

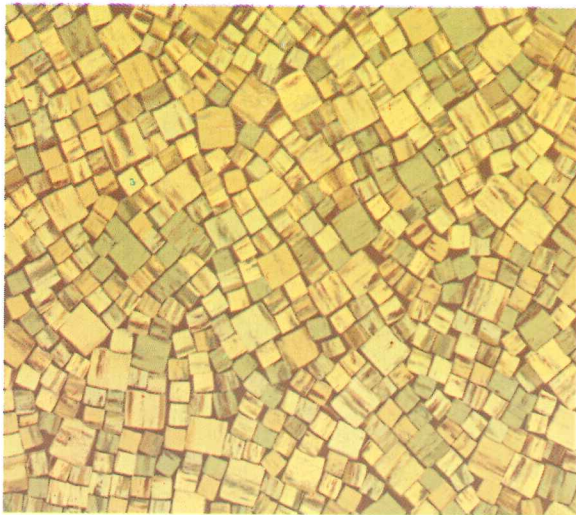


EQUITABLE DATA CENTER, EASTON, PENNSYLVANIA, BY KAHN AND JACOBS/HOK, ARCHITECTS
NEW LIFE FOR OLD BUILDINGS: PROJECTS BY SHEPLEY BULFINCH RICHARDSON & ABBOTT
EVOLUTION AND EVALUATION OF ENVIRONMENT FOR MENTAL HEALTH
BUILDING TYPES STUDY: PRODUCTIVE ELEGANCE FOR INDUSTRY
ARCHITECTURAL ENGINEERING: STRUCTURAL SYSTEM CREATES A STRONG YET SERENE IMAGE
FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

JULY 1975 **7** A MCGRAW-HILL PUBLICATION FOUR DOLLARS PER COPY

The Brigantine® floor from Armstrong. **At Middlesex General Hospital, it's on call 24 hours a day, seven days a week, and keeps right on smiling.**



cians, orderlies, custodians. As well as the administrator who's responsible for it all.

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with a minimum of seams. What's more, with its rugged vinyl construction, Brigantine offers solid underfoot economy. A beautiful benefit anywhere it's put down.

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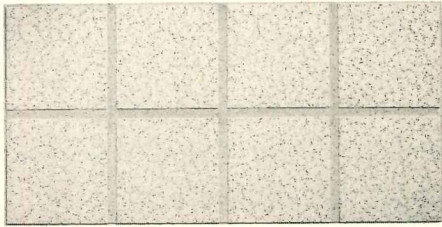


Architects: Ferrenz and Taylor, Inc., New York, N.Y.
Flooring Contractor: Hercules Flooring Company, Long Island City, N.Y.

FROM THE  INDOOR WORLD® OF
Armstrong

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Letters to the editor

While I agree that it will only cost one lunch to contact the not-so-big builder [editorial, May 1975], I believe your advice to architects should be to become that residential builder. My experience with the speculative builder (small, medium or large) is that he wants very little from an architect. The builder may look for concepts but I have never found one who is interested in the architect becoming thoroughly involved.

I know of no reason why architects cannot be responsible for the entire residential product. Most residential builders have very little equity and in many cases, none. What they do have is guts and no fear of bankruptcy.

While I do not agree with your specific advice, at least you are recommending that architects get off their fannies and get involved in a field where we have been on the outside for too long.

And congratulations on introducing "Legal Briefs for Architects, Engineers and Contractors." We have sent for an introductory subscription.

Alexander Ewing of
Ewing Cole
Erdman Rizzio Cherry Parsky
Philadelphia, Pa.

As a non-professional reader of your publication I found it interesting that the recommendations of the Biloxi Design Festival were followed by Mr. Ross' article in which the Portland Plaza was featured. Here is an example of an independently conceived, freestanding building which has no regard for a city's architectural heritage, cultural traditions, or scale. The insensitivity on the part of the architect obscures the merits of his construction system.

Yours was an enlightening juxtaposition, and the contrast of attitudes did not go unnoticed.

Gayle Ashton
Portland, Oregon

Some of the facts and statements you presented in the April editorial "Tweedle-dum, Tweedle-dee: Where do they get their priorities?" are erroneous and without substance.

I refer specifically to the paragraph relating to the Housing and Community Development Act of 1974.

First, Title I of the new law provides \$8.6 billion to states and local governments over a period of three years. The new law went into effect January 1, 1975 with \$2.55 billion for this fiscal year and an authorization of \$3 billion for fiscal year 1976.

Secondly, you are wrong when you state "... almost none of the \$12 billion has been appropriated because HUD just hasn't gone after it. ..." It should be clarified that the \$12 billion is an *authorized* funding level for both Title I, Community Development and Title II Housing, for a three-year period. Each fiscal year a specific amount is *appropriated* to be spent. For example, in fiscal year 1975 the following appropriations have been made: Title I, Community Development \$2.55 billion, and Title II, Housing \$450 million. All of the 1,344 entitlement recipients (excepting 15 communities) have applied for these funds and most of them will be funded before the end of this fiscal year. (As of April 25th, 152 applications for \$282 million has been approved.) Additionally over 5,000 local governments have applied for the nonmetropolitan discretionary funds and a smaller percentage of these cities will be funded from the approximately \$200 million allocated for small communities outside of metropolitan areas that do not receive hold-harmless funding.

Because of the shortage of funds in the metropolitan discretionary balances, President Ford requested an additional appropriation of \$200 million for fiscal year 1976, and the House of Representatives voted a fiscal year 1975 supplemental appropriation of \$54.6 million, to be earmarked for SMSA balances.

There is also a housing authorization in the 1974 Act. These Section 8 funds are available to communities under Title II of the Act.

Secretary Hills is making every effort to see that these Section 8 funds are immediately made available to the communities for housing construction this year. Over \$1 billion representing subsidies for over 400,000 units have been made available to field offices and it is expected that possibly 40,000 units of Section 8 housing will be reserved for fiscal year 1975.

David O. Meeker, Jr. FAIA, AIP
Assistant Secretary
Department of Housing
and Urban Development

Calendar

JULY

Current-August 8 Exhibition on Immovable Objects, Cooper-Hewitt Museum of Design, New York City. Contact: Ted Wolner, Cooper-Hewitt Museum, 9 East 90th Street, New York, N.Y. 10028.

Current-September 14 An exhibition of Milton Glaser's work, The Museum of Modern Art, New York City. Con-

tact: Michael Boodro, Department of Public Information, The Museum of Modern Art, 11 West 53 Street, New York, N.Y. 10019.

JULY 17-19 Human Response to Tall Buildings symposium, Sears Roebuck Building, Chicago. Sponsored by the American Institute of Architects and the Joint Committee on Tall Buildings. Contact: Evagene H. Bond, AIA Public Relations, 1735 New York Avenue, N.W. Washington, D.C. 20006.

23-24 Laboratory on "Cutting Production Costs," Sunnysdale, Cal. Contact: Continuing Education, The American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006.

31-August 2 National Conference on "The Economic Benefits of Preserving Old Buildings," Olympic Hotel, Seattle, Wash. Sponsored by the National Trust for Historic Preservation and the city of Seattle. Contact: Michael S. Leventhal, Department of Education, National Trust for Historic Preservation, 740-748 Jackson Place, N.W., Washington, D.C. 20006.

AUGUST

11-30 International Congress on Metropolitan Development, Amsterdam, the Netherlands. Theme: "Metropolitan Association of Urban Designers and Environmental Planners, Inc., P.O. Box 722, Church Street Station, New York, N.Y. 10008.

12-16 Energy Resource Alternatives (ERA) competition, Albuquerque, New Mexico. Contact: Score News Office, MIT Room 5-336, Cambridge, Mass. 02139.

13-14 Laboratory on "Cutting Production Costs." See July 23-24 item above for details. Program will also be repeated on August 27-28.

SEPTEMBER

5-7 Conference, "CM—Is It For You?," Arizona Biltmore Hotel, Phoenix. Sponsored by The American Institute of Architects and the Arizona Chapter, Producers' Council. Contact: Milan Srnka, 3122 North 3rd Avenue, Phoenix, Ariz. 85013.

15-17 Noise-Con, 75, National Conference on Noise Control Engineering, National Bureau of Standards, Gaithersburg, Md. Sponsored by Institute of Noise Control Engineering and the National Bureau of Standards. Contact: Noise-Con 75, INCE, P.O. Box 3206, Poughkeepsie, N.Y. 12603.

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

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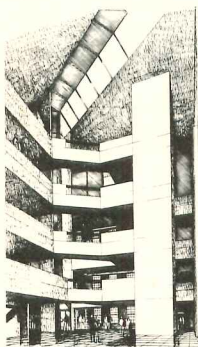
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For more data, circle 4 on inquiry card

FEATURES

89 New life for old buildings

The firm of Shepley Bulfinch Richardson & Abbott is long experienced in renovating institutional architecture. Included in this feature are the Andover Savings Bank addition, the Sherman Fairchild Physical Sciences Center at Dartmouth College and an addition to a landmark at Vassar designed by James Renwick.



99 A serious discussion of an apparently whimsical house

There is even more to the luxurious new pool house that architects Robert Stern and John Haggmann have recently completed than meets the eye, for in a carefully explicit essay they reveal the host of sources they drew upon for the design of this extraordinary structure.

101 Evolution and evaluation of environment for mental health

Two mental health facilities have related lessons in program and design:

102 Marin County Community Mental Health Center, Greenbrae, California by Kaplan/McLaughlin

104 Elmcrest Psychiatric Institute Portland, Connecticut by the Environmental Design Group

111 Visitors center at nuclear plant

A light and graceful pavilion, designed by architects Wolff Zimmer Gunsul Frasca, houses the information center for visitors to the Trojan Nuclear Power Plant on the Columbia River near Rainier, Oregon.

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115 Productive elegance for industry

Exceptional design for production facilities is an increasingly accepted practice—especially for a group of clients who have consistently grown to appreciate the advantages of providing more than the minimum. Those clients are getting back the maximum for their investment.

115 Westinghouse Manufacturing Facility Randolph Township, New Jersey Bohlin and Powell, architects

118 Kramer Arlington Industrial Building Arlington Heights, Illinois Stanley Tigerman, architect

120 Westinghouse Manufacturing Facility Round Rock, Texas Caudill Rowlett Scott, architects

123 Equitable Data Center Easton, Pennsylvania Kahn and Jacobs/HOK, architects

126 The Cummins Engine Company Columbus, Indiana Kevin Roche and John Dinkeloo, architects



ARCHITECTURAL ENGINEERING

131 A bold structural system creates a strong yet serene image

Citizens Bank Center in Dallas, by OMNIPLAN Architects Harrell + Hamilton, with Datum Structures Engineering, Inc., meets a complex series of program requirements in a structure of stunning simplicity and visual strength that instantly says "something special" even to the uninitiated.

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NEXT MONTH IN RECORD

Building Types Study: Conservation, preservation, re-use, rehabilitation

Man has begun to put a higher value on the existing built environment and is beginning to realize that it may be as great an economic resource as our unmined mineral supplies. A building which a few years ago would be torn down and replaced is now often remodeled and added on to. RECORD will report on some skillful remodelings and additions including the new wing for the Robert Lehman Collection at New York's Metropolitan Museum, the re-hab and re-use of portions of the Yale art Gallery, and the restoration of the great turn-of-the century conservatory of the New York Botanical Garden.

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The Atlanta Convention: Who speaks for the user?

Do we need to invent a new process if architects are to better respond to the needs and wishes of the people for whom they design? The theme sessions of the 1975 AIA Convention focused on this intriguing question; and if they did not come up with an answer they did come up with a lot of mind-opening talk.

There were four theme workshops—teams of architects and sociologists jointly described projects on which they have collaborated: the rehabilitation of a previously none-too-successful low-income housing in a hostile Arctic environment; the design of housing and medical-care facilities for the elderly; a study of the needs of Milwaukee's people by its Department of City Development; and the planning of what must be the most successful and most developed new town, Columbia, Maryland.

Further, Convention attendees were invited to tour a number of Atlanta buildings and spaces and rate them from a number of subjective points of view. One was asked to rate, for example, the Hyatt-Regency lobby (to pick the most familiar of the spaces on the tour) on whether it was "surprising," "lively" "functional," "inviting," "impractical," "ordinary," "warm," and "quiet"—all on a scale from one to 10—or "not at all" to "very." Most important—architects were asked to make those ratings not on the basis of what they thought, but what they thought the *users* of that lobby (or school, or housing-shopping complex, or pedestrian mall) thought about it.

Finally (to take things in reverse order) the Convention was keyed by Heinz Von Foerster, scientist and professor emeritus, Department of Biophysics and Electrical Engineering of the University of Illinois. Professor Von Foerster's role was—as that great phrasemaker Bill Caudill put it—"to shoot at us with anti-complacent missiles." Von Foerster asked the profession to continue to be dissatisfied with what it sees and what it knows. His most-quoted quote was: "You do not perceive what you do not perceive." There were a lot of interpretations of that one, but I'm happiest with: "Do we (architects) really know what we don't know? Do we really know what kinds of advice and help we need?"

Are the behavioral sciences a new buzz word, a new threat, or a useful new resource?

I'll tell you one thing: a Convention emphasis on behavioral science—on user needs and wishes—was to me a refreshing change from the recent heavy emphases on construction management, on systems building, on "the

building team," on one new "revolution" after another. It was to me—without thinking that all of the sessions were as exciting as they might have been—refreshing to see the emphasis switch back to people; to serving the user better. For the simple reason that we need more reminders than ever—in these cost-conscious, get-it-done-fast days—that what architecture is about is creating spaces for people. It is not about management or tight budgetary control or who heads the team (whatever that is)—it is about creating spaces for people.

Some of the Convention attendees seemed to react with some hostility to this emerging force on the design horizon—professionals who speak a language of behavior, and "perceived environment." Wondering, perhaps, whether we need to go through the battle again—remember when the big aero-space guys were going to take over the world? Or the big design-and-build corporations; or the systems experts; or the construction managers?

Like all the other consultants who have come before, some of the behavioralists talk as though they are the central force in all this; as though no architect could design or build a great space for people without the inputs of their science.

That's about as sensible as architects feeling that, as generalists, they know all they need to know about people's needs and wishes; that since they have designed buildings for so long without the input of social scientists they can keep right on doing it.

The truth, as usual, is somewhere in the middle. If I were an architect, I would not need a social scientist to tell me that bright colors and changes of level go over big with 10-year-olds; or that better lighting and thoughtful layout of open spaces is important in low-income housing projects; or that people in Arctic housing think it's a dumb idea for the main entrance to open directly into the living room; or that the bulk of visitors to the lobby of John Portman's Regency-Hyatt find it "surprising," "lively," and not at all "ordinary." But I think I would also agree that we continue to create a good many buildings and spaces that people do not like and cannot function effectively within. And that the profession and architecture can be well served by inputs from people whose training and expert testimony can help us design with greater sympathy and understanding of what the user (not necessarily the client) needs and wants.

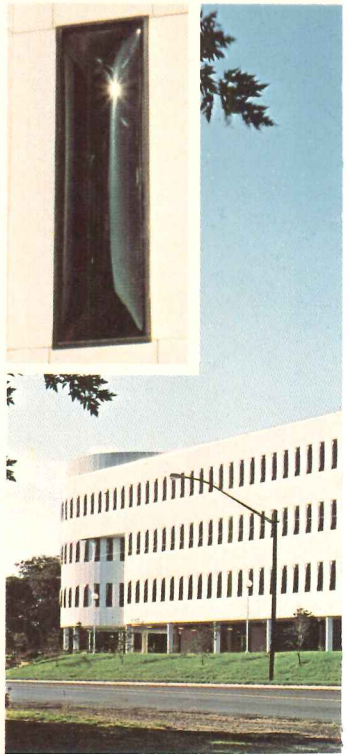
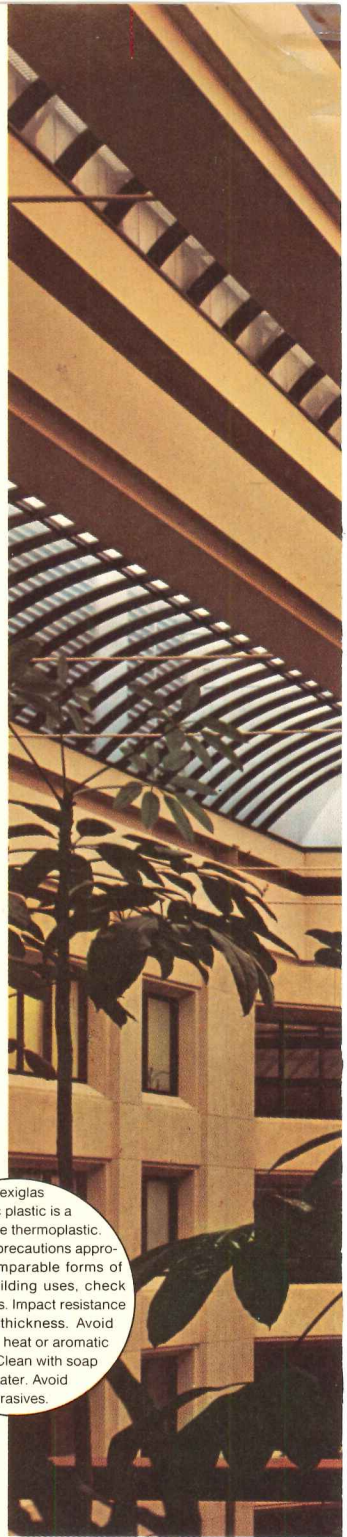
And surely that is a worthy goal . . .

—Walter F. Wagner Jr.

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Fenestration, Ingleside Office Building, McLean, Va. Architect: Francis L. Koenig, McLean, Va.

Luminaire Lenses, Transamerica Pyramid, San Francisco, Cal. Architect: William Pereira & Associates, San Francisco, Cal.

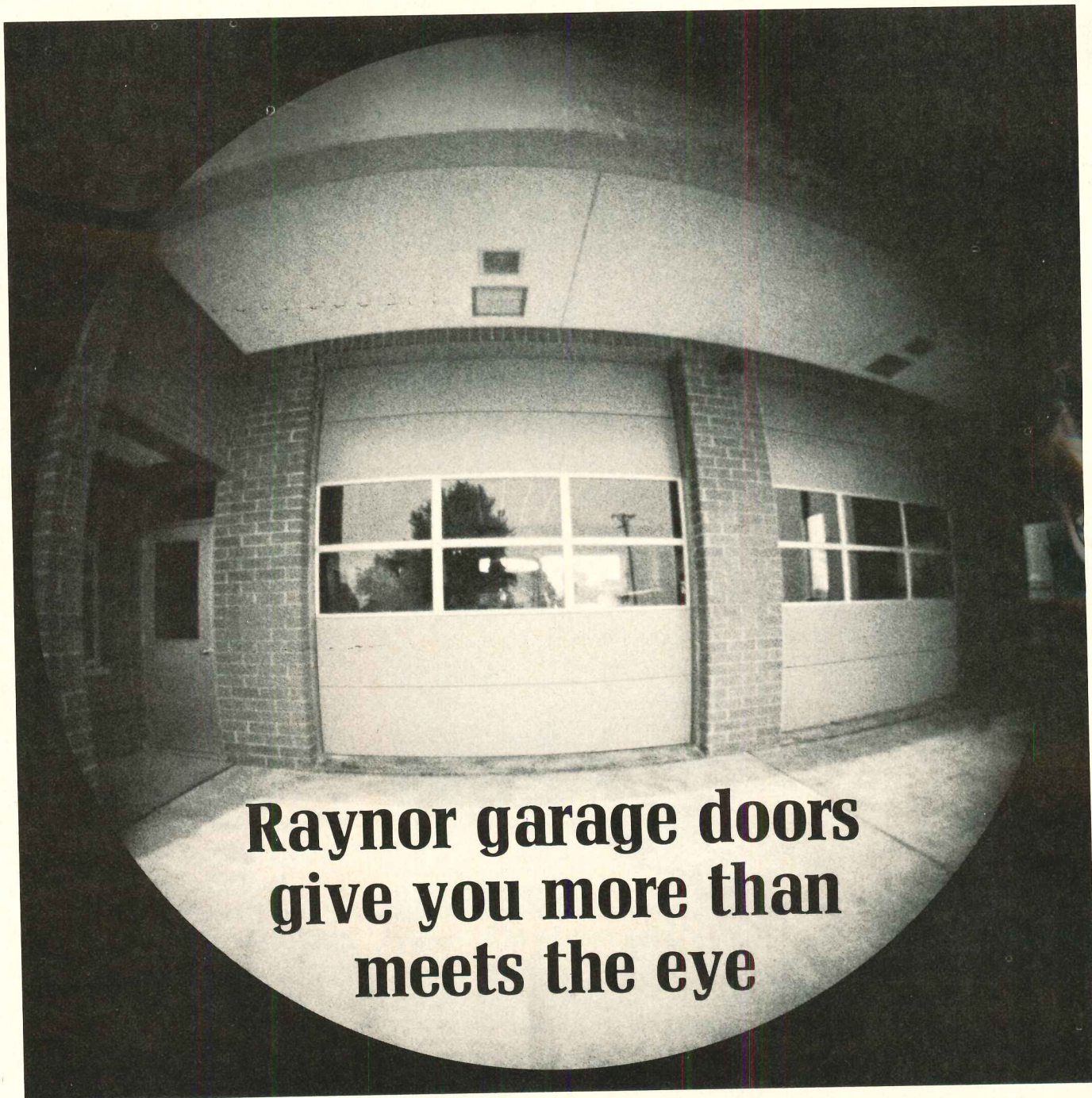


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James Ream and Associates, Inc., Design Consultants,
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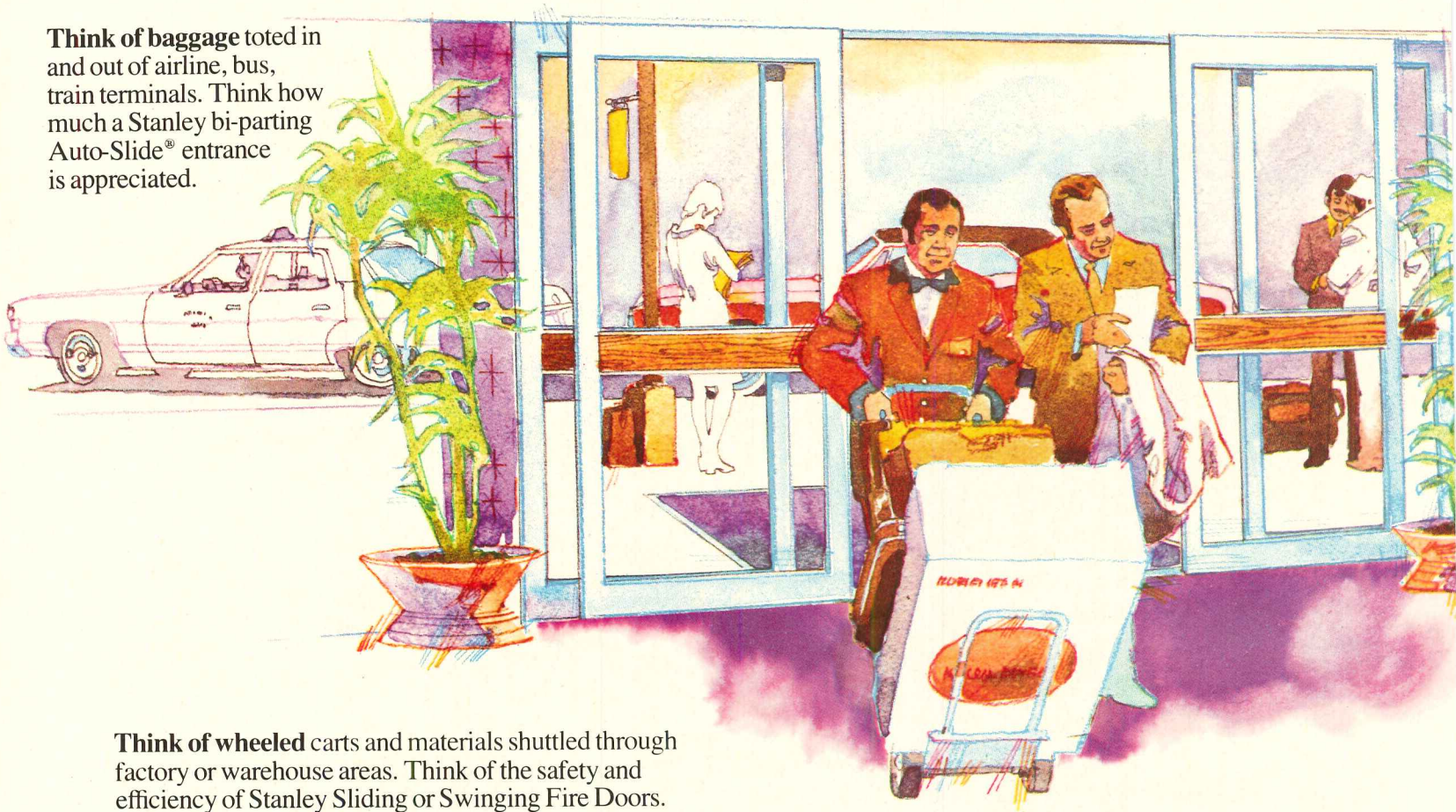
Owner: Sears, Roebuck and Co.
Architect: Abbott, Merkt Architects, Inc.
Engineers: Abbott, Merkt & Co., Inc., Engineers

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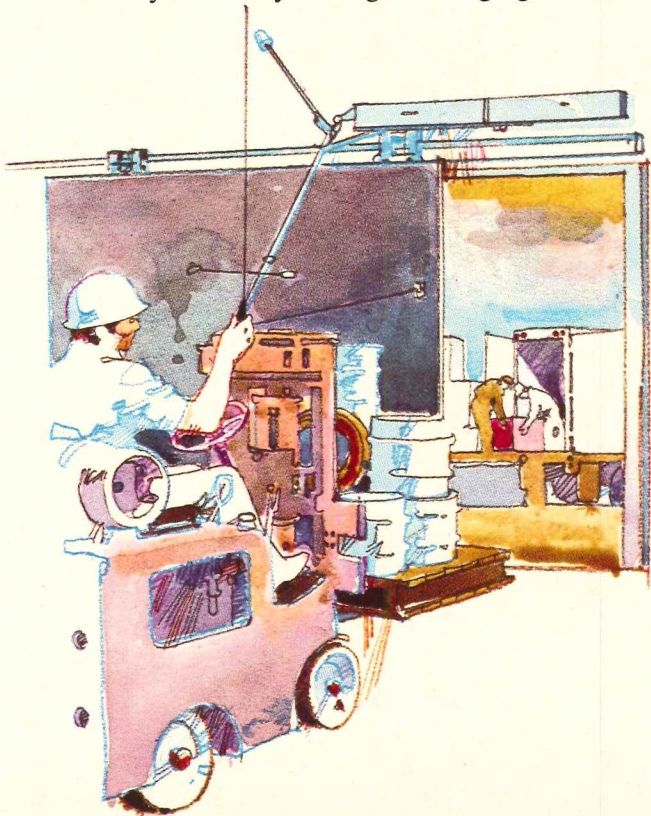


No one knows entrances

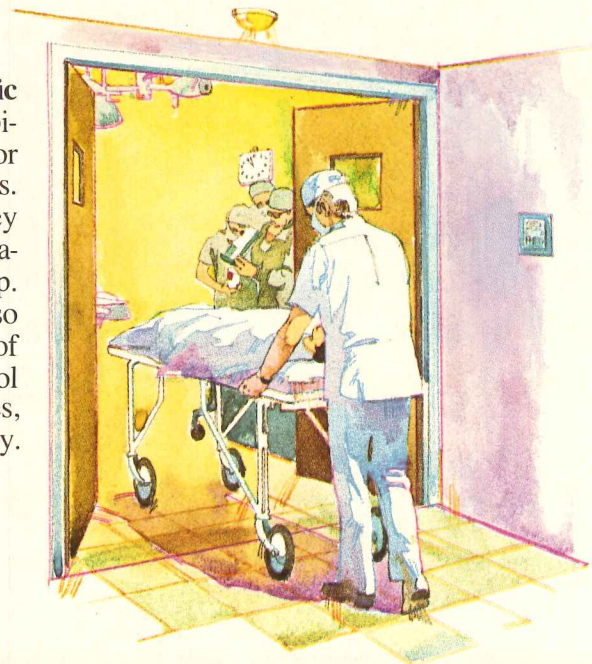
Think of baggage toted in and out of airline, bus, train terminals. Think how much a Stanley bi-parting Auto-Slide® entrance is appreciated.



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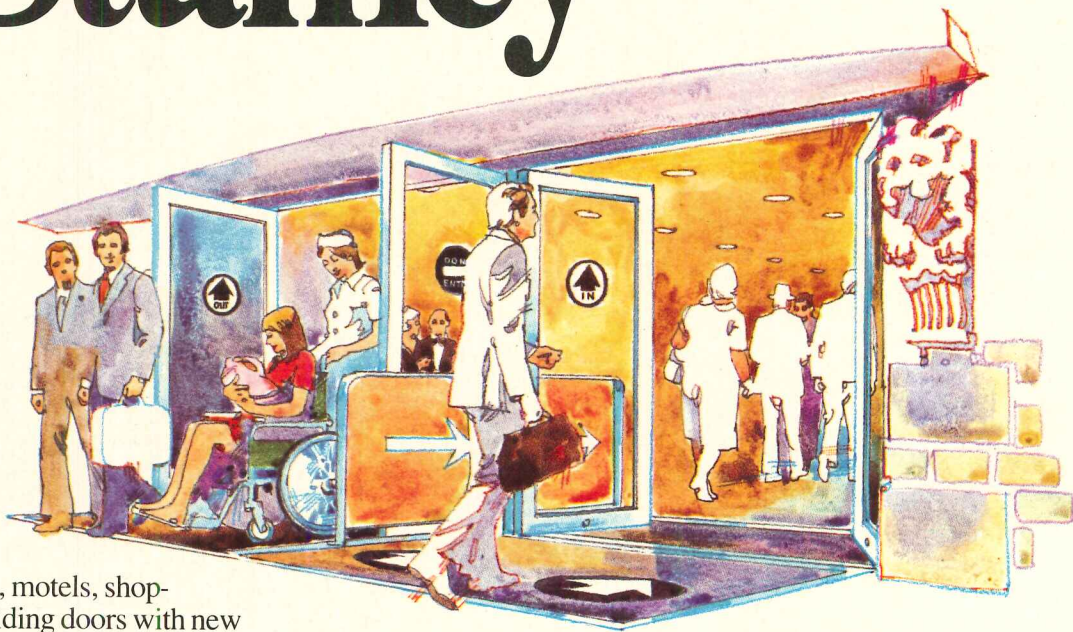


Think of traffic through busy hospital corridors or emergency areas. Think how Stanley pneumatic operators can help. The doors also create areas of quiet, help control temperatures, save energy.



automatic like Stanley

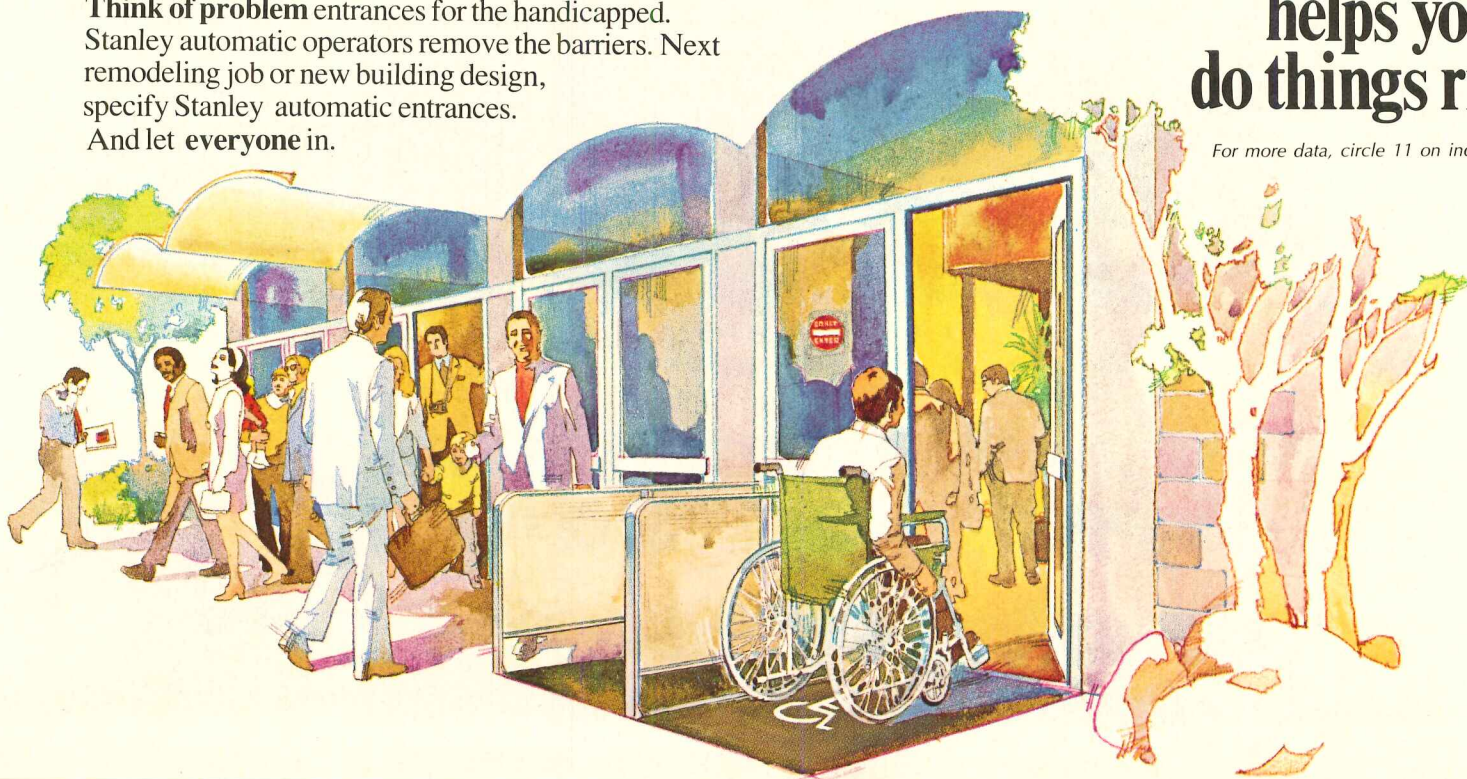
Think of jam-ups at hospital and other building entrances. Think how Stanley Auto-Swing™ operators help take the hassle out of pedestrian traffic.



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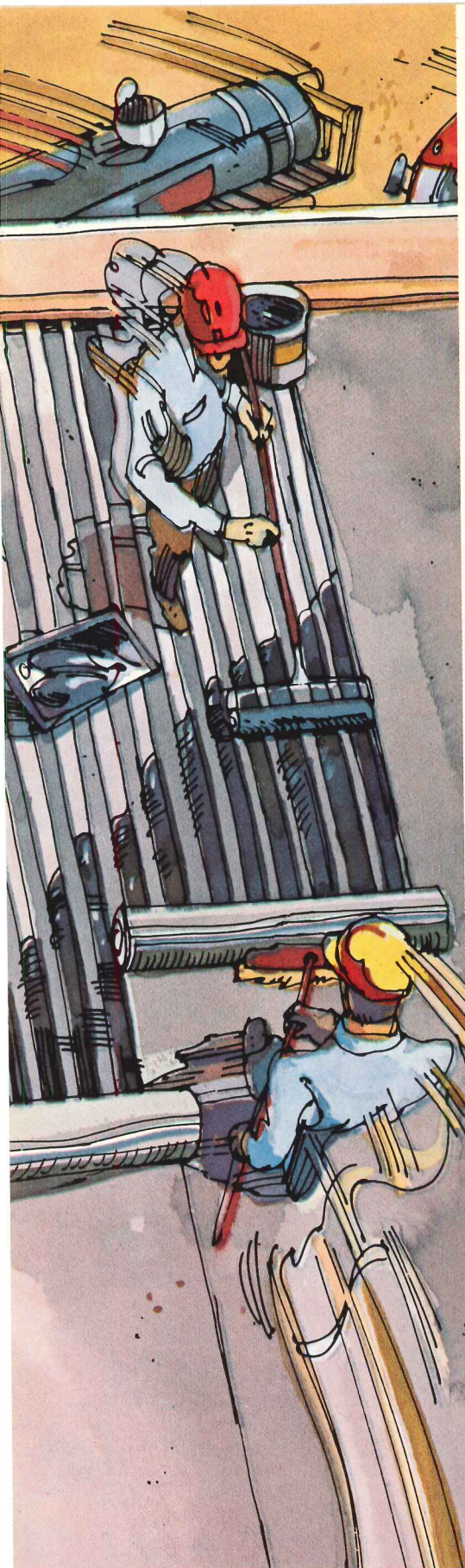


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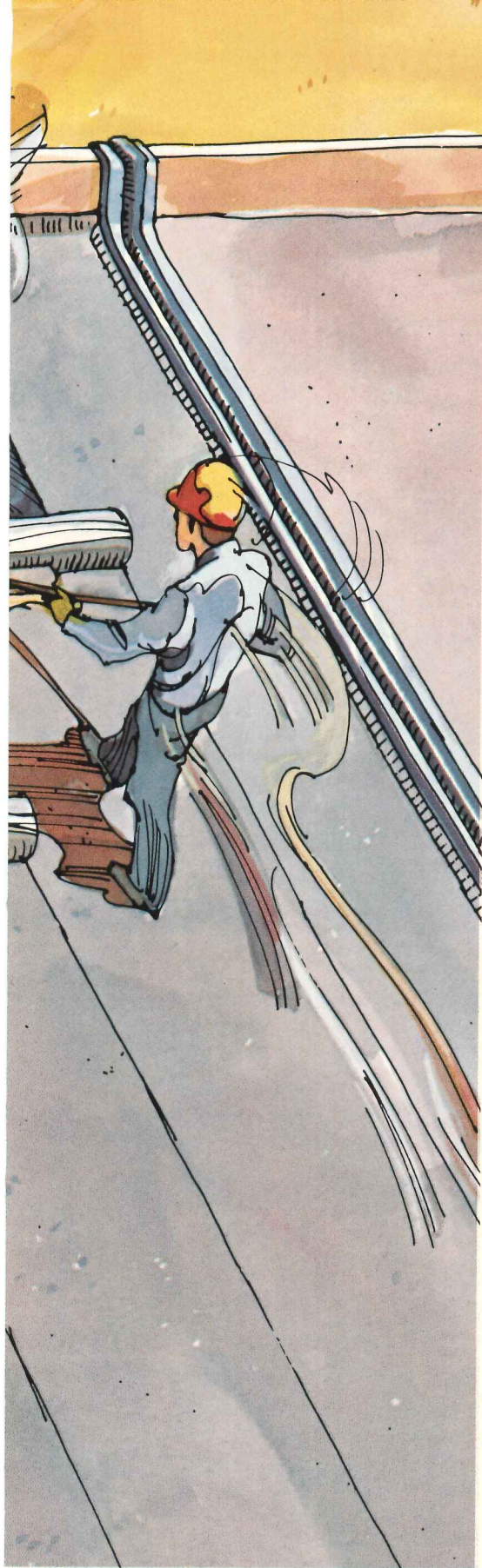
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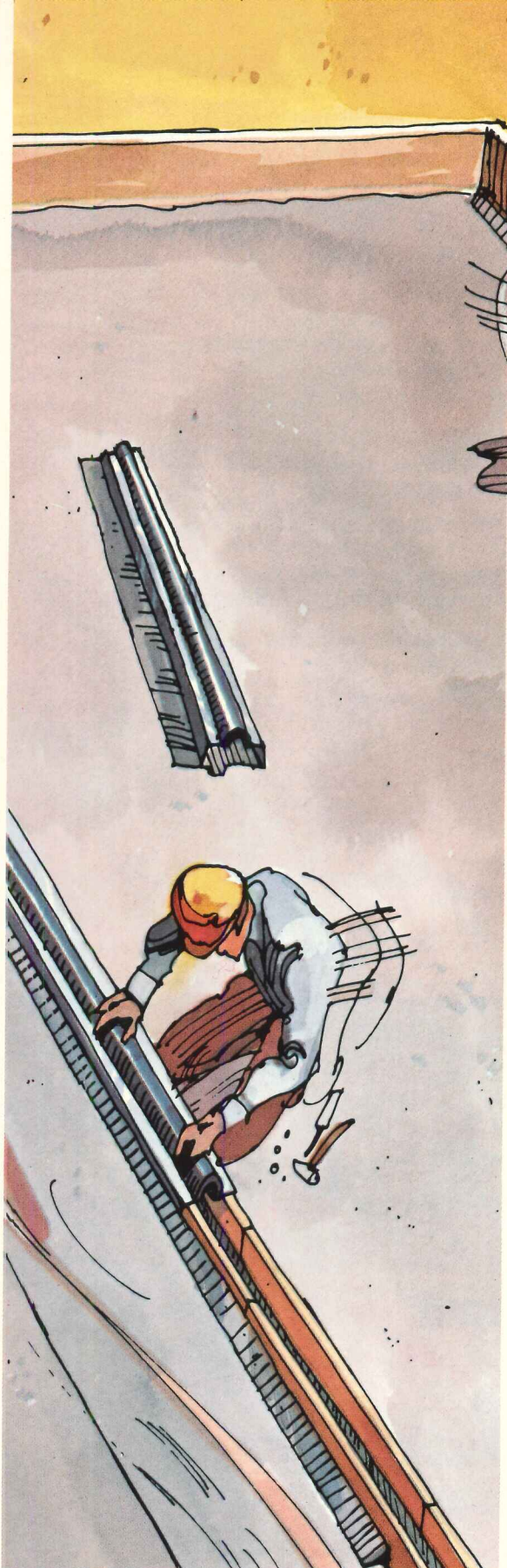
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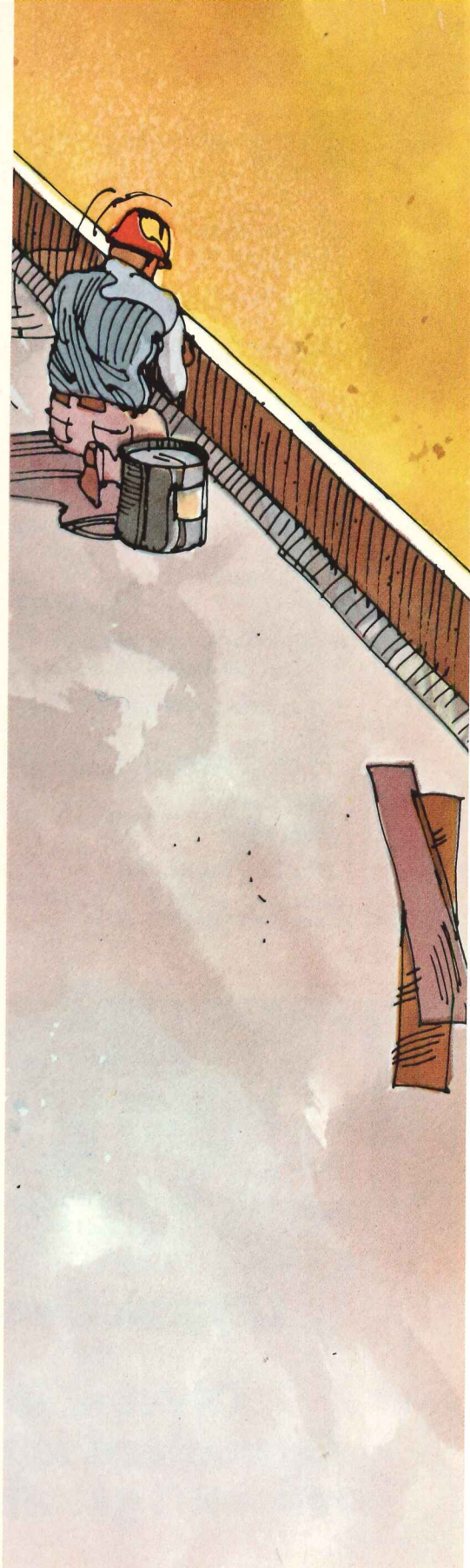
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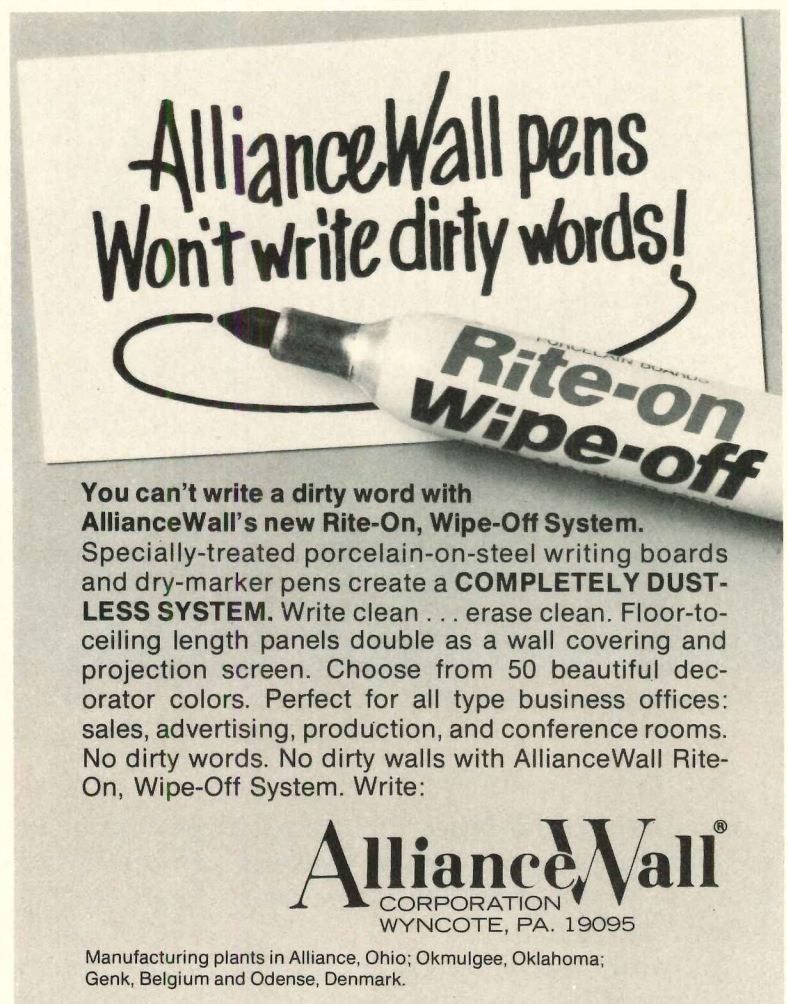
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With a typical HID lighting system* AEC can save over 400,000 kilowatt hours and \$12,000 for each and every relamp interval. This means savings from 15% to 25% for most commercial installations.

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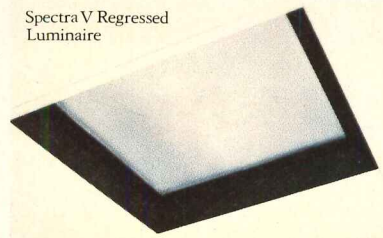
The result is that you get only the amount of light you need. And pay for only the amount of light you need.

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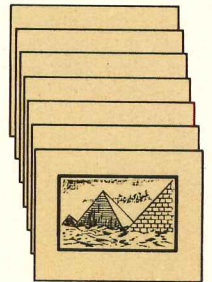
See the Pyramids of Egypt—the only wonder of the 7 that exists today. Or take your choice of a trip to the area that created any of the others: Hanging Gardens of Babylon, Mausoleum at Halicarnassus, Shrine of Zeus, Colossus of Rhodes, Temple of Diana at Ephesus, Pharos Lighthouse at Alexandria.

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1. Fill out entry card below to be eligible for Sweepstakes and free set of 7 Wonders prints.
2. Entries must be postmarked before December 31, 1975.
3. All entries eligible for Sweepstakes Drawing, January 21, 1976.
4. Winner will be notified by mail.
5. This contest is nationwide except where prohibited by law.
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Let winds blow. Let it rain or snow. Let the sun glow. The PBS-383 positive thermal barrier system protects people inside from weather outside. Resists thermal transfer through highly efficient barrier. Effects savings in energy costs. Accepts single or double glazing. For low rise or high. Installs from inside or outside.

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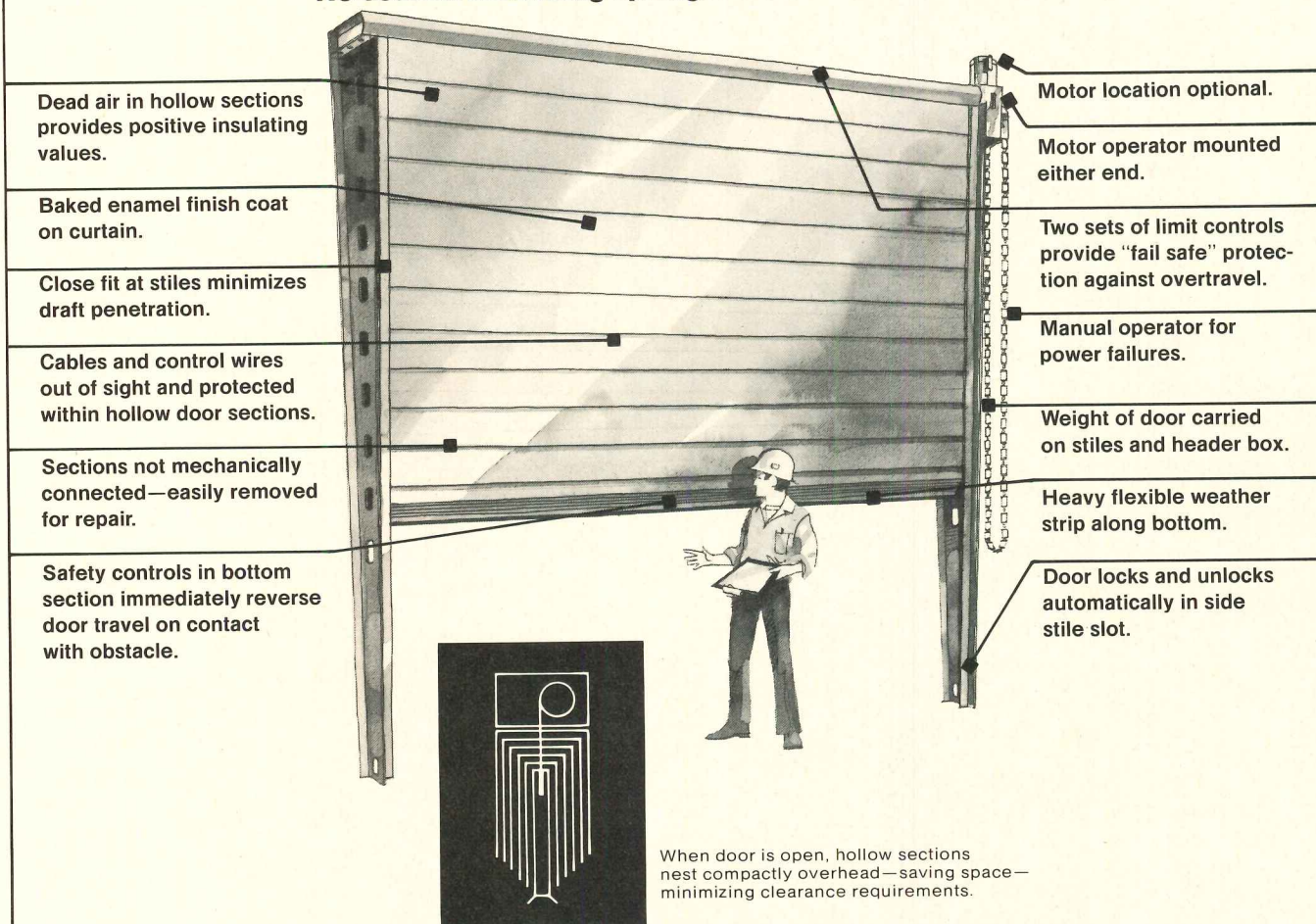
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No counterbalancing springs. No overhead struts.



Dead air in hollow sections provides positive insulating values.

Baked enamel finish coat on curtain.

Close fit at stiles minimizes draft penetration.

Cables and control wires out of sight and protected within hollow door sections.

Sections not mechanically connected—easily removed for repair.

Safety controls in bottom section immediately reverse door travel on contact with obstacle.

Motor location optional.

Motor operator mounted either end.

Two sets of limit controls provide "fail safe" protection against overtravel.

Manual operator for power failures.

Weight of door carried on stiles and header box.

Heavy flexible weather strip along bottom.

Door locks and unlocks automatically in side stile slot.

When door is open, hollow sections nest compactly overhead—saving space—minimizing clearance requirements.

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NEWS REPORTS
 BUILDINGS IN THE NEWS
 HUMAN SETTLEMENTS
 REQUIRED READING

A bill now in Congress would allow a construction union to shut down an entire construction site. If passed, HR 5900 will permit a union to force a general contractor off the project by picketing everyone on the site, even if he is not involved in the disagreement. The bill, known as the Common Situs, would abolish the existing rule that allows a construction union to strike and picket a firm in dispute, but not to willfully picket or to pressure any firm on the site that is neutral in the dispute. The change would enable any of the building trade unions having a dispute with one of several firms on the site to picket indiscriminately and to shut down the entire project. Details on page 34.

The U.S. Supreme Court has agreed to review Federal court authority to countermand state licensing rules for design professionals. The case in point involves a three-judge constitutional court in Puerto Rico which struck down a provision that only citizens can get full licenses from examining boards of architects, engineers and surveyors. The high court, will look at the legality of banning alien architects. The lower court order to the board to license Mexican and Spanish applicants is stayed until the Justices rule in the term beginning October 6.

Candidates are now being considered for the AIA/NBS Architect in Residence Program sponsored by the American Institute of Architects and the U.S. Department of Commerce, National Bureau of Standards. Among the goals of the program is maintaining linkages between the architectural profession and research and development in planning and construction technology. The appointment offers a stipend of \$15,000 and runs from September 1, 1975 to June 30, 1976. For further information, contact: John P. Eberhard, AIA Research Corporation, 1735 New York Avenue, N.W., Washington, D.C. 20006.

Wage settlements in the construction industry are averaging 10.1 per cent so far this year, up from 9.6 as reported in April. These figures are compiled by the Associated General Contractors of America and reflect 153 settlements reported to its national office. Approximately 3,500 contracts expire this year.

Bankers are now wary of PUD costs, according to a *Business Week* interview with mortgager Robert L. Cashion, board chairman of North Carolina National Bank. He states: "The amount of development capital required, the amount of risk exposure generated, is just too much for any one leader or consortium of lenders to accept."

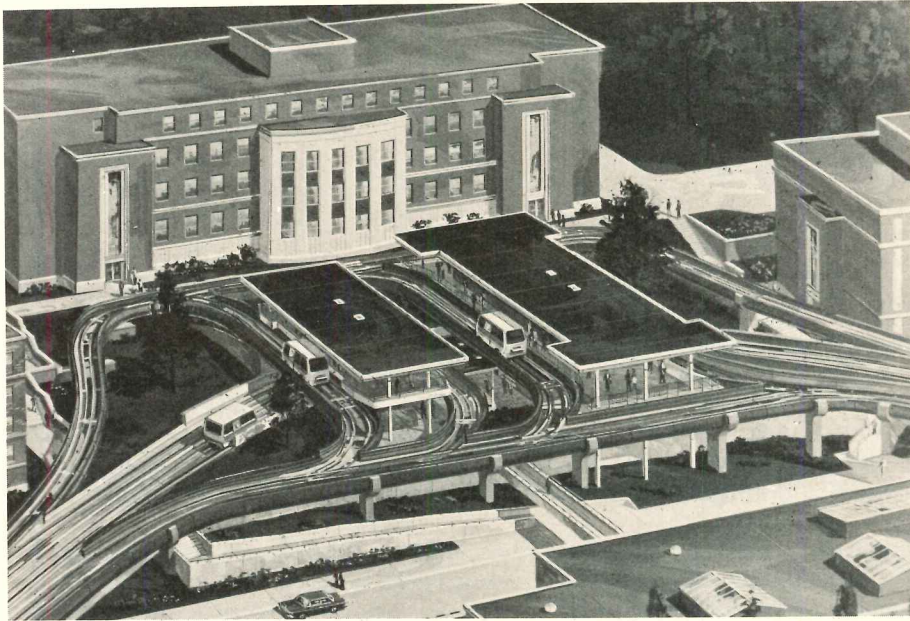
Owens-Corning Fiberglas Corporation announces its Fourth Annual Energy Conservation Awards Program. The program recognizes architects, engineers and building owners who have made significant contributions to energy management in the design and construction of commercial, industrial and institutional buildings. Deadline for submitting entries is August 31. For further information, write Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.

Joseph A. D'Amelio of Sweet's, and Saul Horowitz Jr. of HRH Construction Company died on June 24 in the crash of an Eastern Airlines jet landing at New York's John F. Kennedy International Airport. Both men were returning from the annual convention of the Construction Specifications Institute in New Orleans. Mr. D'Amelio, a registered architect, was vice president of development for the Sweet's Division of McGraw-Hill Information Systems Company, and had previously been an assistant professor of architecture at Cooper Union in New York. Before joining McGraw-Hill, he was also a designer in the New York offices of Skidmore, Owings and Merrill; Gruzen and Associates; and Edward Durell Stone. Saul Horowitz Jr., chairman of the HRH Construction Company, one of the largest privately owned building concerns in New York, was also the current president of The Associated General Contractors of America. Last year, he was named "Construction's Man of the Year" by *Engineering News-Record*, and among the buildings constructed by his firm are the Whitney Museum of American Art and the Waterside housing development in New York City.

Columbia University is seeking films and video-tapes dealing with built environments for a film festival to be held in November. This year's festival focuses on the urban reality and on process of urbanization. A jury of prominent urban specialists will award money prizes to those works selected and all entries must be received between September 15 and October 1st. Deadline for indicating interest is July 31st. For more information, contact Francois Confino, 410 H Avery Hall, Columbia University, New York, New York 10027.

John Merrill Sr., retired partner in Skidmore, Owings & Merrill died June 10 at the age of 78. He lived in Colorado Springs. Mr. Merrill, who retired in 1958, was a Fellow of the American Institute of Architects and past president of the Chicago Chapter. Among his most notable achievements was the design and construction of Oak Ridge, Tenn., the nuclear-research installation where the atomic bomb was developed.

Peter Blake has been appointed chairman of the Boston Architectural Center's School of Architecture. Mr. Blake, architect and editor of *Architecture Plus*, will move to Boston from New York and assume his duties at the BAC later this year. The BAC is one of the oldest and largest architectural schools in the U.S., with more than 550 students admitted under an open-door policy, with a volunteer faculty of more than 200 professionals.



Congress and Urban Mass Transit Administration disagree on transit priorities

A Congressional investigation into the Federal government's funding of research into Personal Rapid Transit (PRT) concluded that small systems still may be a long-range answer to urban transportation problems, but was critical of much of the current approach.

The study was prepared over a period of five months by the Congressional Office of Technology Assessment (OTA) to guide the Senate Appropriations Subcommittee on Transportation during hearings on the fiscal 1976 budget request by the Urban Mass Transit Administration (UMTA).

Many of the findings—in rough form—were supplied to the House Appropriations Committee in May. During those proceedings, UMTA officials agreed some of the OTA criticism was justified. They held firm, however, in their fundamental philosophy that the Federal government's role is not to finance actual projects, but to develop feasible technologies for probable systems. UMTA argued for continued funding in order to place proper emphasis on advanced technology rather than to assume what it feels is industry's role in assisting development of established technology.

What the OTA likes are the small, simple, Shuttle-Loop Transit (SLT) systems. Most common at airports, these employ small vehicles moving along fixed paths with few or no switches. In the United States there are nine SLT systems in revenue service and six more under construction. Four companies installed 14 of the 15 systems and shouldered almost the entire R&D burden.

This is the only success story in what the OTA study

calls Automated Guideway Transit (AGT), and yet "UMTA has not issued performance standards or criteria which would qualify even the simple SLT systems for capital grants," it said. The OTA apparently fears that developing firms may lose interest: "There is little incentive for industry to spend additional funds for follow-on development, testing and product improvement in the face of a negative attitude from UMTA."

UMTA was advised to establish programs for "improvement of technical operating characteristics and reduction of SLT system costs," launch a demonstration program designed to establish data on the economics and social acceptance of SLT systems, and set down "criteria for qualifying SLT systems for capital grant funding."

For the next level of technology—group rapid transit (GRT) represented by the Boeing system (shown) in Morgantown, W.Va., and the LTV Airtrans system at Dallas/Ft. Worth Airport—the OTA recommended a wait-and-see approach to further development.

These two GRT systems have been expensive. Airtrans, originally projected at \$35 million, now exceeds \$53 million. Morgantown was estimated originally in 1970 to cost \$18 million. The project to date has cost \$64 million, for a system half as large as initially envisioned. UMTA has contributed approximately \$70 million to the projects without ever establishing, according to the OTA, whether "there is a market for GRT systems or a transit 'need' which they would serve."

UMTA also "does not have a program for demon-

strating and facilitating use of GRT systems to solve urban transportation problems;" the study reported. "This should be corrected, particularly if further investment in GRT systems R&D is made."

The Congressional report said the two GRT projects are significant because they "represent the most ambitious effort thus far to build a full-scale system and to operate vehicles on 15-second headways in a real life environment."

UMTA and OTA differ on fundamental grounds rather than on issues of economics and technology. SLT systems can move up to 5,000 persons an hour, and even then, only small, select population groups that gather to move through a small and well-defined service area such as an airport or shopping center. While this is a transportation problem, it is not the bigger transportation problem of moving vastly greater numbers of people about congested central business districts or outlying commercial-residential complexes. Such systems must be able to move passengers at rates of 5,000 to 12,000 per hour.

As UMTA officials explained at House budget hearings, it's impossible for SLTs to do this job. For this purpose, UMTA officials propose an even more advanced system, known as high performance personal rapid transit (HPPRT). But the OTA, impressed with the cost overrides, engineering dilemmas and start-up problems of far simpler Morgantown and Airtrans projects, recommends a lot more homework before advance of the R&D program is seriously considered.—James Wargo, *World News, Washington*.

Greenspan argues that "Recession is spent . . ."

"We're now in a situation where consumption has stabilized, and the dramatic reductions in production and employment that we witnessed during the final quarter of 1974 seem to be diminishing in their impact," Alan Greenspan told an audience of Detroit businessmen. The Chairman of the President's Council of Economic Advisers said: "The forces of recession are spent. And we're seeing a lifting of the very negative 'double whammy' effect of inflation and unemployment on consumer confidence."

Although he said he expects employment and production levels to fall further throughout the summer months, Greenspan noted that the rate of decline in both these areas has diminished according to recent government statistics. Reports are mixed now, he said. "We've hit bottom."

"Last month we got a first bit of solid good news," the economist said. "While there's still a market overhang of single-family homes and multiple dwellings, there's been a rise in requests for building permits."

Greenspan indicated that he believes neither housing nor auto sales will lead the way out of the current recession. Instead, he expects a gradual uplift in retail sales will pull the economy out of its deep slump. And the key to recovery, according to the chief Presidential economic adviser, is consumer confidence.

"Last year we misjudged the extreme impact in the area of consumer confidence," admitted Greenspan. "There are very real forces that cause attitudes to change in the retail market."

He cited: 1) The double digit inflation of late 1974, which led to a "significant pulling back and increased savings during early 1975," 2) The rapid increase in unemployment during the final quarter of last year, which "clearly contributed to the drop in consumer confidence and coupled with inflation created a 'double whammy' effect," and 3) The rapid and involuntary build up of inventories that the manufacturing sector "was incapable of sustaining, and so we opened 1975 with dramatic curtailments of production."

Greenspan added: "Inventory reduction must continue through the end of the year. But the rate of inventory reduction

now is very likely at its maximum."

The economist hedged his forecast with the proviso that things still can get worse before they get better. The economy could fall off the plateau it's now on to a lower level. But Greenspan made it clear he doesn't expect that to happen.

"I'm not suggesting we'll see an overnight switch from consumer pessimism to consumer optimism," he remarked. "But it's going to get there eventually. I expect to see more good signs in the weeks and months ahead. The view will be better this fall."—Roger Guiles, *World News, Detroit*.

Rules tighten for building in flood plains

For decades, the Federal government has pumped hundreds of millions of dollars annually into flood control.

The latest Federal legislation enacted against this is the 1973 Flood Disaster Protection Act, now going into effect nationwide. Its purpose is to force proper management of and adequate insurance for all building in flood-prone regions.

Highly stringent land-use rules have resulted, which builders often charge border on confiscation. Local governments, in turn, have felt squeezed between the Federal rules and their constituents.

Early fears, however, appear exaggerated. The "teeth" of the law, which should concern builders and local governments the most, permits the government, through the Department of Housing and Urban Development, to turn off the spigot of Federal aid—all of it—if the new rules are not complied with. This includes the right to FHA and VA loans and borrowing privileges at Federally chartered and insured banks and savings and loans.

But central to the program is a subsidized flood insurance, one that is guaranteed for private underwriters at levels which allow rates affordable to property owners. This insurance is the "open sesame" to borrowing rights and other Federal aid.

In order to get it, however, more than 10,000 local governments will need to rewrite their ordinances to restrict building in flood plains.

In most cases, building in flood plains is not absolutely prohibited. But structures there may be required to be elevated and braced. A design manual prepared by HUD and AIA will be available this summer.



Workshops focus on Federal contracting

Robert E. Burton, marketing representative for the Shaver Partnership, was one of about 1,200 architects at the AIA convention in Atlanta, May 18-22, who interviewed representatives of Federal agencies to learn what he could about obtaining government contracts. Mr. Burton (shown left with a Federal representative) interviewed representatives of 10 agencies, and consented for a reporter to accompany him to each of the sessions. The following was gleaned from the interviews with these agencies.

- **Department of Health, Education & Welfare:** The largest part of HEW's work that has architectural/engineer input consists of reviewing drawings, plans and specifications for clients who have received a Federal grant.

The agency does contract directly for some architectural

services, such as schools built on military bases and some Indian hospitals. This, along with responsibilities for renovation and modernization, however, makes up a small part of the agency's activities involving architects.

- **U.S. Air Force:** Construction for the Air Force in fiscal year 1976 will be in the range of \$400 to \$500 million, the bulk of which will be performed by either the Corps of Engineers or the Naval Facilities Engineering Command. The Air Force does about 20 per cent of its own work, for which it uses A-Es.

Of the work assigned to the Corps of Engineers, about 15 to 20 per cent is done in-house, the rest by consultant architects. The Naval Facilities Engineering Command uses A-Es for almost all work the Air Force assigns it.

In addition to the \$400 to \$500 million figure, the Air Force has large repair projects—such as improvements to family housing—that involve A-E firms. The base involved usually selects the architects and awards, contracts and supervises their work.

Burton was advised to place his firm on file with the civil engineer's office at all Air Force bases in locations his firm might be interested in.

- **National Park Service, Department of Interior:** The National Park Service representative said about 3,500 standard Form 251s are on file in the NPS's central registry in Denver. Most of the Park Service's work is performed at the large national parks or national seashores; and many of these are small projects. Advertising projects in the *Commerce Business Daily* over the past two or so years has drawn a "large response," he said.

- **Housing & Urban Development:** HUD is usually "two or three steps removed" from direct contracting for architectural services, becoming directly involved only through rehabilitation of foreclosed housing. Architects are best advised to deal with local HUD offices to determine who has HUD grants. One possibility for architectural involvement is helping cities draw up proposals for grants under the Housing and Community Development Act. Burton, and two other architects at the session, however, were warned about potential conflict of interest in such an advisory role.

- **Naval Facilities Engineering Command:** This agency does the vast majority of its work through engineering field divisions, each of which should

have a firm's Form 251 on file. This agency—in fiscal year 1976—will perform about \$550 million of construction, the type of job determining if it goes to an architectural, A-E, or engineering firm.

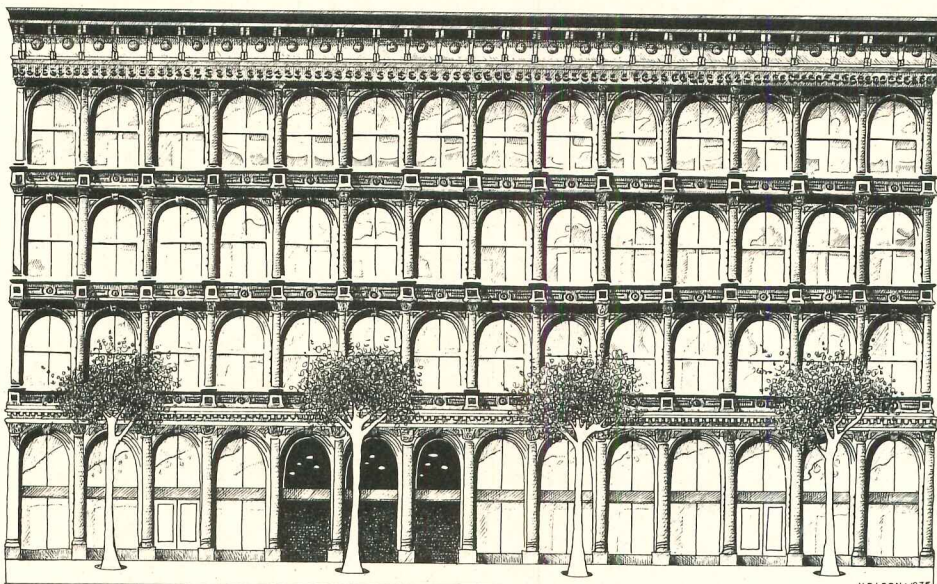
- **U.S. Postal Services:** The Postal Service consists of six large organizations: a headquarters group and five regions. Construction of major facilities (costing \$3 million or more or containing 50,000 square feet or more) is handled at the headquarters level in Washington. Other facilities are handled regionally. In either case, Form 251 should be brought up-to-date once a year. Supplementary data may be submitted with the form. Multi-office firms should indicate on Form 251 the staff composition of each individual office. Selection consideration goes first to local firms. The capital outlay budget for fiscal year 1976 is "close to, but under, \$1 billion."

- **Veterans Administration:** Although most of the major work for 1976 has been advertised, representatives said "a lot of work" exists in minor programs. This consists of projects costing \$1 million or less, all of which are administered by the local VA hospital through its Chief of Engineering.

"You should be knocking on local VA hospital doors in whatever states you're operating in," Burton was told.

- **Corps of Engineers:** The Corps adheres to the same selection procedures as other agencies falling under the Defense Department. The level at which construction work actually is accomplished by the Corps is the district office, where it is good to get to know the professional staff personally, Burton was told. The representative of the Corps said he felt that Form 251 fails to provide a complete picture of a firm. On the other hand, personal contact at the Washington level is of little worth, he said.

Other Federal agencies represented in the program included: U.S. Department of Agriculture, Department of Commerce/National Bureau of Standards, Department of Defense, Energy Research and Development Administration, Environmental Protection Agency, General Services Administration, Department of the Interior, Department of Justice/Bureau of Prisons, National Aeronautics and Space Administration, Department of State, Department of Transportation.—*Stan Fisher, World News, Atlanta.*



Richmond will restore four buildings behind 1865 "Ironfront" facade

Four of Richmond, Virginia's, most important and historic iron-front buildings located in the heart of the city's financial district are to be restored in a new recycling project. Announcement of the plans, which will create one horizontally-integrated building behind the restored facade, was made by James Glave, of Glave, Newman, Anderson, architect and partner in The Ironfront Asso-

ciates, developers of the project.

Known as "The Stearns Block" for more than a century, the buildings are located at 1007-1013 East Main Street. Franklin Stearn built The Ironfronts in 1866 immediately after the evacuation fire during the Civil War destroyed much of Richmond's commercial district. Stearns had purchased the land in 1865 from the Farmer's

Bank, which stood on the site before the fire.

The multi-million restoration-recycling will restore the identical unified facade which was built in 1866. Behind the facade, The Ironfronts will be a single, 20th-century building. The four floors plus lower level and basement will provide approximately 60,000 square feet of prime space for office, retail-commercial and record storage.

Robert Schmertz, architect and balladeer, dead at 77

Robert W. Schmertz, architect, teacher and civic leader in the arts who was known nationally in folk music circles and among architects for his avocation—writing ballads about architecture and the historic lore of his native Pittsburgh—died June 8 after a brief illness. He was 77.

His songs have been performed and recorded by Burl Ives, Pete Seeger and Tennessee Ernie Ford. Most notable are *Noah Found Grace in the Eyes of the Lord*, *The Locktender's Lament* and *The Jolly Little House With the Queen Ann Front and the Mary Anne Behind*.

Singing his songs to either his own banjo accompaniment or with his group of folk singers and instrumentalists, Mr. Schmertz made five recordings of his own, a number on the Folkways label. Among the five albums are *Ladies Beware of an Architect; Sing, Oh! the City, Oh; Songs for Architects and Their Girl Friends* and *Robert Schmertz Sings His Songs*. He was an accomplished cartoonist, and his own evocative and impertinent drawings embellish the covers of his records.

As an architect, Mr. Schmertz was known for many notable residences he designed in the Pittsburgh area during a period of almost 40 years. His principal works also include two churches, the First Presbyterian Church, Youngstown, Ohio, and St. Michael's of the Valley, Rector, Pennsylvania. He taught architectural design at Carnegie Institute of Technology (now Carnegie Mellon University) for 35 years before his retirement in 1965. He was chairman of the Pennsylvania State Art Commission from 1962 to 1968 and a member of the Pittsburgh Art Commission from 1940 to 1960.

Mr. Schmertz was honored with fellowship in The American Institute of Architects for distinction in education and public service, and with a special Architectural Critic's Citation awarded by the Pittsburgh Chapter of the AIA in 1974. The latter recognized the quotient of architectural criticism in his ballads.

Surviving are three children, one of whom is Mildred F. Schmertz, a senior editor of ARCHITECTURAL RECORD.

—*Jeanne M. Davern*

Professions vs. antitrust: "learned professions"

The National Society of Professional Engineers has won another day in court in its battle against Government charges that its ban on competitive bidding violates the Sherman Antitrust Act. On June 23, the U.S. Supreme Court vacated the judgment of the District Court for the District of Columbia and remanded the case to that court for further consideration in the light of the High Court ruling in the Goldfarb case.

Legal Briefs for Architects, Engineers, and Contractors, in its June 30 issue, reports that:

"The 8-0 U.S. Supreme Court decision in the Goldfarb vs. Fairfax County and Virginia State Bar Association case, made June 16th, did not dispose of the pending NSPE antitrust case, and the question of whether an ethical standard against fee bidding is permissible under the "rule of reason"

test; it did determine that professional services can be in interstate commerce and that immunity cannot be established under a "learned profession" principle.

NSPE said of the Goldfarb case disposition: The opinion recognizes that different tests apply as between businesses and the professions in determining whether a particular restraint violates the Sherman Act. It cited this excerpt: "The public service aspect, and other features of the professions, may require that a particular practice, which could properly be viewed as a violation of the Sherman Act in another context, be treated differently. We intimate no view on any other situation than the one with which we are confronted today."

The Court also held that states may regulate the professions under the antitrust law. But the Justices said that the minimum fee schedule published by the Virginia State Bar

Association violated the law.

A footnote to the ruling states: "It would be unrealistic to view the practice of professions as interchangeable with other business activities, and automatically to apply to the professions concepts which originated in other areas."

And here is key language in the decision written by Chief Justice Warren Burger: "A purely advisory fee schedule to provide guidelines, or an exchange of price information without a showing of actual restraint on trade, would present us with different question. The record here, however, reveals a situation quite different from what would occur under a purely advisory fee schedule."

(No. 74-70, *Lewis H. Goldfarb et al., petitioners, v. Virginia State Bar Association et al.*, on Writ of Certiorari to the U.S. Court of Appeals for the Fourth Circuit.)—from *Legal Briefs for Architects, Engineers and Contractors*, June 30, 1975.

Contractor groups join against boycotts

The nation's builders, independent unions and minority contractors, representing all segments of the construction industry from a one-man company to giant corporate constructors, have temporarily joined forces. Their banner is the National Action Committee on Secondary Boycotts, formed "in an attempt to stop AFL unions from railroading through Congress an exemption from restrictions on the use of illegal secondary boycotts (HR 5900)."

Philip Abrams, president of the Associated Builders and Contractors (ABC) and a member of the Action Committee, said the builders are concerned especially about the union's attempt to get a secondary boycott exemption from the Taft-Hartley Laws, because of the "disastrous effects it will have on our nation's largest industry, particularly the union segment of it, by creating further chaos and polarization within the industry."

If Congress grants the building unions the exemption, they will be able to picket "secondary" employers to get their demands—in other words, a company the union does not have a direct grievance against.

One basic disagreement on the secondary boycott issue concerns the many employers involved in construction jobs. The unions claim all contractors, subcontractors and suppliers on a construction project are one company, under a joint venture agreement. Contractors say that each contractor, subcontractor and material supplier is a separate company. They cite as evidence the union's procedure of wage bargaining with individual companies.

"The logical extension of the union's joint venture fiction," Abrams said, "is that since General Motors and all of its suppliers build one product, then a dispute with G.M. or any supplier should be regarded as a dispute with all of them."

Abrams cited several examples of recurring disputes that would continually stop construction projects. If any contractor, for example, tried to use a prefabricated product that would increase productivity, under the "preservation of work" doctrine, the entire jobsite would be shut down he said. If a jurisdictional dispute between AFL unions arose, or a wildcat strike occurred, the entire jobsite would be shut down. If one steward were

fired, even for cause, he said, or if one man refused to join the union after seven days, the same thing would happen. "What this means," Abrams said, "is that innocent companies and their employes will be thrown out of work over petty disputes they cannot solve or had any party to. Union contractor costs will skyrocket and he further will lose his struggle to remain competitive." But hardest hit, Abrams claimed, "will be the AFL building tradesman who will spend even more of his time unemployed."

More new use: An English tavern for sale

Gargoyles, Ltd., an American firm headquartered in historic Philadelphia, has imported another English landmark to the "colonies," this time an old tavern known as Courtenay's.

The tavern dates back to 1838 and used to stand on the London-Canterbury road. The entire drinking establishment—lock, stock and fitted bar—is now in Gargoyles' showroom, awaiting re-location. Interested parties should contact Richard Serbin, president, at 512 3rd South St., Philadelphia, Pa. 19147.

Gargoyles catalogs and sells a large line of architectural antiques and reproductions, unusual bar and restaurant fittings and leather sofas and chairs imported from England. It also has such oddities as cast iron pub tables and chairs, hundreds of stained glass windows and hand-carved signs. In addition to restaurants and bars, Gargoyles also salvages and restores mansion and ship interiors.

Learning tools for architectural history

San Francisco architect Roy F. Killeen, who works to restore actual Victorian buildings, also produces do-it-yourself kits for paper replicas of eight historic American buildings. The kits come drawn to scale, printed in color and ready to cut out and "construct."

Killeen, who started the project in 1969, chooses his buildings for both historic significance and architectural charm. Included are such monuments as the old Lighthouse at Point Loma, Cal., Old Plaza Firehouse No. 1 in Los Angeles and St. Paul's Chapel of Trinity Church on Manhattan Island, the oldest public building in New York.

The kits are produced by Killeen's small publishing company, 101 Productions.

One of Detroit's grand buildings and spaces finds new use

Last year the owner of an unprofitable office building in downtown Detroit evicted its tenants and offered the empty building to any non-profit organization that would take it. None did. So the Farwell Building, designed in 1915 by Rogers, Bonnah & Chaffee, was scheduled to be demolished for a parking lot.

At the last minute, the Detroit Historical Society stepped in, lured by the building's Louis Tiffany Lobby, lavish with veined marble, ornate brasswork, stained glass and mosaic.

Michael W. Higgins, president of Higgins Management

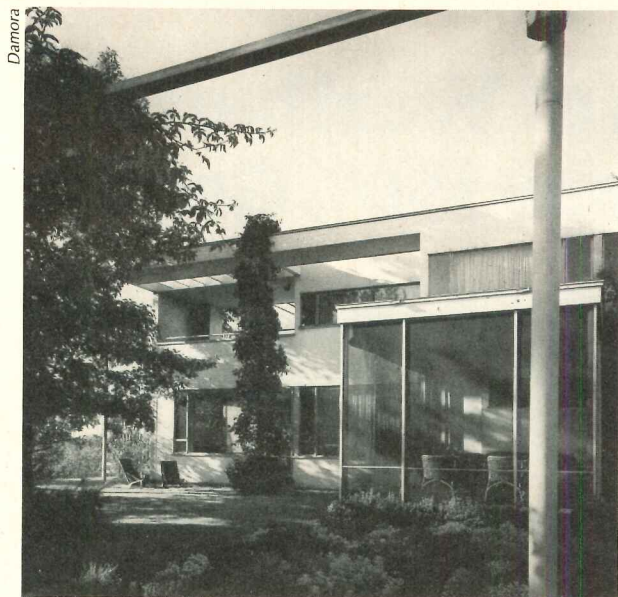
Co., bought the building from the Detroit Historical Society in May because the Society could not afford to keep it. Purchase price was under the building's \$240,000 tax valuation, but

Higgins declined to disclose actual sale price. He said he will try to attract shop owners to the building and said he hopes to open restaurants on each of the eight floors.

Under a plan proposed by the Urban Design Committee of the Detroit Chapter AIA and accepted by the Central Business District Association, the entire Capital Park area—where the Farwell Building is located—may soon be improved as a focus for outdoor community activities. The plan still needs city approval.—*Roger Guiles, World News, Detroit.*



Toni Spina



Gropius' first work in U.S. to be preserved

A campaign to raise a \$500,000 endowment fund to maintain the Walter Gropius House in Lincoln, Massachusetts, began April 25. Mrs. Walter Gropius, widow of Dr. Gropius, has offered to give the house, complete with its original furniture made in the Bauhaus workshops, to the Society for the Preservation of New England Antiquities. This will be the first acquisition by the Society of a major modern historic house. Mrs. Gropius will remain in residence during her lifetime and as curator will continue to welcome visitors desiring to view the house in its original state.

To preserve and maintain the property and to carry out the intent of the donor, the SPNEA must establish, through gifts or endowment, principal to yield an annual income of approximately \$30,000. This will meet the costs of maintenance, curator salary and sundry regular expenses. Leading the campaign to secure gifts

Atlanta's great Fox Theater saved by local banks

Atlanta's imperiled Fox Theater apparently has a two- to three-year lease on life as the result of a \$1.58 million loan to Atlanta Landmarks, Inc., by the five major local banks.

Lee Dunagan, an instructor in architectural history at Georgia Tech, who has been acting as executive director of the organization formed to save the Fox and other historic Atlanta buildings, said the loan will be used to buy 10 to 12 parcels of land in the same block. This land, on which the group already has options, will then be swapped to Southern Bell Telephone and Telegraph Co. for the theater.

Southern Bell said some

for the endowment fund is architect and former Dean of the Harvard University Graduate School of Design, Jose Luis Sert.

The house was the first building designed by Gropius in the United States, and was built shortly after his arrival in 1937. It stands on the crest of a low hill in the partly open, partly wooded countryside and is a happy blending of New England traditions and contemporary expression, an adaptation of Bauhaus principles to New England materials and environment.

When author Lewis Mumford visited the Gropius house for the first time in 1939, he wrote in the guest book; "Hail to the most indigenous, the most regional example of the New England home, the New England of a New World!"

Contributions may be sent to: fund for the Preservation of the Gropius House, SPNEA, 141 Cambridge Street, Boston, Mass. 02114.

months ago that it would accept such an arrangement, which would preserve the Fox and also give the company a location for its proposed tower.

Dunagan said that Atlanta Landmarks has "been looking at the best management companies" across the country to operate the Fox in an effort to use the building and secure profits with which to pay off the loan. Dunagan said plans call for Broadway productions in the theater and using it for the opera when it is in Atlanta, and for possibly major movie premiers. There is also room in the structure for a mini-cinema and boutique shops, he said.—*Stan Fisher, World News, Atlanta.*

Habitat budget is \$1.5 million

Meeting in Nairobi in late April, the United Nations Environment Programme Governing Council adopted a plan and program of operations for the UN Habitat and Human Settlements Foundation, moving the new foundation into the operational phase. Firm support for the plan and program of operations was expressed by representatives of countries from all regions, developing and developed. The foundation is intended to assist in strengthening national environment programs relating to human settlements, particularly in developing countries, through the provision of seed capital and the extension of the necessary technical and financial assistance needed for human habitat and environmental design.

Also in actions of the UNEP Governing Council session, \$1.5 million was allocated to the budget of HABITAT, the UN Conference on Human Settlements set for 1976 in Vancouver, British Columbia. This additional money will be used for direct aid to developing countries preparing audio visual programs on human settlement problems and solutions.

In expressing support for the foundation to "be made operational without delay," the representative of the Philippines said the Council had an historic opportunity to institutionalize its concern for human settlements, particularly in the area of financial mobilization and management.

He also announced his country's decision "to co-sponsor with The International Architectural Foundation an international contest for the design of a prototype urban neighborhood, which would utilize appropriate technology and housing designs suited to the conditions of developing countries." (At present the competition, described on pages 208-209 of the May 1975, issue, has drawn nearly 2500 entries.)

Civil engineers meet in Manila

William C. Horn, Daniel, Mann, Johnson, & Mendenhall project manager for the Mangahan Flood Control Project in Manila, was the only American engineer appearing as a featured speaker at the first Philippines International Conference on Civil Engineering in Disaster Prevention and Control. The week-long meeting, from May 20 to May 24, 1975, in the city

of San Juan, near Manila, covered engineering design for safety in natural disasters such as floods, earthquakes, and typhoons, as well as industrial environmental hazards.

Fernando Nabong, water resources engineer with the Philippines Department of Public Works and government project manager for the Mangahan Floodway Project, delivered a paper on the multi-million-dollar project, which will provide flood control for the city of Manila.

The meeting was attended by hundreds of civil engineers from public agencies and private consulting firms, as well as top government officials. It was sponsored by the Philippines Institute of Civil Engineers. William L. Horn's paper was on "Hazard Mitigation and Control."

Daniel, Mann, Johnson, & Mendenhall (DMJM) has three Philippine project offices, as well as other Far East area offices in Seoul, Korea; Penang, Malaysia, Tokyo, Japan; and Jakarta, Indonesia.

HABITAT finds widespread support

Calling for decisive improvement in the quality of individual communities in which people live Dr. Enrique Penalosa, Secretary-General of HABITAT, addressed the spring United Nations Environment Programme Governing Council meeting in Nairobi. HABITAT, the United Nations Conference on Human Settlements, is preparing for a major worldwide conference in Vancouver, British Columbia in June 1976.

Dr. Penalosa said that in advance of the Vancouver conference he has visited almost 70 countries during the last 12 months to explore actual and projected conditions of human settlements with governmental officials and technical experts.

"It is impossible to deny the evidence of one's own eyes," he said, pointing to "the spread of slums and squatter settlements, progressive environmental deterioration, ugly and dehumanizing forms of new construction, obsolete systems of public transport, mounting problems of waste disposal, and much more."

Quoted in a report in the *Delegates World Bulletin*, he said that HABITAT will be actively supported by the great majority of the world's governments, that public and professional interest is rising, that plans for a parallel conference on non-governmental organi-

zations are well advanced and that the conference's preparatory activities are proceeding satisfactorily.

As part of the preparations, regional conferences were held in Teheran, Cairo and Caracas last month, and the Canadian delegation spokesman said that Canada, as the host country for the conference, is promoting a public debate on human settlements policy in Canada. The spokesman further called for an integrated and comprehensive human settlements policy, rather than ad hoc solutions.

Speaking as chairman of a group of developing countries, the "Group of 77," the Reverend George Muhoho of Kenya said, "The International Habitat and Human Settlements Foundation (UN sponsors of HABITAT) has the capacity to become the most effective instrument in the range of international organizations dealing with the varied solutions to the problem of human settlements. The foundation can be a unique organization, unique in the sense that it is designed in such a way to ensure a comprehensive approach to settlements policy and a workable solution to the many problems which have received minimal attention in the past."

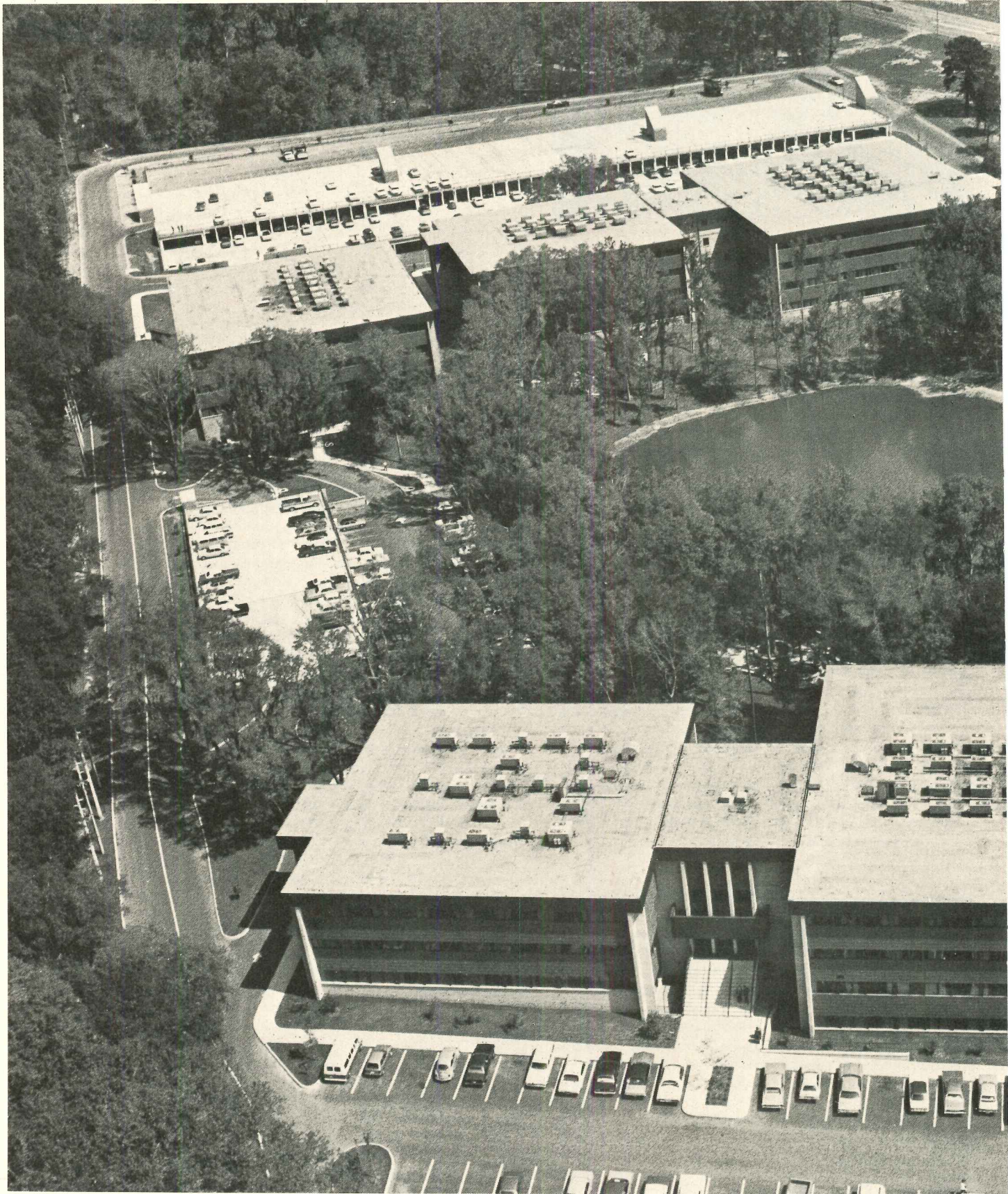
Nigerian leader urges "selfless support"

The military governor of the state of Nigeria, Brigadier Osaigbovo Ogbemudia, has urged the Nigerian Institute of Architects to give their best in the implementation of the current national development plan. The Governor, who described the plan as a challenge to the architects, urged the Institute to offer its professional services "selflessly."

Brigadier Ogbemudia, addressing the annual meeting of the Nigerian Institute of Architects in Benin, urged the members to strive at all times to blend the Nigerian style of architecture with foreign or modern techniques. The Governor said that the present time was the best for every profession to be geared towards maximum performance in support of the nation's third development plan, adding that without the architects the development envisaged in the plan cannot be satisfactorily executed.

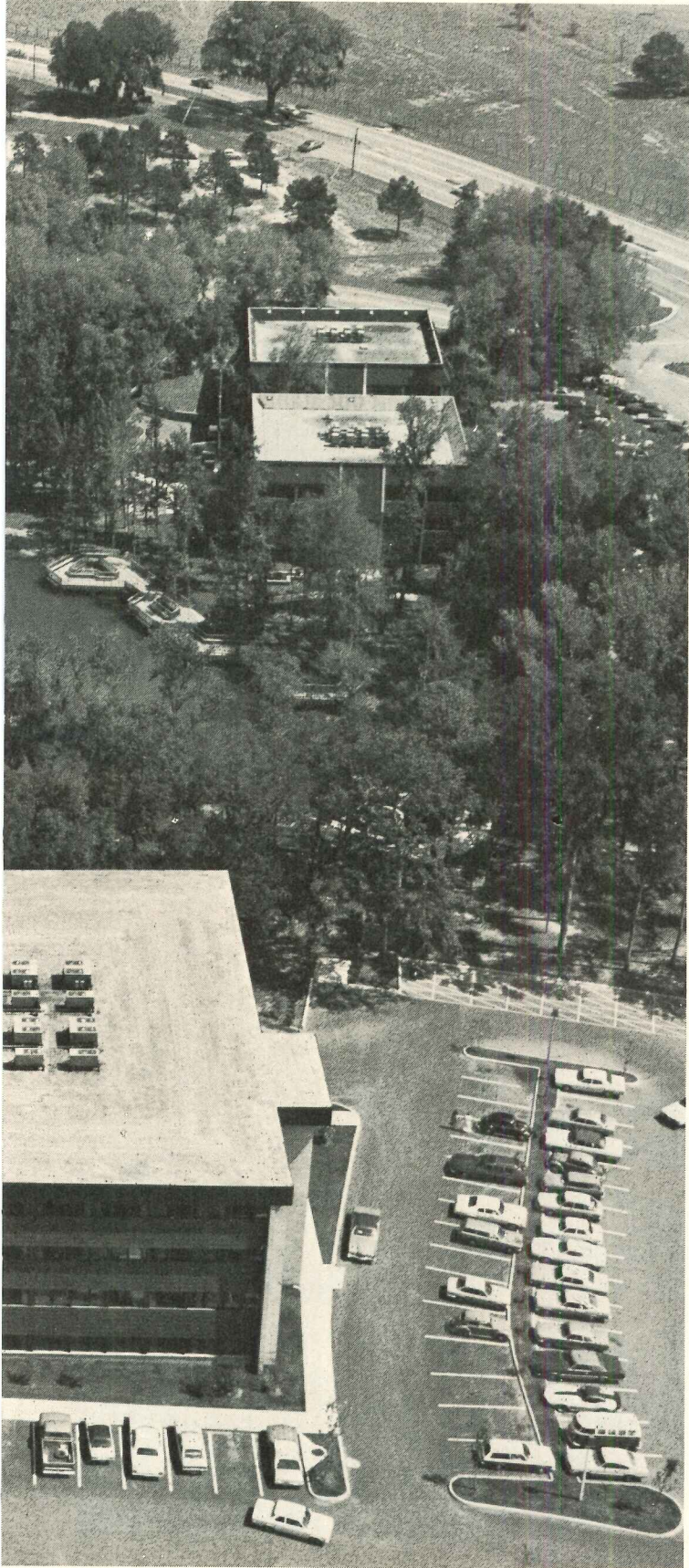
He enjoined the architects to take into consideration the limited number of architects in the country compared with the need for their services, stressing that architecture is being studied only at three universities.

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Winewood Development occupies 287 acres two miles from the center of Tallahassee, Fla. When completed it will contain between 1,500 and 2,000 luxury apartments and villas. The 8 office buildings occupy 25 acres. A golf course, tennis courts and swimming pools complete the environmental arrangement.

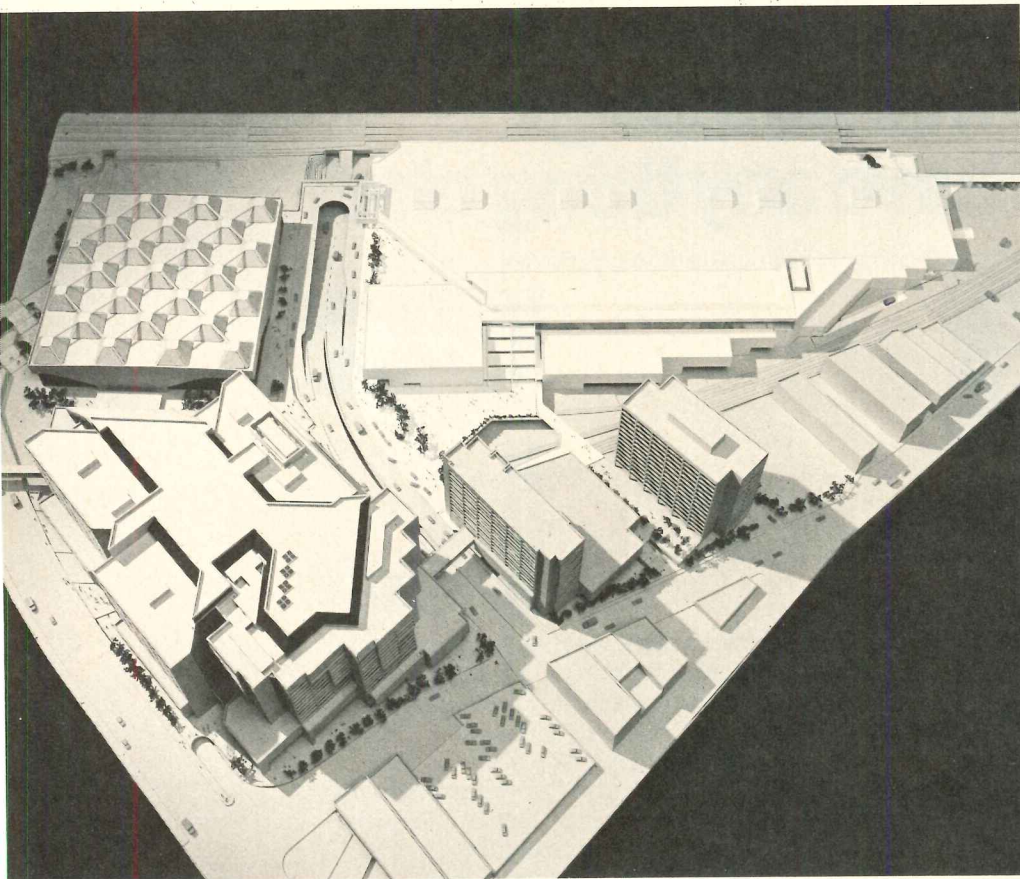
Winewood's architect is Joseph N. Clemons, A.I.A. Winewood is served by Central Heating Consultants, Inc., who installed all air conditioning and heat pump units.

Bill Cartee is lavish in his praise of his General Electric dealer. So, if you're contemplating an air conditioning installation, get in touch with a General Electric Central Air Conditioning dealer. He's in the Yellow Pages under "Air Conditioning Equipment and Systems!"

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Atlanta's World Congress Center will be located adjacent to Omni

The new George L. Smith II World Congress Center, now under construction in Atlanta, will have one of the country's largest single exhibition halls with 350,000 square feet of net usable area. The \$35 million, 10-acre building (upper right) was designed by Thompson,

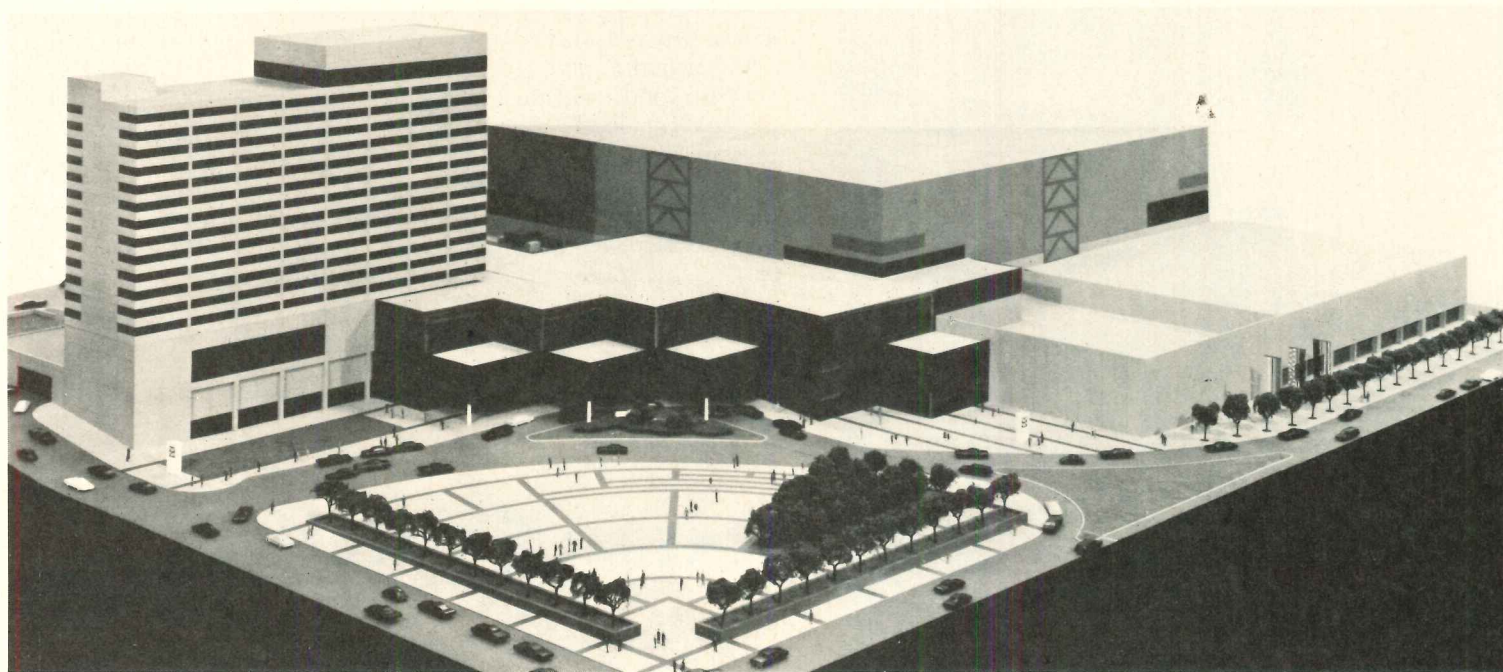
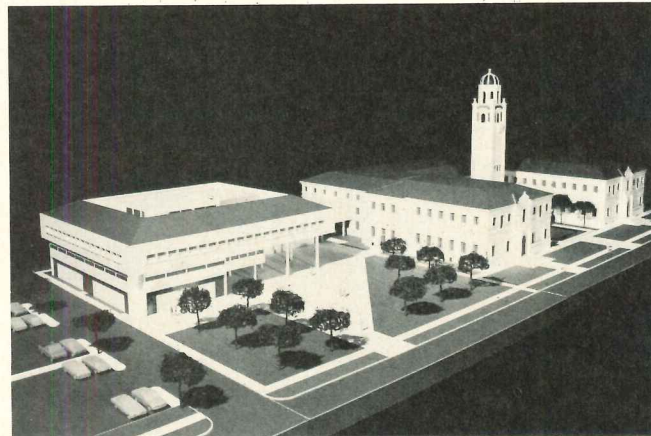
Ventulett and Stainback and Armour & Cape, Inc. It completes a triangle of projects—including the Omni sports center (upper left)—in downtown Atlanta. Below at lower left is the \$65 million Omni International, a megastructure containing office and retail space, plus a

hotel. The entire 35-acre complex is the design of Thompson Ventulett and Stainback. Plans for the World Congress Center call for a post-tensioned concrete structure, incorporating 90-foot-square bays, and a curtain wall of pre-stressed concrete panels.

Sarasota, Florida jail added to existing facility

A new jail facility now being added to an existing one in Sarasota, Florida, was designed by Prindle and Patrick. The new County Jail, costing \$3.2 million, is scheduled for completion in November, adding accommodations for 132 inmates with single cell occupancy.

Multi-use spaces for dining, consultation and instruction are also included. Housing pods consisting of six to 14 cells are arranged with day space for group activities. The reinforced poured-in-place concrete structure with exterior stucco finish will be roofed in Spanish tile.

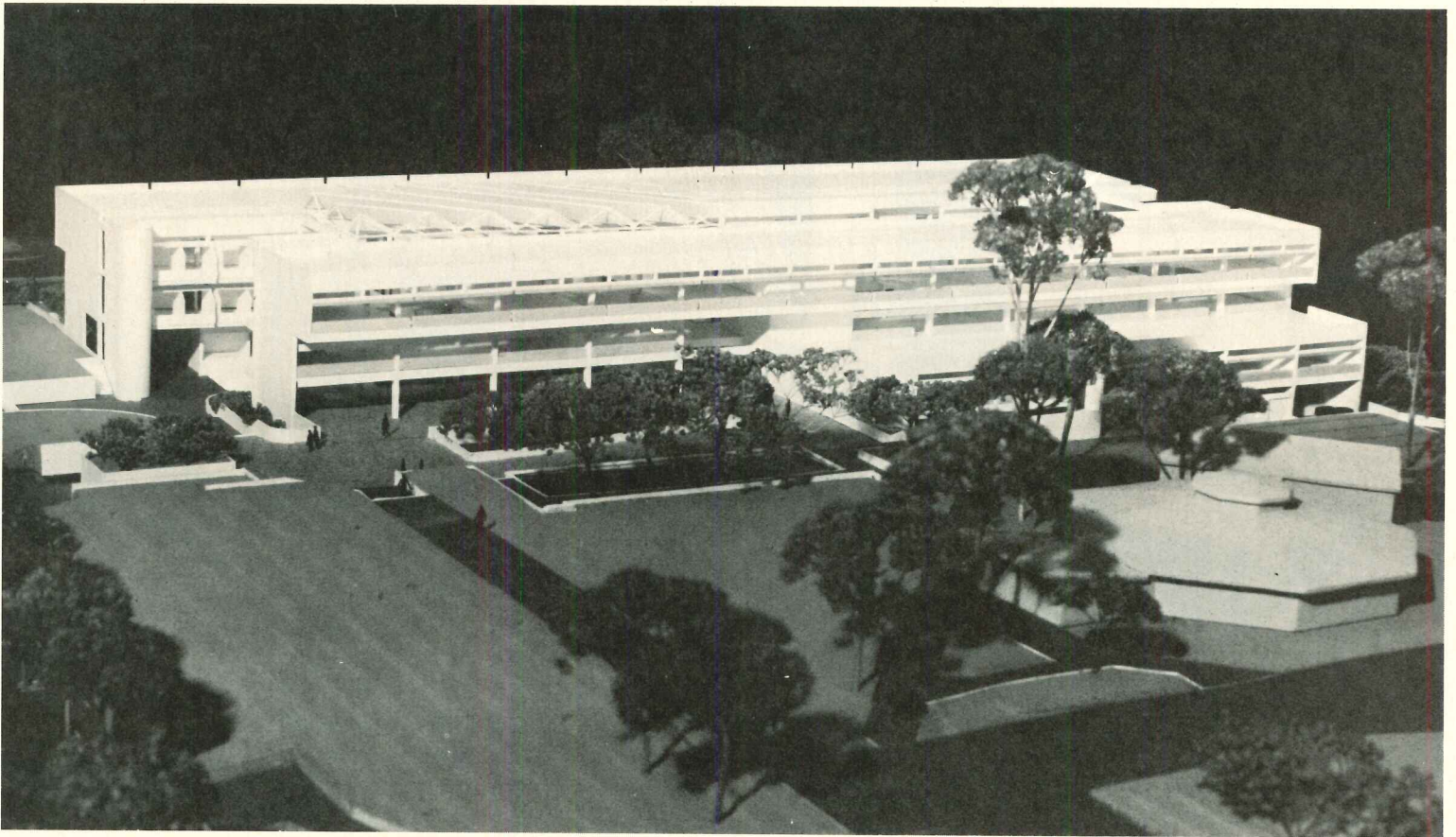


Lexington, Kentucky, Civic Center will be completed in 1976

The \$46 million Civic Center under construction in Lexington, Kentucky, is a design-build project by Bluegrass Development Consortium (BDC), con-

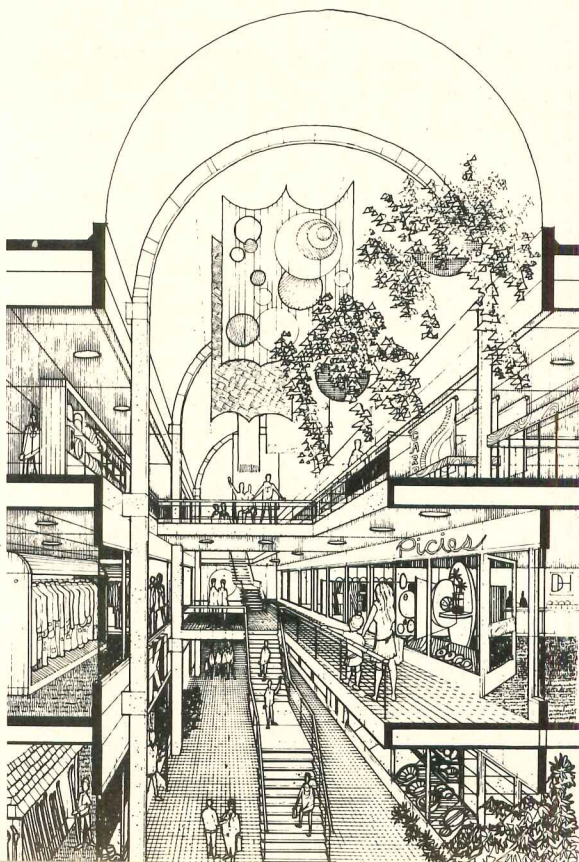
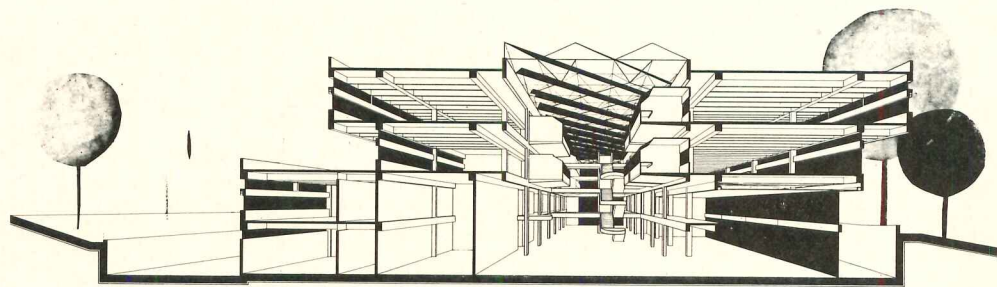
sisting of Landmark Development Corp. (a subsidiary of Ellerbe Architects, Engineers, Planners) and Hunt Development Company. Located on an

11-acre downtown site, the complex will contain a hotel, shopping mall, convention center and sports arena, with an indoor court as the focal point.



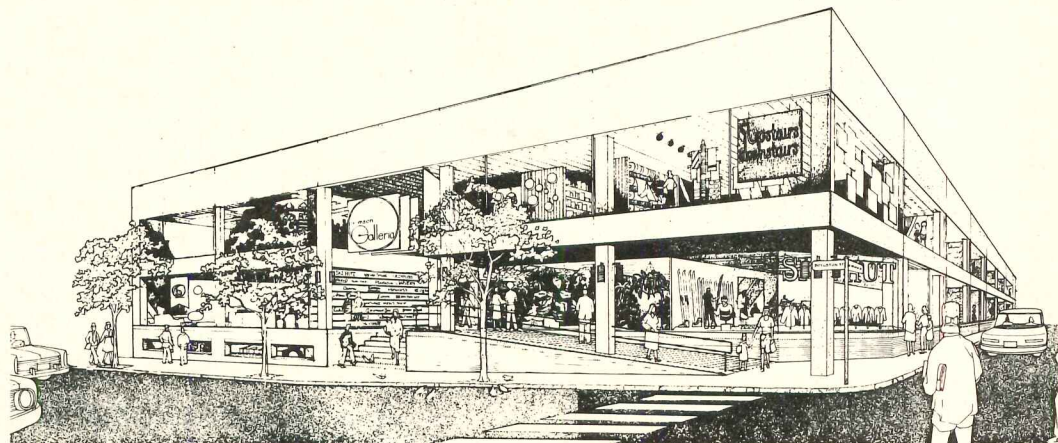
Art-Architecture Building selected in competition

In April, McCarty Bullock Holsapple, Inc. were selected as the winning architectural firm in a competition for the proposed \$8 million University of Tennessee Art-Architecture Building in Knoxville. In designating the winner, the jury commended the design for its form and site planning, which creates an important outdoor space linking the building with an adjacent theater, and humanities building. The linear structure features a four-story skylighted central space around which are the studios and exhibition spaces. Concrete framing and glass infills provide contrast to sloped and stepped planes of the landscape. Design development is proceeding, and construction is awaiting passage of a bond issue.



The Crimson Galeria will open next month in Cambridge, Massachusetts

A retail shopping complex will open next month in Cambridge's Harvard Square. Designed by Childs Bertman Tseckares Associates, Inc., the Crimson Galeria will contain 38,000 square feet of enclosed shopping space on three levels, with non-shop space devoted to movies, restaurants and malls. Shoppers will have access to both sides of the mall at the upper levels by court-spanning bridges, and broad bands of clear glazing are designed to bring the panorama of the shops to the eye level of pedestrians. The steel framed building is being built on a brick foundation, to blend with adjacent buildings, and exterior surfaces will be of precast concrete with a light buff finish. Developer: Hilton Development Corp.





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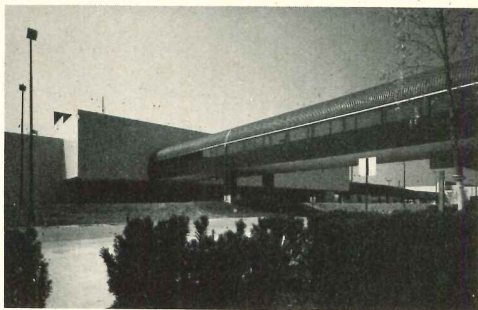


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George Heery states the case for discipline in support of architecture

TIME, COST, AND ARCHITECTURE, by George T. Heery; McGraw-Hill Book Company, 1975, 212 pages, illustrations, \$16.50.

Architect George T. Heery practices what he preaches in this book. The sequence of items in the title—time, cost, and architecture—represents his choice of emphasis for this particular volume rather than an order or priority in his professional approach to his calling. The genesis of that emphasis has been in his personal history as the son of the founder of a successful architectural firm designing predominantly industrial building types. His has been the task of turning his Atlanta-based firm in to a diversified practice in which conventionally defined design excellence has become a more and more essential ingredient. No one yet



identifies the firm with the monumental masters, but a scanning of the pictorial section in the first chapter of this book reveals an evolution in this direction (the photo-reproduction is unfortunately poor in this volume).

The point is that George Heery has inherited a profound respect for the practicalities

of getting architectural commissions executed on time and within budgets, and he has studied all the devices for achieving those ends in support of the design evolution he has undertaken. This firm, along with many if not all others, has been sorting out the practical disciplines of project design and delivery over the years before the term "construction management" acquired its current connotation. Heery has not only joined in the diverse efforts to clarify those connotations in precise definition, but he has also defended valiantly and given example to the proposition that construction management is the natural, if not the exclusive, prerogative of architects.

In Chapter 2, Heery offers his own definition: "construction management is that group of management activities, over and above normal architectural and engineering services, related to a construction program—carried out during the pre-design, design, and construction phases—that contributes to the control of time and cost in the construction of a new facility."

Thus, the Heery view of construction program management embraces a broad set of services, all of them focused on the discipline and architectural success of the project.

One does not have to agree with all of this philosophy in order to recognize in this book a hard core of information and practical method for achieving architecture in the difficult arena of today's economy. Subjects like: the management contract, predesign analysis, the systems approach, cost control systems, phased construction, bidding and negotiations management, all are documented with examples of forms and schedules that make this book a practical resource.

—William B. Foxhall

Dinner's served

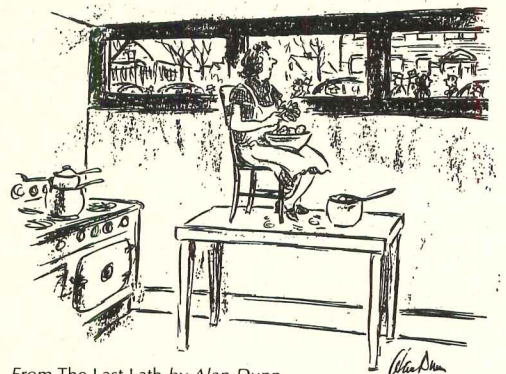
THE ARCHITECTURAL COOKBOOK: *Selected recipes for architects, engineers and contractors and all who care about good architecture and good food*, by Arthur Hawkins, with illustrations by Alan Dunn; Architectural Record Books, 1975, 144 pages, \$4.95.

They say that imitation is the sincerest form of flattery, so you can imagine my surprise and pleasure when Walter Wagner told me last year that the RECORD was going to publish a cookbook similar to *The Watergate Cookbook*, or *Who's in the Soup* written by a group of us in Cambridge.

There I was giggling happily through the book when Gerald Allen called to ask if I would review it—more flattery! Naturally I couldn't refuse and promptly left for the convention in Atlanta. What better place to review

this masterpiece of culinary twistagrams than in the comfort of the RECORD suite, resplendent with INDIRECT LIGHTING and an endless supply of LIGHT MY FAIA! Sure enough, everyone was there—BAKED HUGHES WITH HERBS SMITH, CHICK PEAS MARSHALL, FISH AND CHIPS HARKNESS—all toasting the MAISON GLACÉ and its creator-owner FILLIP!

Reminded that this review should include a comment about cooking, I have to be honest. Easy to follow and prepare, the recipes present little challenge to the serious gourmet. Perhaps Author Hawkins was inspired by "Less is More," which is often true, but I detect an overdose of the ordinary. Also some of the recipes are inoperative, as ingredients like eel, venison loin, and sturgeon have a low availability ration in the local markets. However, if I were giving The Dinner to Honor Julia Child, I would start with BAUHAUS CHOWDER followed



From *The Last Lath* by Alan Dunn

by COQUILLES ELY JACQUES KAHN, red hot AALTO-MATOES and fresh garden greens with LOUIS SULLIVAN DRESSING. For dessert, EZRA STOLLEN, of course.

The point is you don't have to be interested in good food to enjoy this book. In fact, I seriously question whether it should ever leave the coffee table, for it is a conversation piece for all those architects, engineers, contractors and designer-chasers in the know. At \$4.95 an impulse purchase it is not, a collector's item it is.

So there in Atlanta, sharing the ambiance in the RECORD suite and observing the spontaneous delight of all those who thumbed through the book, I could only conclude that WALNUTS WAGNER and his colleagues are really spicy nutcakes to have produced this very clever and amusing DODGEPODGE!

—Lolly McDonnell-Mitchell

Lolly McDonnell-Mitchell is director of public relations for The Architects Collaborative and co-author of *The Watergate Cookbook*.

1975 CRSI design awards program

Enter whatever you've designed in reinforced concrete.
It could be a winner.



A

B

The 1974 CRSI Design Award Winners.

- A. ONE POLICE PLAZA**, New York.
Architect: Gruzen & Partners, New York, N.Y. Structural Engineer: Farkas, Barron & Partners, New York, N.Y.
- B. SCHOOL OF NURSING BUILDING**, University of California Medical Center, San Francisco, Calif. Architect: George Matsumoto & Associates, San Francisco, Calif. Structural Engineer: Hirsch and Gray, San Francisco, Calif.

- C. FREMONT ELEMENTARY SCHOOL**, Santa Ana, California. Architect: Allen & Miller Architects, Santa Ana, Calif. Structural Engineer: Martin, Tranbarger & Associates, Newport Beach, Calif.

- D. CHRISTIAN SCIENCE CENTER**, Boston, Massachusetts. Architect: I.M. Pei & Partners & Araldo Cossutta Associated Architects, New York, N.Y. Structural Engineer: Weiskopf & Pickworth, New York, N.Y.

- E. CLINICS EXPANSION & PARKING STRUCTURE**, University of California, San Francisco, Calif. Architect and Structural Engineer: Reid & Tarics Associates, San Francisco, Calif.

- F. B.L. ENGLAND STATION, SALT WATER NATURAL DRAFT COOLING TOWER**, Beesley's Point, New Jersey. Designed & Built by: Hamon Cooling Tower Division, Research-Cottrell, Bound Brook, N.J. Architect/Engineer: United Engineers and Constructors, Philadelphia, Pa.

call for entries

Concrete Reinforcing Steel Institute announces a Call for Entries in the 1975 CRSI Design Awards Program—our second annual Awards event for design professionals.

The Awards will honor creative design achievements utilizing site-cast concrete in which conventional reinforcing bars are the predominant reinforcement.

Categories of Awards—There are no specific categories of eligible structures. All types of site-cast reinforced concrete structures—large and small—will be judged on an equally objective basis.

Criteria of Awards—Awards will be given for esthetic expression, engineering achievement, functional excellence, or economy (or any meritorious combination of these qualities).

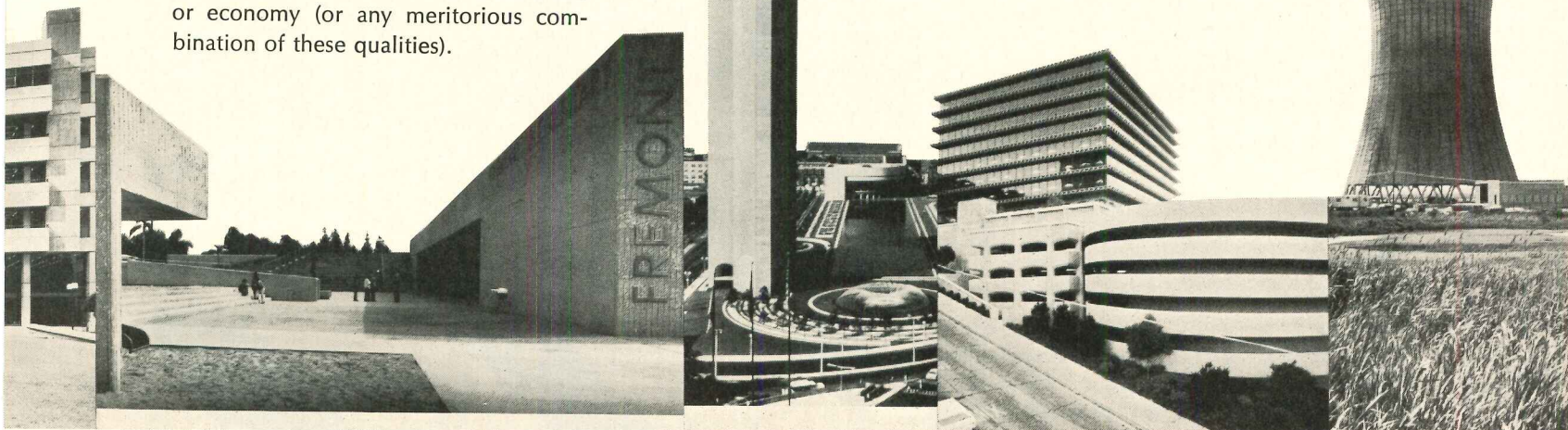
Type of Award—Since reinforced concrete can be used to solve so many totally different design problems, no single first-place Design Award will be given. Several Awards will be presented, each equally acknowledging excellence of achievement. Each Award will consist of (1) engraved commemorative plaques for engineer, architect and owner, (2) recognition of the award-winner's achievement through publication of the winner's story and structure in print advertising sponsored by CRSI, and (3) presentation of the Award to entrant (architect or engineer) at a special ceremony at the CRSI annual convention, Colorado Springs, Colorado, April, 1976. Winning entrants (if a team, a representative of the team) and their spouses

will be invited to attend the Award presentation ceremony at CRSI's expense.

The Judges—A distinguished panel of recognized professional architects and engineers from throughout the United States has been selected to judge all entries.

Who is Eligible—The 1975 CRSI Design Awards Program is open to all registered architects and engineers (entrants may be individuals or a team). Eligible structures must be located within the continental United States and have been completed since January 1, 1973, or essentially finished by contest deadline date.

AIA Approval—This program has been approved by the American Institute of Architects and is patterned after the AIA Honor Awards Program.



C

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How to submit entries: Simply mail your entry directly to CRSI. Please follow these specifications in organizing materials for submission:

1. To preserve anonymity during judging, submit the following data typewritten on plain white 8 1/2" x 11" paper.
 - a. Description of type of structure.
 - b. Size of structure in total square footage.
 - c. Brief description of structural framing system. Indicate which portions of system are conventionally reinforced, prestressed or precast concrete.
 - d. Description of any unique design features that deserve special consideration during judging.
 - e. Date structure was completed or scheduled for completion.
2. Include a brief statement of reasons for choosing reinforced concrete.
3. Include at least two 8" x 10" glossy black-and-white photographs and at least two 35mm color slides of completed structure. **Do not** include company or firm identification on photographic material.
4. Give any computations or specifications if they enlarge on design problems and solutions. Include, if considered necessary, copies of plans, perspective drawings, detail drawings, etc.
5. Prepare a **separate** typed sheet (you may use company letterhead) giving proper name of entry; type of structure and location; names, addresses, and phone numbers of architect, engineer, and owner; and date of completion. Seal this sheet in a plain, unmarked envelope and affix to back of entry.
6. Assemble all of the materials in a ring binder (or equivalent) approximately 10" x 12".
7. You may submit more than one entry, but please organize each according to above specifications and submit separately.

Deadline for Entries—All entries must be received no later than **November 15, 1975**, at CRSI headquarters (address below).

Announcement of Winners—To be made as soon after judging as practical.

Ownership and Publication of Entries—All entries shall become sole property of CRSI. No materials will be returned. CRSI reserves the right to use or publish all entries and accompanying materials in CRSI advertising, CRSI publications or for any and all editorial purposes and by entering, entrant grants a royalty-free license to CRSI to use any copyrighted materials. Such right includes publication of photographs and names of Award winners without compensation to winners.

Judges' Decision Shall be Final—Upon entering the 1975 CRSI Design Awards Program, each entrant waives his or her right to make a claim against the panel of Judges (or any member thereof), or to make a claim against Concrete Reinforcing Steel Institute (or any member thereof).

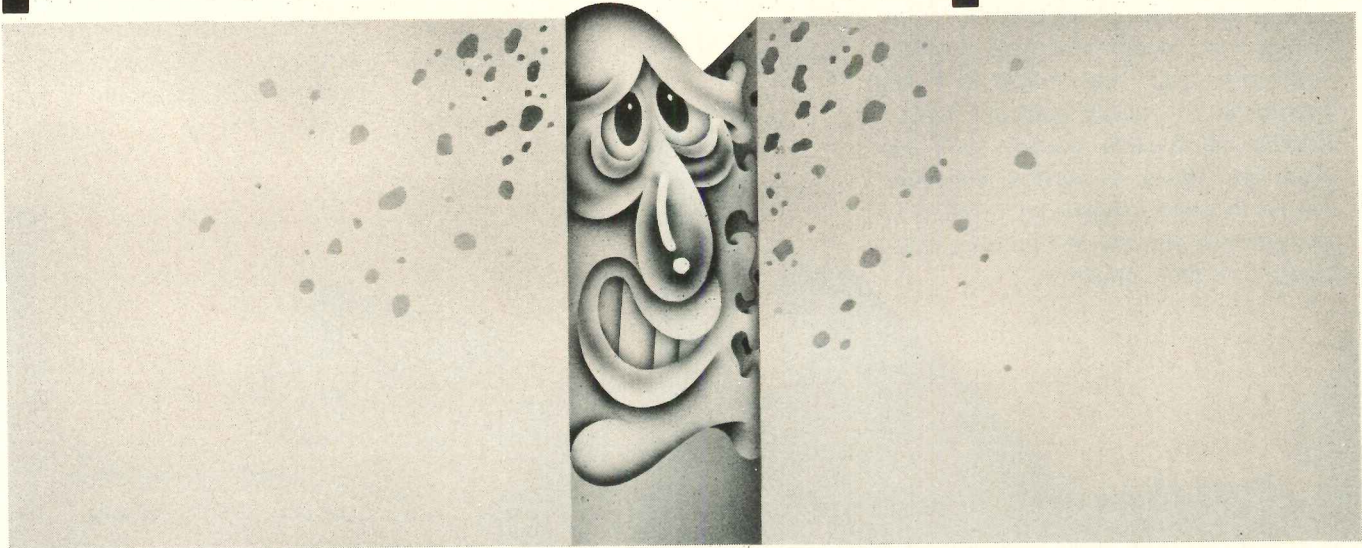
mail
entries
to:



CONCRETE REINFORCING STEEL INSTITUTE
180 North LaSalle Street Room 2108-D
Chicago, Illinois 60601
Attention: George F. Leyh

Deadline for entries: November 15, 1975.

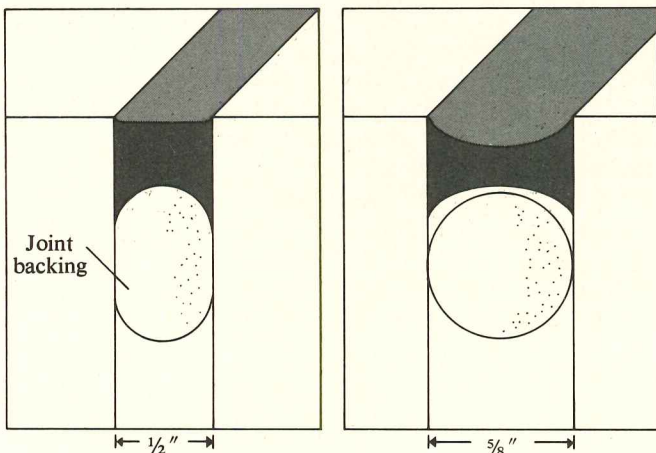
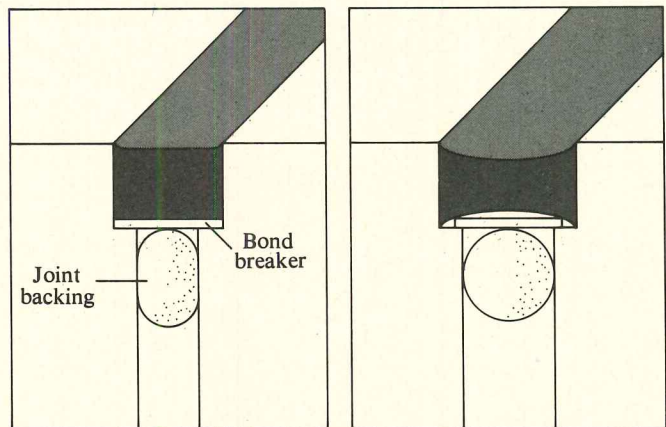
How to avoid sealant problems when you design precast concrete panels.



Obviously, you don't want sealant-adhesive failure in the joints between precast panels. And certainly we — Tremco — don't want it. So here's a brief guide to potential problem areas and tips on how to avoid them.

Let's start with design. When you're designing a joint, be sure it's wide enough to allow the sealant to move within its capabilities. If the joint is found to be too small on-site, it will have to be saw-cut to sufficient width — a costly procedure. A good rule of thumb is to design $\frac{1}{2}$ -inch wide joints for panels up to 15 feet, $\frac{5}{8}$ -inch or wider, for longer panels. An even better rule of thumb is to consult your Tremco man while you're in the design stage.

Two ways we help. Tremco has been solving sealant problems for more than 45 years, so our man can bring a lot of



experience to bear on your problems. Second, in response to the special needs of the precast industry, we've developed DYmeric®, a two-part polymer sealant designed to take the stress and movement common to precast cladding. It's also capable of sealing joints up to 2 inches wide in one application, without sagging. And you don't need a primer. With this kind of help, the odds are you can avoid a lot of the following problems.

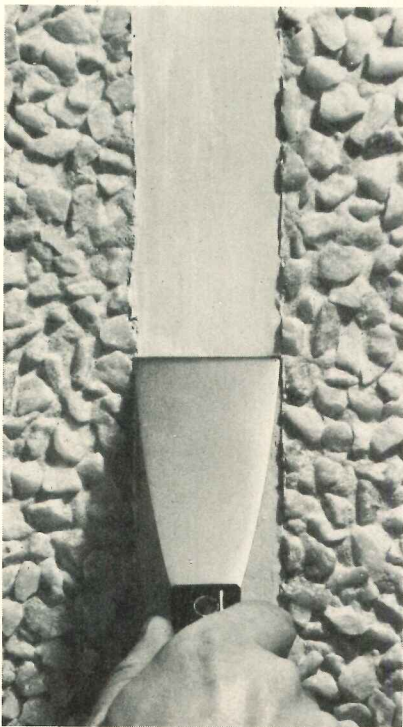
Form release agents: friend and foe. Form release agents are a necessity, but they can also create major problems for sealants.

The same action that prevents adhesion between the panel and the form can impair adhesion of the sealant bead to the joint interface. This could happen weeks or months after caulking, depending on the type of sealant,

the type of release agent and the amount of joint movement.

Some release agents are less troublesome than others. However, you can only be sure of good sealant adhesion if two things are done. First, the joint interface should be thoroughly cleaned the same time as the panel face, when it is removed from the form.

Second, be sure the joint interface is cleaned just before caulking. Your Tremco man can help you find the most economical way to get this done.

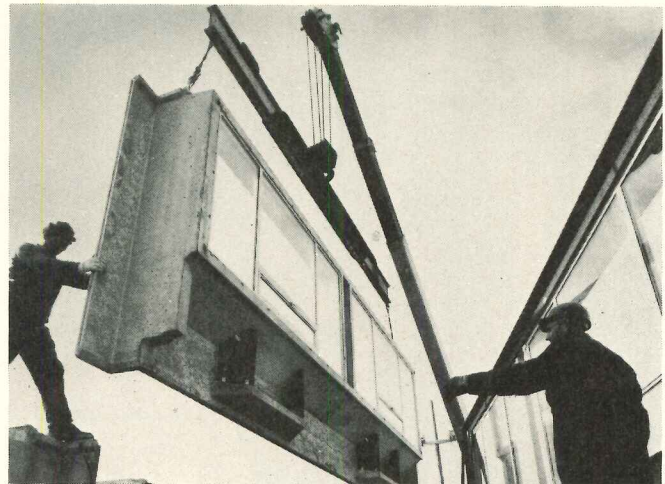


Don't take a powder. Another common problem that affects sealant adhesion is laitance on the joint interface. A frequent cause of this powdery surface condition is the use of retarder on exposed aggregate panels. A slight change in joint design can often help prevent the retarder from migrating to the joint face.

However, it's a good idea to specify that high pressure water spray be used on the joint surface as well as the face of the panel, during the

process of exposing the aggregate. Even then, though laitance has been successfully removed, the joint has to be thoroughly cleaned just before caulking. Since each case is different, your best bet is still to talk to your Tremco man and use DYmeric.

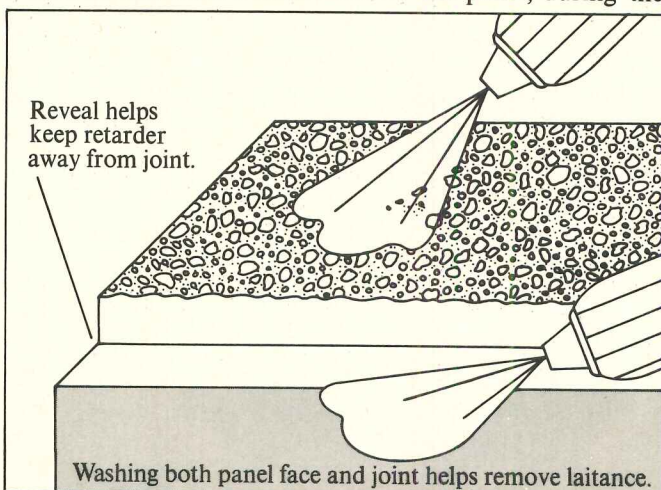
Waterproofing woes. While Tremco makes clear waterproofing coatings for masonry panels, we want to warn you that ours, like all the others, can cause sealant failure when they're improperly used.



Our advice is to caulk first, then waterproof. But sometimes specifications call for waterproofing at the factory, to protect the panels during transit and storage. If so, the joint should be protected from overspray. Your best bet, as always, is thorough cleaning of the joint interfaces just prior to caulking. Your Tremco man can help you decide on the right cleaning method for specific circumstances.

To sum it all up you can count on Tremco to help seal and weatherproof precast buildings better because it's the kind of thing we've been doing for more than 45 years. With some 15 basic job-proven sealants to choose from, such as MONO[®], DYmeric[®], and Lasto-Meric[®], and our unique TREMPROOF[®] waterproofing systems and our roofing system, Tremline[®], your Tremco man can recommend the systems that are exactly right for your job.

So talk to Tremco first. And you won't have joint sealing problems later. For help, contact your Tremco rep. Or Tremco, 10701 Shaker Blvd., Cleveland, Ohio 44104. Toronto, Ontario M4H 1G7.



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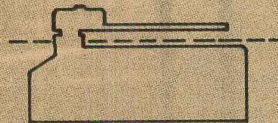
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A report on legal cases about license revocation

It's possible to lose your license to practice architecture—but it's not easy—and you can fight back. That's the gist of this survey of precedent cases by Washington, D.C. lawyer John Warren Giles.

If anyone should attempt to procure the revocation of your architectural license, what are your principal defenses? As you know, you received your architectural license under a statute which enumerates the disciplinary grounds with respect to issuance of your license and the conditions of your right to practice architecture. Consequently, if your license is attacked, you in turn may attack the statute or regulations on the ground that they were void for vagueness; that they unlawfully delineated legislative power, or permitted the improper exercise of judicial power by the administrative body; or that due process requires judicial rather than administrative proceedings.

An examination of the cases reveals that there are very few cases where an architect's license was actually revoked. One case is reported in Wisconsin (9 NW 2nd 630). In that case, the court held that evidence fully sustained the state licensing board's revocation of an architect's license to practice under a statute that authorized disciplinary measures on grounds of "gross negligence, incompetency, and misconduct in the practice of architecture." The court also held that the board's action was not affected by the fact that the statute permitted the work in question to be done by an unlicensed person. In this case, the court affirmed a Summary Judgment upholding the revocation of the license.

The court emphasized the evidence that, in connection with a certain single-family dwelling, the architect had made mistakes in the plans leading to the failure of the basement walls and had delayed in the construction of the building, failed to secure a building permit, misplaced the building in reference to the lot line, and secured the owner's endorsement of payment without informing him of the true state of affairs. The architect had also made mistakes in the plans of another dwelling and had permitted dangerous and improper construction, and had omitted the installation of certain necessary foundations.

The court rejected the contention that, since the statute authorized the erection of single-family dwellings by unlicensed persons, the defendants' license could not be revoked for conduct in connection with such structures. Although he could have constructed the dwell-

ings in question in a capacity other than as an architect, the evidence clearly indicated that he had contracted to furnish his services in his professional capacity and that his clients had retained him in reliance upon such representations.

In a New York case (306 NYS 2nd 869) the architect's license to practice was only suspended for six months. The New York statute empowered the State Board of Regents to impose discipline for "fraud, deceit or misconduct in the practice of architecture" and for "unprofessional conduct." In this case the architect had offered to secure a zoning variance in a certain city for \$6,000, one-half of which was allegedly to be used to bribe appropriate city officials. The court said that testimony that the defendant had agreed to find out if one of the officials would accept money for a favorable determination constituted substantial evidence demonstrating misconduct which warranted punishment.

The balance of the reported cases, which occurred in Illinois, California, Georgia, Maryland and the District of Columbia, did not result in revocation of the architects' licenses. In an Illinois case (177 Ill. App. 527) the court recognized that the grounds expressly enumerated by the statute were the exclusive bases upon which an order of revocation could be predicted. Accordingly, the court pointed out that a statute which empowered the State Licensing Board to discipline an architect for "gross incompetency or recklessness in the construction of the building" or "dishonest practices" also stated by implication that only the specified grounds in the statute constituted the exclusive causes for which revocatory action could be taken.

In a California case (19 Pac. 2nd 1002) where a statute authorized the administrative revocation or suspension of an architectural license upon a finding of "dishonest practices" but did not define the types of conduct precluded, the court stated that the statutory language could encompass such a variety of misconduct that, although the Board had some discretion as to its interpretation, activity sufficient to warrant discipline would have to be found with such definiteness and certainty that wrong-doing would be apparent to all.

In a case in the District of Columbia (249 Fed. 2nd 104), discipline had been imposed on the architect on the basis of evidence that, in his license application, the architect stated that he had never had a license to practice revoked, when, in fact, his Maryland registration had

been previously revoked, upon a conviction for forgery. Although noting that the Board's sole conclusion was that the architect had violated the statutory provision, the court was apparently uncertain whether registration would have been refused if the Board had known of the Maryland revocation. The court remanded the case with directions for vacation of the Board's decision, if it could not find, from the record, that the actual obtaining of the licenses was due to fraud or misrepresentation.

In a Georgia case, the architect's license was not revoked (112 S.E. 2nd 423). It appeared that the architect, on his license application, under the heading of "schooling and experience" had listed "Massachusetts Institute of Technology 1915-1917." The architect had attended said institution for only six months in 1915, and for two months in 1916. The court said that misrepresentation sufficient to justify revocation could not be something immaterial to the initial issuance of the license. The court noted that the licensing statute required only that an applicant complete high school, and although it authorized the Board to prescribe additional educational requirements, there was no showing that this had ever been done. The court pointed out that the architect's high school qualifications were not questioned, and the court stated that he had accordingly met the relevant academic requirements, and that any mis-statement as to higher education was, therefore, immaterial.

—John Warren Giles

Legal briefs for architects, engineers and contractors

The second issue of *Legal Briefs*, a twice-monthly survey of events and decisions affecting legal pitfalls and precautions, more than fulfills the promise of the first. Here's a sampling of content:

- *Perspective* about rulings of the Army Corps of Engineers Board of Contract Appeals; U.S. Court of Appeals decisions about OSHA standards; U.S. Supreme Court rulings on minority labor activities;
- *Alerts* about liability; EPA regulations; code changes;
- *A caselog* of decisions about corporate liability; architects' negligence; compensation for unbuilt projects, etc.

This *expert* newsletter is still at an introductory \$72 (later \$96) for 24 issues from: Construction Industry Legal Reports Department, ARCHITECTURAL RECORD, 1221 Avenue of the Americas, New York City 10020.

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Contract documents further define professional construction management

There has been a long and widely scattered search for a definition of professionalism in the practice of construction management. Some hold that if the practitioner works for a fee and avoids conflict of interest, he enters into the fold of the professional. There is a peril to architects and managers alike in believing—or even in suggesting—that working for a negotiated compensation rather than a profit tied to construction costs constitutes per se a professional service. That is a limited and destructive view. Professionalism lies not only in the mode of compensation but in: 1) the demanding education of the practitioner, 2) in his commitment to agency and service for his client, and 3) in a commitment to the public weal. Beyond all that, and perhaps primarily, the professional serves his own concept of a compelling human goal related to his personal talents.

So, also, must those who would elevate construction management to any semblance of professionalism, bear in mind that working for a fee is only one condition—not total imprimatur—of their professionalism. The profession resides in its body of special knowledge and its commitment to the service of clients and the public. That service

is not merely cutting costs—although cost control is one primary mission. The real service is to all of us by doing well.

Doing well at doing what? The specifics of the construction manager's role are defined and re-defined on every project where a construction manager is employed. Each job is different in both scope and detail. And virtually every detail must be spelled out in a contract tailored to the occasion.

Two problems have been basic to the difficulty of developing an adaptable super-contract. One is the problem of identity and scope. The other is the problem of responsibility and risk. Identity and scope have to do with separation and preservation of the roles of architects, engineers and other professionals on the job. Responsibility and risk have to do with professional agency whereby owners can accept their own risks without the markup of a guarantee.

The following report on AIA Document B801 by former AIA staff director of professional practice programs, Steven H. Rosenfeld, (now associate in the firm of Ronald S. Senseman FAIA) takes up the beginnings of some of these points.

—W.F.

With the publication of AIA Document B801, Standard Form of Agreement Between Owner and Construction Manager, definition of the professional construction manager and the services he renders may gain more widespread acceptance, especially in the private sector of the construction industry.

Construction management has received numerous definitions from various sources, both in and out of government (RECORD, March 1974, June 1975, et al). However, no definition has been as carefully written as B801 to delineate construction management as a *professional* service, compatible with the professional levels and aims of architects.

The basic difference between construction management as a professional service, as described in B801, and as it is currently envisioned by some other governmental and private contracting agencies lies in the belief that you cannot be both a professional and also an entrepreneur taking (and necessarily charging for) the risk of guaranteeing the cost of construction. By requiring "construction managers" to give and to guarantee a maximum price, the client transforms the CM from a professional agent of the owner into an entrepreneur whose interests lie in the price of the job rather than in its quality or program on the owner's behalf. Thus, the advantages of a separate professional service are lost. (See also "The guaranteed maximum price: a sampling of views" RECORD, April 1974.)

Many qualified general contractors have

recognized the benefits to themselves and to their clients of providing construction management services on a professional basis. These practitioners operate on the basis of competence in their ability to successfully perform the myriad services required of a CM, for a fixed negotiated fee as their total compensation unrelated either to profit on the job or to changes in total construction cost—other than changes in scope of work, of course. But, the CM is not of necessity a general contractor. Many successful projects have been completed under CM contracts by architects, engineers and other qualified firms offering construction management services. It is primarily the type, quantity and quality of services offered by the construction manager that dictate the skills required.

Defining relationships among owner, CM and architect

Of prime importance to architects and owners is clear definition of the services to be provided by a CM and his relationship with the owner and architect. AIA Document B801 lists in great detail these services, their relationships to the services provided by the architect, and their sequence in the design and construction process. It is a contract for professional services, designed for use by a CM whose origin, whether architect, engineer or contractor, is not defined. The architect for the project is a separate entity.

It is possible for the architect to provide

both construction management and architectural services on a project, and that is successfully being done now. It is also possible for a construction manager to accomplish certain of the construction work on a project directly with his own forces, as he might if he were the general contractor on the project. However, both examples can create a potential conflict of interest which must be considered by the owner in determining the potential usefulness of CM services for his project.

One of the first decisions the client must make is whether to engage a construction manager for the project. In negotiating the owner/architect agreement, the client should make known his interest in employing a CM and discuss the merits of the various construction options with the architect. The architect may also, at the time he negotiates his contract, propose the employment of a CM if he feels it is in the best interest of the project.

The effect of construction management on architects' compensation

The architect should note that the use of a CM on his project can affect the computation of his own compensation. The use of a CM will not necessarily reduce the amount of time the architect devotes to a project. Quite the contrary, it is certain that it will introduce a factor for time charged to meetings with the CM and to the implementation of phased construction and multiple bid packages. While a competent CM will be able to save a good deal of the ar-

chitect's time on matters of schedule, computation, reduction of changes, field services, etc., the architect should carefully gauge where those savings might—or might not—lie in negotiating his compensation.

Further, and especially where a guaranteed maximum price is involved, both the architect and the CM would almost certainly spend time in discussions with potential major subcontractors, or general contractors, each of whom would need project orientation in order to submit his portion of the price, guaranteed or not. In estimating prices, the various contractors would have made certain assumptions, early in the design phase, on which they based their quotations. If these were made independently of the architect, conflicts with his design assumptions would arise with all implicit complications and later change orders.

The architect's compensation would also be affected by the fact that the construction cost will no longer include various cost items found in traditional construction contracting methods. Among these are the multiple high risk factors and certain items which the owner now assumes and pays the CM to safeguard. Because of this, the construction cost for a given design effort is reduced, and the architect should only consider providing services on the bases of a "multiple of direct personnel expense" or "professional fee plus expenses."

Many architects who currently provide or are contemplating providing construction management services have established separate divisions in their firms or totally independent corporations to provide CM services. Their decision is usually predicated on the reduction of risk achieved by separating the vehicle for the architect's services from that of the CM. In some cases, it reduces the potential for a conflict of interest arising if the architect is also the CM on a project. It also permits the CM arm of the operation to work on projects of other architects without creating an atmosphere of suspicion.

Development and basic provisions of AIA's construction management documents

AIA Document B801 is the culmination of more than two years' work by the Institute's Document Board. It has received input from construction managers, architects, engineers, general contractors and Federal agency representatives; the merits of the various options and services were weighed with both legal and insurance counsel. The result is a balanced document that coordinates the professional services provided by a CM with the architect's services and the owner's responsibilities as defined in AIA Documents B141, Standard Form of Agreement Between Owner and Architect, and A201, General Conditions of the Contract for Construction. A further Document Board project has been the development of a General Conditions for CM Projects, recently issued as A201CM and also companion documents A101CM and B141CM.

The CM services defined in B801 are insurable, and professional liability insurance is available. Because of the potential liability exposure, any changes in the text should be reviewed with both legal and insurance counsel.

It must be noted that the giving of a guaranteed maximum price by a CM voids many of these insurance policies.

B801 provides four options in the selection of a method of compensation. These are the standard methods employed by the architectural profession: Professional Fee Plus Expenses, Multiple of Direct Personnel Expense, Percentage of Construction Cost and Fixed Fee—and most practitioners are familiar with the merits of the various methods. Two multiples of direct personnel expense are provided in this agreement: one for office personnel and one for construction site personnel.

Services are divided into two phases: design and construction. The design phase services are critical as they determine the feasibility of the project and set the tone for the successful completion of the project. During this phase the CM:

- consults with the owner and the architect on project requirements;
- provides expertise to the architect to assure economical and functional design;
- prepares and continually updates the project budget;
- assists in the coordination of the contract documents as they are being prepared, providing suggested alternative solutions as necessary to secure construction feasibility and maintain schedules, to ascertain jurisdictional overlap, verify that all work is included and to accommodate phased construction;
- schedules and assists in the early purchase of materials and equipment requiring long-lead time;
- analyzes the availability of labor for critical phases of the work and prepares equal employment opportunity programs;
- prepares pre-qualification criteria for bidding and conducts pre-bid conferences;
- prepares bid analysis, providing recommendations to the owner for award of contracts. (This service is similar to that usually provided by the architect; however, in the construction management process, this service may require processing of anywhere from 10 to 100 separate contracts.)

With the beginning of construction, the CM exercises control on the construction site. During this phase the CM:

- coordinates and schedules the various contractors;
- updates the project construction budget with real numbers as contracts are let;
- inspects the work of the contractors on a continuing basis (the architect inspects only at substantial completion and at final completion) all in accordance with the owner's requirements relating to cost, time and quality.

The architect is still the final judge of the meaning and intent of the drawings and specifications, and no service delineated in B801 that the CM provides impinges on the architect's responsibility under the standard AIA Owner/Architect Agreement or under the General Conditions of the Contract for Construction, AIA Document A201.

Various additional services are available from the construction manager, the most important being the providing of conditions of the contract not provided by a contractor. The cost

of providing these services is paid to the CM by the owner as a reimbursable expense, and staff time is paid for on the basis of an additional service.

Other services are similar to those found in the owner/architect agreement, with the additional provision requiring the owner to retain an architect. However, the owner is now more personally involved in his project, since he is dealing with a multiplicity of contractors and is making cost and design decisions throughout the design and construction process.

When is a fixed limit not a guaranteed maximum cost?

This agreement provides for the establishment *in writing* of a *fixed limit of construction cost*; this is *not a guaranteed maximum price* but rather a total cost that both the architect and CM are working within. The CM's obligation to meet this construction cost is as defined in the agreement. Only the owner has the right to modify this fixed dollar limit; but the architect and CM can revise their estimates to reflect current market prices if the owner has delayed bidding. The owner's options when the fixed limit is apparently going to be exceeded are the same as found in the owner/architect agreement: 1) increase the fixed limit, 2) authorize re-bidding, or 3) cooperate in the re-design of the contract items or subsequent contracts to achieve the established fixed dollar limit.

Arbitration: This is the standard arbitration provision adopted by the AIA in December of 1973. The provision specifically prohibits *joinder* or *consolidation* of arbitration proceedings unless agreed to in writing by the parties. While this has always been the intent of the provision, the revision was made so that the language would be perfectly clear.

Reimbursable expenses: Two important differences in reimbursable expenses between the owner/architect agreement and the owner/CM agreement are: 1) reimbursement for insurance premiums, and 2) reimbursement for construction support activities, such as work items included in the Conditions of the Contract and in Division 1 of the specifications.

Professional liability: Insurance premiums for the CM are based on the specific project, similar to the method employed for joint ventures. Because the premium is based on the services to be rendered and on the type of project, each contract must be reviewed by the professional liability insurance carrier and evaluated independently. This may change in the future when wider use of CM services permits the development of a basis for actuarial projections.

While it is impossible to predict how B801 may be modified in practice, it is important to recognize that this document and the companion CM documents now available from the AIA will become the basic criteria upon which owners and practitioners will evaluate and judge proposals for construction management services.

—Steven H. Rosenfeld

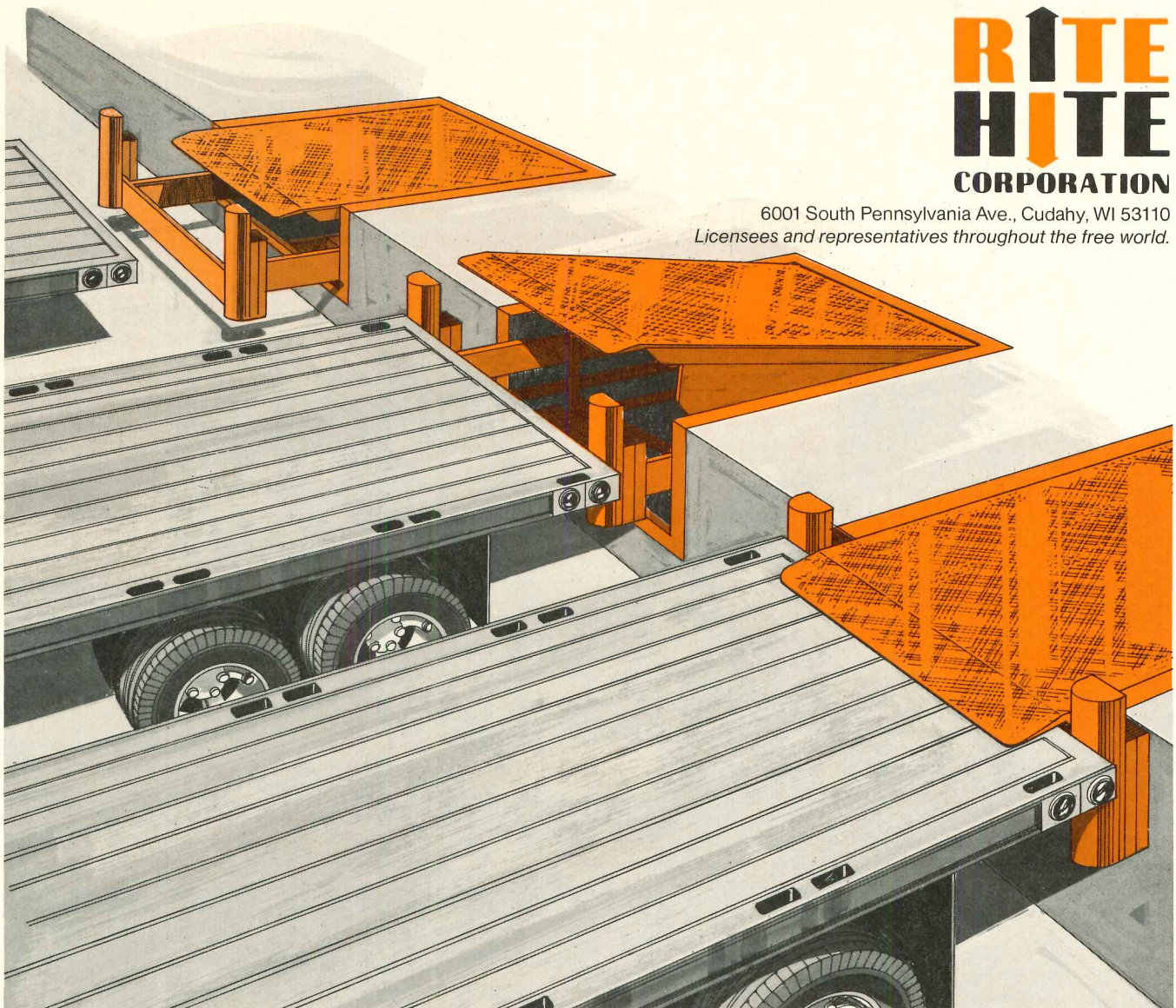
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Few architectural elements are more traditional than the classic mansard roof. Its current adaptation to highly contemporary design thus provides a dramatic example of "the very old becoming the very new," a phrase which Frank Lloyd Wright once applied to Terne metal itself. And wherever such fascia elements are used, the outstanding functional characteristics of Terne, along with its inherent affinity for both form and color, are available at relatively moderate cost.

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WELTON BECKET AND ASSOCIATES
SAN FRANCISCO, CALIFORNIA

ROOFER: MARELICH MANUFACTURING COMPANY
SAN BRUNO, CALIFORNIA

For more data, circle 35 on inquiry card



Average costs of classroom buildings

The following table presents national averages of costs for college classroom buildings.

Building system	Medium		High	
	\$/SF	% Tot	\$/SF	% Tot
Site improvement	.46	1.1	.58	1.2
Foundations	1.06	2.4	1.06	2.2
Floors on grade	.34	.8	.34	.7
Superstructure	9.03	20.9	9.03	18.4
Roofing	.52	1.2	.52	1.1
Exterior	4.99	11.6	6.24	12.7
Partitions	2.81	6.5	3.52	7.2
Wall finishes	.43	1.0	.54	1.1
Floor finishes	.48	1.1	.54	1.1
Ceiling finishes	.72	1.7	.90	1.8
Conveying systems	.61	1.4	.68	1.4
Specialties	.93	2.2	1.04	2.1
Fixed equipment				
HVAC	9.01	20.9	11.27	22.9
Plumbing	2.20	5.1	2.45	5.0
Electrical	7.65	17.7	8.51	17.2
Gen. conditions	1.89	4.4	1.89	3.9
Total	\$43.13	100.0	\$49.11	100.0

In order to provide cost services to professionals during budgeting and conceptual phases, Wood & Tower has developed a computer system called Construction Budget Analysis. The only information needed is a specific category for the building, its gross area, and the postal zip code of its location. A company desiring preliminary cost information need only telephone the Princeton office of Wood & Tower, (609)921-6500.

*John H. Farley, senior editor
Dodge Building Cost Services*

INDEXES: July 1975

1941=100.00 (except as noted)

Metropolitan area	Cost differential	Current Indexes				% change last 12 months
		non-res.	residential	masonry	steel	
U.S. Average	8.5	493.6	463.4	485.0	472.9	+ 7.77
Atlanta	7.5	592.9	559.0	581.4	569.8	+ 5.13
Baltimore	8.5	549.9	517.0	539.1	523.9	+ 4.32
Birmingham	7.3	446.2	415.1	433.1	431.0	+ 8.13
Boston	9.0	492.4	465.3	489.8	474.4	+ 6.35
Buffalo	9.1	542.4	509.4	533.5	518.7	+ 6.98
Chicago	8.3	548.8	521.8	528.6	521.5	+ 4.84
Cincinnati	8.8	526.7	495.7	513.1	500.1	+ 6.89
Cleveland	9.0	525.8	494.9	516.1	502.4	+ 5.34
Columbus, Ohio	8.2	508.4	477.4	501.2	487.2	+ 6.64
Dallas	7.9	494.7	479.1	485.6	477.2	+ 7.60
Denver	8.4	538.3	506.4	530.9	517.6	+11.36
Detroit	9.8	562.6	535.9	572.3	548.7	+ 6.69
Houston	7.4	454.4	426.7	442.7	434.5	+ 8.74
Indianapolis	7.8	445.1	418.0	435.6	425.2	+ 8.03
Kansas City	8.7	489.3	462.4	480.4	472.0	+10.38
Los Angeles	8.5	560.8	512.7	543.8	531.9	+ 6.28
Louisville	7.6	480.6	451.3	468.1	459.8	+ 4.84
Memphis	8.4	508.7	477.7	489.0	480.5	+ 9.57
Miami	7.9	507.5	483.5	493.0	482.1	+ 6.80
Milwaukee	8.7	564.9	530.5	556.7	541.9	+10.48
Minneapolis	8.9	521.6	490.7	514.2	502.3	+ 9.38
Newark	9.0	488.4	458.7	484.5	471.7	+11.98
New Orleans	7.5	471.5	445.2	466.0	454.3	+ 5.92
New York	10.0	538.2	500.4	527.1	515.0	+ 5.33
Philadelphia	9.1	539.4	513.9	536.4	521.9	+ 7.20
Phoenix (1947 = 100)	8.2	291.8	274.1	283.6	277.3	+10.02
Pittsburgh	8.9	482.4	453.9	478.6	463.1	+ 7.07
St. Louis	8.7	505.9	477.6	501.5	490.1	+ 8.43
San Antonio (1960 = 100)	7.6	188.6	177.1	185.6	180.7	+ 7.58
San Diego (1960 = 100)	8.7	209.7	197.0	205.8	200.4	+ 8.22
San Francisco	9.6	734.0	671.0	725.3	704.1	+10.62
Seattle	8.6	486.8	435.7	481.3	462.5	+ 7.89
Washington, D.C.	8.4	488.3	458.6	479.5	466.6	+11.54

Cost differentials compare current local costs, not indexes, on a scale of 10 based on New York

Tables compiled by Dodge Building Cost Services, McGraw-Hill Information Systems Company

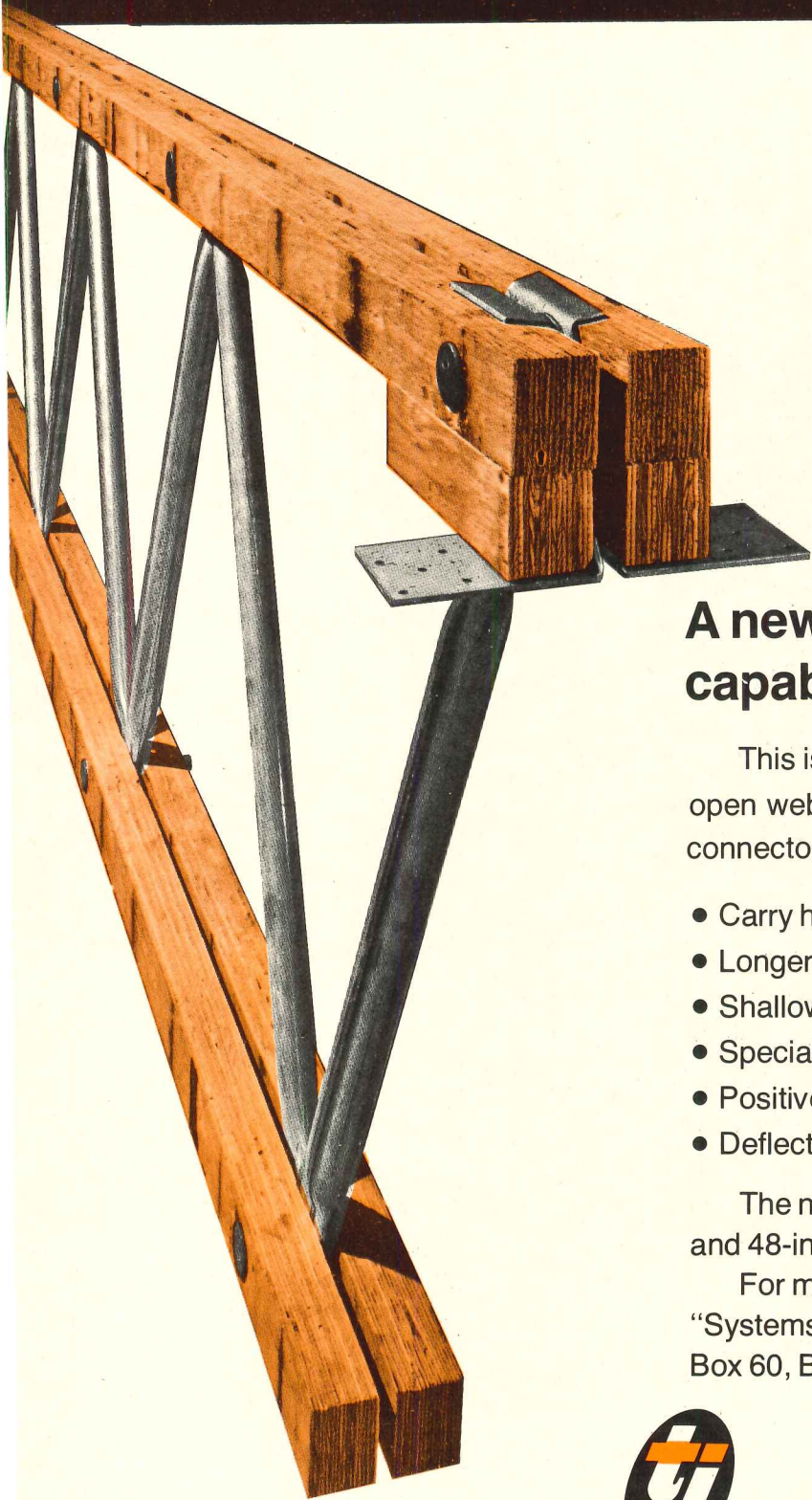
HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

Metropolitan area	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974 (Quarterly)				1975 (Quarterly)			
										1st	2nd	3rd	4th	1st	2nd	3rd	4th
Atlanta	321.5	329.8	335.7	353.1	384.0	422.4	459.2	497.7	544.8	555.2	556.7	573.5	575.0	583.8	585.3		
Baltimore	285.7	280.9	295.8	308.7	322.8	348.8	381.7	420.4	475.5	516.3	517.8	532.8	534.3	538.7	540.2		
Birmingham	265.9	270.7	274.7	284.3	303.4	309.3	331.6	358.3	402.1	405.5	407.0	419.7	421.2	438.6	440.1		
Boston	257.8	262.0	265.7	277.1	295.0	328.6	362.0	394.4	437.8	455.1	456.6	461.0	462.5	484.1	485.6		
Chicago	311.7	320.4	328.4	339.5	356.1	386.1	418.8	444.3	508.6	514.2	515.7	528.1	529.6	539.2	540.7		
Cincinnati	274.0	278.3	288.2	302.6	325.8	348.5	386.1	410.7	462.4	484.5	486.0	498.6	500.1	518.0	519.5		
Cleveland	292.3	300.7	303.7	331.5	358.3	380.1	415.6	429.3	462.2	490.3	491.8	508.0	509.5	516.6	518.1		
Dallas	260.8	266.9	270.4	281.7	308.6	327.1	357.9	386.6	436.4	453.7	455.2	476.4	477.9	488.3	489.8		
Denver	294.0	297.5	305.1	312.5	339.0	368.1	392.9	415.4	461.0	476.1	477.6	508.5	510.0	530.4	531.9		
Detroit	284.7	296.9	301.2	316.4	352.9	377.4	409.7	433.1	501.0	519.5	521.0	537.2	538.7	554.4	555.9		
Kansas City	256.4	261.0	264.3	278.0	295.5	315.3	344.7	367.0	405.8	435.6	437.1	443.4	444.9	481.1	482.5		
Los Angeles	297.1	302.7	310.1	320.1	344.1	361.9	400.9	424.5	504.2	514.3	515.8	531.3	531.8	546.7	548.2		
Miami	277.5	284.0	286.1	305.3	392.3	353.2	384.7	406.4	447.2	467.6	469.1	484.6	485.5	499.5	501.0		
Minneapolis	285.0	289.4	300.2	309.4	331.2	361.1	417.1	412.9	456.1	469.7	471.2	487.1	488.6	513.9	515.4		
New Orleans	256.3	259.8	267.6	274.2	297.5	318.9	341.8	369.7	420.5	437.5	439.0	440.6	442.1	463.5	465.0		
New York	297.1	304.0	313.6	321.4	344.5	366.0	395.6	423.1	485.3	497.4	498.9	513.8	515.3	524.1	525.5		
Philadelphia	280.8	286.6	293.7	301.7	321.0	346.5	374.9	419.5	485.1	495.7	497.2	517.0	518.5	531.5	533.0		
Pittsburgh	267.0	271.1	275.0	293.8	311.0	327.2	362.1	380.3	424.4	443.7	445.2	464.1	465.6	475.2	476.7		
St. Louis	280.9	288.3	293.2	304.4	324.7	344.4	375.5	402.5	444.2	458.7	460.2	475.2	476.7	497.5	499.0		
San Francisco	368.6	386.0	390.8	402.9	441.1	465.1	512.3	561.0	632.3	647.1	648.6	671.0	672.5	716.0	717.5		
Seattle	268.9	275.0	283.5	292.2	317.8	341.8	358.4	371.5	424.4	437.8	439.3	448.7	450.2	472.5	474.0		

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

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The outlook for industrial building activity

Capital spending for new plants and equipment is the vital ingredient in the recipe for a smoothly functioning economy where productivity and growth are desired. Not only does investment add directly to the nation's gross national product (the total output of goods and services), but it also provides the necessary capacity for future increases in output. And of particular interest to architects and engineers, the construction of new industrial buildings is an important component of capital spending. In this article we'll take a look at what's been happening to industrial building construction and what's likely to happen over the next few years.

Changes in business activity have a magnified effect on investment spending and, within the investment sector, industrial building is even more sensitive to the cyclical movements of the economy than total plant and equipment expenditures. Over the past two decades, plant and equipment spending declined significantly three times, each drop associated with a recession: in 1958, 25 per cent, in 1961, 5 per cent, in 1971, 6 per cent. The corresponding drops in manufacturing building contracts were: 35 per cent, 14 per cent and 28 per cent, in each case substantially larger than for all plant and equipment expenditures.

Why? When the economy slides into a downturn, production declines and the operating rate (how much of plant capacity is being utilized) also falls. With excess capacity available, business has little incentive to expand capacity by investing in additional plants. Consequently, during recessions manufacturers not only reduce their investment spending, but they also lower the proportion of such spending that is devoted to plants.

And this is exactly what happened during the three periods of declining plant and equipment expenditures. From 1957 to 1958, manufacturing building contracts as a per cent of manufacturing plant and equipment expenditures fell from more than 13 per cent to a little more than 11 per cent. From 1960 to 1961, the decrease was almost one and one-half percentage points. And during the last recession the proportion fell from over 11 per cent to under 9 per cent. This explains why industrial building construction is more volatile than all manufacturing plant and equipment spending.

With plant and equipment expenditures and industrial building contracts running at record levels over the past two years, why are we forecasting a substantial drop in contract

value of this building type? Essentially three reasons should resolve this apparent contradiction. First, plant and equipment spending is what economists call a "lagging indicator," that is, one that follows general business activity. For instance, gross national product (GNP) began expanding in 1971, indicating that the economy was pulling out of that recession, while at the same time plant and equipment spending was declining. And, as we noted above, industrial building contract value dropped sharply in 1971. Last year another apparent contradiction occurred. The economy was (and still is) depressed. Although GNP climbed about \$100 billion, that increase was caused solely by double digit inflation—real GNP actually dropped nearly \$20 billion. But both plant and equipment expenditures and industrial building contracts set all-time records in 1974.

Second, business is operating at a very low rate of capacity utilization. Manufacturers are now operating at less than 70 per cent of capacity, sharply below the preferred 90 per cent rate. Until production picks up and more of capacity is utilized, business will not be tempted to expand and manufacturing construction will be hindered.

Finally, the outlook for profits is not overly sanguine. Corporate profits of manufacturing companies have been on a plateau since 1973 and are not expected to begin rising until economic recovery occurs.

On the brighter side, it must be stressed that if the forecasted decline in industrial building contracting is realized, contract value would still be at a very high level—the third highest in history. It's rather like saying that we shouldn't be too downhearted if a baseball player "slips" in homerun output from 60 a year to 50, which after all would still be a pretty good performance.

The sequence of McGraw-Hill surveys of business plans for plant and equipment spending shows surprising strength considering the present weakness of the economy. Last fall's survey indicated that all business had *planned* to spend 12 per cent more in 1975 than 1974 on new plants and equipment. By March, 1975, when the latest survey was taken, all business had lowered their capital spending sights to a 5 per cent increase. Manufacturing companies also reduced their plans. Back in October, they *planned* an increase of 21 per cent, while this spring they now plan a 9 per cent rise. What these facts suggest is that business, although cutting back sharply from last

fall's plans, still projects an *increase* in capital spending, surely less than gloomy given the current economic scene.

Among the various industries, iron and steel companies plan the biggest increase in plant and equipment expenditures—more than 50 per cent, while the aerospace and petroleum industries also plan substantial hikes in investment. The largest reduction in capital spending is planned by the automobile and truck industry.

McGraw-Hill also surveyed the potential impact of the 10 per cent investment tax credit, which Congress enacted this spring. According to the manufacturers surveyed, they plan to invest nearly \$1.2 billion more than they would have in 1975, simply because of the tax credit. The iron and steel and the machinery industries would appear to be the biggest beneficiaries of the tax credit, since those two alone plan nearly \$600 million more of investment between now and 1978.

Finally, taking a longer look into the future, the outlook for industrial building construction is a good deal brighter. Several commentators have said that massive amounts of new investment will be needed by the American economy over the next decade. For instance, Treasury Secretary William Simon stated that U. S. business will have to raise at least \$4 trillion—yes, that's *trillion*—to finance new plants and equipment. Even though there might be some quibbling about the exact amounts required, it's safe to say that most economists would agree that huge amounts of capital spending are needed. Several factors pointed up the reasons why. First of all, much of U. S. industry's plant is outmoded and inefficient, and there is a need for massive modernization of our manufacturing facilities.

Second, as we've noted before, making U.S. industry more efficient is possibly the best way of combatting double-digit inflation. Moreover, since a significant portion of capital spending over the last few years has gone into pollution control equipment and increased safety, there is an even greater urgency to invest in plant and equipment that improves efficiency.

Third, if economic growth is one of our nation's goals, as most would agree, then increased investment is a must.

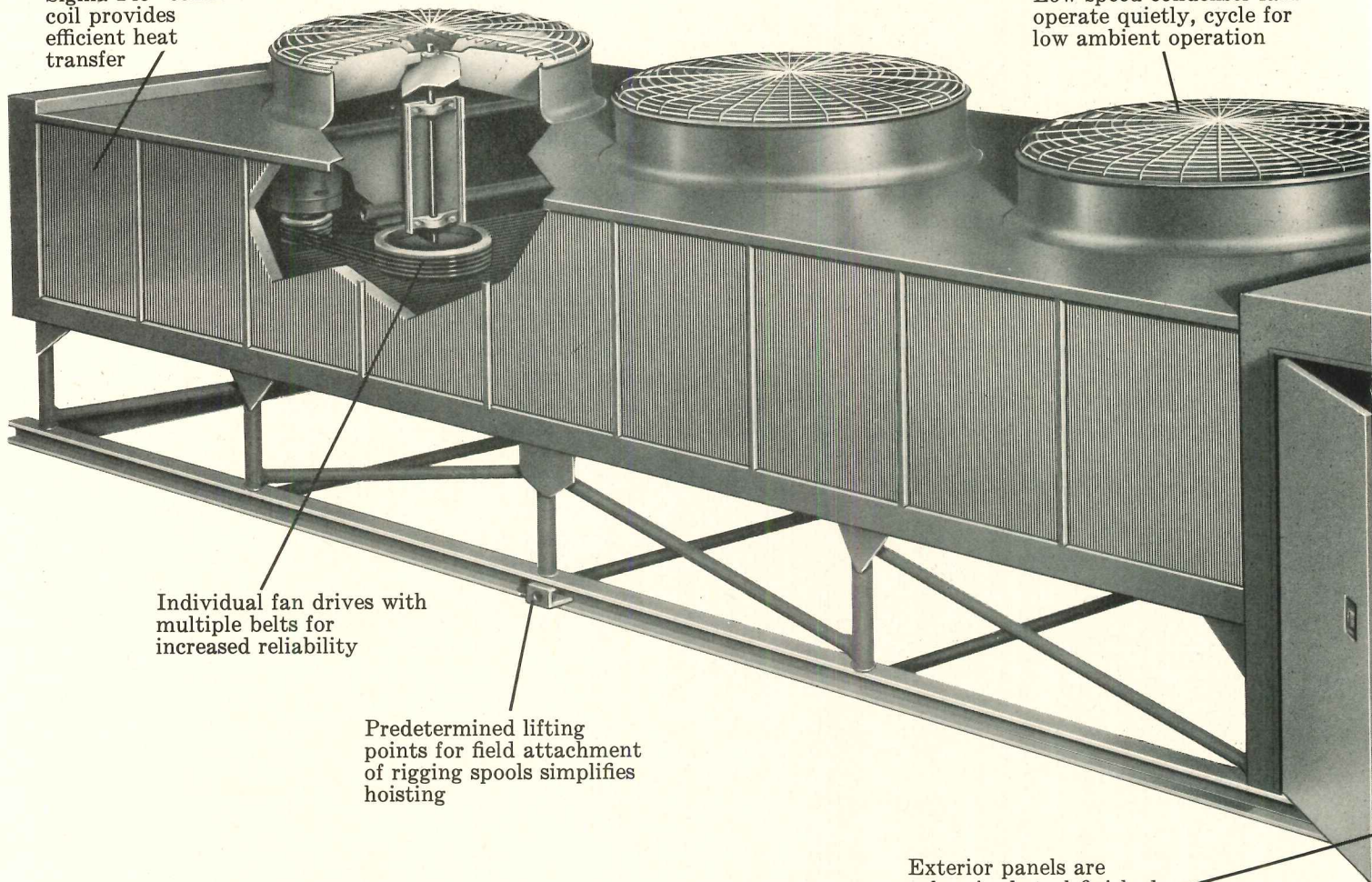
Finally, some have suggested that higher capital spending is necessary to reduce unemployment, another economic goal that few would disagree with.

Henry C. F. Arnold

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TRANE Air Cooled CenTraVacs are available in six nominal sizes: 130; 160; 180; 210; 270; and 320 tons. The two basic models are—Standard Unit: 20°F to 115°F operating range. Low Ambient Unit: 0°F to 115°F operating range.

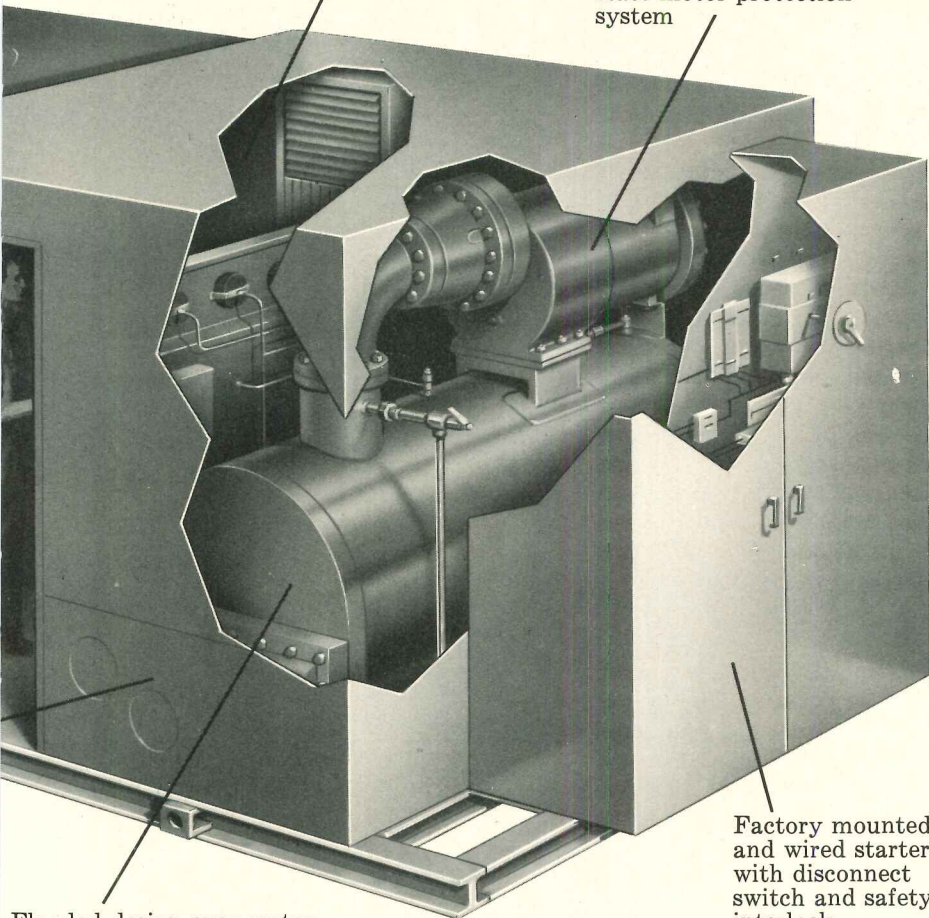
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The start-up of each Air Cooled CenTraVac is supervised by a service engineer from one of the over 80 TRANE Service Agencies throughout the nation. In addition TRANE'S service policy includes the complete instruction of your operating personnel. Then, to make sure you not only get a quality product, but the service to back it up, over 300 service engineers and 550 sales engineers are available for help nationwide.

For further information, contact your nearby TRANE sales office or write The TRANE Company, Commercial Air Conditioning Division, La Crosse, Wisconsin 54601.

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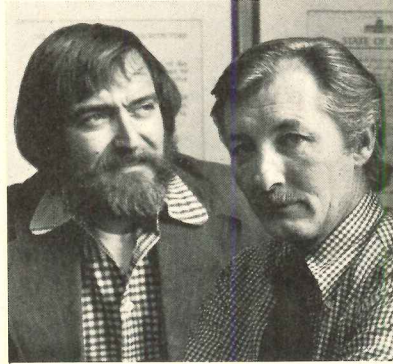
Flooded design evaporator with removable water boxes simplifies water-side cleaning

Factory mounted and wired starter with disconnect switch and safety interlock

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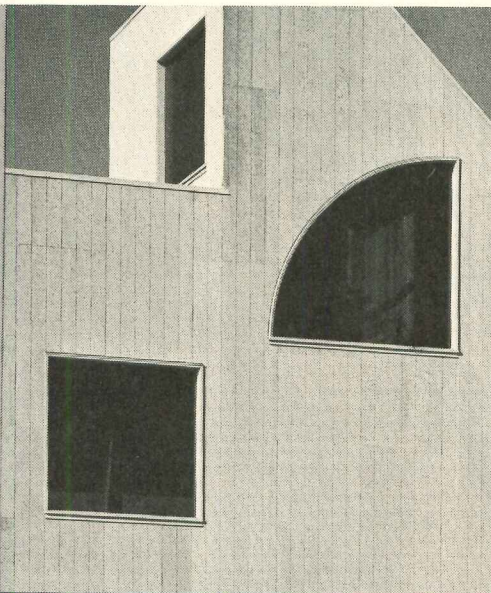
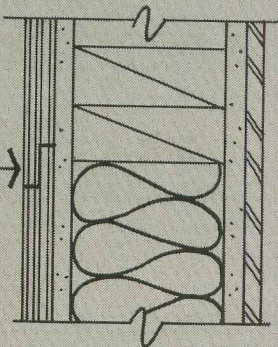


**Plywood gave three things
to this Oakland restaurant: economy, texture,
and a design award to Sandy & Babcock.**



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SHIPLAP JOINT ON EDGES
AND ENDS.
HORIZONTAL JOINTS
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For steak, lobster and a whale of a sailboat view, you can't beat the Rusty Scupper in Oakland, California.

It floats over the water like a huge wood scow riding at anchor in the embarcadero.

The 1975 Plywood Design Awards jury was sufficiently impressed to give it a citation and a few chosen words: "This restaurant is a strong, simple sculptural form that makes the most of an excellent marine site."

The over-water building is 8,300 square feet on six levels, enough room for 250 young sea dogs put into port.

The "Scupper," only part of a large

commercial and residential project, fits in beautifully with its neighbors at Portobello.

"Some of the exterior forms of the other building are repeated and orchestrated in this structure," said the architects, Sandy & Babcock, AIA, San Francisco.

Exterior of the building is 5/8-inch rough-sawn plywood covered with a semi-transparent stain.

"We selected plywood because of its economy, consistency of texture and durability in facing the waterfront elements," said Babcock.

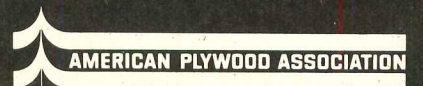
To avoid the stacked appearance common to multi-story plywood walls,

the architects decided against using "Z" flashing at horizontal joints. Instead, the plywood panels were horizontally staggered and all joints were shiplapped.

For more information on plywood walls, write American Plywood Association, Department AR-075, Tacoma, Washington 98401.

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And best of all, you won't have to waste time, paint, or people repainting the center stripes every year.

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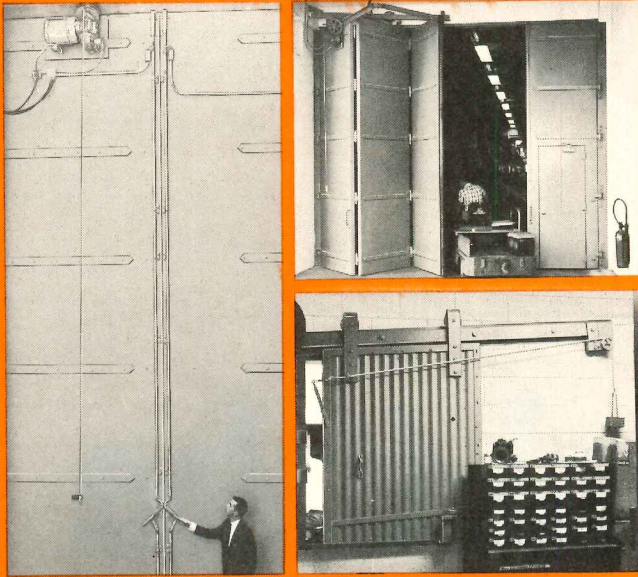


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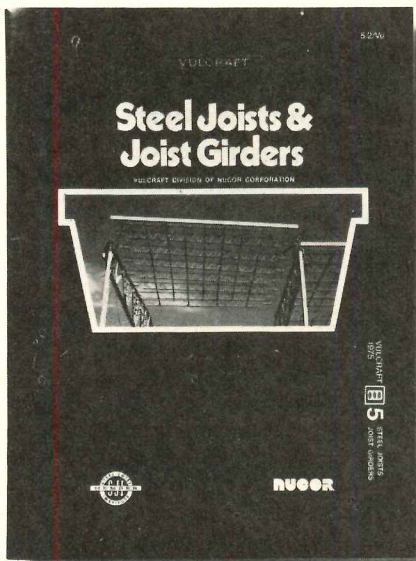


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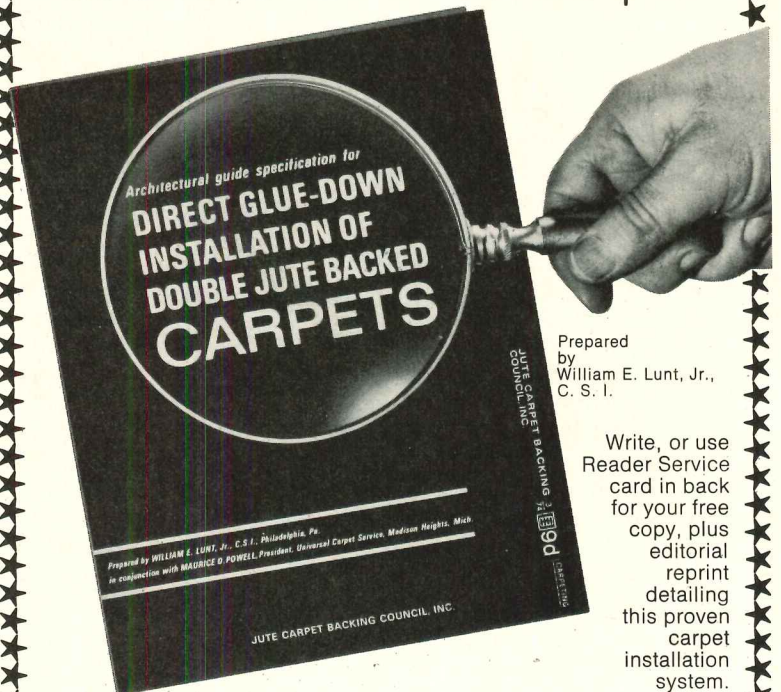
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The guide spec that opened
countless doors to carpet



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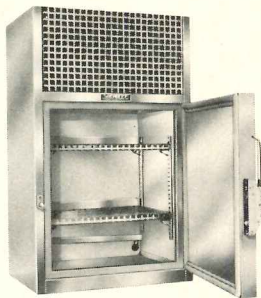
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when it comes to lab design we fit in

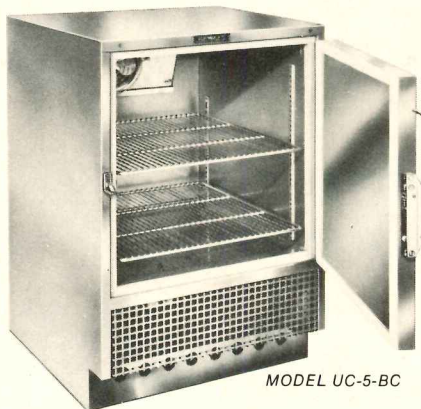
Under-counter or wall-mounted, Jewett's lab refrigerators are dimensioned to fit into casework modules. Exteriors are of polished stainless steel or can be finished to your specifications.



MODEL WM-CW



The model WM-1-CW, illustrated, measures 30"H x 18"W x 13"D, has a 1.5 cubic foot capacity and is cooled by a cold-wall system. Other single door models range in capacity from 2.3 cu. ft. to 4.3 cu. ft. Double door models range in capacity from 6.6 to 9.6 cu. ft. and have blower-coil cooling systems.



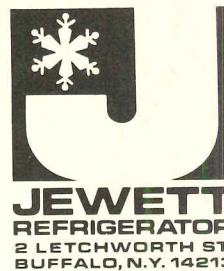
MODEL UC-5-BC

The model UC-5-BC, illustrated, is only one of many 5.4 cu. ft. models available with the same exterior dimensions, 34½"H x 24"W x 24"D. With your choice of cold-wall, blower-coil, or ice-cuber cooling systems, they are ideal space savers for lab, pharmacy or nurses station.

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OFFICE NOTES

New offices, office changes

Lorenzi Dodds & Gunnill Inc. has moved to new offices at 1400, The Bank, 307 Fourth Avenue, Pittsburgh, Pa.

McKee-Berger-Mansueto, Inc. has announced the opening of a regional office at 222 St. Paul Place, Baltimore, Md.

John Powell, AIA, has formed a consulting service providing interior planning for architects. His office is located at 41 Ferry Street, New Hope, Pa.

The Morristown, N.J. firm of Porter and Ripa Associates, Inc. has announced the formation of a joint venture company with Bakar Binladen and Abdallah Almihdar of Saudi Arabia. The new company will be called **SAEC** and will provide engineering for projects in the Mideast. Headquarters for the joint operation are in Jeddah, with offices also in Riyadh.

New associates, promotions

Bellante, Clauss, Miller & Nolan, Inc., Scranton, Pa., has announced four associate partners: **Charles J. Callaghan, Jr.**, director of architectural design; **David C. L. Leung**, director of planning; **Vyto V. Petrauskas**, director of architecture; **Harvey M. Rubenstein**, director of landscape architecture.

R. Cecil Peters, AIA, has been named an associate of McCarty Bullock Holsaple, Inc., Knoxville, Tenn.

John Dziurman, AIA, has joined Straub, Van Dine, Associates as a principal and vice president.

Connell Associates, Inc., Coral Gables, Fla., has promoted **Fernando I. Zaragoza, PE**, to the position of senior structural engineer.

John Niceley, AIA, has been appointed to the design staff of Willis & Associates, Inc., as project manager.

Richard Meier and Associates, N.Y.C., has announced the appointment of **Henry Smith-Miller**, architect, as an associate.

The affiliated firms of The Grad Partnership, architects of N.J. and Walker/Grad Inc., New York City, have appointed **Ira Davis** as director of business development.

Perkins & Will has appointed three senior associates and two associates in its New York City and White Plains offices. The senior associates are **Robert E. Gray**, **John M. Kenney** and **William F. Schacht**. The two new associates are **Edward W. Gay** and **Donald S. Salvato**.

Robert J. McNamara has been named a partner of LeMessurier Associates/SCI with offices in Cambridge, Mass., St. Louis and New York City.

The Iowa City firm of Hansen Lind Meyer has announced the appointment of five new associates: **John Pattinson**, **James M. Cook**, **Brian P. Gutheinz**, **Charles M. Engberg** and **Dale Johnson**.

The selection of **William B. Johnson** as president of Joiner-Pelton-Rose, Inc. has been announced by J. W. Joiner, chairman of the board.

Louis N. Maloof has been named executive vice president and chief operating officer of Heery & Heery Architects, announced by George Heery. Also **W. Ennis Parker** has been named executive vice president of the firm.

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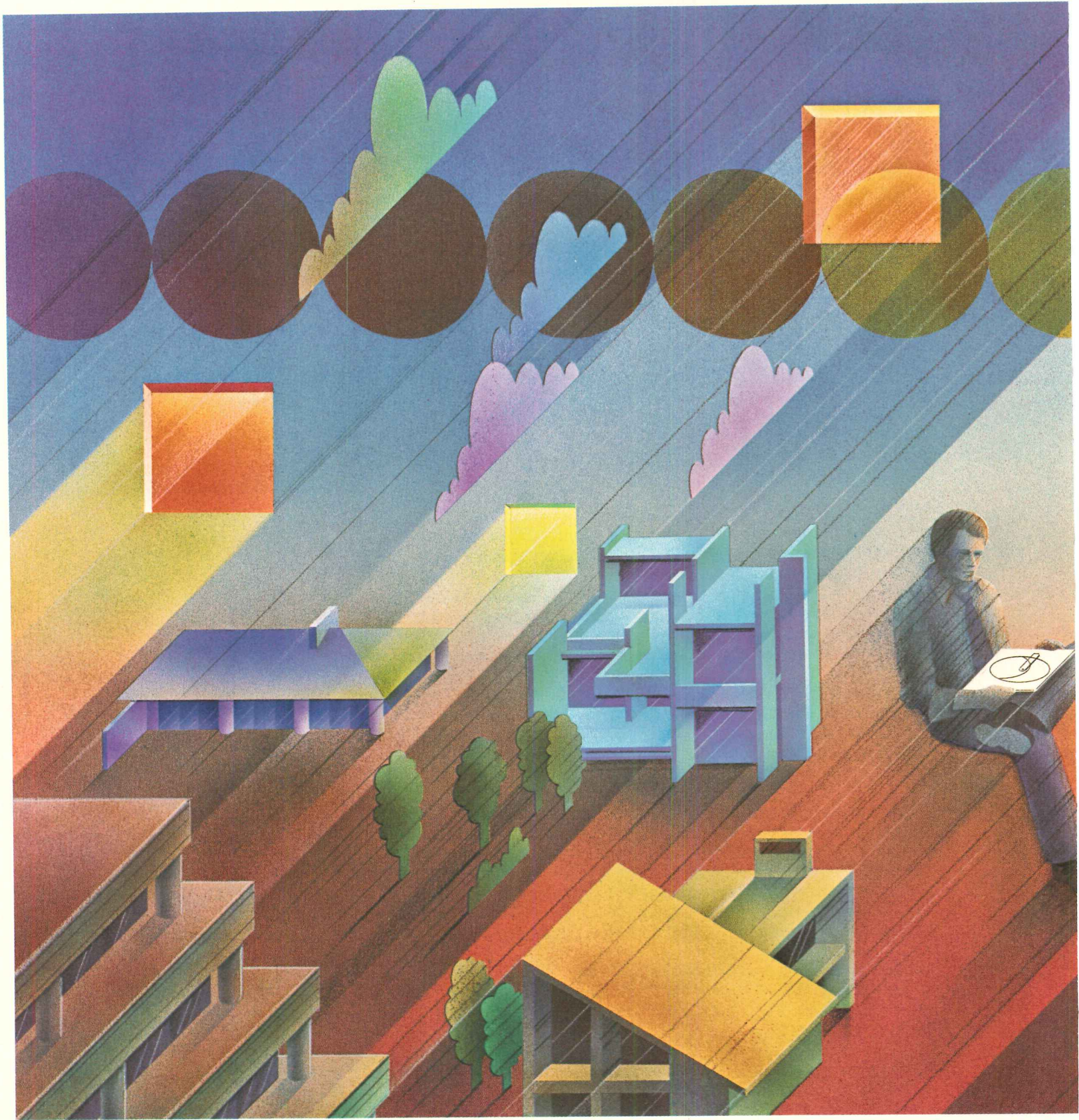
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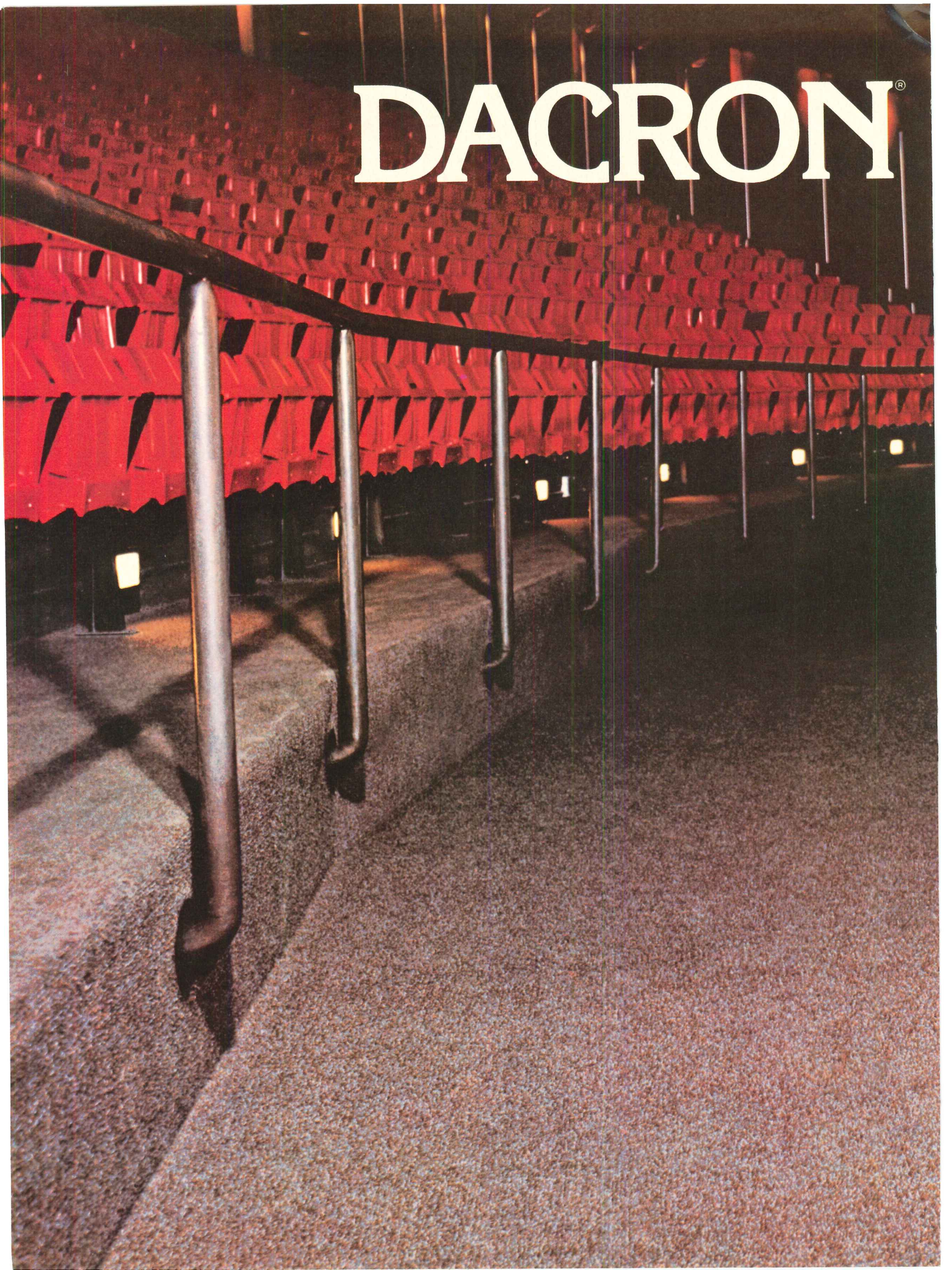
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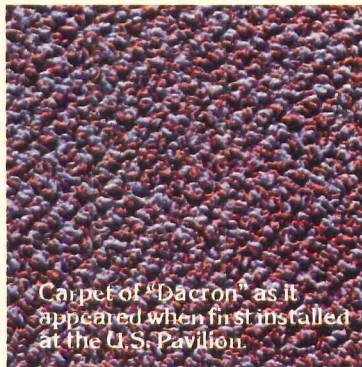
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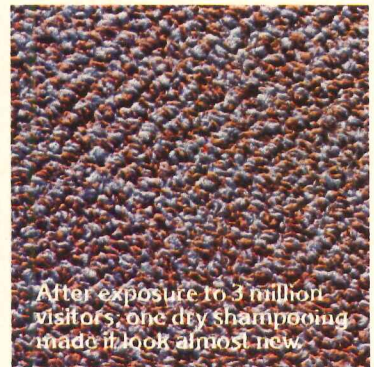


AND EXPO '74

This was a tough test for any carpet — particularly one with the look of wool.



Carpet of "Dacron" as it appeared when first installed at the U.S. Pavilion.



After exposure to 3 million visitors, one dry shampooing made it look almost new.



expo'74

This is the theatre in the U.S. Pavilion as it looked just before Spokane's Expo '74 closed.

The carpet here and in the adjoining exhibit areas had, by then, welcomed as many as 3+ million visitors. Yet it still looked almost new.

Its warm, spun-yarn look together with its ability to withstand tough abuse originally "sold" U.S. Department of Commerce officials on Dacron* polyester, recommended by Du Pont for commercial carpets.

From opening day on, performance of the carpet exceeded expectations. Maintenance was minimal: nightly vacuuming and occasional spot cleaning.

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You can specify carpet with pile of "Dacron." For full particulars, write Du Pont, Carpet Fibers Division, Rm. AR, Centre Road Building, Wilmington, DE 19898.

*Du Pont registered trademark for its polyester fiber.
Du Pont makes fibers, not carpets.



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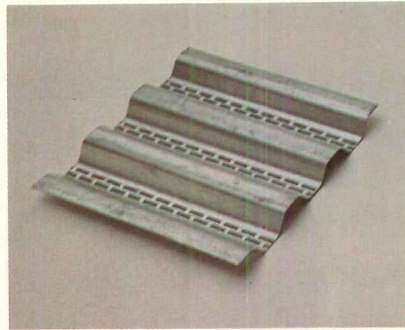
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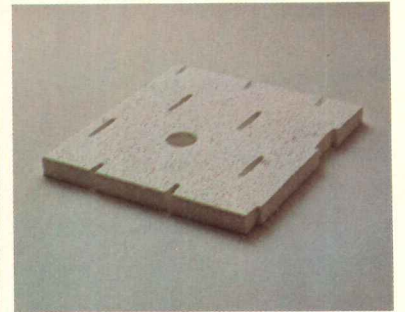
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1. Slotted Metal Base

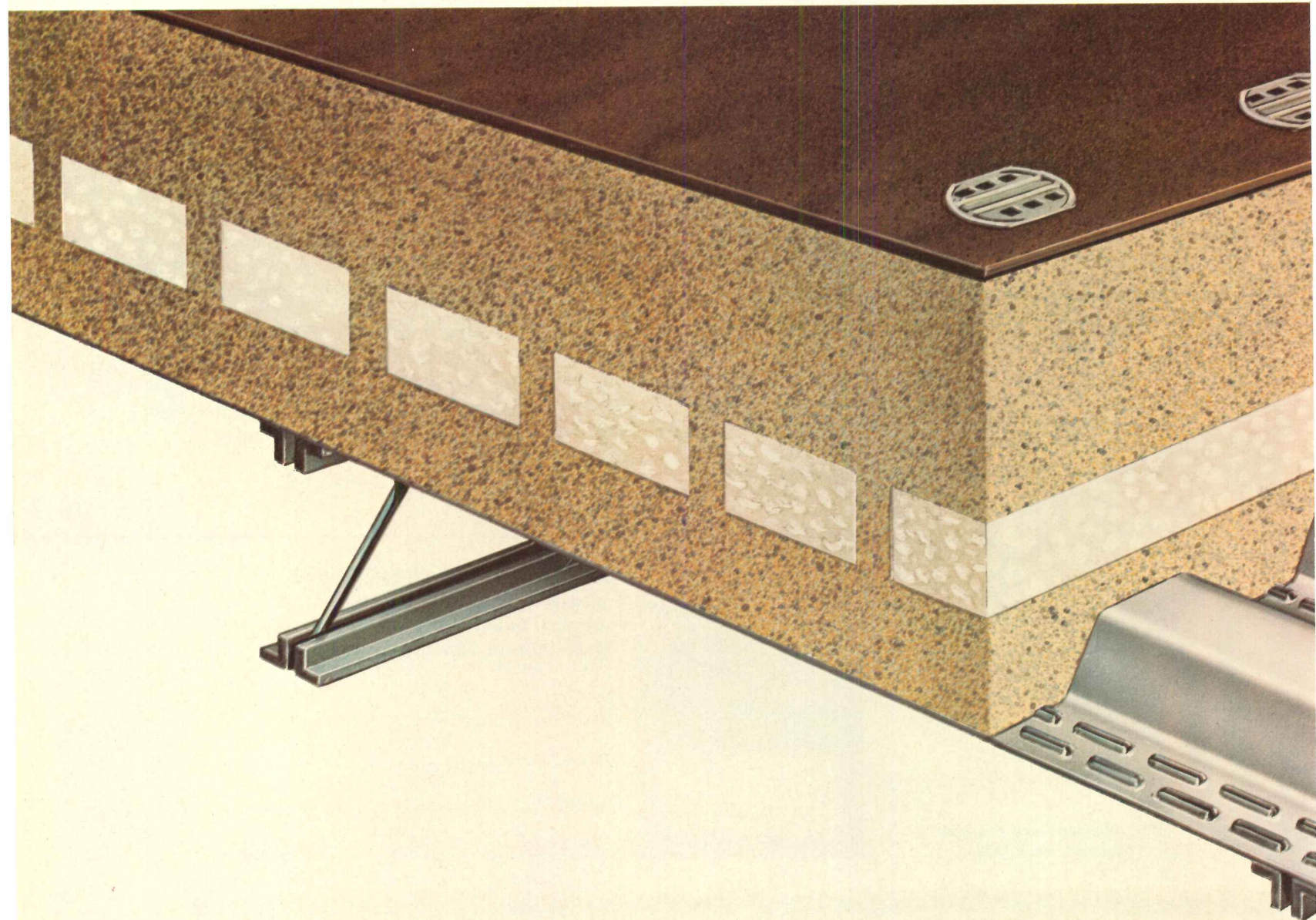


2. Insulperm™ Insulation Board



3. Zonolite Base Ply Fasteners

Three design improvements tops in performance,



This isn't the Zonolite Roof Deck you knew ten, five, or even two years ago. Design improvements make installation fast and simple, cut drying time to a minimum and permit early application of built-up roofing. Winter or summer. North or South.

A new Slotted Metal Base, the first improvement.

The new base helps speed drying and venting, provides a unique structural marriage with lightweight Zonolite Insulating Concrete for maximum strength and stability.

New Insulperm™ Insulation Board, the second improvement.

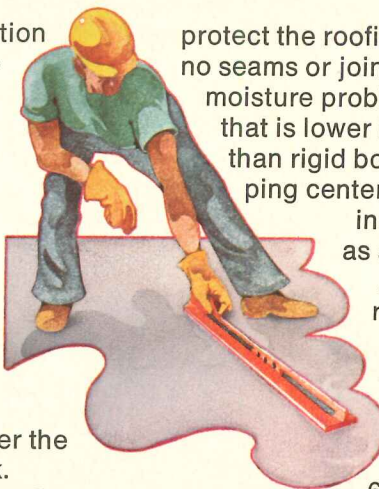
Insulperm board is slotted to promote fast, complete drying and venting and also ensures maximum shear strength in the insulation sandwich. One of the finest insulating materials known,

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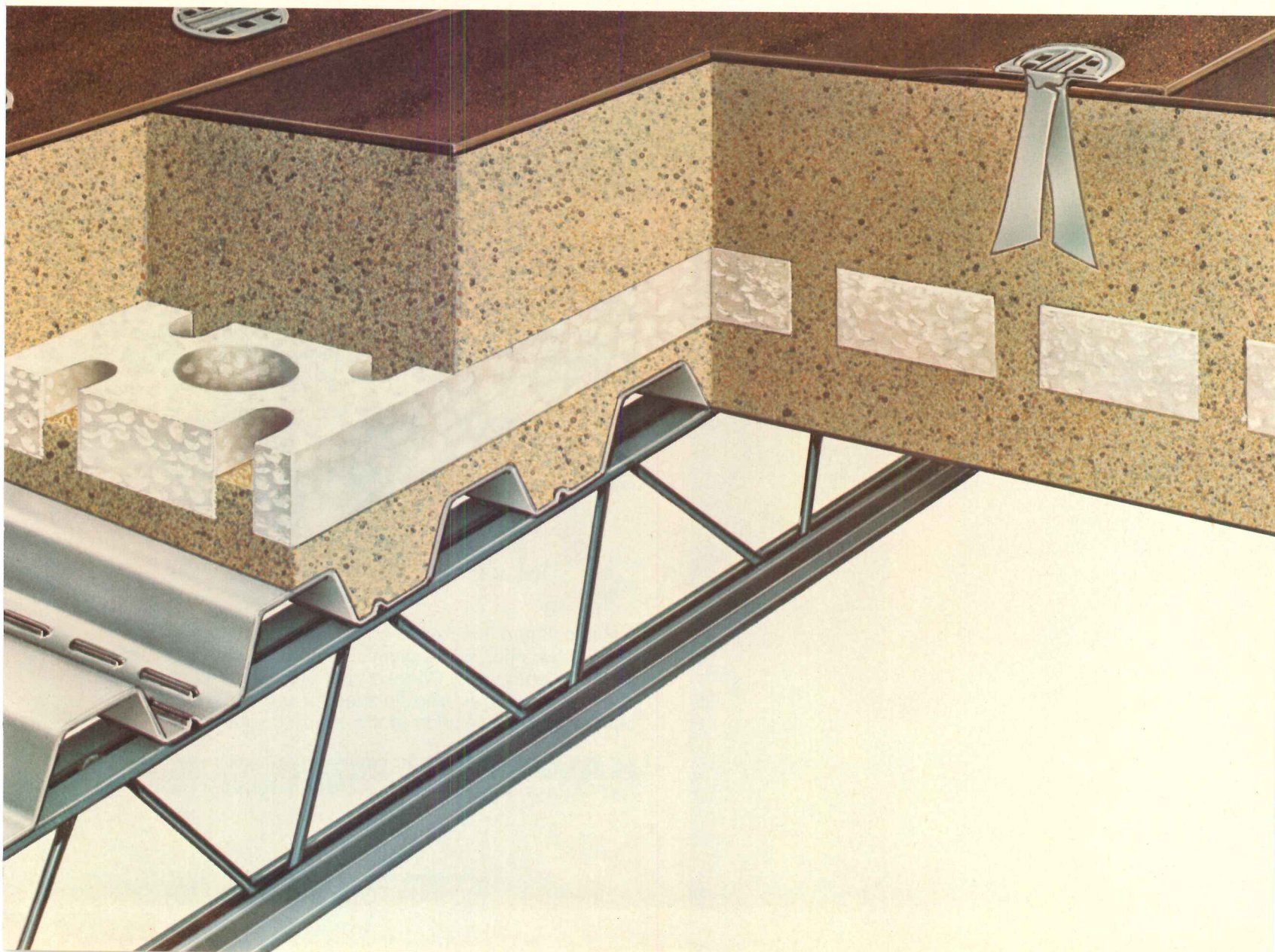
industrial plants as well as schools and churches.

Ask your Zonolite representative to give you all the facts on new, improved Zonolite Roof Decks. Or write W. R. Grace & Co., 62 Whittemore Avenue, Cambridge, Massachusetts 02140.

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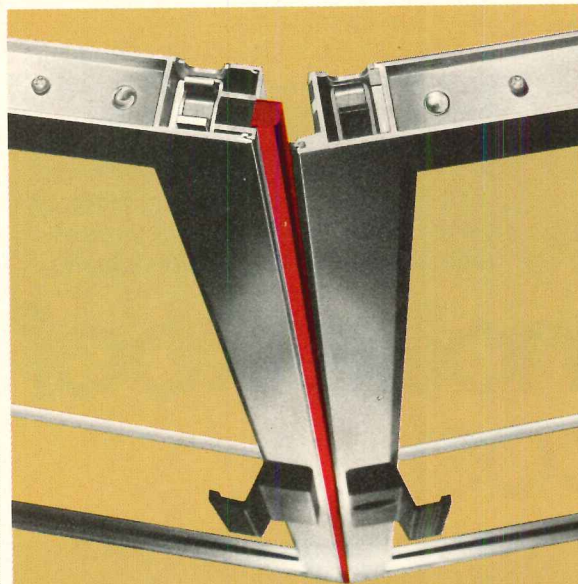
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make Zonolite® Roof Decks lower in cost.



Kawneer's Exclusive Panic Guard™ Entrances

CLOSE THE GAP

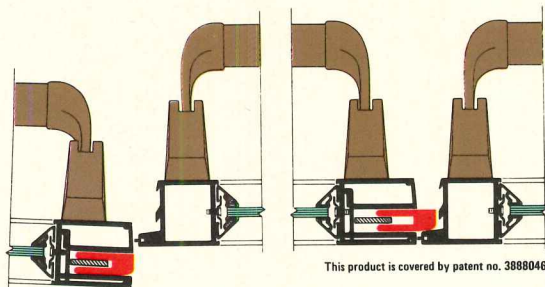


A retracting aluminum bar closes the gap between doors for the full height of the entrance. When the crash bar is depressed, the bar moves into one door. When the door closes, the astragal bar moves back into place, interlocking the two panic entrances. Panic Guard doesn't require additional mullions or co-ordinating devices for proper operation.

Panic entrances mean better life safety. Paired doors mean smoother traffic flow. But, put the two together and they spell "Security Gap." Through the Gap between the doors burglars or vandals can gain entry by merely inserting a coat hanger or other device and easily tripping the panic bar. Chains solve the security leak, but they are a violation of life safety codes. Removable mullions may make the building secure, but they impair smooth traffic flow and are inconvenient when large objects must be moved through the door.

Panic Guard Entrances close the "Security Gap."

Kawneer's Patented Panic Guard entrance design features a full-length, movable astragal bar that locks into place to provide security. And, when the panic bar is depressed (from the inside only), the astragal bar retracts back into the meeting stile to provide a quick, safe exit. Smoother traffic flow. Life safety. And security. They all add up to Panic Guard entrances.



This product is covered by patent no. 3888046

Panic Guard is a Kawneer exclusive and is available on 190 narrow stile, 350 medium stile and 500 wide stile series Kawneer entrances. Choose from black and bronze hard-color or clear anodized finishes for enduring beauty, security and non-violation of life safety codes.

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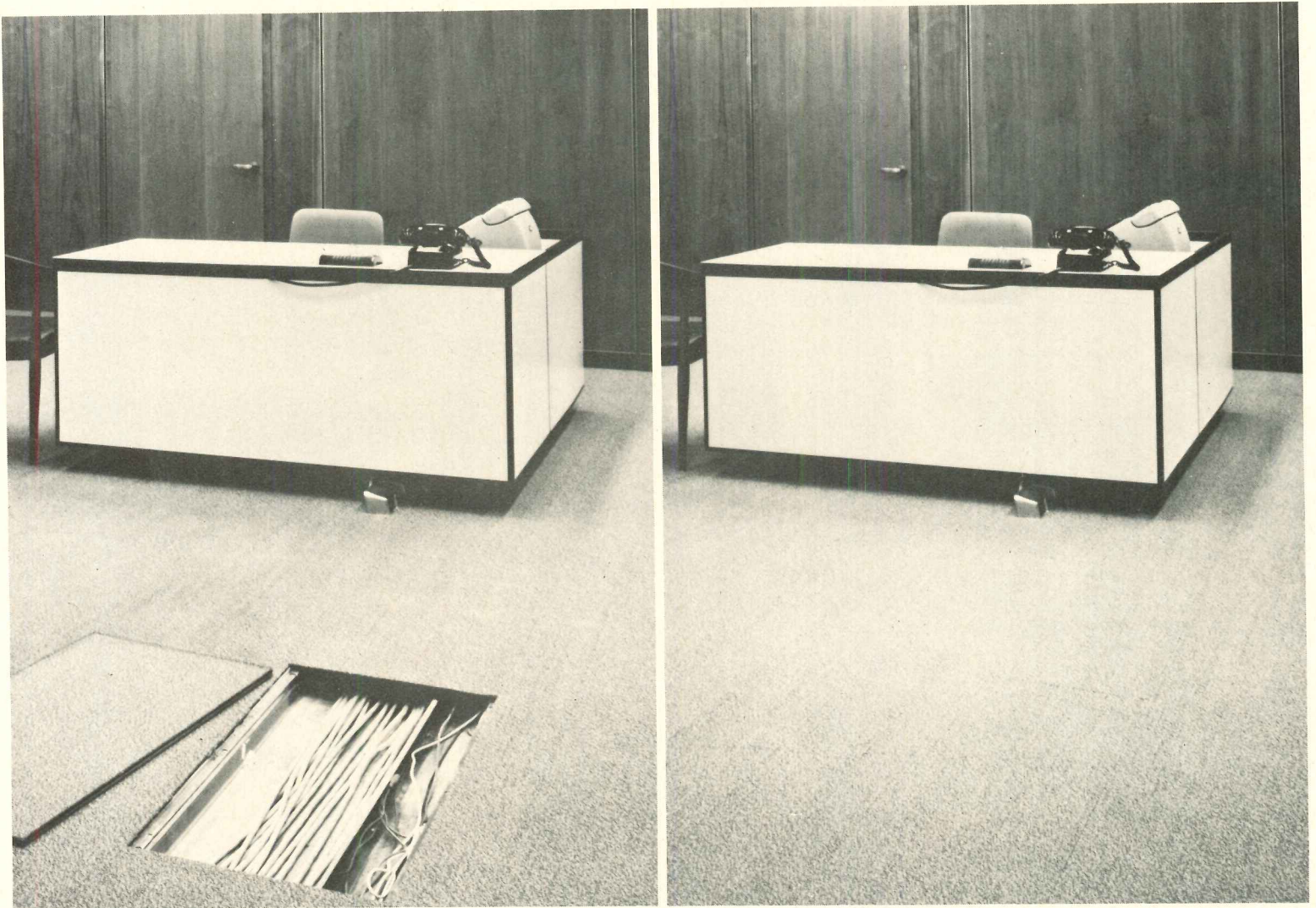
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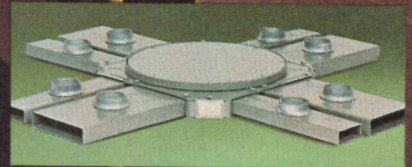
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The communication explosion can teach you a lesson. If you aren't ready for it, things can come to a screeching halt. While you're trying to make room for more phone wiring, more new equipment.

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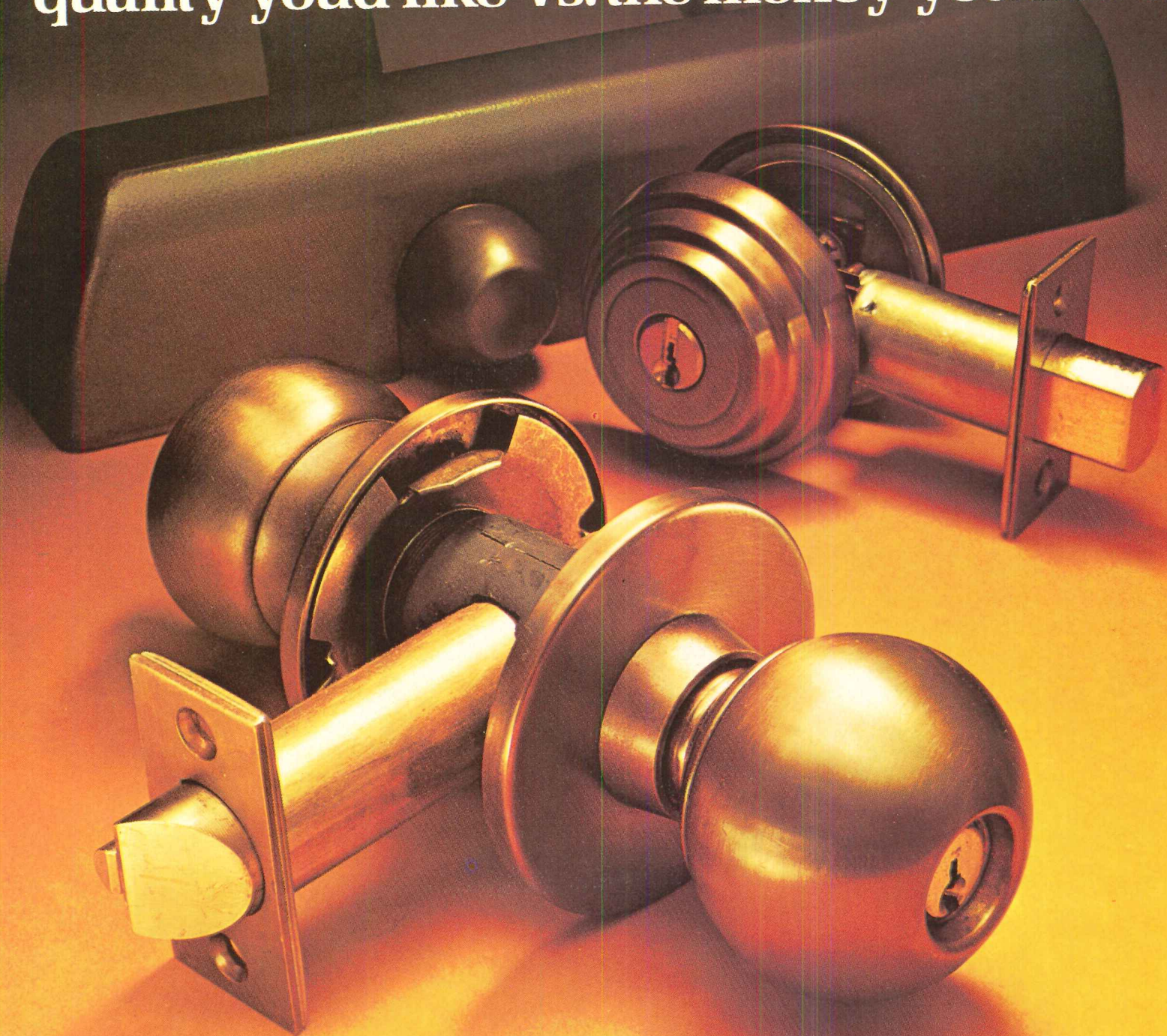
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NEW LIFE

FOR OLD BUILDINGS: **3** ADDITIONS BY SBR&A

The firm of Shepley Bulfinch Richardson & Abbott, Inc., founded by Henry Hobson Richardson in 1873, celebrated its one-hundredth anniversary just two years ago. There are not many U.S. architectural firms which have lasted for over a century—even in Boston. SBR&A's clients have included major governmental, medical, commercial and academic institutions. Through the years the firm has introduced new buildings into already harmonious campus settings, designed earlier by themselves or others. Successive generations of partners have added wing after wing to hospital or library facilities as these institutions expanded their programs. It is to be expected that such durable firms have a special point of view shaped by their long survival, and that their institutional and corporate clients share these attitudes since many of the latter have been around an equally long time. Today, when more and more U.S. firms are now in the business of finding new uses for older structures and then remodeling and adding to them, these words of the late Henry R. Shepley (February 1959, page 154) are pertinent: "If we figuratively lift our eyes and try to imagine our building fourth-dimensionally, that is, see it in its relation to past and future as well as present, we may find we should break one of our cherished rules of technocratic or esthetic morality and as artists liberate it from being too grim an example of the Strong Statement or the Pure Solution. After all, our cherished rules are not static, but are always changing as architecture develops, and if we tie ourselves to a formula we very soon find we are left behind and on the defensive in the onrush of new concepts which are flooding in on us from all sides."

—Mildred F. Schmetz

1 DOUBLING THE SPACE OF A NEO-CLASSIC BANK



The original bank is a valuable part of the architectural heritage of the town of Andover, Massachusetts, a community of over twenty-five thousand people. It is prominently located on Main Street. As the number of the bank's customers and the range and type of its services began to outgrow the original facility, the bank was faced with the problem of remodeling with an addition, or constructing a completely new building.

The bank's managers elected to keep their beautifully detailed old building and to construct an addition to house new executive suites, conference rooms, lending officers' areas accessible to the public area and clerical staff space. The older building was to be generally remodeled, but its fine detailing was to be kept intact.

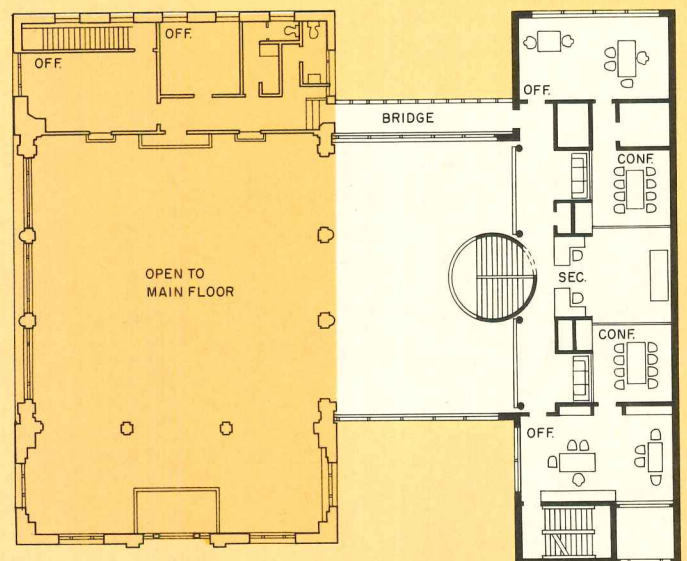
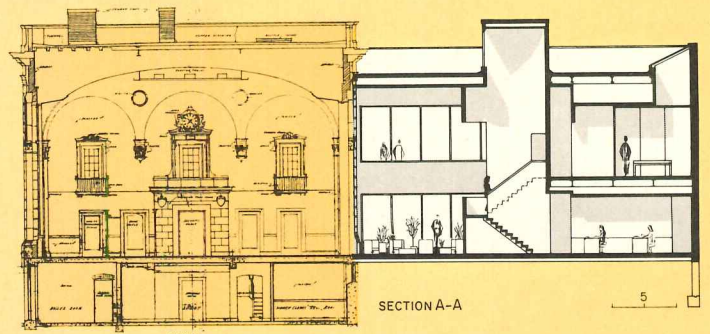
The neo-classic structure is symmetrical about both its longitudinal and transverse axes. The architects reoriented the major space circulation patterns from east to west to north and south. The tellers' counters were moved to the south wall (see isometric, opposite page top). They face three arched openings (opposite page bottom) which were once three arched windows in the north wall of the old bank.

Beyond, in the new double-height space, the drum staircase penetrates the new roof to become a source of daylight as can be seen in the section (right). By its form and position it serves as a focal element for the new spaces around it. The original north elevation has become a gateway to the new glazed double-height space, creating a dramatic juxtaposition between the new and the old.

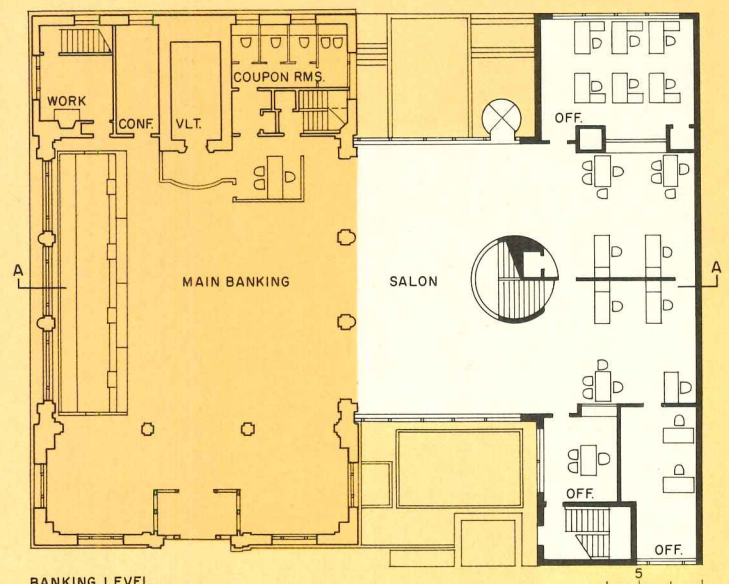
The addition is of steel-framed construction with masonry infill. At the main banking level is a slab on grade. The mezzanine and mechanical level floors are of concrete. The interior partitions are of metal stud or block. Surfaces are white painted plaster or drywall. Natural finish wood is used on the railing caps, window stools, tellers' counters, and the safe deposit vault screen.

The heating system was replaced and a new energy conserving air conditioning system was installed. All the interiors were designed by the architects. The total cost of the remodeling, the addition and the interior furnishing was \$489,000.

ANDOVER SAVINGS BANK ADDITION, Andover, Massachusetts. Architects: *Shepley Bulfinch Richardson & Abbott*. Engineers: *Abraham Woolf* (structural); *Shoosuanian Engineering Associates* (mechanical); *Lotero & Mason* (electrical). General contractor: *Charles Construction Company*.

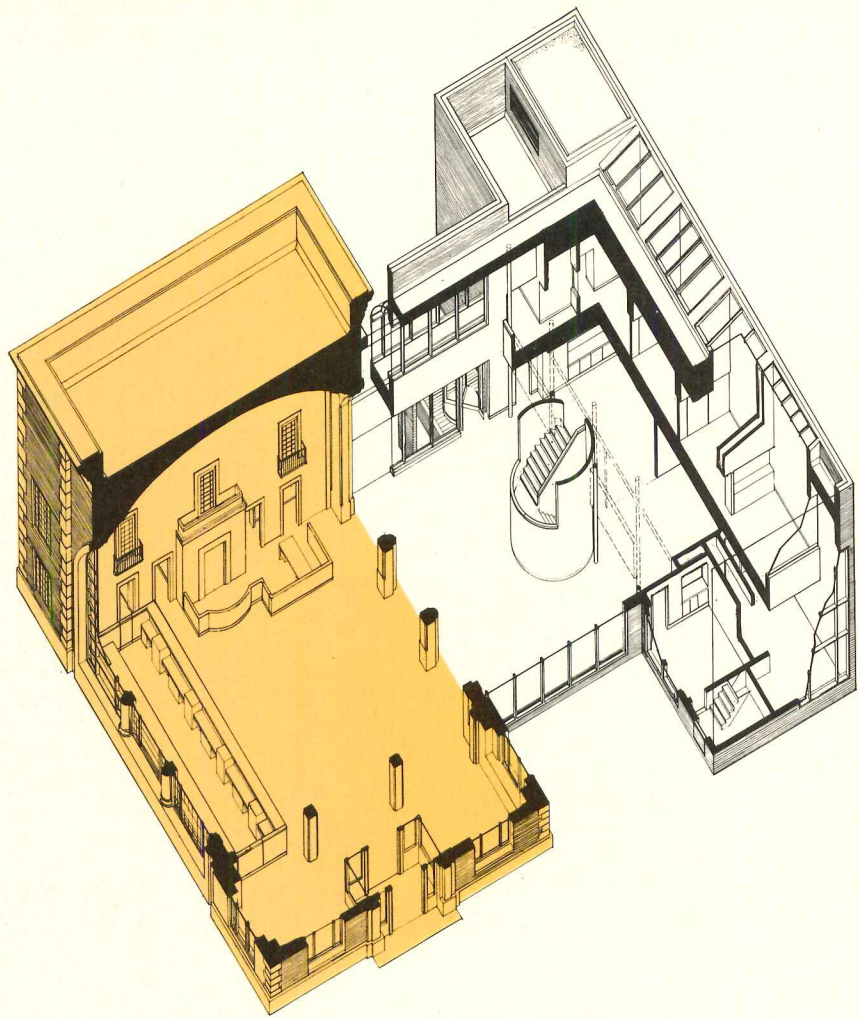


MEZZANINE LEVEL



BANKING LEVEL

As the isometric (right) indicates, the addition is spare and simple in its expression and is without ornamentation. It relates to the older wing by means of its symmetry and by its shared wall. Its restraint acts as a foil for the rich decoration of the older banking room. At the same time, the new space has a spatial vitality of its own.



2 A TOWER LINK INTEGRATES THREE BUILDINGS

According to Jean Paul Carlhian, the design objective of this new glass and concrete tower is to give new life to an entire college science complex, by linking a new laboratory building (now under construction) with the existing physics and chemistry buildings.

The tower gives physical expression to Dartmouth College's desire to reinforce the functional interaction between the scientific disciplines. This linkage problem was a complicated one, requiring ingenuity on the part of the architects in solving the geometric incompatibility and non-corresponding floor levels of the existing buildings. The tower link will accommodate a fourth wing (see plan), which may be added in the future.

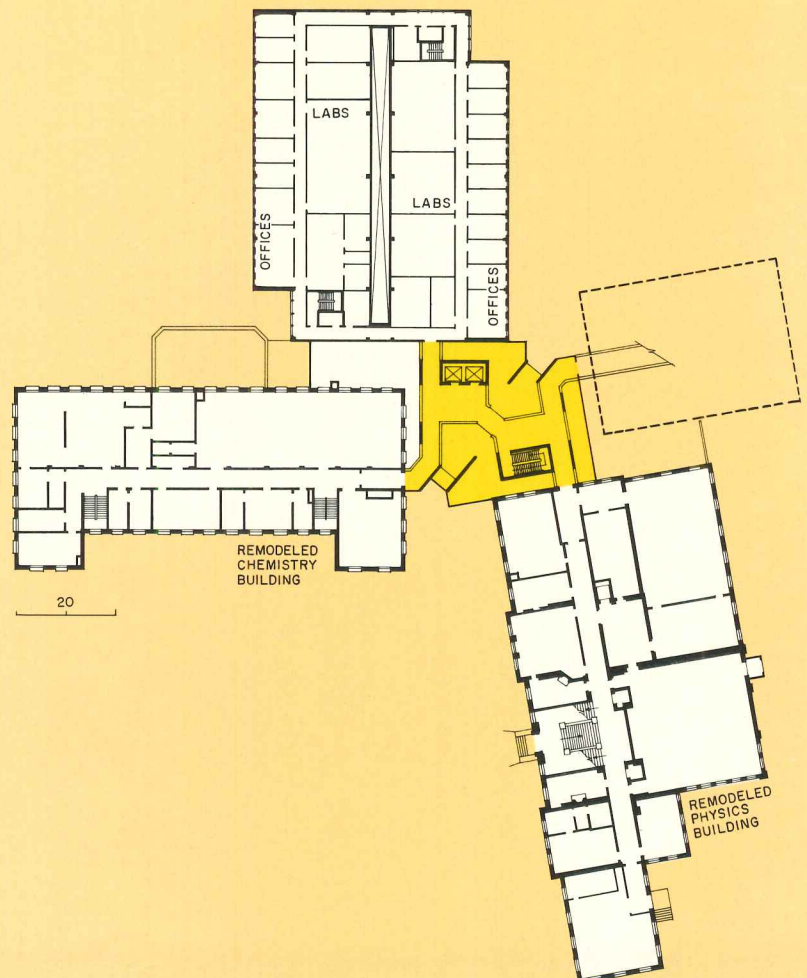
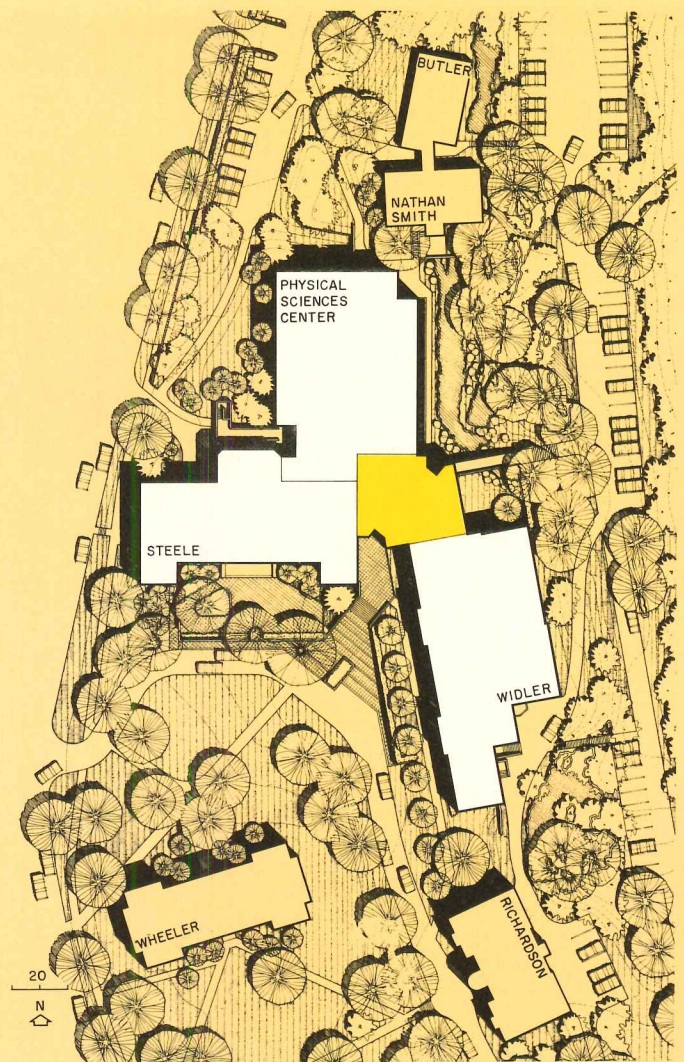
As conceived and built, the new link is a concrete tower based geometrically on two triangles, creating a strong new diagonal axis at the very focus of the science complex. This central space, formed by the adjoining buildings and walls of glass, provides access and primary vertical circulation to the entire science center. In addition to serving as a circulatory node, the new link also acts as a mini-commons, with sitting areas on each floor and a variety of artistic and scientific displays. At the tower base is a new entrance for the entire complex.

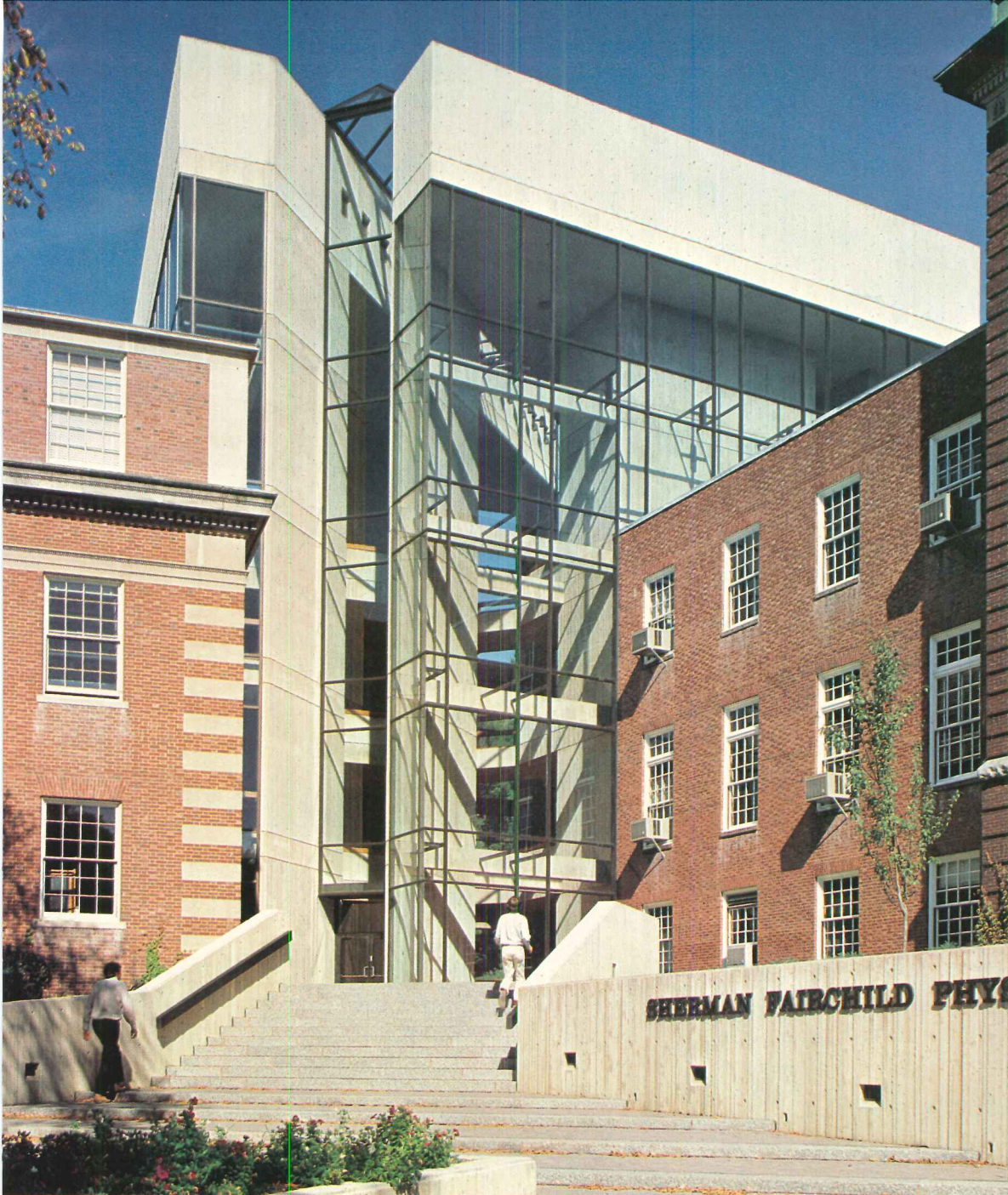
The older physics building has been remodeled, and the existing chemistry building has also been recycled. The new laboratory wing under construction is being built according to the SEF system. Barely discernible in the upper left hand corner of the bird's-eye photo (opposite page), it embodies a sophisticated modular vocabulary developed jointly by the Toronto School System and the Ford Foundation.

A full complement of sub-systems is being used, including pre-finished wall panels, electric-electronic components and demountable interior walls with excellent STC ratings. The space enclosed is extremely flexible. The architects believe it to be the most ambitious application of industrialized architecture so far attempted in New England.

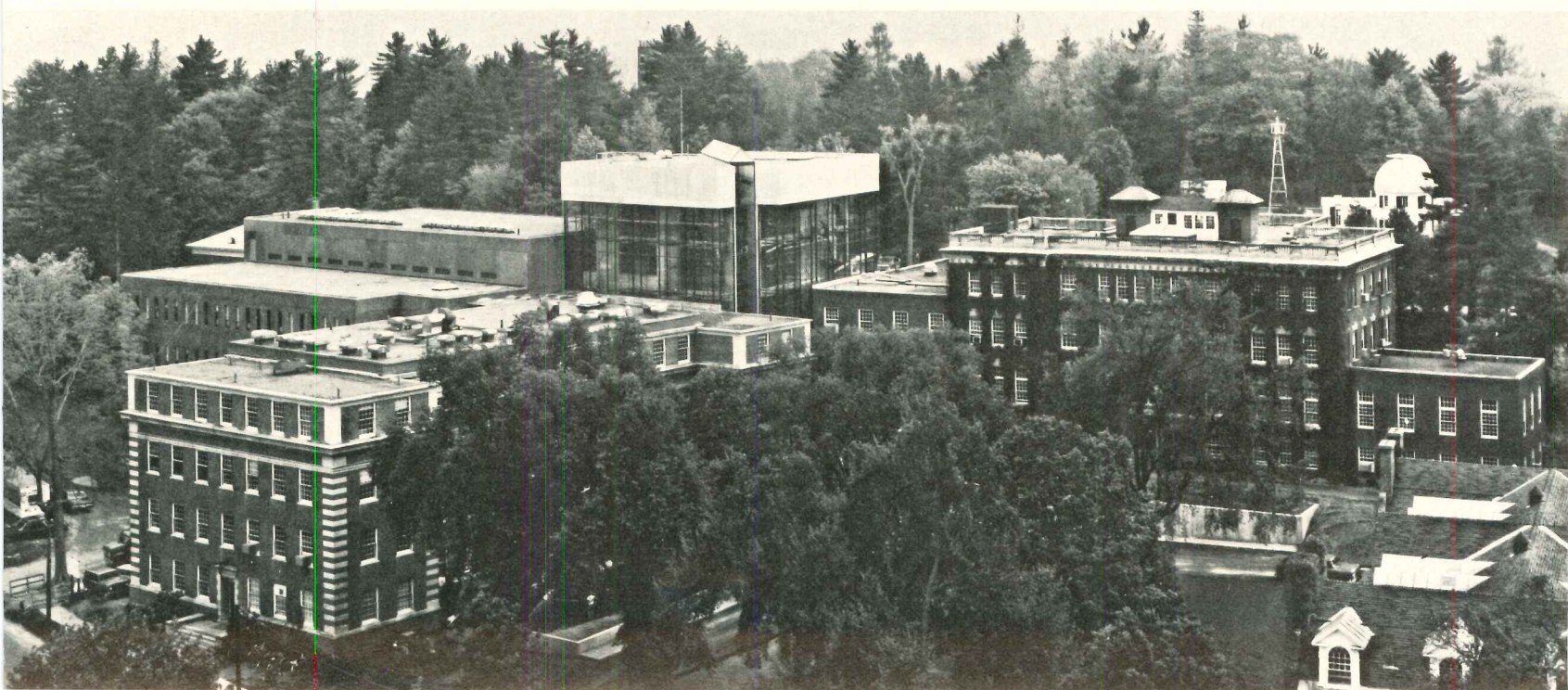
The total cost of the project including the tower link, the two recycled wings and the new laboratory building is \$4.5 million.

SHERMAN FAIRCHILD PHYSICAL SCIENCES CENTER, Dartmouth College, Hanover, New Hampshire. Architects: *Shepley Bulfinch Richardson & Abbott*. Engineers: *Nichols, Norton and Zaldastani, Inc.* (structural); *Leo J. Crowley Associates, Inc.* (mechanical); *Thompson Engineering Co., Inc.* (electrical); *William Cavanaugh* (acoustics). General contractor: *Jackson Construction Company*.



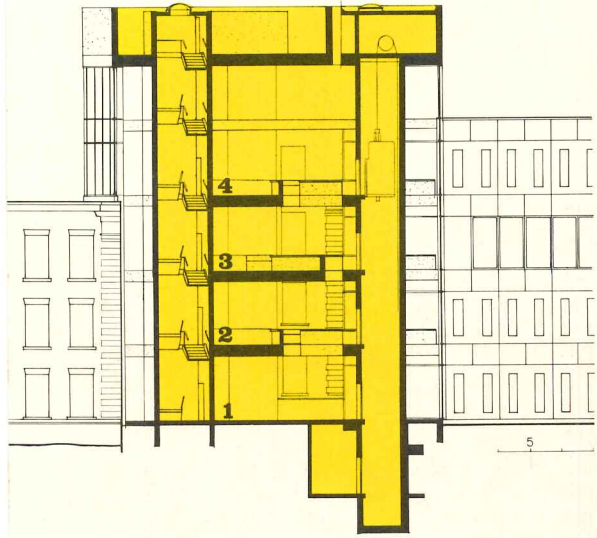


At the point at which the chemistry building and the physics building are linked by the tower, a broad entrance staircase has been created. The interconnecting floors can be seen through the glass facade. At night (below) the lighted tower becomes a landmark.

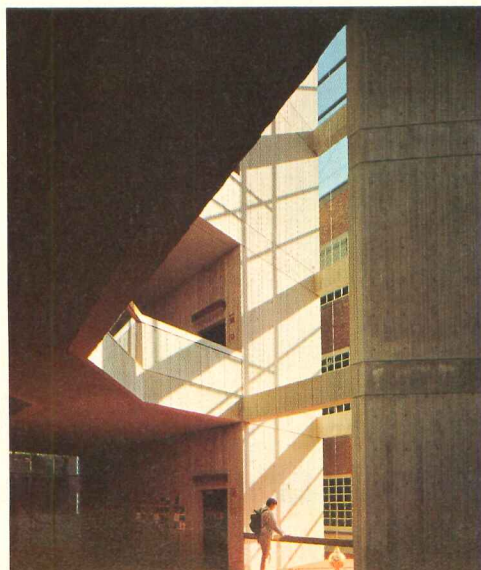




THE UNIVERSITY OF MICHIGAN
HUMAN DEVELOPMENT
1964



The end walls of the two older buildings have been left unaltered and are visible from the various levels within the tower. The poured concrete walls and piers are set back from the older walls, keeping them intact. As the photo (right) indicates, the old and new structural elements are attractively juxtaposed. Opening off the circulation elements are lounge spaces, called mini-commons, which provide opportunities for the students to rest and study.



3 RECYCLING A CAMPUS LANDMARK BY JAMES RENWICK

When James Renwick, architect of the Smithsonian Institution in Washington, D.C. and St. Patrick's Cathedral in New York City, was commissioned to design Vassar College, he conceived a bold and unique solution. His plan, which in 1865 long preceded subsequent Beaux Arts plans that were similar, consisted of grouping all the activities of the new college into a single multi-use complex.

When a century later, Shepley Bulfinch Richardson & Abbott were asked to find a suitable location for a new campus center, the college had grown in all directions—yet Main Hall, the original Renwick building, still stood at the hub of its many paths.

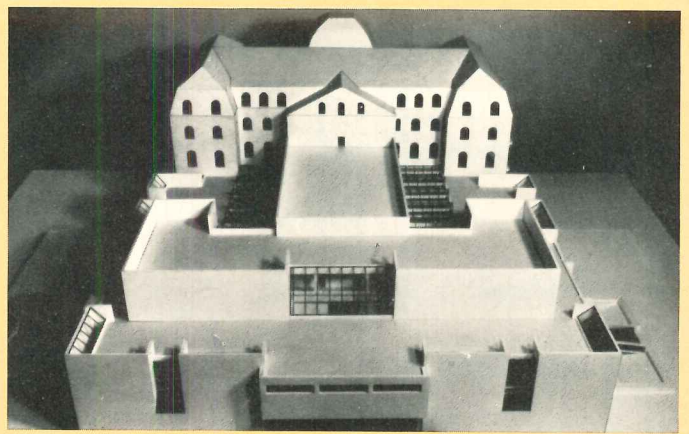
At the back of Main, toward newer dormitory groupings, is a wing which formerly housed an obsolete kitchen and dining room. The architects decided to remodel this wing and to wrap a U-shaped addition around it, separated from it by two great glass-roofed courts. These atria are part of the circulation system at the hub of the campus and will give the college a much needed center.

The ground floor of the new structure includes a terrace to the south surrounded by fine old spruce trees. At this level are a post office, an exhibit gallery, a snack bar, coffee house and lounge spaces. Below this floor at the basement level is a new campus store lit by a sunken court.

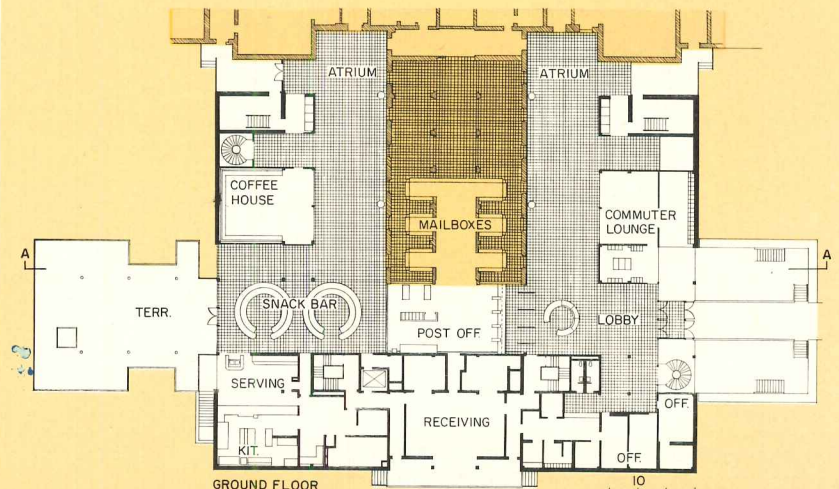
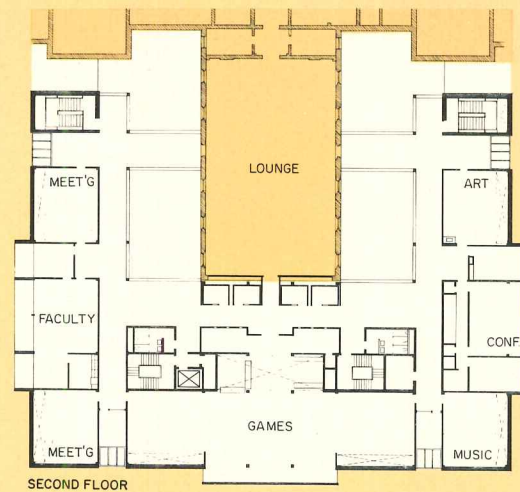
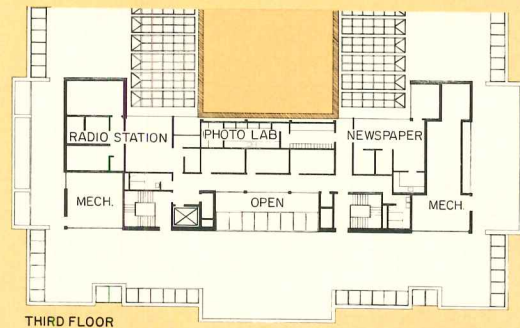
The second floor of the addition has been connected by bridges to the old east wing dining room which has been remodeled into lounge space. At this level are meeting rooms, a faculty lounge, game rooms, art studios, music rooms and various student offices. The third floor at the skylight level is occupied by the campus daily, the radio station and the photographic society.

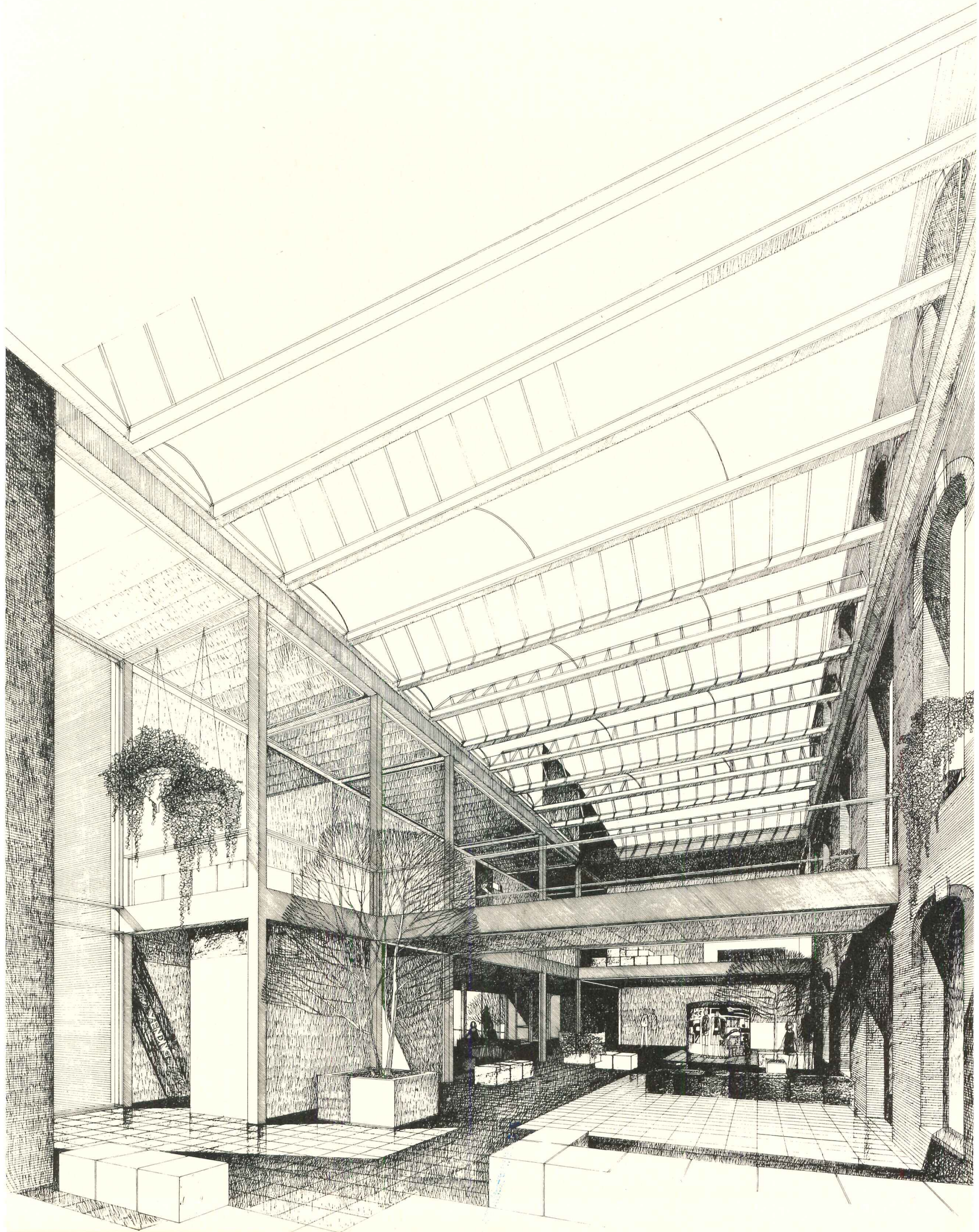
As the plans (right) indicate, the success of the entire solution depends on the attractiveness of the two skylit courts or atria. When complete, they will be oases of plants, shrubs, and flowers to brighten the long Poughkeepsie winters. Vassar, which has long been known for its achievements in the fields of botany, will endow a special fund to ensure the preparation, maintenance and replacement of an outstanding collection of plant material to keep these interior patios green and interesting all year.

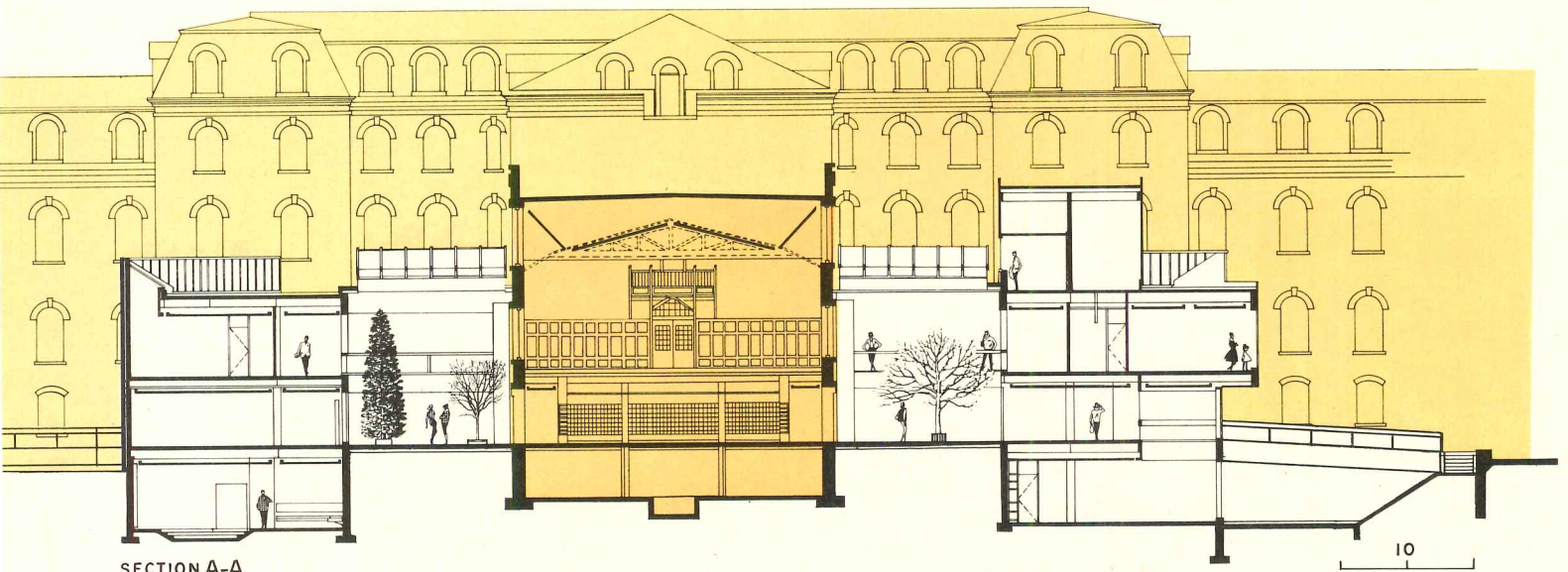
VASSAR COLLEGE CENTER, Vassar College, Poughkeepsie, New York. Architects: *Shepley Bulfinch Richardson & Abbott, Inc.* Engineers: *Nichols Norton & Zaldastani* (structural); *Robert W. Sullivan* (plumbing); *Stressinger & Adams* (mechanical); *Thompson Engineering Co.* (electrical). Consultants: *Bolt Beranek & Newman* (acoustical); *Wood & Tower* (costs); *Crabtree Associates* (food service). General contractor: *Dimeo Construction Co.*



When the new addition is complete, Vassar will at last have a welcoming and gracious campus center. The ground floor of Main had for many years been badly overcrowded as new functional requirements were jammed into the old spaces. As the plans below indicate, the basic amenities, which belong at the heart of every campus, will be excellently housed in the new spaces.

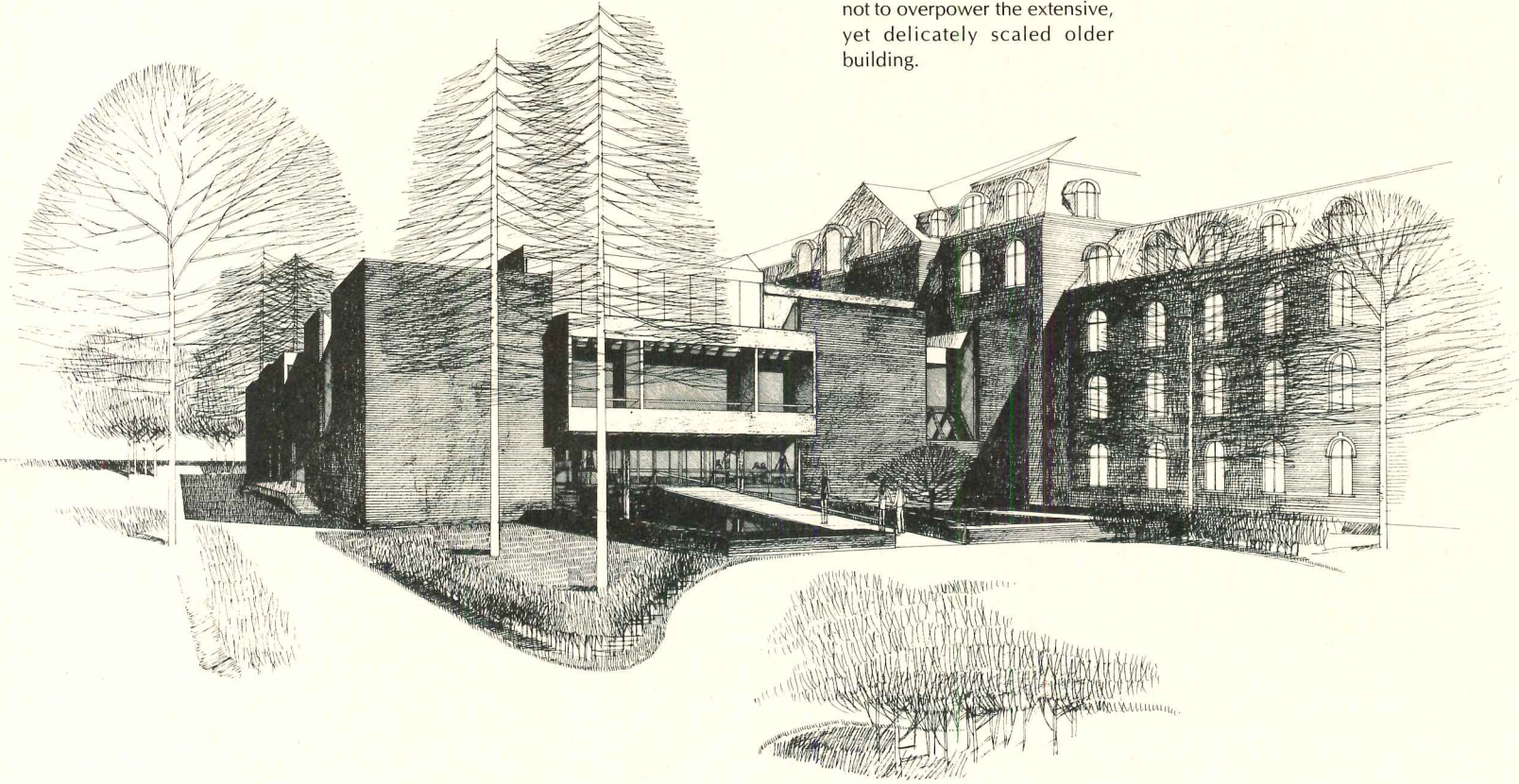






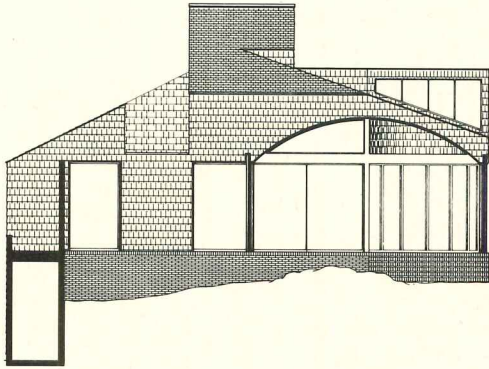
SECTION A-A

The facades of the original Renwick structure have been left intact wherever possible, and the paneling in the old dining hall which has been converted to lounge space will remain. As the rendering (below) indicates, the new addition, while large, has been carefully scaled so as not to overpower the extensive, yet delicately scaled older building.



A SERIOUS DISCUSSION OF AN APPARENTLY WHIMSICAL HOUSE

In this pool house, architects Robert Stern and John Haggmann had the opportunity to explore a design philosophy that is controversial, but that appeals more and more to young architects. In the essay that follows, Stern describes his approach as collage. Here is his argument:



In 1950, Philip Johnson presented to the readers of the *Architectural Review* his then recently completed glass house/guest house/swimming pool complex in New Canaan. With characteristic iconoclasm, he wrote a detailed analysis of that remarkable grouping, discussing it not in terms of program or construction techniques but in terms of its form and, more particularly, of the historical sources for the form. Johnson wished to declare himself free of the antihistorical biases of the International Style, and of what he regarded as the functionalist posturing that Walter Gropius and others used to buoy up a particular set of formal preferences. In so doing, Johnson showed us that though his commitment to Miesian form was important to his work it was not exclusively so, and that as a result his work was to be regarded as much as a search for form through *collage* as it was through invention.

My purposes in writing this brief explanation of our poolhouse design begin with a desire to pay tribute to Johnson's working methods and his candor. Beyond that, they include a desire to reiterate my conviction, and the conviction of our office, that architecture is a communicative art, capable of meaning different things to different people at the same time. Thus, what I am about to say about the formal sources of our work is intended as a communication between architects; were this written for clients or contractors, different but not, I emphasize, contradictory things—would be said.

To begin: site and context

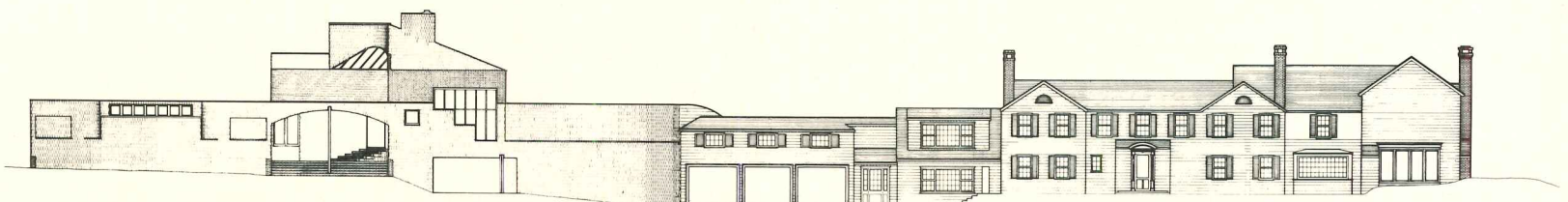
Originally, the poolhouse and its related facilities were to be sited elsewhere on the property. In the scheme for the first site, the owners' mandate for sculptural invention and the isolation of the poolhouse from other buildings resulted in a relatively free play of shapes, based on the bow-fronted, inflected, outside-space-making architecture we have for a long time been interested in. The first scheme was not developed beyond a schematic stage because the owners changed their minds about the site, which was at some distance from their house.

In order to minimize problems of supervision and servicing, they wished the new facilities to be more easily accessible to the house. As a result of this, and of the consequences of zoning, the poolhouse is physically attached to the main house, though the only interior connection is a service passageway between garages. It is this new contextual situation which really focused the design, causing us to search for fresh formal inventions that could amicably coexist with some rather anemic ones from the recent past. That is to say, our poolhouse design continues the long wall begun by the main house, a stretched-out, vaguely colonial, shingled affair, which marks one edge of a sloped meadow, the other edge being a lovely woods. The forms of massing of the poolhouse are modified at the new site, recognizing the character of the main house it connects with, though the landscaping and topography make it impossible to perceive them as one (even in winter) and allow the poolhouse to nod to its neighbor without having to bow and scrape (long elevation below).

Inflection: from concept to precept

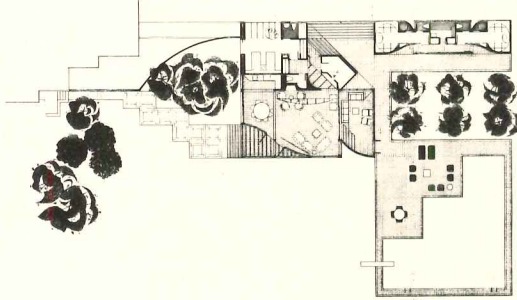
The hipped roof tent is inflected* in a variety of ways for light and view. From the example of Sir Edwin Lutyen's house the "Salutation" at Sandwich, we gained courage to split the hip and introduce clerestory lighting to the kitchen and the guest bedroom. The line of the hip rises toward the rear of the big room, where it inflects back again to widen into a dormer that carries one side of the hip and grabs south light over the fireplace. At its base, this dormer/monitor kicks out into the plane of the sloped roof, where its leading edge terminates in a long curve: this willful openness, at precisely

* The word *inflect* is used so frequently here (and also in the drafting and jury rooms of some architectural schools) that it deserves a special definition. To *inflect* means to bend or modulate; the meaning of *inflect* in current architectural parlance, however, is best described by analogy with grammar, where, for instance, the personal pronoun (I) is inflected by case (me) or by gender (she) or by number (we or they). In each case it is still a personal pronoun, but it is "bent" into its particular form by its particular context.—G.A.



the point where one would anticipate major structural elements, underscores the tentlike qualities of the roof structure. The underside of the roof is further manipulated to articulate the three principal spaces of the big room: a barrel vault is introduced to mark the dining area; a sloped ceiling follows the true roof pitch in the fireplace area; and as the brick podium drops down into the screened porch, the ceiling and roof jump up to a flat portion that rises above the main roof to bring west light and breezes into the screened porch.

Similarly, the fundamentally square plan of the pavilion is inflected to take advantage of views and to mark particular events in the plan. The S-curve wall inflects the living room toward the view down the valley, permits the



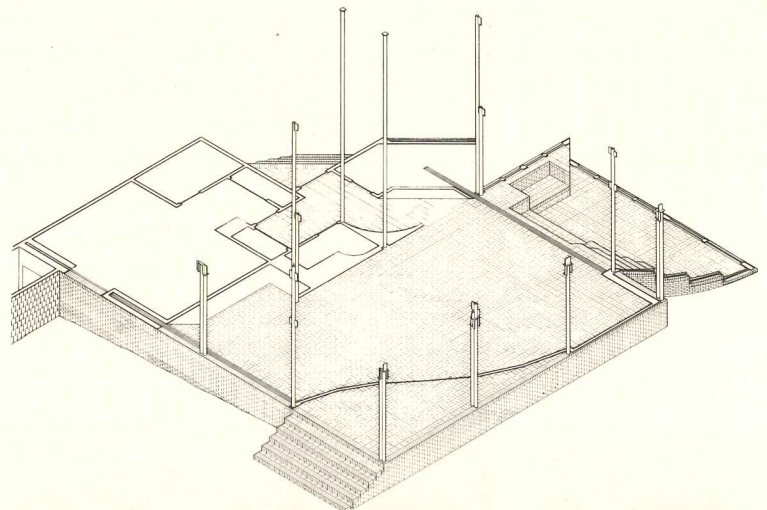
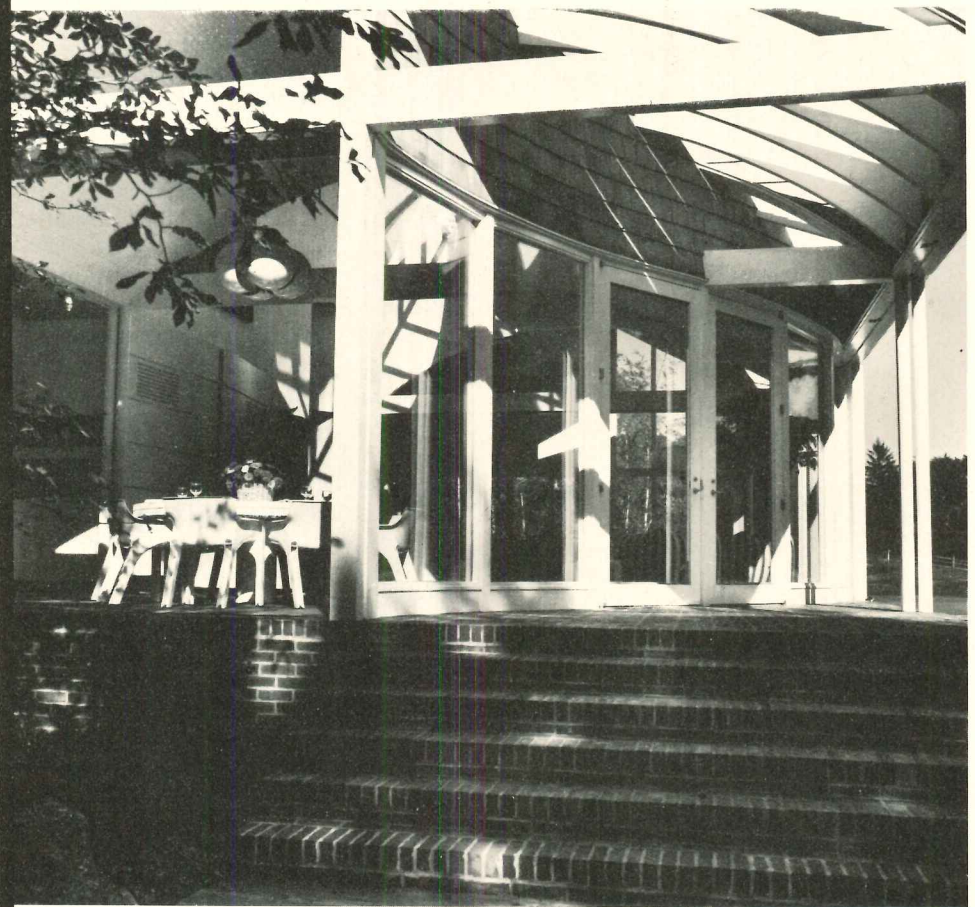
development of an entry porch, and makes the dining room more intimate; the curved "bite" out of the square between the living room and the porch allows the living room a direct view toward the pool and gives the porch not only a direct view west down the valley but also a curved back wall, which emphasizes the importance of its principal view east toward the big rock. At the northeast corner, the square is inflected to reinforce the importance of the arched gateway and to make a "front door" to the pavilion.

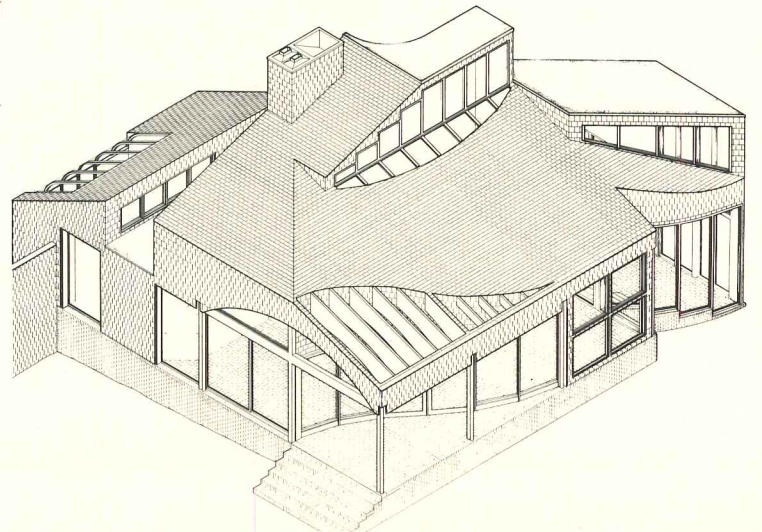
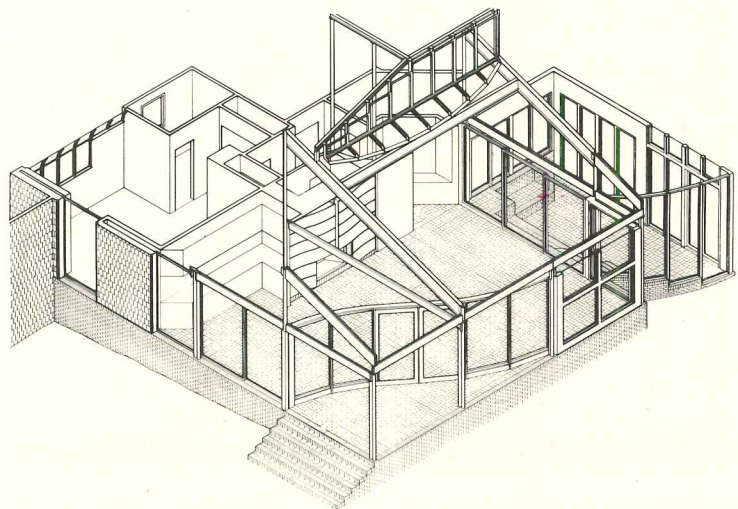
The big room is further articulated by the expressed and implied structural system overhead. Its relationship to the out-of-doors is ambiguously defined by enormous glass doors and screens that slide back into pockets, making it possible to open the entire room to the weather or to enclose the dining and living areas. We admire the use of pocket doors in Regency architecture, in the Shingle Style, and in such recent work as Edward Barnes' Wayzata farm group of 1965.

Similarly, the strict geometry of the bathhouse gives way on the entrance (rear) elevation to admit light to the water closets and on the pool (front) elevation to mark the entrances. In each case, these inflections make the perception of geometry more vivid.

The entrance facade: frontality and ambiguity

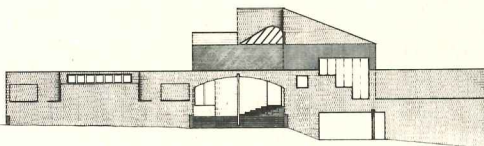
The arched gateway, which connects the bathhouse wing with the pavilion, owes an obvious debt to Robert Venturi's mother's house in Chestnut Hill and beyond that to some of the



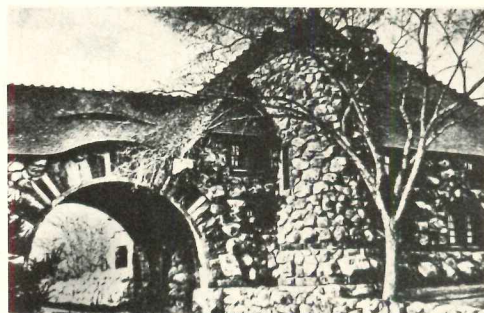




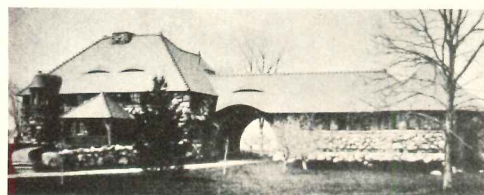
deliberate misreadings of tension and compression favored by Frank Furness. The gateway is rife with double meanings; though it announces the poolhouse to the arriving guest and is scaled to be seen from the distant driveway, it is really the only significant event on



the rear elevation (that is, the elevation facing away from the water) of the poolhouse that is oriented in the opposite direction: as in all suburban houses, front and rear are ambiguous. The relationship established between the arched opening and the broad expanse of shingled walls reinforces the entry and recalls Richardson's use of large panels of blank masonry to surround his Syrian arches at North Easton and Quincy. But, I think, the road side



of his Ames Gate Lodge is the closest parallel to our intentions, with its bold expression of arched gateway with a low blank-walled appendage at one side and a more richly articulated main mass on the other, and, in both cases, a strong expression of "front" and "back."



After the gateway arch, the principal feature of the entrance facade is the stepped greenhouse section, which lights the guest bedroom. Because this facade faces north, this large amount of unshaded glass can be used; the greenhouse was selected for its minimal detailing and for its splendid curved glass, which opens up the view at the eave; it also reinforces the continuity of the wall and makes the perception of the shingled volume more vivid. Our fascination with the possibilities for an ambiguous indoor/outdoor relationship using a greenhouse enclosure relates to our

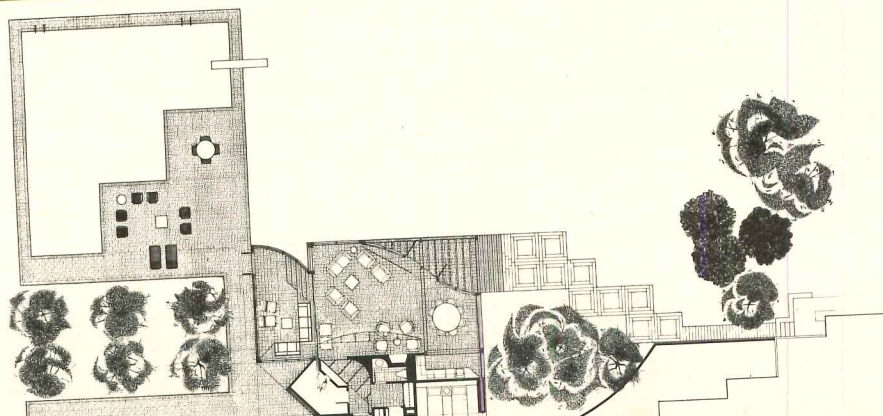


The poolhouse dining area (above) is adjacent to the fireplace which, according to architect Stern, recalls a facade by George Howe. The dining area is articulated by a barrel vault, while the fireplace area has a sloped ceiling that follows the true pitch of the roof. Where the brick podium drops down to the screened porch (below), the ceiling becomes higher than the main roof bringing west light and breezes to this porch, which is directly accessible from the pool. The main living area (opposite page) has

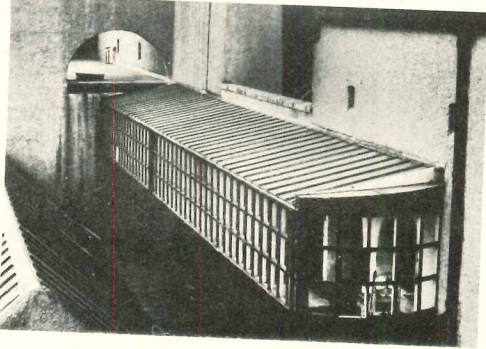
both an expressed and implied structural system overhead. The bathhouse is a separate structure. Its bathroom (opposite page bottom) is lit naturally and artificially from overhead.

POOLHOUSE, Greenwich, Connecticut. Architects: Robert A. M. Stern & John S. Hagman; project architect: Daniel L. Colbert. Engineers: Zoldos Silman (structural); Langer Polise (mechanical). Consultants: Carroll Cline (lighting); Wilson Skewes (landscape). General contractor: Franco Brothers.



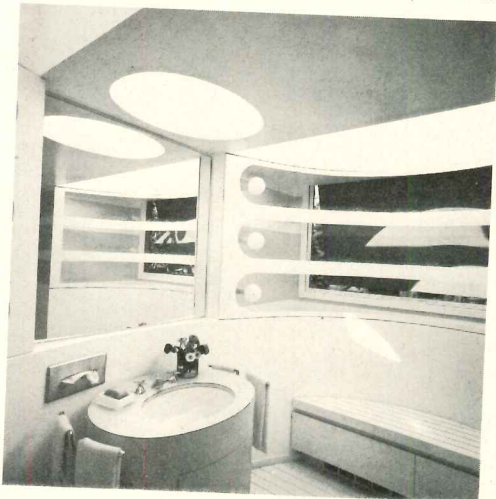


interest in Charles Rennie Mackintosh's work, especially at the Glasgow Arts School.

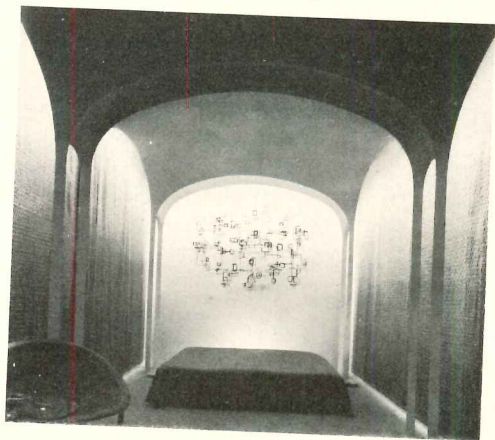
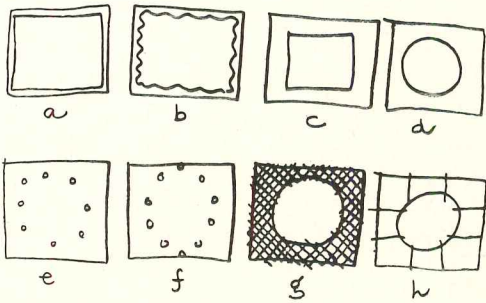


The bathhouse: inside vs. outside

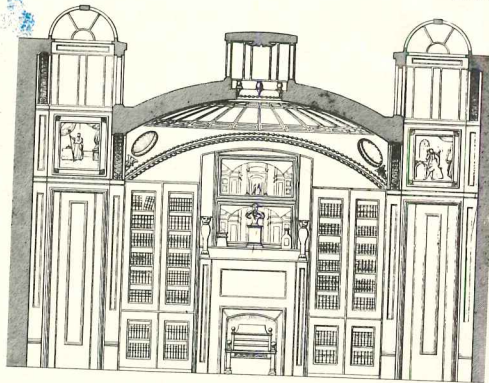
Our intentions in designing the changing rooms in the bathhouse were simple enough: to create an environment in which, day or night, year-round, it always seemed to be bright summer. To achieve this effect, natural



and artificial light is brought in from concealed overhead sources and view-windows are eliminated so that no direct reference to the landscape can be made; bold, bright colors are used in a striped design to dematerialize the wall and, in some cases, to enhance the intentional ambiguities of the enclosure system. The resultant interplay between the rectangular shell and the hybrid geometry of the inner



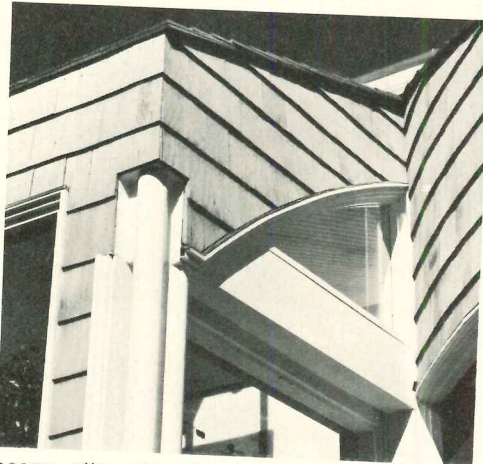
spaces would not have been possible to conceive of without the support of Venturi's analysis of the inner lining (diagram below left) and the example of Philip Johnson's experiments in the 1953 remodeling of his guest house at New Canaan. And, of course, it is to Sir John



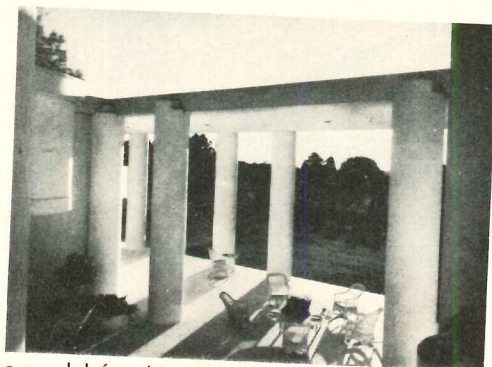
Soane's house that we continually return for refreshment and stimulation.

Details:

The capitals of the columns, specially fabricated metal shoes which bite into the shingled



beams, attempt to give richness to the intersection. Their design is part of a continuing search for expressive joinery. Paul Rudolph's similarly intentioned experiments in brick and wood at the Wallace Houses in Athens, Alabama, were

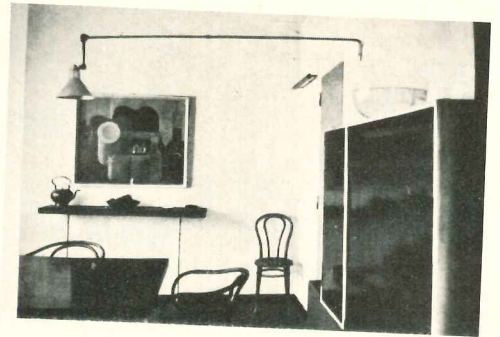


a model for this. The fireplace surround is a wooden overmantle which conceals the high fidelity speakers; its gently swelling curve and layered motif are intended to modify the extraordinary verticality of the space; the design recalls George Howe's facade for the Robert Welsh House of 1934-35 (top photo next column.)

The inside of the big room is sheathed in wainscoting, the grooved boarding frequently used by Shingle Style architects. Because we regard the ubiquitous recessed downlight as one of modern architecture's least articulate



achievements—ceiling acne, as it were—we are continuously trying to find other ways to light space artificially. We admire Le Corbusier's almost ad hoc use of stock fixtures in his early work, particularly his "light on a stick" in the dining room of the LaRoche-Jeanneret



House. Our dining fixture is a Milanese ceiling pendant lamp (not exactly from the dime store) but a stock item used unconventionally nonetheless. The big beams which help articulate the various spaces under the shed roof conceal lights which illuminate the ceiling. And when the downlight or wall washer is needed, as in the high monitor over the fireplace, we chose not to recess the fixture in our effort to maintain the integrity of the ceiling and the fixture alike.

■ In the previous paragraphs, I have tried to focus on the strategies we use in our efforts to enrich our design and take it beyond mere functional accommodation and technological problem solving. Ours is a version of that process of *collage* which Stuart Cohen described as the bringing together of "improbable things . . . ; extending architectural usefulness to the entire world of objects and ideas."

As a culture, as architects, we know so very much. What we must do is face this knowledge squarely—and in so doing face the world around us, taking it for what it is, incrementally adapting the objects and ideas in it to our needs while we in turn adapt to its demands. Our attitude toward form, based on a love for and knowledge of history, is not concerned with accurate replication. It is eclectic and uses collage and juxtaposition as techniques to give new meaning to known forms and in so doing to cover new ground. Ours is a confidence in the power of memory combined with the action of people (function) to infuse design with richness and meaning, to attach to our work the larger issues of culture and symbol. If architecture is to succeed in its effort to participate creatively in the culture of our time, it must go beyond the iconoclasm of the modern movement of the last 50 years or the limited formalism of so much recent work and recapture for itself a basis in culture and the fullest possible reading of its own history.

EVOLUTION AND EVALUATION OF ENVIRONMENT FOR MENTAL HEALTH

The two facilities on the following pages make some important points about design of an environment fostering mental health and about the practice of architecture. Marin County Community Mental Health Center was introduced in *RECORD*, March 1970, to illustrate the project evaluation program of Kaplan/McLaughlin Architects. Succeeding phases and results of that program are reported here. New facilities for the Elmcrest Psychiatric Institute demonstrate the ability of the architects, the Environmental Design Group of New Haven, to accept, analyze and interpret the complex and sometimes conflicting input of the client staff and various consultants including Herbert McLaughlin.

It would be easy but perhaps simplistic to observe too strong or structured a thread of evolution from Marin to Elmcrest. Despite certain commonalities of function, each is the product of a quite different set of experiences. And of course the county mental health center is inherently different in many ways from the private psychiatric institute. Nevertheless, the development of spatial concepts for in-patient mental health facilities has gained a great deal from the experience and evaluation programs at Marin, and the refinement of these concepts at Elmcrest represents progress and refreshment.

Jonathan Foote, who heads the Environmental Design Group, is quick to acknowledge the effectiveness of a programming and design procedure that quite resembled the encounter groups of therapy and gamesmanship. Such techniques are increasingly the mode by which architects solve complex problems of communication. In this case, group leadership underwent logical transitions among psychiatric, technical and design specialties. Mr. Foote points out, however, that the design of Elmcrest was in essential ways a conventional architectural commission in that the focus of ultimate design decisions remained clearly architectural without diffusion by any compromises that could be called a "committee effect." Future evaluation of the project by professionally sound methods is high on his list of priorities.

The evaluation program at Marin has reached a third phase in a planned progression that began, as previously reported, with staff meetings prior to occupancy and continued with various surveys after some months of occupancy in 1969. The current phase of evaluation is reported by Herbert McLaughlin on pages 106 and 107. The lessons perceived by this architect at Marin are not confined to spaces for mental therapy, but are applicable wherever open spaces and indeterminate groupings are essential to the program. Mr. McLaughlin draws a brief but not overly persistent parallel with the spaces his firm subsequently developed in renovation and conversion of a factory building into office space. The comparison is visible on page 107.

Designed environments for mental health and evaluation of the effectiveness of those designs may indeed turn out to provide general lessons in design for people everywhere.—*William B. Foxhall*

MARIN COMMUNITY MENTAL HEALTH CENTER

The Kaplan/McLaughlin evaluation program for this county facility (RECORD, March, 1970) is updated in this fifth-year report by Herbert McLaughlin.

The Marin County CMHC design focuses on a large, irregularly shaped room with sunlight spilling in from clerestories above and through large windows—a splendid landscape is readily apparent. Clearly visible on the periphery are bedrooms, offices, and multi-function spaces. This central space is usually full of people in low comfortable chairs talking, playing games, reading or making snacks.

It is an extremely innovative design in which spaces are in some ways purposely ambiguous and changing. The architects refer to this as "indeterminate" design. This concept negates the philosophy that rigidly defined spaces are appropriate for patients—or others—who are learning to define themselves and deal with a world of change. Rather architecture should create spatial variety.

It would seem very important to discover how some of the new ideas inherent in the design of this Center worked out. For if we can evaluate the good and the bad of making breaks with the past, it will be much easier for others to do likewise.

At Marin, an evaluation program was set up with staff, before occupancy. After building completion in 1969 and again in 1974, full scale evaluations were made by interdisciplinary teams of architects, psychologists and sociologists through observation and interviews.

Many variables exist: the quality and attitude of the staff and of the patients at any one given time, the competence of the evaluators, the techniques used which did not stress direct comparisons with other facilities—although there was a very brief simultaneous evaluation of another mental health center that has a program and patients similar to Marin but a pleasantly conventional Spanish style single-story, U-shaped design. This center is identified in this report by the fictitious name of Carehaven.

The criteria for the evaluation were the well articulated original design and treatment programs, tested by activities that have stayed relatively close to the original conception in one unit and a drastically different program inaugurated during 1972 in the other unit.

The basic intent of "indeterminate" design is to encourage many different behaviors. This runs contrary to most designs for mental health which are structured to provide the strongest possible behavioral messages of conformity—whether to a medically powerful doctor-patient relationship, or an equally pervasive home-away-from-home status.

Not that this design is unstructured. An exposed structure and a clear hierarchy of spaces exist; but within those clarities, complexity of spatial relationships, variety of routes and of surfaces and experiences exist. Geometries are superimposed on one another but expressed directly in plan and section. In this case, square is laid upon triangle. The resulting atmosphere is one of great openness and a real

range of clearly different spaces in which one can occupy, and express oneself in very different ways.

The Center is very much like a village under one roof. There is the village's hierarchy of a major public space surrounded by semi-public and private spaces. The Center is a village microcosm preparing individuals to return to the larger community.

In order to create an environment that fosters positive involvement between patients and staff and among the patients themselves, Kaplan and McLaughlin believed that a radically new type of design was called for, a spatially indeterminate environment that was emphatically non-linear and non-boxlike, an architecture of irregularity that consistently emphasized change and choice. Stimulation, change and challenge to the patients would make them feel independent. At the same time it was desired that the building express "benign institutionality." This was not just to be a home, but a school of sorts, from which one graduated as soon as possible.

How well did Kaplan and McLaughlin succeed in meeting their objectives? The 1969 and 1974 teams of architects, psychologists and sociologists were well qualified for evaluating buildings. Most of the 1969 evaluation was done by the Environmental Analysis Group, an independent San Francisco firm. This evaluation was intended to obtain the initial response of staff and patients while this special experience was fresh in their minds.

The second evaluation in 1974 by a sociologist and an architectural psychologist was a study of the long-term use of the building after the original program had been in operation for five years in Unit A, with however, a patient population that was considerably more acutely ill than the one originally designed for. In unit B, a radically different program of emergency crisis intervention had been substituted in 1972. This was an ideal set-up for the evaluation team to see how well the building responded to a different program.

The 1969 and 1974 evaluations reveal that in the unit used as conceptualized in the original design, the communal space dominated patient and staff awareness. When patients were asked in 1969 if the unit's design was "free," or "bossy," more than two-thirds said "free," 14 per cent said "both," and 14 per cent said "bossy." That distribution holds in 1974. Further, 95 per cent of the staff described the Marin design as the best in which they had ever worked. There was more patient activity and interaction at Marin than at Carehaven. Staff at Carehaven who had also worked at Marin preferred the Marin design.

All were keenly aware that the Marin space was unusual and stimulating. In 1969, 39 per cent of the inpatients and day patients said the space was relaxing. Forty-eight per cent said it was both relaxing and challenging. The staff felt it definitely increased socializing and decreased a strong feeling of territoriality, both physically and psychologically. Except for room-to-room trips the patients had to pass

through or pass by the communal space and virtually all activities take place there: games, preparation of foods, meals and meetings. As one patient put it: "With any brains at all, you can find something to do (in the communal space)."

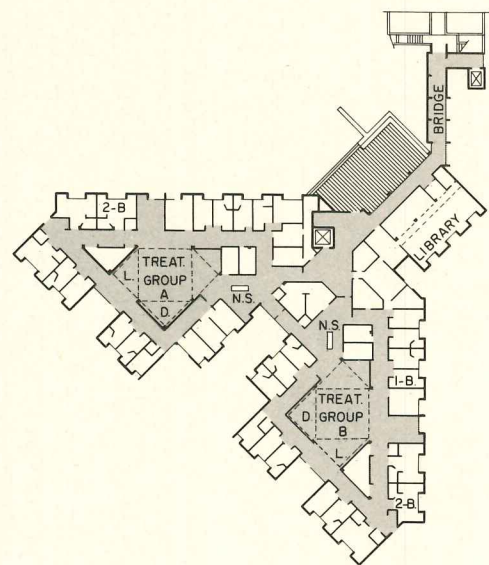
Activities in the communal space overshadowed the secondary public areas: the music, sewing and TV rooms. Those areas quite literally languished due to the attraction of the communal room. In 1969 and 1974 the over-all response was very favorable. Staff noticed patients emerging from group therapy sessions in rooms away from the communal space seemed to lose their moods of anger and aggression soon after their return.

How well does Kaplan and McLaughlin's design concept work for more severely disoriented patients? Though the staff of unit B liked the openness and spaciousness of the communal space, it was less used by patients, according to observation in 1974. The communal space seemed unfocused and sparsely furnished to the evaluation team. According to the clinical staff, the communal space worked well for the day patient program; however, the staff did think the communal space and plan of the unit was overly challenging to severely disoriented patients. Those patients rarely used the communal room, but then this patient type seldom mixes well in any setting.

For crisis patients, perhaps design emphasis should be on control and supervision with small scale simple spatial experiences and undemanding environmental details. As the staff of Unit B put it: a more "home-like atmosphere" with familiar and clearly defined spaces is best for crisis intervention work.

There would seem to be much to learn from the design, and from the evaluation of it.

—Herbert McLaughlin



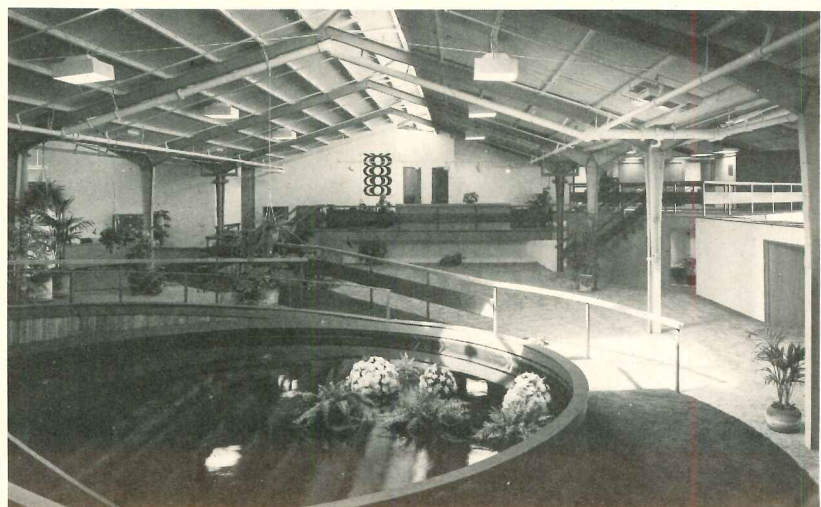
MARIN COUNTY COMMUNITY MENTAL HEALTH CENTER, Greenbrae, California. Architects: Kaplan and McLaughlin—Ellis Kaplan, partner-in-charge; Herbert McLaughlin, programming and design; Fred Lee, construction supervisor. Engineers: Rutherford & Chekene (structural); Ben Lennert & Associates (foundations); G.L. Gendler & Associates (mechanical). Lenore Larsen & Associates, (interior design consultant). Landscape architect: Douglas Batus. General contractor: Christenson & Foster.



Joshua Freiwald photos



Herb McLaughlin observes a developing line of continuity in the concept of indeterminate space from the communal space at Marin, left, to the design for renovation of the Christiana factory for informal office use, right and below. Some of these concepts were carried forward to the Elmcrest facility on the following pages, which Herb McLaughlin thinks is more successful than Marin because pitched roofs permit more varied spaces.



ELMCREST PSYCHIATRIC INSTITUTE

The design of spaces for psychiatric services cannot be codified into universal solutions any more than can the design of spaces for people in general. Certainly, the so-called "indeterminate" spaces seem to work well for in-patient residential activities. But spaces for structured programs such as patients' schools or workshops enter into therapeutic programs by reflecting the atmospheres of discipline and endeavor the patient is likely to encounter in the real world outside.

Elmcrest Psychiatric Institute is a 99-bed private facility for adults and adolescents in Portland, Connecticut. The buildings to accommodate recent doubling of capacity are sited on the cultivated 14-acre semi-rural grounds of three former mansions. The mix of early-American styles of the original buildings, which have housed the operation since its founding in 1938, is shown at top right. The new buildings are designed to introduce a compatible but not imitative vocabulary of a more contemporary aspect.

Architect Jonathan Foote, head of the New Haven based Environmental Design Group, describes the genesis of the project. Medical Director Dr. Louis B. Fierman brought together a group of psychiatrists, architects, administrators and interior designers to create an environment in keeping with strongly developed therapeutic programs with a high level of clinical intensity. Components of the program include milieu therapy which calls for a capability of reproducing the community while sustaining an atmosphere of small self-governing patient groups as well as some of the aspects of family therapy, encounter groups and also some elements of behavior modification techniques of treatment.

The design process itself had many of the aspects of the encounter group. The entire program evolved with many long sessions of interchange among the various specialists. These exchanges were guided at key points by the group member most responsible. Herbert McLaughlin, who was architectural and psychiatric design consultant to the project, was a leader/facilitator in matters relating to his experience in psychiatric design at Marin, Buffalo and other mental health facilities. Dr. Fierman, Elmcrest administrator Allen Cohen, nursing director Joan Schmidt and representatives of the design department of The Psychiatric Institutes of America (a Washington based association representing institute owners) each played a role in the procedure.

There was a particularly active interplay among the design group members in their approaches to the admitting-residential building (center plan at right). Various basic design approaches were considered. These included conventional inpatient nursing unit configurations, some of the proposals of Osmond and other psychiatric workers—and, of course, the "indeterminate" spaces of Marin CMHC and other mental health facilities.

The indeterminate idea gained precedence with the group, and physical plans were prepared demonstrating degrees of structured

organization within the indeterminate concept and responding to specifics of the institute program. A moderately structured plan evolved, as shown, and was fitted into the EDG master plan for this and other buildings of the complex—the school, therapy center, etc.

Designs for the other buildings were similarly generated out of design group interplay but were more straightforward in conventional terms. That is, for example, the multi-purpose building (bottom plan, right) developed out of a need for spaces for eating, meeting and team play. The double-story multipurpose room serves for games, parties, theater and other uses, while a second level over the dining area serves for group encounter meetings and other clinical activities that may be noisier than would be desirable in the communal group spaces.

Similarly, the design for the school rooms sought a more conventional discipline than was applied to the indeterminate inpatient building. Here, on diminished scale, are straighter lines and harder furnishings to foster concentration for whatever attention spans may be available without communal distractions. To preserve a sense of benign discipline, the school corridors are richly warm in color, while classrooms are cool and diligent without being forbidding or austere.

Following is Jonathan Foote's description of the process:

"The architecture of the new Elmcrest is the direct result of a design process which itself is a reflection of the attitudes of the therapeutic community (as previously described).

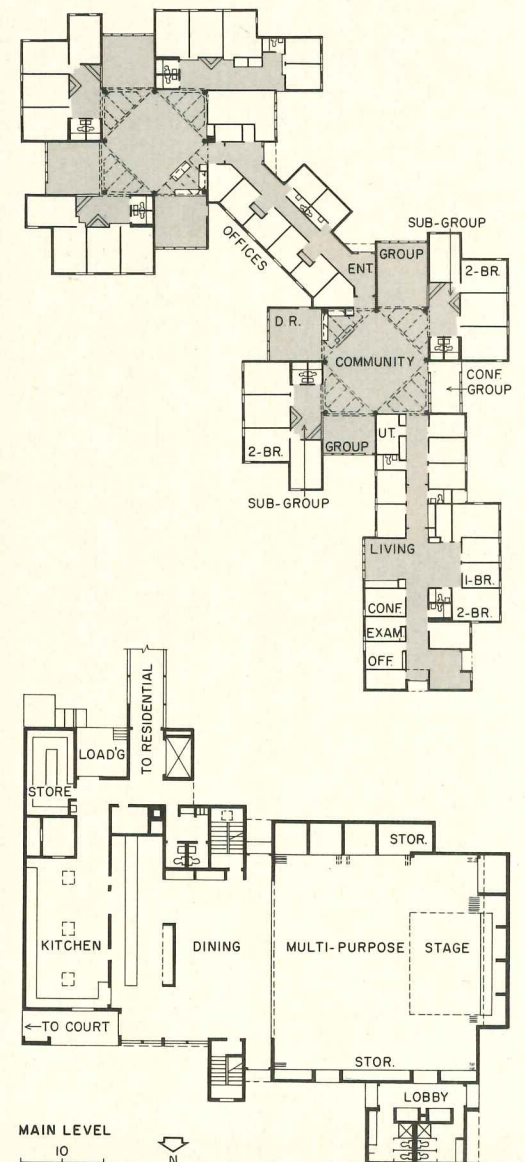
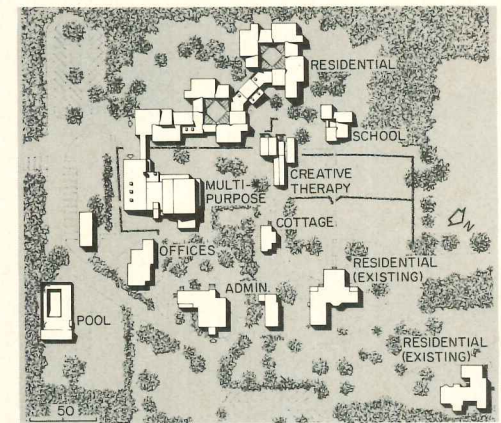
"The architects, who took an active part in all these phases, were then left with the responsibility of developing architectural continuity within the limits of the program and budget—in short, 'to get it all together.'

"In the new facilities, the two-bed room is the territory of two roommates who, with the occupants of three other two-bed rooms, form an eight-person group. They have their own sub-group territory defined by space change, while remaining an integral part of the forum space, which is group territory for three such 8-patient sub-groups housed around it.

"The sky-lighted forum, central to the community, is the space for the bulk of community activity. This space is extremely flexible and conducive to ambulatory activities and is at all times visible from each of the private two-bed rooms.

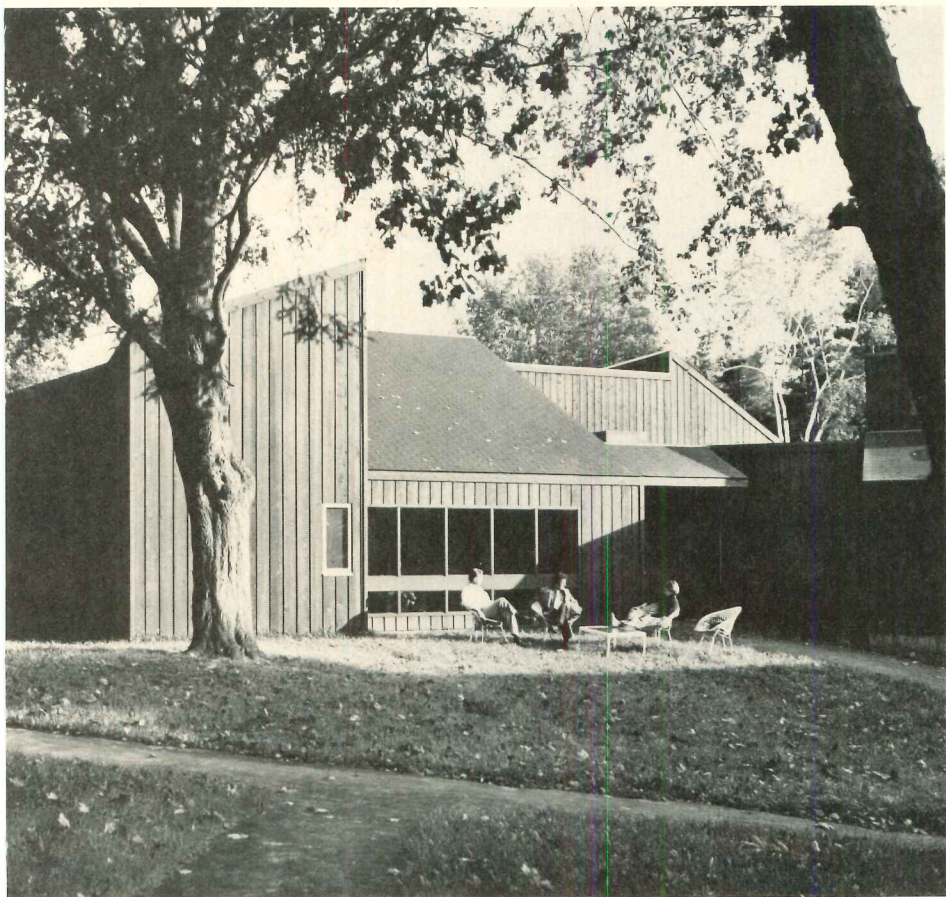
"The nurses' station is a major social gathering point and is therefore treated as the kitchen table might be, where patient, family, staff and visitors can interact, rather than feel intimidated by the traditional barrier approach to the nurses' station.

"Isolation of each unit from the whole is minimized by emphasizing the connections between inside and outside, developing a campus plan which focuses on the grounds and the creative therapy center and by the development of centrally located 'meeting places.' From the inside, there will be a constant awareness of weather, light and season.





Lautman photos



Western cedar siding and pitched roofs give the new buildings at Elmcree a character with which patients can identify. Both the wood and variations in height are carried to the interior providing accents of rough wood colors and telephone pole columns in contrast to vinyl chairs and plaster walls in tones predominantly yellow

and orange. The roof angles permit volume variation and skylighting to help identify transitions of space. The central community space, above, is surrounded by alcoves for smaller group activities and by four-bedroom pods of dormitory space, each with its own subgroup alcove—a kind of eight-member family room.

"As a member of the community goes from his unit to the creative therapy center, he is made aware of the whole and of the constant activity of the community."

All of the interiors at Elmcrest were the special concern of the design department of Psychiatric Institutes of America. Marge Thomas, director of the department, and Marcia Lacy, project designer, emphasize that "in-determinate," in their parlance, does not mean "indefinite" but has a special character for its own uses in the community. "Each space within the new facility," says Marge Thomas, "was planned and furnished to meet specific needs and perform certain functions. Through experience with other psychiatric facilities, we have learned that large, ill-defined, multipurpose spaces do not work for therapy. Consequently, the over-all facility was designed to create a progression of varied spaces to foster a therapeutic setting for the hospital's program." For example, patient bedrooms (center photo at right) were furnished with specifically designed modular furniture for ease of maintenance without institutional appearance. Colored tackwalls permit individual displays. The rooms are comfortable but not for lounging or nesting. This is in keeping with a treatment philosophy of interaction rather than isolation.

Furniture designed at PIA for community and lounge areas includes sturdy vinyl chairs that can be moved about like giant building blocks (bottom photo, right) and coffee tables strong enough to serve as stages for psychodrama. In smaller subgroup areas, carpeted small platforms strewn with pillows encourage casual sitting to observe the open area.

Patients return from outside activities through an entrance near the kitchen and snack-bar area (top photo) where they can help themselves within usual family limits. Spatial transitions and variety of light and color are enhanced by varied ceiling treatment, pitched or flat, so there is identity and even a sense of privacy despite almost total visibility.

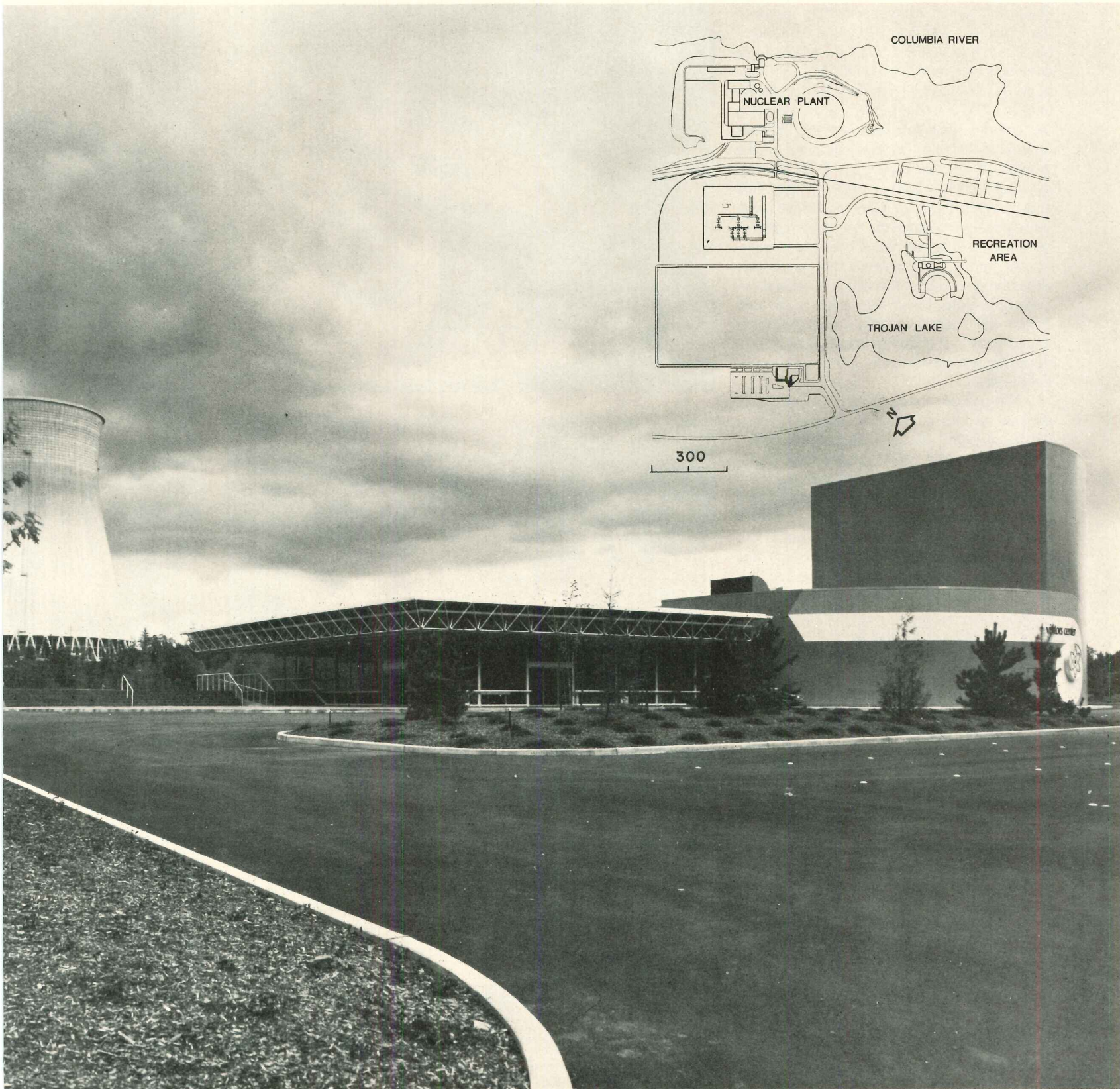
Evaluation programs outlined for Elmcrest include ongoing work by an internal staff committee to develop information for both current use of spaces and for future design guidance. EDG is also working with an environmental physiologist to see if the physical impact of spaces on staff and patients can be measured. There will be a design group meeting after several months to assess the design. Also, funds permitting, it is hoped to draw some comparisons between remodeled old buildings and the new spaces in a clinical context.

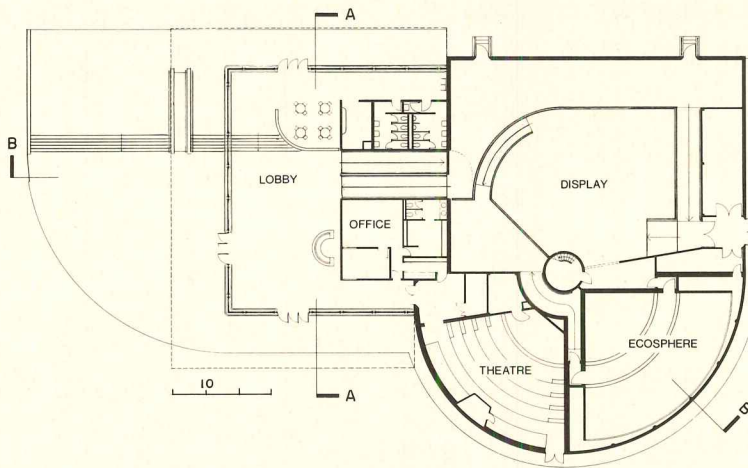
ELMCREST PSYCHIATRIC INSTITUTE, Portland, Connecticut. Architects: *Environmental Design Group*—Jonathan L. Foote, project architect; Barun K. Basu, project coordinator. Program and design consultant architect: *Herbert McLaughlin, Kaplan/McLaughlin Architects*. Engineers: *John C. Martin* (structural); *Hubbard, Lawless and Osborne* (mechanical/electrical). Interior designers: *Design Department, Psychiatric Institutes of America*—Marge Thomas, director, Marcia Lacy, project designer. Elmcrest Design Group: *Louis B. Fierman*, clinical director; *Allen Cohen*, hospital administrator; *Joan Green* and *Lou Perlin*, unit directors; *Joan Schmidt*, chief of nursing; *John Silverman*, PIA representative; *James Green*, group facilitator. General contractor: *J.H. Hogan, Inc.*



NUCLEAR POWER PLANT VISITORS CENTER

This light and airy pavilion, housing visitor information services for the Northwest's first commercial nuclear electric generating plant, contrasts strongly with the huge cooling tower that rises behind. Designed by Portland architects Wolff Zimmer Gunsul Frasca, the Visitors Center handsomely and skillfully expresses the various functions of the building.





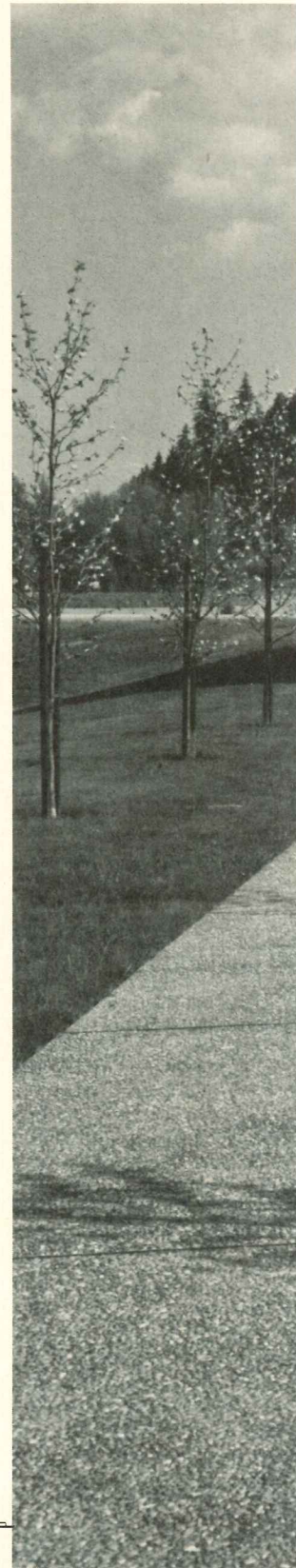
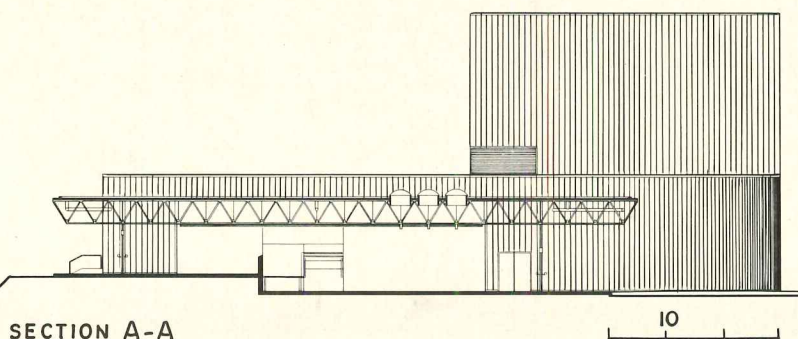
The first thing that visitors see as they approach the Trojan Nuclear Power Plant on the Columbia River near Rainier, Oregon, is the huge cooling tower, equal in height to a 50-story building. But the first building they come to (and the only one the public has access to) is the colorful, graceful, human-scaled Visitors Information Center at the entrance to the grounds of this new utility plant. The Center provides travelers with a welcome rest stop and an opportunity to learn about the awesome process by which the energy in nuclei of certain elements can be released and transformed into electric power, and specifically about the operation of this first commercial nuclear generating plant in the Pacific Northwest. Trojan will eventually supply enough power for a city the size of Portland, or twice that produced by Bonneville Dam farther up the Columbia River.

The primary function of the Center is to educate, and the information it presents is in a variety of forms, designed by an information display consultant whose program the architects had to meet. Each kind of information—display, movie, lecture—required a different kind of space. Such diversity in so small a structure could have been chaotic, but in this building the design was controlled with rare care, from concept to details, and handled with exceptional elegance and style.

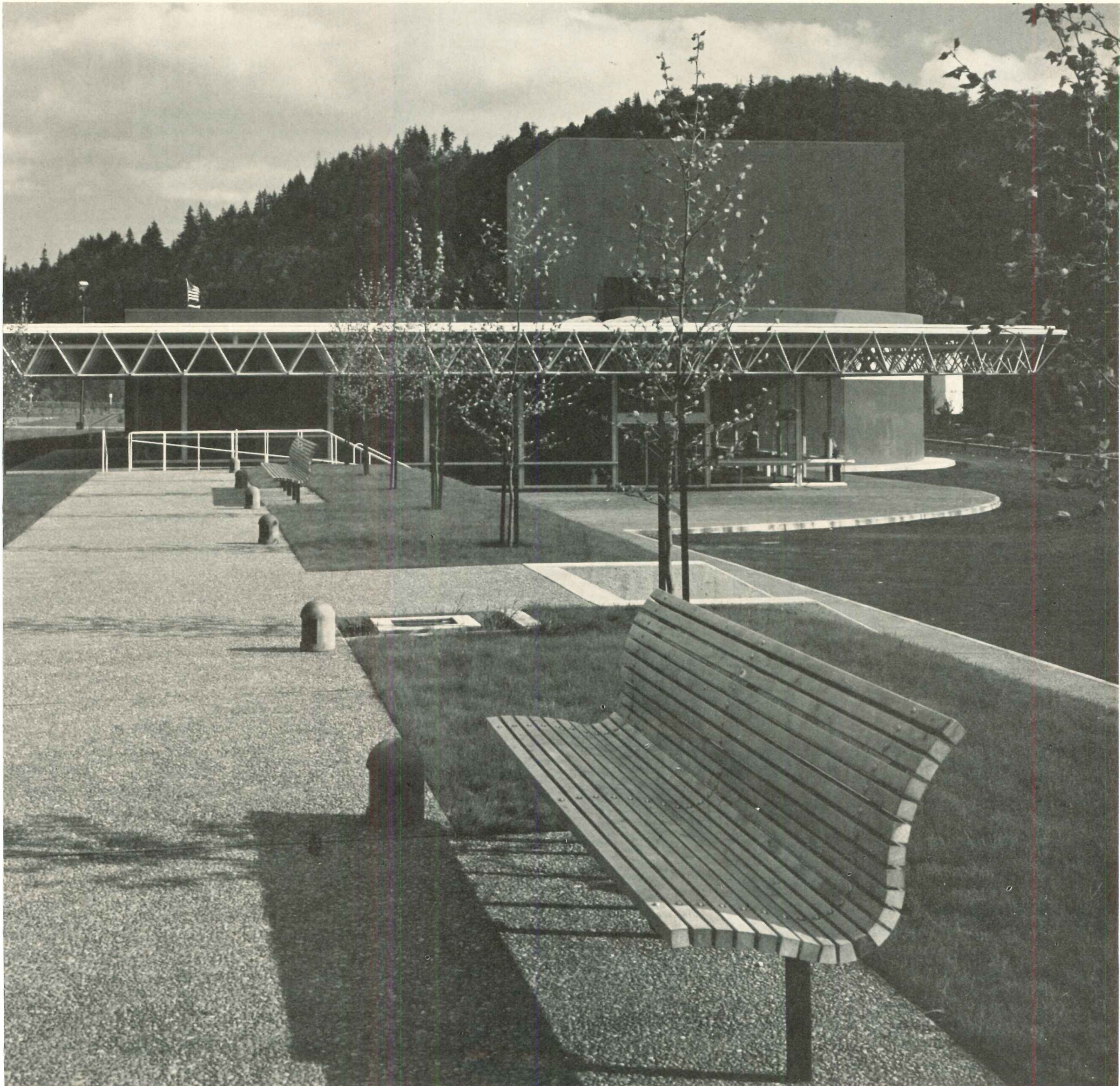
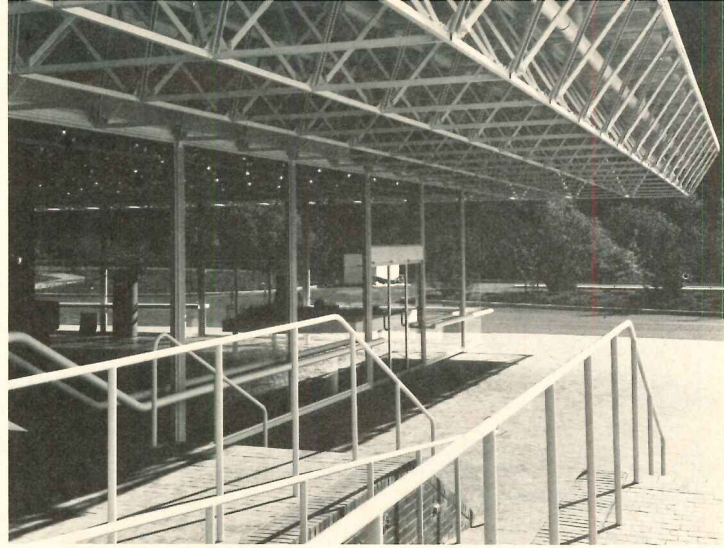
VISITORS INFORMATION CENTER, TROJAN NUCLEAR POWER PLANT, Rainier, Oregon. Owner: Portland General Electric Company. Architects: Wolff Zimmer Gunsul Frasca—Brooks R. W. Gunsul, partner-in-charge; Raymond A. Boucher, Robert J. Frasca, Gary Larson, design team; Pietro Belluschi, consultant. Engineers: Nortec, Inc. (structural/mechanical/electrical.) Interiors: Karol Niemi. Exhibit design: Walter Landor Associates. Landscape architects: Lawrence Halprin & Associates. General contractor: James S. Hickey Company.

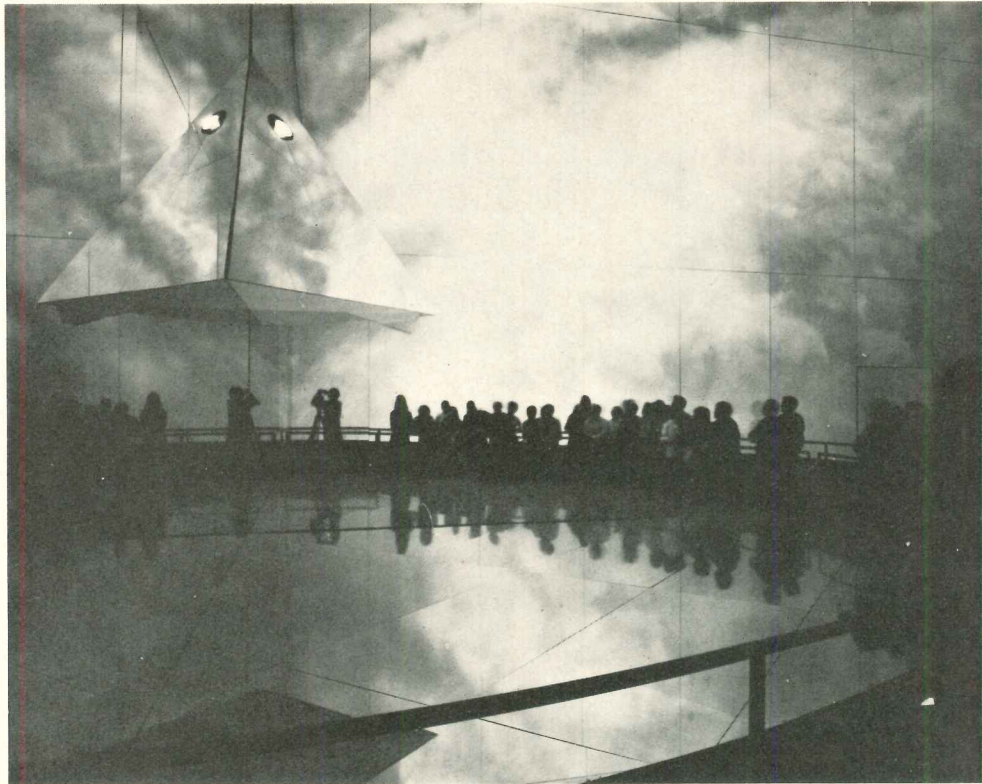
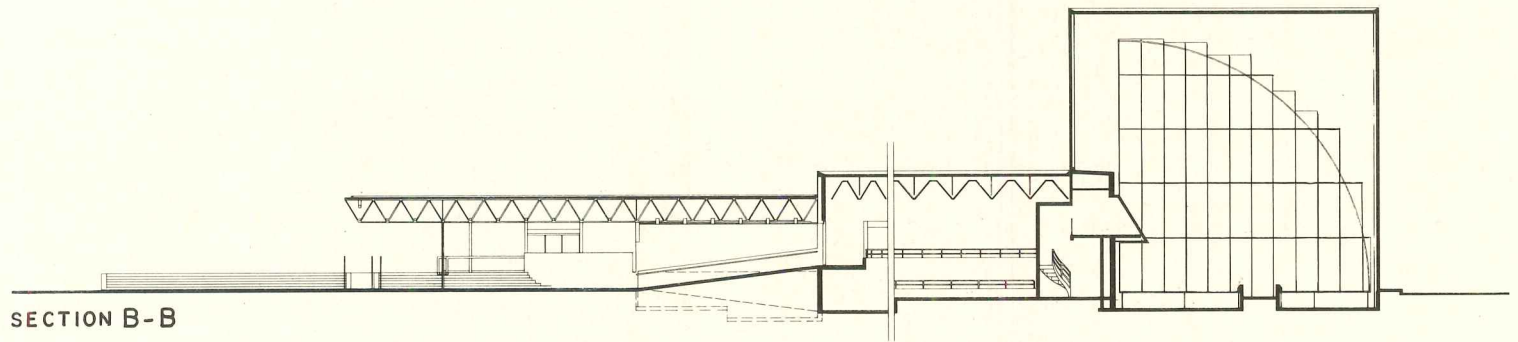


Ed and Carol Hershberger photos

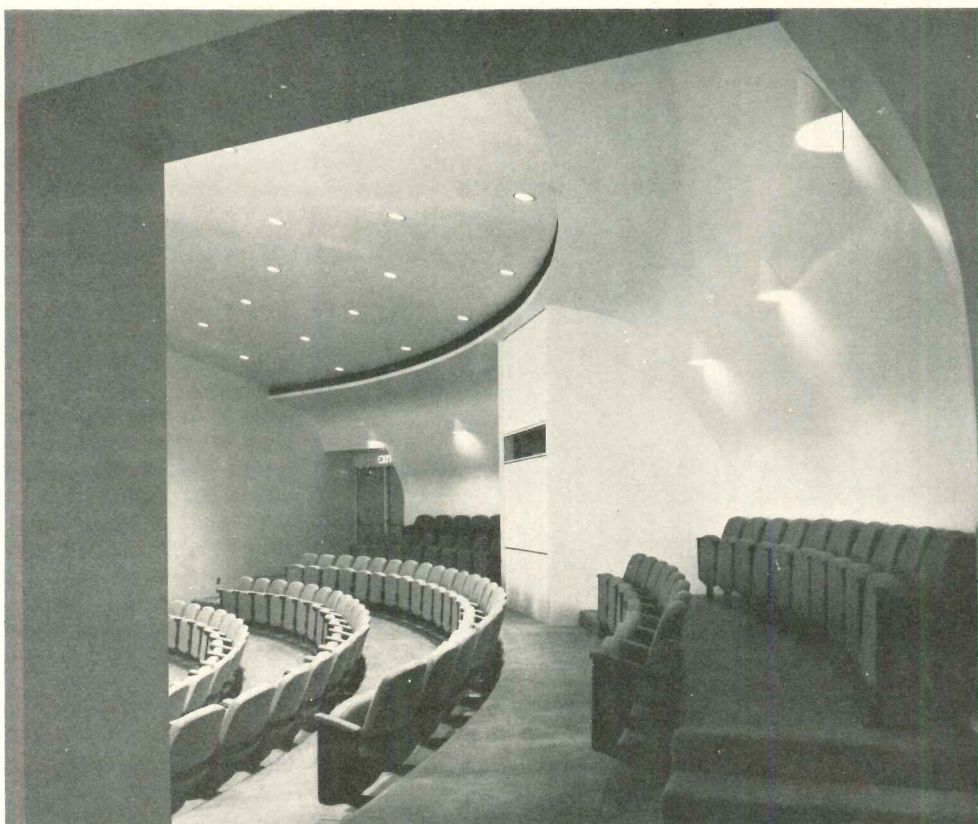


The building consists of a large, open, two-level lobby covered with a space frame, a large display area reached by ramp from the lobby, and a semi-circular aluminum paneled tower, painted bright yellow, housing auditorium and ecosphere. The space frame, painted white, gives a light and lacy look to both exterior and interior, inviting entrance and making a pleasant experience of waiting for entrance to displays and programs. A snack and eating area, on the upper level of the lobby, overlooks the lake and the plant. Landscaping — paved paths, grass lawns, deciduous trees and benches — complement the character of the building.





The semi-circular tower, which carries the Center's identification (and the insignia for atomic energy), encloses the Center's most unusual space—the ecosphere—and the auditorium. Although neither is large in either area or volume—they are in actuality each an eighth of a sphere—they are both effective and appropriate for their individual functions. The ecosphere (photo left, and section above) is a multi-dimensional movie "theater," in which the viewers stand in what appears to be a balcony to watch the movie projected on the curved wall of the chamber. Walls and floor are covered with shimmering mylar so that the room appears to be twice its actual size, and the "balcony" with its viewers is reflected on what seems to be a well, but is actually the floor. Suspended from the flat wall of the room is a half-pyramid in which are the audio and visual controls for the movie program. The smallness of this "theater" and the drama of its *trompe l'oeil* never fail to astound the visiting public. The auditorium (below, left) is adjacent to the ecosphere, and is a remarkably pleasant small lecture hall with seats for 150. The white walls of the room are nicely offset by red upholstery on the chairs.

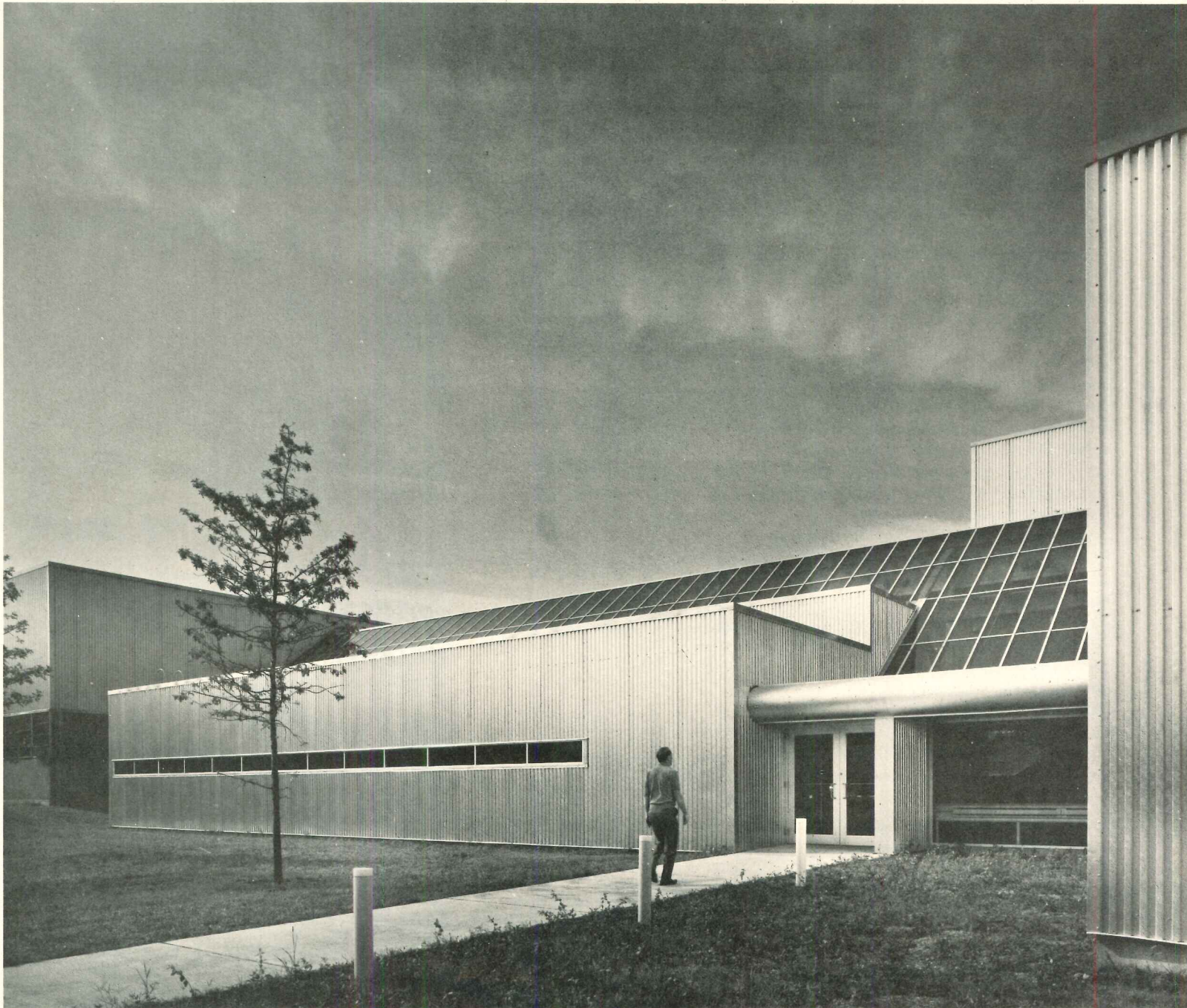


PRODUCTIVE ELEGANCE FOR INDUSTRY

In perhaps no other building type has the dictum "form follows function" been taken so seriously as it has in buildings for industrial production. On first analysis, such facilities—when stripped of amenity—seem to provide the most direct route to the reason for their existence: maximum results for minimum investment. But, the assets to be derived from higher-quality production facilities can no longer be ignored. The five buildings on the following pages were designed with fresh eyes—by imaginative architects (most had little previous industrial experience) for four clients who have clearly seen the worth of the extra commitment made: hopefully increased sales, through a better corporate image, and surely increased production from improved employee relations. Utilizing a variety of sheathing techniques the architects have created exciting, not just functional, forms—which say a lot about their owners. And they have created places that induce workers to function effectively—and not to just come to work.—*Charles Hoyt.*

Westinghouse, Medium-speed Elevator Division

Joseph W. Molitor photos



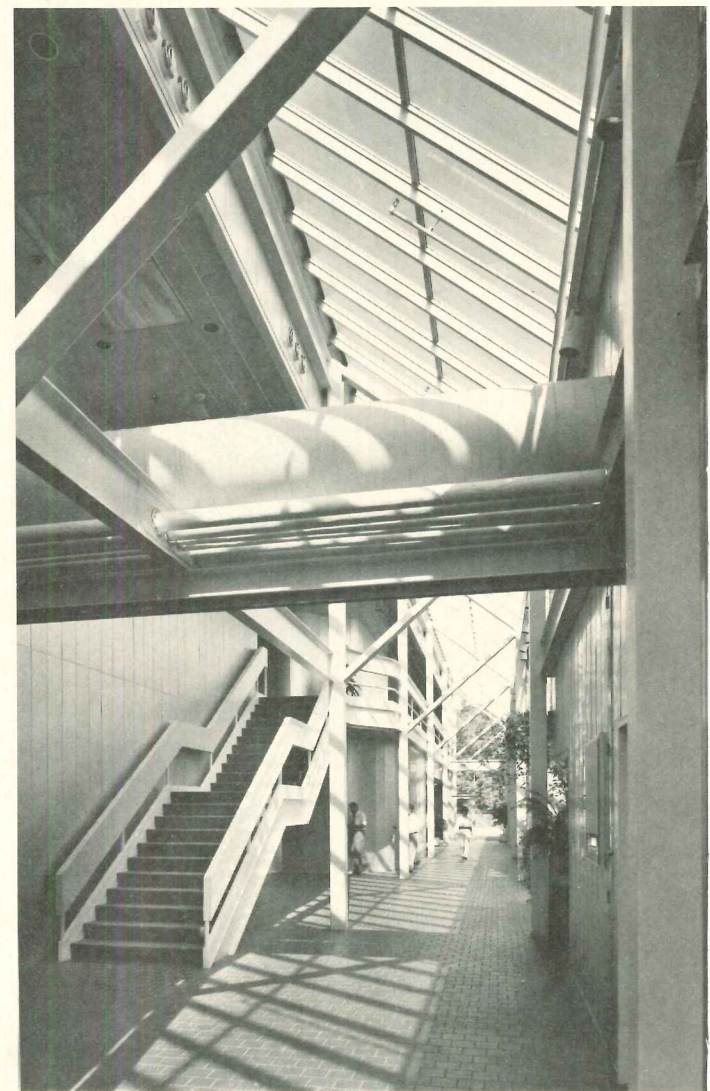
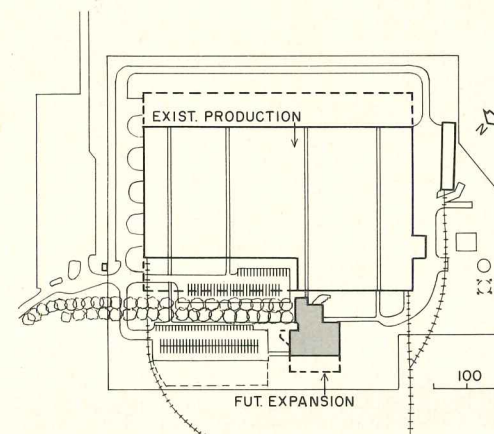
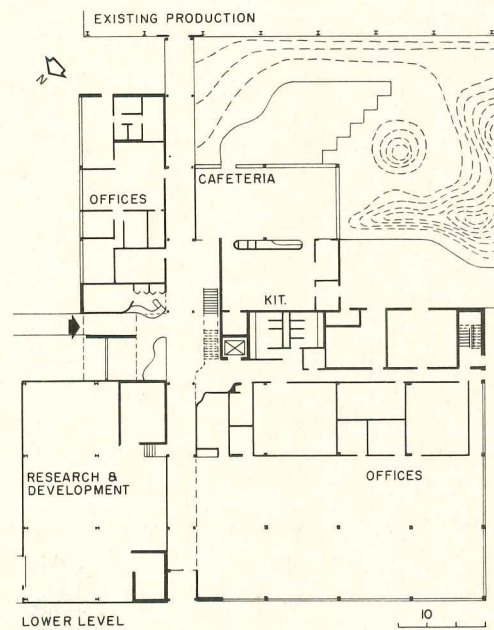
Long a leader in commitment to good design, Westinghouse began operations of this plant in Randolph Township, New Jersey, in 1952. The original 420,000-square-foot manufacturing building was designed by Skidmore, Owings & Merrill. When there was a need for expansion of offices and research, the corporation turned to architects Bohlin and Powell, who first examined the idea of placing the new spaces (32,000 square feet were required in the first stage) on top of the plant in a location that was central to operations and that avoided the usual "tacked-on" appearance of plant office space. But costs and circulation were impossible in the integrated scheme, and the architects turned to examine how an addition might become a positive asset to the rural site of 150 acres, and an organizing element for the whole plant.

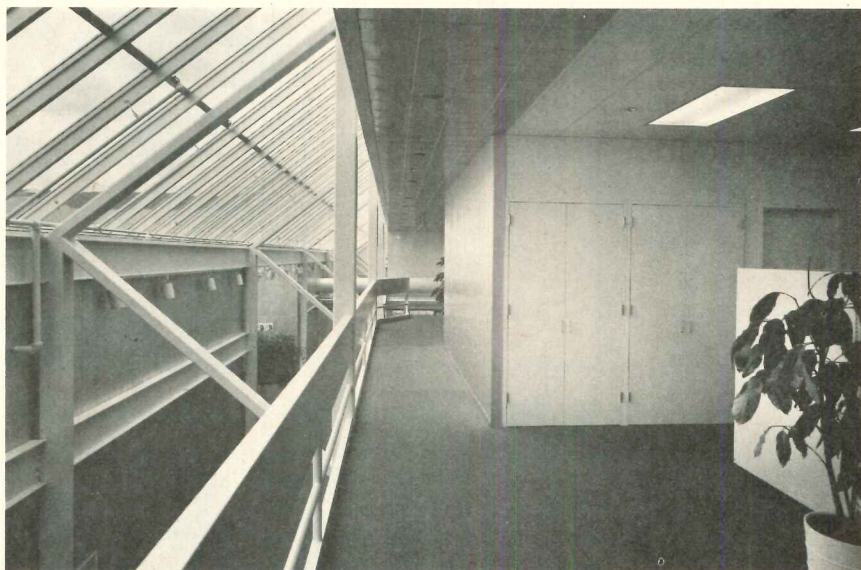
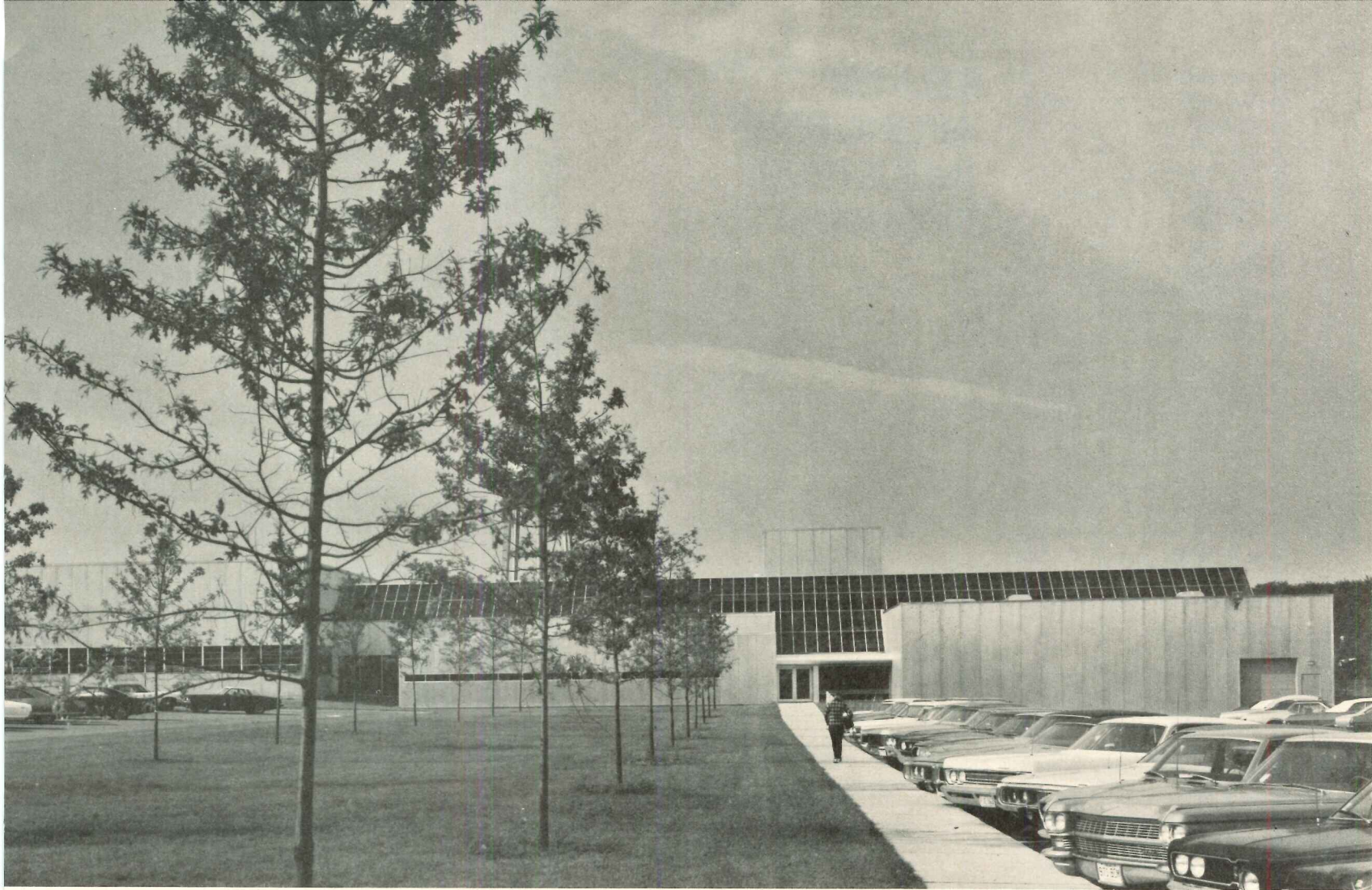
Accordingly, a new focus was created by directing the access road toward the new building and reinforcing the new axis with rows of trees, which also shielded the initial view of the older production facility. The focus will, in the future, be further reinforced with a test tower next to the entrance, which is shared by visitors, and plant and office workers alike; and it is reinforced by the inviting glass roof over the spaces within.

In creating the form of the addition, Bohlin and Powell did not try to create a unique piece of architecture wherein all of the parts were equally as important. The building has an economical steel frame, and is simple and straight-forward—with only selected parts accentuated by special treatment—the glazed corridor, one curve in the corridor wall, and the rounded fascia above the entrance that reflects light from any direction and spells "entrance." The sheathing is an extension of the original plant's polished, mill-finished aluminum skin. Such economy of means is not only appropriate but helped to bring the building within low, allowable construction costs—and helped the architects win a Pennsylvania AIA award.

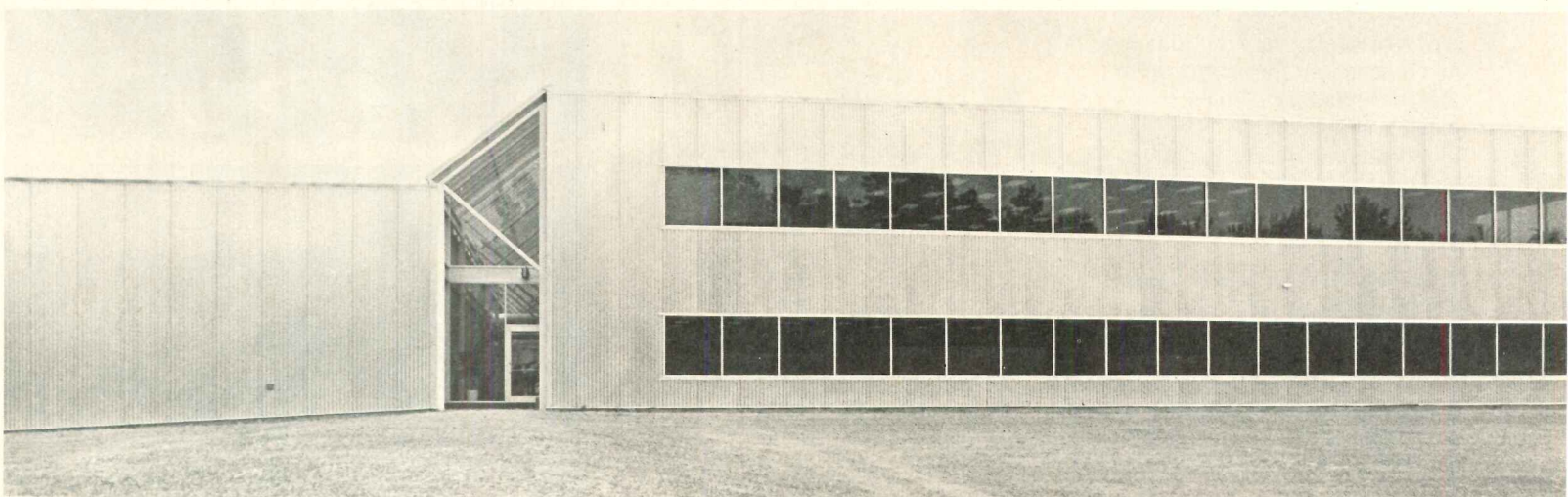
MEDIUM-SPEED ELEVATOR DIVISION, Randolph Township, New Jersey. Owner: Westinghouse Electric Corporation. Architects: Bohlin and Powell—partner-in-charge: Peter Bohlin; project architect: Donald Maxwell. Engineers: Vincent Szykman, Inc. (structural); Paul H. Yeomans, Inc. (mechanical/electrical). General contractor: Goltra Construction.

MEDIUM-SPEED ELEVATOR DIVISION FOR WESTINGHOUSE





Housing administration, employee facilities and a research and development laboratory, the new building (at right in photo above) is an extension of the massive older plant seen at the left. All of the new facilities are related to a glass roofed corridor (photo left) which terminates at an outside wall (photo below) and in a production aisle of the plant (right), forming an unmistakable "heart" for the whole plant. A gate under the exposed duct allows employee facilities (located toward the production areas) to be isolated from the offices for night shifts.



Harvey Krasnegor

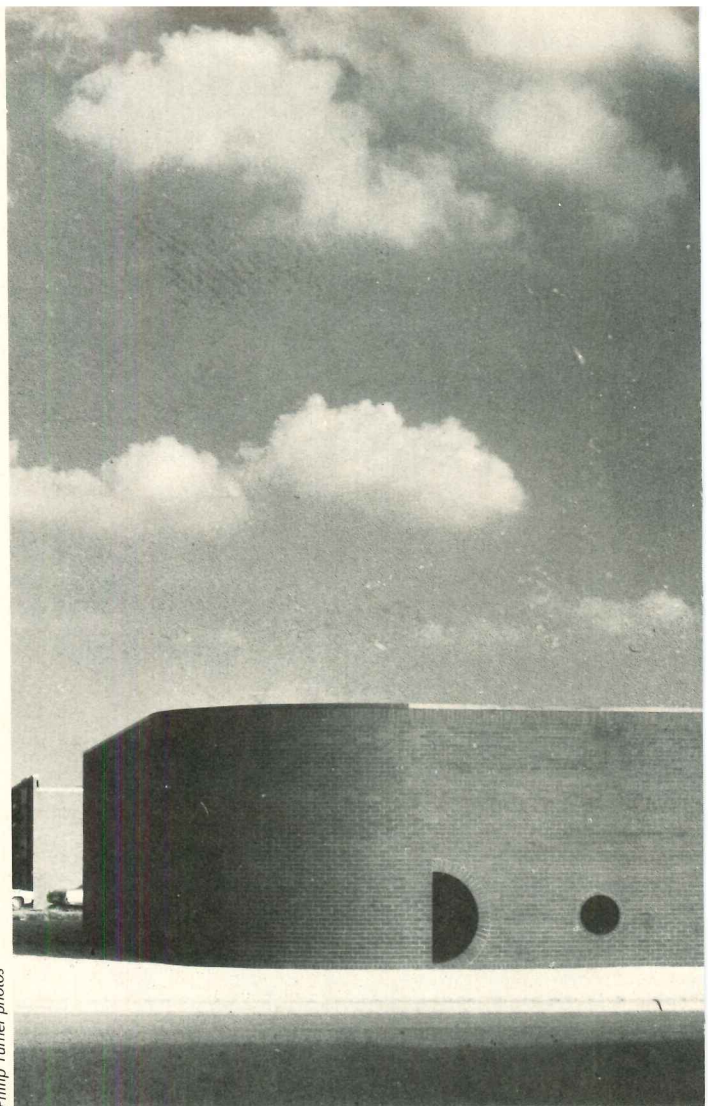
To gain distinction in a surrounding amorphous limbo of industrial buildings and single-family houses, architect Stanley Tigerman has taken an approach that is opposite to that of Bohlin and Powell (previous pages). For an enlightened speculative developer, Kelmer Arlington Associates, he has consciously created a piece of isolated "sculpture," which—meant to be seen from all sides—stands as an anchor for disparate surrounding parts. Indeed, he was so intent on preserving the monumentality of this example of an often mundane building-type, that he took pains to ensure that no plants would grow against the walls by providing a strip of gravel around the base. The 22,000 square-foot building is meant to look like its original model with flush surfaces and openings.

And the client has every reason to be happy with the results. So universally appealing is the finished product, that it is fully rented, in a competitive market, to tenants who include a fire extinguisher manufacturer and a sculptor. Equally important, its construction cost did not exceed the \$11-per-square-foot allowance established by other industrial buildings in the area. This is largely attributed to minimization of the costs of the basic structure; the concrete block and brick cavity walls of the exterior are load bearing, and one row of pipe columns and beams provides the only intermediate support in the building's 95-foot width. Joists are welded at the points of contraflexure to increase their practical length of support. An added bonus is increased flexibility due to few interior columns. All finish items—including plumbing fixtures and roof-top air handling units—are supplied by tenants.

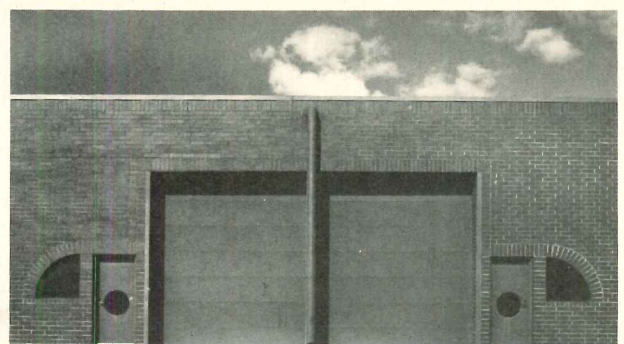
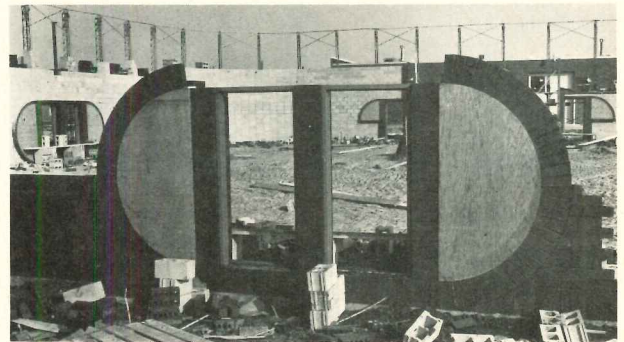
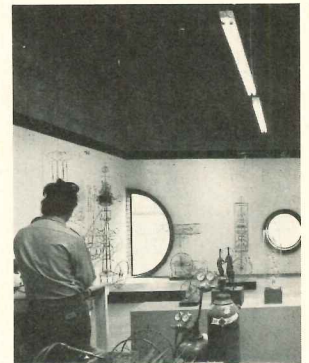
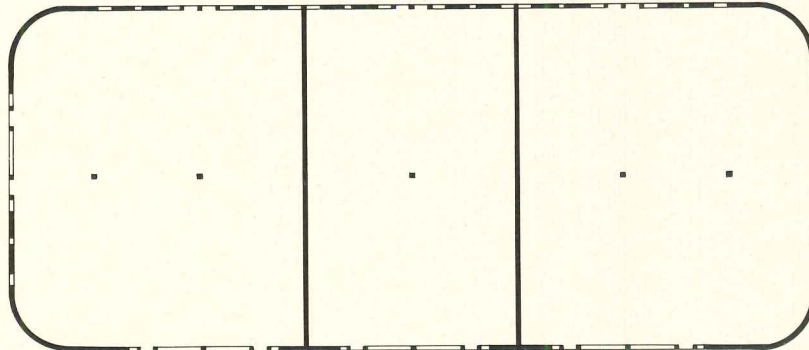
The economy of means is a factor shared with Bohlin and Powell's building. But here, there is no real front or back, and a minimal change in appearance from the street (photo, top) to the truck-loading side (bottom). The flat, rounded-box concept is articulated only by the two projecting fire walls.

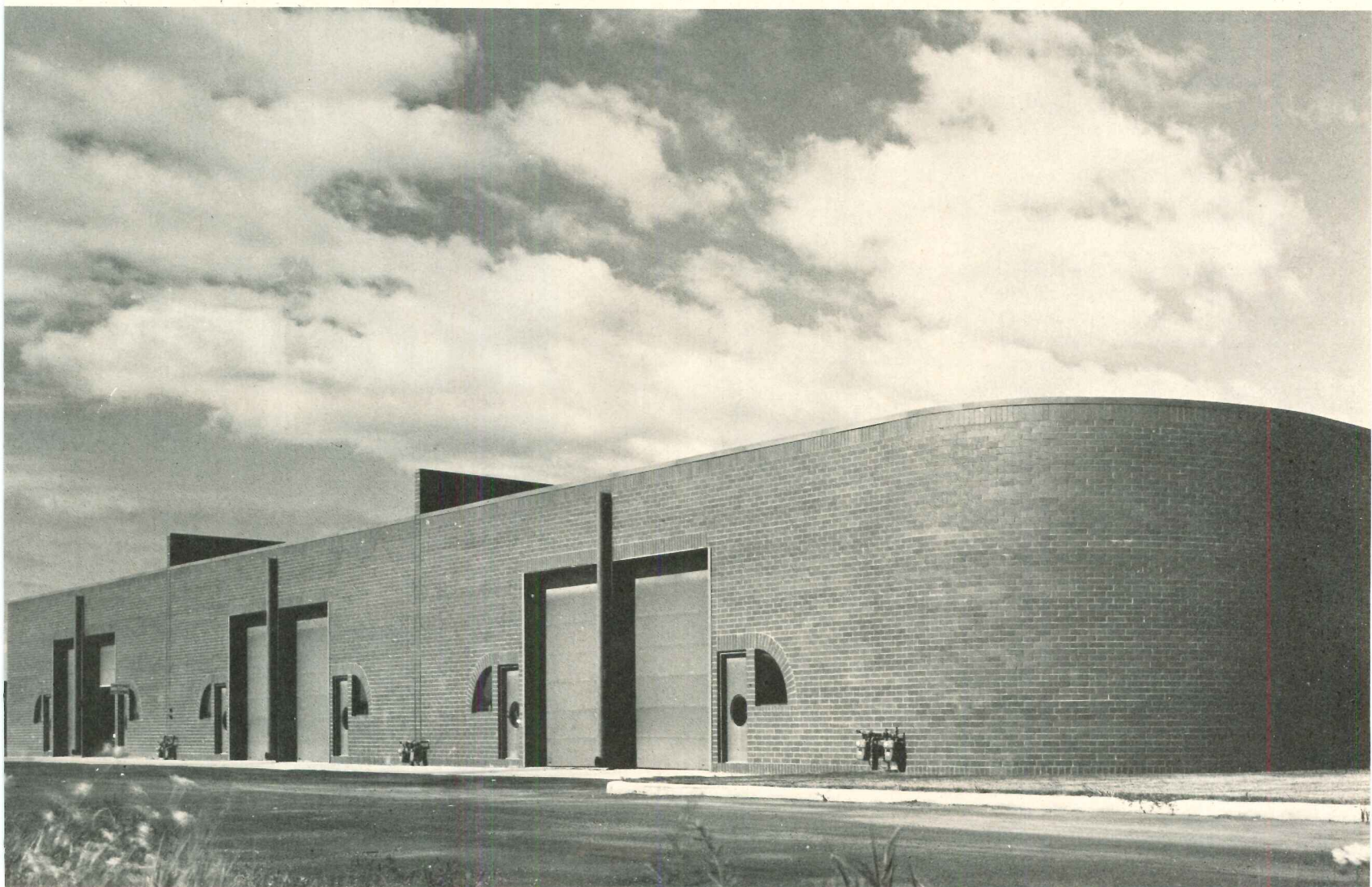
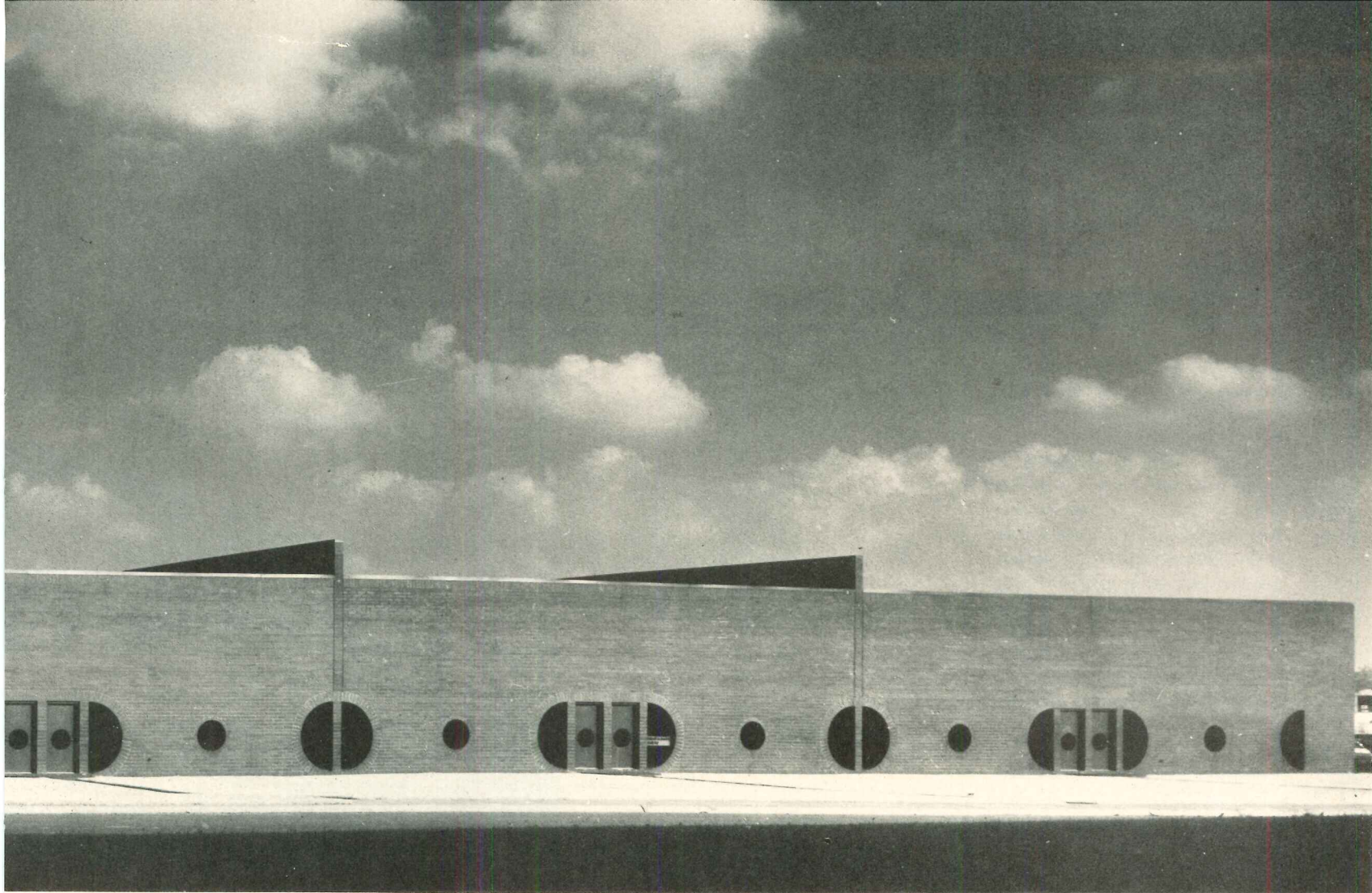
KELMER ARLINGTON INDUSTRIAL BUILDING, Arlington Heights, Illinois. Owner: *Kelmer Arlington Associates*. Architects: *Stanley Tigerman & Associates*—associate-in-charge: *Anthony Saifuka*. Engineers: *Raymond Beebe* (structural); *Wallace & Migdal* (mechanical/electrical). General contractor: *Kelmer Arlington Construction Management*.

KELMER ARLINGTON INDUSTRIAL BUILDING



Philip Turner photos





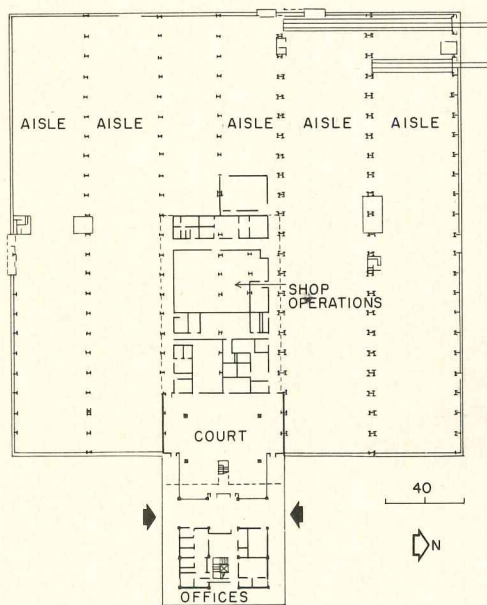
STEAM AND GAS TURBINE PLANT FOR WESTINGHOUSE

Because of a talented in-house staff to develop design criteria, Westinghouse has been able to exactly determine the requirements that the corporation wants in each of its new facilities. Here, at Round Rock, Texas, the needs that were given to architects Caudill Rowlett Scott and Lockwood, Andrews & Neuman, included: a quick return on the initial investment, an interior environment that would facilitate good will between management and workers, and a positive impact on the neighboring community.

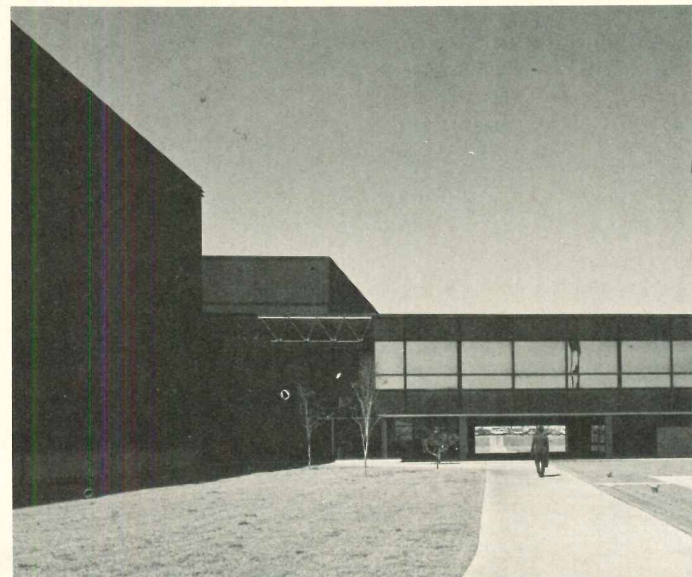
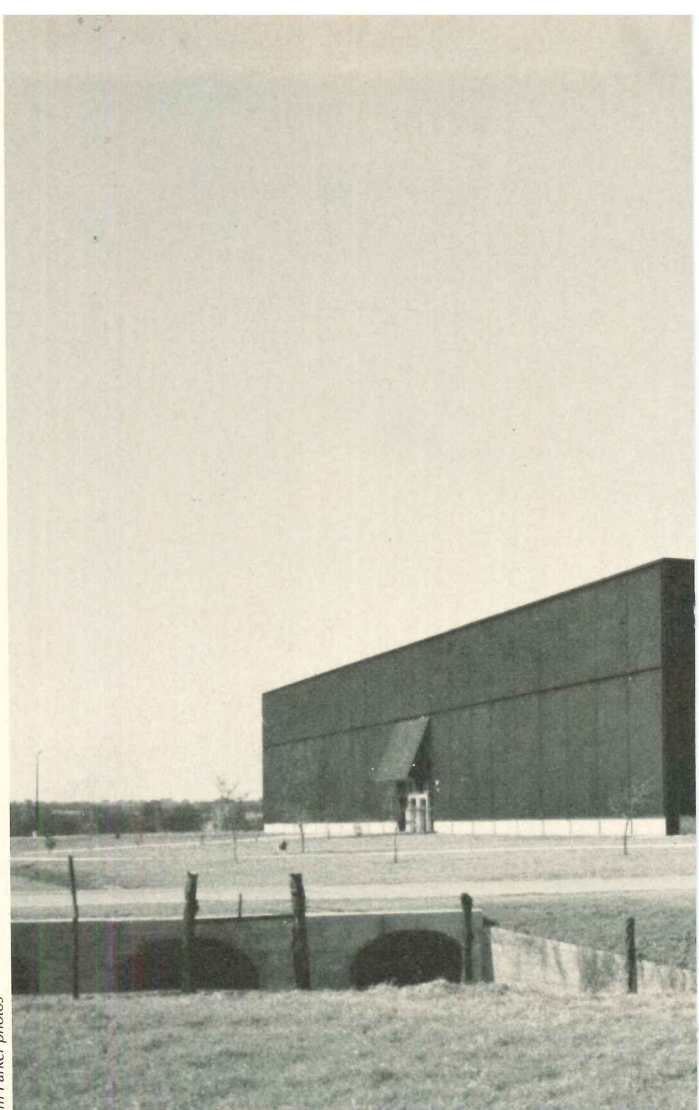
The architects produced a straightforward, square plan for the production spaces that accommodates the assembly aisles in the most efficient way and facilitated fast erection of the prefabricated, pre-painted steel frame. Overlapping of the construction schedules allowed the building, of 240,000 square feet, to be completed in 18 months and for less cost (\$27 per square foot) than the budget. To reduce heat transfer through the exterior walls of the totally air-conditioned spaces, the production area is windowless. The high mass required to house the crane bays is softened by a sheathing of weathering steel. Typical of this building type, the executive offices and employee facilities are contained in a separate, lower unit, but here that unit is visually integrated into the larger mass by being partially surrounded by it.

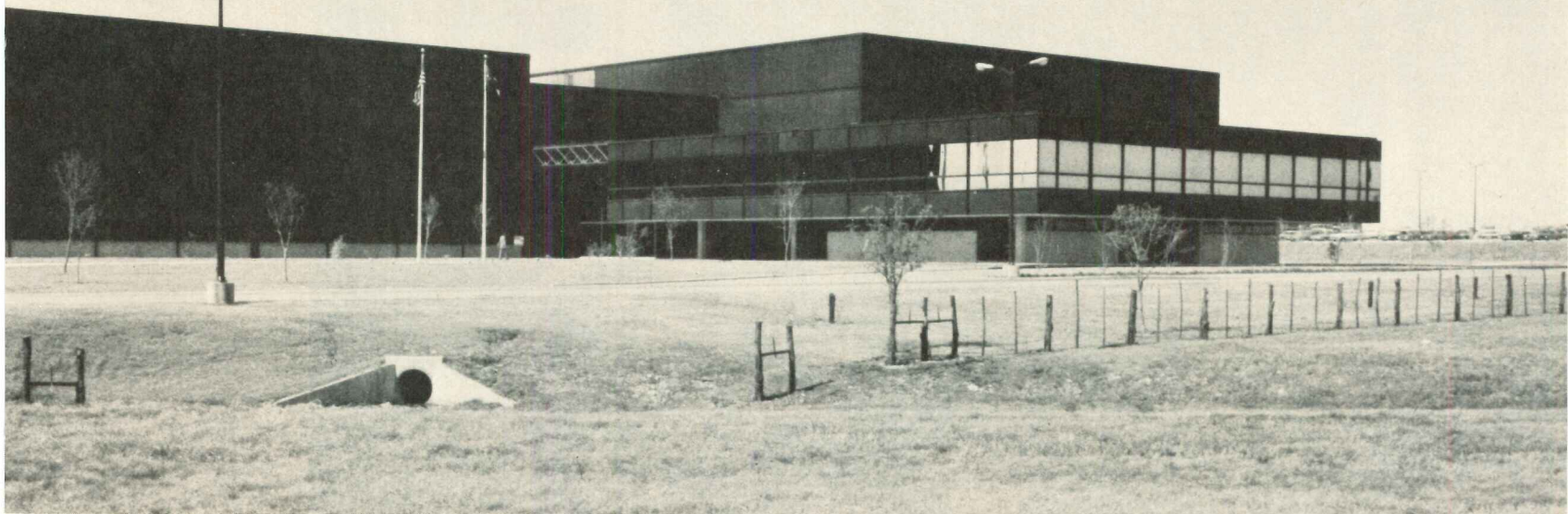
At the juncture of high and low elements, CRS introduced a glass enclosed court, which is simultaneously a relief from the windowless production spaces and a pleasant meeting ground for all levels of employees at the plant. Here, everyone has their lunches, coffee breaks and meetings, in an environment that is visually connected, but atmospherically isolated, from the sometimes harsh climate outside. Every effort has been made to produce a space that people will enjoy, and which can be viewed from both production and office spaces. Windows (which do not increase heat transfer from or to the outside) open industrial spaces and offices to the court.

WESTINGHOUSE STEAM AND GAS TURBINE PLANT, Round Rock, Texas.
 Owner: Westinghouse Electric Corp.
 Architects and engineers: Caudill Rowlett Scott and Lockwood, Andrews & Neuman—project manager: Ralph Carroll; lead designer: Frank Lawyer.
 Interior and graphic consultant: CRS Interior/Graphic-director: Jeffrey Corbin. General contractor: Warrior Contractors.

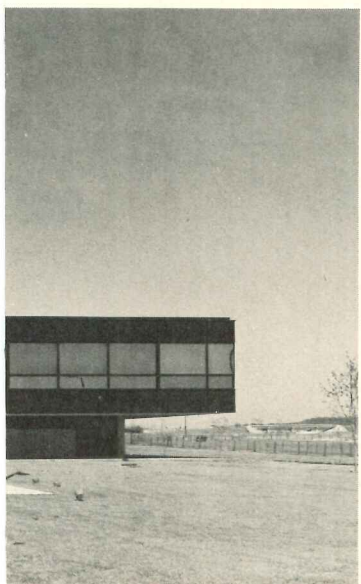
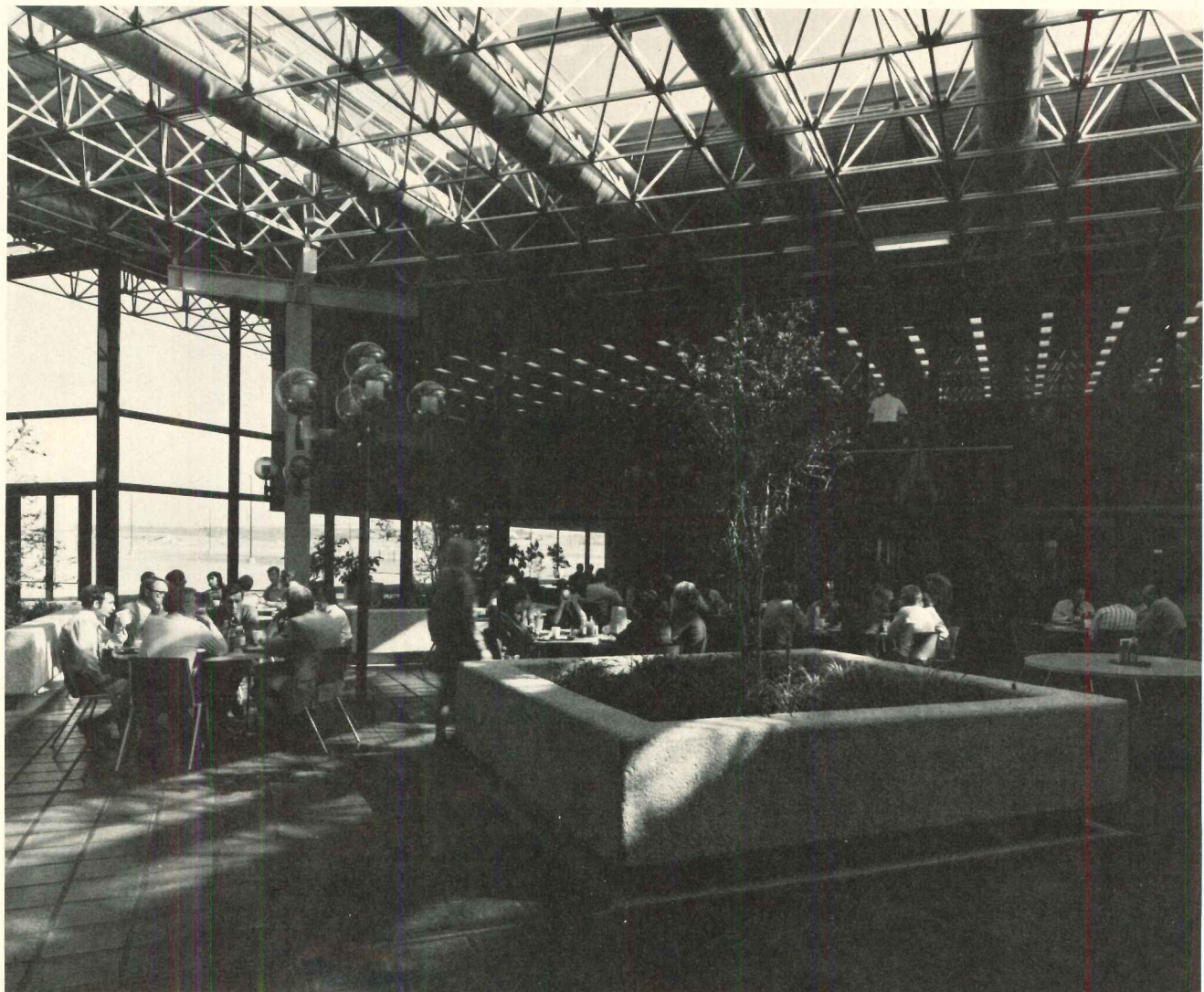


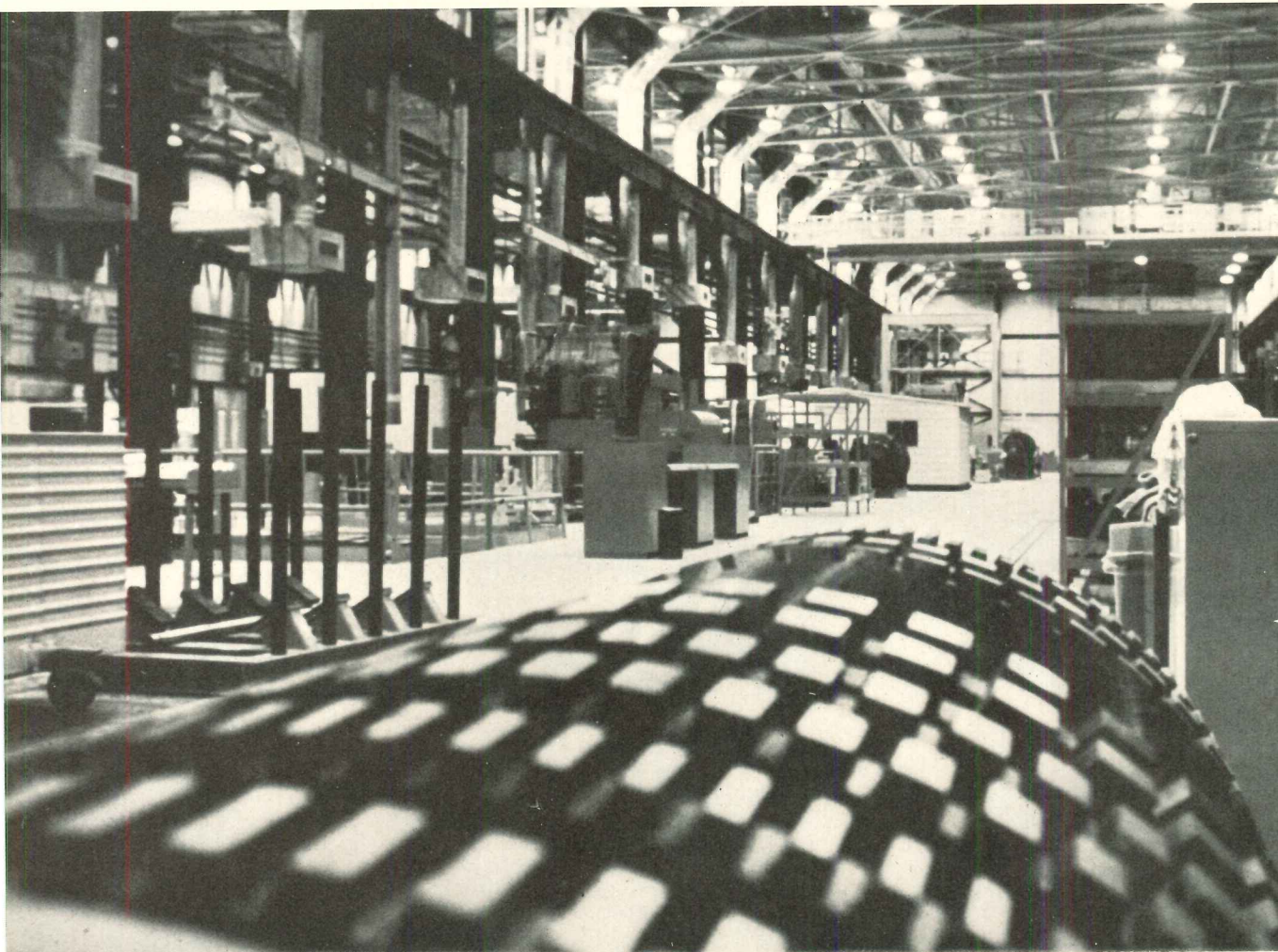
Jim Parker photos





All employees and visitors enter the massive building under the windows of the projecting executive offices (photo below) and go to either the executive lobby or the glass enclosed court (right). This airy space is covered with an exposed steel structure and spanned by exposed, round ducts for air handling, which also function as partial sun screens. Plants and fountains give pleasant relief from the flat surrounding landscape and the enclosure of the heavy industrial spaces that can be seen through the glass walls.

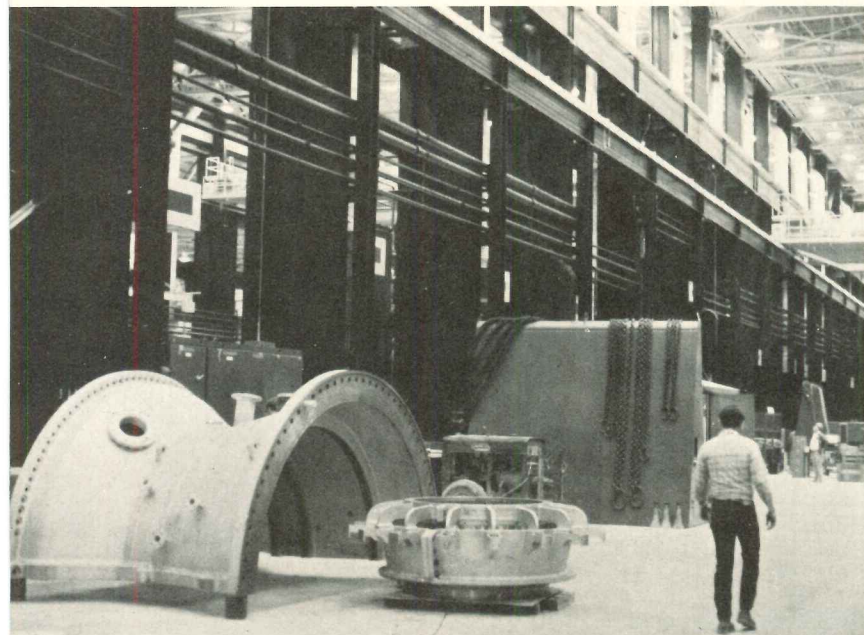




Westinghouse has been a leader in realizing the increased productivity that can be gained from extra effort spent on designing production spaces—both in efficient organization and in producing the psychological uplift of an eye-pleasing environment. Their rehabilitation of several million square feet of older plants in Pittsburgh has produced dramatic results in increased voluntary productivity, higher sales to impressed buyers and lower life cycle costs. This program, carried out by Hobart Betts, will be covered in a future issue of RECORD.

At Round Rock, Jeff Corbin of

CRS Interior/Graphic has developed signage and color coding which clearly identify the functions of various machines and their location in the building. Most important, all moving equipment is painted a bright cautionary yellow for safety, in accordance with increasing current practice. The brightly colored environment is not only cheerful but efficient. Corbin also designed the office interiors, which are unified by materials and color. Many of these spaces have views directly into the glazed court (photo right). The engineering offices, shown in that photo, are over the production floor.



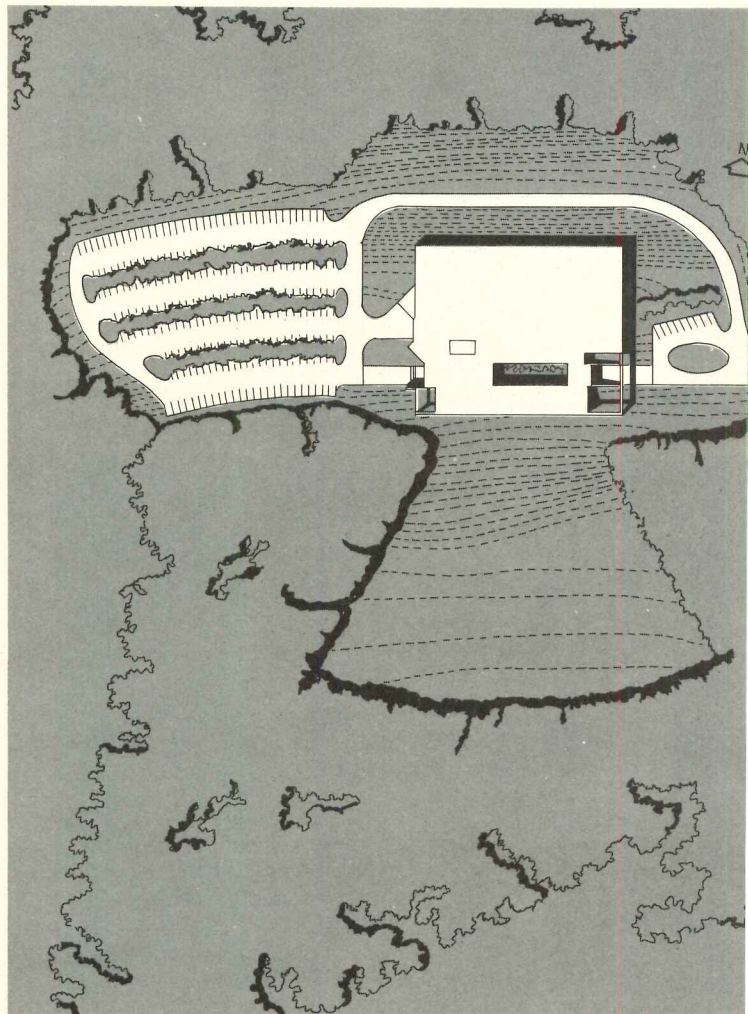
An unusual loft-type building, which produces information as a product, this housing for computers was designed by architects Kahn and Jacobs/Hellmuth, Obata & Kassabaum to fit into a residential neighborhood of Easton, Pennsylvania and still occupy the conspicuous crest of a view-commanding hill on a site of nearly 40 acres. Equitable was willing to go to extraordinary efforts to assure both community acceptance for their 53,000-square-foot facility, and to provide a program and client liaison (through their real estate department) that would assure the desired finished product for an eventual 250 local employees. According to designer Der Scutt, Equitable was one of the most sophisticated clients that the architects had ever encountered.

From the public road to the east (see site plan), the building is perceived as an essentially single story solid mass (windows were eliminated in the computer area for security). Parking was placed, out of sight, on the opposite side of the building—and away from the spectacular views from the windows. Despite its apparent solidity, the building is constructed of metal decking on a steel frame, and clad in light brown precast concrete panels.

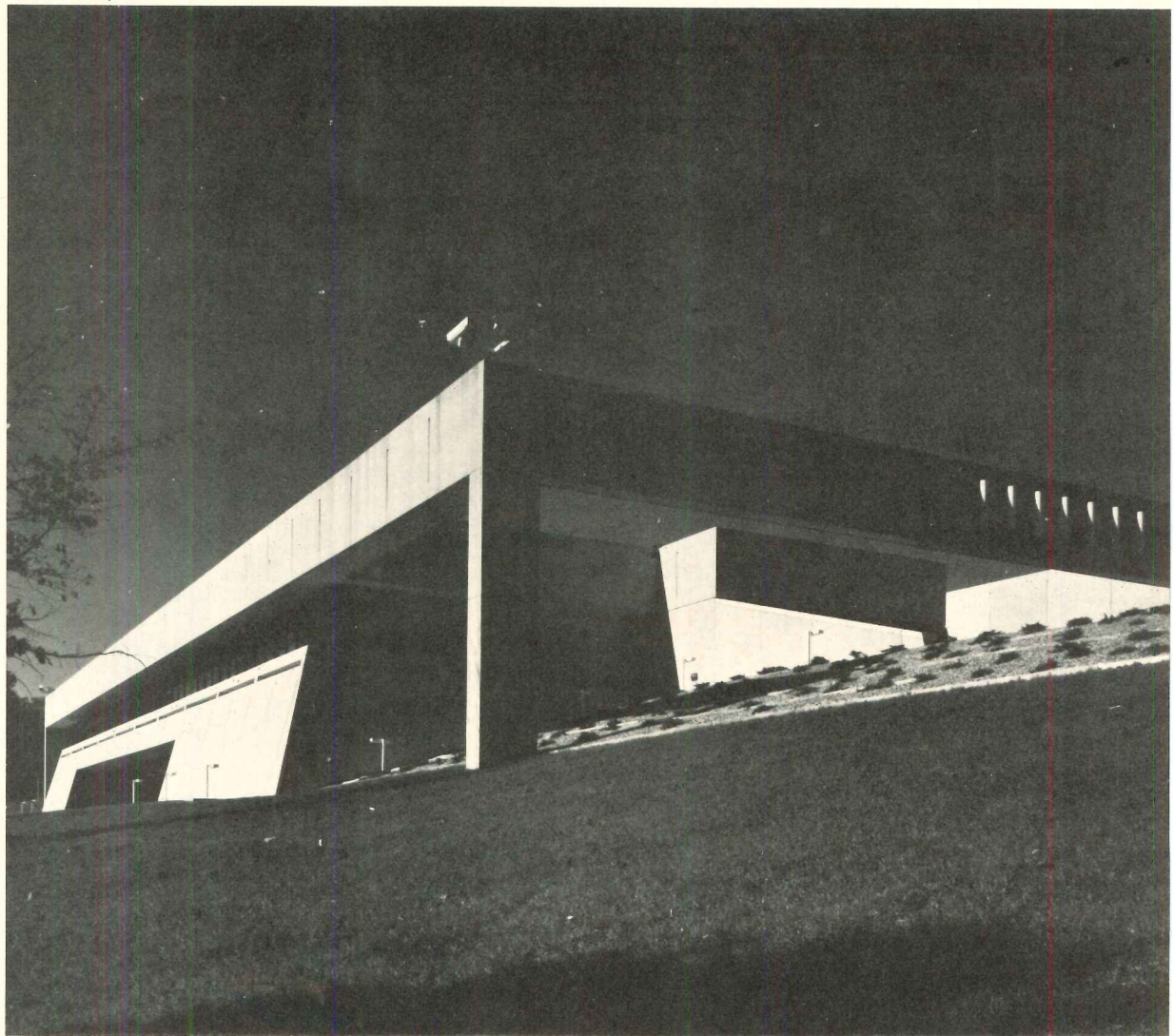
Outside of its unusual appearance and the way in which it utilizes its site, the building's principal interest to designers of industrial facilities is the way in which the administrative (small scale) functions have been incorporated into the "production" (large scale) portions of the building. As seen in the photos and plan (overleaf), the precast-concrete envelope of the computers' loft has been extended by exposed beams and columns to envelope and contain the multi-level administrative, employee-facility and reception spaces—and thus unify an assortment of otherwise separate parts. This treatment also provides a strong sense of "opening" to indicate the entrances.

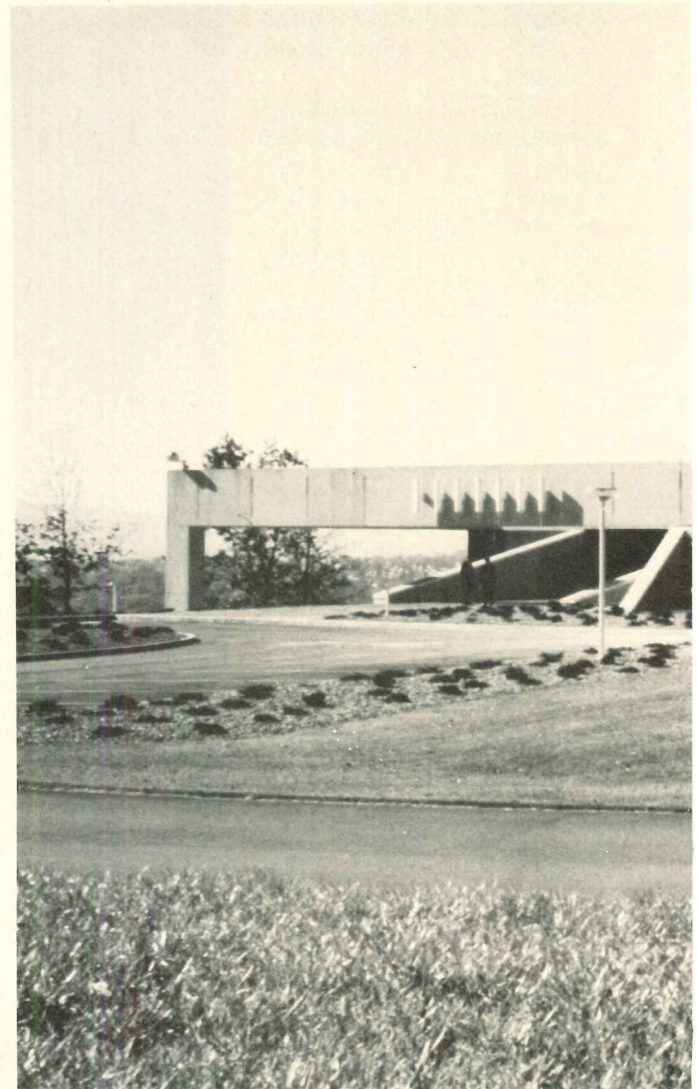
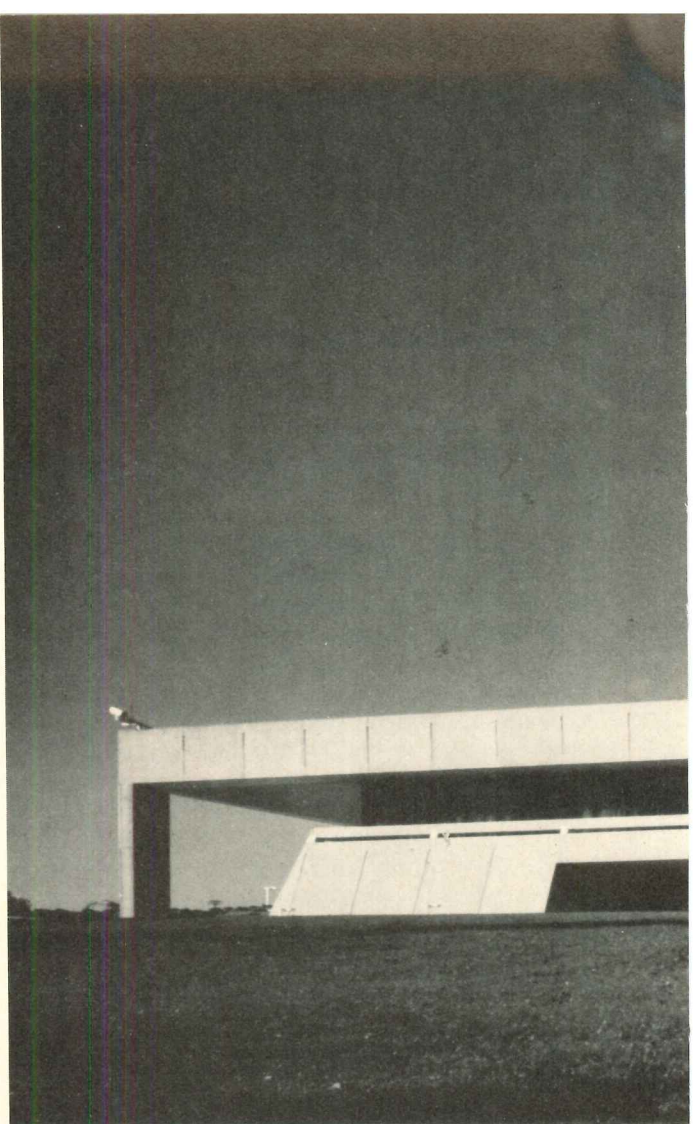
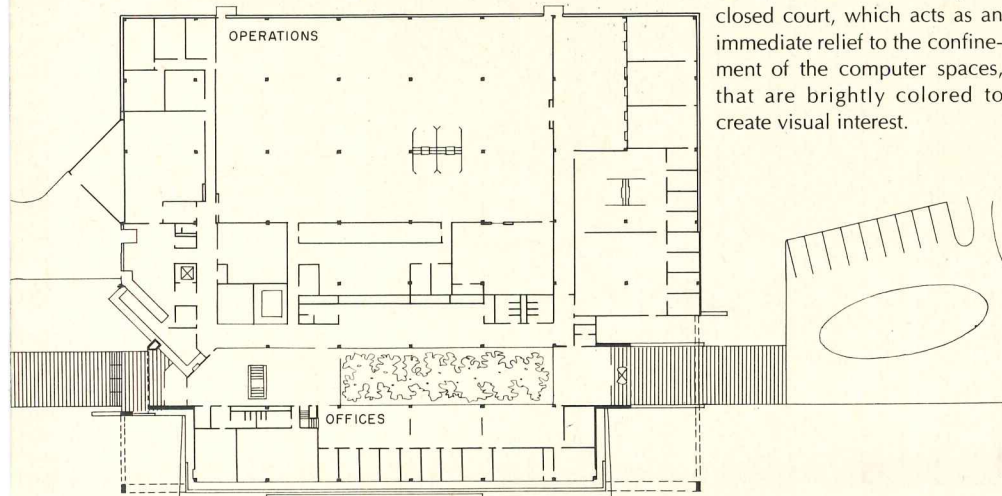
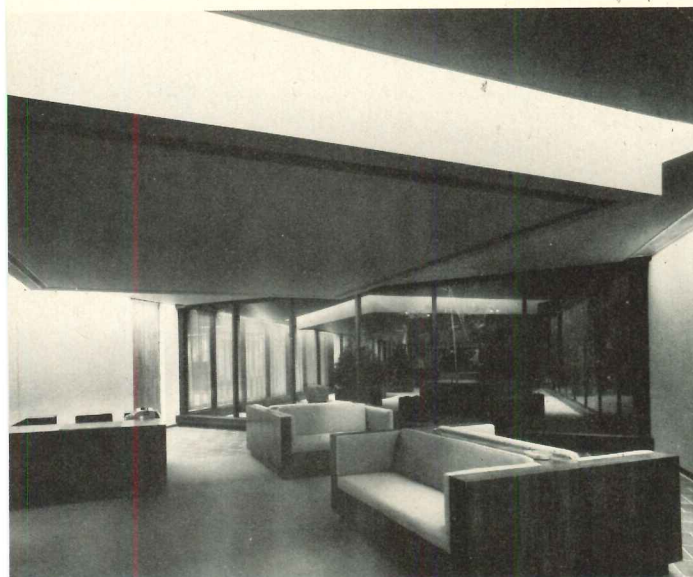
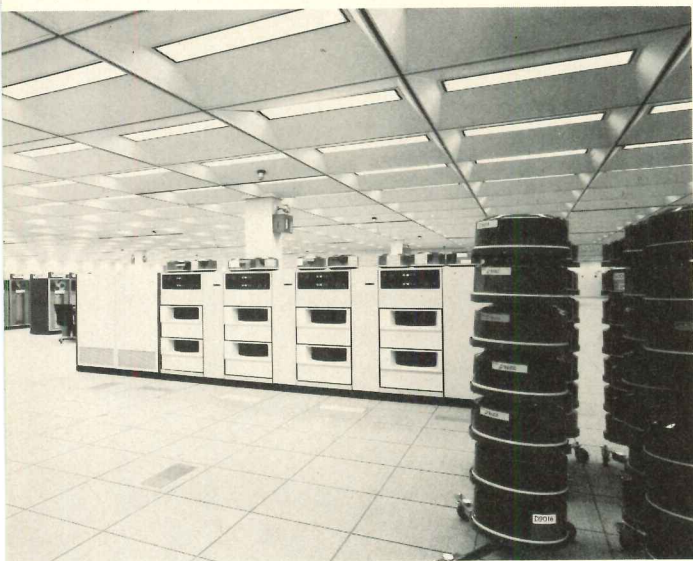
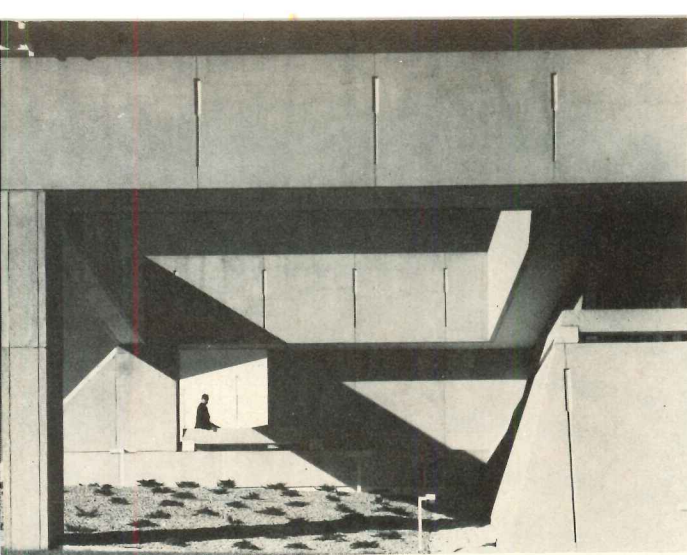
EASTON DATA CENTER, Easton, Pennsylvania. Owner: *Equitable Life Assurance Society*. Architects: *Kahn and Jacobs/Hellmuth, Obata & Kassabaum*—partner-in-charge: *Lloyd Doughty*; project designer: *Der Scutt*; project manager: *Nevio Maggiora*. Engineers: *Weiskopf and Pickworth* (structural); *Woodward-Moorhouse & Associates* (soils and foundations); *Meyer Strong and Jones* (mechanical/electrical); *Clarke and Rapuano, Inc.* (site). General contractor: *Frank Biscoe Company*.

DATA CENTER FOR EQUITABLE LIFE ASSURANCE SOCIETY

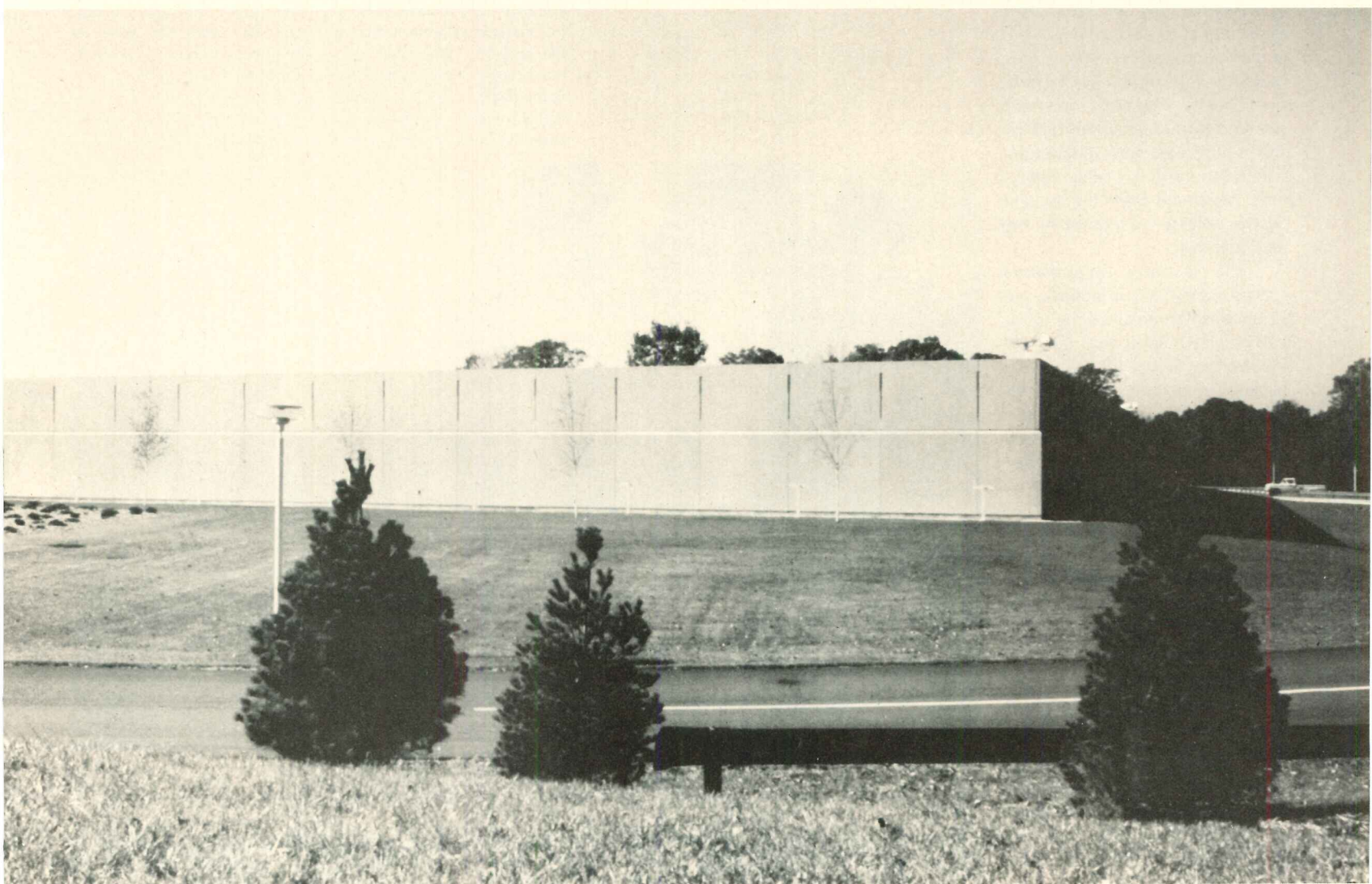
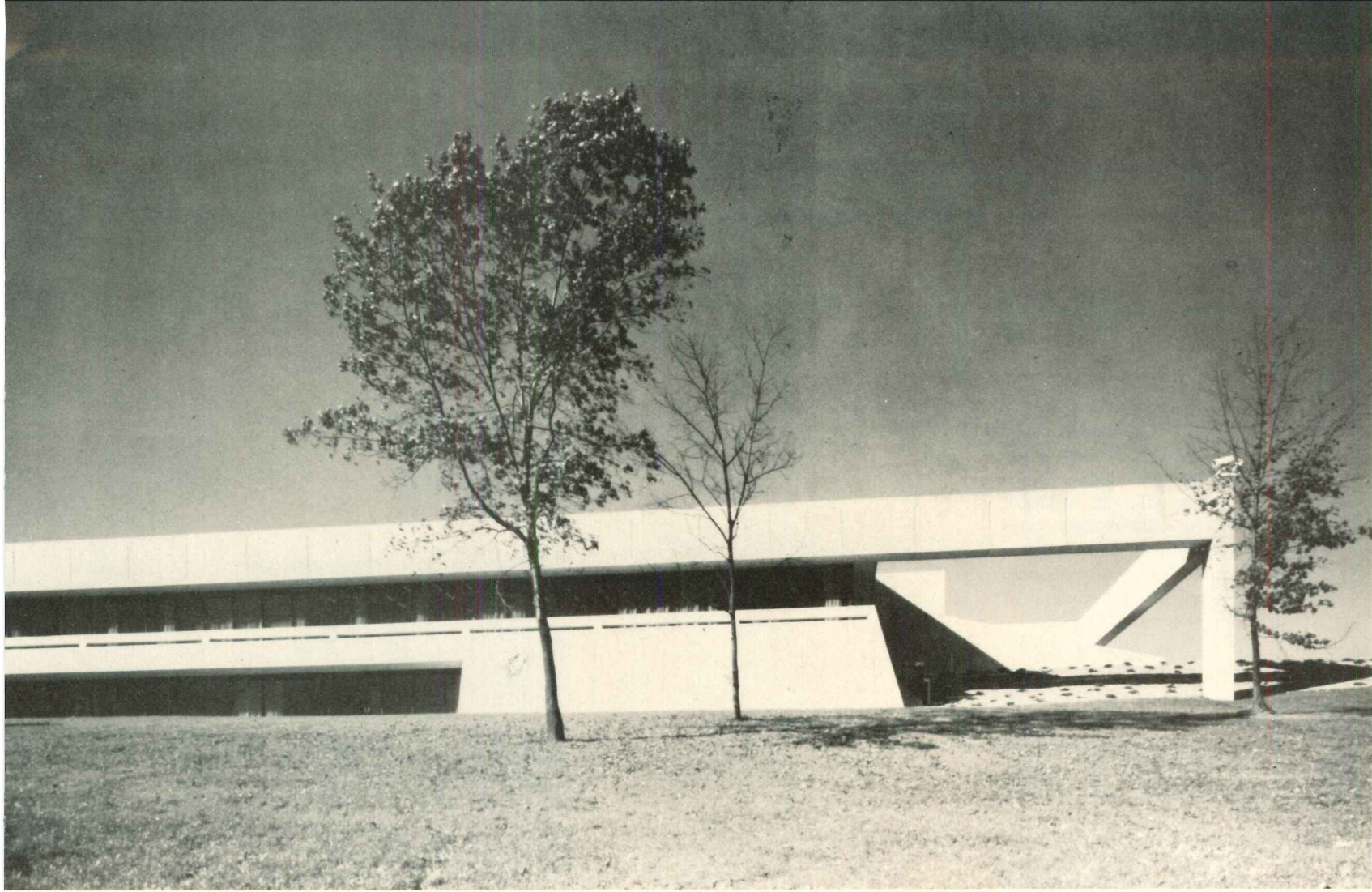


Barbara Martin photos





From the approach view (photo, right) the Equitable building is seen as a solid, one-story mass, which extends, by exposed beams and columns, to enclose the smaller scaled offices and facilities (photo above) tucked into the hillside facing spectacular views. The public entrance (at left in photo, opposite) and the matching employee-entrance on the opposite side of the building (top photo at left) are given visual importance as semi-enclosed spaces. Dark glass, in dark frames, neatly spells out "window" (or void) in the solid, light-colored concrete panels of the exterior. The lobby (left) has distant views as well as views into a nearby enclosed court, which acts as an immediate relief to the confinement of the computer spaces, that are brightly colored to create visual interest.



Cummins has continued to stand out as an exceptional client—even in the noteworthy architectural atmosphere of Columbus, Indiana. Having sponsored architects Roche and Dinkeloo's design for an impressive, prototype post office for Columbus in 1965 (as a public benefit), the company now has this monumental facility, and future plans (even more astounding) for their own offices, by the same architects. Since 1957, a foundation established by the company has paid the architectural fees for 18 public buildings in Columbus; it was recognized by the AIA, at the recent Atlanta convention, as the outstanding, professionally-related organization of the year. And the company's efforts here have certainly not gone unrewarded, in terms of public and employee relations.

On a large, heavily wooded site, Cummins comes as close to a "non-building" as possible. The visible, high storage-structure (photo right) occupies less than 10 per cent of the building's real area of 570,000 square feet, which is depressed to six feet below grade. Because of the massive roof structure required for cranes, parking space for 1400 cars (which would normally occupy an area, now forest, equal to the building itself) could be placed on top of the building with minimal extra reinforcement. Parked cars are shielded from the public road by sheets of opaque glass (photo top), which form a thin, visible "structure" separated from the ground by the recessed windows of the real building.

The usually amorphous spaces of production facilities are given visual orientation by these perimeter windows that face the meadow in front, the woods in back (over the low partitions of offices and cafeterias that line those walls) and a central, depressed court (photos, overleaf). And, they are given additional amenity by such details as wood-block flooring which provides resilience plus durability. Altogether, it is one of the best possible places to work—and to spend a good portion of a productive life. And it is a contribution to its environment.

WALESBORO COMPONENTS PLANT, Columbus, Indiana. Owner: *Cummins Engine Company*. Architect: *Roche and Dinkeloo Associates*. Engineers: *Pfisterer Tor Associates* (structural); *John Artieri* (mechanical/electrical); *Bolt Beranek and Newman, Inc.* (acoustical). General contractor: *F. A. Wilhelm Construction Co.*

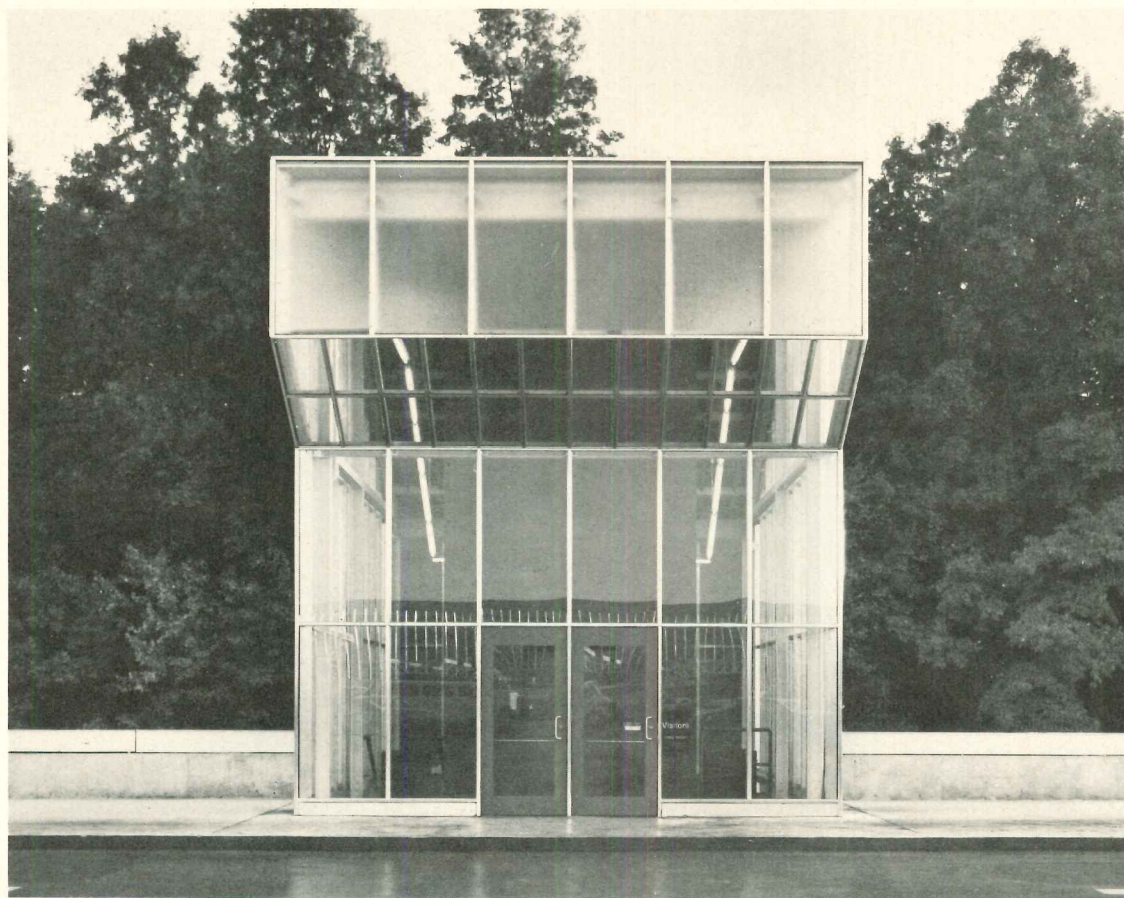
COMPONENT PLANT FOR CUMMINS ENGINE COMPANY

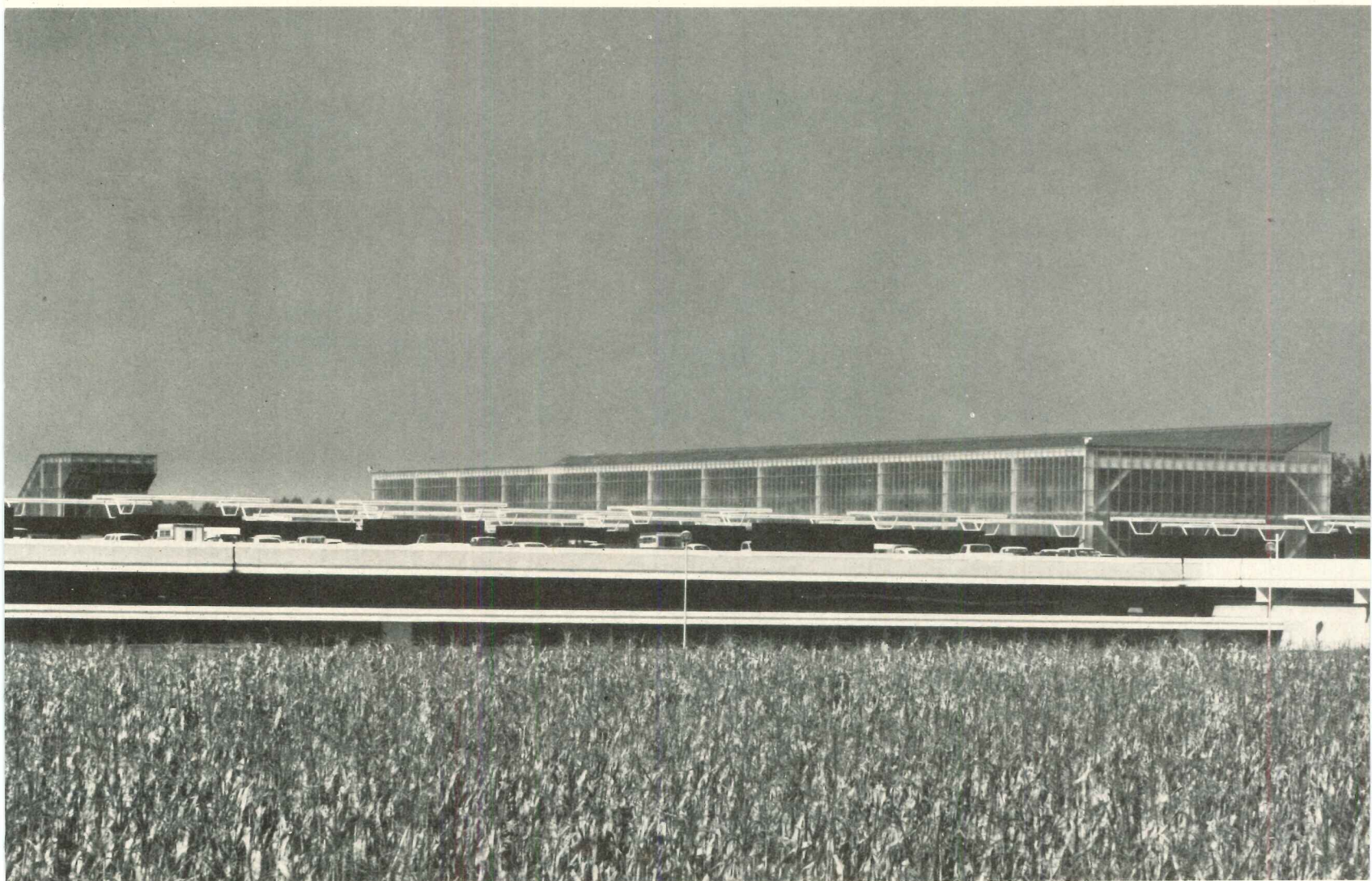
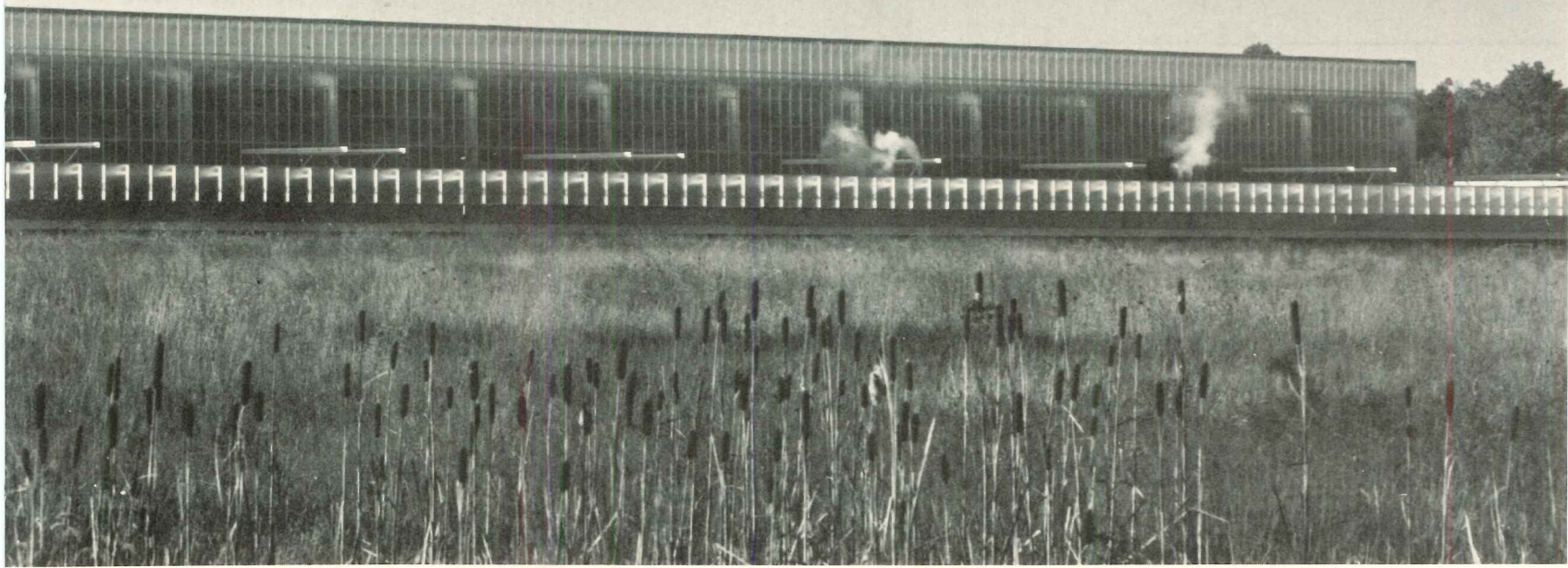


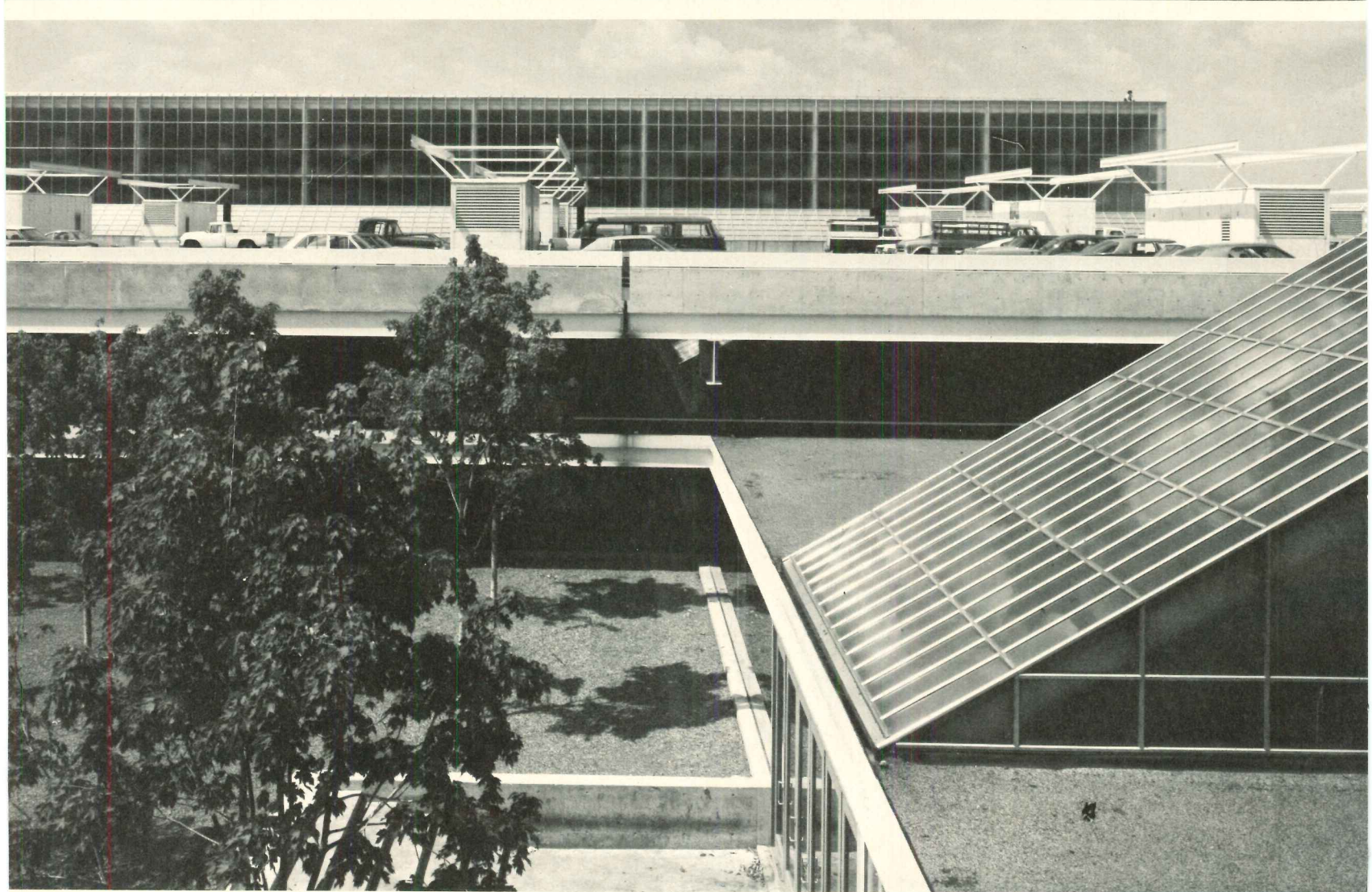
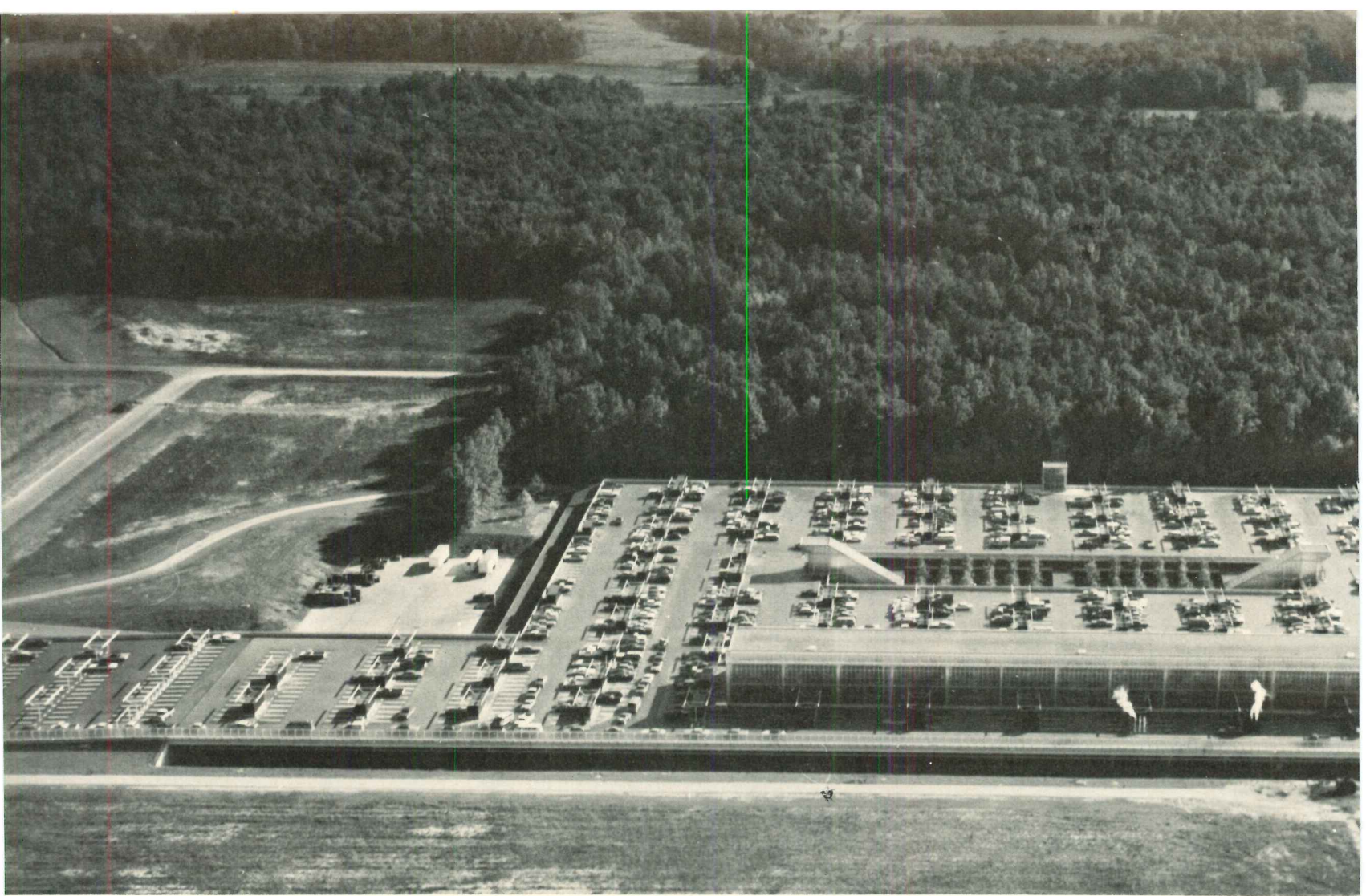
Yukio Futagawa photos

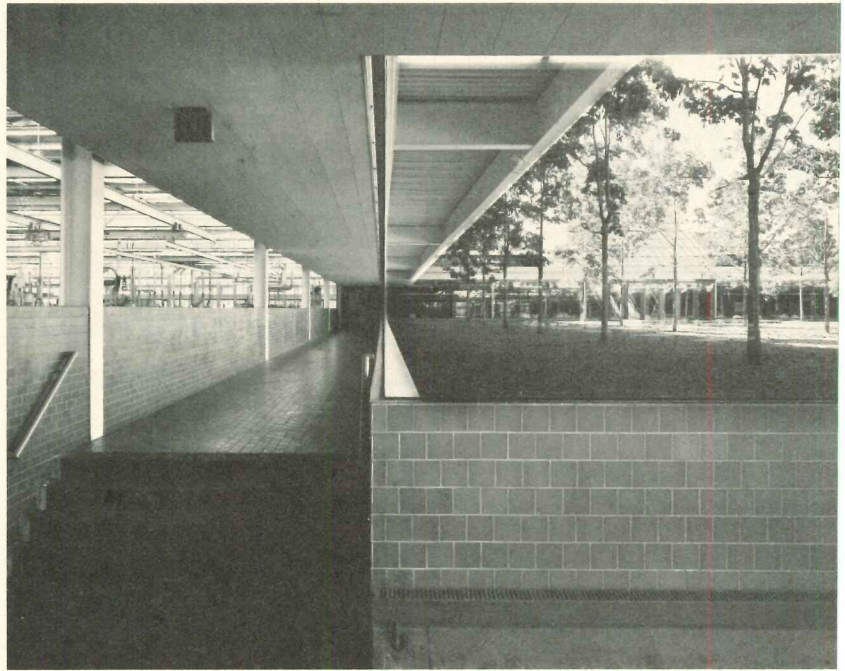
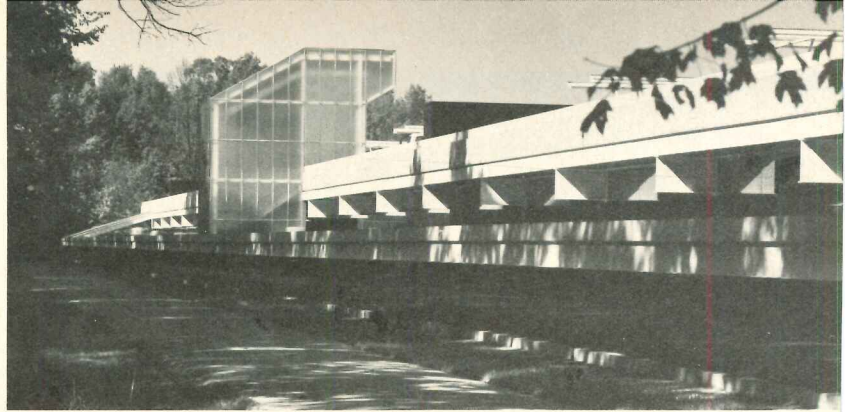
Entrance stairs around the parking area (photo below) indicate the presence underneath of a much larger building than the immediately visible, storage bay (photos top and right). Apparently bucking the current

trend away from glass enclosure for production areas, a small but conspicuous percentage of the real building is actually so sheathed. The remainder is below grade and is contained by retaining walls.





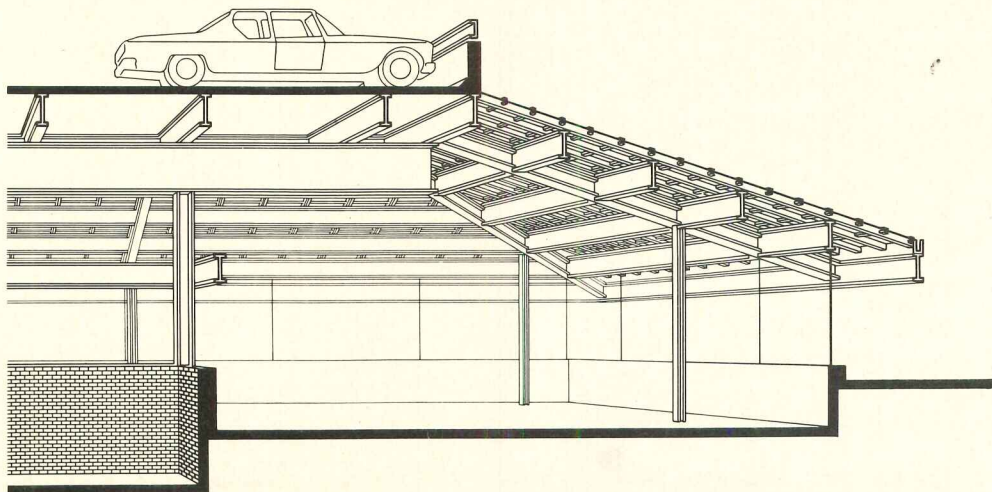
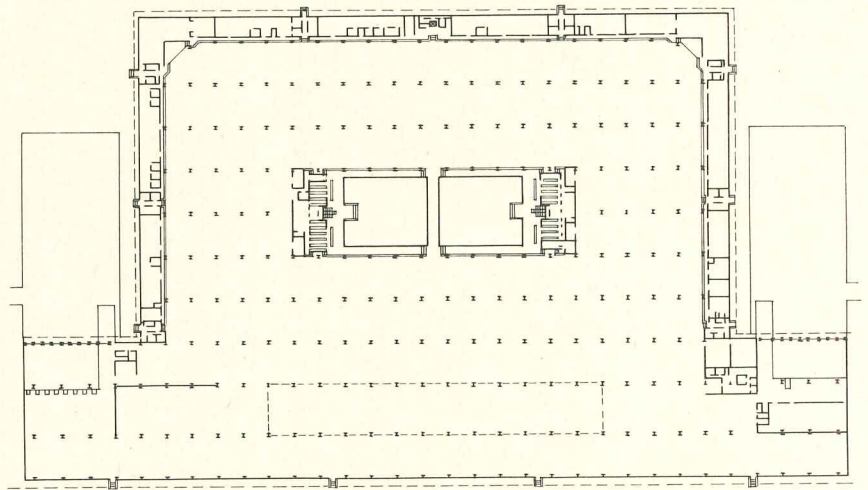


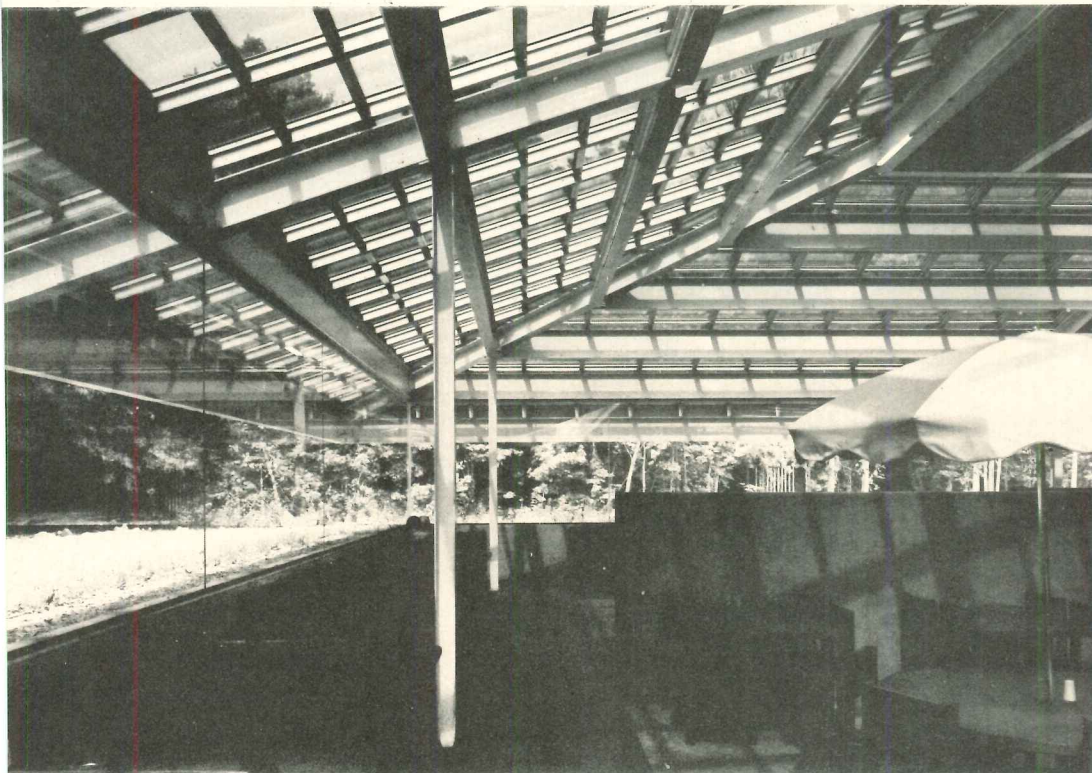


Access to roof-top parking is gained by bermed ramps to the left and right in the photo above. From this level, entrance stairs seem to lead into the surrounding forest or into a landscaped, central court, which is located half way between the parking level and the production-floor below. The relation of that floor to the court can be seen in the lower photo, right; the raised gallery forms an area for lounging and is separated from the main floor by low walls—as are offices and cafeteria, located around the perimeter of the building (plan, right). The section (below) indi-

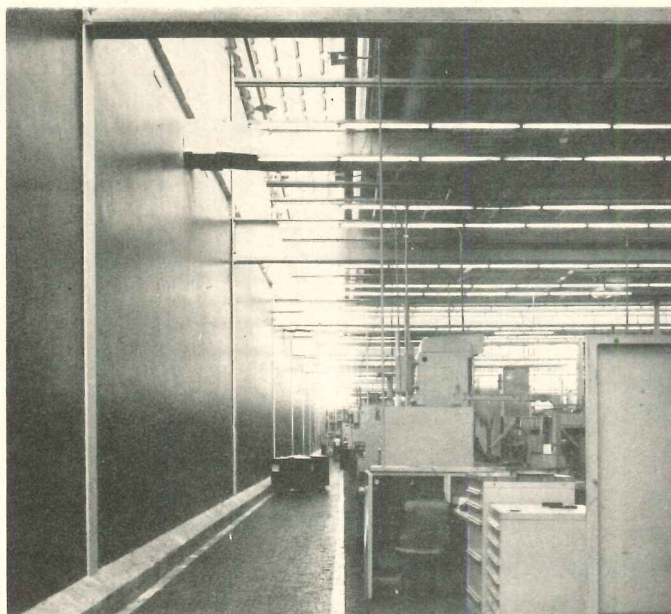
cates the relationship of parking, grade and the production area, adjoining the cafeterias (second lowest level), which occur at the corners of the building and are partially glass roofed.

Trucks enter the loading-dock areas (left and right in photo above) by roads that are ramped down to the depressed levels. Great care was taken to avoid cutting the existing trees which occupy much of the site. In the photograph at the upper right, the side of the building toward the forest can be seen. One of the glazed-roof cafeterias is in the distance.

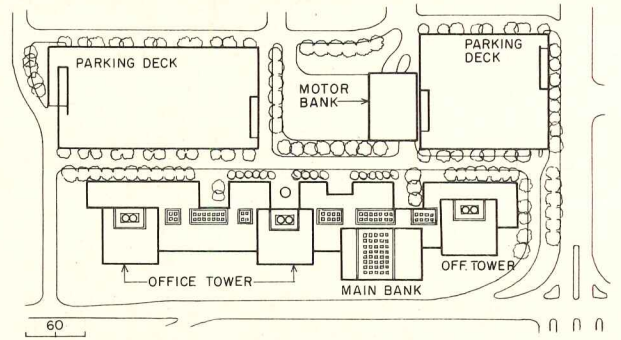




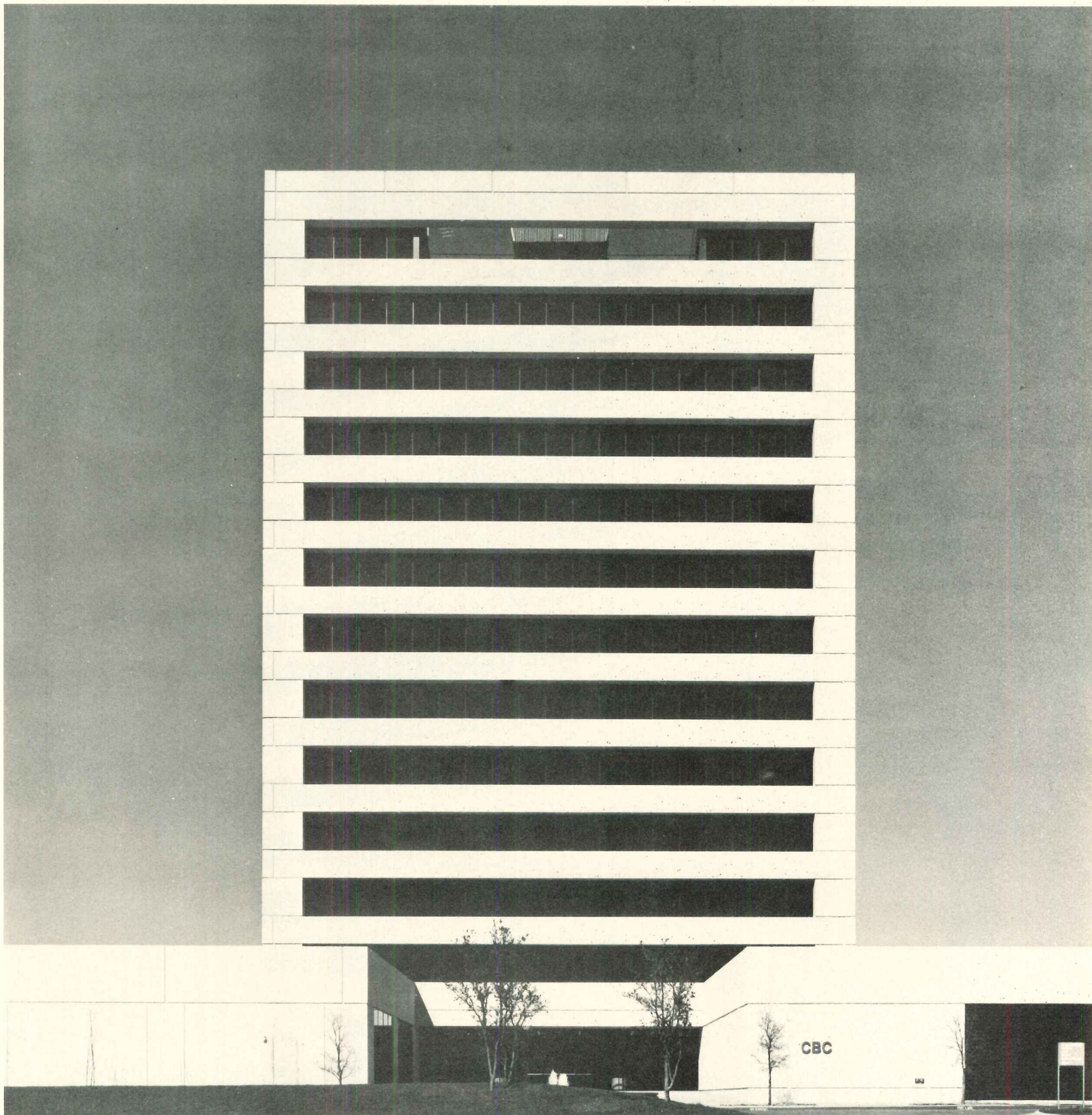
The interior of one of the two cafeterias (photo, above), located at the corners of the building toward the forest, gives the impression of a picnic arbor. The ambiance is furthered by "rustic" furnishings and sun umbrellas which serve a real function on bright days. In the top photo, the various materials of brick and wood-block paving, exposed concrete and brilliantly colored, glazed tiles are seen. Attention to detail is evident in the lighting and in the furnishing of the production areas (photo, right).

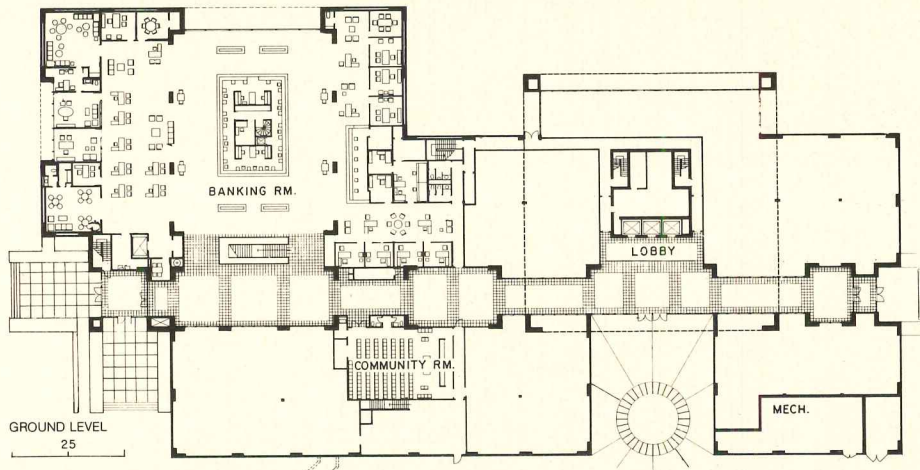


Citizens Bank Center in Richardson, Texas (a Dallas suburb), meets a complex series of program requirements in a structure of stunning simplicity and visual strength. Designed by OMNIPLAN Architects Harrell + Hamilton with Datum Structures Engineering, Inc., the 13-story office building stands above 35,000 square feet of banking space and 15,000 square feet of retail space. The designers have created for the bank the desired strong identity with a form that instantly says "something special" even to the uninitiated.



A bold structural system creates a strong yet serene image





The structure is a hybrid: the cage is precast, the core was slip-formed, and the floor is steel

The program for Citizens Bank Center called for a strong visual identity, a form that would attract attention by motorists passing on the expressway. It also asked for an image that would express the bank's commitment to long-term ownership. Yet it wanted a building that would be suitable to what is a more suburban than urban location. All of this was accomplished with a single design idea of great simplicity: a composition of solids and voids, of huge precast concrete elements and deeply recessed insulating glass fitted beautifully together.

The structure is a hybrid system of precast concrete, poured-in-place concrete and structural steel. The main precast elements are L-shaped columns at the corners supporting 105-ft, 60-ton precast concrete girders. The floor structure consists of steel beams on 10-ft centers spanning from the girders to the 37 ft, 4 in-square slip-formed concrete core. These beams carry the floor system of metal deck and lightweight concrete slab. The slab is tied compositely to the steel beams by means of studs attached to the top flanges of the beams. Because the structural elements are "dry," very rapid erection was possible.

The concrete building cage is a rigid frame that provides 60 per cent of the lateral stability against wind load; the remaining 40 per cent is provided by the core. The frame was made rigid by using vertical post-tensioning to clamp the corner columns and girders together into a unified structure. Sleeves were cast into the columns and girders in a matched configuration for the vertical post-tensioning rods (see drawing overleaf).

The precast girders were prestressed (via post-tensioning) in the plant to control girder deflection. They were allowed to cure for 23 days prior to post-tensioning.

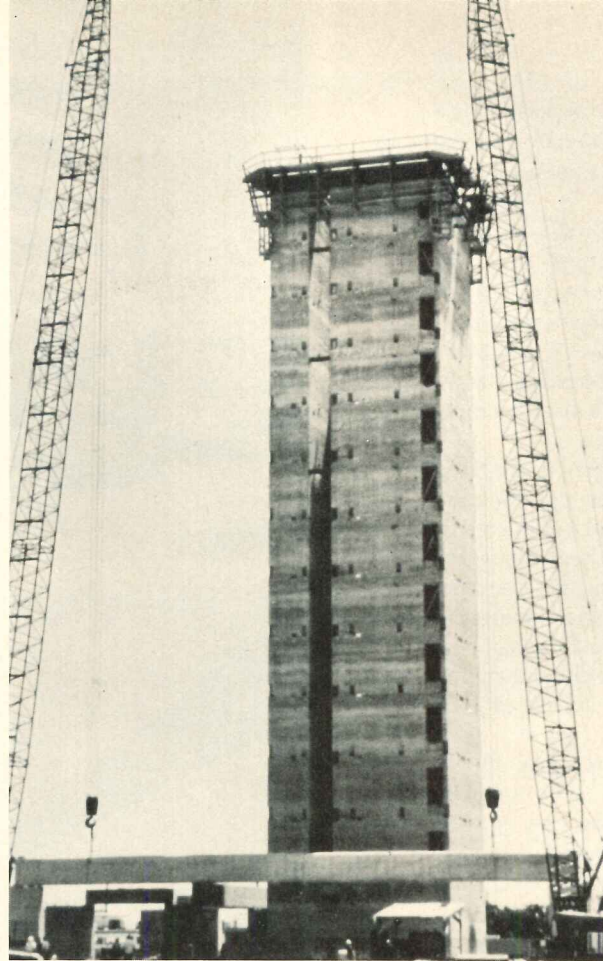
The girders were hoisted by a pair of 150-ton crawler cranes. Once four of the L-shaped corner columns were in place, a bed of grout was applied to their top horizontal surfaces to receive the girders. After the girders were placed and grout had set, the prestressing rods that extended through sleeves in the girders and columns were post-tensioned to 6,700 psi.

In addition to the vertical sleeves for post-tensioning, the girders and columns have dual-function steel embedments at the ends, on the top horizontal surfaces. Each fitting is comprised of a bearing plate with a short wide-flange stub attached, end-up. After jacks have tensioned the vertical rods, nuts are turned down against the plate to maintain the tension. The WF stubs project up into boxes formed in the bottoms of girders and columns (see drawing). Their purpose is to transfer horizontal shear from girder to column and vice versa.

The corner precast "posts" are essentially filler pieces because they do not participate in the lateral resistance of the frame.

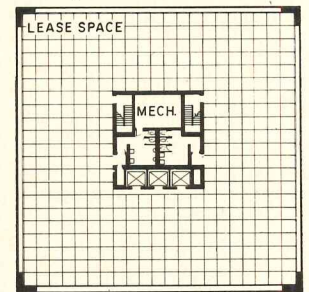
The hvac and lighting systems are designed for a high degree of flexibility

The cooling and heating of the Citizens Bank Center is all-electric. Two 425-ton centrifugal

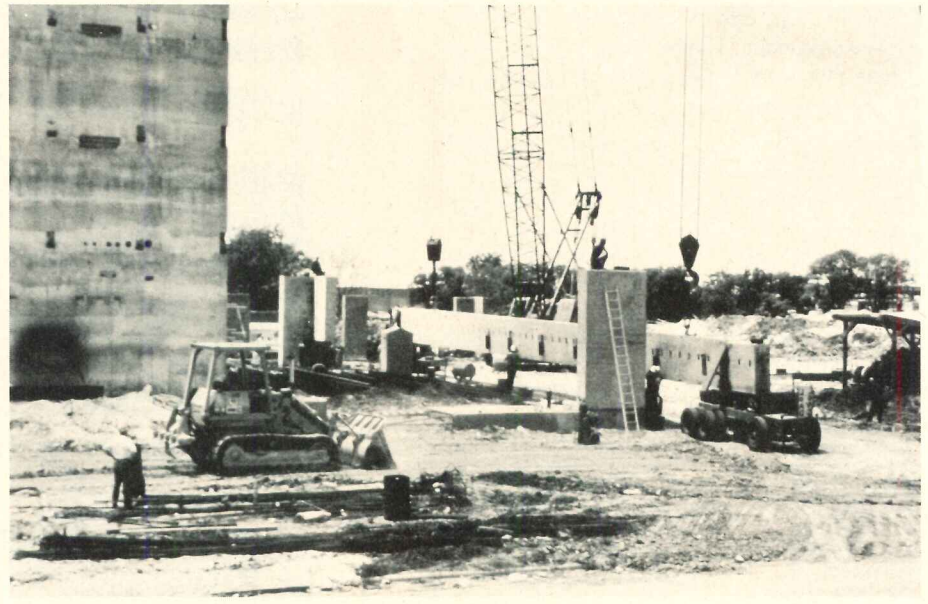


First step in construction of the tower was slip-forming of the 1-ft thick concrete core. Next was placement of L-shaped corner columns that support the 105-ft precast, post-tensioned girders. Girders were set in position with two crawler cranes. Floor framing is steel beams spanning from the girders to the core. In the corners, steel frames into steel. The floor system is metal deck and a lightweight concrete slab compositely tied to the steel beams.

A multizone air handler with nine zones is provided on each floor. The system is all-electric using electric heaters in ductwork for exterior zone heating.



TYPICAL TOWER FLOOR



CITIZENS BANK CENTER

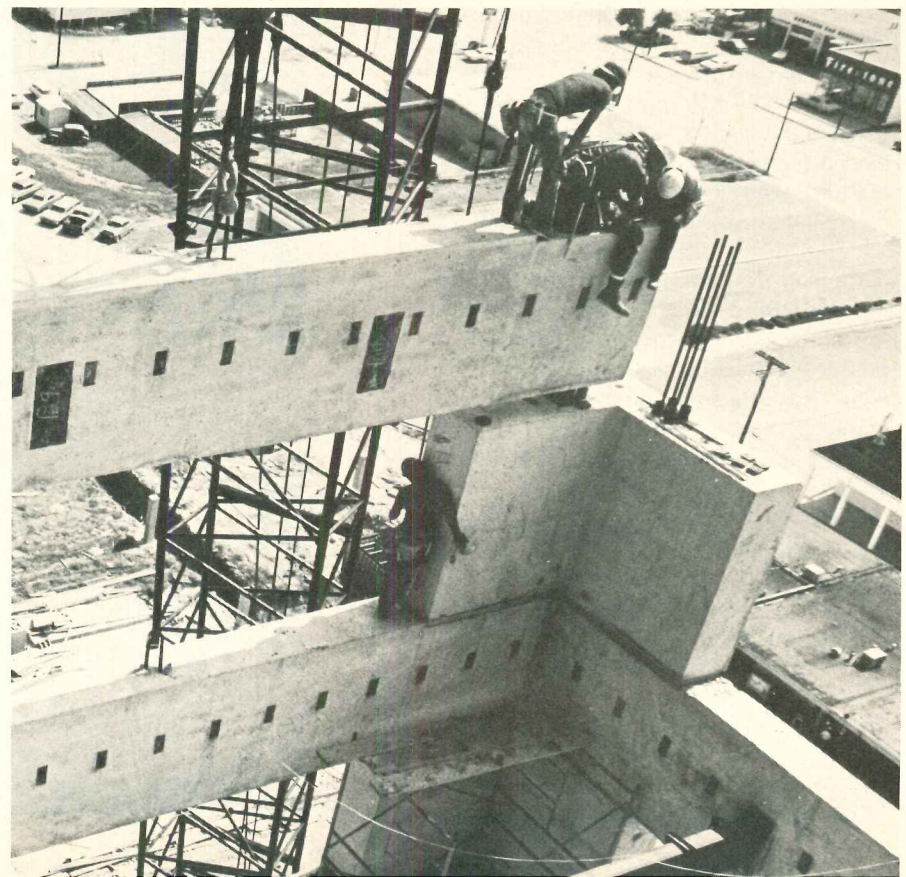
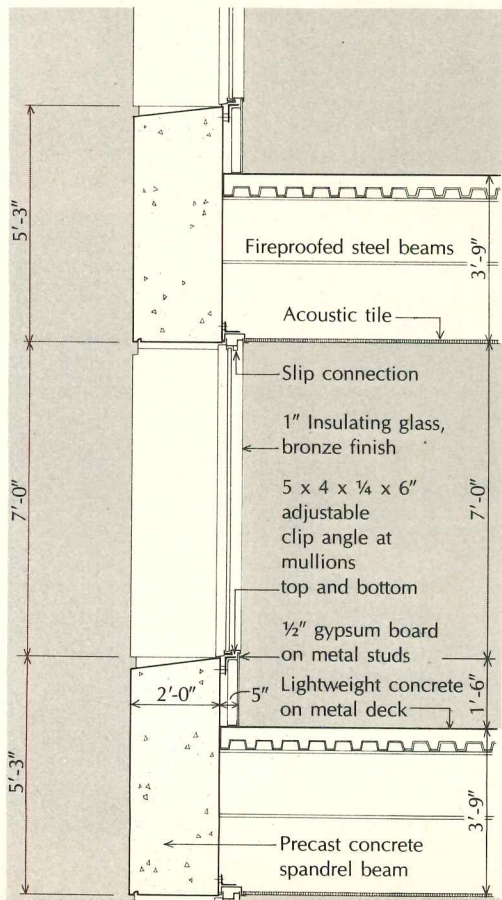
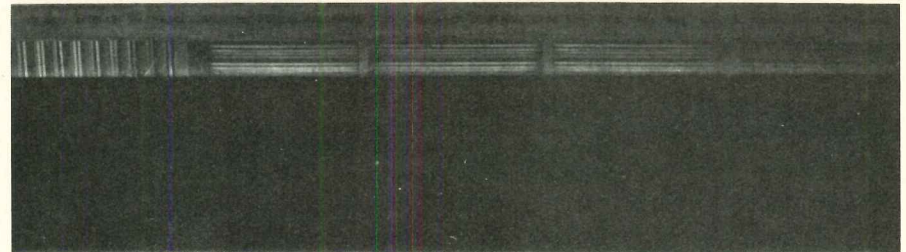
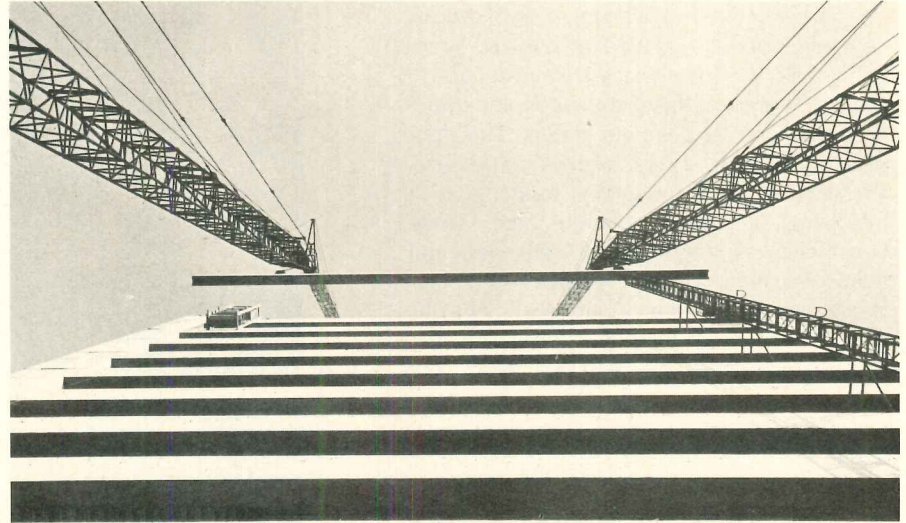
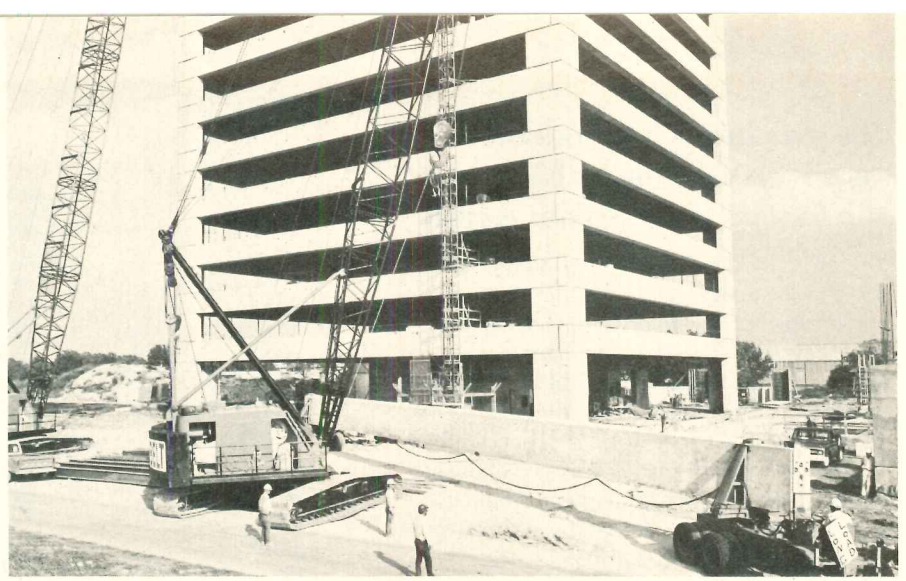
chillers are located in a central mechanical room at ground level in a secondary location behind retail lease space. Two associated cooling towers are on the roof.

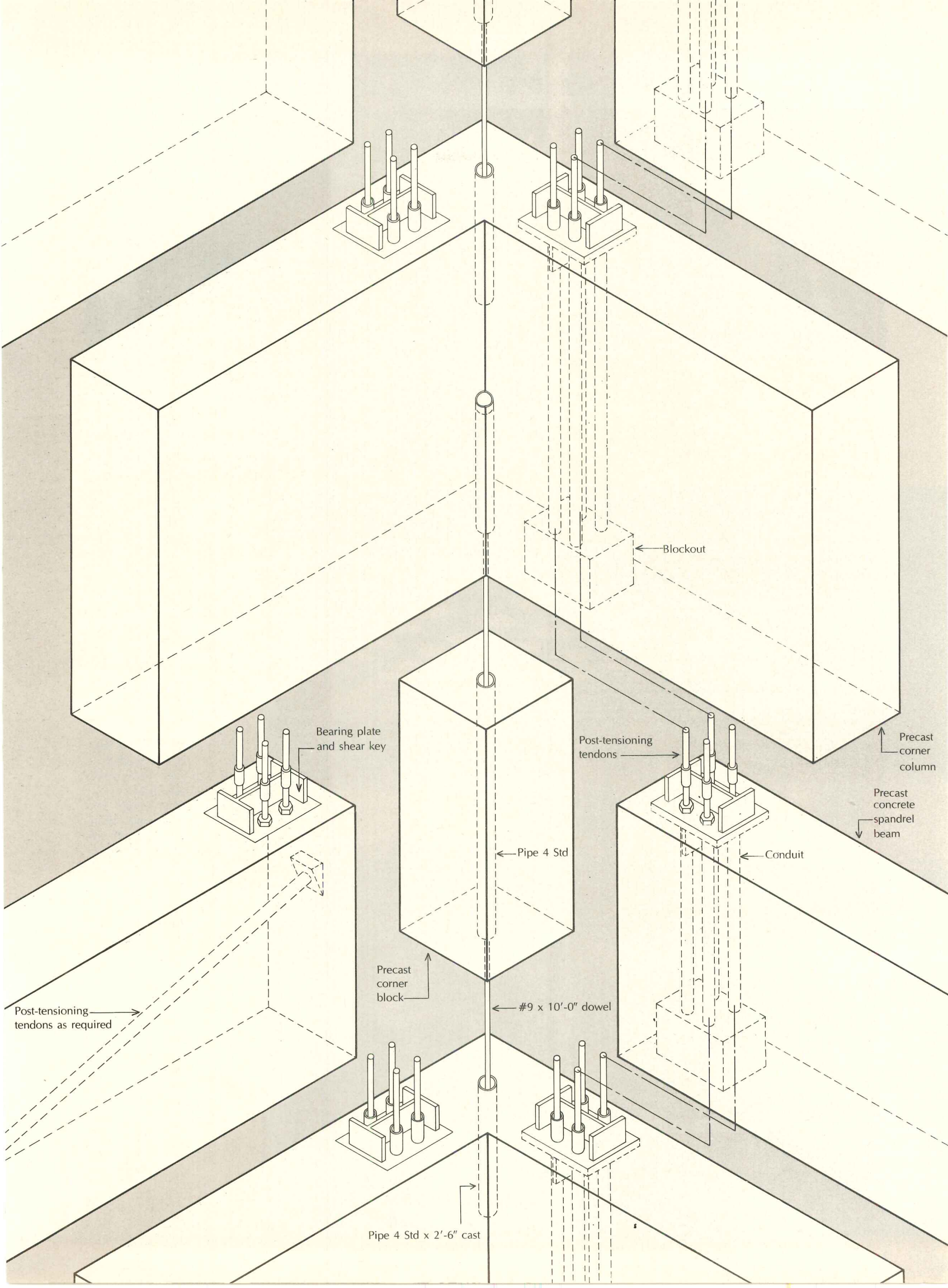
The basic air system uses multi-zone air-handling units of the blow-through type, one unit per floor, each with nine zones for control. Special zoning is provided for corner offices because they have two exposures. Ductwork is of the low-velocity type with acoustical attenuation at the air-handling room to assure a quiet delivery throughout the building.

Heating for perimeter offices is provided by electric duct heaters in the exterior-zone ductwork. There is no heat source in the multi-zone unit—the normal hot-deck section serves as a by-pass around the cooling units. The temperature controls are set up so that the electric heaters cannot be energized until the dampers are in the full by-pass position, eliminating the possibility of energy-wasting reheat of mechanically-cooled air.

Lighting in the office tower uses 20- by 60-in. recessed troffers of the lay-in type. To provide a nighttime image, the two exterior rows of luminaires are separately circuited with low-voltage (24-v) control. Thus, the building will not be brilliantly illuminated at night, but there will be just enough light so that people will recognize the building as a major structure in the city of Richardson. The control is fully automatic. The lighting can have preselected "time on and time off" control—which can be changed at will.

CITIZENS BANK CENTER, Richardson, Texas. Architects: OMNIPLAN Architects Harrell + Hamilton—principal-in-charge: George F. Harrell; project manager: Velpeau Hawes; designer: E. G. Hamilton. Engineers: Datum Structures Engineering, Inc. (structural); Chenault, Brady & Freeman (mechanical); Shimek-Roming-Jacobs & Finkles (civil). Landscape architects: Myrick, Newman & Dahlber, Inc. Bank interiors: Don R. Scott. Graphics: OMNIPLAN Design Services. Market analyst: Oliver Mattingly.





Blockout

Bearing plate and shear key

Post-tensioning tendons

Precast corner column

Precast concrete spandrel beam

Pipe 4 Std

Conduit

Post-tensioning tendons as required

Precast corner block

#9 x 10'-0" dowel

Pipe 4 Std x 2'-6" cast



Citizens Bank Center consists of the bank and an office tower linked by an arcade with retail and restaurant facilities. Entrances to the arcade are located at several points convenient to the major functions and to the parking. The bank's space is situated on two floors with its main lobby and related public functions on the ground level adjacent to the arcade, but secured by a roll-away grille. The ceiling of the banking room (left) is constructed with precast concrete double tees and has skylight wells. A central island houses the teller functions and is connected via a stair to the bookkeeping department directly below.

The width, height and lighting (natural and incandescent) of the arcade are manipulated to create a variety of spaces for pedestrians circulating through the building.

For more information, circle item numbers on Reader Service Inquiry Card, pages 201-202.



British office system offers immediate delivery

This European manufacturer of wood office furniture, including a knockdown system (above) available for immediate delivery, is now represented in the United States through a network of dealers. Shown is the "K.D."

system which requires no tools or special skills to assemble. Oak, chrome and plastic laminate are the materials. ■ Arenson International (USA) Inc., New York City.

Circle 300 on inquiry card

Plastic-clad fire door in new sizes

Plastic-clad fire doors up to 4 by 10 ft are now available, all carrying the UL ¾-hour label for fire resistance. Also approved is a light opening up to 30 in. wide by 40 in. high. More than 750 colors and patterns of high-pressure plastic laminate are offered on these doors. Also new from the company is a UL-labeled transom panel with a fire resistance rating of 1½ hours. It comes in veneers to match the company's 1½-, 1-, and ¾-hour wood fire doors, in sizes up to 48 by 48 in. Also included in the new company lines is a commercial grade particleboard fire door carrying a UL 20-minute label. ■ Weyerhaeuser Co., Tacoma, Wash.

Circle 302 on inquiry card

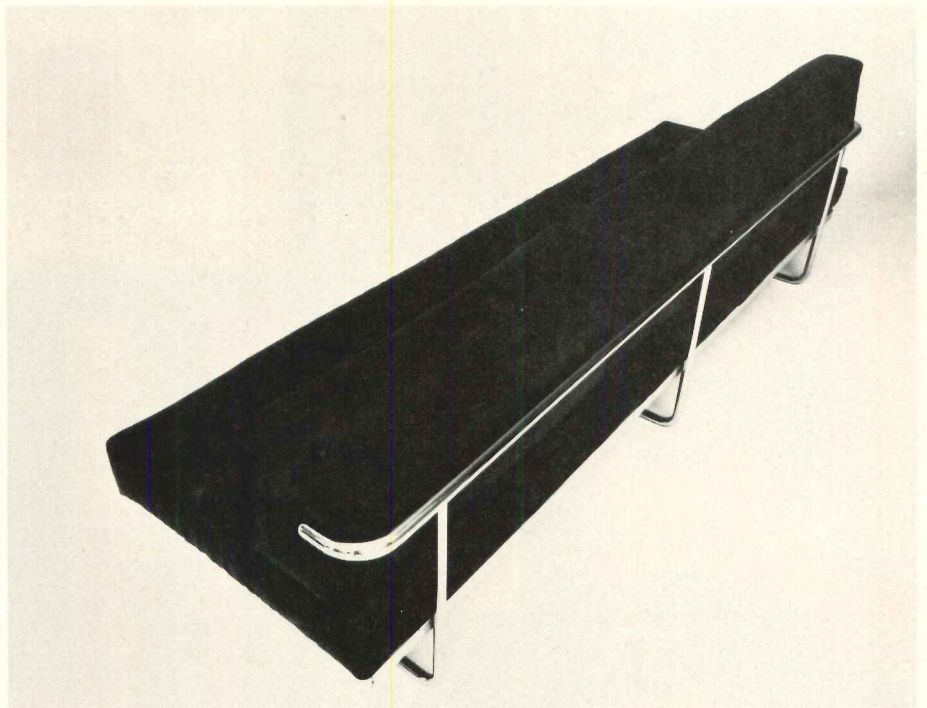


New telephone interconnect system introduced

The "D-1000" telephone and intercom system uses computer technology to reduce attendant duties to a minimum in handling up to 500 lines and trunks. Conference calls, switching, holding, etc. can all be accom-

plished with the compact equipment, including the desk console shown and an equipment cabinet occupying 4½ sq ft of floor space. ■ Executone Inc., Long Island City, N.Y.

Circle 301 on inquiry card



Le Corbusier design added to company's "Masters Collection"

Designed in 1929, this sofa with polished chromium-plated, or brick red or black varnished base, is being manufactured by Cassina in agreement with the estate of Le Corbusier. It is available in fabric or leather upholstery, with foam polyurethane

and Dacron fiberfill padding. A dining table also designed by Le Corbusier joins the sofa as recent company offering. ■ Atelier International, Ltd., New York City.

Circle 303 on inquiry card
more products on page 145

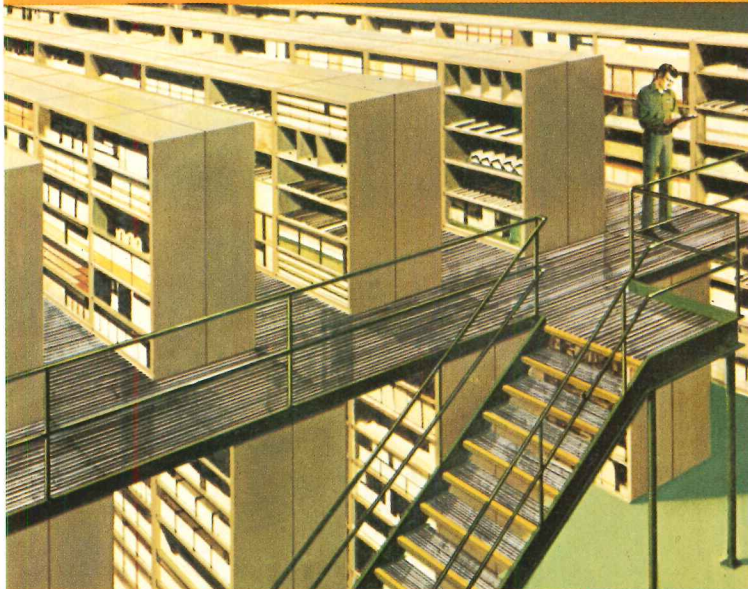


What a world if everything came in Lyon Quality!

You could reach buying decisions mighty fast! There would hardly be any need to ask how long a product would last. Lyon products are well known for their quality, precision and long life.

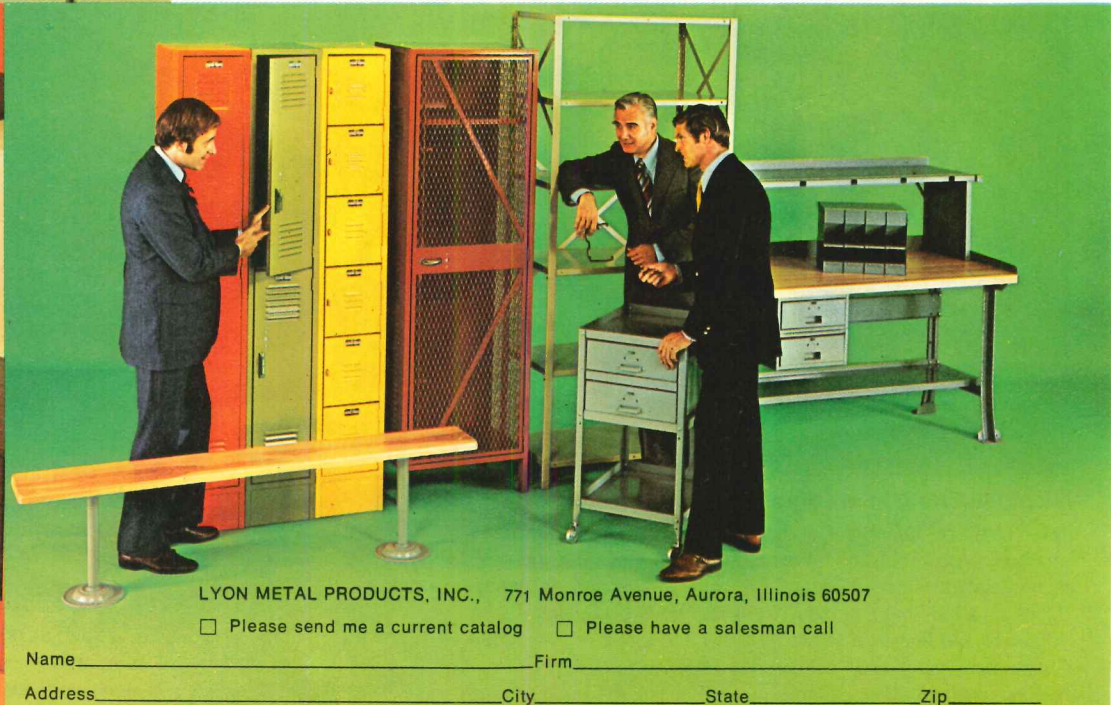
And what a world if everyone offered service like your Lyon Dealer. The way he keeps on top of your changing needs. (Right now he's featuring two new furniture lines, a new selection of colors and brand-new 1-piece clip-type shelving.) The way he always has your *first* choice within the Lyon selection of over 1600 stock items. The way he works closely with you, from layout plans through the finished installation. And assures you prompt delivery.

Yes, it's a better world when you work with your Lyon Dealer. Call him and see! Lyon Metal Products, Inc., General Offices, Aurora, Ill. 60507. Plants in Aurora, Ill., York, Pa., Los Angeles. Dealers and Branches in all Principal Cities.



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Please send me a current catalog Please have a salesman call

Name _____ Firm _____
 Address _____ City _____ State _____ Zip _____

For more data, circle 55 on inquiry card

OFFICE LITERATURE

For more information, circle item numbers on Reader Service Inquiry Card, pages 201-202.

PORCELAIN-ON-STEEL CHALKBOARDS / Ten colors are illustrated in the company's new color guide for chalkboards with writing surfaces extending from floor to ceiling. The product is guaranteed for 50 years or the life of the building. "Silver Screen Gray" boards, also described, can be used as a projection screen for all types of audio-visual instruction, according to the company. ■ AllianceWall Corp., Wyncote, Pa.

Circle 400 on inquiry card

STAINLESS STEEL KITCHEN SINKS / New Camelot sinks, combining the durability of 20-gauge nickel stainless steel with high styling, are detailed in a six-page illustrated color brochure. Featured is a "Super Bowl" design, which provides the largest bowl area in the smallest counter space and incorporates an integral mounting rim that forms a positive seal without the need for a separate frame. Also included in the brochure are complete specifications, installation and accessory information, along with a stainless steel sink selector chart for determining sink and faucet combinations. ■ Moen, Div. of Stanadyne, Elyria, Ohio.

Circle 401 on inquiry card

PRE-ENGINEERED ELEVATORS / A selection of 18 pre-engineered elevator models is summarized in a new publication. Applicable to buildings from two to 30 stories, the elevators are pre-engineered and pre-manufactured to reduce contract-award-to-completion time by as much as 40 per cent. The lines include hydraulic and geared traction types, with capacities ranging from 1,500 to 4,500 lbs. Choices from a variety of solid color and wood grain wall panels may be combined with complementary carpeting and ceiling selections for individualized car interiors. Automatic control systems are said to maximize elevator performance in single and multiple-car installations. ■ Otis Elevator Co., New York City.

Circle 402 on inquiry card

DRYWALL PARTITION SYSTEMS / A new eight-page brochure describes steel stud drywall partition systems and outlines construction features and installation techniques for the various types of company partitions for residential construction. These steel stud partitions are lightweight, non-load bearing assemblies framed with steel channel studs that snap into steel floor and ceiling runners. The partitions are faced with gypsum panels which screw-attach to each side. ■ United States Gypsum Co., Chicago, Ill.

Circle 403 on inquiry card

MATV SPECIFICATION GUIDE / A new MATV specification guide incorporating the latest state of the art has been published to serve the needs of architects and specifying engineers. Entitled "Guideline Specifications for Television Distribution Systems," the new publication covers all aspects of TV distribution systems, including conventional MATV systems and CATV compatible systems. CATV compatible systems are specified to comply with the Federal Communications Commission Telecommunications Regulations. ■ Jerrold Electronics Corp., Horsham, Pa.

Circle 404 on inquiry card

HIGH MAST LIGHTING POLES / An aid to selection, design and specification of high mast tapered tubular steel lighting poles provides information covering bidder qualifications, AASHTO specifications, design, wind velocity, acceptable materials, welding and fabricating requirements, telescoping joints,

base connections, anchor bolts, foundation design, field assembly, lifting the pole into place and plumbing the pole. This 16-page guide to utilization of steel tapered tubular poles for high mast lighting contains sample design calculations and cutaway drawings showing construction, anchoring, type of foundation, methods of field assembly and vertical aligning of high mast poles. The publication also has a two-page, point-by-point outline of specifications for high mast lighting poles. ■ The Union Metal Mfg. Co., Canton, Ohio.

Circle 405 on inquiry card

TRACTION ELEVATORS / A new four-color, 17-page brochure describes the UST geared traction series of elevators consisting of two 2000 lbs, three 2500 lbs, and two 3000 lbs versions of various speeds with a choice of three different customized interiors, featuring four panel selections of wood or leather grain patterns. Three basic types of control systems are described in detail in the booklet. Also shown are dimensioned outline drawings, sketches of the decorator coordinated interiors and photographs of the systems in use. Complete specifications and electrical requirements are provided. ■ U.S. Elevator, Spring Valley, Cal.

Circle 406 on inquiry card

HOME VENTILATION GUIDE / "Is Your Home Properly Ventilated?" is the title of a new illustrated pamphlet published as a consumer guide to proper ventilation and systems installations. The 12-page, two-color pamphlet demonstrates the need for summer and winter ventilation, the various types of vents and systems, and provides FHA and HVI charts for determining vent-free areas required for any size home. ■ Leigh Products, Coopersville, Miss.

Circle 407 on inquiry card

SOLAR HEATING AND COOLING / A publication which brings together recently completed National Science Foundation-sponsored research on solar heating and cooling has just been issued by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE), and the Department of Mechanical and Chemical Engineers, School of Engineering and Applied Science, University of Virginia. The publication contains 164 pages. It describes the experience of four schools in widely separated parts of the country that were equipped with solar heating and cooling. It sets forth how to create a solar system, costs, and problems, among other topics, and there are forecasts on the future size of the solar energy market. ■ ASHRAE, New York City.

Circle 408 on inquiry card

BITUTHENE WATERPROOFING / A newly-updated brochure on BITUTHENE® structural waterproofing membrane contains data on physical properties, application drawings, and comprehensive instructions for installing the membrane on vertical or horizontal structural concrete and masonry surfaces, decks, tunnel envelopes, floor drains, T-beams and other areas. ■ W. R. Grace & Co., Cambridge, Mass.

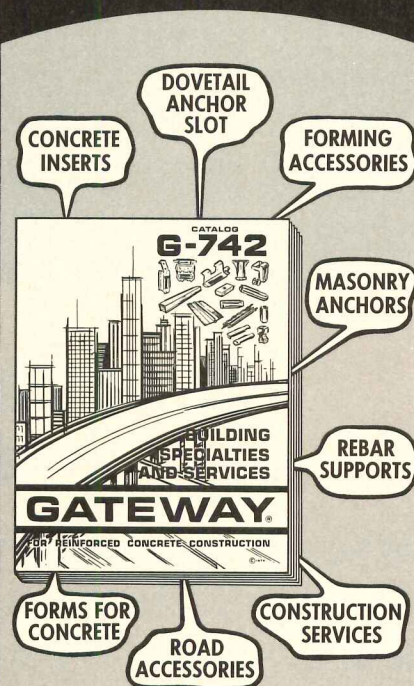
Circle 409 on inquiry card

SOAP DISPENSERS / A new four-page, fully illustrated soap dispenser catalog describes stainless steel dispensers and dispenser-shelf combinations for liquid, lather and powdered soap, in a variety of designs and capacities. ■ The Charles Parker Company, Meriden, Conn.

Circle 410 on inquiry card

more literature on page 151

Contractors SHOPPING CENTER



GET THIS FREE CATALOGUE SHOWING PRODUCTS AND SERVICES FOR REINFORCED CONCRETE CONSTRUCTION

It will assist you in securing a complete quality line of Building Specialties for concrete construction from one reliable source. Engineering details and data are included.

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For more data, circle 56 on inquiry card



Even a half-time business needs full-time protection.

When the Golden State Warriors or California Golden Seals play at home in the Oakland Arena, hot dog and beer sales go way up. As soon as the Cookson counter doors go up. And when the Oakland A's or Raiders play next door at the Coliseum, the same thing happens.

During working hours, Cookson counter doors are coiled up, out of sight, out of the way. At closing time, they're easily rolled down, locked into position, fitted snugly to the counter.

They're easy to roll up and down because they're counter-balanced and equipped with lubricated ball bearings.

They're difficult to tamper with because the compact removable-crank operator is mounted at the top of the door, not at counter level.

The locking device is even hard

to find: we conceal it in the footpiece.

Available with slats of galvanized steel, stainless steel or extruded aluminum, Cookson standard counter doors are trim, handsomely styled.

So are our sturdy, UL-listed steel rolling counter fire doors, and our custom-built unitized counter doors.

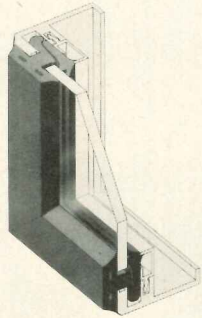
Cookson counter doors were the best way to close 80 refreshment stand openings in the giant Oakland-Alameda County Coliseum complex. Including the "hot dog-watch dog" above.

For complete information on our counter doors, grilles and rolling doors, see our catalog in Sweet's. Or write for your own copy to: The Cookson Company, 700 Pennsylvania Avenue, San Francisco, California 94107.

 **Cookson Rolling Doors**
Best way to close an opening.

For more data, circle 57 on inquiry card

STRUCTURAL GLAZING SYSTEM / Wej-Grip, a new high-performance gasket system for structural glazing, is designed to provide an architecturally clean and attractive narrow sight line appearance, and fast, easy straight-in glazing. The two-piece system consists of a gasket and locking wedge extruded from ozone-resistant 100 per cent virgin *Neoprene* with physical properties that meet or exceed the requirements of ASTM C-542-71a. Corners are factory mitered, assembled with durable stainless steel reinforcing angles, sealed and quality checked to ensure premium performance. ■ Tremco, Cleveland, Ohio.

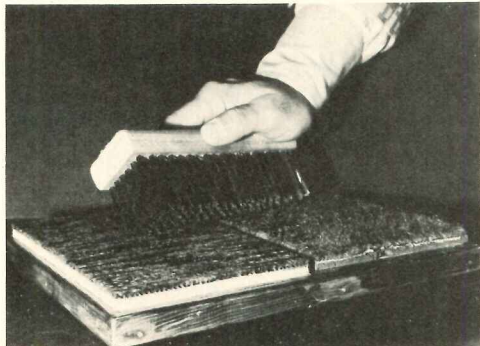


Circle 304 on inquiry card



FIRE SAFETY SYSTEM / A new fire fighter's communications system is now available for installation in both existing and planned high-rise construction. Called the "SAS Fire Fighter's Communication System," the unit can be installed separately or linked with a fire detection and alarm system to form a complete emergency control center for fire department and building personnel. The system is provided in modular form to match a wide range of high-rise and other building requirements. The system consists of the emergency voice communication system and the fire fighter's telephone system. ■ Notifier Co., Lincoln, Neb.

Circle 305 on inquiry card



URETHANE SPONGE-BACKED CARPETING / The company has announced the development of a new manufacturing process for the production of urethane sponge-backed carpeting. The improved fiber lock also can result in better pile pattern definition for a sharp, crisp appearance on space-dyed level loop fabrics. Other claims are: long lasting pile with better appearance retention because the fibers are locked in to prevent pilling, fuzzing and shedding; resiliency that gives an excellent feel underfoot; easy and inexpensive installation; fast recovery from indentations when furniture is shifted; backing resists peeling, scarring and crumbling. ■ Dow Chemical USA, Midland, Mich.

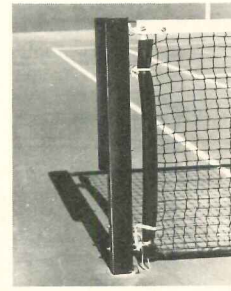
Circle 306 on inquiry card

EYE-WASH / A lightweight, corrosion-resistant eyewash, the model 171-B, has a green *Cyclac* bowl that is excellent for highly corrosive conditions, and the new eyewash weighs only 10 lbs. Equipped with twin chrome-plated brass eyewash heads, model 171-B features a 1/2-in. instant-action, full-flow ball valve. The unit is actuated by pushing the flag handle. ■ Western Drinking Fountains, Glen Riddle, Pa.



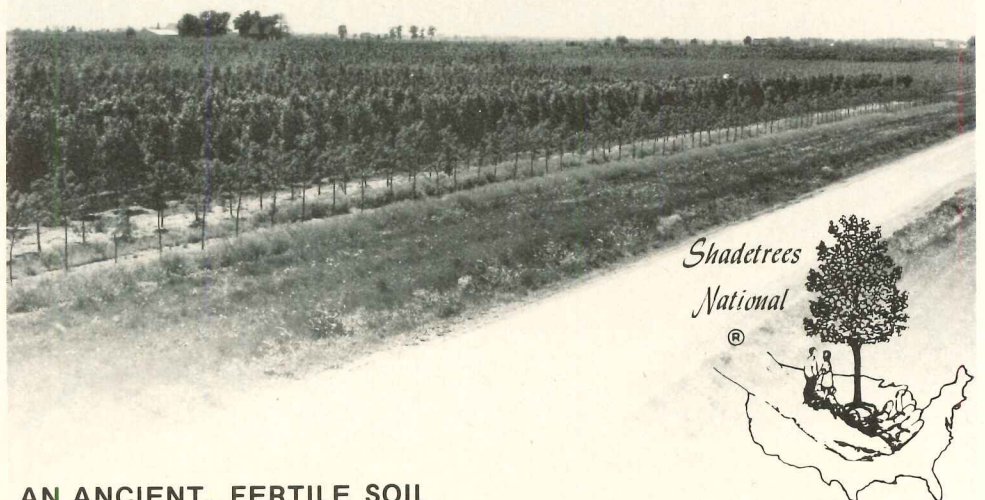
Circle 307 on inquiry card

TENNIS NET POSTS / The new posts are completely free of any exposed protrusions, gears, ratchets or winding handles. The entire outer surface is smoothly curved and possesses no sharp edges. Posts will not bend or break even when required to suspend twice the weight or tension normally experienced, and rapid installation is said to be achieved without any special equipment. ■ J. & J. Company, Hackensack, N.J.



Circle 308 on inquiry card
more products on page 147

WHY SPECIFY WANDELL'S? HERE'S FOUR GOOD REASONS!



AN ANCIENT, FERTILE SOIL

Ask any agronomist! There's no better soil anywhere in the world than that which surrounds the Champaign-Urbana area. Rich glacial loess and wind deposited loam form the basis of the soil in which our trees are grown.

SCIENTIFIC PRODUCTION

Our more than 600 acres produce shade trees on a scientific basis. Trees are widely spaced, with plenty of room to grow. Special attention is given to stock selection, planting methods, survival, fertility, uniformity of growth, and harvesting methods. The result is an exceptional shade tree every time at considerable cost advantage to our customers.

THE ZONE-4 "CAPABILITY"

Wandell's is a **Zone-4 Nursery**, with all that implies relative to meeting specs and government requirements for hardy "northern-grown" nursery stock.

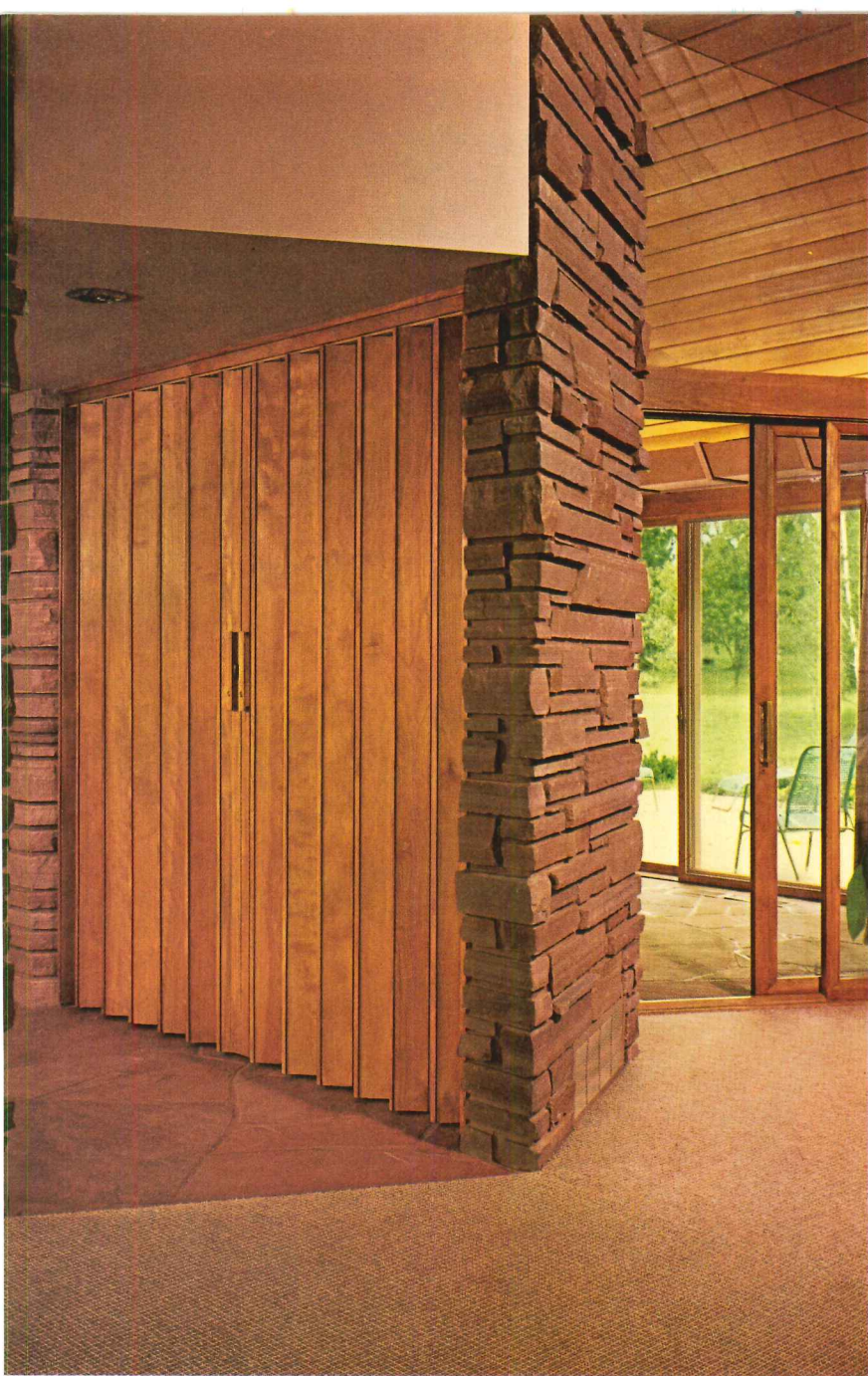
THE RESERVE-A-ROW® IDEA

We have a plan that gives you tomorrow's shade trees at today's prices--a real inflation fighter. It's called **Reserve-A-Row®**, and it's one of the most responsible ways you can handle your client's money and one of the best returns on investment available anywhere!

Wandell's

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For more data, circle 58 on inquiry card



Pella wood folding doors move quietly, easily and with a certain natural beauty.

Genuine wood veneers or vinyl. Wood core panels. Hung on nylon rollers. Hinged by a patented system of steel alloy springs.

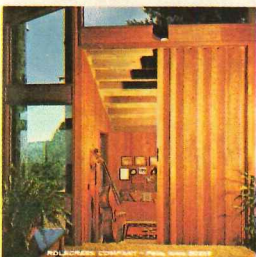
Pella Wood Folding Doors are as practical as they are beautiful. The solid wood core construction minimizes possible surface damage. And it keeps the panels hanging straight and true, even in humid areas. The concealed steel spring hinging system creates equal tension on each of the panels, for smooth operating motion, uniformly positioned panels and flat, compact stacking. Pella Wood Folding Doors. Finished or ready-to-finish. In a wide variety of styles. Heights to 16'1". Unlimited widths.



OUR 50TH YEAR

For more detailed information, send for your free copies of our 8-page, full-color brochures on Pella Wood Folding Doors. See us in Sweet's Architectural File. Call Sweet's BUY-LINE number or look in the Yellow Pages, under "doors", for the phone number of your Pella Distributor.

Pella WOOD FOLDING DOORS
SERIES 202



Please send me your 8-page brochures on Pella Wood Folding Doors. I would also like information on: Sliding Glass Doors, Casement Windows, Double-Hung Windows, Awning Windows.

Name _____

Firm _____

Address _____

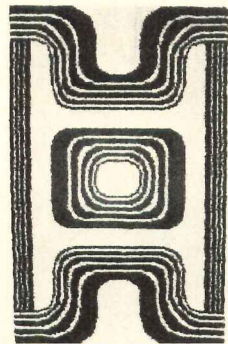
City _____ State _____ ZIP _____

Telephone _____

Mail to: Pella Windows & Doors, Dept. T31G5, 100 Main St., Pella, Iowa 50219.
Also Available Throughout Canada This coupon answered within 24 hours.

For more data, circle 59 on inquiry card

Rugs / The rugs which come from Greece, Belgium

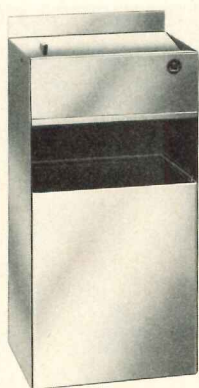


and the Philippines, are contemporary in feeling. Two are cut pile, one in acrylic, the other in wool. The third is a wool Flokati. The "Pacifica" group (shown) is in a hand-tufted heavy cut pile plush in acrylic fiber, made in the Philippines. The four patterns—Flame Stitch, Chevron, Moroccan and Swirl—are colored in earth tones and in stronger

contrasts using green, yellow and blues. Custom sizes are offered in the "Pacifica" patterns, both in broadloom and in area rugs, as well in sizes up to 8 by 11 ft. ■ Cado/Royal System, Inc., New York City.

Circle 309 on inquiry card

ASH TRAY/RECEPTACLE / The new unit is manufactured of type 304 stainless steel, with all welded construction, and exposed surfaces are satin finish.



On a companion model the finish is a satin bronze tone. The flip top ash tray is theftproof, and permanently attached to the cabinet. It pivots at the top to permit removal of the receptacle for servicing. The 3¾-gal. capacity stainless steel waste receptacle is secured by a tumbler lock

so that it can be removed for custodial servicing. The unit measures 11 in. wide, 23¾ in. high, 5¾ in. deep. Bottom edges are hemmed for safety. ■ Bobrick Architectural Service Dept., New York City.

Circle 310 on inquiry card

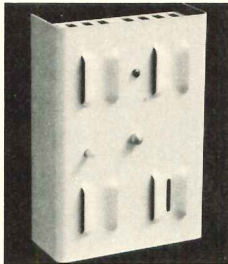
OUTDOOR SHELTERS / The standard shelter is approximately 8 ft high, 10 ft wide and 5 ft deep, and includes an aluminum frame in natural or black duranodic finish. The roof and sides of the structure are glazed with ¼ in.-thick sheets of grey tinted acrylic or polycarbonate.



The sides of the shelter are bolted to one-foot-high concrete blocks. A one-foot space between the rear of the shelter and the ground prevents a buildup of snow, dirt, paper and debris in the shelter. ■ Tubular Products, Inc., Souderton, Pa.

Circle 311 on inquiry card

SMOKE DETECTORS / Designed to meet all building code and safety requirements for early warning of fire danger, models are UL-listed and operate on standard household current. Both plug-in and direct wire-models are easy to install and feature an exterior push to test button, rugged all aluminum construction and five-year warranty. ■ Wellen Industries, Monterey Park, Cal.



Circle 312 on inquiry card

more products on page 149

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the design/construct
team approach . . .
consider**

Leavell

C. H. Leavell & Company represents experience and proven results as the general contractor team member on design/construct projects . . . more than 4.6 million square feet of retail space for shopping center developers . . . more than 2.6 million square feet of commercial space for independent developer and corporate clients. Leavell's design/construct performance is balanced by a record of success as low bidder on major commercial, industrial, institutional and government projects. Offices staffed by professional construction managers give us depth in key market areas of the country. If you're considering the design/construct team approach . . . give us a call.

We know construction.



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For more data, circle 62 on inquiry card

Bally started conserving energy back in 1962

That's when we introduced 4-inch
thick urethane foamed-in-place
metal-clad panels for Walk-in
Coolers / Freezers / Refrigerated Buildings.

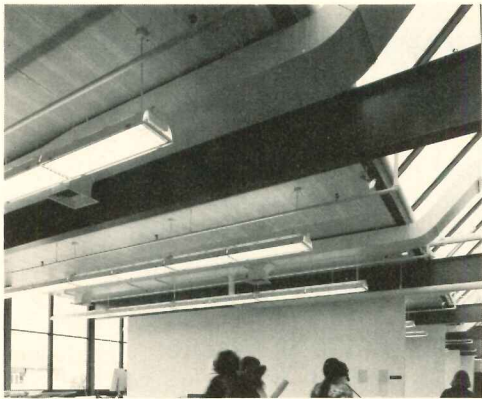
Bally 4-inch thick panels have the insulation value of 8½ inches of fiberglass and other conventional insulations. Their energy conserving characteristics established a new standard for refrigerated storage design. Bally Prefabs can be assembled in any size from standard modular panels clad with galvanized, aluminum or stainless steel. Easy to enlarge or relocate. Refrigeration systems for every temperature requirement. Subject to fast depreciation and investment tax credit (ask your accountant). See Sweet's Catalog 11.24/Ba. Write for *Working Data Catalog*. **Bally Case & Cooler, Inc., Bally, Pa. 19503.** Phone (215) 845-2311
ADDRESS ALL CORRESPONDENCE TO DEPT. AR-7



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For more data, circle 61 on inquiry card





FLOOR/CEILING SYSTEM / This is a structural deck that works through the co-action of formed steel decking with a cover slab of poured-in-place concrete. The result is a floor that can carry heavy loads for spans of up to 32 ft. Because of the shallow overall profile of composite deck sections (total floor/ceiling depth is normally 1 ft or less), costly building cubage is saved. The system meets building code requirements for fire resistance up to 2 hours as certified by Underwriters' Laboratories. There are three profile types which can provide one or more of these features: acoustical control; communications and electrical raceways; air diffusion and distribution; and recessed lighting troffers. It is a structural-mechanical floor and an architectural ceiling at one and the same time. ■ H. H. Robertson Co., Pittsburgh, Pa.

Circle 313 on inquiry card



COMBINATION STORAGE FILE / Wall-hung file units, specially designed to accommodate the combination of computer printout binders, legal- and letter-size files in current usage in many banking, accounting, and industrial middle-management and sales offices, are the latest addition to the company's OIS line of office interior products. Available in two sizes, 30- and 44-in. wide, the storage units are compatible with other storage and work units in the line. They are top-access with rear-hinged, two-section lids, and can effectively hold EDP binders. The combination storage files are finished in beige to coordinate with other OIS components. ■ Hauserman, Inc., Cleveland, Ohio.

Circle 314 on inquiry card

MAIL BOX / A new horizontal mail box, featuring solid ¼-in. extruded aluminum doors and concealed hinge and frame, is called the "Aristocrat." The mail box is designed for high-rise apartment buildings and meets all new U.S. Postal Service regulations. The unit is available in front and rear loading models with standard compartment dimensions. Arrangements include three, four or five doors wide by five, six or seven doors high. Cabinets are of double-walled aluminum construction. Trim matches door finish. Each mail box is equipped with a five-pin cylinder lock with cam latch (1000 key changes). ■ American Device, Steepleville, Ill.

Circle 315 on inquiry card

SUBMERSIBLE POOL PLATFORM / "Tot-Dock," a submersible platform for swimming instruction, has been developed for use in home or public swimming pools. It creates a safety zone in the shallow end of the pool, allowing instructors to work easily with toddlers who might find the normal shallow-end depth over their heads. Each unit is 7½ by 3 ft and stands 6 in. high. It can be used singly or in multiples. The lightweight aluminum units weigh about 55 lbs and can be removed easily for non-instructional periods. ■ Stadiums Unlimited Inc., Grinnell, Iowa.



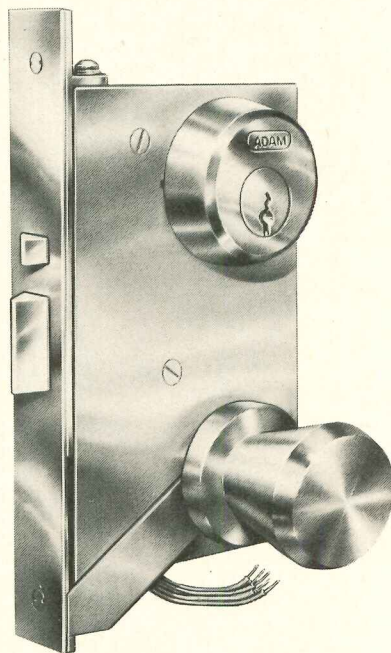
Circle 316 on inquiry card

LEVEL-LOOP CARPET / The strongly textured level loop carpet is made of Antron nylon with Antron III added for newness retention and control of static electricity, generally limited to less than 3.0 kilovolts, as measured by AATCC test procedures. Triple-piled yarns are dyed by the continuous range method, which allows large yardage runs of the same dye lot and is said to improve on color uniformity. "Saco," available in 11 bright triple tone-on-tone colorations, is recommended for offices, restaurants, lounges, etc. ■ Philadelphia Carpet Co., Cartersville, Ga.



Circle 317 on inquiry card

FA Model 125 Extra Strength for institutional, industrial and commercial use



As a leader in security for correctional institutions for more than 65 years, Folger Adam offers you a lock that truly means security for your applications—industrial, commercial, school, nursing home.

The Model 125 is the ultimate of the industry, in a word: SECURE. It's also versatile, providing you with remote control and signalling features. The Model 125 utilizes the Adam® Mogul cylinder and can operate in combination with the Folger Adam® Model 310-2 electric strike.

Ask for descriptive and technical data on our new, unique Model 125 mortise lock with automatic dead-latch—with mechanical and/or electrical functions.

FOLGER ADAM CO.

Architectural Security Div. 700 Railroad St., Joliet, Ill. 60436 (815) 723-3438

For more data, circle 60 on inquiry card

TEXTONE® Panels are born beautiful. That's where your in-place savings come in.

TEXTONE Vinyl-faced Gypsum Panels give you high fashion walls without the high cost of field-applied vinyls. They come to the site completely predecorated with heavy-duty vinyl in your choice of 27 colors and textures. Installation can be immediate, so there are no delays in scheduling and, of course, none of the mess of field-applied

jobs. Matching mouldings are available. The tough vinyl covering is easily cleaned. See your U.S.G. representative for installation details, or refer to Sweet's Architectural and Interior Design files for TEXTONE Panels data. For sample swatchbook, write on your letterhead to 101 S. Wacker Dr., Chicago, Ill., 60606, Dept. AR-75



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UNITED STATES GYPSUM 
BUILDING AMERICA

For more data, circle 63 on inquiry card

imagine a roof deck insulation this effective!

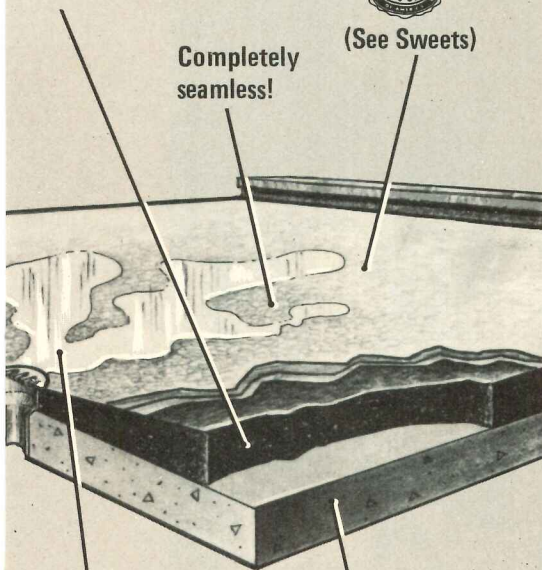
All-weather Crete
saves energy —
cuts fuel costs
1/3 to 1/2!

2 Hour UL
fire rating!



(See Sweets)

Completely
seamless!



AWC is sloped
to drains
providing positive
water run-off!

AWC systems can be
installed on concrete,
metal or pre-stressed
decks - for roof
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Quality installation
only by trained,
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For more data, circle 64 on inquiry card

OFFICE LITERATURE *continued from page 143*

PRE-BUILT FIREPLACES / Literature available from the company includes an illustrated brochure on the firm's pre-built fireplaces—woodburning, gas-fired or electric, freestanding or built-in—as well as dimensional drawings and installation information on each of the units, and a chimney installation brochure. ■ Preway, Inc., Wisconsin Rapids, Wis.

Circle 411 on inquiry card

ELECTRIC STEAM BOILERS / New bulletin provides application information for low- and high-pressure electric steam boilers. The eight-page booklet contains sample specifications and tables and formulas for correctly sizing electric steam boilers and piping connections. It is intended to complement the firm's Electric Hot Water Boiler Bulletin A120. ■ Brasch Manufacturing Company, Inc., Maryland Heights, Mo.

Circle 412 on inquiry card

ELECTRIC HEATERS / An enlarged edition of the company's catalog of *Calrod* electric heaters and controls describes 66 product lines of heaters, controls and accessories for industrial heating applications. The thumb-indexed 120-page book has an application and selection guide and an alphabetical product index, as well as photographs, diagrams, sections and specifications of the products discussed. ■ General Electric Company, Scotia, N.Y.

Circle 413 on inquiry card

WOOD DOORS / *End of the Drab Door*, a 24-page four-color catalog, describes six product lines of the manufacturer's wood doors: Knot Block, Old Wood, Barbie's Blocks, New Wood, Armijo Art and Painted Wood. ■ Whittlewood Corporation, Albuquerque, N. Mex.

Circle 414 on inquiry card

MINERAL FIREPROOFING / New brochure describes *Thermafiber* fireproofing for steel columns and beams. The lightweight dry fireproofing, which contains no asbestos, gives a fire rating of up to four hours, with six UL designs for structural steel protection. ■ United States Gypsum Company, Chicago, Ill.

Circle 415 on inquiry card

CONTEMPORARY CHAIR / The *Zographos* chair, designed by Nicos Zographos, is described in a new brochure. The chair has a chrome-finished steel-tube frame, and seats and backs are available in saddle leathers, vinyls in 40 colors, or fabric. ■ GF Business Equipment, Inc., Youngstown, Ohio.

Circle 416 on inquiry card

FINNISH PLYWOOD / The 1975 Finnish Plywood Brochure (Technical Bulletin No. 1A-1975) is a 12-page, four-color booklet describing interior and exterior grades of the material. Pictures and tables illustrate grades, finishes and colors and give stress factors, strength and section properties, thicknesses, and other engineering and design data. ■ The Finnish Plywood Development Associates USA, Inc., Falls Church, Va.

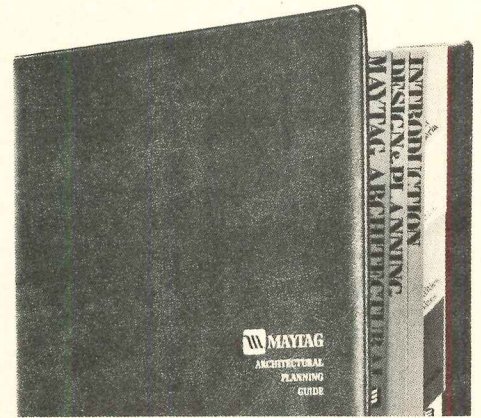
Circle 417 on inquiry card

CONSTRUCTION ESTIMATING BOOKS / A new catalog entitled, "Building Construction Books, Estimating Forms, Measuring Tools" includes *Building Construction Cost Data* and other estimating and scheduling books. The illustrated catalog also includes: cost analysis sheets, quantity sheets, daily time sheets and telephone quote forms. Also offered is a line of drafting scales, and a selection of measuring tapes. ■ R.S. Means Co., Inc., Duxbury, Mass.

Circle 418 on inquiry card

more literature on page 153

Unique book shows how to avoid needless expense and improve tenant satisfaction in designing laundries for multiple housing.



Indispensable for architects,
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Kelley Dockboards Can Save Your Client \$4,000 Every Year

Remodeling and upgrading of loading docks requires surprisingly little expenditure. As a result your client gets faster and better return on his dollars than virtually any other investment he can make.

For example: Suppose he services 10 trucks per dock position per day. And suppose it costs \$20 per hour for a man and material handling equipment. Kelley Permanent Dockboards will save at least 5 minutes per truck, or more than \$4000 per position per year. That easily pays for the dockboards, their installation and leaves a substantial profit.

Call your Kelley Representative. He's a loading dock specialist. He not only does expert remodeling, but also can make suggestions to improve total dock operations. Many of his suggestions won't cost a dime, but they help clamp down on losses, and make docks safer and more efficient.

Sound logical? Call your Kelley Representative today. He's listed in the Yellow Pages under Dockboards or contact Kelley Company, Inc., 6768 N. Teutonia Avenue, Milwaukee, Wisconsin 53209... Telephone: (414) 352-1000... Telex: 26-661.



55-698A

For more data, circle 66 on inquiry card

EPICORE The Weight Lifter 222 psf

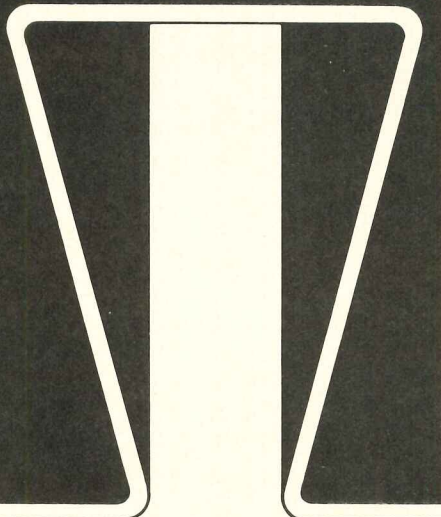
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EPICORE® Composite Deck
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No Spray-on Fireproofing

Change the gage,
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For more data, circle 67 on inquiry card

STONE AGGREGATE SIDING / A new installation manual for *Sanspray* stone-aggregate plywood siding tells how to achieve the architectural stone look with standard carpentry tools and techniques. Detailed drawings cover varieties of panel, molding and joint treatments. Fire classification data and wide range of color options for the modular building panels supplement step-by-step application instruction. ■ U.S. Plywood, Stamford, Conn.

Circle 419 on inquiry card

ASPHALT PAVING / "Full-Depth Asphalt Paving for Parking Facilities" (PS-7), a new publication from the National Asphalt Pavement Association (NAPA), covers the advantages of full-depth hot-mix asphalt construction, construction techniques, and suggested design considerations. The eight-page brochure describes full-depth asphalt construction, its advantages to the designer and facility owner, general design criteria, and a table of suggested design thicknesses. The brochure also contains a listing of Asphalt Institute engineering offices and NAPA State Associations for handy reference. ■ National Asphalt Pavement Association, Riverdale, Md.

Circle 420 on inquiry card

CONVEYOR BROCHURE / A 10-page brochure describing a complete line of overhead enclosed track power and free conveyors contains component specifications, application guidelines for systems, and a thorough explanation of the equipment's accumulations and secondary push features. ■ Rapistan Inc., Grand Rapids, Mich.

Circle 421 on inquiry card

HVAC STANDARDS / Completely revised and updated, the "Standard for the Installation of Air Conditioning and Ventilating Systems" (NFPA 90A) is now available in the 40-page 1975 edition from the National Fire Protection Association (NFPA). Among the major new provisions in NFPA 90A are recognition of Class O duct materials and a new requirement for installation of smoke dampers at duct penetrations of required smoke partitions. This standard applies to warm air heating, ventilating, combination heating and ventilating, air cooling, air conditioning, and exhaust systems. ■ NFPA, Boston, Mass.

Circle 422 on inquiry card

FURNITURE BUYING GUIDE / The "Buyers Guide for Chairs," points out six essential features to consider in selecting chairs: durability, cost, comfort, appearance, space savings, and safety. The brochure describes how to test each one to see if a chair meets specification criteria. ■ Fixtures Mfg. Corp., Kansas City, Mo.

Circle 423 on inquiry card

STEEL EQUIPMENT CATALOG / Steel equipment and office furniture are illustrated in photos and drawings in the 18-page catalog of equipment products for commercial, industrial and institutional use. Detailed specifications and "in use" photos of equipment installations are included. ■ Lyon Metal Products, Aurora, Ill.

Circle 424 on inquiry card

HARDBOARD SPECIFICATIONS / Product specifications are described in a three-page brochure containing color and black and white photographs illustrating the products and their uses. Included are industrial hardboard used for signs, displays and paneling; laminated standard hardboard with applications in furniture manufacture and as platform stock and industrial reel ends; and hardboard on fir laminate which, the literature says, is so smooth it is used in pool tables as a high-grade slate substitute. ■ Publishers Forest Products, Portland, Ore.

Circle 425 on inquiry card

For more data, circle 68 on inquiry card

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any
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bar
requirement,



parker has a
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The reliable service that you expect from Parker is as accessible as your telephone. There are Parker representatives located throughout the country to assist in providing Parker grab bars wherever strong support is needed. If you require a special bar to fit a difficult area, your Parker representative can help you choose the ideal bar from among Parker's wide variety of special applications. If you have already chosen the right Parker grab bar to fill your needs, he can help to assure your delivery requirements. For person-to-person service in filling all your grab bar needs, your Parker representative's number is the only one you need to know.

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Fuel savings.

Three ways: vinyl-clad wood core, optional double-pane insulating glass and close-fitting tolerances.

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Rigid vinyl sheath doesn't rust, pit or corrode. Doesn't chip, crack or peel.

Look at all that Andersen® Perma-Shield® Casement and Awning Windows in Terratone can bring to your commercial and institutional designs. There's so much, it makes you wonder: Could this be the perfect window?

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The beautiful, carefree way to save fuel.

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We call this rich, inviting earth-tone color Terratone. It's a deep, natural hue that blends beautifully with wood, brick, stone, masonry—almost any building material. (Also available in white.)

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COULD THIS BE THE PERFECT COMMERCIAL WINDOW?

Double-pane insulating glass.

Adds the fuel-saving benefits of storm windows without the bother.

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Wood trim can be stained or painted to complement any decor.

Snug-fitting design.

Perma-Shield Casement and Awning Windows in Terratone color are two times more weathertight than industry air-infiltration standards. To help seal out drafts and dust, and help save on heating and cooling costs.

Expressions in Masonry



A biological research tower, a building for which there is no historical precedent, is given human scale and historic reference by brick.

Concrete masonry units enclosing apartments provide protective firmness and the detail interest of hand-layed units.

Two expressions of the beauty and flexibility of masonry by Ulrich Franzen, FAIA.



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*Research Tower, College of Veterinary Medicine,
State Colleges, Cornell University, Ithaca, N.Y.*

Architect: Ulrich Franzen & Associates

*William Street Apartments, Wesleyan University
Middletown, Conn.*

Architect: Ulrich Franzen & Associates

Photographs: David Franzen

For more data, circle 70 on inquiry card





NOW LEASING
CALL HOBBSON 702-222-0000

No-Passing Zone

It's pretty tough for temperatures on either side of these windows to pass through. They're C-E Polarpane "20" Gold Reflective Insulating Units. Installed in Denver's new Sherman Building.

Very little outside summer heat will pass in. Because these Polarpane units reject over 90% of infra-red solar energy. Shading coefficient is a low .16. This adds up to a total indoor heat gain of only 37 BTU/hr per square foot. Which helps to cut the initial HVAC investment and operating costs thereafter.

In winter, this no-passing zone helps keep most heat in . . . more than $\frac{2}{3}$ of it, as a matter of fact. Thanks to the .31 "U" value offered by Polarpane Gold Reflective Insulating Units. Result is substantial savings on fuels and fuel costs, at a time when they're needed more than ever. Especially in this electrically heated building.

Can't really blame a BTU for not getting through. Polarpane's no-passing zone hangs tough: A double-glazed insulating unit of plate or float . . . clear, bronze or gray. The inner or sealed surface of the exterior lite is permanently coated with thin, reflective metallic gold or silver. This lite is separated from a companion clear plate by a cushion of filtered and dehydrated air. A treated steel air space separator, double butyl seal and stainless steel edge channels hermetically seal the unit, assuring complete protection against condensation.

A strong 20 year performance warranty is also built in . . . a warranty backed by a company that will be here 20 years from now: Combustion Engineering, Inc., one of America's largest industrial firms.

Ask us for your free copy of the Polarpane "20" catalog. Or, consult a C-E Glass specialist. C-E Glass, 825 Hylton Road, Pennsauken, N.J. 08110, (609) 662-0400.



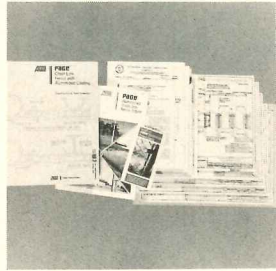
Architect: Chester L. Lindsey Architects, Seattle, Washington
Glazing Contractor: PPG Industries, Denver, Colorado

CE GLASS
COMBUSTION ENGINEERING, INC.

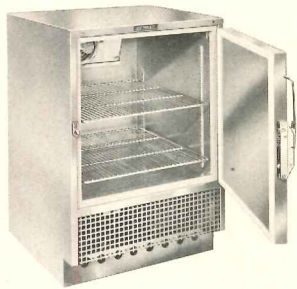
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AE/UPDATE A classified advertising section devoted to helping architects and engineers keep up to date on building product manufacturers.

FREE FENCE SPEC KIT SAVES TIME, TROUBLE! Invaluable for planning chain link fencing. Kit includes drawings on styles, wire gauges, gates, fittings, framework. Also includes lab reports, work sheets and specifications. **Page®** aluminized fabric lasts 3-5 times longer than the best of galvanized. Send for your kit today. American Chain & Cable Company, Inc., Page Fence Division, P.O. Box 430, Bridgeport, Connecticut 06602



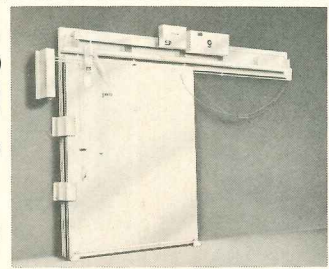
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SPACE-SAVING REFRIGERATORS WITH MODULAR COMPATIBILITY, under-counter and eye-level models in a variety of standard dimensions that form an unbroken line of design. Polished stainless steel exterior (or your choice of finish) and interior. Designed for hospital labs, pharmacies or nurses' stations, explosion safe or total explosion proof construction optional. Freezers with same dimensions available. Removable front grille facilitates easy servicing. Defrost systems, featuring condensate evaporator and accumulator, eliminate need for floor drain. Write: Jewett Refrigerator Co., Inc., 2 Letchworth St., Buffalo, N.Y. 14213.

For more data, circle 73 on inquiry card

It's here!
The world's first Cold Storage Fire Door.



New THERMADOOR™ has a Class A, 3 hr. UL fire rating...and it's filled with urethane foam.



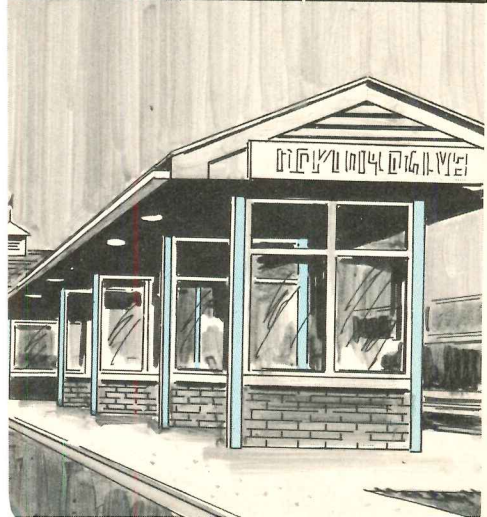
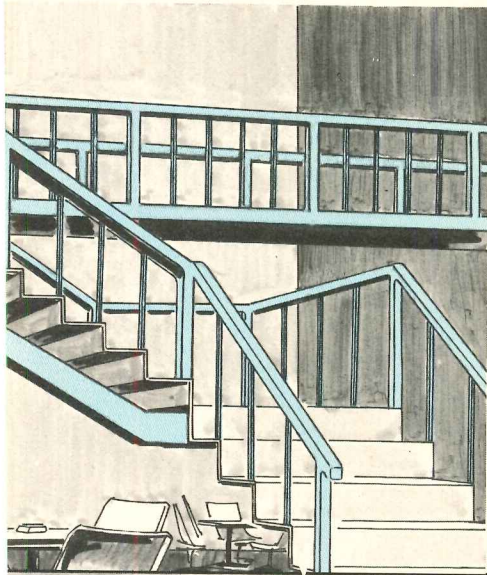
New, urethane insulated THERMADOOR saves refrigeration and provides a positive fire barrier...in one, fast moving, easy-to-install door.

Write for this free descriptive literature!



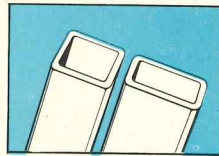
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For more data, circle 74 on inquiry card



Designing with steel?

Look at the aesthetics and structure/ability of Regal Welded Steel Tubing



1" square thru
12" x 8" rectangle.
.083 thru .500 wall

Our clean-lined, smooth squares and rectangles assure better appearance and give you basic design advantages.

Higher strength-to-weight ratios let you use lighter structural columns and beams, trusses, mullions, and stairways. Also provide handsome concealment of conduit, pipe, etc.

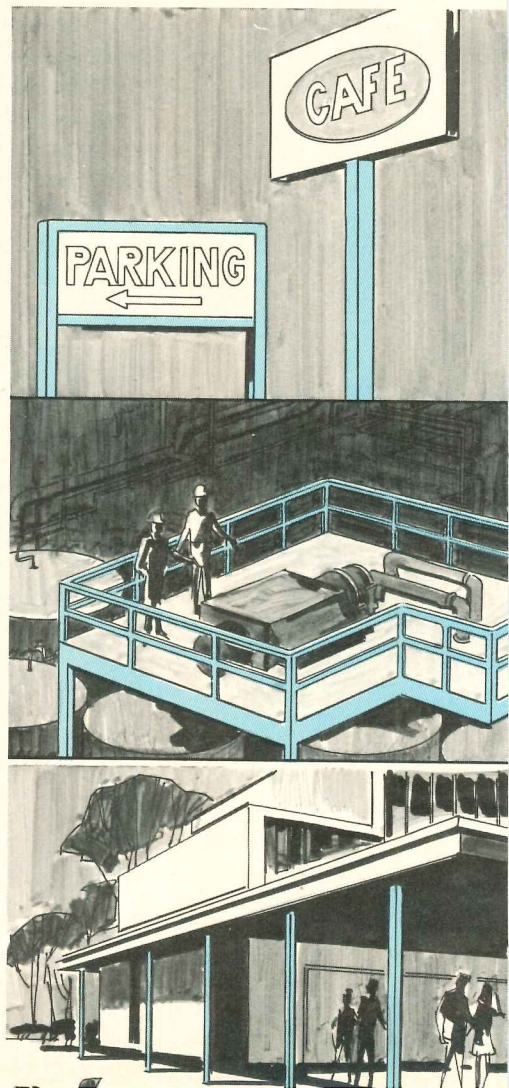
You can simplify layout and speed construction due to easy joining to the four flat surfaces.

These are only a few of the cost-saving advantages of Regal structural steel tubing. Learn more about how Regal structural steel tubing can save you time and costs. Write for our new catalog, free on request. Or contact your steel service center.

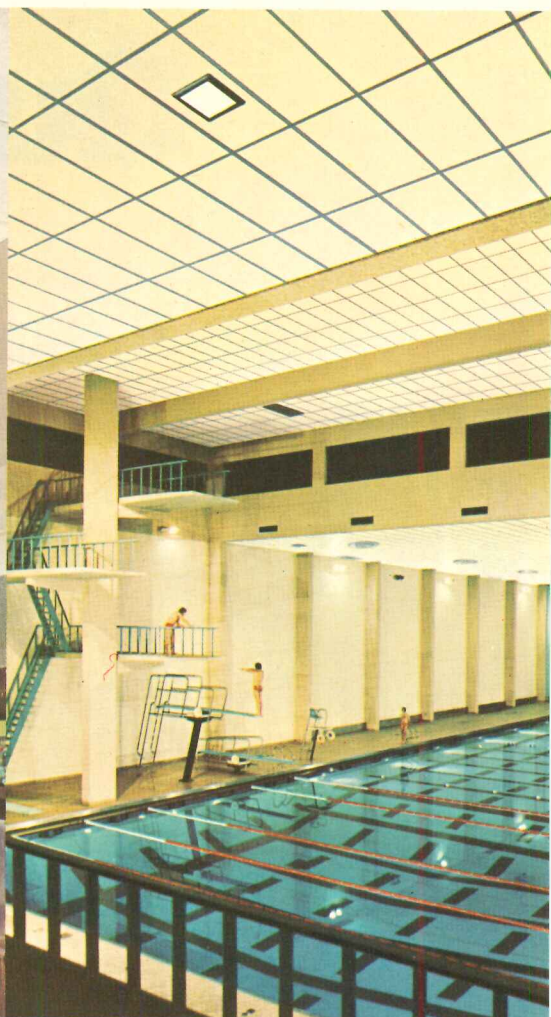


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For more data, circle 75 on inquiry card



Three ceiling problems, three Conwed solutions.



1. Rough treatment

There are actually two Conwed® solutions to this problem. Our ultra-hard Rock Face™ tile and panels provide both abuse-resistance and beauty and are ideal for unsupervised corridors and public places. Where abuse is heavy—such as a gymnasium—we offer an Impaction Ceiling System. It's designed to take a blow from a high flying ball, give with it, then snap back into place. It's U.L. fire rated too! Both of these solutions were introduced by Conwed.

2. Grime and grease

There are certain areas where cleanliness is crucial: kitchens, hospitals, laboratories, supermarkets. For these problem areas, Conwed makes the Metal Face Ceiling. The vinyl-coated, metal-clad surface resists penetration of dirt, moisture and odors. Even areas with concentrations of grease come clean with a sponge and mild detergent solution. The washable ceiling is another Conwed first.

3. High humidity

Conwed Ceramic Ceilings are designed to withstand high humidity and are resistant to heat and corrosive chemical fumes. They offer excellent acoustical control, a pleasing appearance and a two-hour U.L. fire rating. An obvious application is for swimming pools, but the Ceramic Ceiling is also appropriate for installation under outside canopies or soffits and in areas as diverse as kitchens and industrial plants.

And as many more solutions as there are problems.

Conwed has been making ceiling products for over 50 years. We've had one basic way of doing things—isolate a need, and develop a product solution in a form contributing to interior design and

minimal maintenance. This approach has made Conwed a concept and product innovator. For more ceiling solutions, write Conwed Corporation, 332 Minnesota Street, St. Paul, Minnesota 55101.



Conwed
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Ceilings that challenge comparison.

For more data, circle 76 on inquiry card

Noisy highway outside. Quiet theater inside.

Overly builds the doors that others don't.



The Shaw Festival Theater in Niagara-on-the-Lake, Ontario, Canada, has one quality many theaters, large or small, lack: intimacy. None of the 830 seats is more than 63 feet from the 5,000-square-foot stage, and the balcony is near the stage and wrapped around the sides of the auditorium. It's a fairly large theater, but intimacy has been achieved.

There's a busy highway some 200 feet from the theater, and to keep highway noises out, the architects specified an Overly acoustical door on the rear. It's big enough to pass scenery through, but quiet enough (41 db) to exclude distractions. Although the door is 12 feet wide x 22 feet high, one man can open it easily.

Overly designed and installed the door on this magnificent new theater. It's one of many Overly installations that range from Heinz Hall in Pittsburgh to the Kennedy Center for the Performing Arts in Washington, D.C., to music schools and broadcast studios all over the country. Overly acoustical doors are available with sound-transmission ratings up to 62 decibels, and as sliding, vertical lift and bifold units. All hardware is included.

For more information on our capabilities, see us in Sweet's Catalog or write Overly Manufacturing Company, 574 West Otterman Street, Greensburg, Pa. 15601.

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DOES WHAT OTHERS DON'T

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8" x 8" Ember Flash—Plate No. 689

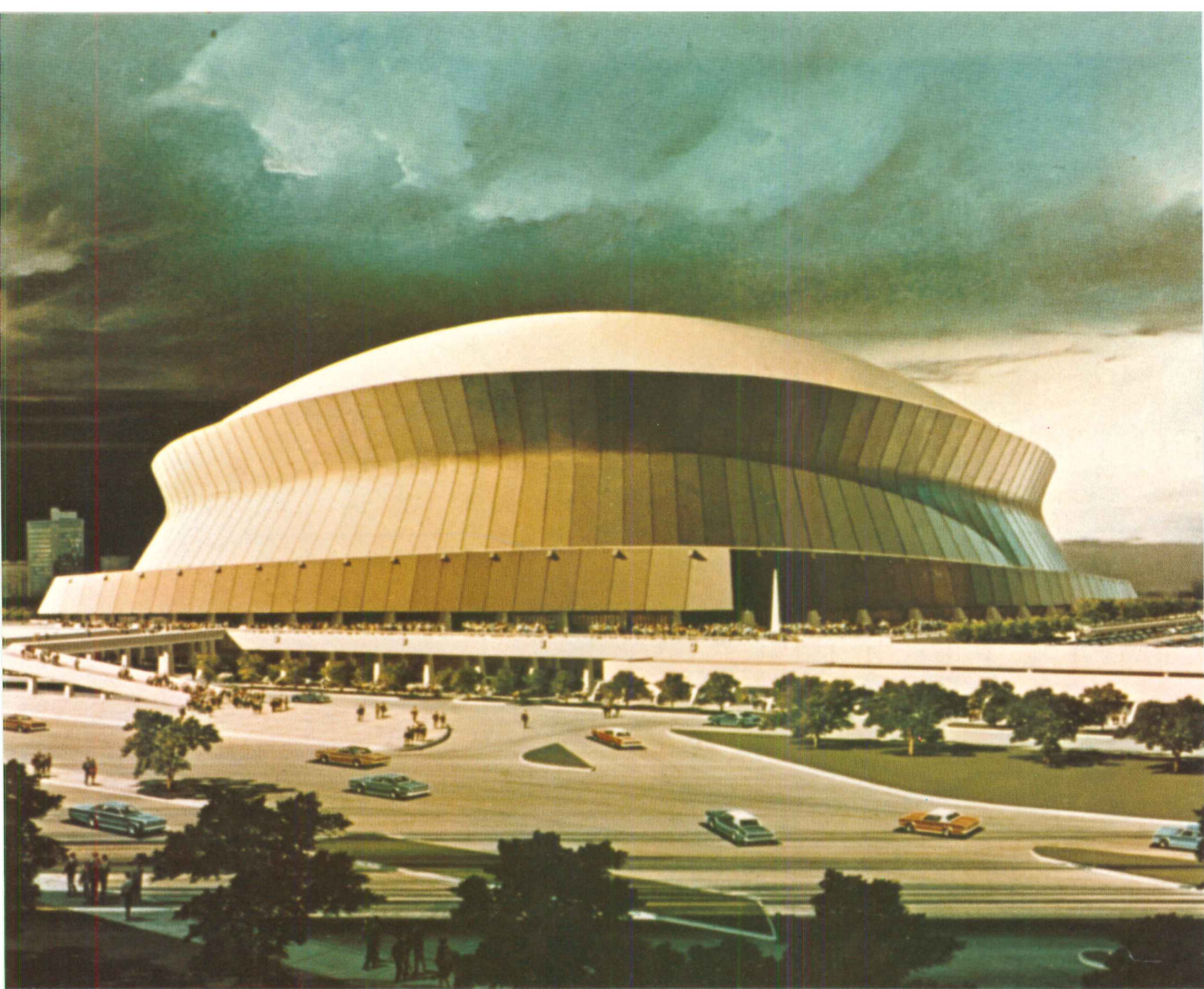
The floor? 8x8 Murray® quarry tile available only from

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Washing 200,000 Hands. A super problem.

Washing hands is a big order in a big building, like the New Orleans Superdome. A big order handled without big installation costs. Without big demands on water, or water heating energy. A big problem solved with just sixty 54" circular Bradley Washfountains.

Check these cost saving facts. It takes eight lavatories to serve eight people. Or just one Bradley Washfountain. The difference adds up to around \$1,400, (including all materials). Now add floor space savings of up to 25% and you see why Washfountains belong in all kinds of buildings.

The same Washfountains save up to 80% on water consumption and water heating energy. And each Washfountain eliminates seven sets of plumbing connections. At the Superdome elimination of double wall construction and pipe chases was vital. Maintenance?

Just think what happens when you cut the number of bowls by 86%. Non-liming spray heads and self-closing valves without gimmicks keep Washfountain operating costs low. For the Superdome we even incorporated special towel dispensers on each Washfountain.

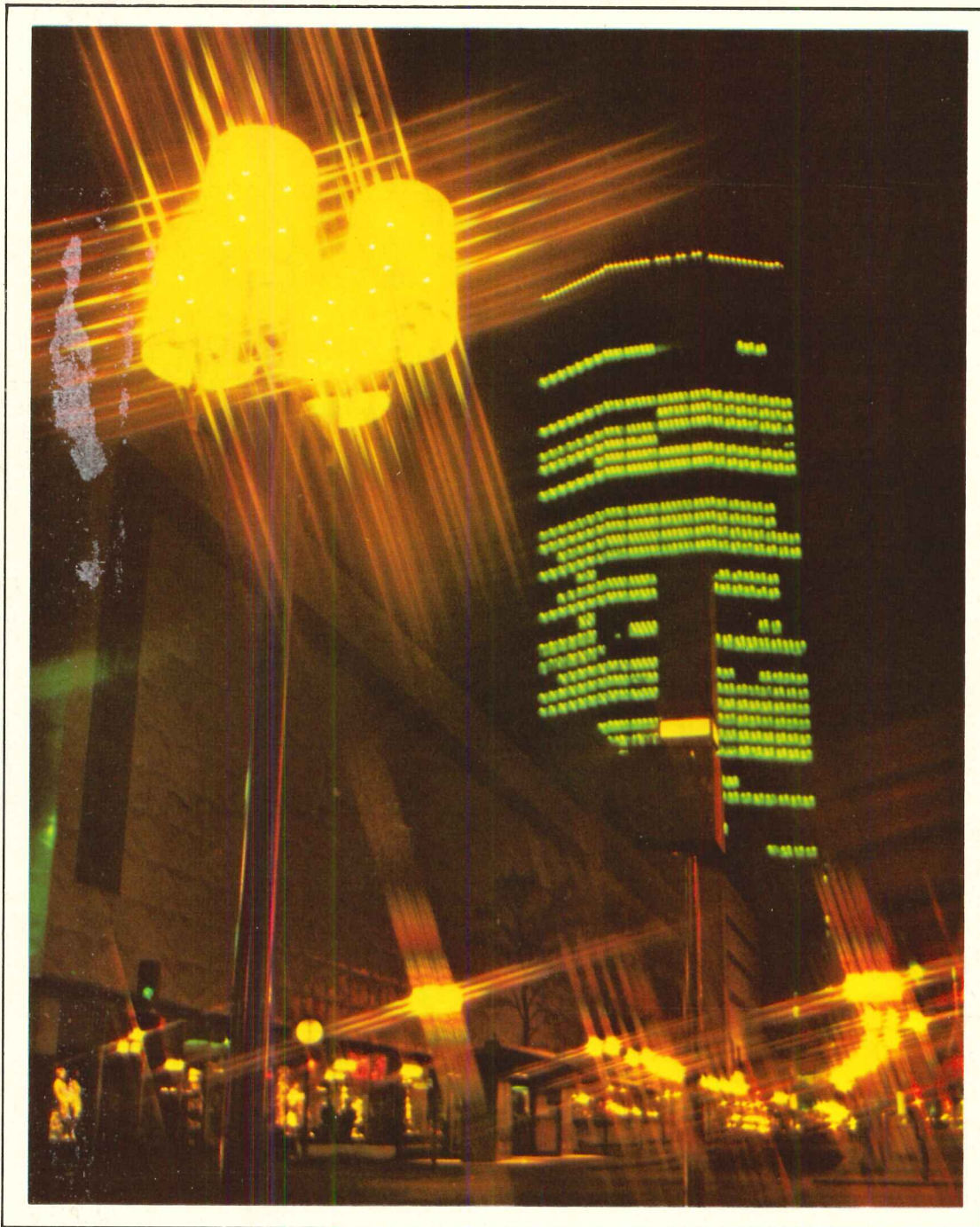
If you've got to clean a lot of hands, remember the Superdome. Contact your local Bradley representative, or write Bradley Corporation, 9107 Fountain Boulevard, Menomonee Falls, WI 53051.



Bradley  **Super problems solved with savings.**

Architects: Curtis and Davis Associated Architects, Inc., Edward B. Silverstein and Associates, Nolan, Norman and Nolan, Sverdrup, Parcel and Associates, Inc.
Mechanical Contractor: Limbach Company. **Wholesaler:** American Plumbing Supply, Inc.

For more data, circle 80 on inquiry card

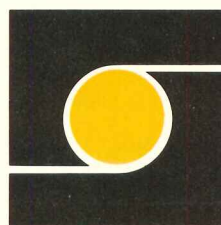


Sterner custom lighting. For those who are never satisfied with things the way they are.

You know the feeling. Every luminaire you see seems to have a depressing similarity to all the others. And none of them quite fit your project. So, you start drawing. Forms take shape. And almost before you realize it, you've designed your own unique fixture. When that happens, it's time to call us.

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We also offer the expertise of our Simes and Infranor Divisions to provide solutions to specialty lighting and floodlighting problems. So remember, if lighting is your problem, Sterner is your answer.



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It's as easy as 1, 2, 3.

1. Bring your small package to United's passenger check-in counter 30 minutes before flight time. Pay the charges.

2. Phone your addressee. Give him the flight number, arrival time, and receipt number.

3. Thirty minutes after arrival, the package can be picked up at the baggage claim area.

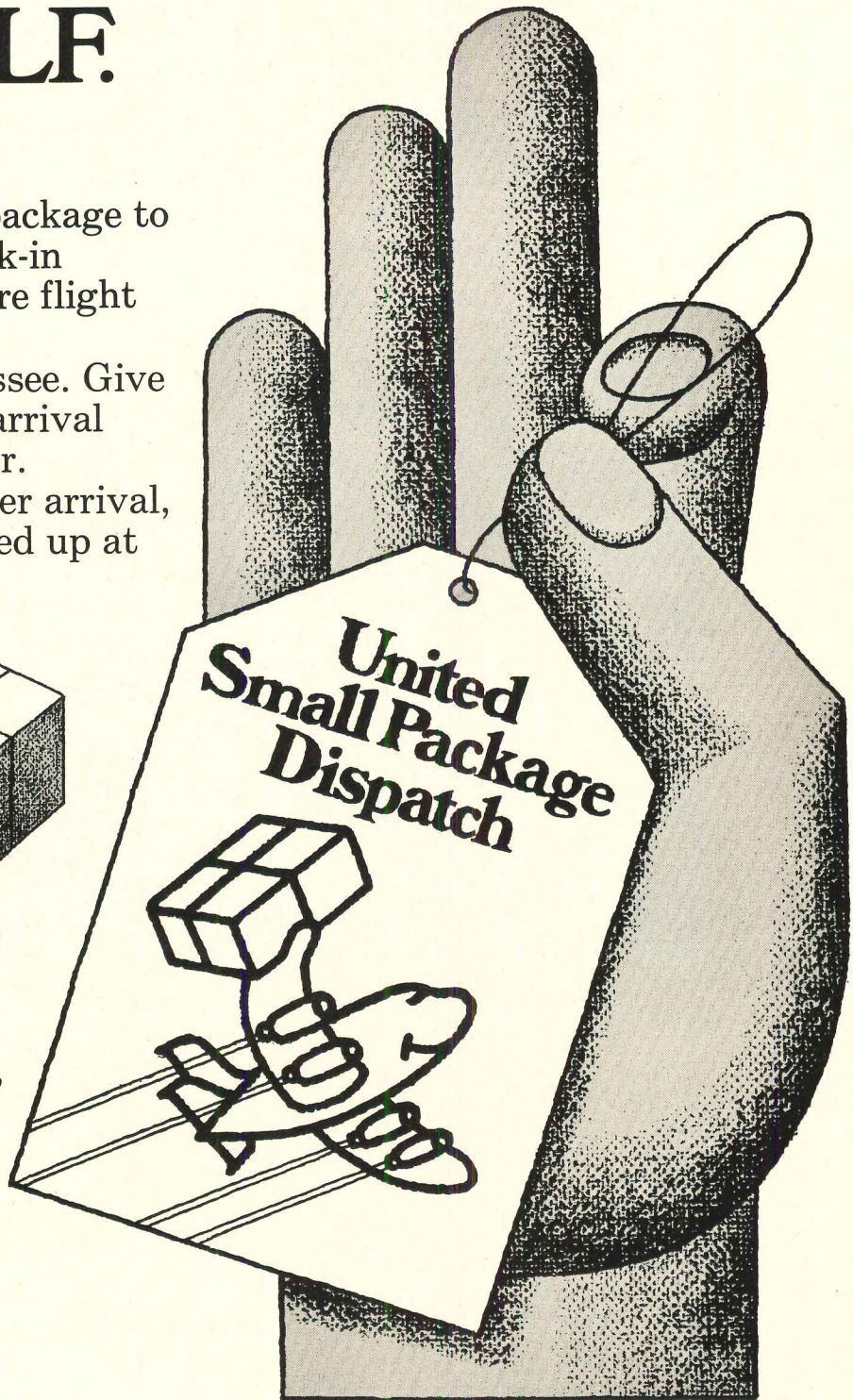
How big is small?

Up to 50 pounds in weight, up to 90 inches in total dimensions (length, plus width, plus height).



What can you ship?

Things like film, computer tape, samples, medicine, advertising material, blueprints . . . or the briefcase you forgot to take on your business trip.



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J-M Expand-O-Flash® Expansion Joint Covers.

Combine strength with stretch in a prefabricated expansion joint cover.



Roof expansion joints can be a problem. And often are.

But the problem is one that's easily solved.

With J-M Expand-O-Flash Expansion Joint Covers.

Expand-O-Flash is the original prefabricated expansion joint cover.

Two preformed metal flanges are joined by a strip of neoprene in a patented process that permanently bonds the neoprene to the metal. Closed cell foam insulation is cemented to the underside of the neoprene.

The metal provides strength; the neoprene provides stretch—two requirements for any effective joint cover.

Expand-O-Flash Expansion Joint Covers are extremely versatile, offered in: curb form; straight flange; WS Waterstop—for vertical wall expansion joints; and a Tedlar/nitrile joint cover that accommodates

all styles of expansion joint openings. In addition, Expand-O-Flash comes in a variety of preformed shapes for corners, tees, crossovers, inside and outside corners, plus custom fittings made to your specifications.

All install quickly and easily to form a strong yet flexible watertight, weathertight closure.

Expand-O-Flash Expansion Joint Covers are sold by distributors nationwide. For product and installation details, write for BU-302A, Johns-Manville, Greenwood Plaza, Denver, Colorado 80217. Or call, Don Korte, 303/770-1000.



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**The single-source
built-up roofing system**



Johns-Manville

For quality wood windows and doors, specify the NWMA Hallmark.



Or knock on wood.

This is the NWMA Hallmark. When you include it in your wood window and door specifications, you'll be sure the products meet the high standards covered by I. S. 1-73 (NWMA Industry Standard for Hardwood Veneered Flush Doors) and I. S. 2-73 (NWMA Industry Standard for Wood Window Units).

The hallmark means that the manufacturer's facilities and equipment have passed periodic inspections. And that samples of his products carrying the hallmark have passed regular laboratory tests to guarantee conformity to all NWMA quality regulations.

HUD/FHA and others depend on it. You can depend on it, too.

For complete information, write: National Woodwork Mfrs. Assn., 400 W. Madison Street, Chicago, Illinois 60606.

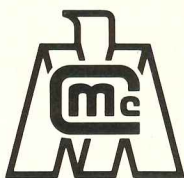
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Seen this *Sweet's Insert ?

If not, write for your special copy today. It details Bali-Architect's many impressive **Exclusive Blind Features.**

*Architectural and Interior Design files

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Note: The savings shown above are approximate and are based on the following: Average 1975 fuel and equipment costs. Upgrading roof insulation from 15/16" to 2¼" on a 60,000-sq.-ft. metal deck. Suburban office building. Northern climate. Gas heating and electric cooling.

Your estimated savings on a particular building depend on size, type, location, method of heating and cooling, and other variables. (The figures you'll get from our computer are approximate savings, of course, and can't replace a full analysis.)

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Project: Guardian Bank, Pinellas Park, Florida Architect: Robert Bernzott
Fabricator: J-C Products Corporation Applicator: Midway Glass Company



Project: Professional Building for Stebbins & Scott, Fort Pierce, Florida
Architect: Stebbins & Scott, A.I.A. Fabricator/Installer: Construction Specialties, Inc.

Strength and durability make Alcoa EZ Wall an excellent choice for facing or refacing.

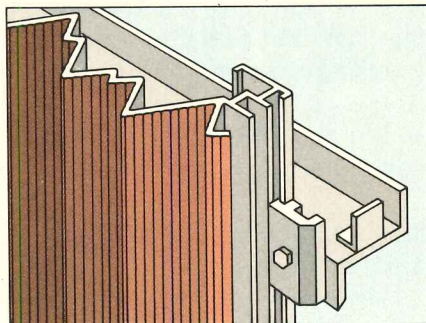
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be provided in lengths up to 44 ft, eliminating horizontal joints in many three-story applications. EZ Wall is designed to provide for thermal expansion and field tolerances. It's the only metal wall system of its kind available in acrylic, fluoropolymer enamel, anodic or Duranodic† finishes.

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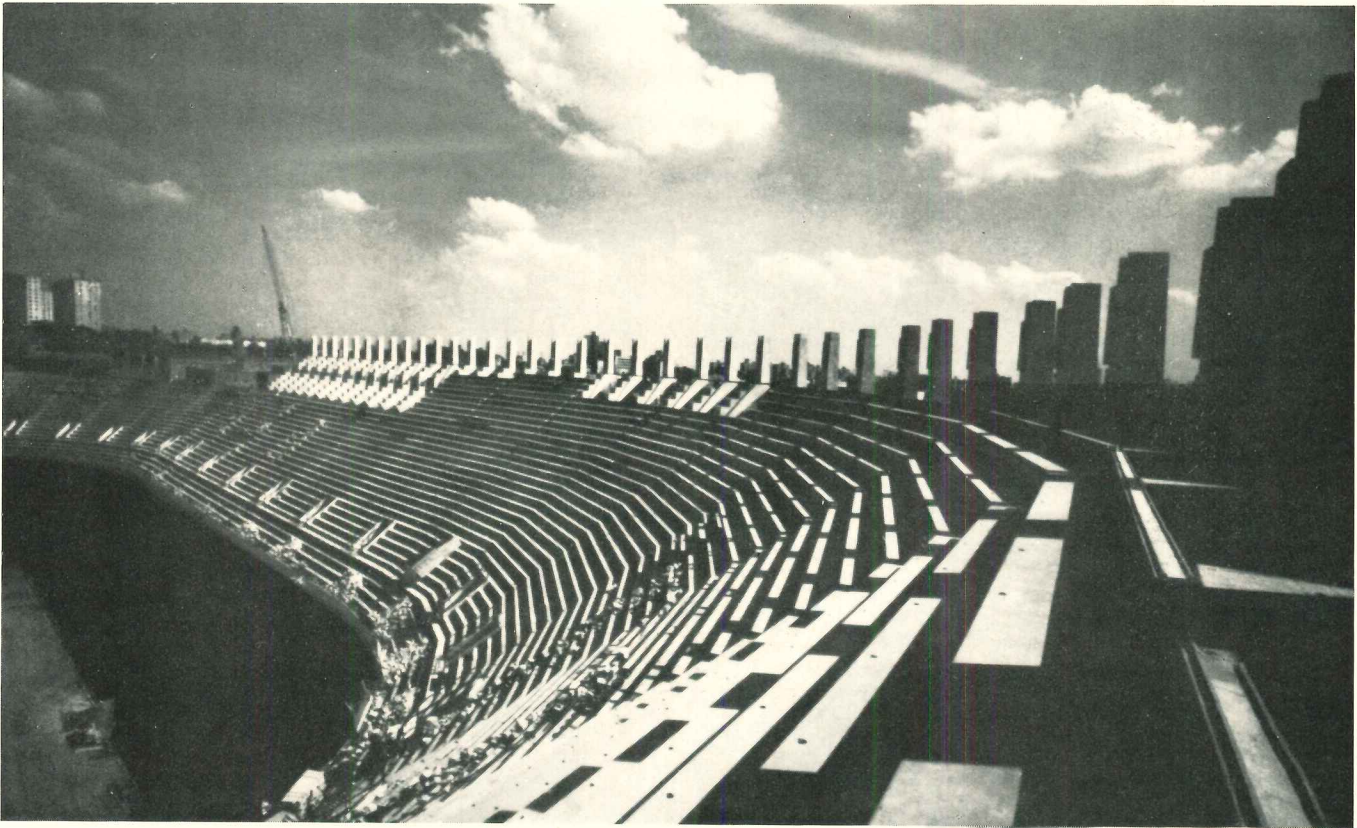
Tell us your needs. At nominal charges, we can custom-design extrusions to accommodate a variety of building panels. And we can give you the benefit of our long experience with wall systems, industrial roofing and siding, finishes and low-, middle- and high-rise building problems. For more information, write Aluminum Company of America, 1075-G Alcoa Building, Pittsburgh, PA 15219.

†Trade Name

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 **ALCOA**

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Yankee ingenuity.

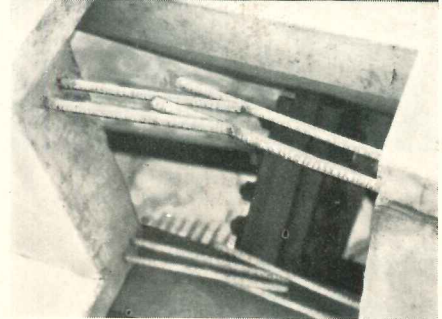
Galvanized reinforcement for the house that Ruth built.

In rebuilding Yankee Stadium, thousands of pounds of steel are used to reinforce the concrete in the upper level of the stadium. And *galvanizing* was specified to protect the steel against rain and melting snow which can seep through concrete. Without this zinc coating, the steel could corrode and expand, causing cracking and spalling of the concrete.

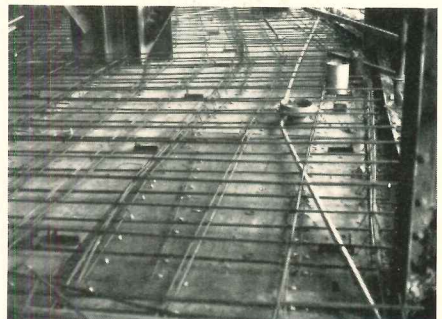
Galvanized mesh and rebars are used in each 40-foot "L"-shaped concrete seat-base unit. And galvanized shims are used to keep all units in line.

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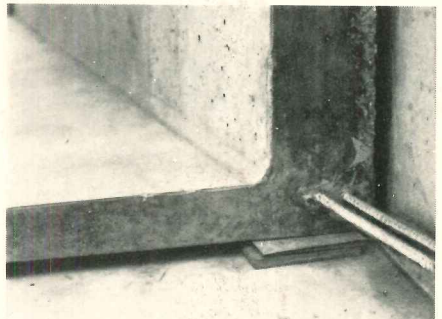
ASARCO



Galvanized steel rebars near surface of seat-base units.



Galvanized rebars under surface of decking.



Galvanized shims keep seat units in line.

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Two theaters in one civic center

STAGE LIFTS BY DOVER

The Birmingham-Jefferson Civic Center in Birmingham, Alabama, features two separate and completely equipped theaters. The smaller seats 1,000 for straight plays, the larger hall seats 2,960 for concerts, operas, and other musical productions. Each of these two theaters is served by two Dover Stage Lifts. Thus each has a fore-stage area that converts from stage to audience seating area to orchestra pit. For information on Dover Stage Lifts, write Dover Corporation, Elevator Division, P. O. Box 2177, Dept. A, Memphis, TN 38101.



DOVER

Stage Lifts

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Birmingham-Jefferson Civic Center Theater and Concert Hall,
Birmingham, Al.

Architects: Geddes Brecher Qualls Cunningham,
Philadelphia, Pa.

Construction Management/Consultant: Turner Construction
Company, Cincinnati, Oh.

General Contractor: Brice Building Company, Birmingham.

Theater Consultants: Jean Rosenthal Associates, Inc.,
Orange, N.J.

Dover Stage Lifts installed by
Dover Elevator Company,
Birmingham.



In 1970, in response to the upsurge of activity and interest in design of interiors by architects around the country, ARCHITECTURAL RECORD established a new editorial awards program—RECORD INTERIORS.

Recently completed architect-designed interiors of all building types will be considered—remodelings and renovations as well as new structures—anywhere in the United States. Selections will be made by the editors on the basis of the excellence of the design solution for the particular client's individual program. Submissions from architects of new, unpublished work will be welcomed through Sept. 15, 1975. No formal presentations are required, though materials submitted should include plan, photographs or snapshots, and brief description of program.

RECORD INTERIORS of 1976 will be published in the January 1976 issue of ARCHITECTURAL RECORD.

Write or telephone:
Barclay Gordon
ARCHITECTURAL RECORD
1221 Avenue of the Americas
New York, New York 10020
Telephone (212) 997-2334
or
425 Battery Street
San Francisco, Cal. 94111

RECORD INTERIORS

to be featured in the January 1976 issue



New York City brownstone interior by architects Maurer and Maurer. Robert Perron photo

Every architect registered in the United States may submit material for consideration in RECORD HOUSES and Apartments of 1976 awards program. Single-family houses and multi-family buildings that represent today's wide variety of design approaches will be featured in the twenty-first issue of the magazine. Include the following: 6 to 10 clear informal photographs, black-and-white preferred, fully describing the architectural intent, both on the exterior and the interior (35 mm. slides must be in 8½ x 11 in. clear envelopes); relevant plans and sections and a descriptive sheet including the architect's name and location of building. Do not send originals or other material which must be returned before issue appears. Deadline is Nov. 1, 1975.

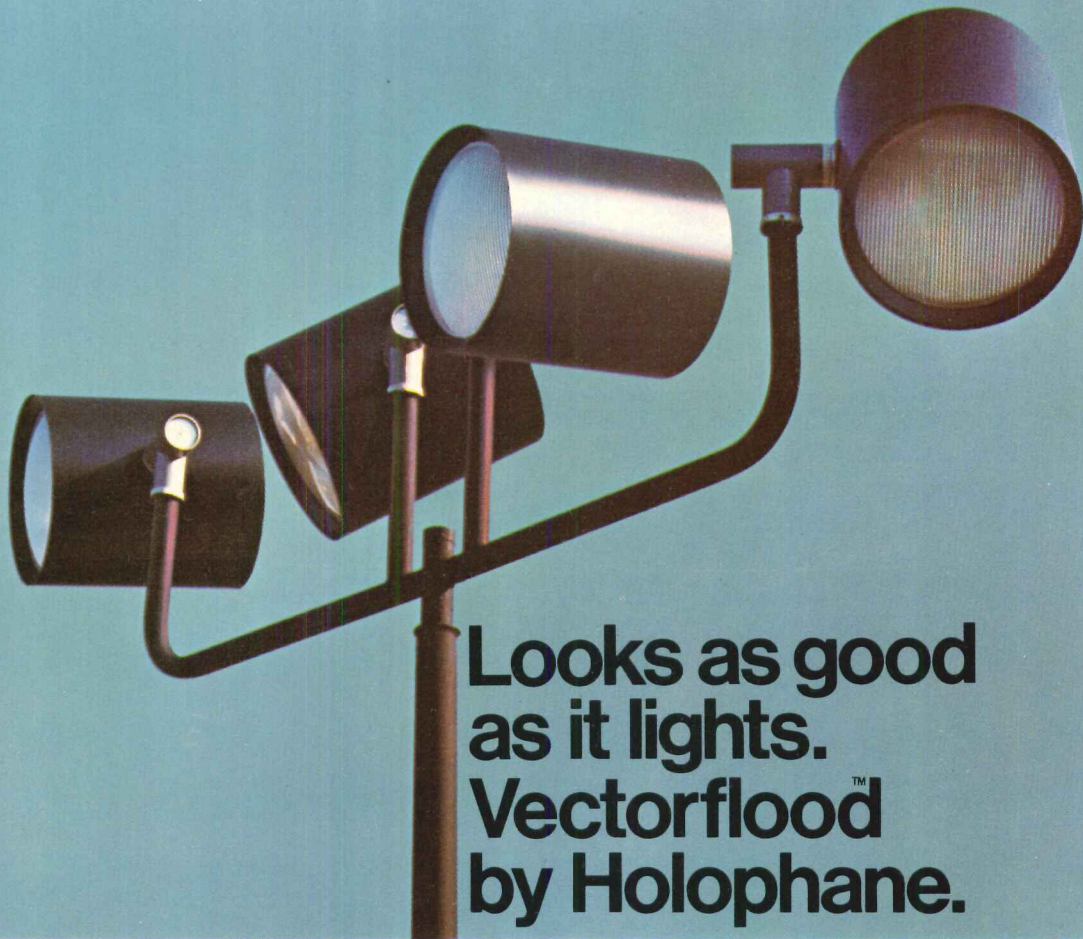
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New York City 10020
Telephone: (212) 997-2334
or
425 Battery Street
San Francisco, Cal. 94111

RECORD HOUSES AND APARTMENTS

for the 1976 Mid-May issue



Grossman residence, Cape Cod by architect Earl Flansburgh & Associates. Steve Rosenthal photo



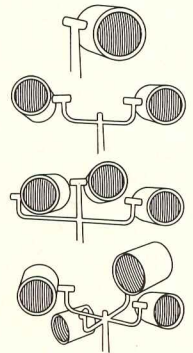
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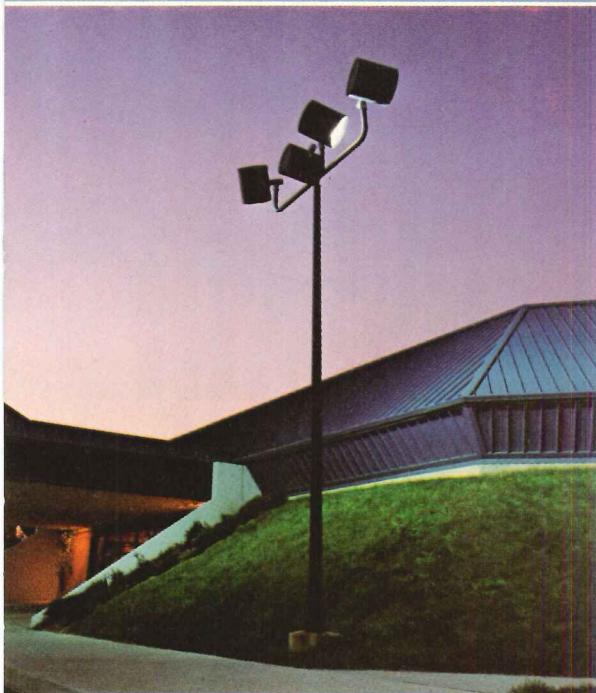
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CREDITS

The Front Row Theatre,
Highland Heights, Ohio
Architect:
Richard R. Jencen & Associates
Structural Engineer:
D. T. Levigne Associates, Inc.
Electrical Engineer:
Denk-Kish Associates, Inc.
General Contractor:
Faro Construction, Inc.
Electrical Contractor:
The Max Oster Electric Co., Inc.
All firms located in
Cleveland, Ohio



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Impressive performance by the first editions

The 1974-75 ENR Directories were published in January, 1974. Thirteen months later, in response to a survey among a representative sample of Directories recipients, the following reports were received:

- 87.5% of recipients still had the Directories on file for reference.
- 88.6% of these have found the Directories "useful to have."
- 69.5% financed new construction projects in 1974.
- 65.8% planned new construction in 1975.
- 31.6% of referrals to the Directories led to direct contacts with one or more of the participating Design or Contractor firms.

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mation unit" is only \$995.00—and represents the lowest possible cost at which you can make sure essential information about your firm is instantly accessible when owners first seek the kind of design or construct capabilities you can provide.

For reservations and additional information call or write: James Sullivan, Directories Editor, Engineering News-Record, 1221 Avenue of the Americas, New York, N.Y. 10020 (telephone: 212-997-2534).

Additional Directory facts worth noting

Each Directory will have a complete range of indexes. Participating firms will be indexed alphabetically, geographically, and by specialties. The Contractor Directory will carry a listing of all firms in the current ENR Top 400 Contractors List. The Design Firms Directory will have a comparable listing of the ENR Top 500 Design Firms.

Participation in the Directories has great advantages for smaller firms as well as the bigger ones. (Directory "information units" will help smaller firms grow *bigger*.)

Both Directories will be bound in hard covers. Participating firms can order Directory copies in any desired quantity at the special price of \$5.95 (regular price: \$9.95). *Orders for extra copies must be received by October 1, 1975.*

You will want complete information on the text and format restrictions that apply to all "information units." This is immediately available from James Sullivan, Directories Editor, Engineering News-Record, 1221 Avenue of the Americas, New York, N.Y. 10020.

Remember that the 1976-77 ENR Directories are communication services published by the most widely read, highly respected of all construction publications. Their identification with Engineering News-Record assures their acceptance wherever they are distributed.

**Engineering
News-Record**

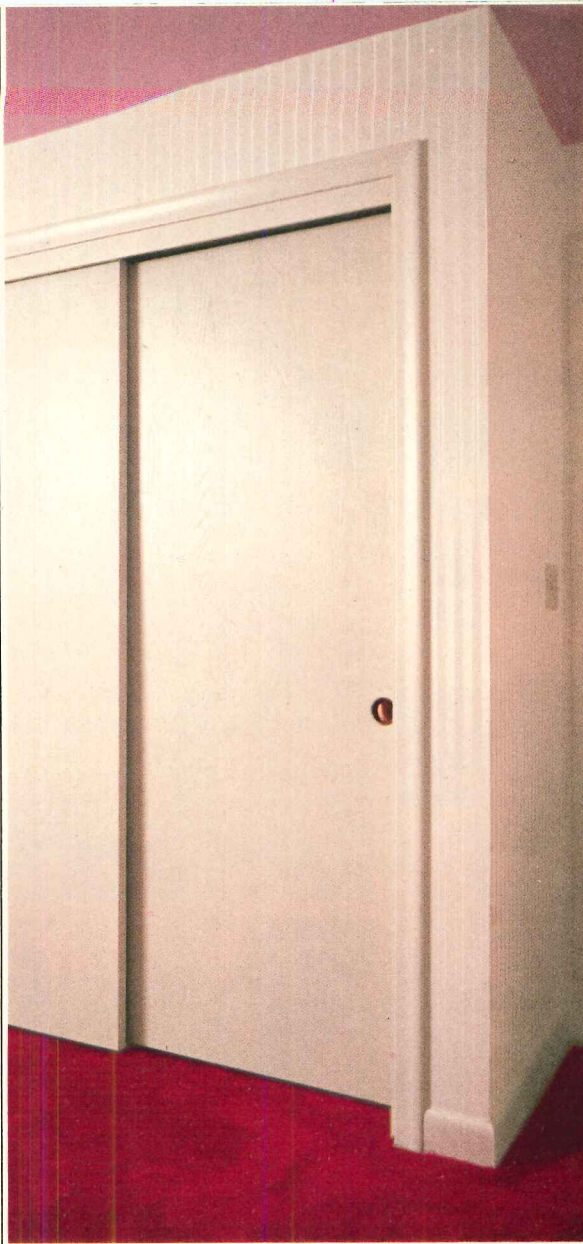


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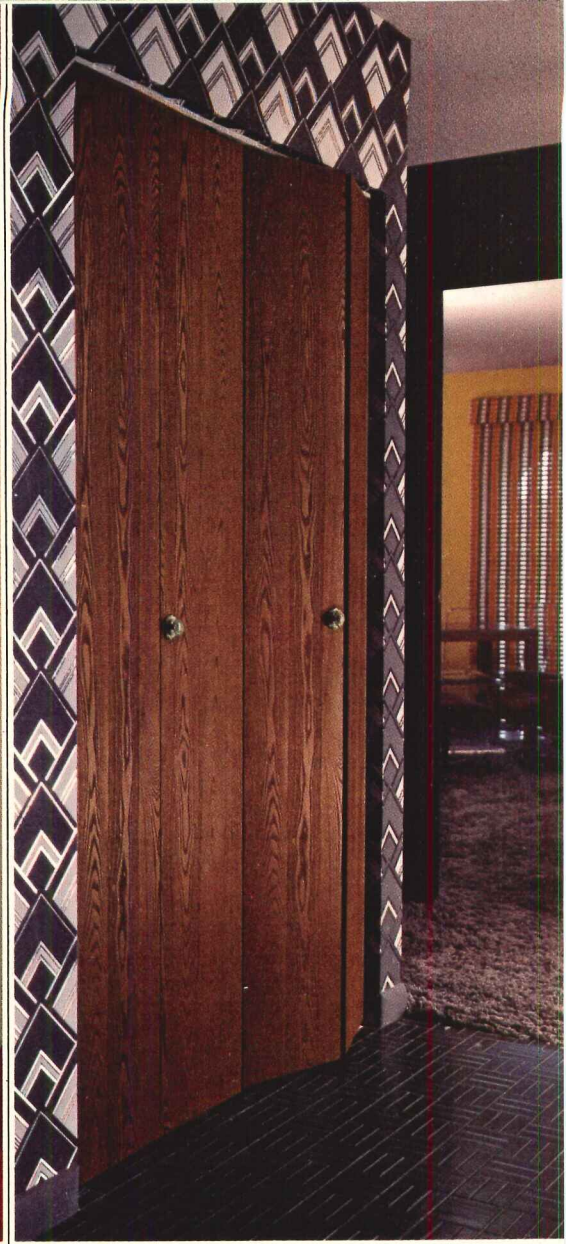
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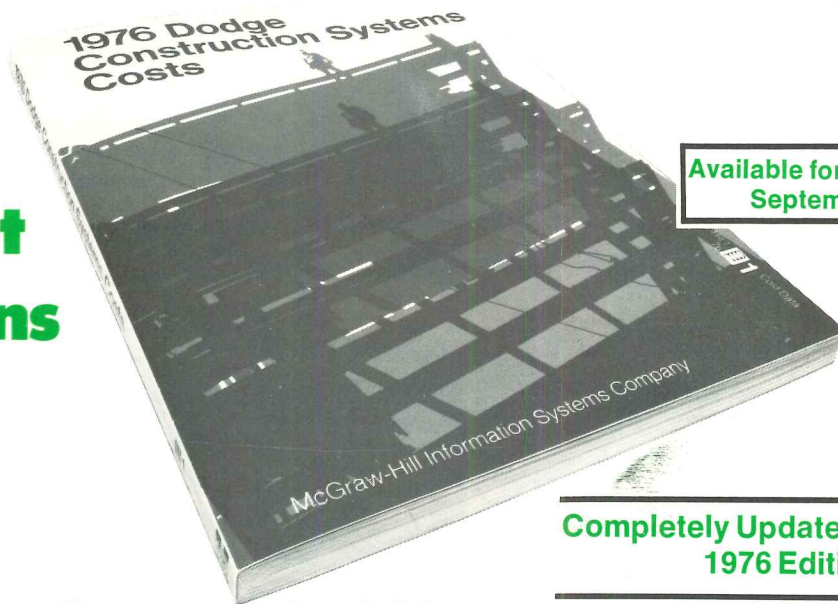
Now there's a *proven* professional publication, designed specifically for architects, that helps you and your clients understand cost implications at the design stage in a matter of minutes. The data in *1976 Dodge Construction Systems Costs* gives you something authoritative to go on (no matter how accurate your guesswork turns out to be it's still guesswork). And using it is *infinitely faster and much less complicated than detailed unit costing.*

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A: The *Manual* is a "unit cost" estimating book. That is, it breaks each construction item into the smallest possible pieces. When you need a very *detailed*, very accurate estimate at the *take-off stage*, the *Manual* is invaluable. However, *Construction Systems Costs* presents a different approach. It is designed for *quick cost analysis in the preliminary design stages . . .* and for rapid cost comparisons between different construction methods within the same building.

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Completely Updated, Expanded 1976 Edition

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ARCHITECTURAL RECORD July 1975 185

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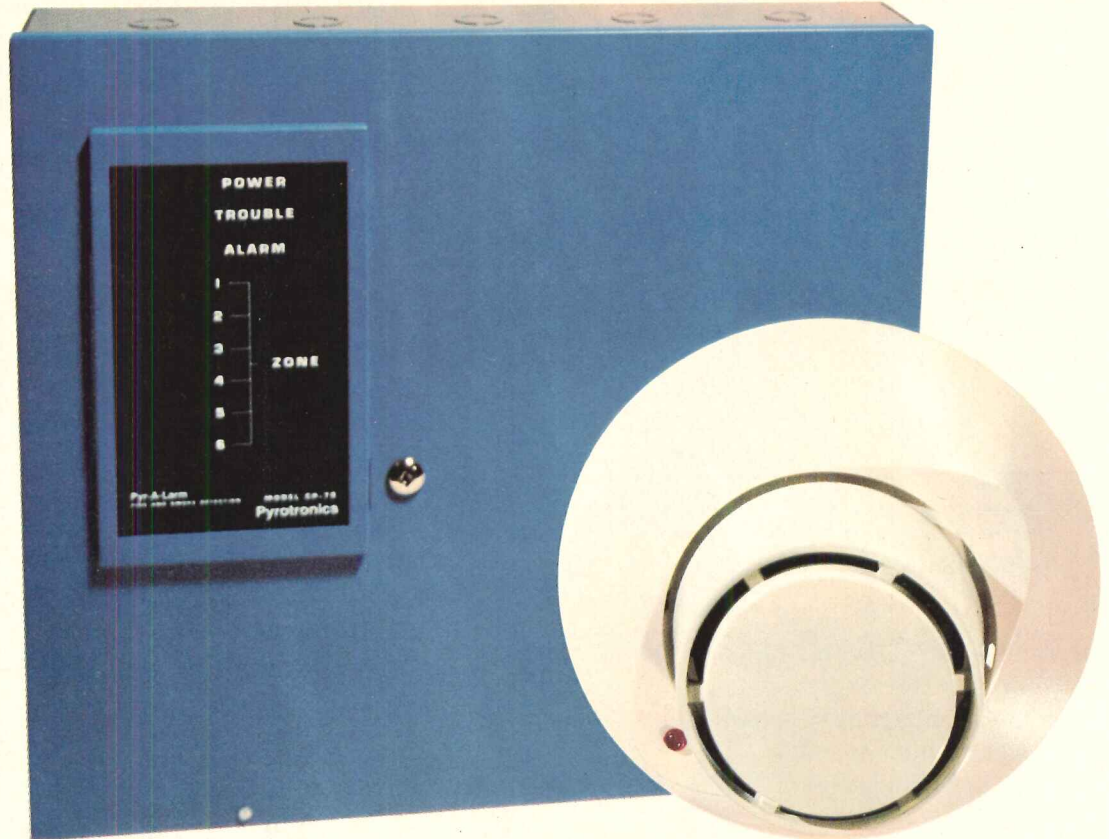
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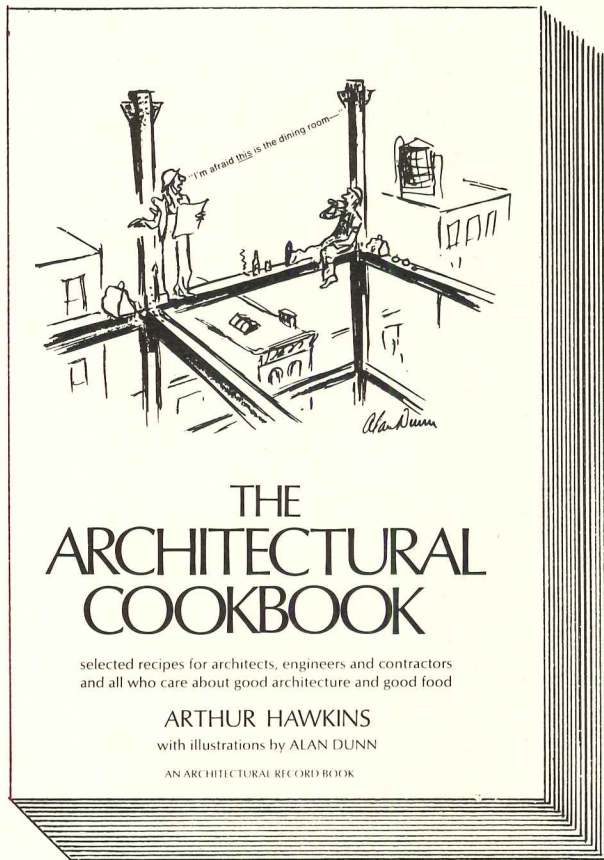
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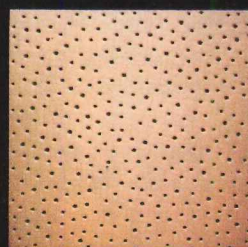
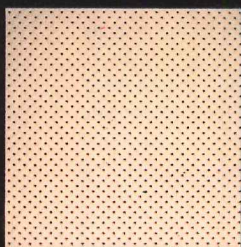
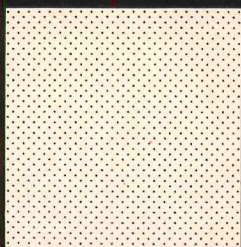
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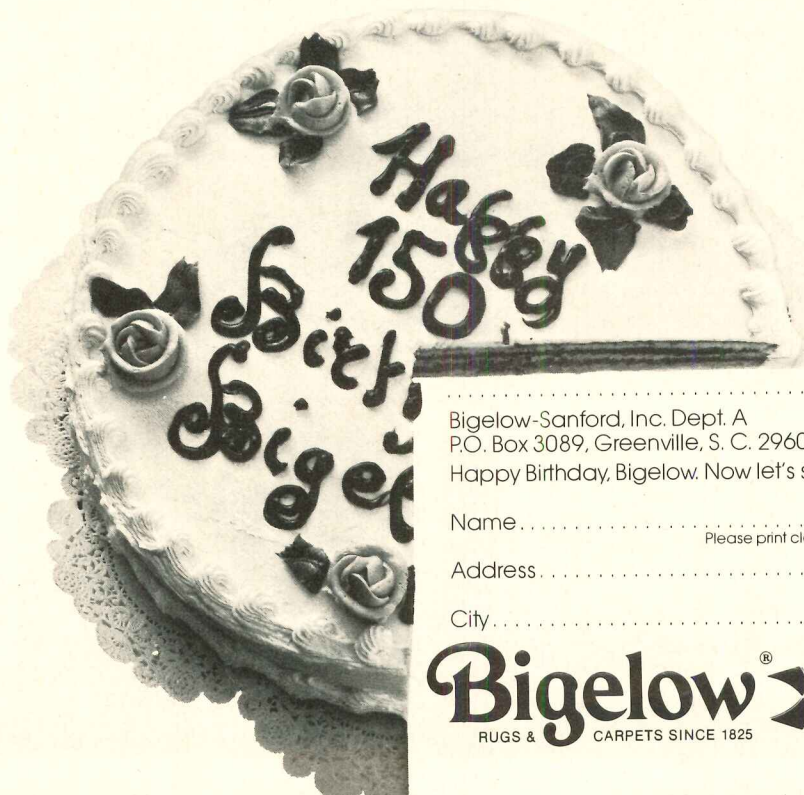
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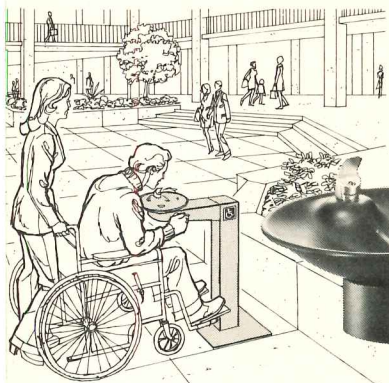
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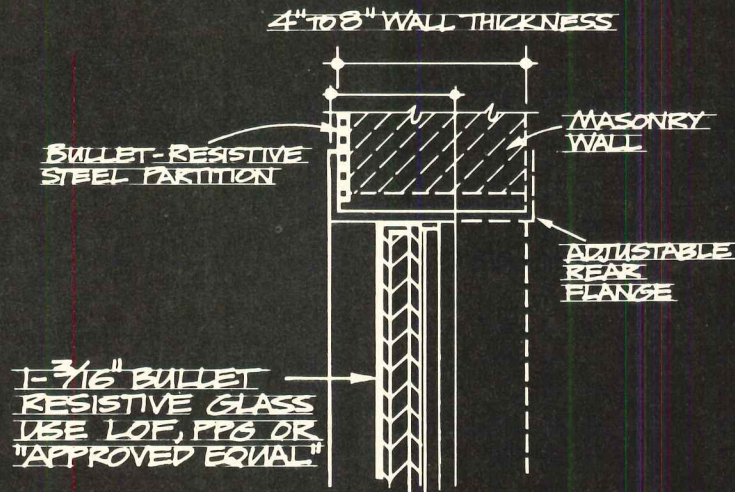
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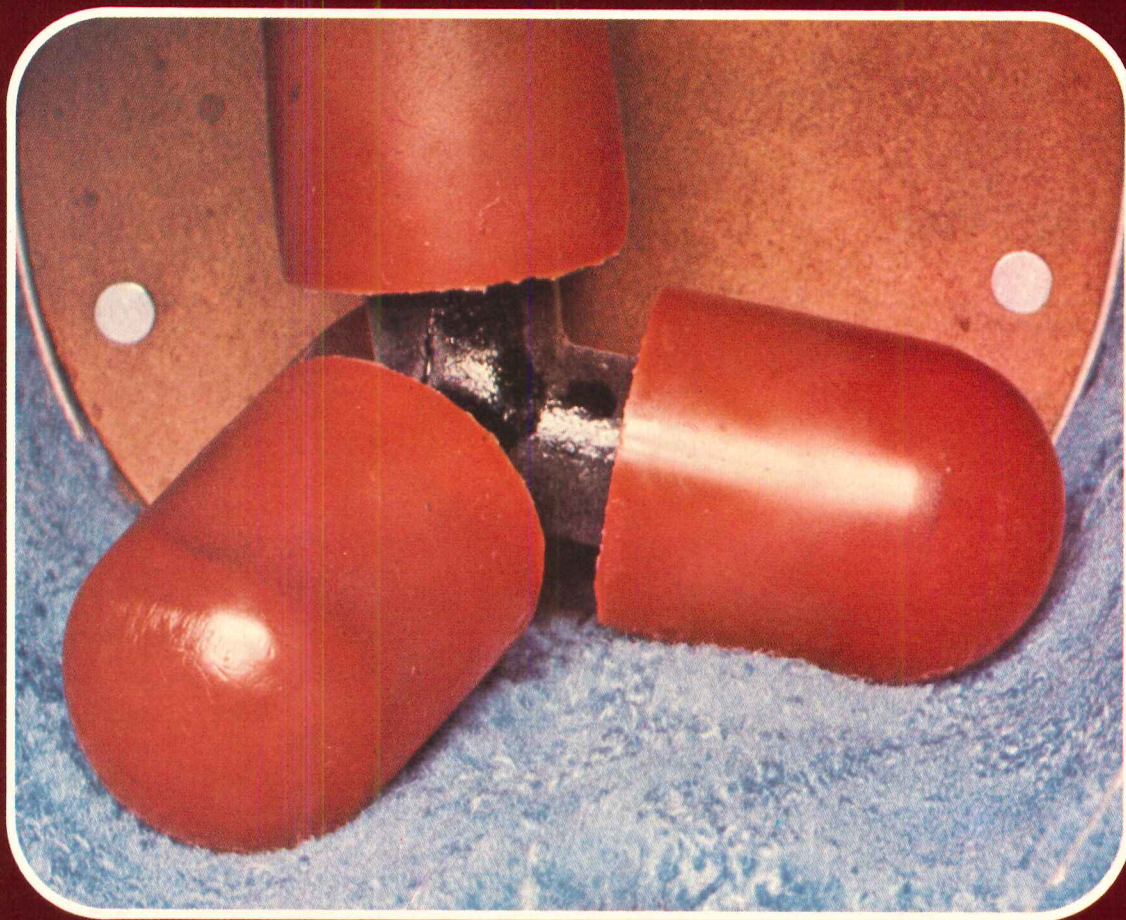
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Galerie Porte de Namur, 22-26, Chaussée de Wavre
1050 Brussels, Belgium

Frankfurt/Main

Elsa-Brandstroen Str. 2, Frankfurt/Main, Germany

London

34 Dover Street, London W.1, England

Milan

Via Baracchini No. 1, Milan, Italy

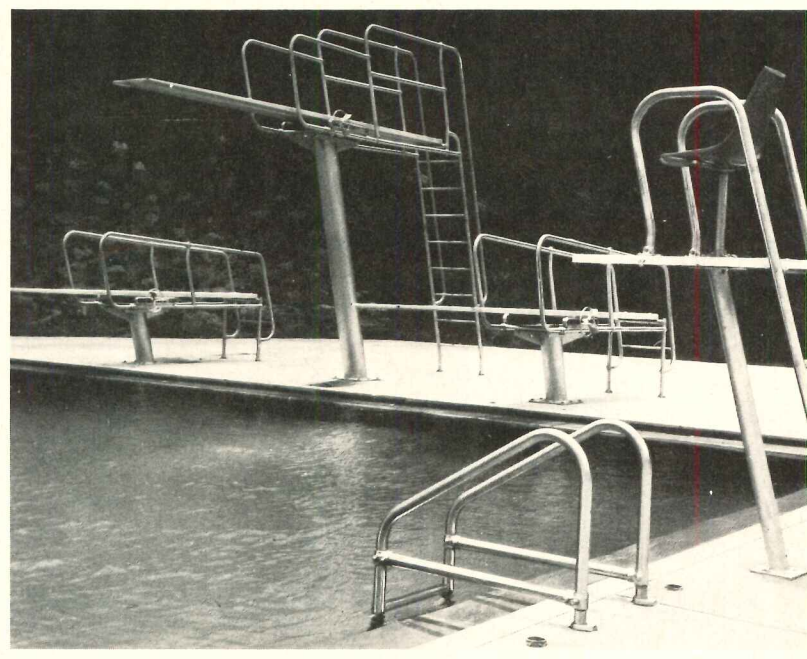
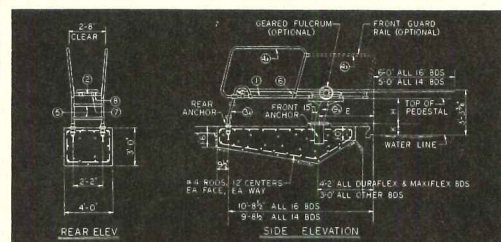
Paris

17, rue Georges Bizet, 75 Paris 16e, France

Tokyo

2-5, 3-chome, Kasumigaseki, Chiyoda-ku, Tokyo, Japan

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206 Locust St.
Santa Cruz, Ca. 95060
408-429-9010



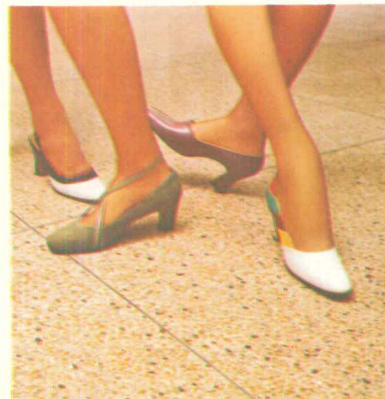


*rare beauty.
rarer economy.*

Beauty is in the eye of the beholder. It is usually subjective. Rarely universal. But economy is another thing. It is difficult to be subjective about economy in the face of facts that prove it. Even after hearing charge and countercharge concerning overall costs of various flooring materials. Consider terrazzo vs. carpet. A recent study showed clearly that the total annual cost of nylon carpet is at least twice that of terrazzo—126% higher, to be exact. Considering cost of material based on average life, maintenance labor, capital equipment and supplies, the total annual flooring cost per 1,000 square feet for nylon carpet came to \$541.81. For terrazzo—only \$245.45. Economy that's beautifully rare in these times. We'll be happy to send you details of the study, and the results. Write **terrazzo** 2A West Loudoun Street, Leesburg, Virginia 22075. (703) 777-7683.

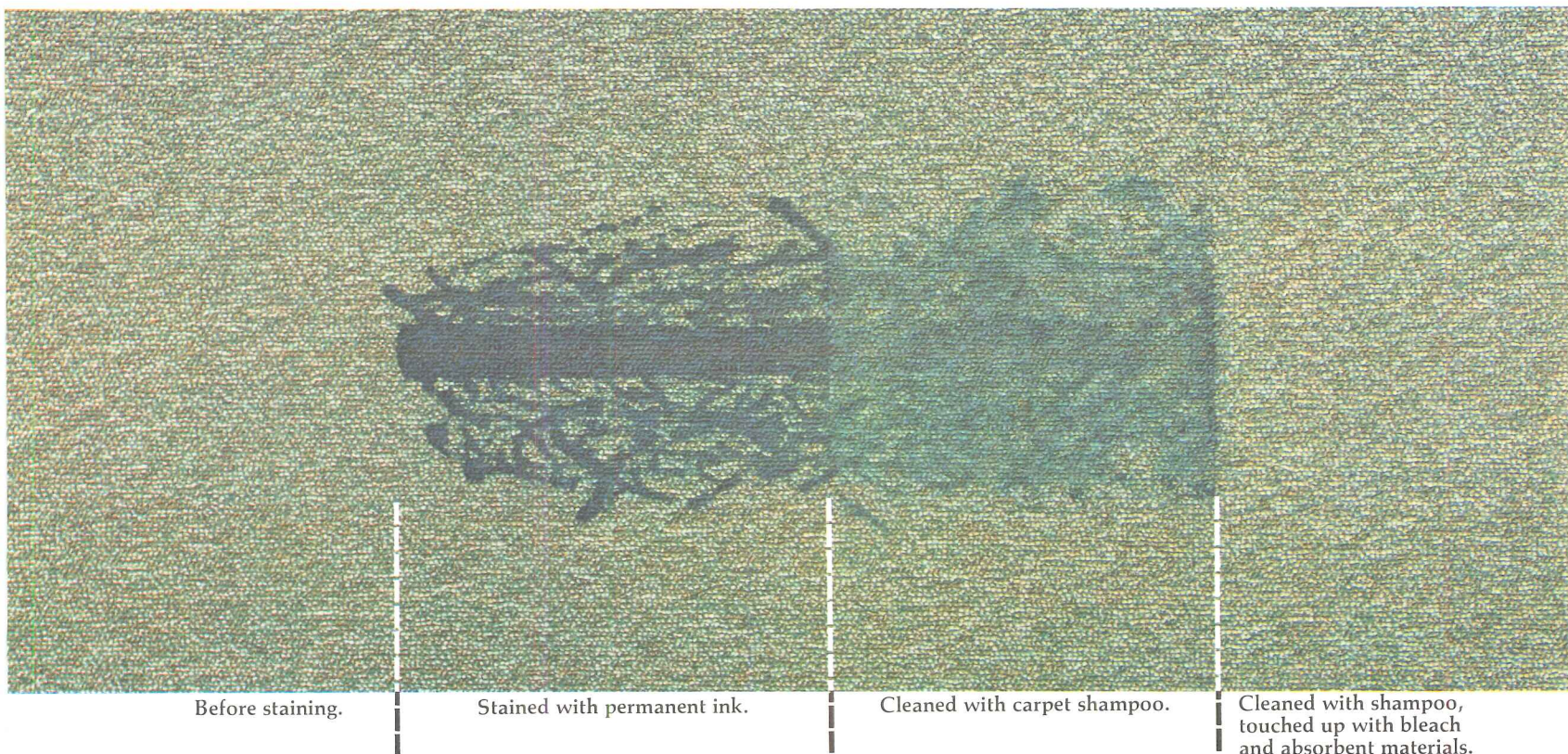
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Cleanability.

What's durability without it?



Durability is certainly a major criteria for carpet selection in commercial buildings. But, so is cleanability. And the first without the second could leave you with a carpet that lasts and stains that do too. That's why Monsanto has engineered Acrilan[®] acrylic fiber to be both cleanable and durable.

Acrilan[®] 2000+ carpets are a product of this engineering. The fiber they're made from is solution-dyed. This means that color, in pigment form, is an integral part of the fiber. As a result, Acrilan[®] 2000+ carpets are exceptionally colorfast and thus, exceptionally cleanable.

For most stains, Monsanto recommends that you start with normal spotting methods and proceed as needed to more powerful agents. These harsher agents can be used effectively without harming either the color or fiber tenacity. When backed with a man-made backing, Acrilan[®] 2000+ carpets aren't even fazed by 100% bleach.

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