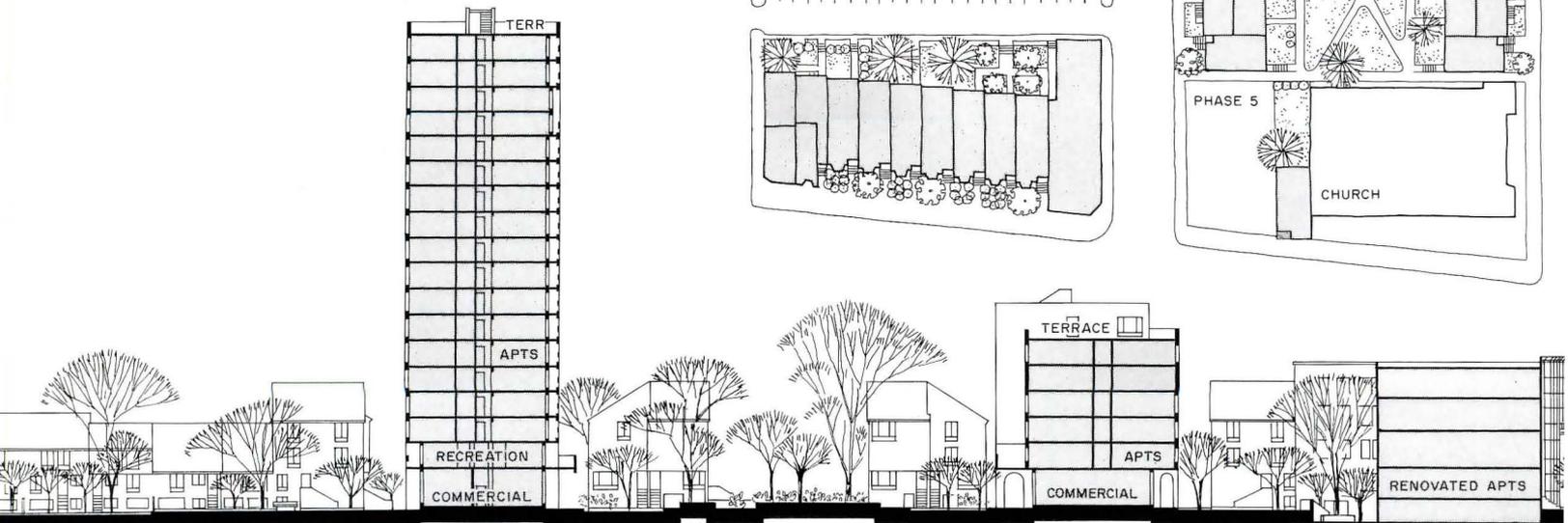
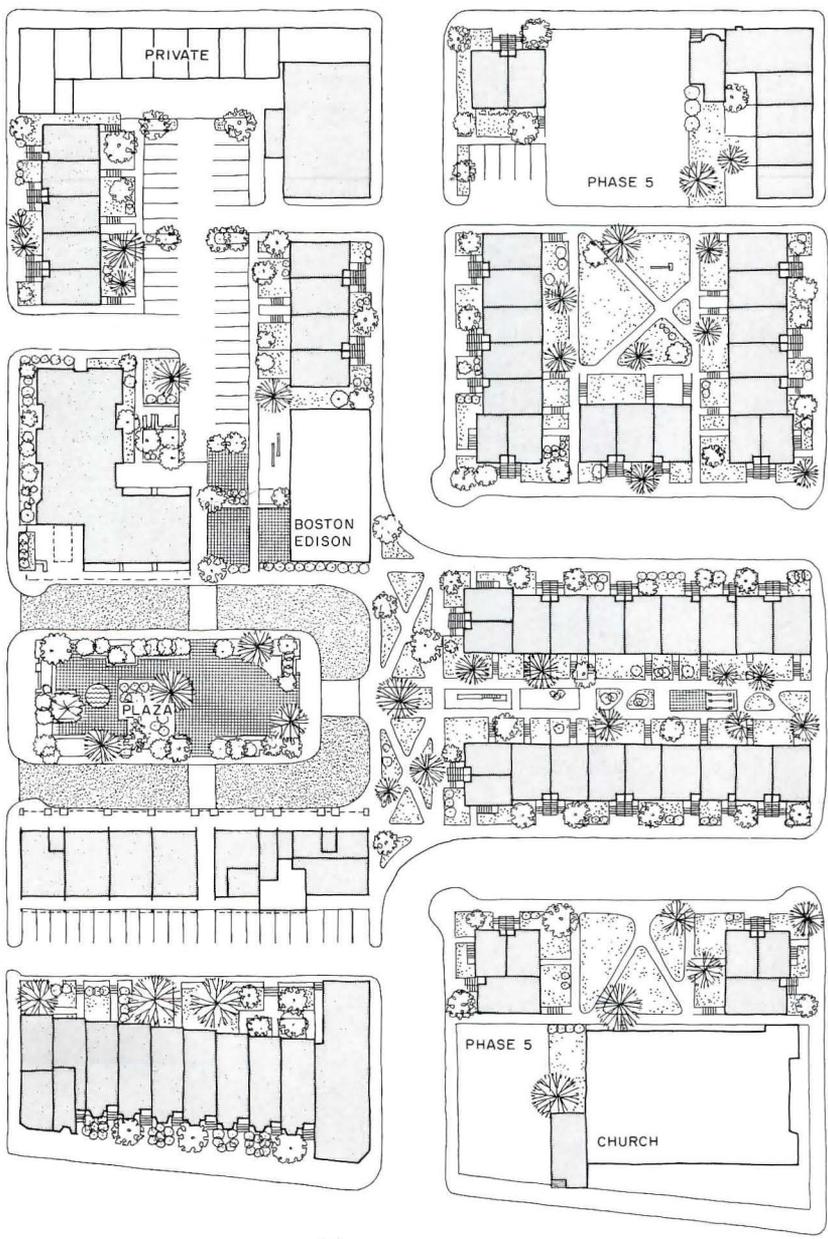
Coincidentally, at the time that this central section of the South End had been designated as an urban renewal site, there began a large migration of families from rural Puerto Rico to Boston, many of whom moved to the urban renewal area. These new Bostonians had found cheap rent, good welfare benefits, low skill jobs, a new community speaking their language, and friends and families from their villages back home.

Although the housing was cheap, services were poor. Heat was inadequate and eviction with dislocation a constant threat. A

local Episcopalian minister helped organize the residents and in 1968 invited the president of the Lower Roxbury Community Corporation, which was working with John Sharratt on Madison Park, to give the South Enders the benefit of Lower Roxbury's experience. As a result of this meeting, Sharratt began to work as an advocacy planner for the South End group as well. His job was to provide the technical assistance necessary to save and rebuild the community for the existing residents.

Sharratt found the problems and solutions for this area to be similar to those of Lower Roxbury. Things were easier to accomplish, however, because of the experience that he had gained through his work with the LRCC. By this time, furthermore, the BRA had become more sensitive to the demands of community groups and more aware of the political benefits of accommodating them.

© Steve Rosenthal photos



The chief obstacle to the continuing existence of the Puerto Rican community in the South End was their proximity to the downtown business area and to good public transportation. Their area was considered valuable for these reasons and highly desirable to speculators and developers.

It was evident to Sharratt upon his first review of the 1965 plan that there were many buildings scheduled for demolition that should be saved. The massive relocation problem had been ignored. He found the plan to be bad for the South End, its residents, and the City of Boston. He therefore set about to replace all the information that the Urban Renewal Authority had gathered to justify the 1965 plan. He and his team assembled and mapped the condition of individual buildings and

information about land use, ownership, traffic, employment and residency with the size and location of all families.

Sharratt and the community developed a new plan for their neighborhood to which the Renewal Authority objected. Although the issues being discussed and planned centered about land use, the real issue was local control and ownership. This was a precedent which the BRA was not yet ready to accept.

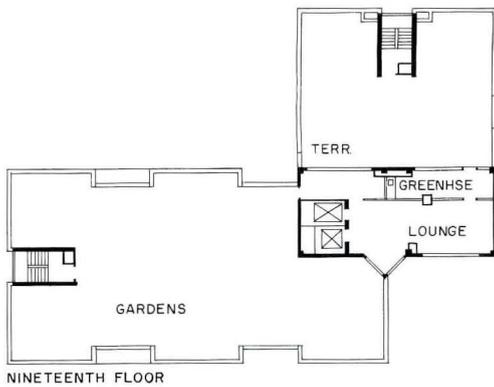
The residents by this time had formed a representative group known as the Emergency Tenants Council (ETC). Sharratt produced a plan for them to which they gave formal approval. Mixed-income housing, on-site relocation and a public plaza recalling the outdoor gathering spaces of Puerto Rico were included.

The ETC then asked to be designated as the redevelopers of the entire 19-acre site, which consisted of eleven separate but contiguous redevelopment parcels. They received supporting letters from every known organization in the South End, Puerto Rican groups from Chicago and New York City, state and Federal senators and representatives, and clergy and civic leaders. After saying no many times, the BRA finally granted their request.

The South End residents started their action a year later than their neighbors in Lower Roxbury and yet received their designation a month earlier. Unfortunately Lower Roxbury paid the price for being the first to ask for the unthinkable in the urban renewal of the sixties—community control. An informal coalition was

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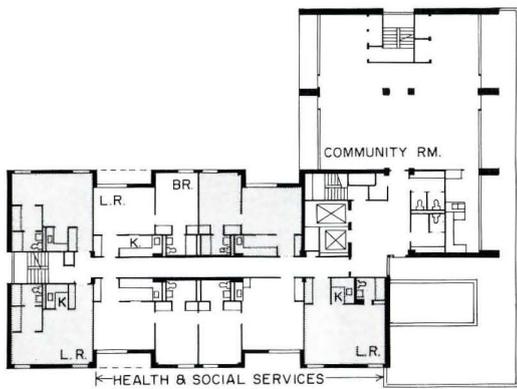




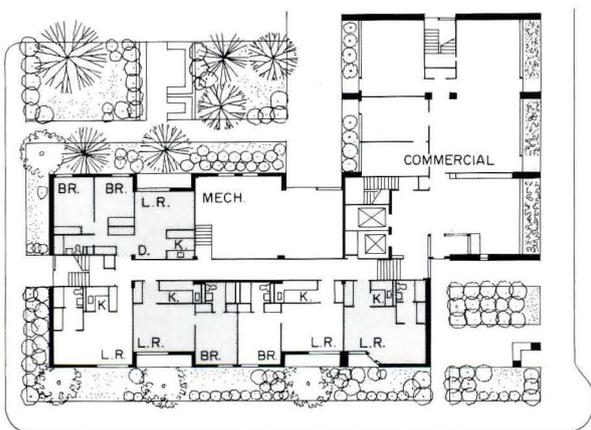
NINETEENTH FLOOR



TYPICAL FLOOR



SECOND FLOOR



FIRST FLOOR

10



formed between these two neighborhoods and they continue to cooperate with each other.

Maintaining their primary objective of good mixed-income housing with on site relocation, the ETC residents have executed four phases of housing development totalling 492 homes and 26 thousand square feet of commercial space, and a six-story office building. Two hundred additional new housing units, 50,000 square feet of new commercial space, and a total renovation of a housing project nearby are in the works. They are converting an industrial building into a new church.

Phase I consisted of the construction of 71 new apartment units in a row of fine Victorian townhouses on the site (page 89). It was financed through a local bank with a HUD Section 221d3

interest subsidy. The local housing authority leases units for low-income tenants.

Phase II is "Torre Unidad" (pages 88-91). It consists of 16 floors of apartments for the elderly. The ground floor is designed for shops and the second floor is a recreational facility. It was financed through the Massachusetts Housing Finance Agency and sold to the Boston Housing Authority using the HUD Turnkey program.

Phase III is "Viviendas" (page 94). Combining a mid-rise structure with townhouses, it adds 181 units of housing to Villa Victoria and over 3,000 square feet of commercial space. It was financed through the MHFA with the HUD Section 236 program of interest subsidy and HUD rent supplements for low income families.

Phase IV is "Casas Borin-

quen." Completed last May was the renovation of nine existing brick townhouses into 36 units of housing. It was financed through MHFA with the HUD Section 8 rent subsidy program.

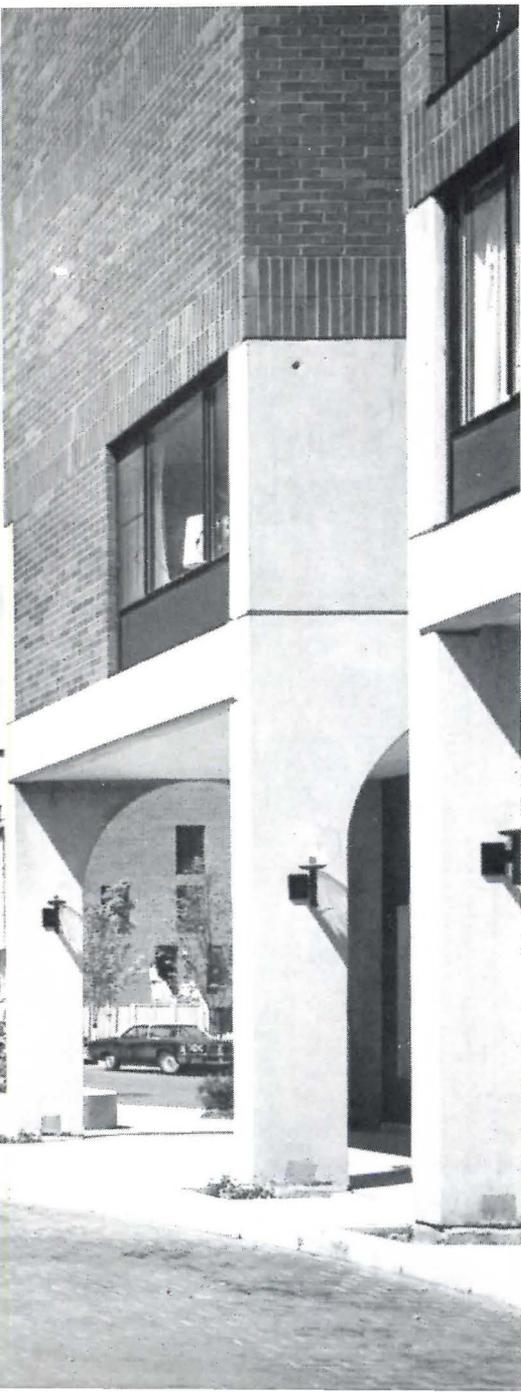
Three of the four projects were executed as limited partnerships, with the residents as the managing general partner. This resulted in a significant return of funds to the community to use at their discretion.

The other project was executed as a precontracted developer-owner sale by the community residents to the Boston Housing Authority for a normal, yet significant developer's fee. The entire economic approach of the ETC residents has been very sophisticated and successful.

The resident group manages all of their developments, plus 300

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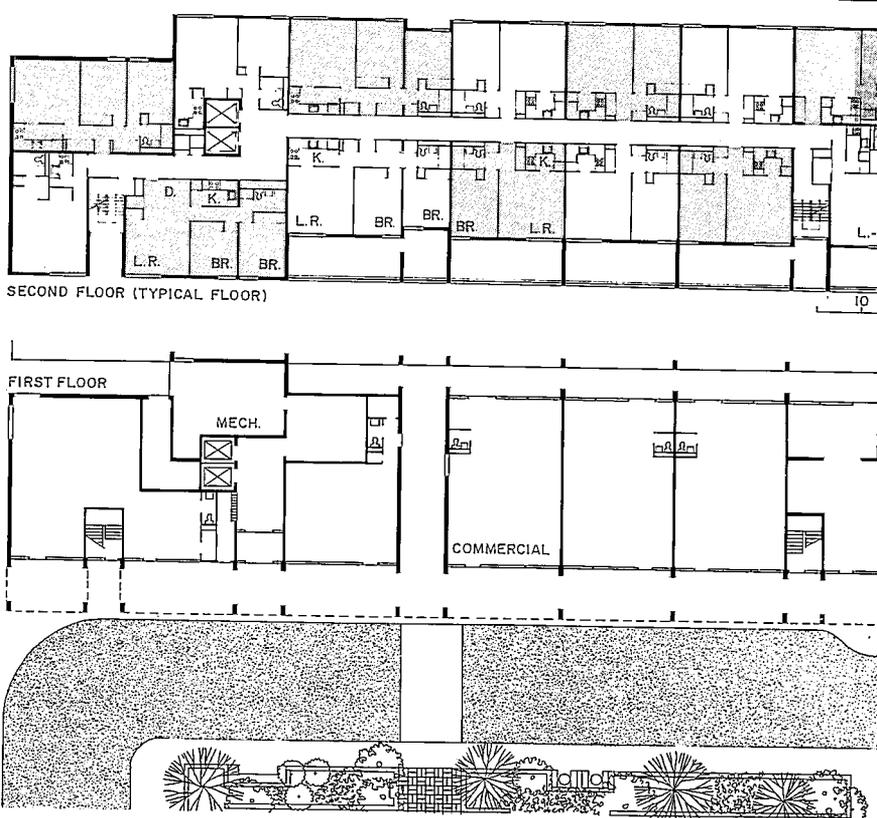




units owned by the Boston Housing Authority. It has contracts for the delivery of social services to the area residents. This function employs a full-time staff of over 50 residents. Since the ETC has a neighborhood priority hiring program, the developments have provided a significant, but not yet counted, number of construction jobs to the community.

VILLA VICTORIA ("TORRE UNIDAD" "CASAS BORINQUEN" "VIVIENDAS LA VICTORIA"), Boston, Massachusetts. Architects: *John Sharratt Associates, Inc.*—project manager: *Robert H. Egan*. Consultants: *Brown-Rona, Inc. (structural)*; *Goldberg-Zoino and Associates, Inc. (foundations)*; *Herbert G. Keating (mechanical/electrical)*. Contractors: *Peabody Construction Company, Inc. ("Torre Unidad")*; *James P. MacFarland, Inc. ("Casas Borinquen")*; *Oxford Development ("Viviendas La Victoria")*.

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THE INDUSTRIAL ESTHETIC: TWO BUILDINGS BY JAMES STEWART POLSHEK AND ASSOCIATES

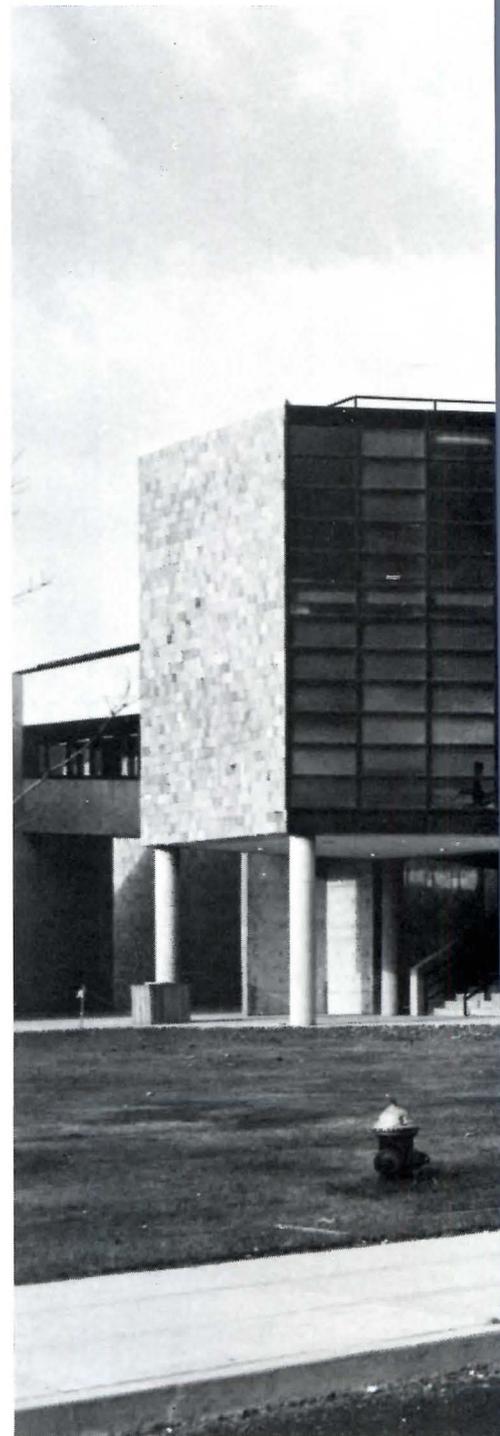
In the two buildings shown below and on the following pages, the architects show a firm and sophisticated control of materials and construction techniques that have been more often associated with industrial construction. Having been pioneers in the use of metal claddings, exposed structures and ducts, and heavy-duty sashes, James Polshek and Associates now show a high level of architectural sophistication in that idiom: for a college physical education building (upper photo) and a municipal vehicle storage and maintenance facility. —C.K.H.



Edmund Stocklein photos

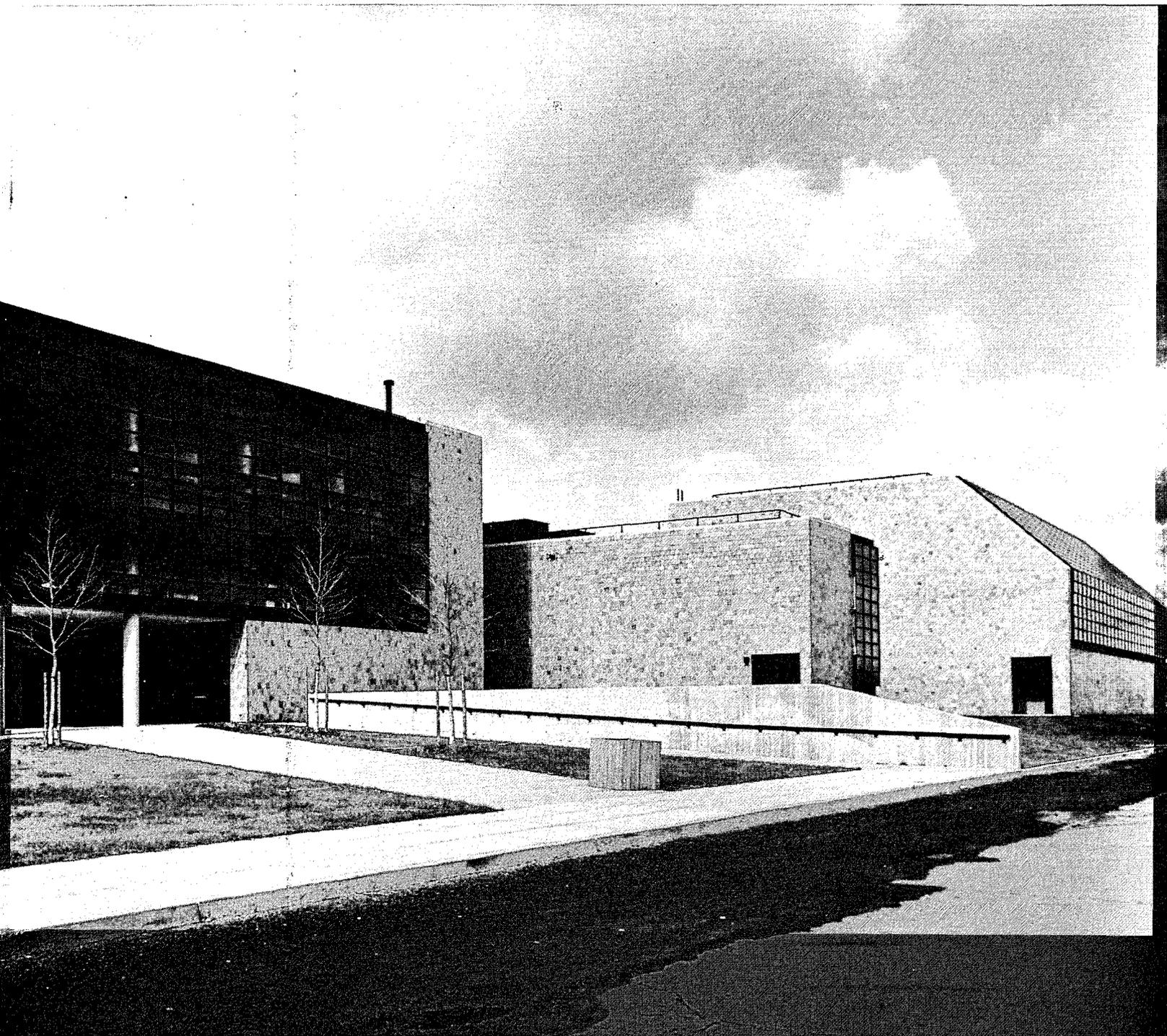


New York City's
new Kingsborough College
physical education facility
is a massive loft given vibrancy
and even intimacy



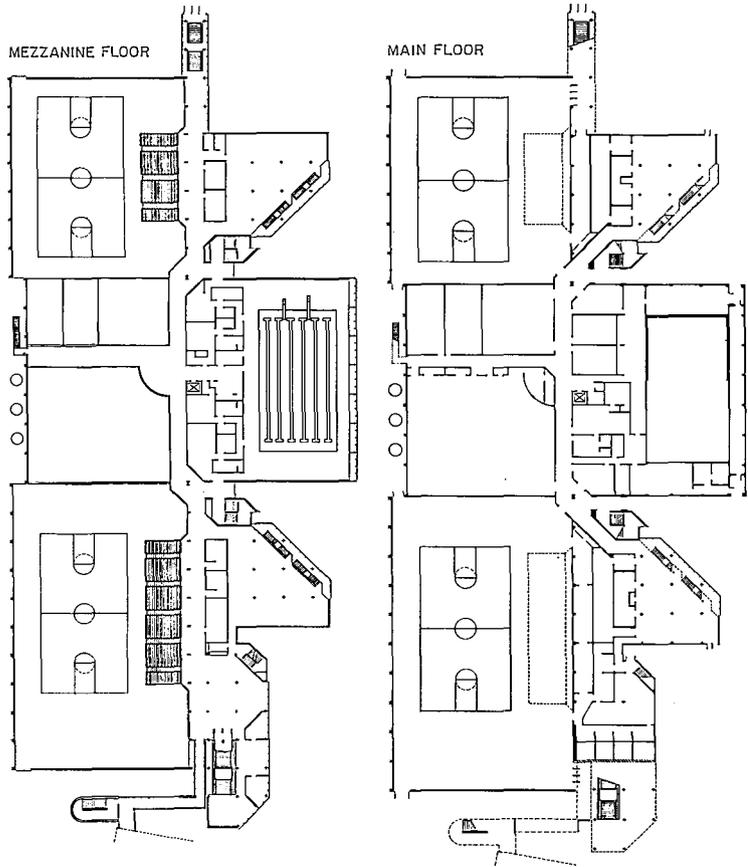
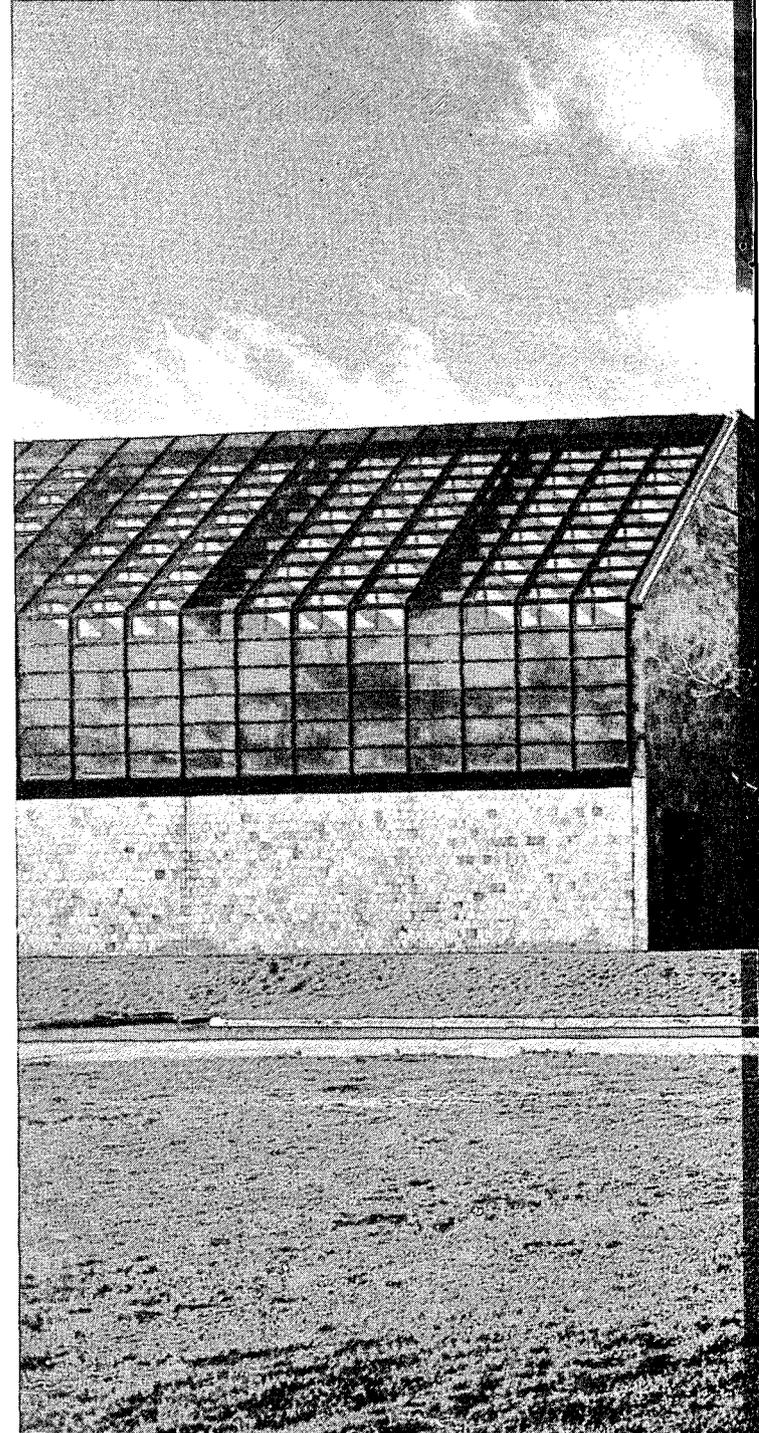
Architect James Polshek describes both this and the public works building on the following pages as "old-fashioned" buildings built without context. There was little in the existing surroundings to which the new structures could relate. Nonetheless, Kingsborough Community College's physical education facility is planned to relate to two adjacent structures that were to be added later, and one natural asset, nearby Jamaica Bay. A pedestrian bridge now extends to buildings across the campus's main entrance road. A future parking garage is planned up against the long flat side of the gymnasium (see plan overleaf). And the spectacular Bay is seen from the glazed stair (which projects out of the building in the photo opposite) and from the broad windows (photo below).

The glazed stair is located at the end of a two-level circulation spine that runs down the center of the building, and separates the loft-gymnasium spaces from other smaller-scaled facilities. The latter give the main facade of the 98,000-square-foot-building a humane scale when seen from the main campus (photo, below and plans, overleaf). There are two large gymnasiums, separated by a yellow-painted multi-purpose space, a smaller dance studio, and two handball courts. These facilities are defined by low partitions that do not visually interrupt the unity of one great space under the exposed 105-foot-long steel roof trusses. The

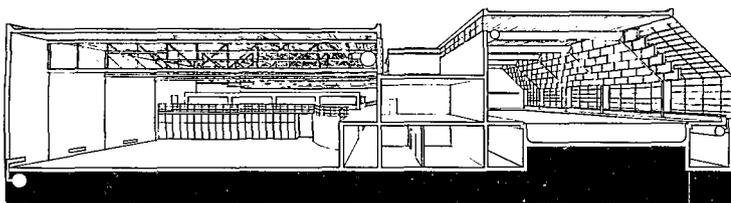




Edmund Stocklein photos



The main entrance from grade is shown in the photo at top. The building can also be entered by a pedestrian bridge at the mezzanine floor level where the main circulation spine is located. This spine is open to the double-height spaces (left in plan) and allows access to ancillary spaces on the other side.

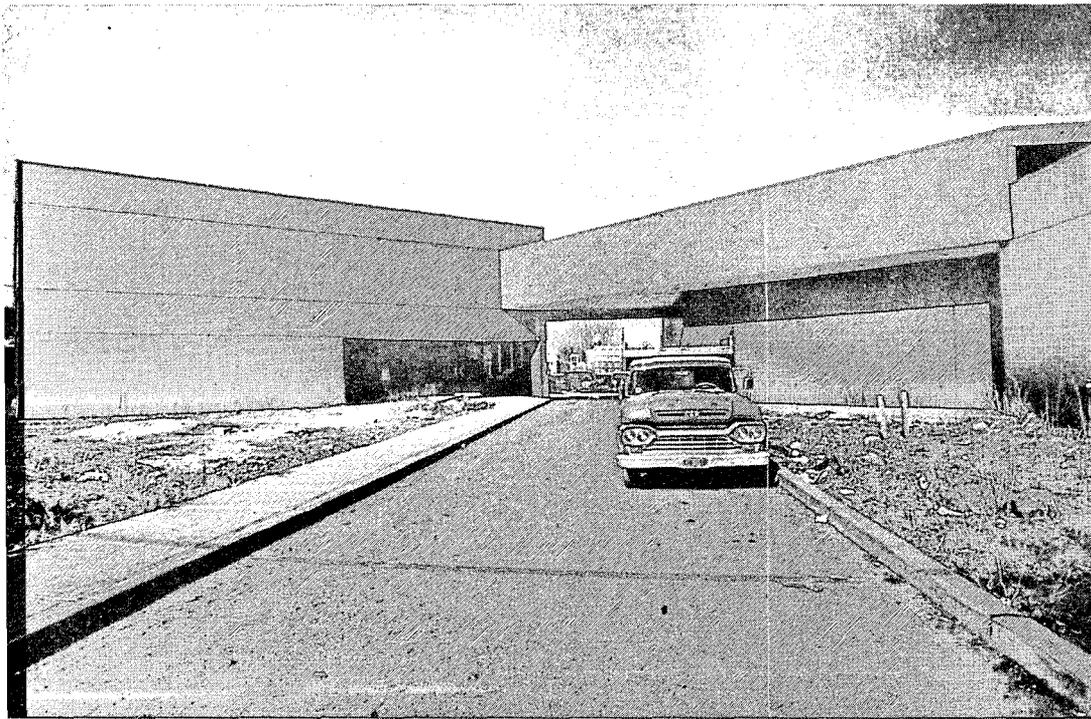
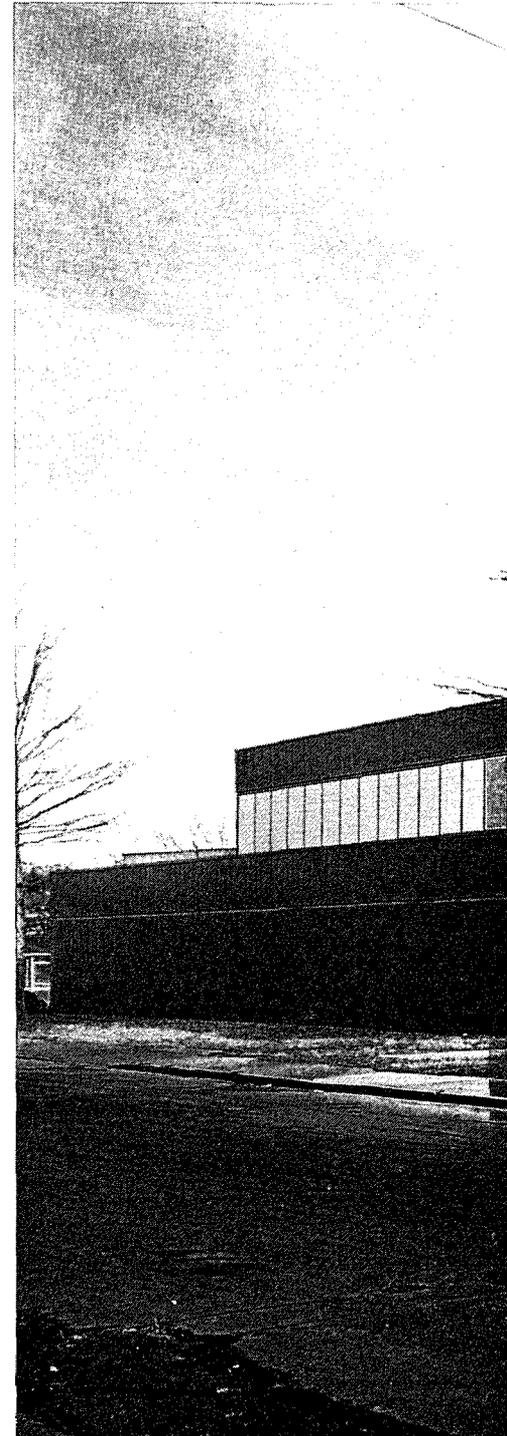
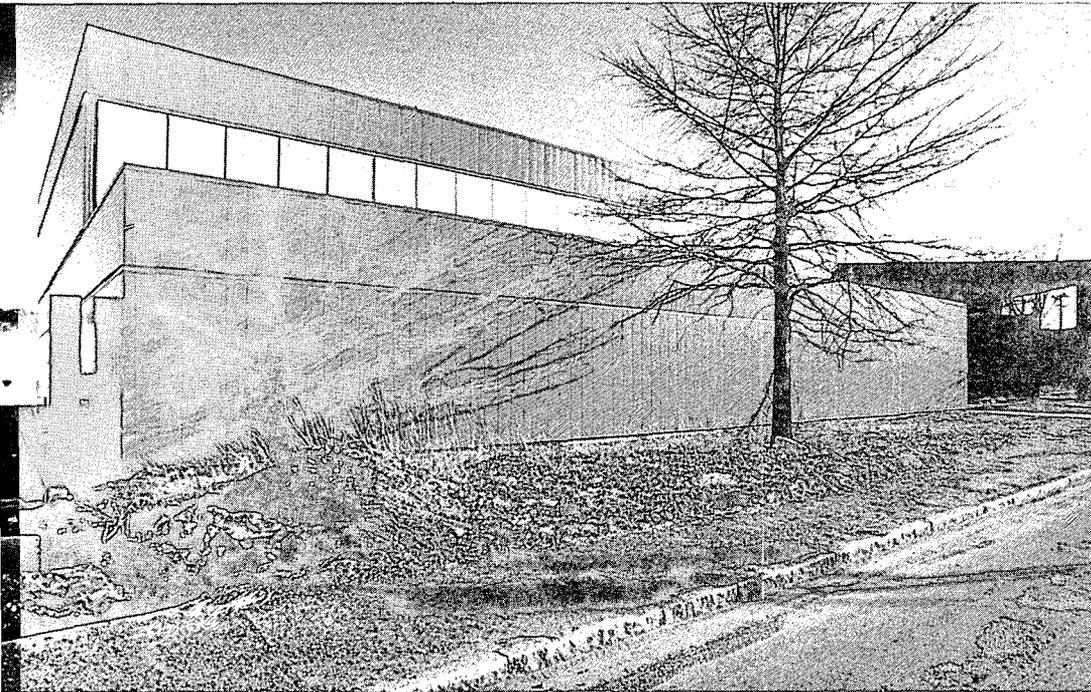
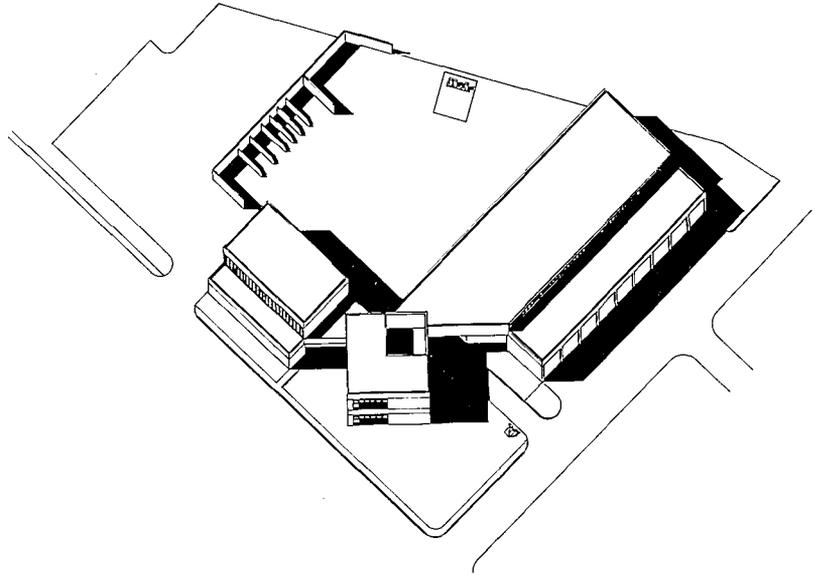


circulation spine is unique, because—on the second level—it is open on one side to the loft spaces, and avoids the restricting effect of the usual enclosed access corridors. Reached from the other side of the spine, two second-floor locker rooms provide access by stairs to the loft spaces and to the swimming pool below. The pool is located at the center of the long facade, facing the main campus, and is covered by a structure of steel frames that bend to form the walls (left in photo below). Light in the pool is controlled by operable sun shading devices constructed of stretched fabric, a system designed by the architects. Unusually high windows without intermediate supports were made from stock framing units. The cost for the building was \$6,250,000. The tan brick for the exterior walls was determined by that chosen for the whole campus.

PHYSICAL EDUCATION FACILITY, Brooklyn, New York. Owner: *City University of New York, Kingsborough Community College*. Architects: *James Stewart Polshek and Associates*—associate in charge: *Joseph Fleischer*; job captain: *Howard Sussel*; design team : *James Polshek, Todd Springer and Sear Sculley*. Engineers: *Andrew Elliott and Associates (structural)*; *Abrams, Moses, Solomon (mechanical/electrical)*. Consultant: *McKee Berger Mansueto (costs)*. General contractor: *Manshul Construction Corporation*.



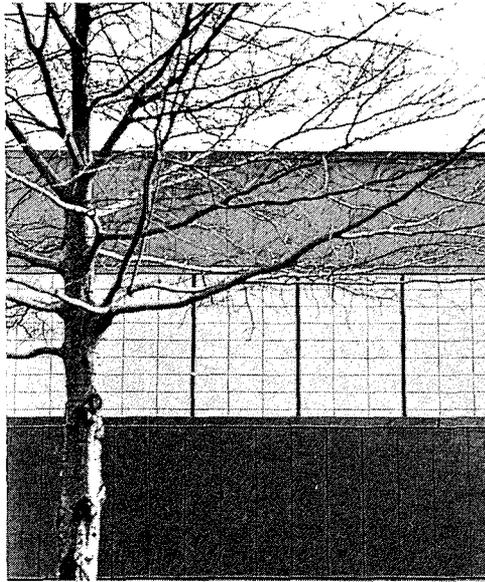
Englewood, New Jersey's new public works facility is an almost monumental building for very mundane functions



Designed to house and service vehicles, architect James Polshek and Associates' new facility is divided into a repair shop (left in isometric) and a large garage, with a two-story office structure in between. Lacking adjacent buildings with which to relate, the building forms a strong sculptural composition with the most ordinary of materials. On a steel structure, bright red steel-faced asbestos wall panels are integrated into a proprietary aluminum curtain-wall system. The aluminum system integrates windows, translucent clerestories in the garage areas, and even the bright blue garage doors. The angled building forms two sides of a court of almost ceremonial proportions where vehicles are parked. The building and walls screen vehicles from the streets and adjacent properties. The office building contains facilities for operations personnel on the ground floor, and administration offices on the second floor. The construction cost was \$1,600,000.

DEPARTMENT OF PUBLIC WORKS FACILITY, Englewood, New Jersey. Owner: *City of Englewood*. Architects: *James Stewart Polshek and Associates*—associate in charge: *Dimitri Linard*; job captain: *Howard Sussel*. Engineers: *Pfister, Tor and Associates* (structural); *Bornikel Engineering* (mechanical/electrical). Consultant: *William Baum, Inc* (costs). General contractor: *Sullivan Magee Sullivan*.





These details show that "industrial" materials often used badly can take on real distinction with careful attention to the real capabilities of the materials. This garage building—sheathed in a stock curtain wall—has the character of a sculptural construction. The translucent fiberglass panels and steel wall panels are mounted in aluminum frames and are factory finished on both the outside and inside.

The Georges Pompidou National Center of Art and Culture has been open a year.

It has perplexed, possessed, repulsed, inspired, traumatized, entertained, and won. This amalgam of activity and emotion isn't out of character. No, it's. . . .

A Building of Paris

This city of light has glowed with many grand horizontals. Now there are those of the Georges Pompidou National Center of Art and Culture, which was thought up by the late French President in 1969, and which is commonly called Beaubourg, after its old neighborhood, a juicy jumble of 17th-, 18th-, and 19th-century buildings with the consistency of onion soup.

Baubourg's grand horizontals are, by comparison, pyrotechnic, housing a colorful melange of activities, emotions, images, and information. They are gotten up like bridges, six of them stacked together, making lofty layers of space, a million square feet of it. All this stacks up to a height of 138 feet, taking up about half of a ten-acre site which, from the 1930s, was a parking lot—the other half now being a public square with a great many things going on in it. The result is that Beaubourg, held up with a system of exposed structural details, strung and hung with a system of exposed mechanical entrails, rambunctiously pokes its piping-cool bulk, 550 feet long, 197 feet wide, just above the Right Bank's roof tops, from which, a year after completion, many Parisians, as rambunctious, are still trying to shout the building down.

Which figures. Parisians have never drawn too severe a distinction between loving and loathing things (or each other), and the capital has practically made a career of carping about Beaubourg's pre-emptory scale, its fever-pitch fabric of columns, trusses, fancy joints, and criss-crossed bracing, its polychromatic plumbing. Absolutely nothing, along with absolutely everything, has been left to the imagination. Which is as Parisian as a building can get.

And so, having said, these past few years, that they were not about to stand still for such a funny-looking piece of architecture, people aren't. Parisians aren't. People from other parts of France, and Europe, aren't. People from all over the world aren't. What they are doing, by way of not standing still for Beaubourg, is showing up, by the thousands, every day of the week, from ten in the morning to ten at night. It is not just that there is a lot to see and do in, certainly around, the place. It is that people, even those as charmingly contentious as Parisians, have been forced (or inspired) to admit, if only deep down, that this funny-looking piece of architecture *is* in scale.

Mon Dieu. In scale with what? With the long-built-up character of its physical context? The close-grained medieval district of Le Marais

edges Beaubourg's site, hard against the building to the east, right across the Rue du Renard. The Boulevard de Sebastopol edges its site, over a hop, skip, and jump across the new public square, to the west, with the former site of Les Halles, the old central marketplace, a couple blocks beyond that. As to this context, which must be said to include the River Seine, Notre Dame, and the Louvre, a few blocks southward, Beaubourg, having been scorned as a colossal incongruity, is a lot more congenial and consolidating a presence, however pyrotechnic those grand horizontals may look, than its harshest critics feared (or hoped).

But Beaubourg is in scale in another sense, in scale with as crucial and telling a context—that is, with long-built-up characteristics of popular sentiments, attitudes, and urges. It has been said that Beaubourg is a meeting between the tastes and preoccupations of a president—between these and the aspirations, "still latent," of the French people. Aspirations may not be the right word. Inclinations is a more accurate one.

It is likely that Pompidou understood this better than anyone. A center of art and culture, were it really to awaken those "still latent" aspirations, would have to appeal to something in the French people that was *already* awake—not to the conventional idea of art and culture, not to the conventional image of what a museum looks like or feels like. It would have to be, visually and functionally and socially, a jugular, throbbing—something to go for. Beaubourg is that, a pleasingly perverse, but wholly honest, expression of the old French passion, as architect Philip Johnson recently quipped, of "going all the way."

In a city where dalliance is a devotion, Beaubourg, rumbling in the urban belly, is a source of entertainment, as much as of enlightenment; of relaxation, as much as of revelation. All the stuff of art and culture is sitting, hanging, or leaning around in those vast spaces inside, or in that vast space outside. None of it is stuffed down anyone's throat. People, acting as much on impulse as anything resembling artistic and cultural aspirations, can stare, study, saunter, bumping into, reeling back from, or embracing the evidence of avant-garde adventure.

But to most—and Pompidou, the avant-garde art buff, understood this too—this public experience works because Beaubourg, quite deliberately, works more like a shopping emporium, an amusement park, or a street festival. The president, in a proposition as much

political as cultural, wanted to bring the French along, expecting that a populist draw, full of fun and games, would subtly swing them toward a warmer, more responsive feeling for serious cultural expression. So he put one of the world's most amazing, efficient bureaucracies to work in coming up with a place which people, either hopping mad or helplessly mesmerized by its looks, could not ignore.

It is wide of the mark to assert, as it has been, that Beaubourg is a piece of Gaullist condescension, that its administrators and staff are force-feeding art to the public, that its fun-and-games atmosphere really talks down to the so-called average man, or that the establishment was, and is, bound and determined to teach him a thing or two about what is serious cultural expression and what isn't.

Baubourg, as a sign of France's, particularly Paris's, hoped for re-emergence as the world's fundamental font of inquiry, experiment, and innovation, could only be believable, in this egalitarian time, if public participation and experience were the integral, integrating force. In this, it was that so-called average man who had taught the establishment, both the political one and the cultural one, a thing or two.

So a fire was set—again, despite the rhetoric of officialdom, not under public aspirations, but under public inclinations, including the inclination to be argumentative, to feign horror, to heckle, to be hostile to strangers, intrigued by them, and the inclination to have a ball. If there is any irony in this fire that was set by Beaubourg, it is that all of the criticism of its architecture was actually a sign of growing fascination for what was afoot.

There was a facetiousness on both sides of the construction fence, with very few people sitting on the fence itself. And in France, even facetiousness must be affected in a grandiose way. What France has gotten is, more than a place where the spirit can soar, a baring of its social and political soul. Beaubourg is a deft misalliance of both avant-garde and reactionary motives, brought off with managerial precision, psychological savvy, and showmanship. The most spontaneous and the most discerning tastes have been seen to. The height of contemporary creation has all the head room it will ever need, as do those throngs of people who would just as soon not let on that they have aspirations, "still latent," for scaling those heights.

Not surprisingly, the world design contest of 1971, which Pompidou called an "interna-

In Paris, out of Paris, leaving Paris,
or coming back to Paris,
it's always Paris
and Paris is France and France is China . . .
afternoons sitting at *La Fourche*,
I ask myself calmly:
Where do we go from here?
Henry Miller

tional competition of ideas," was staged with great aplomb. The embassies and consulates of France, practically everywhere, threw lavish parties to kick the contest off. Architects rented Citroens to drive up in, or at least some did. Subsequently, 681 schemes were received from 71 countries, which were gone over by an international jury, including Philip Johnson, Oscar Niemeyer, Jean Prouve, who was the chairman, plus a number of big-name museum officials from around Europe. The winning scheme, as anyone at all involved or even interested in architecture knows by now, was by Renzo Piano, of Italy, and Richard Rogers, of England—teamed, in turn, with the London engineering firm of Ove Arup & Partners.

Rogers has said that he was initially hesitant about entering the competition because he didn't want to have any part in building just another elitist enclave. By way of dramatizing their belief that a center of art and culture shouldn't be that, and maybe in the hope that the jury would get their message, these architects, almost alone out of all the entries, deliberately designed a public experience, a cage for the age of multi-media and mass-circulation. Times Square, they compared it to, with some of the British Museum tossed in. Almost alone, too, out of all the entries, the four major components—a museum of modern art, a public information library, an industrial design center, an institute for musical and acoustical research—were all brought together in their scheme, like the interlocking circuits of a four-track cassette. Instant play-back, constant feedback, with the four components routinely plugging into each other, and the public plugging into them all. This French Dream Machine was a dare, which the jury not only took, but also delighted in. Pompidou, predicting a storm of controversy, scarcely concealed his own (the plot was thickening).

Beaubourg's architecture is deeply embedded in the theoretical aspect of the 1960s, that jelled in the English molds of Archigram, mainly, along with the metabolic noodle-making experiments of various Italians and Japanese. Archigram's high priests, occupied with process, change, and the expendability of all things, were insistent that a building or even a whole city, is the same as a TV dinner. Flexibility and functionality were measured by the ease with which something could be gotten, consumed or used, and then dispensed with. Archigram's cities, remember, *walked*. Its structures whirred, snorted, batting their *brise soleil* in

assorted cybernetic rites. It was an extremely serious movement. It really was. And it took the opportunity of Beaubourg to awaken these assumptions from the megastructural stupor into which the Archigram set had seemingly lulled itself.

This building is both the illumination and the immolation of those assumptions. Piano + Rogers has been harder on itself than any of the building's detractors in fighting to make those assumptions work, testing and adapting and changing and perfecting. Half of their team's energies was spent fighting to keep the basic kinetic character of the concept intact; the rest, to make that concept answerable to the hard facts of the situation. As much as some people have said that they fear the possibility, Beaubourg will not be casting a mold for the future, at least a formal mold. Little Beaubourgs will not be seen rising around the world. It's too skillful a eulogy.

Their "live center of information *is* living, and will continue to. But its true significance is misjudged if it is studied only as the vindication of a theoretical position. It is possible to mislay oneself, as the poet Rimbaud, saying so, knew full well. And that goes for movements as well as men. Piano + Rogers, answering to the spirit as well as specifics of the Beaubourg challenge, has not mislaid its values. Certain perceptions of a movement they learned from were put to work. But beyond the vindication of theory, Beaubourg's unique program brought about an enlargement of experience—their experience, not to mention the cultural experience of the public that they were *consciously* creating for.

Perhaps one of the most crucial aspects of this maturity is that they were put in mind, as the rest of us might well be, that theory is not something, limited to formal and technical propositions, that sits smugly outside the world of actual experience. Theory is rooted in it.

It so happens that the public experience of art and culture, or perhaps it would be better to say the art and culture of public experience, motivated the architects as much as any set of tenets within the traditions of so-called modern architecture. That Beaubourg represents a conjunction, and a rare conjunction at that, between such perceptions and a particular theoretical starting point is a measure of the architects' accomplishment because, finally, it is the architecture's incorporation of the public, and the public's very perception of itself as Beaubourg is experienced, which permeates the design, in all of its dimensions.

If Marcel Proust was at all accurate in saying that the only paradise is paradise lost, it may be as accurate, especially in the case of Beaubourg, to say the same of paradigms. What "models" of perception and application are being sought when one reads a newspaper, listens to a radio, watches television? There is a little of all of these in, and around, Beaubourg. The media that people have used to find out things, these are the dimensions that the architecture measures. Or the dimensions that the architecture allows people to measure, uncoercively letting them in on many different levels of information and insight.

An example is the Museum of Modern Art at Beaubourg, which is headed by Pontus Hulten, of Sweden, who used to head the Moderna Muséet in Stockholm. The need for such a museum has been talked about for many years, and at one point, the late Andre Malraux, whose death came poignantly one month before Beaubourg's opening, wanted to build one by Le Corbusier—but on the outskirts of Paris. Le Corbusier, wanting to reinforce the center of the city, in obvious contrast to what he wanted to do to it in the 1920s, cooled on Malraux's patrician and escapist concept of what a museum should be.

Hulten, who has allowed that the throngs visiting Beaubourg sometimes drive him to distraction, believes, however, that if the hallowed cult-like calm of the traditional museum has been lost, so much the better. "The partitioning of art, literature, science, and music is a notion which life itself has gone far beyond," Hulten insists. "A true science of information is now beginning to develop in correlation with the new orientation of science and the social sciences; art history, communications, cybernetics, linguistics, and semiology have restated the concepts of theory, history, space, and time—along with concepts of the symbol—all in new terms. We are moving toward a society where art will play a great role, which is why this museum is opened to disciplines that were once excluded by museums, and which is why it is open to the largest possible public." That public, throughout Beaubourg, is already wearing the carpet thin.

Round about Hulten's museum, now the largest one for modern art in Europe, there is not only a stunning permanent collection, dating from the turn of the century, but wide-open ranges of one-man and thematic exhibitions, along with sections for both permanent

and temporary exhibitions of graphic art, photography, films, and video-tape experimentation. Conference rooms, information booths, rest areas, projection rooms, research and archival facilities are arranged around the vast floor area. Any of these elements, along with the various shows, can be rearranged at any time. Even the tidy little men's and women's rooms can be.

If there are times when this museum of modern art seems (and sounds) like a giant fact-finding, image-flashing research center which just happens to have a lot of rotating art exhibitions hanging around, Beaubourg also has a *real* research center, its public information library, which is headed by Jean Pierre Seguin. In contrast to France's many libraries, almost all of which have been off-limits to the public, this one is an off-the-street, on-the-spot resource for anyone doing anything from a book report on Cézanne to a state study on the psychological effects of wall paper decorations on the efficiency of bureaucrats. Books, periodicals, slides, records, microfilm and microfiche, films and video cassettes in this "university of the people," and it really *is* working as such, are supplemented by a current events hall, located on Beaubourg's ground levels, where one can leaf through or buy just about any newspaper or magazine now being published.

Seguin is a lot more frank, and congenial, than most of Beaubourg's chiefs in acknowledging the relationship of his operation to American precedent. "The liberty and movement in the libraries of the U.S. have always been an inspiration to me," Seguin says. "In fact, those libraries are among the best examples of the success of American civilization. We went over to study the best things that have been done, came back, copied them—and just perhaps, are doing it even better."

Many of the more pedagogical types in library science have criticized this approach, comparing it to a discount house or fast-food-for-thought operation. But Seguin believes that the informational, invitational atmosphere, though hardly "home-like" as he also asserts, will bear up under the 4000-person-per-day ordeal and, as importantly, prove that popular accessibility to knowledge does not have to mean the debasement of serious scholarship. The most casual self-improver, absorbed student, or plodding professor can get off by themselves, what with quiet reading rooms, with various hierarchies of solitude, scattered through out the open stacks. Seguin acknowl-

edges that careful programming of his library's many diverse, often overlapping functions was necessary to avoid what he calls "conflict" with the architecture—meaning, and this is something that is being reckoned with throughout Beaubourg, that floors this big, enshrining the notion of flexibility, can be a problem when having to arrange for activities, as in a library, which really should be off by themselves.

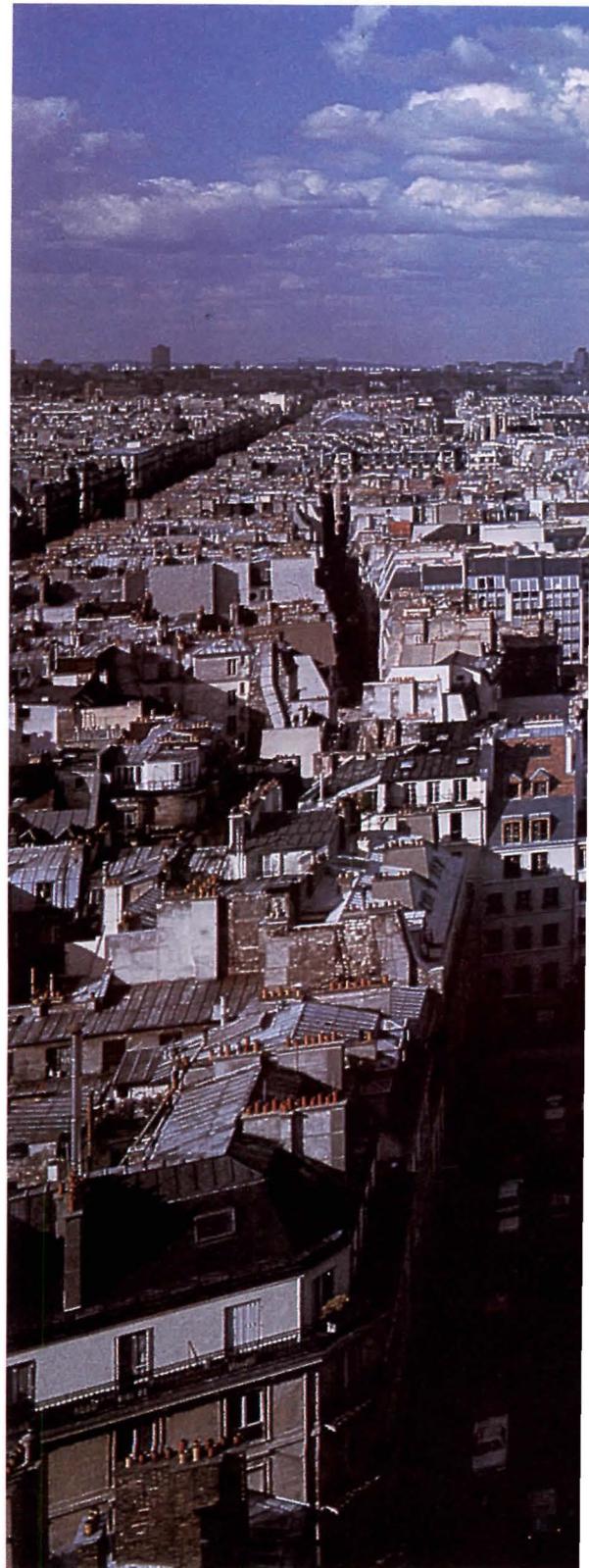
Baubourg's Center for Industrial Design, a third major element of the operation, is one of the most out-going—dealing with cities and towns throughout France, in both an educational and advisory way, on matters of public design, from transportation systems and graphics to community development plans. Research facilities and exhibition programs are giving the public unprecedented access to practical, immediately useful information about product design on every level of experience—almost a *Consumers Guide* approach. And both the philosophical and applied aspects of architectural and urban design have, for the first time, been given a laboratory in which to test ideas.

When it comes to testing, the fourth element of Beaubourg, the Institute for the Research and Coordination of Acoustics and Music, is perhaps the most Jules Verne aspect of the place, and, like Nemo's *Nautilus*, it is mostly submerged—in this case, beneath a plaza next to the Church of St. Merri, just south of the main building. Pompidou personally picked up the phone to inspire the return to France of the institute's director, Pierre Boulez, long familiar to American audiences—and one of the authentic innovators in the tradition of Stravinsky, Schoenberg, and Webern. IRCAM, as his institute is called, is not meant to be a classy little cliché of impresarios fooling around with computers, but in the spirit of Boulez, to bring together the tools and perceptions of science with advancing musical theory. Because Boulez doesn't like the conventional concert hall, any more than Pontus Hulten likes the conventional museum, the main feature of IRCAM is a 400-set squared-off *espace de projection*, where the technical, physical, and psychological dimensions of sound are being dealt with.

This structural box, its walls and ceiling composed of adjustable acoustical panels in a pleated configuration, is a musical instrument in itself, and can assume almost any configuration, of either acoustics, instrumentation, or seating. There is no "orchestra" as such, but a

continued on page 114

Michel Proulx photos except where noted



The six lofty levels of the Georges Pompidou National Center of Art and Culture edge enticingly above the Right Bank's roof tops (below). The east side, looking north, hard against the busy Rue du Renard, has a 20-foot-wide zone of exposed structural and mechanical elements (opposite, top). The close-grained medieval district of Le Marais is immediately east of this (opposite, below left), and its texture is ironically enhanced by Beaubourg's piping, ducts, and assorted circulatory tubes—red for the movement of people, green for water, blue for air conditioning, and yellow for electricity.

The west side, overlooking the new public square, (opposite, below right) is strung with steel-framed, molded-glass tubes that function as corridors and, in the diagonal, as an eye-popping run for escalators. The exposed structure, despite its seemingly frenetic fabric, is a model of simplicity, consistency, and of a craftsmanship so thorough as to recall the pioneering feats of French engineers in the 19th Century. Steel in cast components is the basic grammar. Ten-ton, 26-foot-long pin-like cantilevers called *gerberettes* fit around the columns supporting the long lattice beams.

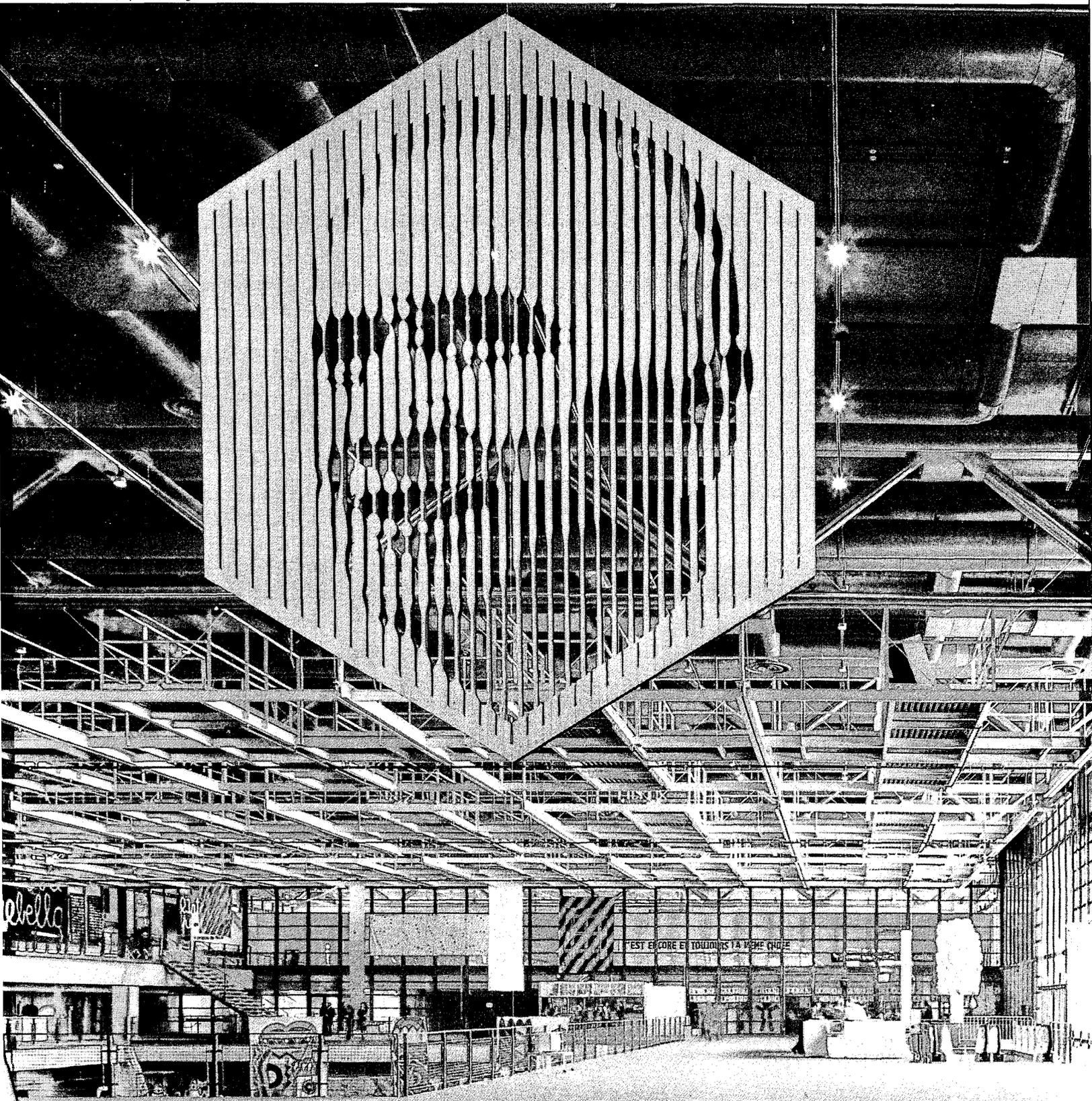




To be able to fill leisure intelligently
is the last product of civilization.

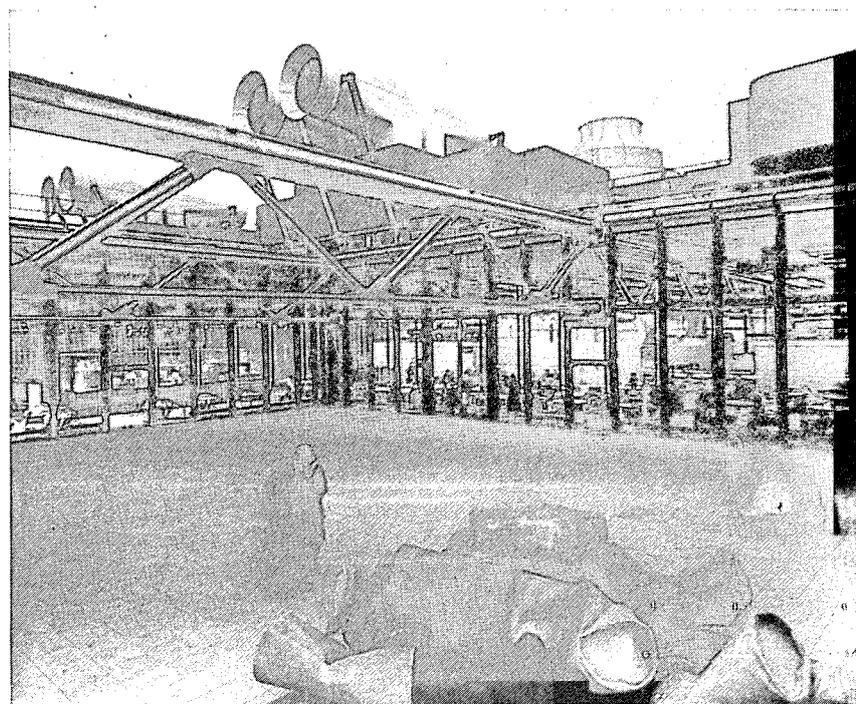
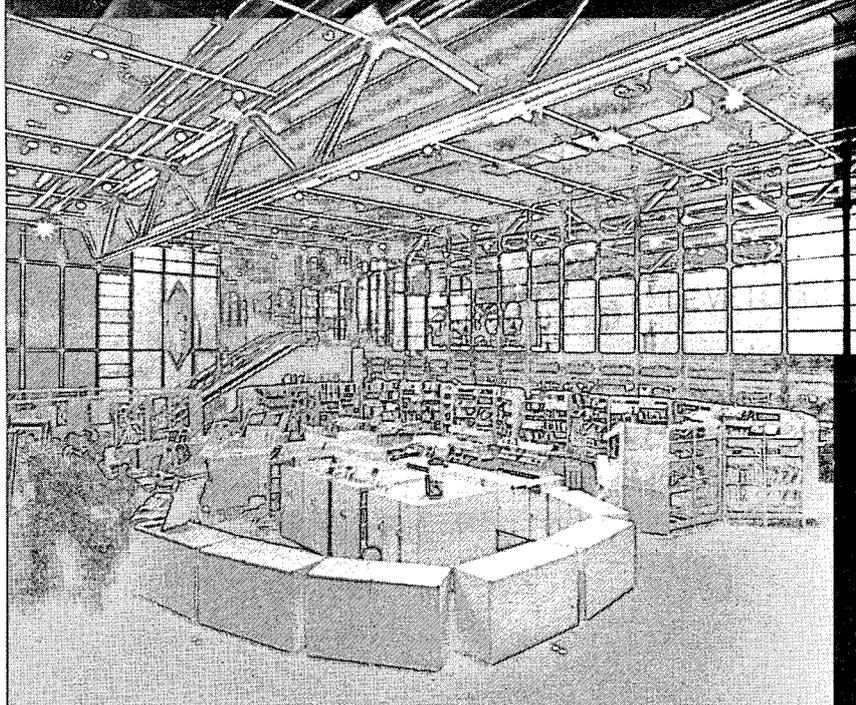
Bertrand Russell

RETORIA, by Yukio Futagawa

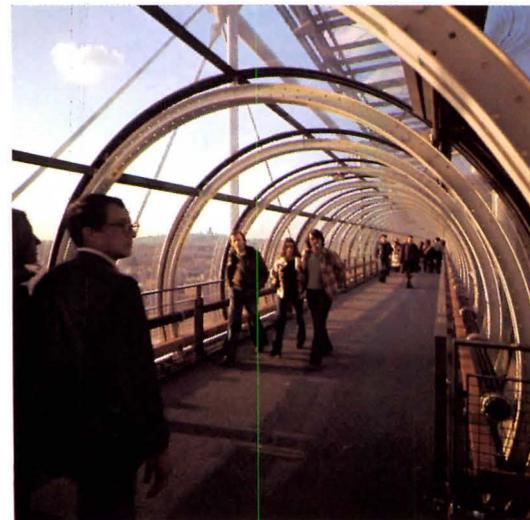


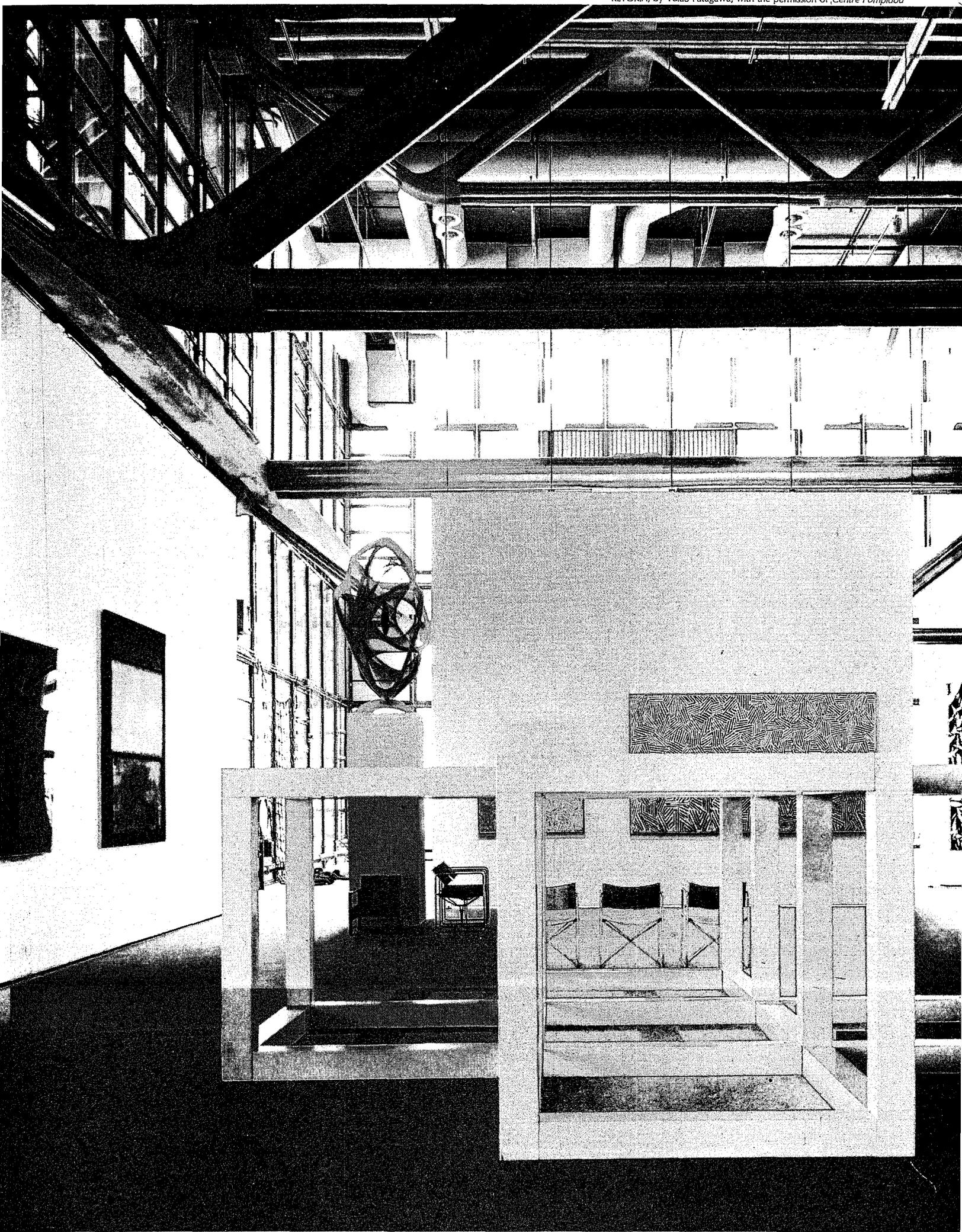
The high public hall, internalizing the drama of Beaubourg's public square, also shows the masterful way in which spatial character, structural facts, and the building's ganglia of services have been synchronized (below). This two-level area contains a mezzanine for the Center of Industrial Design (right, top) and, on the opposite, southern edge of the hall, another for temporary exhibitions. Another, deeper layer of space is beneath this hall, stretching out under the public square, including, discernible in the far-left part of the picture below, a sunken forum-style space for exhibitions, assemblies, and assorted multi-

media, multi-disciplinary happenings. A second major component is the Public Information Library (right, middle), housed on the first three of the five upper wide-span floors—the first truly open library in France. The top floor, along with all of the fourth and part of the third, is given over to the Museum of Modern Art. This topmost range includes a restaurant that overlooks one of several outside sculpture terraces (right, bottom), the building's structural armature and mechanical parts enfolding the public experience. Those nostril-like components, looming over the terrace, are air handlers.

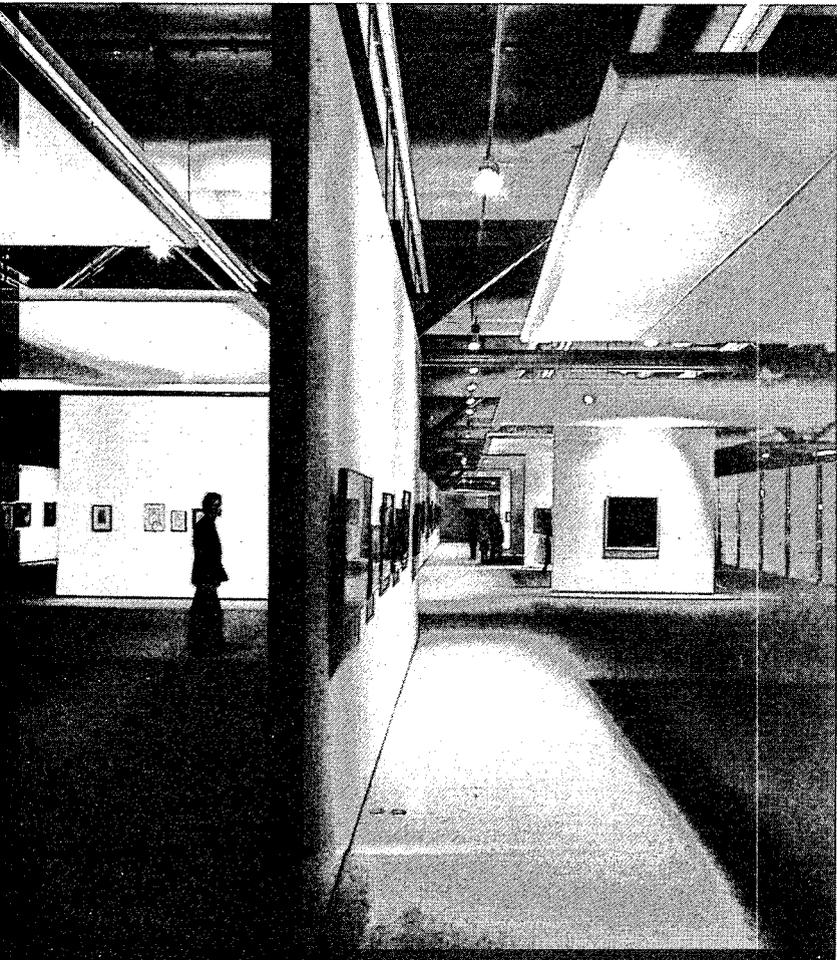
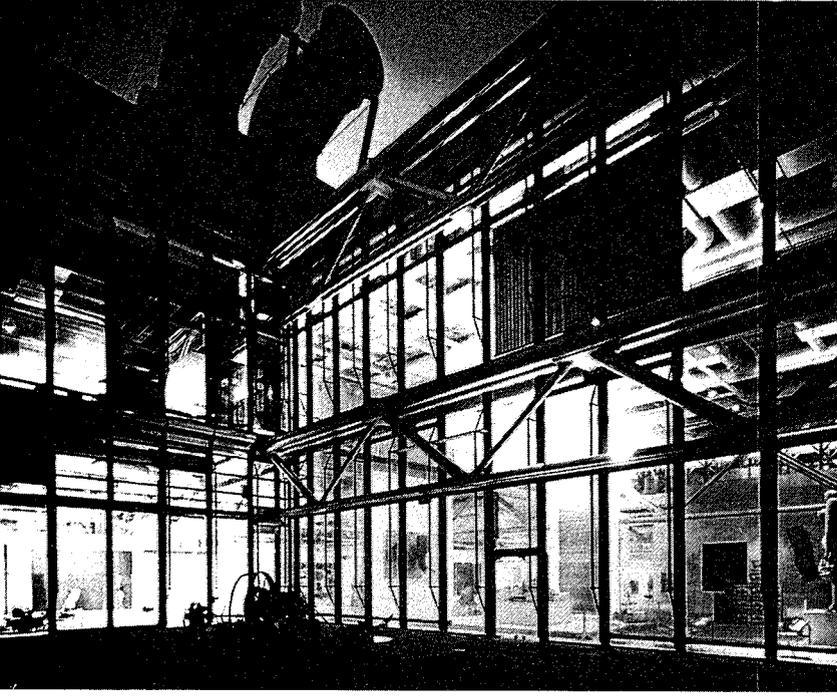


The universality of space in Beaubourg has been attained by a necessarily bold, ubiquitous structural system that, at times, seems to repress the identity of the art works being shown. But curatorial skill is overcoming this. As in this double-level portion of the Museum of Modern Art (opposite), the works are composed in a lively, informative sequence, susceptible to viewing from many points of position (and seriousness). The art of Beaubourg, as much as that inside, is the richness of social and visual sensations (photos below) as the city is latched onto, enlivening the building itself.





How ya gonna keep 'em
down on the farm
after they've seen Patee?



RETORIA, by Yukio Futagawa



The structure of the building called Beaubourg meets the structure of the neighborhood called Beaubourg, looking over the new public square, and west across Paris to the Eiffel Tower. The structural conviction and consistency of the architecture, a few cast-steel elements composing the complete fabric, is a counterpoint, but a uniquely clarifying one, to the low-scale density of the surrounding scene and, in the plaza below, to the spontaneous, simultaneous activities and events that have been drawing people in. Here (below) the joining of the lattice-like beams to the columns by

way of the pin-like *gerberette* connectors frame a dynamic, not dispassionate, architectural regard for the social, cultural, and spiritual connections that are inherent in public access to the processes and products of creative effort—whether the encounter is with visual art, as in Beaubourg's multivalent museum, or with the repository of information, ideas, literature, images, and language skills in its library. This architecture delivers itself of the passions, preoccupations, and currents of France, opening the circuits between leisure and the intelligent uses of leisure.



The avant-garde has become the classicism of the 20th Century.

Jean Cocteau

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constantly changing group of musicians, scientists (in some cases, one in the same), who are testing new combinations of instruments, sounds, tonalities, and atonalities—the computer being a central investigative tool.

In a way, IRCAM, as relatively isolated as its program is (sound-proofing being a major factor), is also a useful metaphor for Beaubourg as a whole. As innovative as its personnel and instrumentation may be, this “new” music that is being heard, the very nature of sound itself, harkens back to the sensory, symbolic, and social nuances of basic communication—the aural archetypes of ancient, pre-literate man. Beaubourg is an investigative tool, too, in the sense that it is amplifying man’s ability to communicate while tapping into the spiritual bedrock that undergirds all creative effort. Post-literate man, as predicted by such apostles of the electronic age as Marshall McLuhan, will find little solace in this atmosphere, as wired as Beaubourg may be for visual excitement. “Artificial intelligence is not yet very intelligent,” mused an IRCAM staff member. “Finally, it is *human* comprehension that Beaubourg, with all of its departments and all of its equipment, is meant to expand.”

“What do you think of that *thing* in Paris?” has to be the most common question being asked, at least among architects, these days. A great many things that architects, or observers of architecture, have been taught to think, or have come to think, have made it difficult to even consider the possibility of liking “that thing.” But like it, despite many previously formed feelings, a lot of people do. What is there about Beaubourg that impels people who *do* spend a lot of time thinking about art and culture to suspend their disdain for it, even as, with most architects especially, they cannot bring themselves to suspend their disdain for the Archigramesque propositions that it is supposed to embody? Put another way, at what point does one’s disagreement with a theory give way to a respect for something that, while incorporating theory in formal and technical terms, has obviously transcended those limitations to deal with a larger truth?

Baubourg’s architecture brings us feet to the fire, when it comes to that. First, as strange and far-out as the building seems when coming upon it, Beaubourg is not this century’s reach for the next. It may well be, in fact, this century’s reach for the last. And this, too, involves more than just architectural pre-

cedents, such as the wide-span halls of the great 19th-century expositions. In other words, Beaubourg is more than an amplification of the material and methodological wherewithal of an earlier day.

No, what makes Beaubourg a powerful presence in architectural history is that it is part of something, evocative of something, extending something, that is at least as basic—the origins of popular culture. The architects understood this. Out of the 19th Century came several fundamentally new kinds of people, and several fundamentally new kinds of experiences. The celebrity, the fan, the champion, the spectator, the sight-seer, and the tourist. All these were *new*, then—and, in a great many ways, they are still new. The seeds of mass-circulation, of books and newspapers and magazines, were sown then, too. Cabarets and concert halls and dance halls began to attract general audiences. Culture became, for the first time, a commodity; its evidence, a consumer-ship matter. France, with England running close behind, fell all over itself, indulging in the exchange of sensations, diversions, ideas. This is really the precedent, if there is one, that Beaubourg must be acclaimed for building upon—not the precedent of the Gallery of Machines (1889), not the precedent of structural purity and direct material expression that came to the fore in the 1920s, not the raw, rakish edges of the so-called Brutalism of the 1950s (just), nor the let-it-all-hang-out predilections of Archigram. Such precedents may, indeed, be cited. But the most informative precedent is that of the enlarged experience of the public, chiming together, in the 30 years leading up to World War I. This process of popular interaction was accelerated after that, and, with the advent of mass-media, far beyond. Beaubourg, in every sense, is an extrapolation and countenance of this trend, and, as such, this trend has been celebrated with a coherence and cogency which make disdain of its strictly architectural and theoretical premises slightly silly.

The big escalator edges upward, across the west face of Beaubourg. Overlooking the busy public square, it is an automated animation of collective cultural consciousness, which may be a reason why it breaks down once in a while. The public square itself, filled with vendors and exhibits and a replica of Constantine Brancusi’s studio—this sloping plaza, with small pedestrianized streets leading into it from



round about, is an exposition in itself, with all the sensory sustenance of the grand old boulevards.

On the eastern face, close by the noisy, bustling Rue du Renard, the grand verticals of the buildings servicing systems, also exposed on the outside, meet the sidewalk and the traffic with a tranquility that stops just short of truculence. Those ducts and pipes, which look like an assortment of diving gear, magically express the processes of mechanical intervention on behalf of public comfort and, finally, do not seem too close for comfort at all.

The inside of Beaubourg, with those lofty layers of space, is damnably “universal” in its flexibility and openness. Spatial “universality” is, of course, one of the monumental self-deceits of the modern movement, and here, especially in the spaces devoted to the museum of modern art, the sheer fluidity can be easily fumbled when separate exhibitions find themselves sloshing together in an ill-defined fashion. In this respect, the five major floors of Beaubourg, being above the major public forum-style area on the ground level, are more like the vast display floors of a merchandise mart and, right now neither the art nor the visitor seem to dwell upon the other. The ambiance is one of browsing. There is a sense of option, wading through these vast floors, but not, as yet, one of orientation, definition, or consolidation. Eventually, Beaubourg’s curators must fix upon greater fixity. A loose fit can only be carried, or thrown, so far.

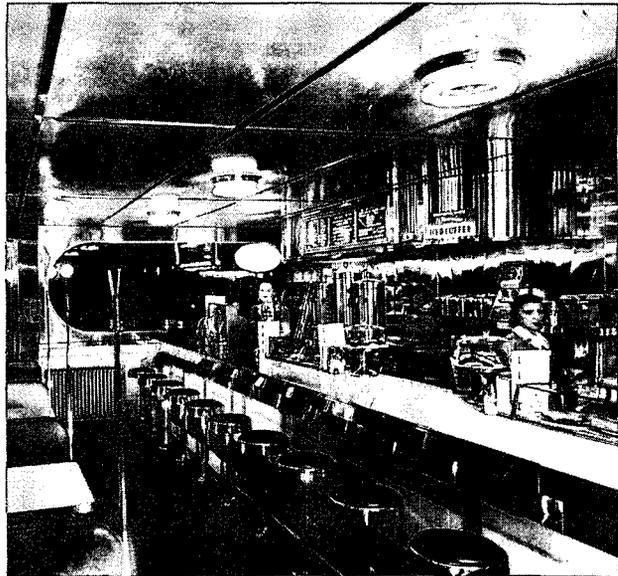
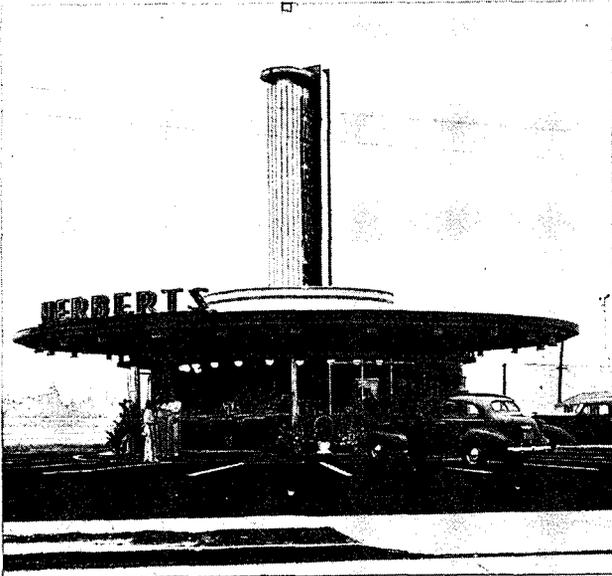
There is a spontaneity and simultaneity of popular interaction, with culture giving commerce a leg up, all around Beaubourg. And ironically this is what, after all the heckling these past years, has redeemed the architecture, making it a genial composition of the social and cultural forces swirling through the mind of France today. This is a building that history longed for, never got, and . . . well, a building that history hasn’t gotten yet. Those pipes and ducts will be moving a lot, including, one can be sure, the pride of posterity in France’s having had the gall to get them up there in the first place. —William Marlin

THE GEORGES POMPIDOU NATIONAL CENTER OF ART AND CULTURE, Paris, France. Architects: *Piano + Rogers*. Engineers: *Ove Arup and Partners*. Contractor: *GTM—Grands Travaux de Marseilles*.

PLACE, PRODUCT, PACKAGING

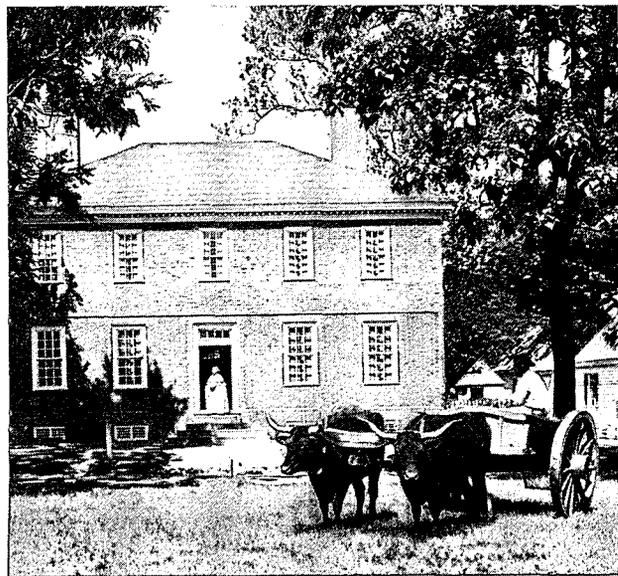
A look at four popular American building types—fast-food restaurants, diners, gasoline stations, and museum-village restorations—to see what they show about the art of design and, from that, what they show us about ourselves, our pasts, and our futures.

Bruce Torrence Historical Collection



Kullman Industries

Texaco



Colonial Williamsburg

From an exhibition at the Cooper-Hewitt Museum in New York, the Smithsonian Institution's National Museum of Design, from January 20th until March 19th, 1978.

The environment is a diary

by Richard Oliver and Nancy Ferguson

Fast-food restaurants, diners, gas stations and museum villages. Such vernacular architecture is much talked about of late—but what does it really have to say? One thing that these kinds of buildings have to say is that they are in a sense historical diaries—but not in the usual sense of a history book. History books—particularly architectural histories, and particularly in this century—have tended to paint a picture which implied that a few particular forms and ideas had covered the earth, or with any luck would. But one of the problems with this kind of history is that it performs not a crime of commission but one of omission. That is, while it describes a few chains of events, it rarely even begins to depict, or for that matter even to notice, the actual growth of the built environment. And, since that environment is always reflective of people and of their wishes, this kind of history also sometimes fails accurately to note the growth of the whole culture. Therefore a look at familiar examples of what we have built can help fill in the picture.

Another problem, though, with history books is that they tend to look at the past as something distinct from the present. This is dangerous, because the distinction is artificial, and the very same danger is present in any attempt to look at the popular environment. It is easy to like a gas station from the 1930s or a resort hotel from the 1880s because they are both relics, like fish out of water. It is far harder—and it is also far more important—to take due notice of mansarded, shingle-sided fast-food restaurants of the 1970s, to distinguish the superior version from the ordinary, and thus to complete the historical picture.

"Place, Product, Packaging" has two purposes: to depict the sense of a total environment as created by architectural settings, costumed personnel, and packaged products, and to document changes in the style of these environments over time through the use of historical photographs. "Place, Product, Packaging," occasionally called "total design," shows itself in four building types chosen from the everyday world: diners, gas stations, fast-food restaurants, and museum villages. The three commercial types do what they do for clearly promotional reasons. The museum village, typically a non-profit foundation, employs the same design attitude to pursue its primary goal, education.

One assumption is that all four of these types have been keenly responsive to popular conceptions of design while at the same time remaining unwaveringly devoted to performing their functions efficiently—even when the two acts were not evidently related.

In calling attention to these four building types, we are not bothering to call them art, although obviously we have selected examples that seem well designed. What is worth emphasizing is that, by their very familiarity, they can and do act as mirrors of our culture.

Diners

The diner is the oldest building type chosen, and in its earliest form it was just a plain vehicle used in a special way. A Walter Scott of Providence, Rhode Island, for instance, is known to have begun serving sandwiches, coffee, and pie out of a horse-drawn wagon in 1872, and during the next decade other entrepreneurs opened lunch wagons in various other parts of the Northeast. Some early diners served customers through windows, while others contained tiny four- or six-stool counters. Variations of the diner type quickly developed, ranging from "temperance" diners (alternatives to "immoral" barrooms) to elegantly appointed diners, rich with fine woods, stained and etched glass, and scenic painted decoration (2).

■ In the 1920s, the tremendous increase in automobiles encouraged diners to expand and to offer booth service. Diners, as before, continued to be made in factories and pulled by truck to a site, but even those which kept their wheels after they got there were no longer intended to be mobile (1). By 1924, a durable nickel and copper alloy—called Monel—became an important material in all aspects of diner construction, from roofs and canopies to counter tops and pots and pans. This material ultimately helped establish the image of the sleek vintage diner which followed.

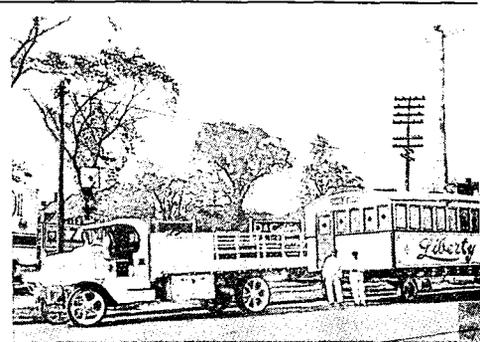
■ In the 1930s and 1940s, diner manufacturers made a conscious effort to borrow images of speed and techniques of streamlining from contemporary railroad car design (3-4). In 1941, the Paramount Diner Company received a patent for a split-construction process, whereby two longitudinal halves of a diner could be shipped separately and joined together on the site. The increased width of the diner which resulted made possible the change from a linear, counter-oriented diner to today's modular diner-restaurant, where booth and table service predominate.

■ In 1962, the Kullman Dining Car Company introduced the "Colonial" diner, equipped with real brick cladding and other traditional details as a replacement for the streamlined models which had come to be viewed, negatively, as old and sleazy. The company now makes "Mediterranean" and "Contemporary" models.

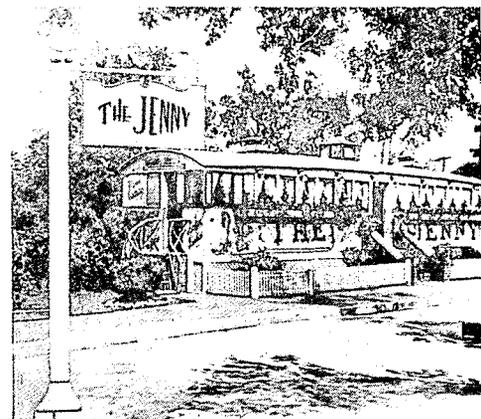
Gas stations

The first gas stations were merely sheds or shacks that sheltered gasoline pumps. A station in St. Louis, built by the Automobile Gasoline Company in 1905, and one in Seattle, built by Standard Oil of California in 1907, are but two which claim to be the "first." Previously, gasoline was available at stables, garages, and general stores, or directly from refineries by the can-and-funnel method.

■ By the 1910s, the standardized station was recognized as an effective means of establishing corporate identity. The Texas Company, later called Texaco, constructed its first standardized station in Houston in 1916. The Magnolia Oil Company followed suit with a standard design used throughout Texas in 1918 (5). Although they were extremely simple, these early stations did employ contemporary architectural forms. Signs, color schemes, logos,



(1) Early diner in transit, about 1920.



(2) Set for a movie starring Gloria Swanson.



(3) Streamlined diner, about 1940.

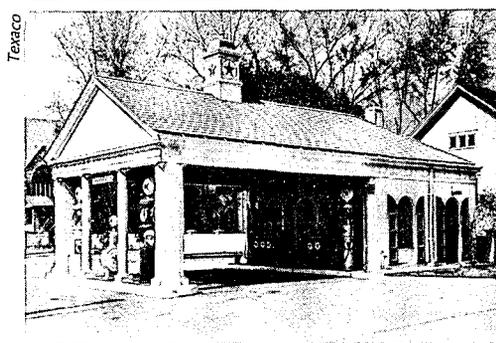


(4) Interior of a streamlined diner, about 1940.

Kullman Industries



(5) Magnolia Oil Company, standard design, 1918.



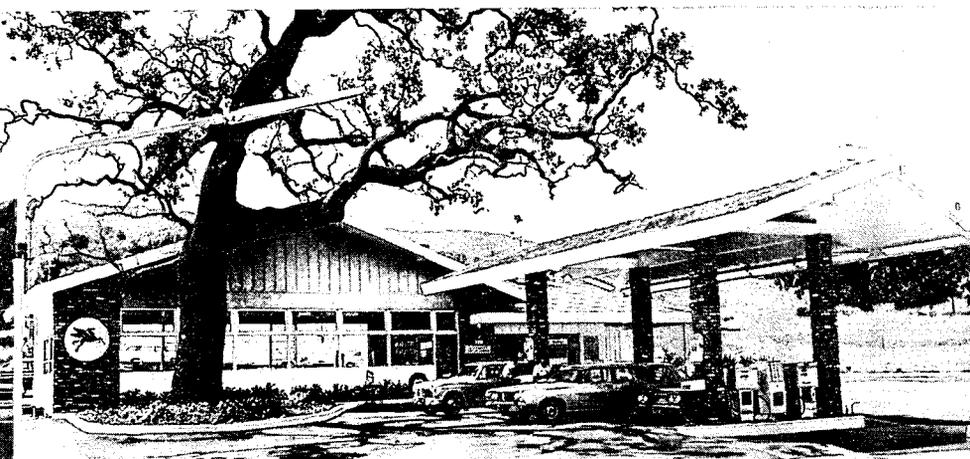
(6) Texaco Colonial design, used nationwide, 1928.



(7) Mobil station, by Frederick G. Frost, 1940s.



(8) Mobil station, St. Johnsbury, Vermont, 1941.



(9) "Western Ranch" station, 1970s.

and uniforms also served to reinforce corporate identity.

Designers of the 1920s, by contrast, participated in the rich and exotic eclecticism of that decade. Chinese pagodas, Georgian manor houses, Greek temples, Dutch Colonial barns, Swiss chalets, and Spanish haciendas all served as dispensaries of gasoline. These little gas stations were both serious cousins of high-style eclectic buildings of the decade, and as well they were functioning gas stations.

In 1928, Texaco selected a "Colonial" type as its first station designed for national use (6). It was built of white brick and crowned by a pediment supported by four columns. A small cupola displayed the Texaco Lone Star logo.

The decade of the 1930s reflected people's fascination with images of the future—images which were endorsed, for instance, by 1933 Chicago "Century of Progress" exposition, and summarized by the 1939 New York World's Fair. Toward the end of the decade, virtually every oil company switched from traditional to modern images in station design, reflecting, as always, the desire to be up-to-date.

In the early 1940s, Frederick G. Frost designed an unusually elegant station type for Mobil which employed a central drum-shaped office decorated with Pegasus in flight (7).

Although this kind of streamlined form did predominate in the commercial architecture of the 1930s and 1940s, houses and institutional buildings, by contrast, largely remained attached to more traditional forms, and so indeed did a few gas stations (8).

In the 1950s, a fourth generation of service stations was dominated by what seem the prosaic enameled porcelain and metal boxes which we all remember and occasionally still see. These "functional" stations, it is arguable, reflected the general banality of post-war Modern architecture.

In the 1960s and 1970s, many existing box-like stations were modified by the application of traditional roof forms, and of shingled materials like stone, brick, and shingles. A Shell station in Millbrae, California, presaged this shift in intentions. Designed in 1956, its unobtrusive "Ranch-House" image was its most remarkable feature. Later types made references to traditional houses: "Suburban," "Colonial," "Shaker," "Williamsburg," and "Western Ranch" (9). Although gas-station architecture of the 1970s is less literal in its historicism than that of the 1920s, the same intentions are evident to suggest domestic images—whether they are in residential or larger-scale surroundings like cities and highways.

Fast-food restaurants

When they first appeared in the 1920s, drive-ins, like gas stations and diners, employed exotic and glamorous versions of historical styles. In the 1930s they, too, became more streamlined, and in the postwar years, many were built of steel, glass, and wood—popular versions of the International Style.

In the 1950s, the first important conceptual modification of the drive-in was the "drive-thru," invented by Robert O. Peterson. This feature was an integral part of the first Jack In The Box fast-food restaurant, built in July, 1951,

in San Diego. Customers drove up in their cars, ordered into a box with a menu on it and down's head on top and then drove along the side of the building to a pickup window. The concept at once reduced the number of staff required, presented the appearance of convenience, and was emblematic of a society intoxicated with the automobile.

Unlike gas stations, fast-food restaurants were not simple boxes in the 1950s. Instead, they were playful and graphic, more like signs than buildings. The Jack In The Box resembled a child's toy enlarged to architectural proportions(11). For its first building, in 1955, McDonald's employed golden arches, a snappy candy-striped exterior, flared rooflines, and other attention-grabbing forms (12). All through the 1950s and 1960s, roadside America witnessed an explosion of flamboyant forms, shapes colors, and lights to satisfy a high-consumption culture. Every aspect of a company's visual identity was extravagantly heralded.

In the 1970s, under pressure to present a quieter image, fast-food restaurants—like diners and gas stations—returned to domestic forms, materials, and landscaping in order to convey a sense of rusticity and naturalness(10). Wood, old brick, or fieldstone structures were often topped by a mansard roof made of shingles or tile. Like other stylistic developments we have seen, this "rustic revival" has at least one high-style precedent: the famous Sea Ranch Condominium designed by Moore, Lyndon, Turnbull, Whitaker in 1965.

As the exteriors of fast-food restaurants have become quieter, the visual excitement has moved indoors. McDonald's, in particular, now encourages unique interiors within an altogether standardized building shell. The range extends from the fantasy and make-believe of a giant ship or railroad train, to the black-lighted glitter-chic of a McDonald's in Beverly Hills.

Museum villages

Texaco's adoption of a "Colonial" design in 1928 was not an isolated example of architectural interest in our country's past. In that year, John D. Rockefeller, Jr., publicly announced his intention to support, under the direction of Dr. W.A.R. Goodwin, the restoration of Williamsburg, the colonial capital of Virginia. Americans in general evidently perceived some meaning in colonial forms which was pleasing and which perhaps provided a psychological anchor and emotional comfort. Indeed, it is clearly demonstrable that the *only* architectural tradition which seems to have had continuous appeal throughout the 20th century is Colonial—including of course, forms from the Indian and Hispanic Southwest as well as those from the Atlantic colonies.

Within Williamsburg's historic area of 173 acres, 88 original 18th- or 19th-century buildings have been restored. Some 90 acres of gardens and many additional buildings have been conjecturally reconstructed to render the scene complete. Thus the reborn Tidewater city was intended to, and does, appeal to the imagination of the visitor through a carefully conceived assembly of architecture, gardens, furniture, crafts, and costumed personnel (13).

Even at Williamsburg, however, there are



Foodmaker

(10) McDonald's standard design, 1970s.



(11) Jack In The Box, Mark II standard design, 1950s.



(12) McDonald's original standard design, 1955-1962.



(13) Costumed hostess, Colonial Williamsburg.



(14) Gunston Hall, Virginia.



(15) "Williamsburg" station, 1970s.



(16) Duke of Gloucester Street, Williamsburg, 1976.

limits to the accuracy with which an 18th-century environment can be presented. The official guidebook points out that "the paved streets, brick sidewalks, street lights and fire hydrants would be strange to 18th century eyes," and that "the whole town would now seem tidier . . . with houses better painted, greens more smoothly cropped, and gardens spruced up, and adorned with more flowers." In short, the museum village presents an 18th-century environment not as the completely real thing but as a kind of theater.

Real or fake?

The 1928 Texaco station was a free interpretation of Colonial architecture. The similarities between the three buildings shown on the left—a more recent station (15), restored buildings on Duke of Gloucester Street (16), and Gunston Hall (14)—illustrate two questions that must be posed. What makes a building real or fake? And what constitutes an architectural tradition?

Consider the three buildings: a "real" 18th-century house, the restored Raleigh Tavern in Colonial Williamsburg, and the 1970s gas station called "Williamsburg." If the claim for authenticity is that they must actually have been built in the 18th century, or as an exact replica of the same, then, alas, the gas station and the conjecturally reconstructed parts of Williamsburg must be called fake. And even the use of indoor plumbing and electricity in Gunston Hall would have to be viewed as a compromise. Clearly, such an unrealistic definition of authenticity presumes that architectural tradition cannot change over time without either losing validity or collapsing altogether.

Ideal types and particular versions

An architectural tradition is composed both of references to an ideal type and of accommodations to particular circumstances. Viewed in this way, the Colonial tradition is more than just a set of 18th-century buildings or latter-day replicas. In other words, the Colonial tradition is a collection of architectural elements to be used in contemporary buildings to evoke to the modern eye (and in the modern heart) both the shapes and the size and, finally the *feel* of 18th-century America.

Thus while Colonial Williamsburg is not an exact replica of an 18th-century town, the assembly of restored and reconstructed and altogether new buildings—like Merchants' Square and the Williamsburg Inn—constitutes a vivid reenactment of the 18th-century world. Indeed, what is absolutely of equal importance and worthy of note is the miracle that in Williamsburg a million visitors can tramp through annually without ever diminishing the aura of its Colonial image. Similarly, the "Colonial" gas station is designed to service an automobile efficiently while simultaneously evoking the qualities of an ideal type, the Colonial house.

Because both Williamsburg and the gas station combine forms associated with an ideal while accommodating their own functional requirements, they are part of an ongoing architectural tradition. This is, for instance, not unlike what Palladio did by designing buildings

that were at once temples and farmhouses, evoking the image and emotive power of the former while not compromising the function of the latter.

Multiplying traditions

Several vernacular traditions have emerged in this century: the eclecticism of the 1920s, the various forms of Modernism and Futurism from the 1930s through the 1960s, the "rustic revival" of the 1970s, and the Colonial tradition persistent through all of those decades. Perhaps the most astonishing aspect of the American urban landscape is the fact that all of these traditions have been so remarkably prolific, all of them equally legitimate—though clearly not all equally well executed.

Shifts in image and function

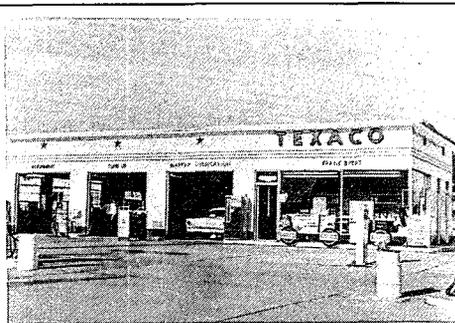
Image and function have developed independently. The image of the environment has changed, often totally, from decade to decade, while, surprisingly, the functional parts of the environment have changed far more slowly. This rapid shift in imagery has been possible primarily because of the malleability of vernacular building shells. Image has been manipulated through remodelling as well as through new construction (17-21). This kind of clip-on or plug-in changeability has always been an integral feature of vernacular architecture—but in terms of appearance rather than structure. If the mansard roof, a clip-on component, can come to be viewed exclusively as decoration applied to a plain box, then other forms of decoration at once more interesting and varied can surely find favor as well.

Changes like these do affect the environment, but because our standard reaction is to ignore the norm, we tend never really to appreciate pieces of the vernacular world until they show up later as relics, or *objets trouvés*, reminding us of where we once were, or where we might be again. To do only this is to make a mistake.

The environment is a diary

The essayist Joan Didion, for instance, once noted that a diary should not be intended merely as an historical record of events, but as a way of staying in touch with oneself. So, too, with the vernacular environment. Colonial Williamsburg is an environmental diary, a record not so much of the 18th century as of the tremendous concentration of energy that transformed a forgotten Tidewater town into a temple of colonial life, far more influential as an image of the future than as a relic of the past. Indeed, Williamsburg and the other building types we have seen are envoys, witnesses testifying to the enormous energies which Americans do expend in order to shape their world to some meaningful image. The goal, finally, of all this is to stay in touch with the *whole* environment because, like a diary, or like a mirror, it reminds us of who we are.

Richard Oliver is Curator of Contemporary Architecture at the Cooper-Hewitt Museum in New York, and an architect. Nancy Ferguson, his assistant, is a graduate student in architectural history at Columbia University.



(17) Standard gas station, 1960s.



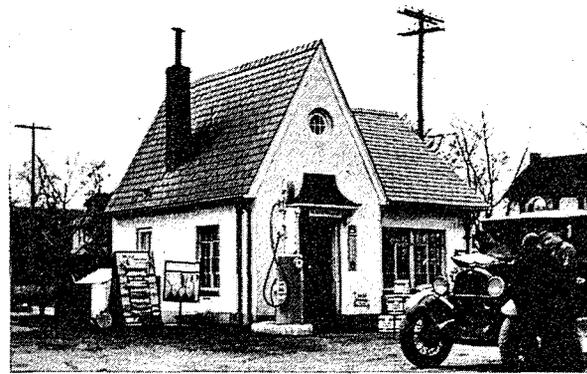
(18) Same station, remodelled, 1970s.



(19) Standard McDonald's, 1955-1962.

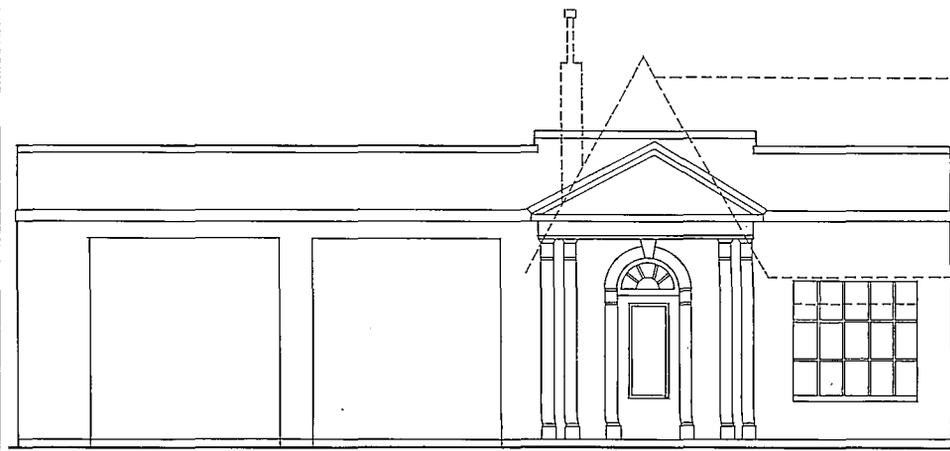
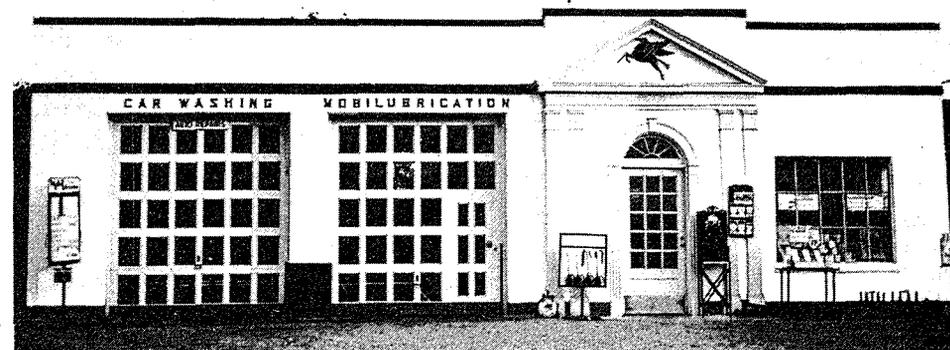


(20) Same McDonald's, remodelled, 1970.



Mobil

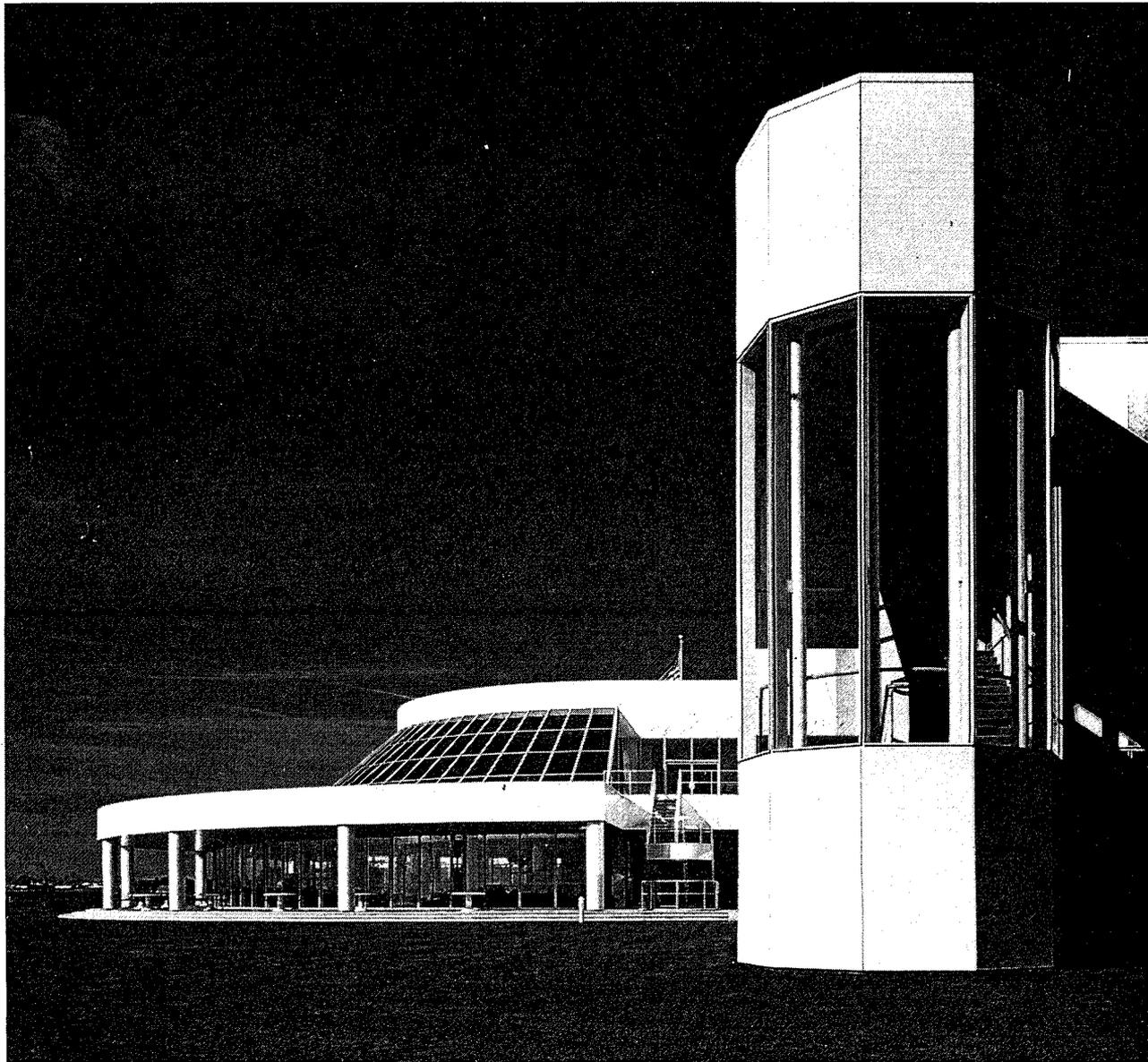
(21) The malleability of the vernacular building shell is illustrated by this almost unbelievable example of the expansion and transformation of a small traditional gas station into a modern one, complete with corporate logos and standardized details. The remodelling of this Mobil station occurred in the early 1930s, and a drawing showing the "before" and "after" conditions is shown below.



ON THE WISCONSIN PRAIRIE, A REPOSEFUL BUILDING WITH STRONG PRESENCE

The offices of the Aid Association for Lutherans, out on the flat farmlands of eastern Wisconsin, affirm the continuing vigor of a few architectural principles lately fallen on rather hard times as many architects strive toward post-modernism—"form follows function," for example, or "organic architecture." The striking individuality of this building, evidenced alike in its remarkable plan, elevations and light-filled interior, did nonetheless evolve out of the designers' rigorous application to the functional requirements of the insurance association. Indeed, references to Frank Lloyd Wright fall frequently and easily from the lips of project designer William Pedersen, then with the office of John Carl Warnecke & Associates. The functions defined by AAL included both the high-minded and the down-to-earth, among them a capacity for future expansion, the expression of Christian community, and open offices. The outcome is a structure suffused with daylight, "the only place we ever saw," says one employee, "where 300 people think they have the best spot in the building."

Elliot Fine



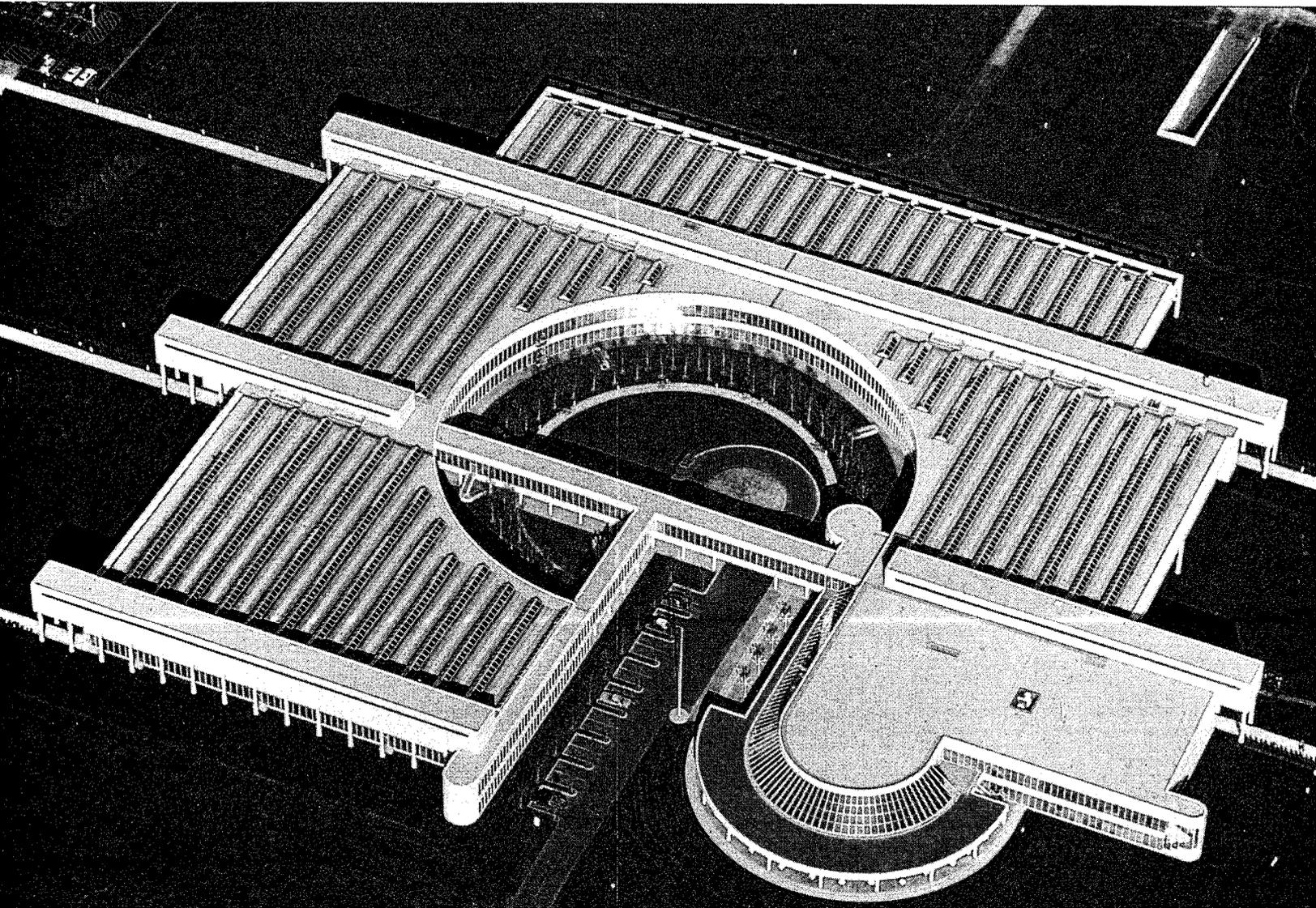
A truism often offered by architects has it that "good clients get good architecture." By all accounts and by the evidence, the Aid Association for Lutherans, in Appleton, Wisconsin, was such a client.

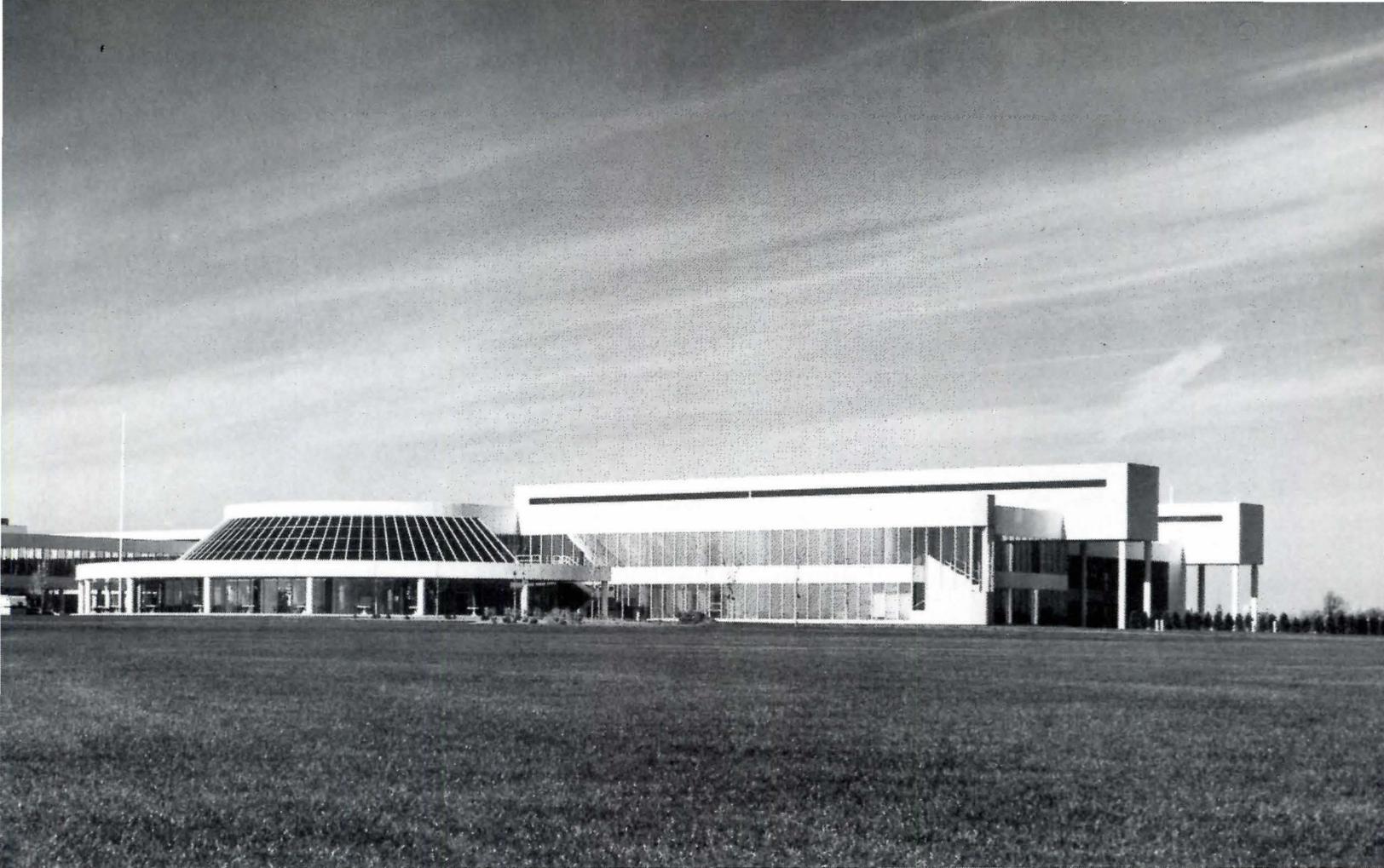
Virtually all the architects and consultants who worked on AAL's new headquarters building speak of the care and enthusiasm shown by the association's building committee at every stage of design and construction, of its indifference to mere monumentality, of its determination to create a pleasant working environment, of its unflinching attention to detail—most importantly, perhaps, of the committee members' common dedication to the health of the community and their conception of human worth.

It should be added that consultants remarked similar consideration and diligence on the part of the architects, whose briefings covered relevant and peripheral data from other specialties that might impinge on design choices. "It was a foregone conclusion," says one, "that the building would succeed."

AAL is a fraternal insurance association that draws its membership from Lutheran congregations across the country. Established some 75 years ago, it is one of Appleton's major employers, and before moving into its new headquarters occupied an 11-story office building in the downtown business district.

Even before engaging John Carl Warnecke & Associates as its architects, the association made a number of decisions about site and building requirements. Knowing that it would need half a million square feet of space, and feeling that such an area would overwhelm Appleton's central business district, it bought five farms just outside town to obtain a 1,200-acre site. (The building itself takes five acres of this land, and much of the remainder is leased as working farms—a decision taken

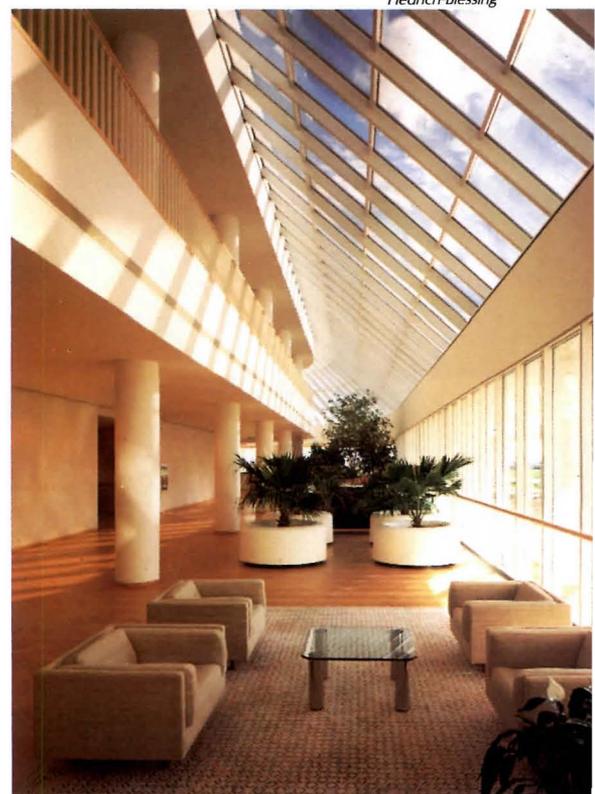




Elliot Fine photos, except as shown

The courtyard at the center provides an unmistakable focus for the building from the interior, from the visitors' approach and from the air. The architects conceived it as a protective enclave in the flat sprawling landscape and as a defined view for office workers looking across it. Visitors enter beneath the courtyard bridge, employees more grandly through propylaea sheltered by fan-room housing.

Hedrich-Blessing



less from a canny desire to make every penny count than from a concern to preserve the social and agricultural texture of the county.)

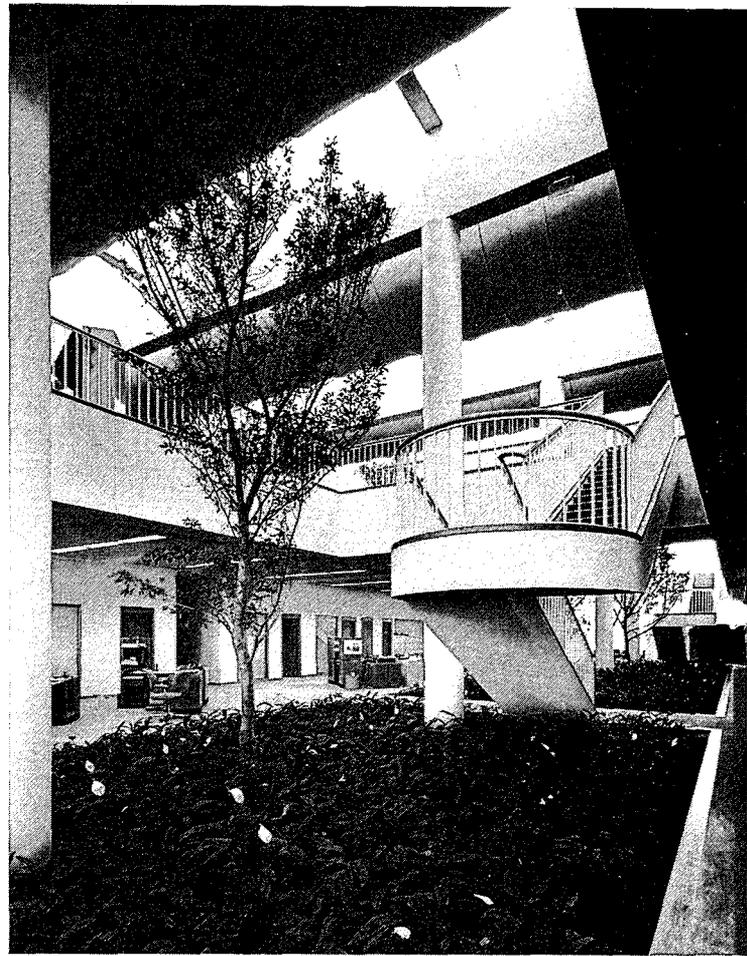
The association also determined ahead of time that offices would occupy an open-plan landscape. This decision harmonized with the sense of unforced democracy that characterizes the organization, and also served to eradicate the monotonous bull pens that so often afflict the large clerical spaces needed in insurance operations.

Still further, AAL specified for its new building "a sense of Christian community" more lively than the simple inclusion of a chapel on the premises—although its chapel was moved intact from the downtown offices.

And finally, the building had to allow possible expansion from 500,000 sq ft to 1 million sq ft.

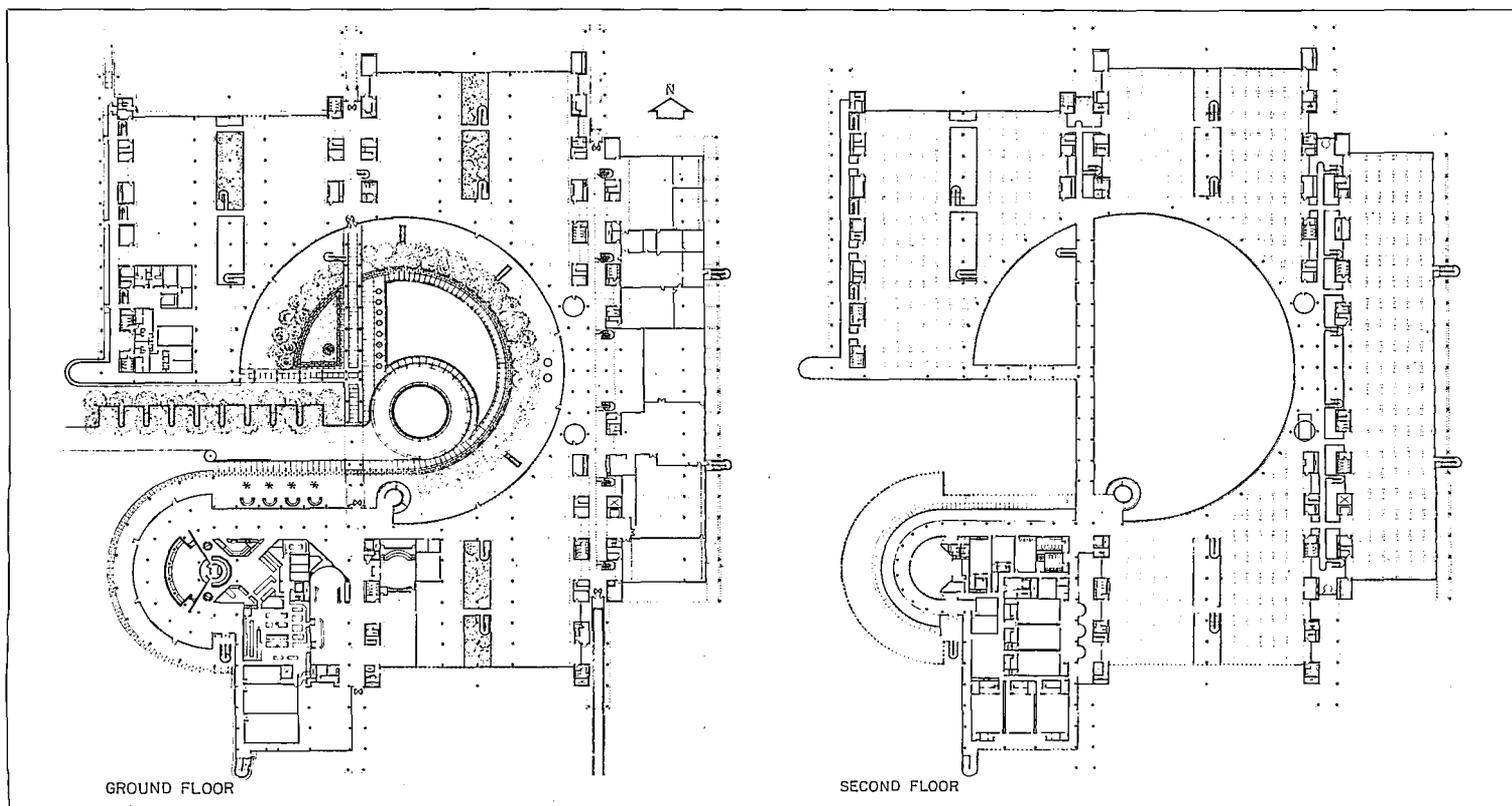
The architects see the hundreds of feet of skylights covering the roof as the element that fuses these disparate requirements into a single whole. In the absence of an iconography that would represent Christianity and not at the same time appear incongruous in a 20th-century office, the admission of Nature, in the form of light and plant life, into the heart of the office space seemed the most direct as well as the most symbolic expression of reverence.

The first impression of a visitor seeing the building's interior is radiance—pure light. His second impression, if he is on the upper floor, is of the powerful sculptural forms that dominate the space from the ceiling. These complexly curved off-white "socks" act in combination with the interspersed girders to diffuse natural illumination evenly. At the same time, since they run on a north-south axis, they reflect the changeable colors and intensity of sunlight from hour to hour and season to season. (The development of these socks commanded the consid-



Elliot Fine

Cafeteria (opposite) is only one element in AAL's thoughtful program of dining facilities, designed to give employees a range of choices and to alleviate feelings of isolation and dependence in the out-of-town location—for eating: cafeteria, fast-food restaurant, dining room with service; for recreation: pool, cards and other games in fan-shaped area adjacent to cafeteria and a TV room nearby.



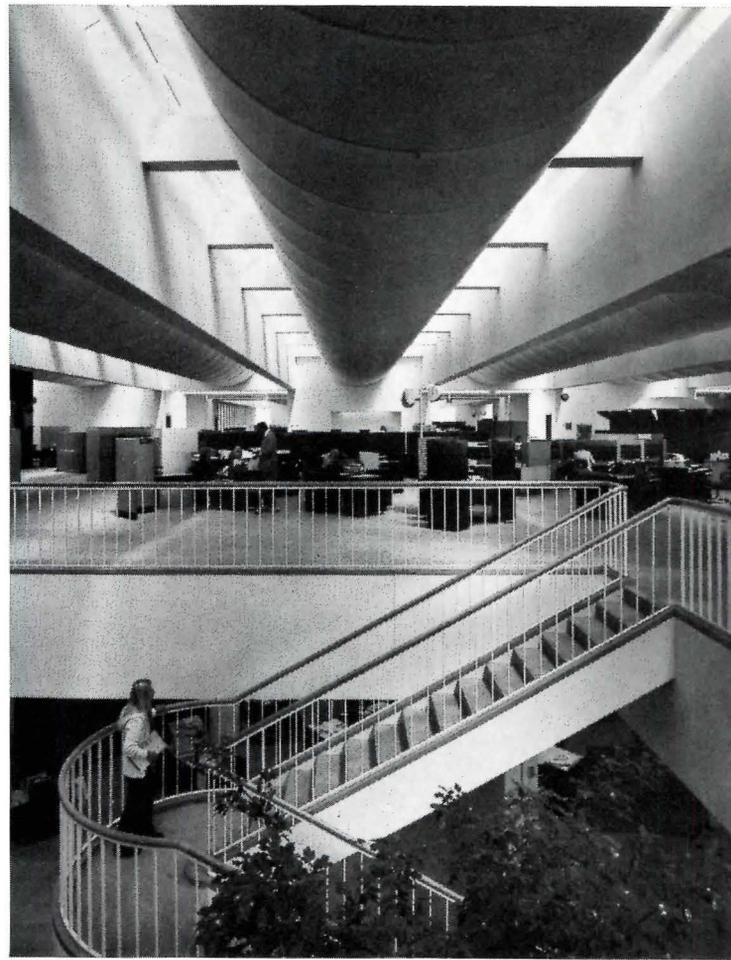


erable efforts of architects, engineers and technical consultants for a period of many months. See RECORD, mid-August 1974, pages 100-101, and mid-August 1977, pages 78-83.)

The overhead light, illuminating all work areas equally, relieved the architects' dependence on perimeter windows for light and a sense of the outdoors, and thus opened the possibility of expanding the building horizontally in three directions. Only the front of the building, with its semicircular "resources center," cannot be extended. (The resources center houses reception, board room, training facilities, cafeteria and dining rooms, as well as AAL's imaginative program of lunch-hour amenities for employees.)

Major horizontal circulation follows the axes set by the spines of fan rooms. These lanes function as city streets, along which workers casually and inevitably meet to exchange pleasantries, discuss business, and make lunch dates. Stairs provide vertical circulation along these streets, in perimeter turrets, and in planted wells that allow light to penetrate to the lower floor and offer oblique views upward for the occupants who work on that floor.

AID ASSOCIATION FOR LUTHERANS, Appleton, Wisconsin. Architects and planners: *John Carl Warnecke & Associates—John Carl Warnecke (principal), William E. Pederson (project designer), John Smart (senior designer), Michael J. Koenen (project planner), Lee Hamptian (project manager), Horst Herman (job captain).* Engineers: *Paul Weidlinger (structural); Joseph R. Loring & Associates (mechanical/electrical).* Landscape architects: *Zion & Breen Associates.* Interiors: *George Nelson & Co., Inc.* Consultants: *Hubert Wilke, Inc. (audio-visual); Joe Baum & Company (food service planners); Cini Grissom Associates (kitchen).* Contractor: *Oscar J. Boldt Construction Co.*



Hedrich-Blessing photos

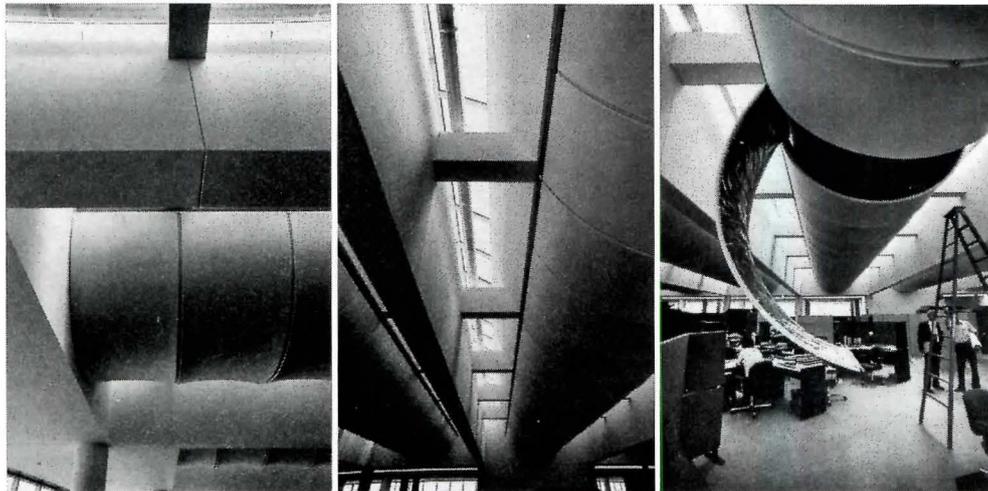
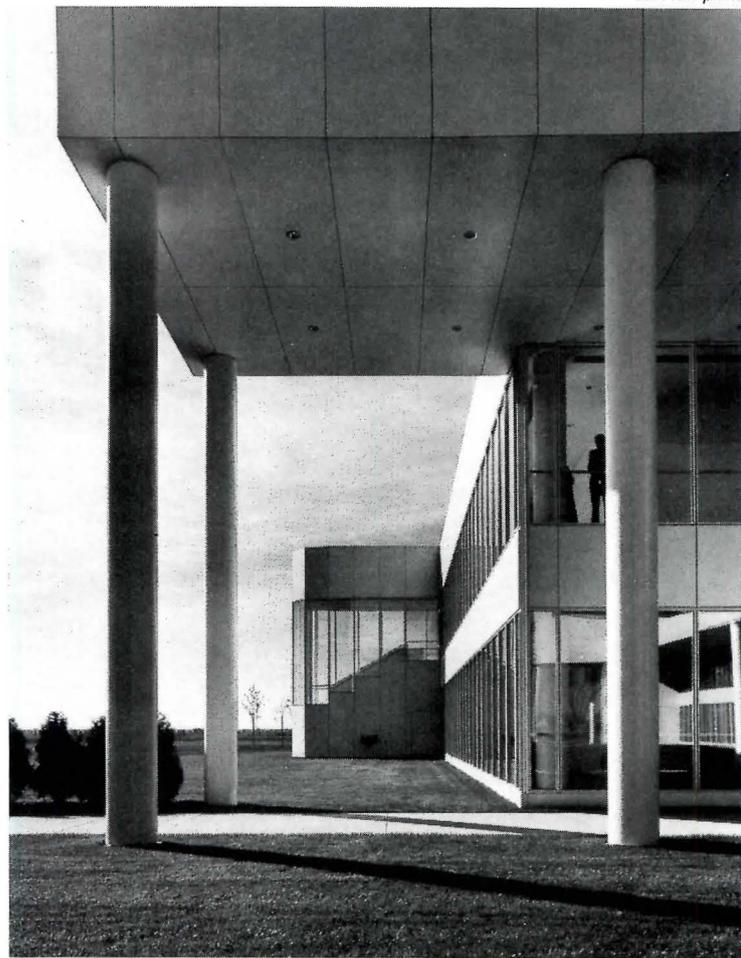
Light level on the upper floor reaches 200 fc of glareless illumination on a clear day, without assistance from fluorescent lamps installed below skylight for use on gray days. Double glazing is reflective outside, unpolished glass inside. Daylight is reflected off gypsum-board facing on girders and off the deep catenary curves of the "socks." Library (lower left) is one of the building's few partitioned-off spaces.





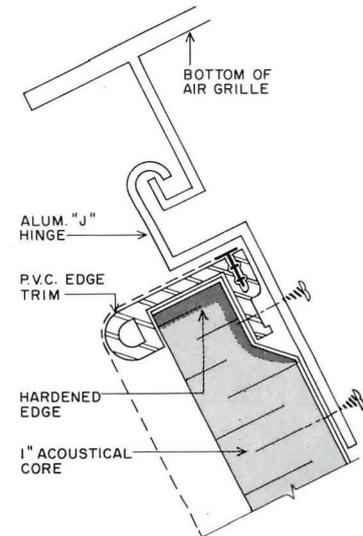
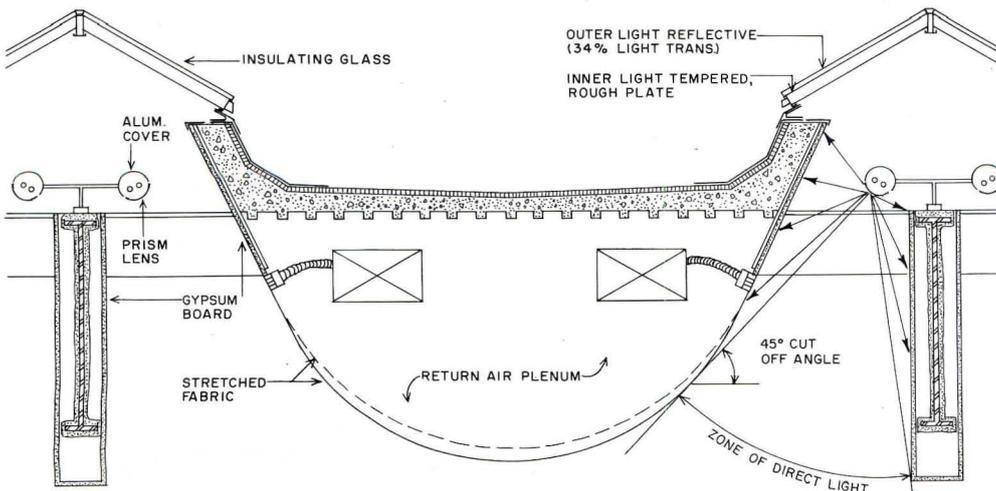
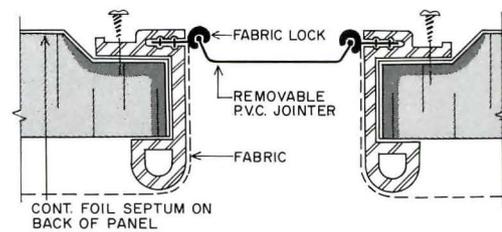
An extraordinary amount of technical talent, artanship, and client participation contributed to the realization and success of daring concepts, refined appearance, and workability of the AAL building. The most significant and innovative architectural product applications cited by Warnecke senior designer John Smart include: 1) the dramatic curtain wall system, 2) the skylighted second floor and sloping skylight of the resources center, 3) the sock ceiling that shields and diffuses daylight, and 4) the native red oak, fabricated and installed with handcrafted excellence, that forms a unifying element in its use for doors, baseboard, handrails, and herringbone flooring for the resources center and cafeteria and recreation area.

Most challenging of all was implementation of the daylighting concept of the second floor, which involved detailed design studies, illumination engineering of a rarefied sort, and product development and evaluation. First problem was to achieve a quality of light that would give a sense of the outdoors, while providing good light to see by. All ceiling elements work to this end: the exposed girders and socks prevent direct glare; the fiberglass socks modulate the brightness of daylight while also diffusing it; the cylindrical fluorescent fixtures emulate daylight when it is insufficient for work. Second problem was to develop a sock with the hooped, doubly-curved shape desired, but which would also allow easy access to the mechanical services it houses and easy maintainability. The acoustics product specialist chosen to fabricate the socks developed an ingenious system (shown below) that allows the fabric to be stretched in smooth curves, and for the sock sections to be hinged from the lower portion of the extrusion used for the continuous air grille. This gives the engineers and the AAL building facilities staff access to mechanical services for air balancing and maintenance.

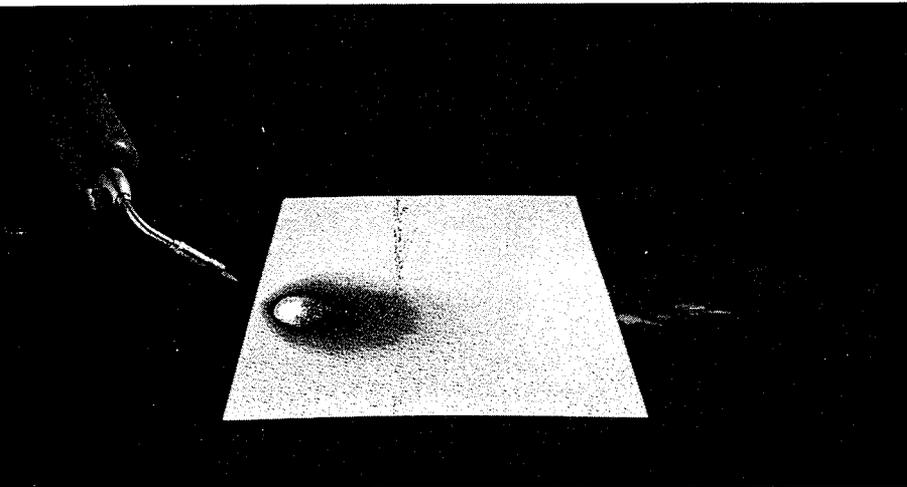


The aluminum-plate curtain wall, finished with a bone-white fluorocarbon coating, is in the current genre of flat walls, precise-joinery and dry weather seals.

The socks are formed of 10-lb density, foil-backed fiberglass, molded in a curve, over which fiberglass fabric is stretched in a compound curve, anchored by extruded PVC edge trim. A removable PVC jointer section is inserted in the fabric lock.



For more information, circle item numbers on Reader Service Inquiry Card, pages 195-196



FRP building panel has low smoke development rating

Manufactured using *Envirez* thermoset laminating resin, *Low Smoke/Fire-X Glasbord* fiberglass-reinforced plastic building panels have a UL smoke development rating of 75; fuel contribution of 5; and a flame spread of 50. The USDA-approved wall

and ceiling panels have a sanitary, embossed wear surface that is abrasion- and scratch-resistant. *Low Smoke/Fire-X Glasbord* is suitable for food preparation areas. ■ Kemlite Corp., Joliet, Ill.

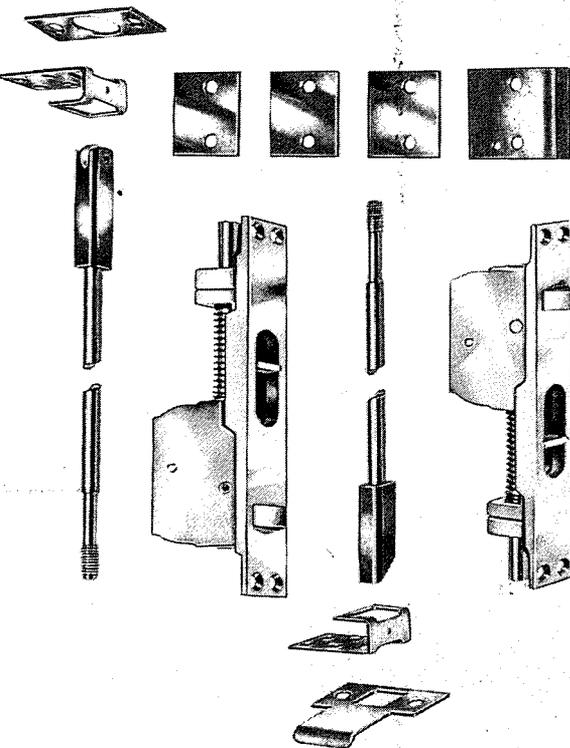
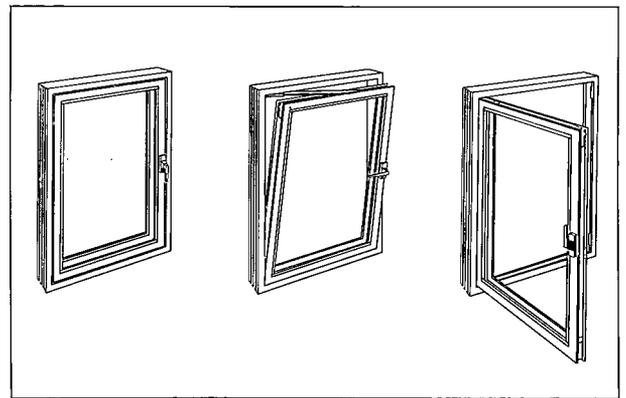
circle 300 on inquiry card

Two-way window offers several options

Constructed of aluminum with low air infiltration compression weatherstripping, the *Versa Vent* commercial window opens two different ways. Turning the single handle 90 degrees opens the window inward from the top to a limit stop. Turning the handle 180

degrees, past the vent position, lets the unit swing inward vertically. Double-glazing, insulating glass, thermal break construction, solar screens, and built-in venetian blinds are available. ■ Flour City Architectural Metals, Glen Cove, N.Y.

circle 301 on inquiry card



Self-latching bolt for fire-rated doors

Designed for use on the inactive leaf of hollow-metal (to 9-ft) and steel-covered composite (to 8-ft) fire doors, the UL-listed "Number 359" flush bolt is

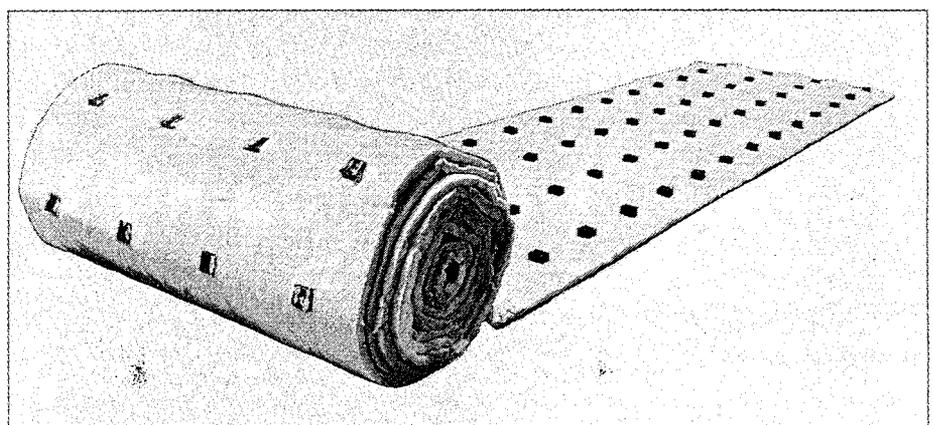
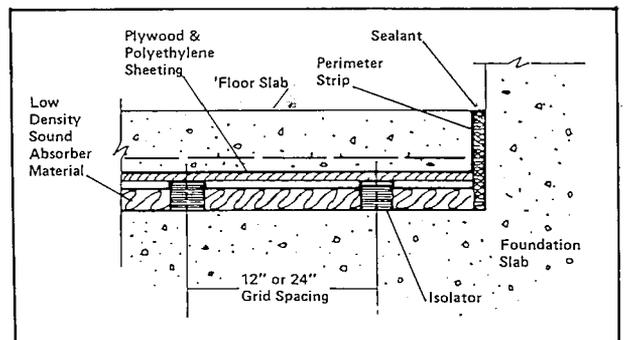
deadlocked while the active leaf is closed. ■ Leigh Products, Inc., New Haven, Conn.

circle 303 on inquiry card
more products on page 137

Noise-reducing floor construction easy to install

The *Floating Floor* is a concrete slab resiliently decoupled from a building's structure by isolation media; it is said to greatly reduce sound transmission between floors. Available in roll form, with diecut holes for flexible attachment to the user's own plywood forms, the pads come in various support ratings. ■ Peabody Noise Control Inc., Dublin, Ohio.

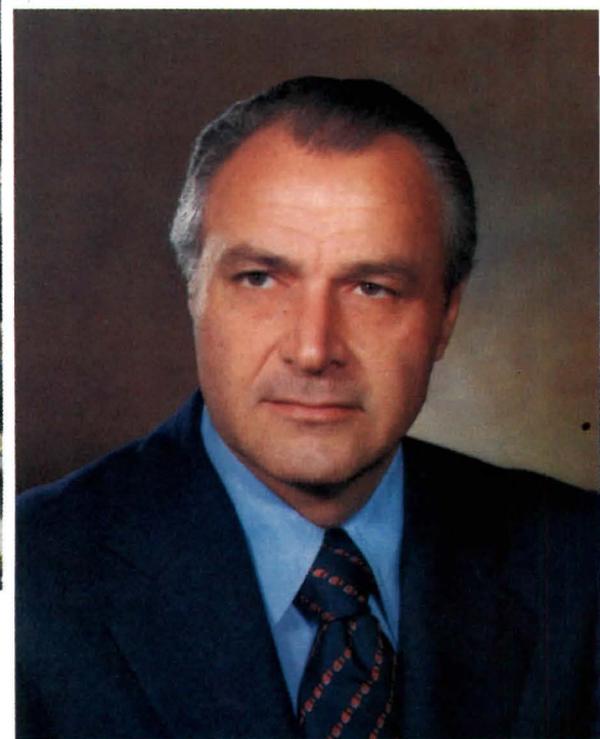
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Kenneth Schnitzer

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For information, consult Sweets file 8.26/Sh or contact:



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For more data, circle 44 on inquiry card

For more information, circle item numbers on Reader Service Inquiry Card, pages 195-196

AIR DOORS / A brochure describes both heated and unheated types of air doors in polycarbonate housings for such commercial applications as customer and personnel entrances, receiving doors, and freezer and cooler doors. The energy-saving and traffic-assisting characteristics of air doors are discussed; USDA, OSHA and NSF approvals are given. ■ Mars Air Doors, El Segundo, Calif.

circle 400 on inquiry card

CERAMIC TILE CATALOG / Containing a complete list of in-stock ceramic tile, the 24-page full-color piece displays 175 ceramic tile colors and a variety of available shapes, sizes, designs and glazes. Nearly 75 floor patterns are indicated in the text. There is also information and photos on swimming pool tile and design, and the company's custom design service, which offers mural and ceramic mosaic design. ■ United States Ceramic Tile Co., Canton, Ohio.

circle 401 on inquiry card

PLASTIC LAMINATES / An eight-page color brochure describes a line of high-pressure plastic laminates in new solids and woodgrains. There is also the company's new abstract series and marble-like laminate, all the *Nevamar* line. The laminates are said to have a flame spread rating of 25, a fuel contribution factor of 25 and a smoke development rating of 40. All are UL-listed. ■ Exxon Chemical Co. U.S.A., Odenton, Md.

circle 402 on inquiry card

DAMAGE-RESISTIVE CEILINGS / A 16-page brochure describes "Armaturff," "Armashield," "Cera-guard," and "Mylar" ceilings. Available in tile and/or lay-in panel forms, these ceilings are designed to resist a variety of external factors that can deteriorate ceiling surfaces such as excessive heat, moisture, steam, surface-impact damage, selected corrosive chemical fumes, and staining. Most of the ceilings described in the new brochure are acoustical and provide comfortable sound-conditioning. ■ Armstrong Cork Co., Lancaster, Pa.

circle 403 on inquiry card

FLOORING PRODUCTS / The 1978 edition of the company's catalog of resilient flooring products contains full-color illustrations of all colors and patterns in vinyl composition floor tile, asphalt floor tile, feature strip, and vinyl cove base. Also included is general information on sizes, gauges, uses, installation, light reflection values, and brief specifications. ■ Azrock Floor Products, San Antonio, Texas.

circle 404 on inquiry card

WINDOW FILM / Applied to windows, the transparent polyester film can significantly reduce the danger of flying glass from explosions, wind storms, accidents, vandalism or earthquakes, and can also foil a thief. A brochure illustrates and describes four tests that demonstrate the film's ability to hold fragments in place even though window glass has been shattered by pendulum impact, a bomb blast, shrapnel, or smashing with a baseball bat. ■ 3M Co., St. Paul, Minn.

circle 405 on inquiry card

TIMBER DOME SYSTEM / A patented laminated timber dome system is said to offer esthetic and acoustic effects, quick fabrication and erection at economical in-place costs. The system is recommended for sports arenas, enclosed recreational facilities, swimming pools and all-weather playgrounds. "Varax" domes are constructed of curved laminated rib members, laminated purlins, 2-in. tongue-and-

groove decking and patented steel connecting hubs and perimeter tension ring. Normally roofed with fiberglass and bitumen (or synthetic rubber membrane) and layered on the inside with three inches of fiberglass acoustic material, the "Varax" dome can span a 40-ft pool or a 700-ft coliseum. ■ Unadilla Laminated Products, Unadilla, N.Y.

circle 406 on inquiry card

EXPOSED AGGREGATE CONCRETE / A data sheet entitled "How to Produce Top Surface Exposed Aggregate Concrete" features a series of step-by-step photographs illustrating the production of sidewalks, pavements, and other face-up applications of exposed aggregate concrete with chemical retarders. ■ Preco, Plainview, N.Y.

circle 407 on inquiry card

DRAFTING MATERIALS / The company is offering an expanded 212-page general catalog for 1978, illustrating a selection of supplies and special equipment including new metric items for architects, engineers, draftsmen, and graphic and industrial artists. A reference index permits location of any item with all metric items highlighted for easy reference. ■ Alvin & Co., Inc., Windsor, Conn.

circle 408 on inquiry card

FIRE ALARM AND DETECTION / A brochure describes the company's new line of fire alarm and detection products for commercial and industrial applications. The line comprises heat and smoke detectors; alarm station products including "pull type" fire alarm stations in several designs and telephone reporting stations; communications systems including audible, visual and SAS systems; control center products having panels and consoles; and a variety of detection system accessories. ■ Grinnell Fire Protection Systems Co., Inc., Providence, R.I.

circle 409 on inquiry card

FIBERGLASS DUCT / Fiberglass duct systems for residential, commercial and industrial applications are illustrated and described in a new brochure. Rectangular, flexible and rigid round fiberglass duct systems are included in the six-page booklet that contains sections on closure systems, strength and durability, fire safety, and fabrication and installation. ■ Thermal Insulation Manufacturers Assn., Mt. Kisco, N.Y.

circle 410 on inquiry card

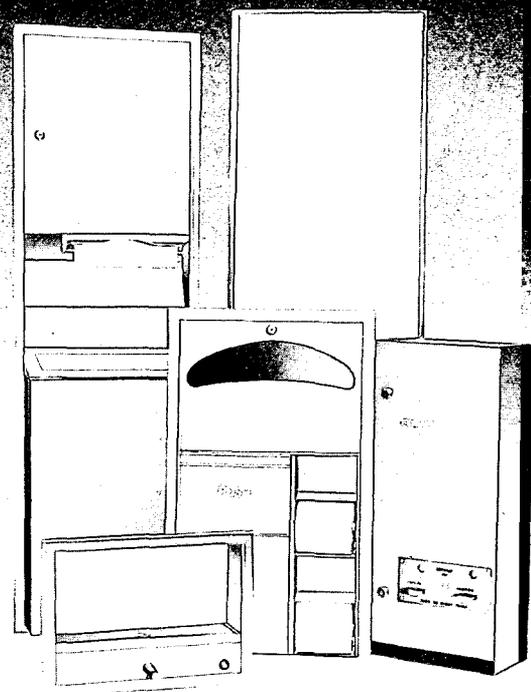
REVERSE CYCLE AC / The bulletin shows how "EnerSaver" air conditioners heat and cool hotels, motels, office buildings, nursing homes, apartments, and commercial buildings. It also describes how the unit operates to absorb heat outside a building when on the heating cycle, or inside the building when on the cooling cycle, and how it pumps this heat into or out of the building to achieve the desired temperature. The bulletin describes key features and graphically depicts capacities and other technical data. ■ American Air Filter Co., Louisville, Ky.

circle 411 on inquiry card

WINDOW BLIND COLORS / A blind color guide, in which each of more than 100 colors has a loose-leaf page to itself, is divided into a dozen removable swatches labeled with the blind color's name and its number. Metallics, solids and patterns are divided within the Color Guide by a tab system. Cost of the guide is \$10.00, including a continuing update service to introduce new colors. To order a copy, write on your professional letterhead, enclosing a check for \$10.00, to Levolor Lorentzen, Inc., 720 Monroe Street, Hoboken, N.J. 07030, Attn: Customer Service Department.

more literature on page 149

Do it right the second time



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.

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For more data, circle 45 on inquiry card

A drink that's refreshing to the eye



Halsey Taylor's twin bubbler provides plenty of water for a refreshing drink every time. When it comes to water coolers, we do that job better than anyone else in the industry. But the functional aspect is only one element you've got to consider. Aesthetics is another. That's why Halsey Taylor coolers come in a wide array of sizes, colors and models for the perfect style to blend with any setting. Get fast, simple and economical on-site installation. And they are built to last, with top quality

components to assure dependable, trouble-free performance. Thousands of architects all across the country regularly specify Halsey Taylor. That's because we deliver hard-working long-lasting water coolers with a functional beauty that's refreshing to the eye.

For sample specs, additional information or free literature, write today to Halsey Taylor Division, Freeport, IL 61032. Or contact your nearby Halsey Taylor representative.



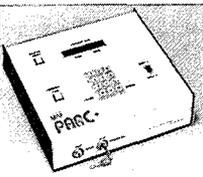
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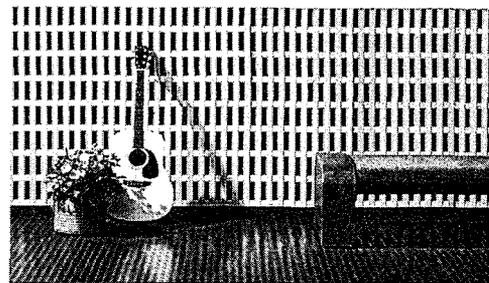
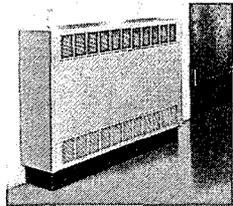
PARKING LOT COMPUTER / The "Mini-Parc" is an automated fee computer for the parking industry. It accommodates two rate schedules, and gives a visual audit at the touch of a button. The unit can be used in all types of parking facilities, and is compatible with present equipment. ■ Parking Inc., Des Moines, Iowa

circle 304 on inquiry card



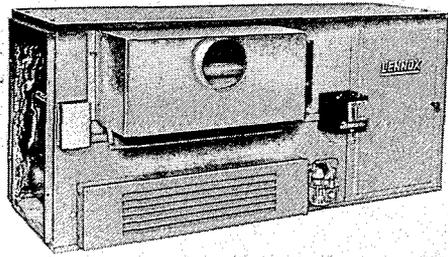
ELECTRIC CABINET HEATER / An all-electric blower cabinet unit heater, the "CUH Series" can be surface-mounted, partially or fully-recessed; it can also be mounted vertically on end to create an air door effect. Standard factory-installed equipment includes: push-button selection of 100 or 50 per cent of kW heat rating; three fan speeds; built-in thermostat; 24-volt control system; push-button selection of continuous or automatic fan; etc. Heaters are available in four cabinet sizes—35, 45, 68 and 78 in. They are available with ratings from 2 to 23kW and Btu/hr outputs from 3412 to 109,184; in 208V, 240V and 480V single-and triple-phase and in 277V, single-phase. Typical applications include foyers, lobbies, large rooms, entryways, stairways, corridors and meeting rooms of commercial, institutional and industrial buildings. ■ Berko Electric, Peru, Ind.

circle 308 on inquiry card



ACOUSTICAL WALLS/CEILING / Engineered for a variety of architectural applications requiring sound control and durability, these wall and ceiling systems in wood and metal are suitable for auditoriums, libraries, terminals, studios, etc. Wood modular panels are offered in oak, mahogany, or redwood; metal systems are available in stainless steel, bronze or aluminum. ■ Forms & Surfaces, Inc., Santa Barbara, Calif.

circle 309 on inquiry card
more products on page 139



HORIZONTAL GAS FURNACE / A space-saving horizontal gas furnace is available in sizes ranging from 60,000 Btu/hr to 160,000. The "GS11" is recommended for installation on combustible flooring in an attic space, on a slab in a crawl space, suspended from the ceiling in a utility or furnace room or hanging from joists in a basement or crawl space. Add-on cooling ranges from 1-1/2 through 5 nominal tons. All units are factory-tested and shipped completely assembled and ready to install. Units are A.G.A. certified for use with natural or propane gas. ■ Lennox Industries Inc., Marshalltown, Iowa.

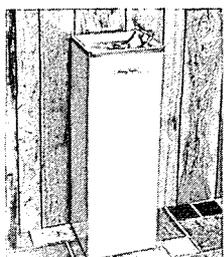
circle 305 on inquiry card

RESIDENTIAL SKYLIGHTS / Insulating double domes in either white or clear acrylic are features of the Ventarama residential skylight. Operable ventilating units can be specified with manual, pole, or motorized electrical operation. Skylights are completely assembled with curbing, screen, and copper flashing for installation on shingle, asphalt, slate, asbestos, and tile roofs. Ventarama skylights are said to be leak-proof, draftproof, and free from condensation and heat or cold transfer. ■ Ventarama Skylight Corp., Port Washington, N.Y.

circle 306 on inquiry card

REPLACEMENT WATER COOLER / Introduced specifically to replace water coolers damaged by heavy usage or vandalism, all three units in the "Replacers" line are said to carry an economy price tag. Available in capacities up to 11.5 gal per hr, these coolers have waste and supply lines secured to the back of the cabinet. Constructed of welded steel with fountain tops of satin finish stainless steel, "Replacer" water coolers have a five-year warranty on the refrigeration system. ■ Halsey Taylor, Freeport, Ill.

circle 307 on inquiry card



SO, YOU THINK THE COST IS TOO HIGH FOR A TOP-SECURITY FLEXIBLE GRILLE?



NEW! NORTH AMERICAN SCISSOR GRILLES CUT IT.

Introducing...new scissor grilles. They cut the cost storefront security. Plus, they're flexible and aesthetically-pleasing.

This top-hung curtain eliminates the need for a floor track. It opens and closes effortlessly, manually, using pendant rollers in a straight or curved track. That means the new scissor grilles can maneuver around all curves with a minimum radius of 18". They also answer the problem of low overhead, which makes roll-up units impractical.

Best of all, scissor grilles protect straight, curved and angled storefronts like no other grille on the market.

They come as single slide units up to 20 feet wide, and biparting units up to 40 feet wide.

All this, in a grille backed by the quality, experience, and reputation of North American.

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For economy-minded, flexible storefront protection — call Wolf Wachter or Jim Karcher at 516/699-7700...they'll tell you how North American scissor grilles cut it.

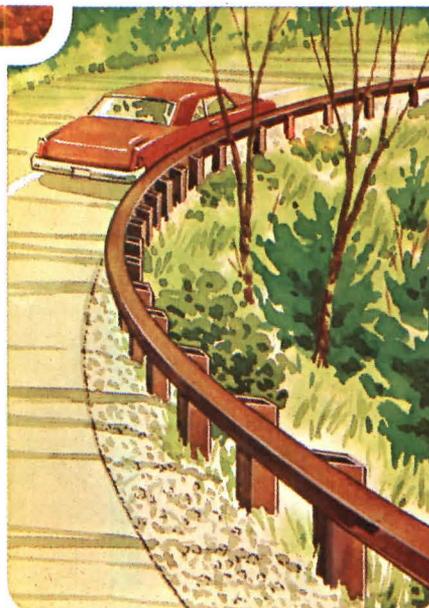
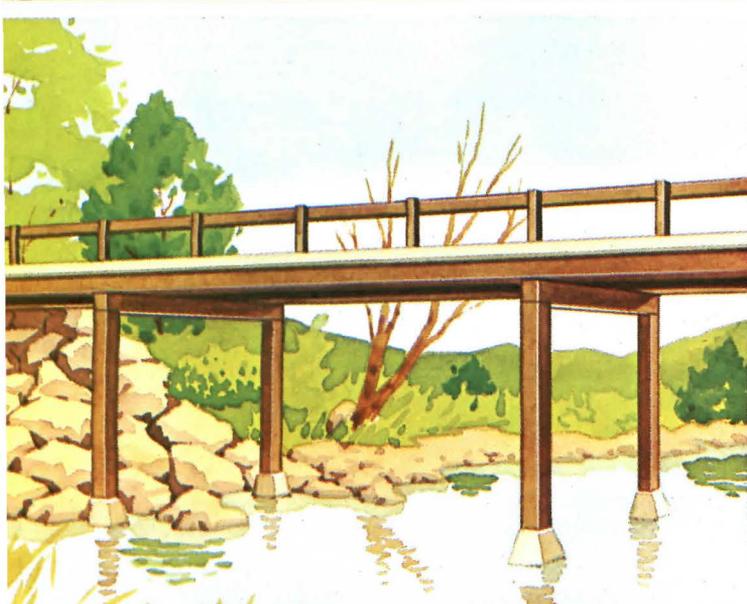
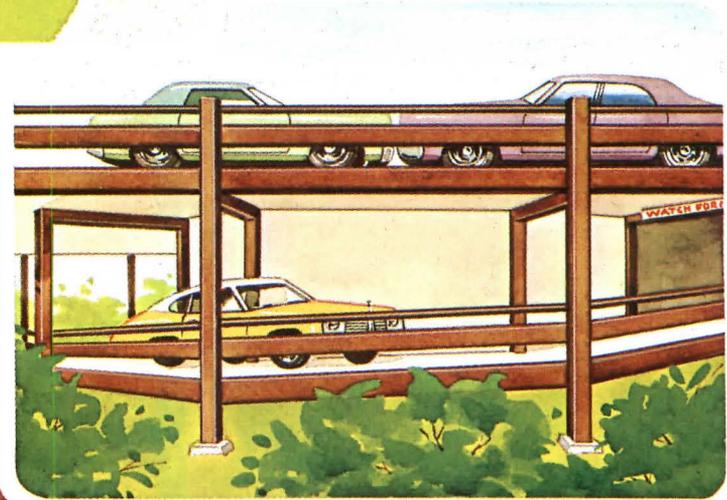
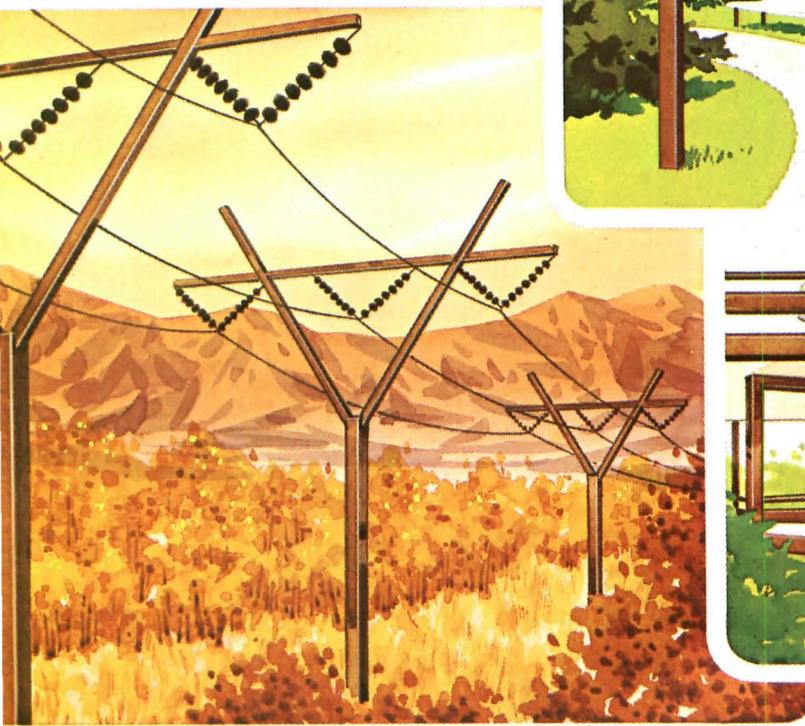
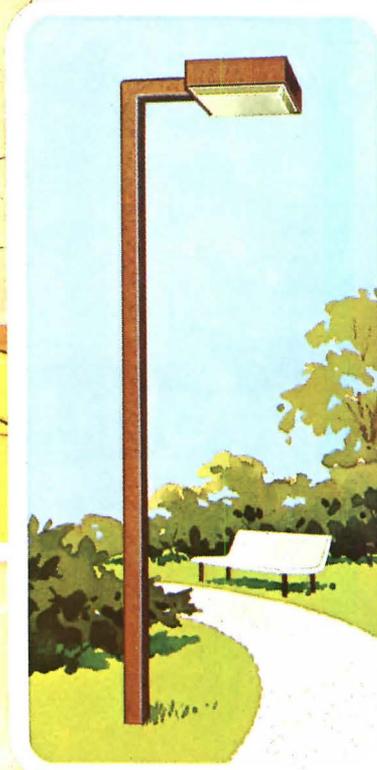
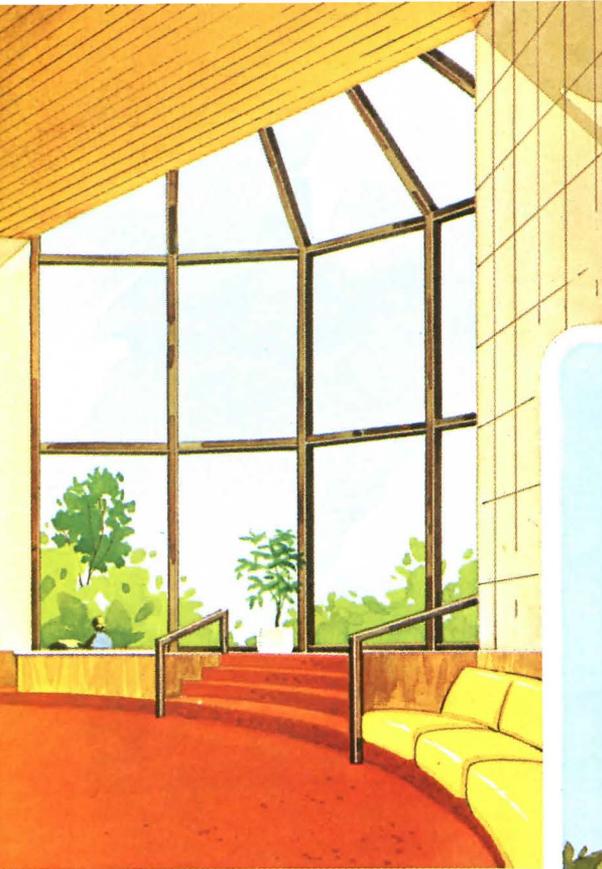
New Regal earth tube

Now Regal offers you structural steel tubing with a beautiful yet tough weathering surface. The warm earth tones of its durable surface mature with age and blend naturally into any environment. Painting is never required. Available in square and rectangular shapes, dozens of perimeters and wall thicknesses for scores of uses. Earth tube. We think you'll agree its well named.

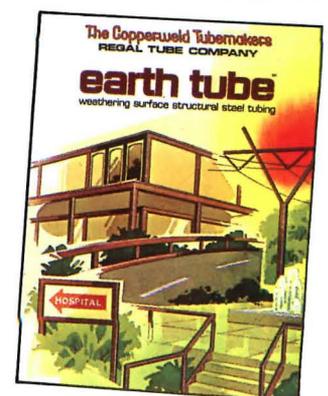
The Copperweld Tubemakers
REGAL TUBE COMPANY

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For more data, circle 48 on inquiry card



We invite you to send for
our earth tube catalog.



CARPET BACKING / A secondary backing material for carpets made of synthetic fibers, *Thiokol* is an all-polypropylene woven backing said to be flexible enough for a variety of floor covering applications. The backing material is stain-resistant, does not absorb moisture or odors, will not rot or mildew, and is completely insect- and rodent-proof. ■ Thiokol, Fibers Div., Waynesboro, Va.

circle 310 on inquiry card

WOOL/NYLON CARPETING / Axminster-type carpets in the "Royalax" collection are power-loomed of 80 per cent wool and 20 per cent nylon in 12-ft widths. Shown is "Starlite," featured in eight colorways. Seventy-one variations of color and pattern are available in the "Royalax" contract carpet line, including plaids, "Pindot" and "Snowflake" patterns, and nine colors in the "Kurdistan" design. ■ Couristan, New York City.

circle 311 on inquiry card

POLYURETHANE COATING / Said to last up to six times longer than conventional finishes, this polyurethane industrial coating product provides maximum resistance for floors, walls and machinery exposed to chemicals, caustic solutions, acids, oil and grease, sugar and other fermentation by-products, etc. The coating comes in a one-step, ready-to-use form, and will cover metal, wood, glass, stone, masonry, phenolic or melamine plastic surfaces. The polyurethane is applied by brush or spray, and air dries to a tack-free finish in 45 minutes. The coating is available in a range of colors as well as clear. ■ The Monroe Co., Inc., Cleveland, Ohio.

circle 312 on inquiry card

WIDE PLANK FLOORING / Solid oak flooring 3/4-in.-thick, is available in planks 3-, 4-, and 6-in.-wide, without pegs. The flooring is installed by blind-nailing, as with regular strip flooring. "Colony" planks come prefinished antique brown in either red or white oak; an unfinished version, "Chelsea Plank," may be specified for applications requiring a special color or surface treatment. ■ Memphis Hardwood Flooring Co., Memphis, Tenn.

circle 313 on inquiry card

MORTISE LOCKSET / A solid extruded brass dead-bolt projects 1-in. to provide extra security for the "29H" series mortise lockset. An armored front conceals cylinder set screws and prevents unauthorized removal of the cylinder. This cylinder has a removable, interchangeable core, permitting quick and economical re-lock when required. Mortise deadlock is available in a number of function variations: bolt action by key outside, by knob inside; by key on both sides; etc. ■ Best Lock Corp., Indianapolis, Ind.

circle 314 on inquiry card

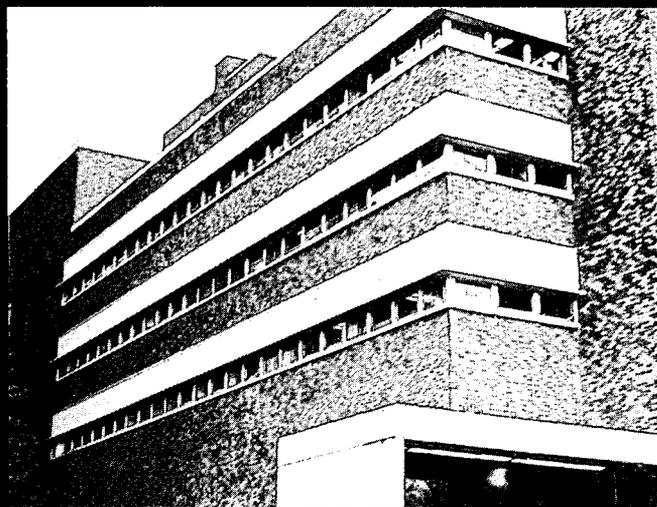
INSULATED GLASS SEALANT / Silicone "IGS 3204" is a black sealant able to bond to both glass and spacer materials, and has been specially formulated for use in new and existing dual-seal insulated glass units. Said to offer excellent adhesion, high and low temperature resistance, flexibility and structural strength, "IGS 3204" sealant is compatible with many glazing components. The silicone product is also relatively unaffected by long-term exposure to ultra-violet light, ozone and moisture vapor. ■ Silicone Products Dept., General Electric Co., Waterford, N.Y.

circle 315 on inquiry card

DARKROOM DOOR / Constructed of high-impact polystyrene with an all-steel superstructure, the *Speedmatic* revolving darkroom door permits easy access to any type darkroom and eliminates accidental film fogging. Breakaway hardware allows for popping the door away from the wall opening in emergencies, or when moving equipment in and out of the darkroom. Reinstallation is said to be fast and simple. For safety, the independent, stationary floor has a non-slip surface. ■ ESECO, Cushing, Okla.

circle 316 on inquiry card
more products on page 141

THIS IS CEM-FIL AR GLASSFIBER, GLASS REINFORCED CEMENT CLADDING.



Sun Shades, University of Washington.
Architect: Shavey & Schmidt.
Manufacturer: Olympian Stone Co., Redmond, Washington.



Giant Foods Shopping Center,
Baltimore, Maryland.
Architect: Coupard & Associates.
Manufacturer: Cem-Fil Corporation,
Nashville, Tennessee.



Workmen demonstrate the
lightweight, ease of handling of
7' x 5' aggregate faced
building panels of GRC.
Manufacturer: Olympian Stone Co.,
Redmond, Washington.



Aggregate faced panels in a variety
of sizes from 3' x 3' to 12' x 9' for
a MetroCenter office building,
Nashville, Tenn.
Architect: Hart, Krivatsy & Stube,
New York, N.Y. Manufacturer:
Cem-Fil Corporation,
Nashville, Tennessee.

These photographs illustrate recent installations in the U.S.A. Architectural cladding is just one of many applications for GRC. For more information, please contact John Jones, Cem-Fil Corporation

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When you specify GRC products, specify GRC reinforced with Cem-Fil AR GlassFiber. There is no equal
See Sweets General Building (Architectural File) 7.5/Cem

Developer

There's an image emerging across the face of our changing nation, the evolution of a new concept in advanced, people-oriented places to live, work, and play.

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Morrison-Knudsen's turnkey capability and fast track methods provide for an effective telescoping of architectural, engineering, procurement and construction phases and functions—with consequent savings in time and money.

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For more data, circle 50 on inquiry card

CONTRACT CARPET / Tufting produces a cut and uncut geometric pattern in "Colleague" acrylic/nylon carpeting. This tufting process leaves both cut and loop yarn ends on the wearing surface for improved wear resistance. The small-scale pattern, uncut squares in a cut-pile grid, is available in 11 colors; suggested retail price for the 12-ft wide carpet is \$13.50 per sq. yd. ■ Firth Carpet, Amsterdam, N.Y.

circle 317 on inquiry card

SET-BACK THERMOSTAT / Savings of up to 16 per cent in heating costs are possible for homeowners installing this automatic set-back thermostat, according to the manufacturer. Operating with all 24V wiring systems, units come in four models: single and dual (day and night) units for heating only, and single and dual units for heating and cooling. Automatic set-backs of up to 10 degrees are controlled by a self-charging nickel-cadmium timing device. ■ Robertshaw Controls Co., Richmond, Va.

circle 318 on inquiry card

OPEN-PLAN CEILINGS / Noise reduction coefficients of .85 to .95 are claimed for *Open-Plan SpanAcoustic* vinyl-faced lay-in ceiling panels, designed specifically for the acoustic requirements of open-plan office interiors. The lightly-embossed, perforated panels are rated Class 25 under FS flame spread index, and 0 to 25, ASTM E-84; *SpanAcoustic* ceilings are UL-listed. ■ Johns-Manville, Holophane Div., Denver, Colo.

circle 319 on inquiry card

MOVABLE PARTITION WALLS / *Ultrawall* partition systems are non-load-bearing walls consisting of special noncombustible gypsum panels, 3/4-in. thick, 24- and 30-in. wide, set in steel runners and framed with three alternate steel studs. Partitions can be erected in any height up to full ceiling; all components are demountable and reusable. Panels are available in five different types of vinyl facings; partitions will accommodate glass inserts. Depending on configuration selected, fire ratings of one and two hours, and sound ratings of up to 50 STC, may be specified in *Ultrawall* partitions. ■ United States Gypsum Co., Chicago, Ill.

circle 320 on inquiry card

SHOWER STALL SEATS / This retractable shower seat fits into its own 16-in.-sq. recessed housing when not in use. Constructed of reinforced 16-gauge stainless steel, the seat opens easily with fingertip pressure, and slides into position with a pivot motion. Capable of supporting up to 350 lbs, the shower seat is all welded, with no exposed screws or sharp edges. ■ Accessory Specialties, Inc., New York City.

circle 321 on inquiry card

COMMERCIAL LUMINAIRES / Designed to combine good light output with optimum brightness control for stores, supermarkets, etc., fixtures in the "Bantam 5000 Series" may be widely spaced. A reflector of *Endural* prismatic glass reduces glare. The series, available with 8 1/2- and 10 3/4-in. diameter reflectors, can be mounted with a 2- by 2-ft regressed splay pan (top); 4-in. black baffle trim (center); or 2-in. black baffle trim (bottom). The luminaires accommodate 100W, 175W, and 250W mercury lamps. ■ Johns-Manville, Holophane Div., Denver, Colo.

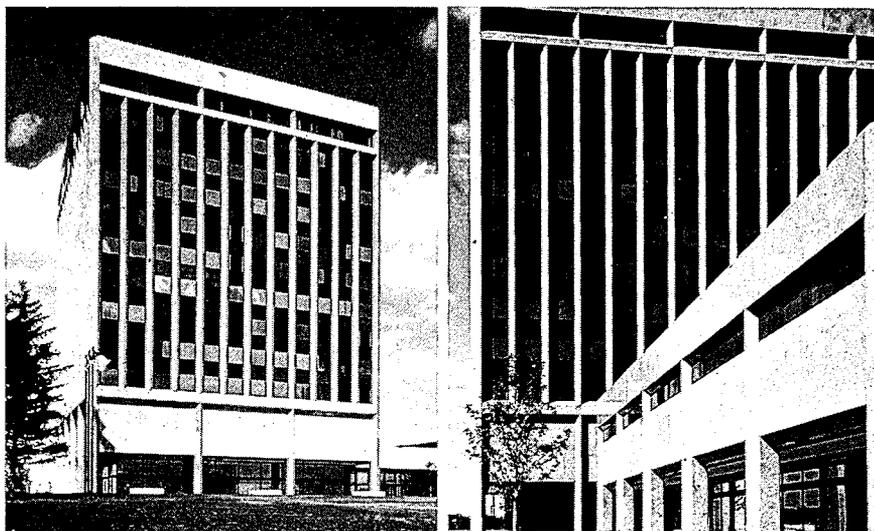
circle 322 on inquiry card

SHEET VINYL FLOORING / Designed especially to meet such particular requirements of residential flooring as stain resistance, color integrity, mildew resistance, and durability, "Villager" sheet vinyl comes in two styles: the "Barclay Square" small tile pattern shown, with six color choices, and "Fairlawn," a basic over-all design available in four colors. "Villager" flooring has a wearlayer 20 per cent thicker than minimum FHA requirements; has a NBS smoke density of 250; and is rated at a flame spread of 30 under ASTM E-84. ■ Congoleum Corp., Kearny, N.J.

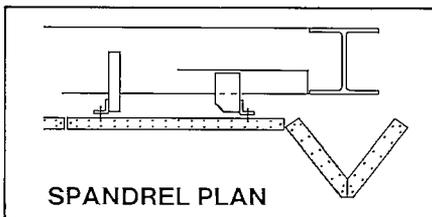
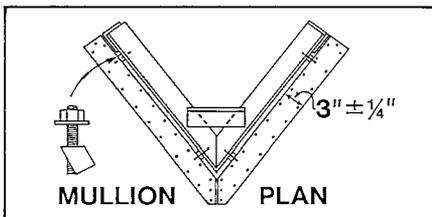
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more products on page 143

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Architect: Graham Anderson Probst & White, Chicago, IL



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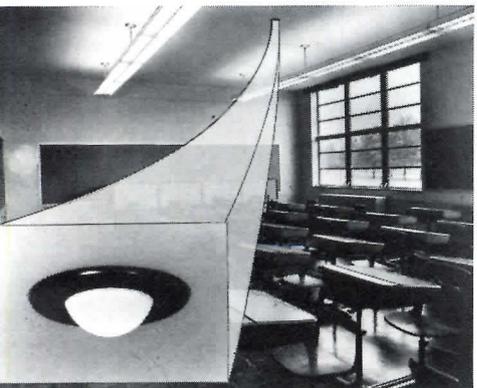
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CONTRACT CARPETING / "Irongate," made of cut and loop *Antron III* nylon pile, has a woven velvet appearance, but is durable enough for such high-traffic applications as general offices, stores, schools, hotels, and health-care facilities. The carpet meets requirements of DOC-FF-1-70 and ASTM E-84 (Steiner tunnel) tests; "Irongate" has static shock control, and hides soil. Woven in 12-ft widths, the carpet is offered in 12 colorways, including natural and heather shades. ■ Philadelphia Carpet Co., Cartersville, Ga.
circle 324 on inquiry card

PROPORTIONAL SCALE / This 8-in.-diameter scale is designed for the calculation of enlargements, reduction of photographs, art work and layouts. The "PS-80" scale consists of two circular discs of laminated vinyl, and provides a number of times of reduction. Suggested list price is \$3.50. ■ The C-Thru Ruler Co., Bloomfield, Conn.
circle 325 on inquiry card

SOLAR HOT WATER SYSTEM / A major portion of a home's hot water requirements can be heated directly in the flat plate solar collector, shown at the rear in the photo, without any indirect heat transfer techniques, and stored in the tank. When the faucet is turned on, preheated water flows from the solar tank to the conventional hot water unit, where it can be raised a few degrees if necessary. The manufacturer estimates a system consisting of four flat plate collectors and a 52-gal storage tank would provide about 80 gal of hot water daily in northern climates, at an installed cost of about \$2,300 to \$2,500. This solar system, intended for homes and light commercial buildings, comes complete with controls, valves and pumps, including an automatic drain to prevent freeze-up or overheating of the collectors. ■ PPG Industries, Inc., Pittsburgh, Pa.
circle 326 on inquiry card



PHOTOCELL LIGHTING CONTROL / The *Lumar* device allows precise, automatic, energy-saving regulation of artificial lighting in daylight interiors. The non-abrasive ceiling-mounted unit controls the level of incandescent, fluorescent and mercury vapor lighting operating in conjunction with natural light to produce a preset desired illumination level. The artificial light output changes slowly to prevent undesirable sudden transitions when daylight levels change. ■ Lutron Electronics Co., Inc., Coopersburg, Pa.
circle 327 on inquiry card

■ For more data, circle 52 on inquiry card

MEDICAL SERVICE WALL / Systems covering requirements from basic patient service to complete coronary or intensive care needs are assembled by combining various *Multi-Wall II* modular medical wall units. Each prefabricated system can provide a wide range of services, including electrical, medical gases, communications, physiological monitoring and lighting, designed and built in accordance with the architects' and hospital planning staff's specifications. ■ Ohio Medical Products, Madison, Wis.
circle 328 on inquiry card



COMPACT LAUNDRY CENTER / Suggested for multi-family buildings, the automatic electric dryer is wall-mounted, with a top-loading washer positioned at an offset underneath, both units fitting into a space 40 in.-wide. The 115V dryer is specifically designed for inside exhausting; the washer can be used as a portable unit or converted for permanent installation. ■ General Electric Co., Louisville, Ky.
circle 329 on inquiry card
more products on page 145

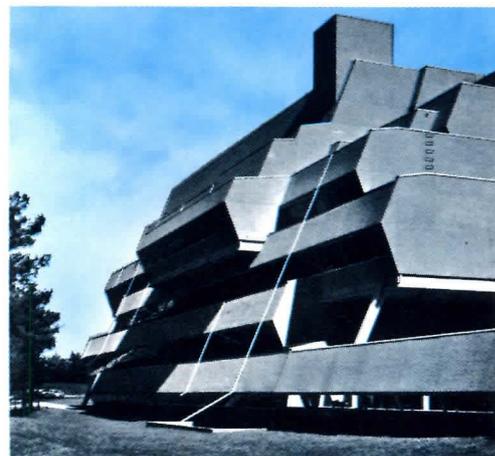
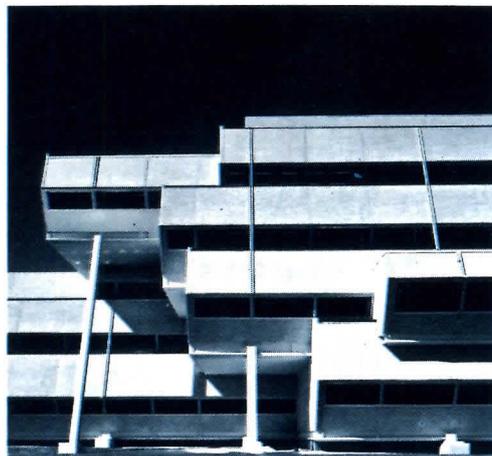


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Attention to detail is but one of the ways in which architect Paul Rudolph has assured the Burroughs Wellcome Co. building of being an extremely functional corporate headquarters and research center as well as a visual architectural accomplishment. One of these details is the use of All-weather Crete as a roof deck insulation. Completely monolithic, excellent thermal protection properties, slope to drains, vapor transmission and dry application by experienced, licensed applicators - all make All-weather Crete the natural insulation choice for buildings demanding a long, trouble-free roof deck or plaza life. See why so many outstanding architectural firms specify the All-weather Crete system for their jobs . . . contact Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525, (312) 735-3322, or see Sweets for the address of your local applicator.



Burroughs Wellcome Co. Building, North Carolina • Paul Rudolph, Architect • Photo, Joseph W. Molitor



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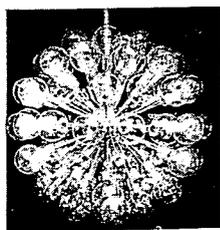
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For more data, circle 54 on inquiry card

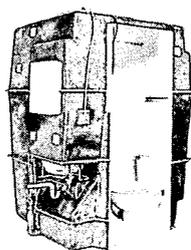
LOW-WATTAGE DECORATIVE LIGHTING / The 75



Tivolites in this spherical chandelier consume a total of 180 watts; the bulbs have a rated life of more than 50 years. Six random light sources in each of the several styles of bulb available create reflections and magnifications within the globe to amplify the apparent brightness many times. UL-listed transformers convert existing lighting systems or fixtures to the 24V current which operates the *Tivolites*. ■ Tivoli Industries Inc., Santa Ana, Calif.

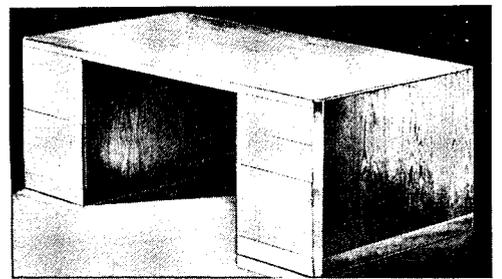
circle 330 on inquiry card

FIBERGLASS BATHROOM / The "Unette," a complete modular fiberglass-



reinforced plastic bathroom, is now being manufactured in Dammam, Saudi Arabia, as well as in the United States. Requiring a minimum of installation time, the *Crane Unette* exceeds commercial requirements as specified in ASI standards for bath tubs, shower stalls, and sanitary ware. Either right- or left-hand plumbing adapts for back-to-back piping installations. ■ Heritage Building Systems International, Houston, Texas.

circle 334 on inquiry card



OFFICE FURNITURE / Natural tones of black walnut or white oak are highlighted by details and trim of mirror-finished chrome in the "Trident" contract series. Designed by Warren Snodgrass, the line includes desks, credenzas, and file cases. ■ Modern Mode, Oakland, Calif.

*circle 335 on inquiry card
more products on page 147*

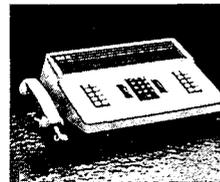
FIRE RETARDANT COATING / *Decadex Firecheck* is



a paint-like paste material that can be applied either by spray or brush to insulating products, such as polyurethane foam, building panels, asbestos, fiberboard, etc. The membrane system is rated by European standards such as British Standard 476 as "Class 1" against the spread of flames. When dry, it forms a thickly adherent elastic membrane that also offers weather, water, chemical and abrasion resistance. ■ Pentagon Plastics U.S.A. Ltd., Springfield, Va.

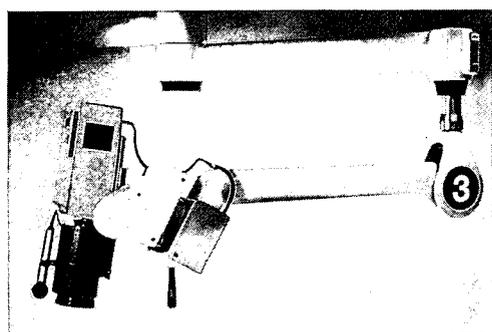
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TELEPHONE BRANCH EXCHANGE / Small, medium,



and larger businesses, institutions and service organizations now have a computerized branch telephone exchange system available for their particular needs, for from 48 to 1500 phone extensions. The "SCBX" installation serves customers with 48 to 144 telephones, providing automatic selection of the least expensive outbound trunk, recording of all information pertinent to traffic, and such service features as conference calls, transfers, and extension pick-up. ■ ROLM Telecommunications, Santa Clara, Calif.

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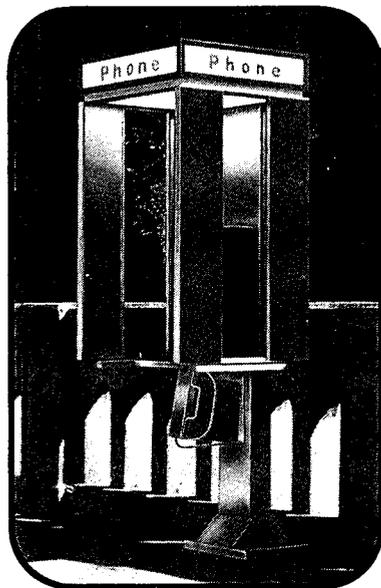
SURGICAL AV SYSTEM / Videotaping surgical procedures without interference to surgeons' lighting flexibility is possible with the portable unit shown above. The TV camera is independently mounted (track or centrally, with single, double or triple units) from the surgical light. Pan and tilt functions are remote-controlled at the AV monitor; shooting angles can be adjusted without movement of the suspension arm. The system includes the camera; audiovisual monitor with 17-in. color screen; time/date generator and cassette storage space; and an independent wall box for connecting the camera with the AV unit. ■ AMSCO/American Sterilizer Co., Erie, Pa.

circle 333 on inquiry card

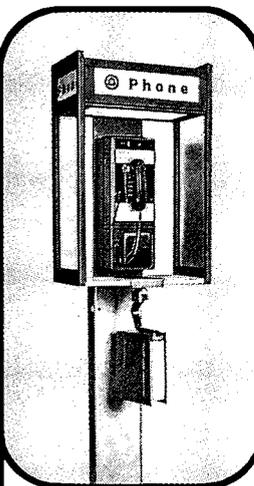
Quiet Outdoor Versatility

The ADCO 120-L DIPLOMAT™ Booth.

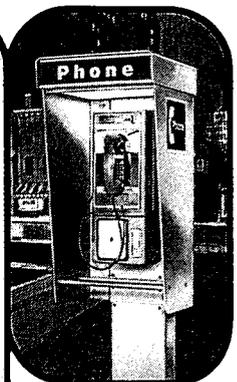
Durably handsome ¾ length acoustical booth for universal 54" or regular 64¾" coin slot height. Multiple mounting choices.



120-L



115



107-X

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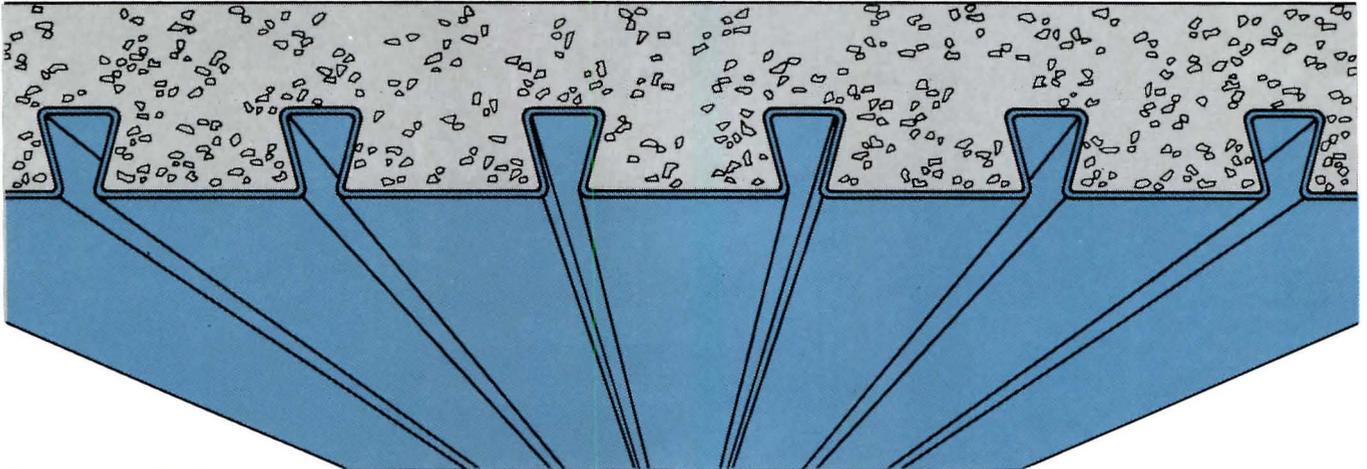


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Architect and Structural Engineer: Charles W. Yoder and Associates

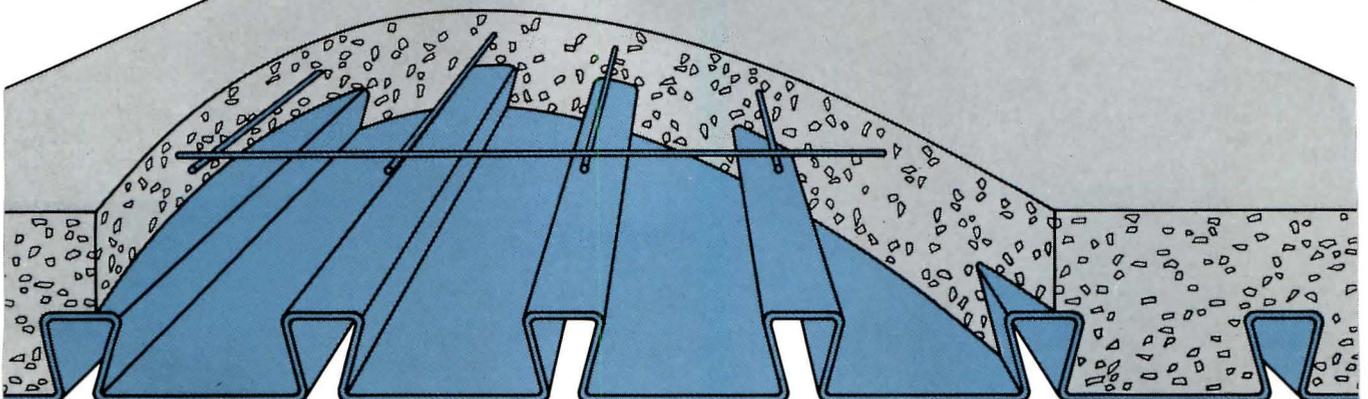
Contractor: Hunzinger Construction Company

Structural Steel Fabricator: Wisconsin Bridge and Iron Company.

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5

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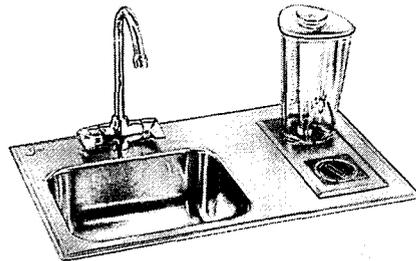
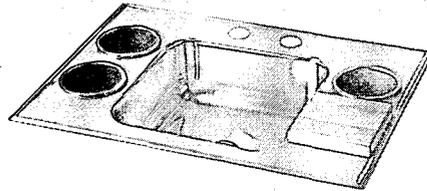
For more data, circle 57 on inquiry card

PRODUCT REPORTS continued from page 145



OAK CABINETRY / "Sungrain Oak" features standard conveniences of self-closing drawers and adjustable wall cabinet shelves. Optional conveniences include a pantry with revolving and adjustable shelves, glide-out towel rack, two-way access wall and base cabinet, and a handy cutting board. Cabinet units come assembled and prefinished for fast installation. There are 80 sizes of base and wall units in the line, with cabinet sizes ranging from 9 to 48 in. ■ Cabinet Div., International Paper Co., Portland, Ore.

circle 336 on inquiry card



BAR SINKS / The "Congeniality Group" includes three special-duty models: a sink with cutting board and four stainless steel bottle holders, a sink with cutting board and two bottle holders, and a sink with a built-in blender. The group also has 13 different-sized ledge-type sinks: nine with single compartments and four with double. All sinks are made of type 302, 18-8 stainless steel. Their interiors and top surfaces are polished, and the bowls are sound-deadened and punched for a standard 1½-in. strainer. ■ Just Mfg. Co., Franklin Park, Ill.

circle 337 on inquiry card

ACCENT LIGHTING / Using 25-watt, 2,000-hr life miniature reflector bulbs for soft "spot" lighting of art, walls or ceilings in homes and stores, the "Trakless" mini-beam series illustrated has 2-, 3-, or 4 cylinder shades with universal yoke-type swivels mounted on a bar. Each fully adjustable accent light has its own on-off switch. ■ Roxter Corp., Long Island City, N.Y.

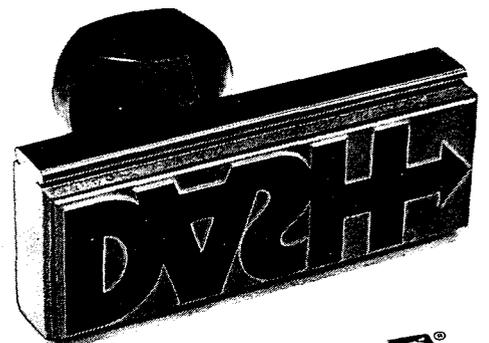
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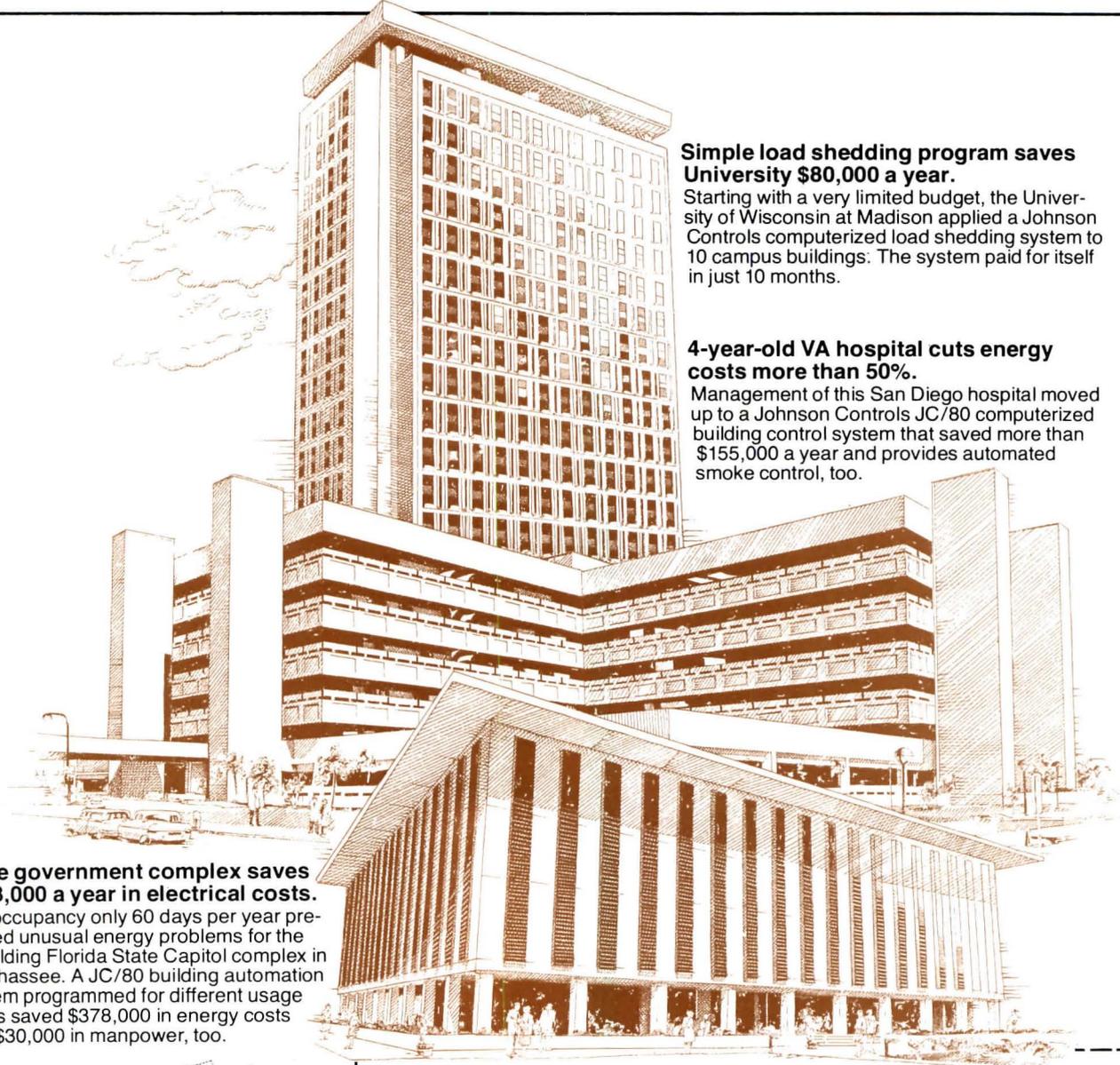
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Full occupancy only 60 days per year presented unusual energy problems for the 4-building Florida State Capitol complex in Tallahassee. A JC/80 building automation system programmed for different usage levels saved \$378,000 in energy costs and \$30,000 in manpower, too.



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HEAT-INVERTER / "Heat-Inverter" is designed to bring the over-heated air that hangs in stratified layers near the ceiling of any work or storage area down to the floor. It is effective in areas up to 2000 sq ft. The unit incorporates a fan and 16 ft of duct which brings the warm ceiling air to the floor where it sets up a gentle draft-free circulation. A guide contains full details of operation and application, including graphs to calculate savings under a variety of conditions. ■ V-M Industries, Inc., Newark, N.J.

circle 412 on inquiry card

TABLE MANUAL / A new Risom/Burr table-selection manual provides tips on design, materials, construction and utility for folding and non-folding conference, dining, work, utility and other tables. Full details of a variety of surface finishes, understructures, possibilities for leg location and the benefits of various edge designs are spelled out. ■ Howe Furniture Corp., New York City.

circle 413 on inquiry card

SHUTTERS / A 12-page catalog describes a complete line of shutters as well as the many variations and accessories that are available. For high velocity airstreams, galvanized steel shutter blades are available. Shutter frames and blades can be fabricated in several grades of stainless steel for corrosive atmospheres, too. The catalog has a special section on selecting shutters to ensure that the specifier understands the applications for each type of shutter. Special applications are described for low duty, unit blower, and roof ventilator shutters. ■ Elgo Shutter & Mfg. Co., Batavia, Ohio.

circle 414 on inquiry card

STAGING CATALOG / A 1977-78 catalog includes data on portable staging for indoor use, a mobile stage and shell on wheels, and variable height portable staging that can be used indoors and outdoors. ■ Wenger Corp., Owatonna, Minn.

circle 415 on inquiry card

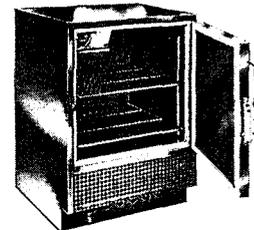
KITCHEN CABINETS / A four-color brochure describes "ChefBlok," a cabinet line made of mixed hardwood pieces edge-and-end glued for a butcher-block look. Detailed in the brochure are construction features, a description of the 10-step finishing process and complete specifications. The brochure is included in a kitchen idea kit, which features cabinet and vanity line literature, layout sheets, and planning hints for cabinet arrangements throughout the house. To receive a copy of the kit, send \$2 to International Paper Co., Cabinet Div., P.O. Box 8411, Dept. 105, Portland, Ore. 97207.

FOAM INSULATION CODES / Provisions of three model building codes pertaining to rigid polyurethane foam insulation have been published in this special bulletin. Principal provisions of the three codes relating to plastic foam insulation cover such areas as required thickness, density and flame spread ratings of the foam insulation, types of construction where the foam may be used, use of foam core with aluminum or steel backing and use of foam insulation in cold storage rooms. Bulletin U-104, "Model Code Provisions Pertaining to Rigid Polyurethane Foam Insulation" may be obtained for 35 cents a copy (\$1.00 minimum order) from the Urethane Div., The Society of the Plastics Industry, Inc., 355 Lexington Avenue, New York, N.Y. 10017.

WOOD MOULDINGS / A 24-page, color publication details the primary aspects of wood mouldings' history, manufacture, and many decorating ideas for architects, builders, and designers. For a copy of this booklet, send \$1.50, which includes postage, to Western Wood Moulding and Millwork Producers, P.O. Box 25278, Portland, Ore. 97225.

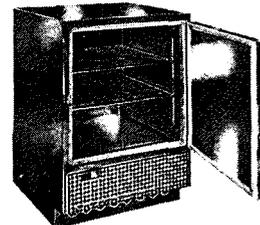
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UC-5-BC refrigerator has a blower coil cooling system with automatic off-cycle defrosting and condensate evaporator in condensing unit compartment. Two adjustable stainless steel shelves are provided.

UC-5-F-BC freezer is equipped with automatic timer electric defrost. Capacity—5.4 cu. ft. (155 ltr.)

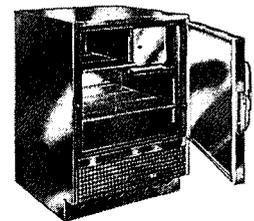


UC-5-CW* refrigerator with cold wall cooling system is equipped with push-button defrost, automatic reset and condensate evaporator. Capacity—5.4 cu. ft. (155 ltr.)

UC-5-F-CW* freezer is equipped with manual hot gas defrost. Capacity—4.6 cu. ft. (130 ltr.)

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*With explosion proof interior only.



UC-5 features a two-tray ice cube cooling system with manual defrost and stainless steel defrost water tray. The cooler section has two adjustable stainless steel shelves. The entire UC-5 series features polyurethane insulated thin wall construction and air-tight neoprene thermo-break door seals. Capacity—5.4 cu. ft. (155 ltr.)

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 organizations in over 100 countries.



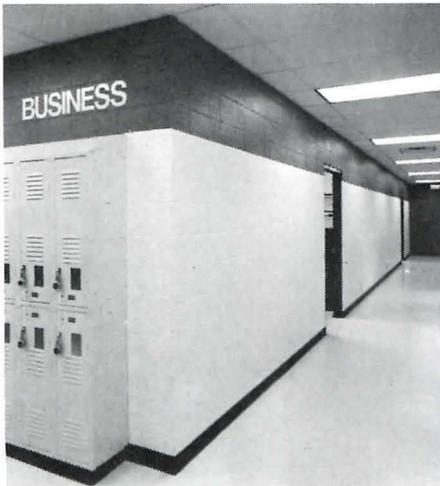
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with one coat* economy—

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transforms new or repaint interior
and exterior walls into colorful,
durable surfaces...spray apply up to
25 mils wet without sagging.



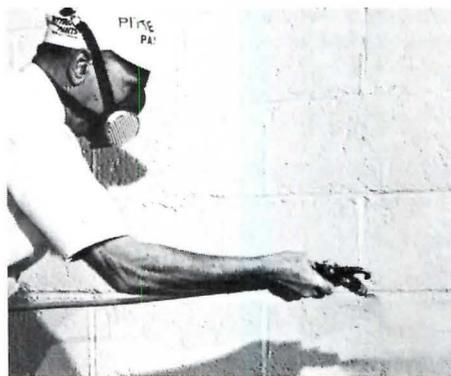
Easy washing qualities make *Speedhide* Fill and Finish Coating well-suited for heavy traffic corridors and hallways.

For information bulletin No. 912 write PPG Industries, Inc., C&R Advertising Dept., One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future



Speedhide Hi-Build Latex Fill and Finish Coating helped transform the Osage Apartment Rehabilitation Project, Tulsa, Oklahoma, inside and out into attractive community housing.



This *Speedhide* Hi-Build Latex Product 6-507 is a vinyl-acrylic paint that can be sprayed, brushed or rolled. Sold as a tintable white, but pastel colors can be obtained on order.

*For good sealing, two coats are recommended for exterior use.



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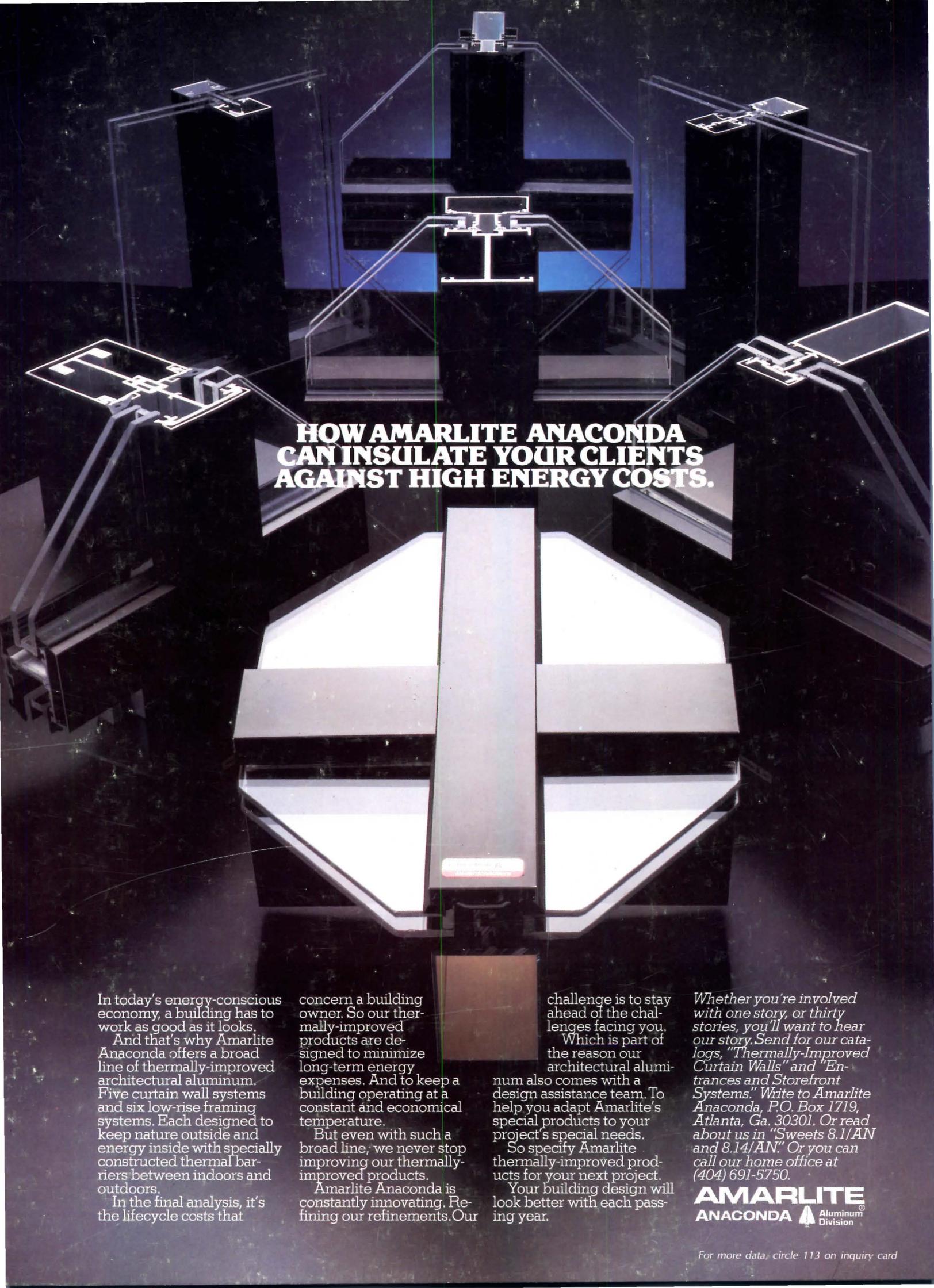
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