INNOVATIVE DESIGN FOR A HEALTH CARE FACILITY IN DETROIT

A CITY HOUSE AND A COUNTRY MUSEUM BY FUMIHIKO MAKI

JOHN HEJDUK: CONSTRUCTING IN TWO DIMENSIONS

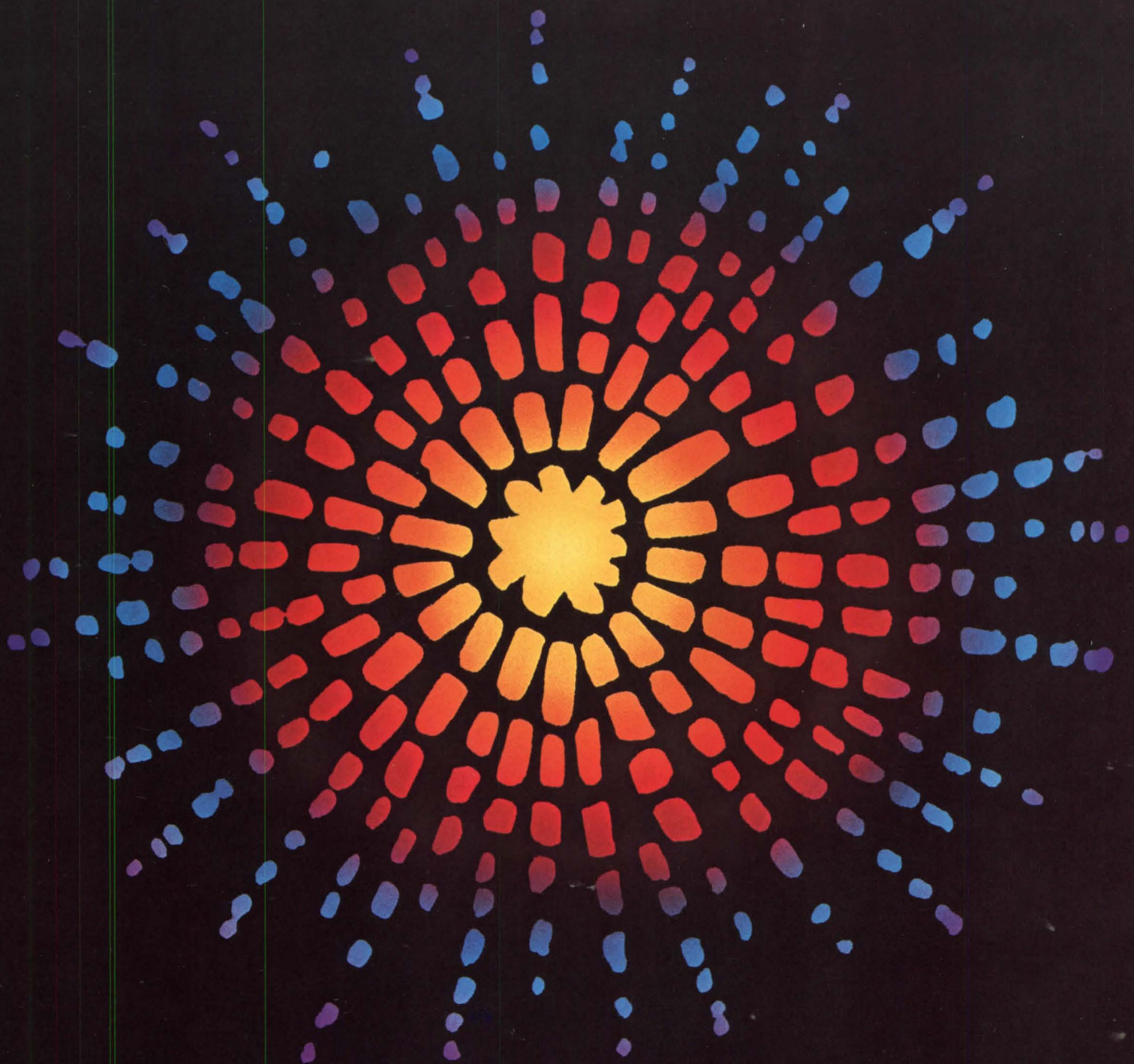
THREE PROJECTS BY HILL MILLER FRIEDLAENDER HOLLANDER

BUILDING TYPES STUDY: HIGH-RISE OFFICE BUILDINGS

FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

APRIL 1980 4 A McGRAW-HILL PUBLICATION $5.50 PER COPY



ConCentrx™

Coming soon... Control Center seating for today's computerized office.

Steelcase

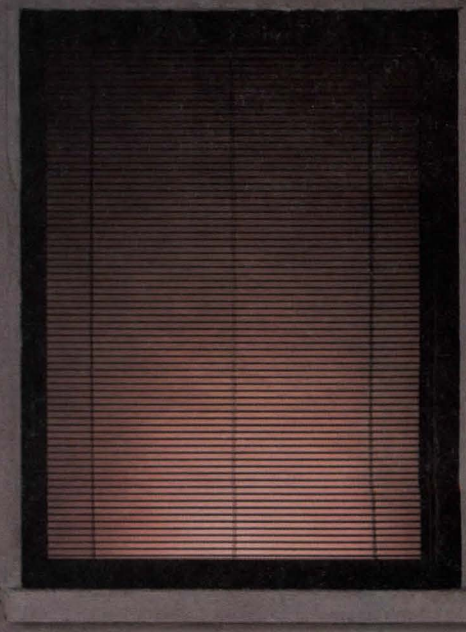
Circle 2 on inquiry card

Meet Disco...The Overachiever.

Slider. Try to wash this one from the inside. Better yet, try to keep it on track. Famous for easy air and water infiltration. They work best when accompanied by a repairman.

Pivoting. You don't have to be a fortune teller to predict the future of pivoting windows. Because they pivot across the weather stripping, they invite damage to the thermal seal. As they get older, pivoting windows let people inside know what's going on outside.

The Overachiever. The DISCO system. Operable, double or triple glazed. Inexpensive to clean and maintain. Side hinged, casement inswing is our favorite. The DISCO T-2001 has a U value of .47 and a shading coefficient as low as .10. No other window does more to save energy and reduce life cycle cost.



No Other Window Does a Better Job Of Reducing Energy Waste and Life Cycle Cost.

Even good windows have a way of becoming mediocre when faced with the challenge of reducing energy and life cycle costs. What was right for the 1970's may not meet the needs and government regulations of the 1980's and beyond.

Enter the overachiever. DISCO. A customized window system which assures maximum thermal efficiency and minimum air and water infiltration in an operable design. Perfect for combating energy waste and maintenance expense.

Our double and triple glazed systems are as malleable as you are imaginative. Each can be customized to meet your exacting specifications.

DISCO's ready for an age when good is no longer good enough...with windows that reflect the solid ideas of forward looking design.

Test us. If we don't have answers to your challenges, chances are they don't exist.

DISCO®

ALUMINUM PRODUCTS COMPANY, INC.

Write or call today for a free copy of "WINDOWS," a question of cost vs. worth. Should you want to meet with a DISCO architectural representative or require aid with drawings or specifications, contact Steve Berryman, DISCO Aluminum Products Company, P.O. Box 1019, Selma, Alabama 36701, (205) 875-9283.

Circle 5 on inquiry card

Letters to the editor

Belated praise for the article by Richard Hatch in the December 1979 RECORD ["Social Architecture: Giving Form to Life," pages 96-107]. None of what he showed was new, but the context of "a social architecture" was well discussed. It gave this young architect heart.

David Weaver
Architectural Design
Los Angeles

The appeal for support of the cause of the Belgian architect Lucien Kroll, who was dismissed by the Catholic University of Louvain administration, appears to be justified on the basis of Richard Hatch's presentation in your December issue. Certainly my personal sympathy is wholly on the side of the Kroll philosophy and architecture, as it was described.

However, I don't want to be so naive as to assume that the UCL administration would not have *its* side of the story, which is quite evidently an issue. That is, there are "conflicting positions supported by identified groups," students vs. administration. Thus, in order to render any support meaningful, you should have allowed space for the administration to present its opinion, since, in all fairness, I must regard Mr. Hatch here as the "spokesman" for the students and Mr. Kroll.

Nonetheless, I enjoyed his article immensely—and the whole December volume, one of the most meaningful RECORDs to me.

Chris Brozek, AIA, AICP
Tucson

Much of the success of our downtown revitalization efforts can be attributed to the Design '79 process coordinated by Moore, Grover, Harper and highlighted in your December 1979 issue [page 101].

The televised Design-a-thons caught the imagination of our citizens, as well as formed new energies in our community. More important, they illustrated to all viewers the complexity of urban planning.

Since television was the critical medium, it seems that the best way to share the experience of Design '79 with others is through the use of video tapes. Copies of a 30-minute condensation of the 4½-hour show are available at cost. For more information, your readers may contact Room 364, Municipal Building, Roanoke, Virginia 24011.

H. B. Ewert, City Manager
Roanoke, Virginia

Can Cesar Pelli really be an architect and educator in the late 1970s? It is inconceivable that such an influential, literate and elegant designer, expressing an interest in technology and "healthy" architecture, can conduct an entire interview expounding his design philosophy without once considering the impact of energy scarcities on buildings [ARCHITECTURAL RECORD, mid-August 1979, pages 66-67].

This arrogant stance is a serious abdication of responsibility in a time of national crisis, and it is also cause for the missed architectural opportunity of the century. The exciting possibilities for a new architecture—one that interacts beneficially with the environment, that cares as much about what a building *is* and *does* as what it looks like, that is concerned with the art of building as well as the art form, and that serves the needs of human beings in expanded dimensions—are being rediscovered by a new generation of architects.

Dean Pelli comments that architects who were working in the mainstream ten years ago may find themselves high and dry today. I would add that the same can be said of today's mainstream architects as today's designs roll off the boards to embarrass their creators in the '80s.

C. Stuart White, AIA
Banwell White & Arnold, Inc., Architects
Hanover, New Hampshire

I am a student in the mathematics and engineering program at Purdue University, and I therefore read your article on Walter Netsch's "Field Theory" with great interest [RECORD, January 1980, pages 111-120].

However, I must take issue with your use of the word *field*. A field is a very specific mathematical object, and the patterns you described are simply not fields. Some of them are *tesselations*, though very irregular, and several of them contain gaps in the patterns and hence do not even qualify as tesselations. Though it is true that some fields will tesselate the plane, it is not necessarily true that an arbitrary tesselation of the plane will form a field, and two of the patterns shown with the article do not even qualify as tesselations.

This may seem a trivial point. However, any attempt to model these patterns mathematically as fields will fail, since the design patterns are not fields. I would suggest that if Mr. Netsch is to claim mathematical rigor in his designs, some more specific name be given his method. A name such as *pattern geometric design* would avoid confusion and guard against letters such as this.

John Keil
La Porte, Indiana

Architects, as well as the rest of us, sometimes help themselves to the language of other achieving disciplines. A physicist also might question Mr. Netsch's appropriation of the word field, *but his neologism is O.K. with us.—Editors.*

Calendar

APRIL

21 Seminar, "Design Cost Analysis for Architects & Engineers," the Halloran House, New York City. Program will be repeated May 13 in Chicago and June 23 in Los Angeles. Contact: ARCHITECTURAL RECORD SEMINARS, 1221 Avenue of the Americas, New York, N.Y. 10020 (212/997-3088).

22 Seminar, "Design/Build and the Law (for Architects, Engineers & Owners)," the Halloran House, New York City. Program will be repeated May 14 in Chicago and June 24 in Los Angeles. Contact: ARCHITECTURAL RECORD SEMINARS (see above).

28-30 Seminar/Workshop, "Integrated Project Management: An Approach to Planning for Better Control in the '80s," sponsored by On-Line Systems Inc., Project Management Division; held at the Sheraton National Hotel, Washington, D.C. Contact: Project Management Division, On-Line Systems Inc., 40 Washington St., Wellesley, Mass. 02181.

April 30 through May 2 Construction Marketing Seminar, sponsored by the Producers' Council, Inc.; at the Hyatt Regency O'Hare, Chicago. Contact: D. Lynne Seline, Director, Marketing Services, Producers' Council, Inc., 1717 Massachusetts Ave., N.W., Washington, D.C. 20036.

MAY

2-11 Seminar on Construction Project Management, organized jointly by the University of the West Indies and Nova Scotia Technical College, Halifax. Sponsored by the Canadian International Development Agency; held at Sam Lord's Castle in Barbados. Contact: Dr. Peter Manning, Dean, Faculty of Architecture, Nova Scotia Technical College, P.O. Box 1000, Halifax, B3J 2X4, Nova Scotia.

3-11 "Philadelphia Open House," sponsored by the Friends of Independence National Historical Park. Contact: FINHP, 313 Walnut St., Philadelphia, Pa. 19106.

8-11 Preservation conference of the Historic House Association of America, held at the Nassau Inn, Princeton, N.J. Contact: HHAA, 1600 H St., N.W., Washington, D.C. 20006.

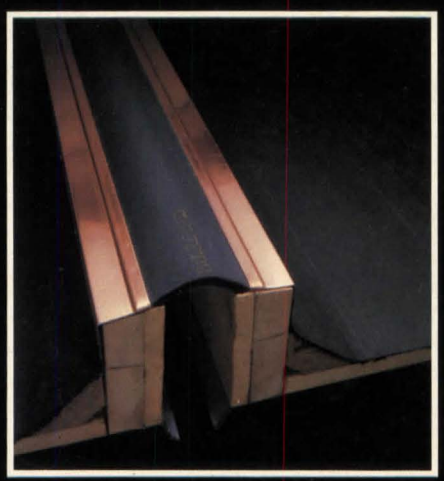
12-16 Institute for Urban Design second World Cities Program: Tour to Helsinki. Contact: Institute for Urban Design, SUNY at Purchase, N.Y. 10577 (914/253-5527).

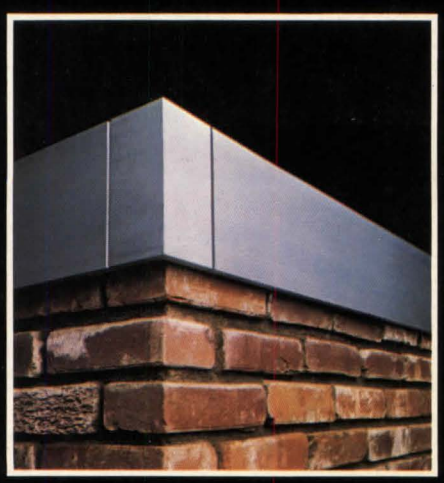
Correction

Credits for the Medical Center Hospital in Memphis (RECORD, January, page 37) should have read: Walk Jones & Francis Mah, Inc., and Gassner/Nathan/Browne, Architects/Planners, Inc., A Joint Venture, architects; Clair Jones & Harold Thompson, associate architects; and The Klein Partnership, consultants.

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER) (USPS 132-650)
April 1980, Vol. 167, No. 4. *Title® reg. in* U. S. Patent Office, copyright© 1980 by McGraw-Hill, Inc. All rights reserved. Copyright not claimed on front cover and editorial four-color separations. Indexed in Reader's Guide to Periodical Literature, Art Index, Applied Science and Technology Index, Engineering Index, and The Architectural Index.
Quotations on reprints of articles available. Every possible effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.
EXECUTIVE, EDITORIAL, CIRCULATION AND ADVERTISING OFFICES: 1221 Avenue of the Americas, New York, N.Y. 10020.
OFFICERS OF McGRAW-HILL PUBLICATIONS COMPANY: president: Paul F. McPherson; executive vice presidents: James E. Boddorf, Gene W. Simpson; group vice president: Thomas H. King; senior vice president-editorial: Ralph R. Schulz; vice presidents: Kemp Anderson, business systems development; Stephen C. Croft, manufacturing; Robert B. Doll, circulation; James E. Hackett, controller; William H. Hammond, communications; Eric B. Herr, planning and development; John W. Patten, sales; Edward E. Schirmer, international.
CORPORATION OFFICERS: Harold W. McGraw, president, chief executive officer and chairman of the board; Robert N. Landes, senior vice president and secretary; Ralph J. Webb, treasurer.
ASSOCIATED SERVICES/McGraw-Hill Information Systems Co.: Sweet's Catalog Files (General Building, Engineering, Industrial Construction and Renovation, Light Residential Construction, Interiors), Dodge Building Cost Services, Dodge Reports and Bulletins, Dodge/SCAN Microfilm Systems, Dodge Management Control Service, Dodge Construction Statistics, Dodge regional construction newspapers (Chicago, Denver, Los Angeles, San Francisco).
SUBSCRIPTIONS: Subscriptions solicited only from architects and engineers. Position, firm connection, and type of firm must be indicated on subscription orders. Please allow 4-12 weeks for shipment. Subscription rates for U.S., U.S. Possessions: $23.00 for architects, engineers and others in the field served; all others $33.00. In Canada: $25.00 for architects, engineers and others in the field served; all others $35.00. In all other countries: $49.00 for architects and engineers; all others $55.00. Domestic and Canadian single copy price: $5.50 except the mid-May issue which is $5.95. Foreign single copy price: $7.00. "Publisher reserves the right to accept/reject any subscription."
GUARANTEE: Publisher agrees to refund that part of subscription price applying to unfilled part of subscription if service is unsatisfactory.
CHANGE OF ADDRESS: Forward changes of address or service letters to Fulfillment Manager, Group A, ARCHITECTURAL RECORD, P.O. Box 430, Hightstown, NJ 08520. Provide both old and new address, including zip code; if possible attach issue address label.
PUBLICATION OFFICE: 1221 Avenue of the Americas, New York, New York, 10020. ARCHITECTURAL RECORD (UPS 132-650) published monthly except May, August and October when semi-monthly, by McGraw-Hill, Inc. Controlled circulation postage paid at Strasburg, Virginia.
POSTMASTER: PLEASE SEND FORM 3579 to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 430, Hightstown, NJ 08520.
THIS ISSUE is published in national and separate editions. Additional pages or separate editions numbered or allowed for as follows: Western Section 32-1 through 32-6.

Foul weather friends.





Protection. That's what a built-up roof is all about. And that's why it makes sense to specify a system with all components coming from a single source.

Using accessories made to complement one another. That work together to do the job for which they're designed.

Like J-M Flex-I-Drain,® the lightweight, flexible roof drain system that installs quickly and easily. That adjusts in all directions to moderate deck deflection and movement.

And J-M Expand-O-Flash,® the original preformed expansion joint cover that forms a strong yet flexible, watertight closure over any kind of roof joint opening, roof-to-roof or roof-to-wall.

Then there's the FP-10 One Way™ Roof Vent, J-M's unique, patented, solar-operated vent that releases moisture vapor from the roofing system and prevents other moisture laden air from entering.

And, finally, the J-M Seal Lock® Fascia and Flashing System, including everything required to form a complete, weathertight flashing and attractive fascia assembly.

Put them all together and they make a J-M roof complete. Providing the best possible protection for what's under it. Fair weather, or foul.

Find out more. Consult Sweet's. Or contact Dave Lucy, Johns-Manville, Denver, Colorado 80217. (303)979-1000.

For single-source built-up roofing systems.

Johns-Manville

Circle 7 on inquiry card

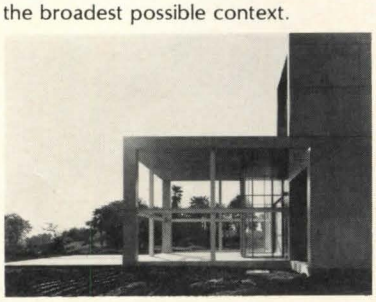
Cover: Detroit Receiving Hospital/
Wayne State University Health Care Institute, Detroit, Michigan
Architects: William Kessler and Associates,
Zeidler Partnership, Giffels Associates in joint venture.
Photographer: ©Timothy Hursley/B. Korab Ltd.

THE RECORD REPORTS

rendering by Octavio Figueroa

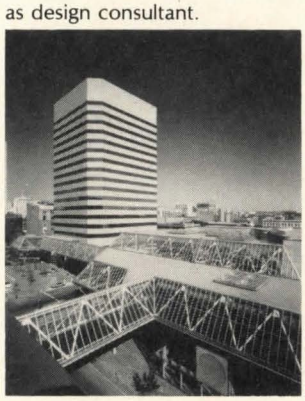
ARCHITECTURAL BUSINESS

FEATURES



Taisuke Ogawa

BUILDING TYPES STUDY 543



Wayne Thom

ARCHITECTURAL ENGINEERING

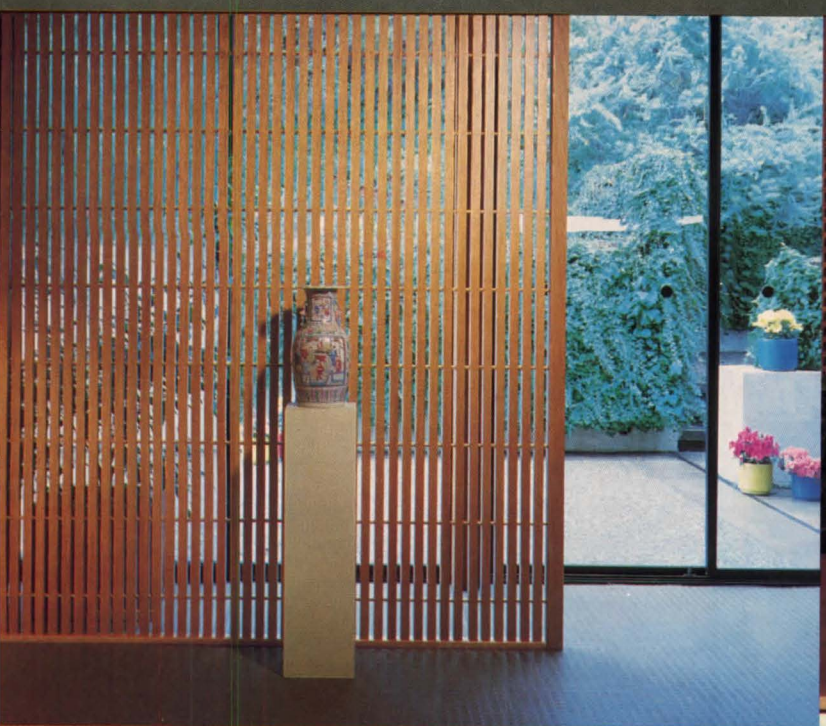
NEXT MONTH IN RECORD

Building Types Study: Health care facilities
This feature will discuss the results of the second Health Facilities Design Competition sponsored by UCLA, Columbia, and ARCHITECTURAL RECORD. In addition to an extensive essay about the "state of the art" in this field of construction, pegged upon the programmatic trends as well as design traits gleaned from the Competition, RECORD will describe in detail the qualities and strengths of the seven honor award winners as well as of the four winners of project citations for buildings yet to be constructed. This Competition program represents an on-going effort by the co-sponsors to identify excellent design that both reflects and informs the key health and planning issues bearing on this field in the 1980s.

Forms & Surfaces presents a comprehensive collection of wood grilles for room dividers, walls and ceilings. Constructed of the finest quality solid woods or selected hardwood veneers on composite wood cores, these grilles are handsomely detailed and handcrafted. Available unfinished, finished, or with Thermo-lag fire retardant finish.

Forms & Surfaces Box 5215
Santa Barbara, CA 93108 (805) 969-4767

Circle 8 on inquiry card



forms+surfaces

New life for old buildings: it's hard to underestimate the market

In December 1971, the RECORD staff wrote an issue entitled "New Life for Old Buildings: The Architect's New Commitment to Preservation." We began it by saying something that sounds as relevant today as it did nearly ten years ago: "People need familiar objects, buildings, and spaces to remind them of what their lives have been in the past, and how their lives are proceeding today. . . . The power of this very human capacity to remember, and to associate forms with events, is the principal force behind the preservation movement today. . . . It is a movement that is affecting the architect deeply because he understands the personal human values involved, and he has often been a leader in those local battles to save a good building. It is a movement now affecting even those architects who have never done a restoration or bothered with remodeling, because the economic balance between keeping existing architecture and building new architecture has changed too. . . .

"In a growing number of specific projects there is less economic justification for tearing down and starting over than there is for rehabilitating an older structure or adding to it; this is a gradual realignment that is nevertheless changing many architects' practice"—a point that has become increasingly valid in the 10 years since that was written.

Our thinking about that issue back then was reinforced by a research report done earlier in 1971 by our market research department. No one had ever known just how many architects were involved in remodeling, recycling, renovation, preservation—and the research astounded us. For in 1971—long before "the boom" and the clear public and professional fascination with recycling older buildings—the response to the question "Has your firm been involved in building remodeling in the last two years?" was 77.1 per cent "Yes." I for one never would have guessed it.

This editorial is generated by the fact that RECORD's research department has just issued another report on the subject—and now the response to the question is that 96 per cent of the respondents have been involved in building remodeling in the last two years.

Before going on, it is essential to insert a disclaimer that any good researcher would insist on: It is not necessarily accurate to extend the results of such a survey—mailed to a national cross section of 1000 architectural firms whose names appear on the market list for Sweet's General Building Catalog File—to be representative of *all* architects, but the results can be studied as at least a pretty good indicator of what's going on.

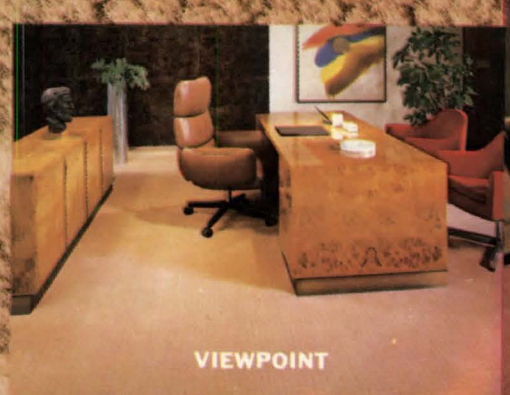
That out of the way, let me repeat that what's going on is that 96 per cent of the respondent firms have been involved in building remodeling (or, if you wish, restoration, renovation, or recycling) in the last two years—up from 77 per cent in 1971. What's more, 94 per cent of the respondent firms say they are doing "the same or more remodeling work" than they did three years ago; and 94 per cent expect to be doing the same or more remodeling in the next two years.

The median architectural firm had about 19 per cent of its work in remodeling—though the spread was wide. Of the 240 respondents, 28 per cent (66 firms) said that less than 10 per cent of their work was "remodeling as opposed to new construction;" 24 per cent said 11 to 20 per cent of their work was remodeling; 15 per cent said 21 to 30 per cent; 11 per cent said 31 to 40 per cent; 11 per cent said 41 to 50 per cent. Another 13 per cent reported that over half their work was remodeling—and as we all know, many firms have built a stunning reputation on the basis of what must be almost full-time design in the recycling area.

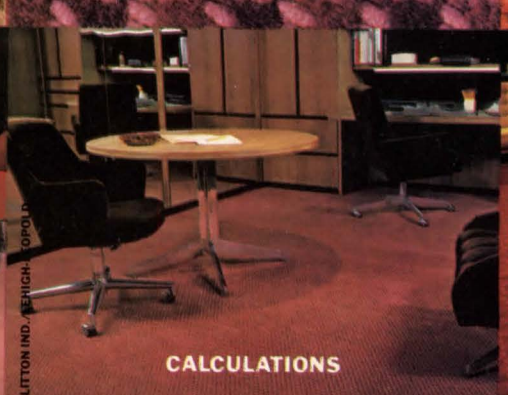
A final piece of fascinating insight comes in response to a question asking why the respondents were retained for these remodeling jobs—in other words, the client's program. The most common answer (78 per cent) was "change the function of space." Other programs: "create a better environment," 50 per cent; "more efficient use of space," 55 per cent; "conformity with codes," 46 per cent; "major increase in floor area," 41 per cent; "energy efficiency," 36 per cent (up from 10 per cent in 1974, you will not be surprised to learn); and finally "to increase productivity," 24 per cent.

Well, perhaps too much heavy statistical going. But this all fascinated me—and I thought it would fascinate you as well as justify the title of this piece, "It's hard to underestimate the market." I also find it all good news: good news because recycling has clearly become a good market for architects' services, and because a lot of the recycling work clearly relates to everyone's wish, these days, to save and improve our architectural heritage instead of discarding it as we did for so many years. —*Walter F. Wagner, Jr.*

One

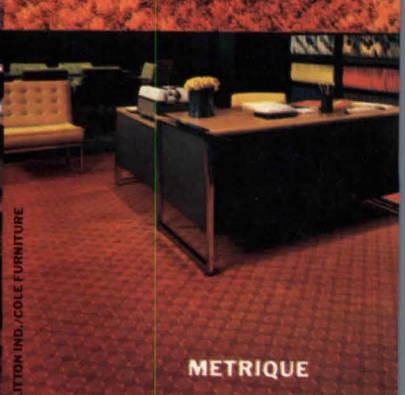


VIEWPOINT



LITTON IND./BERKLINE/TOPOLINE

CALCULATIONS



LITTON IND./COLE FURNITURE

METRIQUE

THE RECORD REPORTS

A need to delay implementation of the government's BEPS begins to emerge as consensus opinion among design professionals and the construction industry as DOE holds public hearings across the country. Details on page 37.

The updated Dodge/Sweet's Construction Outlook lowered expectations for 1980 by $20 billion— from $170 billion down to $149 billion. Economist George A. Christie expects housing to bear much of the loss, though the onset of recession in the second quarter may lead to housing's recovery by the fourth. Some decline is also looked for in stores and industrial building, but the office boom promises to continue all year. Details on page 61.

Housing construction in 1979 declined 11 per cent from 1978's level, totaling 1,767,905 units for the year, according to the F. W. Dodge Division of McGraw-Hill Information Systems Company. Observed Dodge's chief economist George A. Christie, "The conditions prompting the Federal Reserve's [tightening of money]—double-digit inflation, international concern with the value of the dollar, and strong demands for credit—are still present. . . . The cost of mortgage credit will suffer, postponing the housing recovery until later in the year."

In the month of January, nonresidential construction rose to its highest level in the past nine months— to a Dodge index of 190. (The Dodge Index measures the value of new starts.) Totaling $4.4 billion, the contract value of new nonresidential building increased 10 per cent over last January. "Even though the present rate of office construction is far outpacing the boom of the early 1970s," said Dodge chief economist George A. Christie, "the risk of overbuilding for the market of the 1980s is low [since] the growth of the white collar work force in 1979 was 60 per cent greater than in 1973." Housing, on the other hand, declined 9 per cent for the month of January.

New York City's art and architecture societies will share landmark quarters in the Villard Houses. The New York Chapter of the AIA, the Architectural League, the Municipal Art Society and the Parks Commission have moved into the building's north wing on Madison Avenue. Details on page 37.

The Federal government has prepared a uniform standard to eliminate architectural barriers for the handicapped and has published "a notice of intent to issue proposed rules." Details on page 36.

HEW will fund an information clearinghouse developed by the National Center for a Barrier Free Environment. The organization will operate a computerized information system/data bank, a telephone "hot line" and a publications program, and is currently accepting employment applications for new positions. For information: Jack Armstrong, Executive Director, NCBFE, 1140 Connecticut Avenue, N.W., Washington, D.C. 20036 (202/466-6896).

The archives of architect Richard Morris Hunt have received $105,000 in grants to be administered by the American Institute of Architects Foundation. The collection, left to the AIA in 1926 by Hunt's widow, includes 20,000 19th- and 20th-century drawings and photographs. Donors include the National Historical Publications and Records Commission of the GSA, the National Endowment for the Arts, the Institute of Museum Services of HEW, the AIA and its College of Fellows, and the Egg and Dart Society. Hamilton Industries, Inc., gave plan files for storage.

The University of Washington has named Myer Wolfe as Dean of its College of Architecture and Urban Planning. Mr. Wolfe, who has been a professor on the faculty of the Seattle school, will serve for an indefinite term, according to William F. Gerberding, president of the university.

The M. Arch. program at the State University of New York at Buffalo has received national accreditation, announces Harold L. Cohen, Dean of the U/B School of Architecture and Environmental Design. This is the first time, the university says, that the National Architectural Accrediting Board has so recognized any of the schools in the SUNY system. George Anselevicius is chairman of the U/B Department of Architecture.

The Los Angeles Chapter of the AIA has appointed Deborah Feldman its executive director. Miss Feldman, an urban planner and restoration architect, is presently a consultant to California's State Historical Building Advisory Board; she is also a guest lecturer at Columbia University, where she took her degrees, and American correspondent to the Italian architectural magazine DOMUS.

Architects are eligible to enter the third annual Decorating with Photography Design Competition, as are interior designers and photographers. Entries must show installations of photography in residential or contract interiors. The competition, co-sponsored by Eastman Kodak Company and Professional Photographers of America, carries a $1,000 first prize and 20 prizes of $100 each. Deadline for entries is June 16. For information: Linda Somerfield, Decorating with Photography Design Competition, Professional Photographers of America, Inc., 1090 Executive Way, Des Plaines, Illinois 60018 (312/299-8161).

WHEN THE CHAIRMAN OF THE BOARD HAS NOTHING TO DO BUT STARE AT THE CEILING, GIVE HIM SOMETHING BEAUTIFUL TO STARE AT.

Celotex has just come up with a new line of prestige acoustical ceiling panels for executive suites.

We call it Celotex Colortone. And we designed it to go over the heads of most of the heads of business.

Celotex Colortone is very special for several reasons.

To start, it comes in five rich and luxurious colors. The names alone will probably make you want to get hold of a sample. Cattail, Jute, Reed, Pampas and Sage.

The colors of these high-quality panels go right through. From top to bottom. So if they chip or get cut, you'll never notice it.

And they have a "reveal edge" design.

Giving the installation a handsome custom-designed three-dimensional look.

For more information about Celotex Colortone acoustical ceilings, contact your Celotex representative.

Celotex Colortone. They'll definitely make the suite smell of success.

Celotex®

a Jim Walter company

Circle 29 on inquiry card

Federal departments and public groups consolidate rules to guide barrier-free design for the handicapped

Uniform standards to ensure the physically handicapped access to buildings bought or leased by the Federal government are on the way, under a regulatory procedure initiated by the Architectural and Transportation Barriers Compliance Board.

The board, an independent agency established in 1973, was directed by Congress in 1978 to "establish minimum guidelines and requirements" that will apply to standards already issued by four Federal agencies—the Department of Defense, the Department of Housing and Urban Development, the General Services Administration and the U.S. Postal Service.

The board issued its "notice of intent to issue proposed rules" in the Federal Register of February 22, calling for comments by April 7.

According to Irene Bowen, an attorney for the board, the guidelines will probably become effective early in 1981. At that time the four Federal agencies will be obliged to change or make additions to their own standards so that they will conform to each other.

The board is composed of representatives of 10 Federal departments and agencies, plus 11 members representing the public and various interest groups. The chairman is Max Cleland of the Veterans Administration.

The board's important decisions will be those determining the coverage and scope of the facilities and the design features that provide accessibility for the handicapped—restrooms, water fountains, entrance ways, doors, telephones, elevators and the like.

The big question before the board, says its executive director, Robert M. Johnson, is "how many and where?"

The design standards for particular facilities are likely to wind up as variations of the revised standard (A-117.1) of the American National Standards Institute (ANSI), which is close to final publication, or to the Illinois code, which is one of the more comprehensive state codes. Says one ATBCB staff member, ANSI "is very close to what the ATBCB has in mind." But he adds, "The new ANSI standard will not be adopted by reference."

The board notes that the law requires that "every building designed, constructed, or altered . . . shall be designed in accordance with the standard." But it devotes most of the three-page notice in the Federal Register to questions it must answer in detailing just how architects and builders must comply.

On the question of "scope and coverage," the board must decide to what extent the standards for new construction built with Federal funds apply equally to existing buildings leased by a Federal agency. At the same time, it must determine whether buildings that "by definition" would not be used or lived in by the physically handicapped should be exempted.

Generally, alterations to provide accessibility are not required when expenditures on an existing building are for routine maintenance. But, the board asks, "Should accessibility standards be met with respect to any work on a building which presents the opportunity to provide improved accessibility?"

Congress gave the board wide discretion by saying that the standards should be applied "whenever possible" and that the contracting departments and agencies be allowed to modify or waive standards "on a case-by-case basis" where it is "clearly necessary."

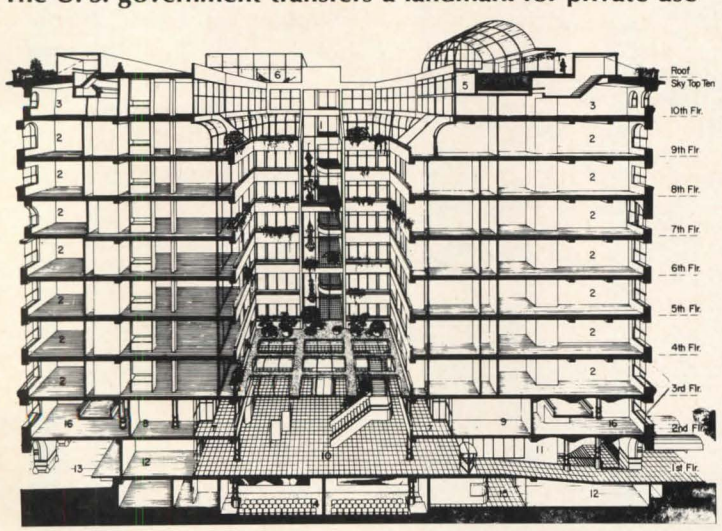
The board seeks advice on the extent to which waivers and exceptions should be considered because of such factors as cost, structural infeasibility, unnecessary hardship, or the small number of handicapped people who can be expected to use or work in the building. For example, the board asks if the standards should apply if "the cost of alterations . . . exceeds 50 per cent of the value of the building."

Other questions that the board must decide, one way or the other, include when to require escalators or elevators, and what requirements should be laid down for the benefit of people with impaired hearing, speech or vision.

Actually, architects and builders working on GSA contracts will be required to conform to revised GSA standards that may become effective as early as mid-July. In February, GSA published a revision of its standard, which, according to the comment of GSA official Robert Sprouls, "is quite close to the new ANSI standard and many others."

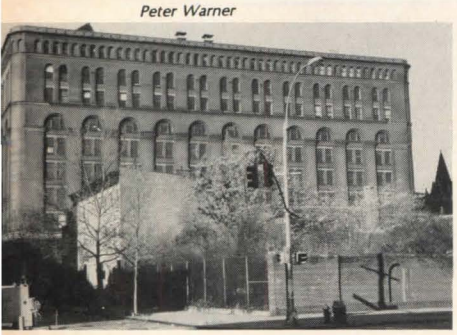
The barriers board has enforcement powers, which it can use to cite building owners and Federal agencies for violations and which allow it to take them to court if necessary. In February, for instance, it cited GSA for failure to bring a leased building for 1,500 Federal employees into compliance with GSA's own standards. The violations involved handrails, toilet seats, and a lack of elevators from a parking garage and to a basement cafeteria. —*Donald Loomis, World News, Washington.*

The U. S. government transfers a landmark for private use



1 Archive west elevator lobby
2 Two BR
3 Two BR w/conv. den & terr.
4 Pool
5 Solar Club
6 Platform tennis
7 Gallery
8 Health arts suite
9 Community space
10 Archive atrium
11 Christopher St. entrance
12 Retail
13 Service entrance
14 Cinema
15 Arcade
16 One BR w/loft

Peter Warner



The Federal government will turn over the landmark Federal Archive Building on Christopher Street in New York City's Greenwich Village to the state's Urban Development Corporation. The transfer will cost the UDC nothing.

This novel arrangement, which takes advantage of the Historic Monuments Act, brings together the national General Services Administration, the state's UDC, the City of New York, the New York Landmarks Conservancy and a private developer, the Teitelbaum-Starrett Group, as parties to an agreement approved last December by the city's Board of Estimate. (The Historic Monuments Act, a little-known amendment to the Federal Property and Administrative Services Act, provides that a Federal landmark building that has been declared surplus property may be transferred at no charge to a state or local government.)

New York City Deputy Mayor Peter J. Solomon says, "The common goals of preserving New York City's historical assets and injecting new life into a facility which has been empty for five years brought together this complex partnership of government agencies, community groups and a private developer."

In lieu of a purchase price, the developer will make payments (approximately $4 million over a period of time) into a trust fund that will be used for the preservation and rehabilitation of other historic properties in New York City. The agreement stipulates that certain standards be met in the rehabilitation of the property and that the building be maintained as a landmark.

Teitelbaum-Starrett will sign a 99-year lease with UDC and begin a $21-million renovation of the building, which in its history served as a GSA warehouse (archive) and provided space for a post office. The renovation, designed by architects Warner Burns Toan Lunde, calls for a mixed-use building.

The over-all plan is to preserve and restore the exterior of the late 19th-century Romanesque Revival structure, which consists of brick bearing walls over a monumental series of arches at street level. There will be re-fenestration within these arches and some exterior work on the roof, but the bulk of the renovation will be on the interior.

The plans propose the creation of 347 apartments from the second to tenth floors. The street level, the level below, and parts of the second and third floors will be utilized by retail stores, restaurants, theaters and nonprofit community groups. A swimming pool and recreational facility will be housed on the roof. A center well, formerly occupied by elevators and shafts, will be converted to an atrium; it will be enclosed for the first three floors to create a public space. Above the third level, the atrium will become an open courtyard serving the surrounding apartments.

The UDC fund generated by the income from the Archive Building will be spent for activities such as rescuing landmarks from destruction, preparation of analyses to show that adaptive use is feasible, and subsidies for restoration projects that are unable to attract adequate private financing. —*C.K.G.*

Building industry evolves consensus opinion on BEPS

As the Department of Energy began settling down for its series of formal hearings on the building energy performance standards (BEPS), architects and other affected parties were slowly evolving a consensus on how to approach the controversial standard.

Practically everyone now agrees that the prescribed implementation schedule—final rule by this August, effective date the following August—is too ambitious and should be moved back.

There is also general concurrence with the opinion that the technical and economic base DOE used to arrive at the standard is faulty and should be challenged.

Most organizations, though not necessarily the architects, seek changes in the standards that will make it easy to compare BEPS to existing energy standards, such as that offered by the American Society of Heating, Air-Conditioning and Refrigerating Engineers—that is, ASHRAE 90-75, already in effect in nearly 40 states.

The first formal airing of views was scheduled for a public hearing March 24-26 in Washington. Subsequent hearings are planned for Atlanta and Kansas City, Missouri, April 14-16; Los Angeles and Boston, April 21-23; and Seattle, April 24-25.

Some business groups plan to testify, with local representatives, at each of the sessions.

Not all the attention of these groups focuses on the hearings, which will be chaired by DOE staff members. The professional and business groups also plan to go before Congress, which wrote the implementation schedule into law, to ask for a delay.

There is no shortage of ideas on how to handle the delay. Senator Henry M. Jackson (D.-Wash.) has suggested a 10-state trial for operating experience with BEPS before the standard becomes mandatory nationwide. The National Association of Home Builders is insisting upon a two-year delay; the American Consulting Engineers Council asks for a five-year delay. And a multi-professional group in informal conversation favored a one-year delay in implementation covering Federal buildings, two-years for other public buildings, and three-years for private structures.

The group strategy of businesses and professions is to ask Congress for nothing more than the delay and to seek changes in the standard through testimony before the DOE itself.

The NAHB sums up its objections to the proposed standard this way: "As currently proposed, the BEPS program will be impractical to administer, it will be impractical to certify any building as complying with the standards, and impractical to determine local or state energy code equivalency with the Federal standards."

As to those design constraints directly related to energy consumption in homes, NAHB claims that "the residential budgets result in inequities due to house size, foundation type and style of a particular residential design."

Moreover, "There are also inequities in the residential budget due to climatic variations as evidenced by the requirements for compliance being virtually identical in both San Francisco and Minneapolis, two widely divergent climates."

Meanwhile, the ACEC has taken a crack at solving one of the most vexing BEPS-related problems likely to beset professional architects and engineers—how to limit their liability exposure if the standards insist upon a certification of actual building energy consumption.

Professionals have argued that design certification could leave them open to large liability claims. The ACEC's Director of Energy in Interprofessional Affairs, Steven L. Biegel, offered one solution to this exposed position: an affidavit signed by the professional saying he has complied with the BEPS as written, but not staking his reputation and liability coverage on how the building operates.

The language of the affidavit says Mr. Biegel, an architect, "adequately limits liability exposure of design professionals while simultaneously establishing a real performance value based upon the requirement of the standards."—*William Hickman, World News, Washington.*

Adriana R. Kleiman

Architectural societies share quarters in Villard Houses

The Architectural League, the New York Chapter of the American Institute of Architects, the Municipal Art Society and the New York City Parks Commission have jointly found a new home in the north wing of the 1884 McKim, Mead & White Villard Houses on Madison Avenue in mid-Manhattan. The four organizations hope that their consolidation will heighten public awareness of issues dealing with architecture, the arts and the urban environment.

The Municipal Art Society has obtained a 35-year lease from developer Harry B. Helmsley, who acquired the houses (originally six) during site assembly for the Palace Hotel, now under construction. The other three organizations will sublease from the Society.

The New York firm of James Stewart Polshek & Associates has designed the renovation. This will be the third renovation for the houses, including a structural renovation in 1925-26 by Charles Platt, who "Frenchified" the interiors. The houses have served a variety of nonresidential functions, including offices for the publishing firm Random House and for the Archdiocese of New York, from whom Helmsley obtained the property.

Commercial tenants will occupy the first, fourth and sixth floors of the wing to ensure economic stability for the four nonprofit organizations. The leases will incorporate stringent guidelines to protect the structure from further alterations.

According to Laurie Beckelman, deputy director of the Municipal Art Society, the parlor floor will function as shared "neutral space," housing various exhibits, lectures and symposiums sponsored by the four organizations throughout the year.

Among the goals of the consolidation will be an "information exchange" program that will provide a reference library, a referral service and an information clearinghouse—"resources for the art and science of our urban environment." The wing will also house the Municipal Art Societys' RESTORE/Restoration program, which sponsors classes devoted to renovation techniques, geared to construction workers rather than to the design professions.

Visitors will enter the north wing from Madison Avenue through the courtyard, which will also serve as the pedestrian entry to the hotel.

The south wing of the houses will contain restaurants and public spaces for the hotel. Two La Farge murals, depicting art and music, and the original detailing will be left intact there. The hotel is directly adjacent to the rear of the houses, between 50th and 51st Streets, and will rise to 55 stories of bronzed anodized aluminum curtain wall with bronze-toned double glazing.—*Charles K. Gandee.*

Moore sculptures maquettes for Pritzker Prize trophies

The Pritzker Architectural Prize now has its own Oscar—a bronze trophy sculptured by Henry Moore and titled by the artist *Architectural Award* in recognition of his esteem for architecture. The sculptor has completed a series of nine maquettes for bronze castings.

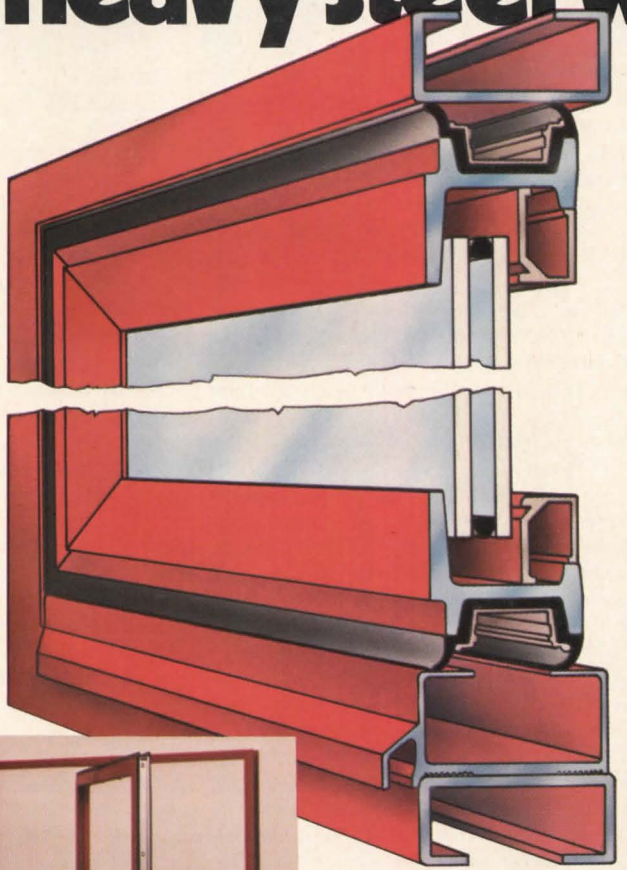
Winners of the Pritzker prize will receive the trophy as well as a $100,000 cash award. New York architect Philip C. Johnson, who took the first Pritzker prize last year (see RECORD, July 1979, page 33), received his version of the Moore sculpture in New York last month from jury chairman Cesar Pelli in a highly informal ceremony.

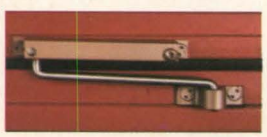
Likened to the Nobel Prizes, the annual Pritzker prize carries the largest cash award yet made in the field of architecture and, though it has so far been given only once, has already acquired considerable prestige.

Mr. Johnson acknowledges that he has already disbursed the money "in small bits" to libraries, magazines and the Museum of Modern Art.

The prize is funded by the Hyatt Foundation and named for Jay A. Pritzker, the foundation's president.

Hope's reversible series 3000 The big turn-around in custom heavy steel windows





All reversible windows share one obvious advantage. They solve expensive cleaning problems. By 180° rotation, exterior glass surfaces can be safely cleaned from inside the building. But Hope's Series 3000 windows offer other advantages that aren't so apparent. And for a good reason — Hope's believes that strength and operation should never interfere with aesthetics.

Because steel is three times stronger than aluminum, large expanses of glazing can be accommodated without massive framing. This means reversible windows can be designed up to eight feet high and five feet wide, while increasing structural integrity and maintaining graceful sight lines.

Hope's provides two different operating systems — occupant life-safety and custodial. One adds functional good looks, the other can't be seen at all. Of course every Series 3000 window is fully weather stripped and has a generous glazing space, accepting up to 1″ thick insulated glass.

There is one more advantage and it *can* be seen. Hope's unique Ultraclad PVC finish. It is without exception the toughest, most corrosion resistant finish available today.

For more information on the Series 3000 and other custom steel windows, contact the people at Hope's. Steel windows make a building what a building should be. Hope's can make the windows.

ROBLIN
HOPE'S WINDOWS
ROBLIN ARCHITECTURAL PRODUCTS COMPANY
84 Hopkins Avenue • Jamestown, N.Y. 14701 (716) 665-5124

Circle 30 on inquiry card

Cambridge subway extension gets $680,000 for new art

The Arts On The Line program in Cambridge, Massachusetts, will spend $680,000 on commissioned art for new stations on the Red Line subway extension now under construction in that city (see RECORD, March 1979, page 36 and July 1979, pages 119, 122-125).

The program has selected 20 artists to create murals and sculpture for installation in the four new stations on the Red Line. The artists' proposals encompass a variety of media and include photographic and ceramic murals, mobile and neon sculptures, bronze and porcelain tiles, earthworks and carved wooden benches.

Proposals also range beyond the visual arts to include literature: at the Davis Square Station, where expanses of brick-paved platforms concerned the art panel, poems will be sandblasted into the surface of the bricks for the contemplation of waiting passengers. Most of the ten verses chosen were written by contemporary Massachusetts poets, although Whitman and Dickinson also appear.

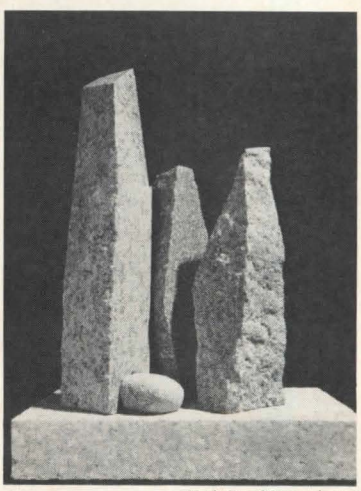
The Cambridge Arts Council, an agency of the city government, initiated and developed Arts On The Line for the Massachusetts Bay Transportation Authority, which has committed ½ of 1 per cent of the stations' construction cost to the art program. The Federal government's Urban Mass Transportation Administration supported the program's first year with a demonstration grant, and the Federally aided Red Line Northeast Extension Project will provide still further funding.

The Cambridge Arts Council established a characteristically thoughtful and thorough selection process, including the contribution of its Artbank of slides showing the work of more than 400 contemporary artists. Each station has its own art committee comprising an advisory group (architect, neighborhood businessmen and residents, MBTA, the Cambridge Community Development Department and the Historical Commission), in addition to a panel of three art professionals.

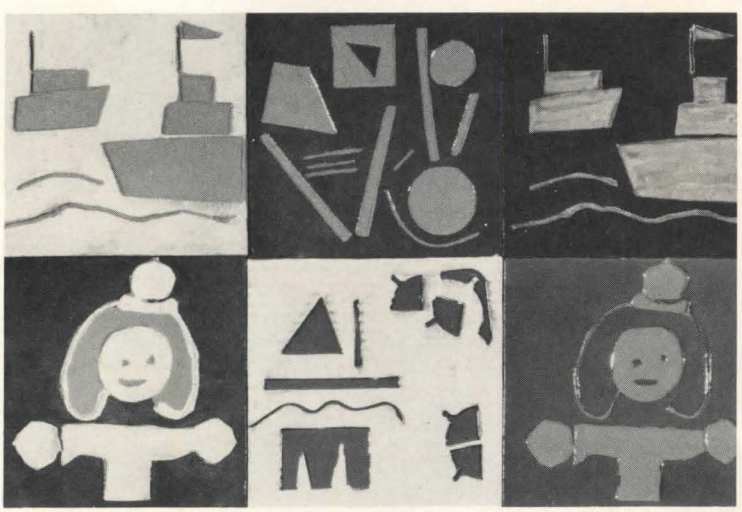
The Hayden Gallery of the Massachusetts Institute of Technology in Cambridge published an illustrated catalog of the artists' proposals and architectural designs for the subway extension in conjunction with its recent exhibit *Arts On The Line.*

For Harvard Square, artist Dimitri Hadzi proposes a 9-ft sculpture and fountain, for which the quarry, providing granite, curbstones, brick and found objects, will be the construction site itself. Other artists at the station will include Gyorgy Kepes, Joyce Kozloff and Ann Norton.

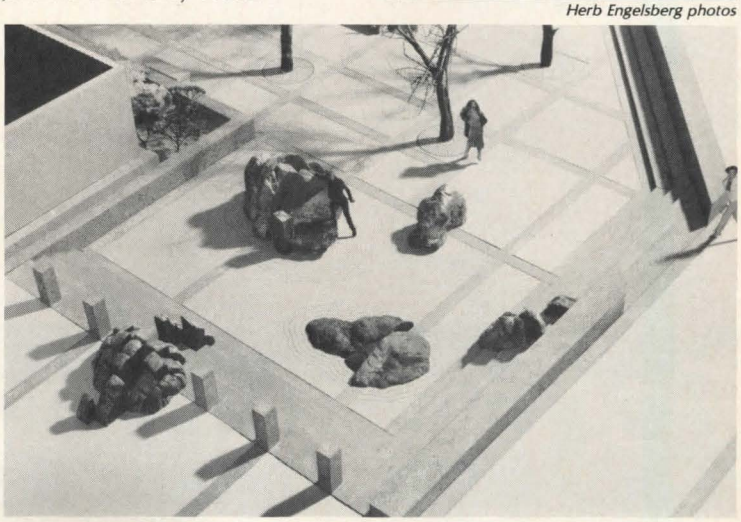
Sculptor Bill Keyser proposes an undulating wood bench for Alewife Station, taking his charge, he says, from the architect, who wanted to "humanize the station and add a touch of whimsey." Other artists include Stephen Antonakos, David Davison, Richard Fleischner, Joel Janowitz and Nancy Webb.



Herb Engelsberg photos



Neighborhood schoolchildren will design ceramic tiles for a mural at Davis Square. Jack Gregory and Joan Wye of Belfast Bay Tileworks will provide technical direction for design and execution and advice on color. Other artists include Sam Gilliam, Jr., Christopher James and James Tyler.



On the Porter Square plaza, sculptor David Phillips will place granite and bronze "boulders." Stones and paving will come from the same quarry; bronze patina will match in color. Other artists include Carlos Dorrien, Mags Harries, Will Reiman, Susumu Shingu and William Wainwright.

Washington's visitors' center reverts to train station

All across the country, train stations are being rehabilitated for new uses. In Washington, Congress is about to reverse that process—it wants to turn a visitors' center into a train station.

Actually, the visitors' center *used* to be a train station—a fine neoclassic structure at the foot of Capitol Hill built early in the century. But in the early 1970s, in a fit of Bicentennial fervor, Congress voted to spend $21.6 million to build a visitors' center for expected Bicentennial tourists in Union Station and to move rail operations and passenger platforms a couple of hundred yards northward.

The center was never finished. Work on it was plagued by cost overruns, schedule delays and the hint of scandal. Moreover, tourists never flocked to its finished parts, despite an elaborate audiovisual display in a pit intended to give visitors an introduction to Washington's chief sights and major tourist attractions.

At the same time, rail travel in the Northeast Corridor picked up and train passengers were greatly inconvenienced by the need to plod through the center to reach ticket windows and remote boarding points.

So, last month the Public Buildings and Grounds Subcommittee of the House Public Works Committee voted to increase the spending authority of the Interior Department to $57.7 million to return the train station to its previous purpose. The Department of Transportation already has an additional $23 million to use in moving the tracks back to their original places.

Thus for a total cost of about $80 million, the station would be restored to its original condition and again receive passengers. The only additions are a parking garage, plus some relatively minor corrections of structural, mechanical and electrical problems. —*William Hickman, World News, Washington.*

Monokote®

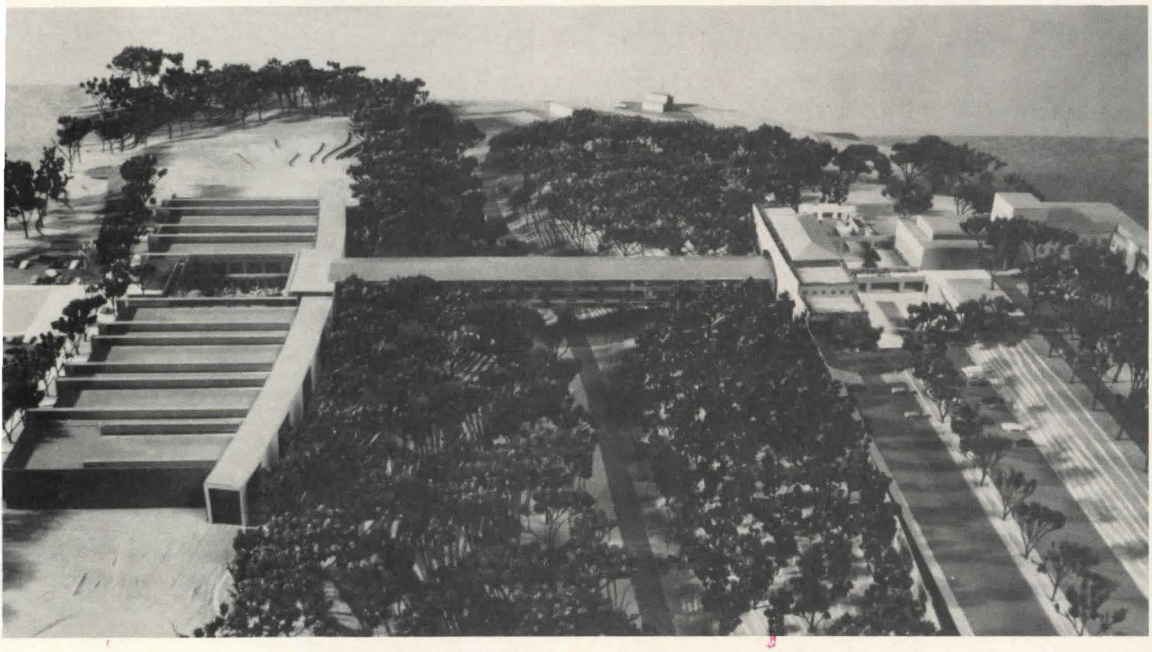
For performance under fire.

Spray-applied structural fireproofing material must offer maximum protection under severe fire test criteria. It must also be strong and durable enough to perform as a construction material with a long service life. Monokote fireproofing performs on both counts. This spray-applied, cementitious coating becomes an integral part of the structure it protects. Tough, monolithic and uniform, its structural properties equal or exceed GSA requirements. The performance of Monokote, when judged against UL and ASTM criteria, is the standard by which other spray-applied materials are measured. Zonolite® Monokote is the fireproofing material to specify for proven performance on the job . . . and under fire. See us in Sweet's 1979 General Building File, 7.14/Gra. Or call the Sweet's Buyline for more assistance.

Construction Products Division, W.R. Grace & Co., Cambridge, MA 02140. (617) 876-1400. Telex: 92-1417 GRACECO CAM.

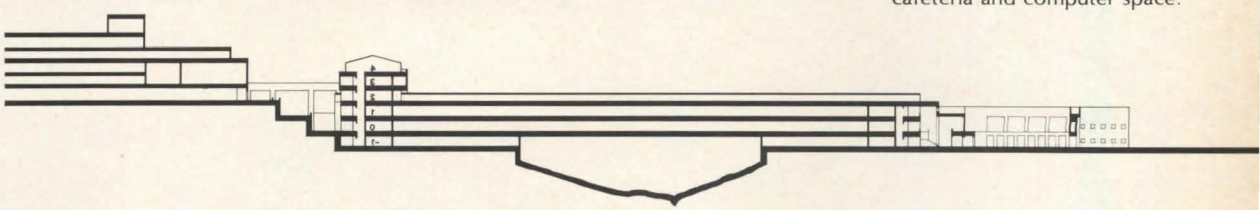
GRACE

Circle 31 on inquiry card



A 240-foot bridge will connect new and old labs for GE

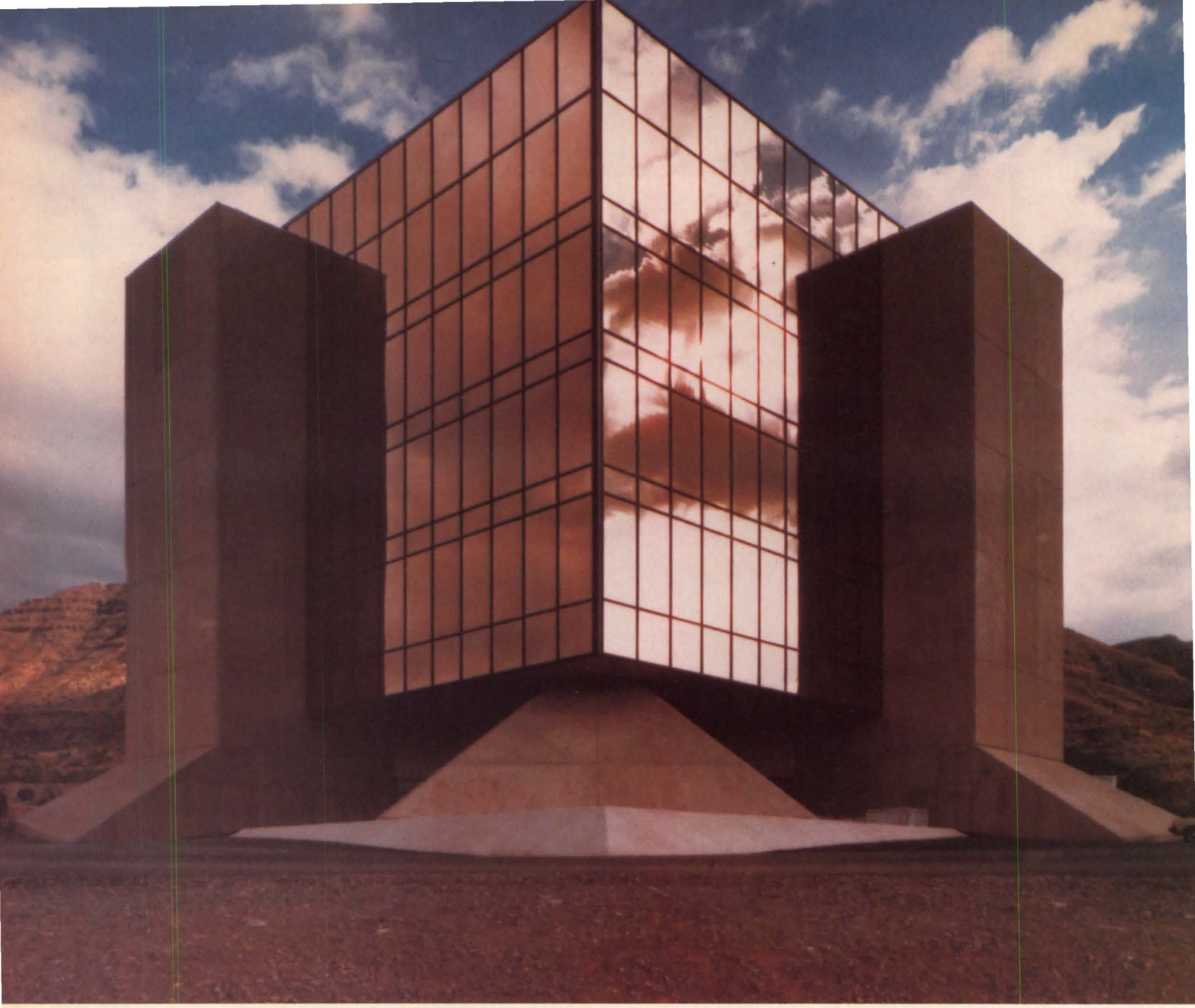
At General Electric's corporate R&D complex in Niskayuna, New York, architects Smith, Hinchman & Grylls have designed an expansion and master plan that will place the old research building and new laboratories on either side of a 75-ft-deep ravine. A 240-ft bridge will traverse the ravine to join old and new elements; it will also house office space. Curved along the west bank of the ravine, lab spaces will be separated by narrow spines of offices. The lab/office modules, connected by a long circulation spine, can extend to the east or west to accommodate growth. Additions around the older building will house cafeteria and computer space.



St. Regis Paper offices will nestle on steep wooded site

For a new office building in West Nyack, New York, St. Regis Paper Company asked its architect, The Eggers Group, to take full advantage of and to touch as lightly as possible a site wooded with mature trees and watered by a stream and a pond. The new building, sited to span the stream and angled to follow the land's contours, will have two parking levels topped by three office floors. The cantilevered overhangs, which will be heavily planted, will provide sunshades. Terraces will allow office expansion.

Renderings by Octavio Figueroa



Architect: Charles E. Nolan Jr. & Associates, Alamogordo, New Mexico

As contemporary and modern in style as the space age itself, the International Space Hall of Fame was built to house the historic documents and exhibits of our nation's space story. The building is sheathed with EGP's COOL-VIEW 400-8 insulating glass which screens out the New Mexico sun to reduce air cooling costs.

EGP, the architectural division of Shatterproof Glass Corporation, furnishes a complete line of architectural glass products that provide architects, owners and glaziers with a total environmental glass package.

- COOL-VIEW reflective glass
- TRANS-VIEW transparent mirror
- COL-R-SPAN spandrel glass
- WEATH-R-PROOF 10 insulating glass
- EGP HEAT STRENGTHENED glass
- TEMP-R-LITE tempered glass
- SHAT-R-PROOF laminated glass — for safety, security, sound control and detention

Look for us in SWEETS, section 8.26/Egp

Egp®

Environmental Glass Products

ARCHITECTURAL DIVISION, *Shatterproof* GLASS CORPORATION

4815 CABOT AVENUE • DETROIT, MICHIGAN 48210 • PHONE 313 • 582-6200

Circle 32 on inquiry card

1

2

SARA design competition awards two gold ribbons, five blue ribbons

The Society of American Registered Architects, in its 1979 National Competition, honored eight firms as it awarded sixteen ribbons—two gold, five blue, six red and three green.

A first-place gold ribbon went to the firm Maxwell Starkman & Associates of Beverly Hills for the $1.1-million headquarters building of the First Los Angeles Bank (**1**) in Los Angeles' Century City. The project combines office space with surface parking.

Another gold ribbon went to A. Epstein and Sons, Inc., of Chicago for the guard towers designed for a Cook County Department of Corrections campus (**2**). The steel-framed towers are surmounted by prefabricated steel "bubbles" with bullet-resistant gold-colored reflective glazing.

Among the blue ribbon winners was the preliminary design by the New York firm Bonsignore, Brignati & Mazzotta for a facilities renovation at the New York Stock Exchange (**3**). The project calls for new electronic trading posts attached by raceways to a space frame hung from the existing structure.

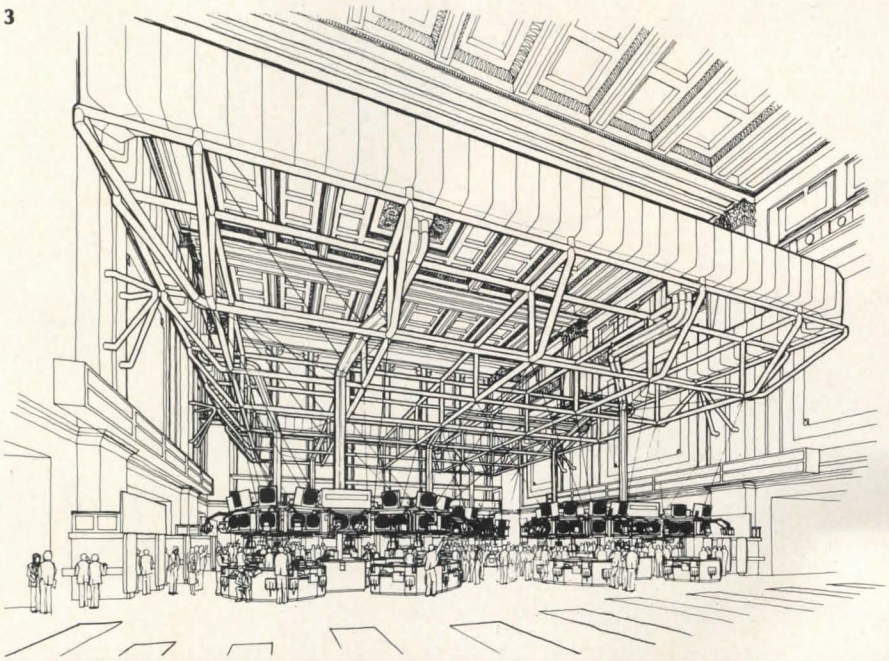
The Greeley Elementary School in Chicago (**4**) brought a blue ribbon to J. W. Sih and Associates, Inc., of Chicago. Built on a constricted site—to the lot line on five of seven sides—the school has much of its play area beneath the raised second floor.

In addition to its gold ribbon, the firm Maxwell Starkman & Associates took a blue ribbon for Peacock Alley (**5**), part of a shopping center complex at Rolling Hills Estate, California. (The firm also received three red ribbons.)

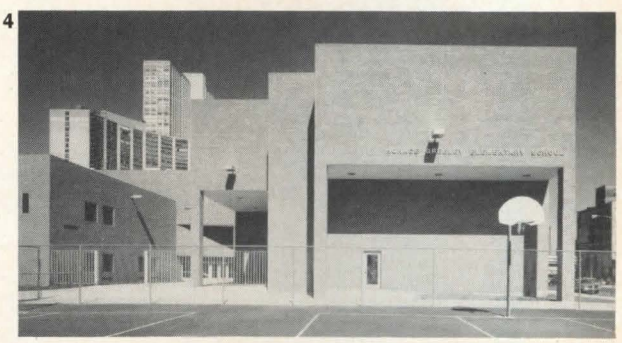
Weese Hickey Seegers & Weese Ltd. took a blue ribbon for its renovation of Bradford Exchange in Niles, Illinois (**6**). The former strip discount store now houses rooms for offices, conferences and dining, as well as a sunken landscaped garden.

A blue ribbon also went to Benham-Blair & Affiliates, Inc., for Mercy Health Center in Oklahoma City (**7**), an eight-story hospital with four nursing wings that offer only private patient rooms.

3

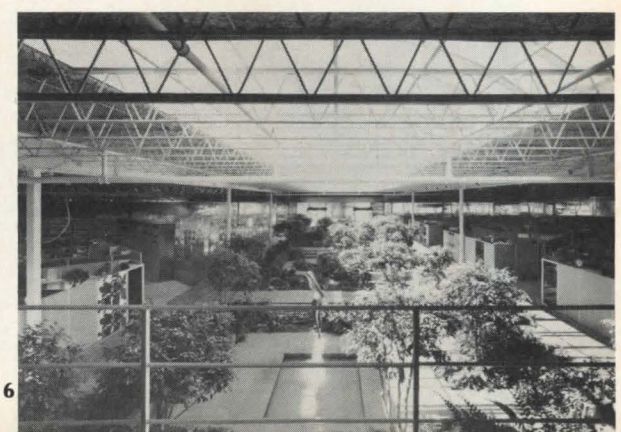


4



5

7



6

C O N W E D

Natural Fissured Ceilings. Above all, versatile.

Above all, Natural Fissured ceilings from Conwed. The most versatile designer ceiling you can get. Its subdued natural fissured pattern is quietly handsome in board rooms or private offices. But because Natural Fissured also comes in a full range of panel sizes, you can continue the same attractive look into hallways, lobbies, and other large areas.

Find out about the entire Conwed® Natural Fissured line. It gives you six different sizes, six edge treatments and two thicknesses to choose from. All are available U.L. time-design fire rated.

For more information, see Sweets File 9.1/Co or contact Conwed Corporation, Ceiling Products Division, P.O. Box 43237, St. Paul, Minnesota 55164. Phone (612) 221-1184.

Conwed®

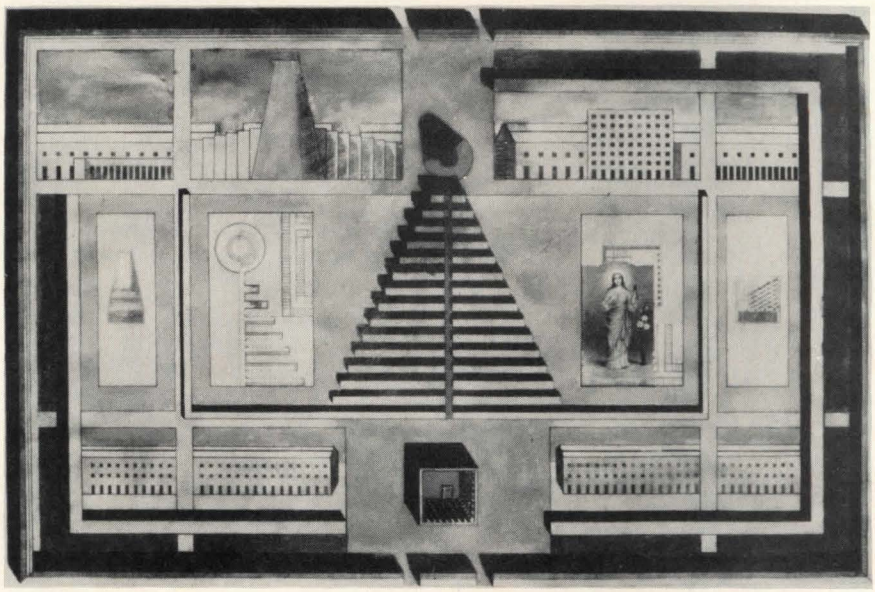
innovative products for better interior environments

Myth and mystique

ALDO ROSSI. PROJECTS AND DRAWINGS 1962-1979, *edited by Francesco Moschini; Rizzoli New York, $14.95.*

ALDO ROSSI IN AMERICA: 1976 to 1979, *introduction by Peter Eisenman; Institute for Architecture and Urban Studies, $10.*

Reviewed by Eleni Constantine



It is not surprising that a myth should have grown up about Aldo Rossi. As an endeavor to build the pure manifestation of architectural types, with all their incidentals removed, his work is the very stuff of myth. The tangible historical existence of Rossi's completed buildings is only one part of their being; it is the architect's intent to create forms that also exist beyond a place and a time.

And he has: seeing the Gallaratese housing (1970), the school at Fagnano Olona (1972), or the Segrate fountain (1965), one has an uncanny impression of *recognizing* the building as something encountered before, dressed in different fashions but fundamentally the same.

Any particular myth is more potent in certain cultures and ages, because the basic elements of the picture strike more exactly the notes of the resonant psychic chord. Rossi's myth has greatest force in northern Italy, now, because he has refined its fundamentals from his experience there. The two forms, piazza and portico, which structure his creations, are particularly well realized in Italy. The concrete of which Rossi's structures are made belongs to cities like those of northern Italy: 20th century industrialized cities which have abandoned their traditions of brick, wood and stone, but not adopted that of glass and steel. If it all smacks of neorealism in Italian cinema, it's because Rossi has captured the essence of that era with a stiletto-sharp poignancy.

Poignancy, not nostalgia. There is no softening. Quite the opposite: Rossi continually pares down the forms to a bare, pure nudity whose force lies exactly in its almost painful asceticism. The architecture is luminously self-evident; this frees it from the industrialized cityscapes of Lombardy from, say, 1930 to the present, giving it an additional, timeless, placeless, mythic, dimension.

This is the dimension on which Rossi elaborates in his drawings. And it is a measure of his alchemical success in refining elemental forms from the given reality that it is the drawings that have spawned the greater part of the literature on Rossi. Unfortunately, they seem to have magnetically attracted about them a literature which tends to be hermetic and dense, to indulge in philosophy and polemic rather than explain, explore or assess. In almost every case, a rather strange process takes the argument immediately to Platonic heights, where it gets attired in appropriate language. In writing about the drawings, the writer approaches the work as art. Now, as art, the drawings are not required to have an intellectually defensible argument, nor do they necessarily incur a social responsibility. But on the other hand, the nature of Rossi's drawings allow them to also evade criticism as artifacts; they introduce themselves as only descriptions of formal ideas, approximations of a perfect mental image. The critic ends up discussing some perceived essence, the idealized concept of Rossi's architecture rather than some visible evidence of it. In other words, Rossi's drawings seem to induce a Rossi-esque imaginative process—but what fuels creative fires makes for critical fog.

The two most recent works on Rossi in English are catalogs of Rossi exhibitions: the Rizzoli book is a reprint of a catalog published by the Centro Di, in Florence, for an exhibit of Rossi's work at the Galleria Pan in Rome in the spring of 1979; the Institute catalog commemorates his show there last fall.

The Rizzoli catalog treats both Rossi's built architecture and his drawings in separate, chronologically ordered sections of black and white plates. This core is fleshed out with some luscious color plates, an appendix listing Rossi's projects and his writings, a bibliography of works on Rossi, a list of his major exhibits, and an introduction by Francesco Moschini. All parts contribute to make the catalog an excellent primer on the architect—with the notable, and disastrous, exception of the introduction.

To do Moschini justice, the major problem is one of translation. Words are spelled incorrectly, inadequate or inexact equivalents are substituted for particular words, the syntax of the English is clumsy, often incorrect, and in several instances the repunctuation of translated sentences substantially alters their meaning. Above all the translation defies the tradition of logic, clarity and balance in English essays—a literary tradition encapsulated by Virginia Woolf's dictum to the effect that the steps from one thought to the next must be cut ever so shallow if another's mind is to ascend them. Europeans have quite another tradition: one in which the argument is not an open road, but a hidden path, whose course alternately obeys rules of logic, imagery, metaphor or verbal rhythm. Italian writers on architecture such as Manfredo Tafuri have raised the genre to a refined if recondite level, but Moschini's essay is no exemplar.

Hidden in the language, however, are several interesting points. Touching base with the generally known (and obvious) tenets of Rossi's work, Moschini describes the way Rossi fragments architectural form, disassociating it from its context to reassemble it in such a way that it becomes a symbolic presence, conveying a personal and collective meaning. This activation of latent expressive power is what artists do: that it is Rossi's major concern indicates his artistry.

continued on page 46

Eleni Constantine, a former associate editor of *Progressive Architecture*, is now an associate editor of ARCHITECTURAL RECORD.

Moschini, like most good art critics, is tempted to push farther than the surface, "beyond the explicit indications," as he says, of the architect. Here, perhaps, he goes astray; Rossi would probably agree with Samuel Beckett, "no symbolism where none intended." Similarly Moschini attempts to expand Rossi's significance by linking his work to that of central European esthetes. Any valid links would have been better illuminated by a more complete biography (citing Rossi's teachers, course of study, and other formative influences) than by Moschini's annoying and unsubstantiated name dropping (15 names in the first three paragraphs).

The Rizzoli book fails to provide an informative context, or perspective for Rossi's work. It's too bad, because the illustrations furnish what is probably the most complete visual documentation of his work to date.

The Institute's catalog has limited its scope to concentrate on a series of drawings entitled "the analogous city." The two short essays by Rossi discuss the drawings' purpose, method and meaning with that lucidity and directness that characterize his extensive writings. The essay by Peter Eisenman is equally typical of that architect's writing: self-consciously difficult, brilliant and in the final analysis, self-referential. At a precise point, Eisenman starts to talk not about Rossi's drawings, but about his own concerns. Though Rossi's images do seem to seduce many critics into such cerebral wanderings down the garden path, the point of departure is particularly noticeable in Eisenman's case because his own preoccupations (death, art for art's sake, humanism) are so well known. Yet—when, as it were, Eisenman periodically leaves his desk to look directly at a drawing—flashes of insight illuminate the dense obscurity of his introspection.

Defining the term "analogy" he calls it "the shadow of logic. . . . It presupposes a conscious logic, not existing alone in its former positivistic sense, but together with this unconscious logic. It describes the process by which the 'Citta Analoga' drawings take on meaning and their intrinsic content—the universe, the shadow of which they bring to consciousness."

All this might be so much rhetoric were it not for the direct statement immediately following: "In Rossi's drawings the shadows themselves signal this fact for they take on material solidity . . . the shadows become another figure . . . the negative image of positive reality." As a close examination of a selected group of drawings—not as a comprehensive statement on Rossi's architecture—the Institute's book has great merit.

Rossi's drawings are to his architecture as a painter's sketches are to his art. It is probably inevitable that the world at large will know his work first through his drawings; they are salable, portable, and require no translation. It is unfortunate that they are not always put into context, but allowed to dominate and obscure discussions of his architecture. Not to see Rossi in three dimensions is, necessarily, to do him a disservice.

Dodge/Sweet's Construction Outlook 1980: first update

With national economic policy in transition, this is an appropriate time for an update of the 1980 Construction Outlook. New directions are already beginning to take shape. The "standard" economic outlook has shifted toward more inflation and less recession in 1980. It is expected, however, that the second, third, and final quarters of 1980 will show small declines in real GNP. Inflation, instead of receding as previously expected, will remain as severe in 1980 as it was in 1979. A 1980 economy that is still recession-bent, but is getting there under greater momentum, generating more inflation, and is being subjected to tighter monetary and fiscal restraint than before, now offers a different potential for the construction industry than it did as recently as last October.

1980 National Estimates
of Dodge Construction Potentials

First Update March 1980

Construction Contract Value (millions of dollars)		1979 Actual	1980 Forecast	Percent Change
Nonresidential Buildings	Office Buildings	$ 11,194	$ 11,500	+ 3
	Stores & Other Commercial	13,021	11,800	− 9
	Manufacturing Buildings	7,280	7,400	+ 2
	Total Commercial & Manufacturing	$ 31,495	$ 30,700	− 3
	Educational	$ 6,298	$ 6,500	+ 3
	Hospital & Health	4,790	5,100	+ 6
	Other Nonresidential Buildings	7,076	7,500	+ 6
	Total Institutional & Other	$ 18,164	$ 19,100	+ 5
	Total Nonresidential Buildings	$ 49,659	$ 49,800	—
Residential Buildings	One-Family Houses	$ 54,520	$ 39,700	−27
	Multi-Family Housing	17,430	14,400	−17
	Total Housekeeping	$ 71,950	$ 54,100	−25
	Total Nonhousekeeping	$ 2,736	$ 2,800	+ 2
	Total Residential Buildings	$ 74,686	$ 56,900	−24
Nonbuilding Construction	Highways & Bridges	$ 13,842	$ 14,200	+ 3
	Utilities	13,117	11,000	−16
	Sewer & Water	7,704	9,300	+21
	Other Nonbuilding Construction	7,370	7,800	+ 6
	Total Nonbuilding Construction	$ 42,033	$ 42,300	+ 1
Total Construction		$166,378	$149,000	−10
Dodge Index (1972 = 100)		183	164	
Floor Area of New Buildings (millions of square feet)				
Nonresidential Buildings	Office Buildings	234	220	− 6
	Stores & Other Commercial	579	470	−19
	Manufacturing Buildings	237	210	−11
	Total Commercial & Manufacturing	1,050	900	−14
	Educational	101	95	− 6
	Hospital & Health	58	56	− 3
	Other Nonresidential Buildings	160	164	+ 2
	Total Institutional & Other	319	315	− 1
	Total Nonresidential Buildings	1,369	1,215	−11
Residential Buildings	One-Family Houses	1,859	1,200	−35
	Multi-Family Housing	616	450	−27
	Total Housekeeping	2,475	1,650	−33
	Total Nonhousekeeping	56	50	−11
	Total Residential Buildings	2,531	1,700	−33
Total Buildings		3,900	2,915	−25
Number of Dwelling Units (thousands of units—F. W. Dodge basis)				
	One-Family Houses	1,169	750	−36
	Multi-Family Housing	599	450	−25
	Total Dwelling Units	1,768	1,200	−32

Failure to reverse the course of inflation during the past six months has led to a chain of reactions which now change the outlook for all three major construction markets.

- Chaotic credit conditions have eroded 1980's none-too-strong housing potential by more than a quarter of a million units.
- Postponement of recession has prolonged expansion of commercial and industrial building, stretching 1979's boom into early 1980.
- Belated budget balancing will have only a negligible effect on public construction in 1980, but it implies limits for 1981.

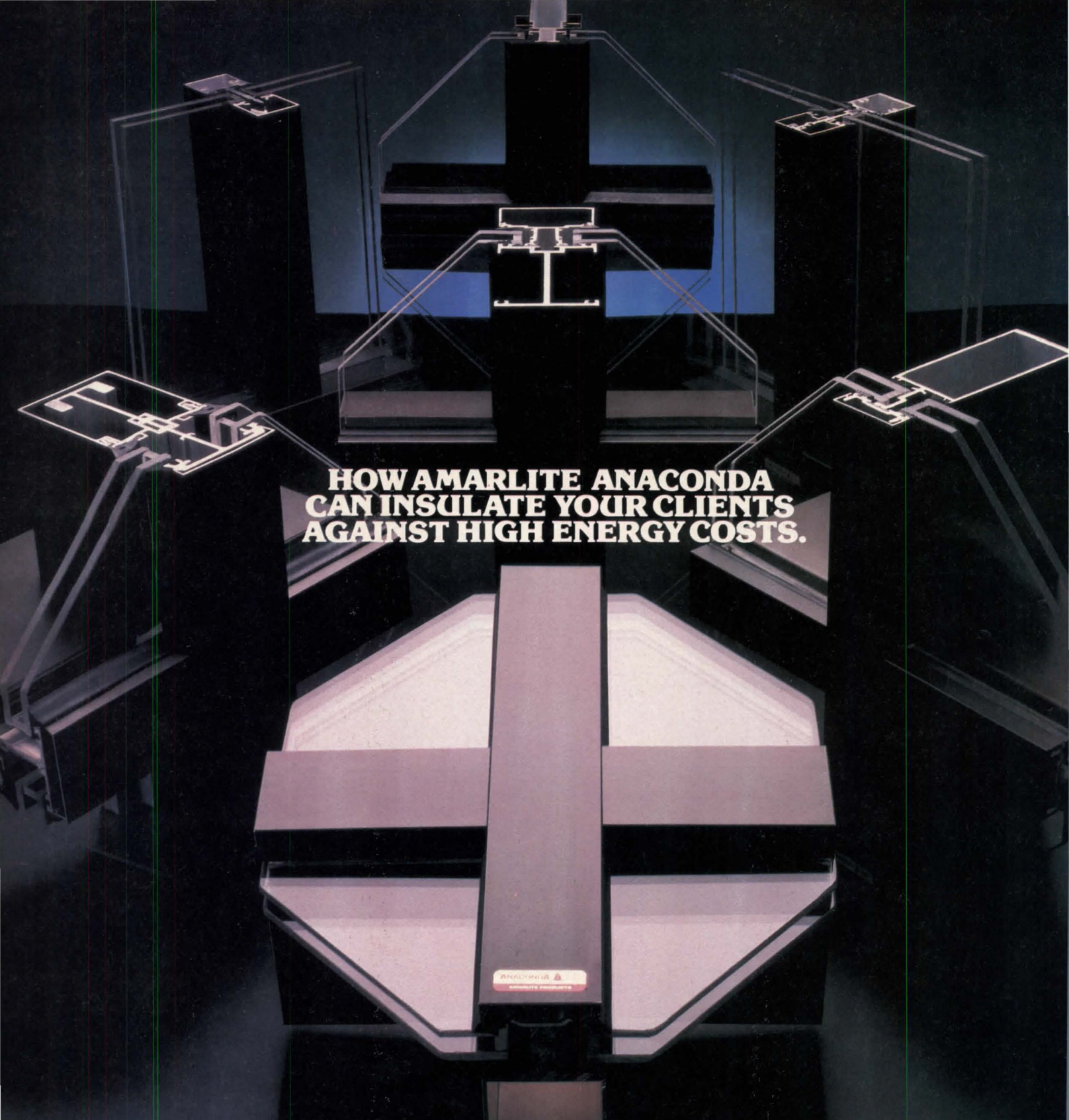
Rejection of credit controls (at least for now) by the Administration's top policy-makers left only fiscal restraint to back up continued tight money in the Administration's renewed anti-inflation effort. However, its impact will be felt primarily on the 1981 budget as the attempt is made to cut Federal spending by some $15 billion.

Housing: how much lower?

The Federal Reserve's boost of its discount rate in February requires lowering the already bleak expectations for housing in 1980. But with so much of 1980's outcome depending on decision-making at the Federal Reserve Board, forecasting has been reduced to "creeping up" on the housing outlook by making a downward adjustment with each new pronouncement by the Chairman.

Conventional wisdom still holds that with 1980 shaping up as another year of double-digit inflation, an upturn in housing will be brought about by general business recession. Sooner or later, business demand for funds should diminish, enabling the credit-starved housing market to recover. Early improvement in credit conditions could limit housing's decline to 1.25 million units (annual rate) in the second quarter, leaving the year's total above 1.3 million. A later change could mean a cyclical low in the third quarter, and the loss of yet another 100,000 potential units.

In view of the continued heavy reliance on monetary restraint in the President's latest (March 14) anti-inflation package, the expectation of a housing recovery in 1980's third quarter now seems unrealistically optimistic. However, a fourth quarter upturn is still a good probability, though it would leave the year's housing start total a weak 1.2 million units. Perhaps the real issue is not whether 1980's housing total will be 1.2 million of 1.3 million units, but that it will not come even close to the 2.1 million volume needed annually to fulfill the demographic requirements of



HOW AMARLITE ANACONDA CAN INSULATE YOUR CLIENTS AGAINST HIGH ENERGY COSTS.

In today's energy-conscious economy, a building has to work as good as it looks.

And that's why Amarlite Anaconda offers a broad line of thermally-improved architectural aluminum. Five curtain wall systems and six low-rise framing systems. Each designed to keep nature outside and energy inside with specially constructed thermal barriers between indoors and outdoors.

In the final analysis, it's the lifecycle costs that concern a building owner. So our thermally-improved products are designed to minimize long-term energy expenses. And to keep a building operating at a constant and economical temperature.

But even with such a broad line, we never stop improving our thermally-improved products.

Amarlite Anaconda is constantly innovating. Refining our refinements. Our challenge is to stay ahead of the challenges facing you.

Which is part of the reason our architectural aluminum also comes with a design assistance team. To help you adapt Amarlite's special products to your project's special needs.

So specify Amarlite thermally-improved products for your next project.

Your building design will look better with each passing year.

Whether you're involved with one story, or thirty stories, you'll want to hear our story. Send for our catalogs, "Thermally-Improved Curtain Walls" and "Entrances and Storefront Systems." Write to Amarlite Anaconda, P.O. Box 1719, Atlanta, Ga. 30301. Or read about us in "Sweets 8.1/AN and 8.14/AN." Or you can call our home office at (404) 691-5750.

AMARLITE
ANACONDA Aluminum Division

Circle 48 on inquiry card

the 1980s.

Update '80: Contract value of the year's 1.200 million total of housing starts, consisting of 750,000 one-family homes and 450,000 multifamily units is estimated at $56.9 billion, down 24 per cent from last year's $74.7 billion.

Nonresidential building: decline postponed

Before the end of 1979, recession was supposed to trigger a cyclical decline in contracting for commercial and industrial building. But whether contracting remained strong because the recession failed to materialize, or the other way around, the pace of commercial and industrial building in 1979's second half nearly matched the first half's extraordinary rate. Nonresidential building last year, at 1.4 billion square feet, drew almost even with the record volume of work started in the two previous peak years of 1973 and 1969.

However, like the recession, the cyclical decline of nonresidential building has merely been postponed, not eliminated. The continuing prospect of a relatively mild recession—now expected in the final three quarters of 1980—implies an impending decline for many types of nonresidential building.

Most vulnerable:

- Stores and warehouses—Because a great deal of retail building is derivative of housing starts, contracting for stores and warehouses is already past its peak and is now reacting to last year's 15 per cent decline in homebuilding. With housing's recovery still a couple of quarters away, store and warehouse contracting face maximum vulnerability in 1980's second half.
- Manufacturing buildings—Currently at its cyclical peak, contracting for industrial buildings must soon adjust to the manufacturing sector's rising excess capacity. With the industrial utilization rate already down from 87 to 84 per cent, and heading for further decline once recession finally arrives, manufacturing building is expected to slip to 210 million square feet in 1980, with little prospect for improvement in 1981.

Less vulnerable:

- Offices—even though the present rate of office construction is far outpacing the boom of the early 1970s, the risk of overbuilding for the market of the 1980s is low. Last year's record 234 million square feet of new offices space topped 1973! Soaring rentals and low vacancies will stretch the current office building boom through 1980, although its pace will be slowed by financial conditions.
- Institutional building—Schools, hospitals, and other nonresidential buildings typically provide a cushion of stability in periods of cyclical stress. This market, which is governed more by demographic trends than by economic events, will show little change in the year ahead.

(Revenue Sharing is high on the list of programs that could be cut to balance the Federal budget. Elimination or reduction of this $7 billion annual transfer of Federal funds to state/local governments would remove support from several categories of public nonresidential buildings starting in 1981.)

Update '80: After a very strong beginning, the deterioration of the commercial and industrial building market will leave 1980's total of nonresidential square footage 11 per cent below the 1979 peak volume. Inflation will hold 1980's contract value very close to last year's record total, however.

Nonbuilding construction: some upturn

The Administration's attempt to cut as much as $15 billion of spending from the 1981 budget is bound to restrict Federal funding for many kinds of public works construction next year. In what remains of 1980, however, only a few categories of Federally financed construction are still controllable:

- Conservation: Projects which are under the direct supervision of Federal agencies (e.g., Corps of Engineers; Water and Power Resources Service) are more easily deferred than projects administered by local governments via grants-in-aid. Subject to budgetary squeeze later in 1980 are dams, reservoirs, and river/harbor development.
- Water quality: Administrative delays in 1979 left the Environmental Protection Agency with a substantial carryover of last year's money to distribute in 1980. Deferral of funding for municipal treatment plant construction appears to offer a choice opportunity to create the illusion of budget cutting during the balance of this year.

Electric utility construction remains in limbo with fossil fueled plants not filling the void left by cancellations of nuclear projects. Contracting for new capacity in 1980 is not even likely to equal 1979's low total.

Update '80: With the major impact of Federal budgetary restraint not due until 1981, contracting for public works in 1980 will be up 8 per cent. However, lagging utility construction will reduce the year's gain in nonbuilding construction to one per cent.

Since October's Outlook, when 1980 construction contract value was estimated at just under $170 billion, the year's potential has shrunk by roughly $20 billion to $149.0 billion, with housing bearing the heavy loss.

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

1980 Regional Estimates
of Dodge Construction Potentials

First Update March 1980

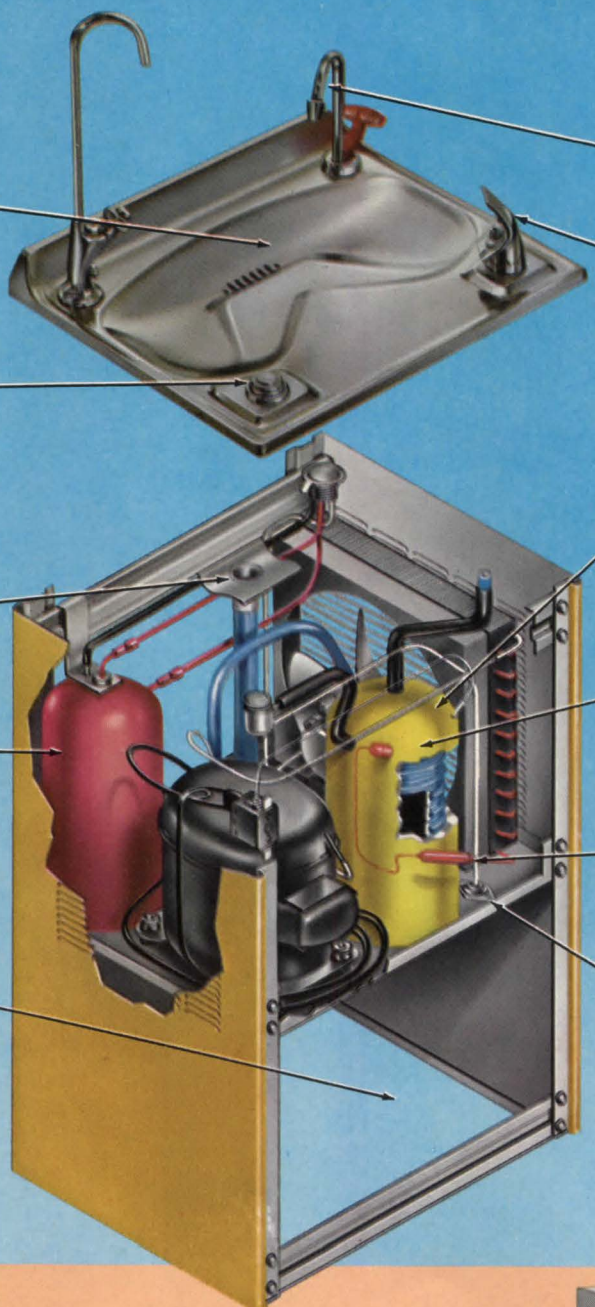
Construction Contract Value (millions of dollars)	Northeast: Conn., D.C., Del., Mass., Md., Maine, N.H., N.J., N.Y., Eastern Pa., R.I., Va., Vt.			Midwest: Northern Ill., Ind., Iowa, Ky., Mich., Minn., N. Dak., Ohio, Western Pa., S. Dak., Wis., W. Va.		
	1979 Actual*	1980 Forecast	Percent Change	1979 Actual*	1980 Forecast	Percent Change
Nonresidential Buildings						
Commercial & Manufacturing	$ 5,257	$ 5,150	− 2	$ 7,533	$ 7,250	− 4
Institutional & Other	3,608	3,875	+ 7	4,466	4,725	+ 6
Total	$ 8,865	$ 9,025	+ 2	$11,999	$11,975	−
Residential Buildings						
One-Family Houses	$ 7,155	$ 5,000	−30	$11,103	$ 7,600	−32
Multi-Family Housing	2,677	2,100	−22	3,398	2,800	−18
Nonhousekeeping	789	825	+ 5	539	575	+ 7
Total	$10,621	$ 7,925	−25	$15,040	$10,975	−27
Nonbuilding Construction						
Highways & Bridges	$ 2,122	$ 2,350	+11	$ 3,947	$ 3,975	+ 1
Utilities	415	500	+20	1,443	3,000	++
Other Nonbuilding Construction	3,123	4,000	+28	3,713	4,250	+14
Total	$ 5,660	$ 6,850	+21	$ 9,103	$11,225	+23
Total Construction	$25,146	$23,800	− 5	$36,142	$34,175	− 5

* Totals may not equal sum of components, due to independent rounding.
++ = Over 100% increase.

Construction Contract Value (millions of dollars)	South: Ala., Ark., Fla., Ga., Southern Ill., Kans., La., Miss., Mo., N.C., Nebr., Okla., S.C., Tenn., Tex.			West: Alaska, Ariz., Calif., Colo., Hawaii, Idaho, Mont., Nev., N. Mex., Ore., Utah, Wash., Wyo.		
	1979 Actual*	1980 Forecast	Percent Change	1979 Actual*	1980 Forecast	Percent Change
Nonresidential Buildings						
Commercial & Manufacturing	$10,442	$10,275	− 2	$ 8,263	$ 8,025	− 3
Institutional & Other	6,363	6,650	+ 5	3,727	3,850	+ 3
Total	$16,805	$16,925	+ 1	$11,990	$11,875	− 1
Residential Buildings						
One-Family Houses	$20,847	$15,700	−25	$15,415	$11,400	−26
Multi-Family Housing	6,234	5,100	−18	5,121	4,400	−14
Nonhousekeeping	749	700	− 7	659	700	+ 6
Total	$27,830	$21,500	−23	$21,195	$16,500	−22
Nonbuilding Construction						
Highways & Bridges	$ 5,241	$ 5,325	+ 2	$ 2,532	$ 2,550	+ 1
Utilities	11,015	4,500	−59	244	3,000	++
Other Nonbuilding Construction	5,233	5,375	+ 3	3,005	3,475	+16
Total	$21,489	$15,200	−29	$ 5,781	$ 9,025	+56
Total Construction	$66,124	$53,625	−19	$38,966	$37,400	− 4

* Totals may not equal sum of components, due to independent rounding.
++ = Over 100% increase.

Elkay Water Coolers: Take an inside look at our specs, before you spell out yours.



Cascade Basin with unique, multi-level deck design—tested to be most splash resistant.

Push Button Control keeps hands away from stream projector. In-line *flow regulator* automatically maintains constant stream height.

Drain Outlet is located for easy accessibility.

Hot Water Storage Tank (optional) heats and serves up to 40 6-oz. cups per hour... piping hot!

"Open Interior" design allows fast installation, easy servicing

Hot Water Dispenser (optional).

Protective Hooded Stream Projector: the most sanitary ever designed.

Non-pressurized storage tank prevents flooding if failure ever occurs, because only *stored* water is released—*not* the full line of flow.

Combination tube-tank type cooling system—fully insulated with UL listed polyurethane foam—provides fast recovery rate.

Drier keeps possible internal moisture from contaminating refrigeration system.

Water Inlet stub. Unobstructed for easy hook-up.

Features like Elkay's *non-pressurized* storage tank—which ultimately may save thousands of dollars in damage, really should be included.

And Elkay's *entire series* of barrier-free coolers for the handicapped, plus a full range of floor, wall, semi- and fully-recessed models include such features.

Check the items covered here. Then get the full story on Elkay's complete line. Write for free literature, or contact your Elkay representative.

Elkay Manufacturing Company • 2222 Camden Court • Oak Brook, Illinois 60521, Dept. 0-20

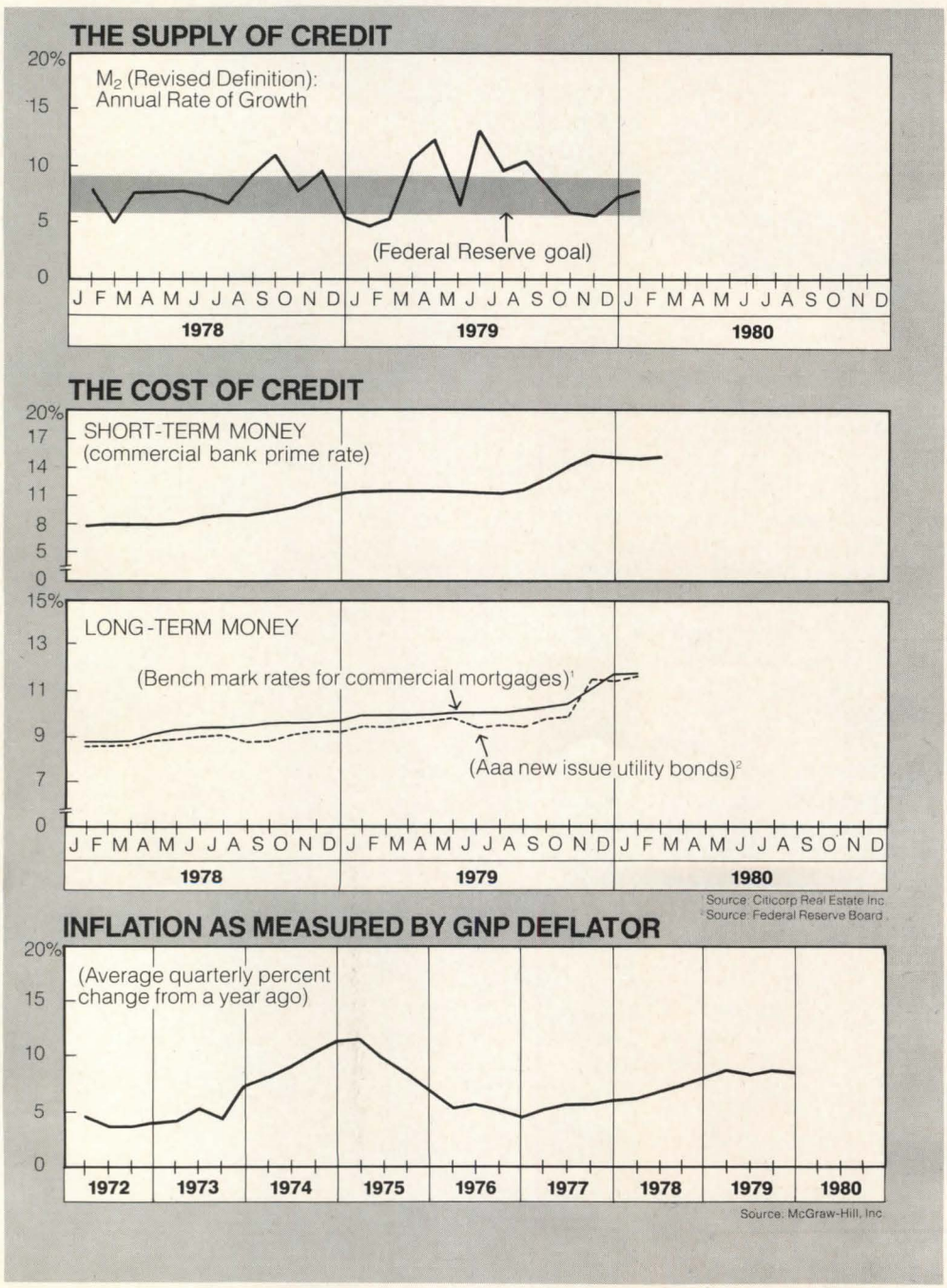
Circle 49 on inquiry card

Mortgage credit deteriorates in a battered financial market

Pervasive inflation, stronger than expected consumer borrowing, a growing Federal deficit, and monetary policy have battered the financial markets. One result is that mortgage credit has deteriorated in terms of both availability and cost.

Not too long ago (October), a mild recession was expected in the first quarter, reducing credit demands. Investors, finding mortgage rates attractive, would expand their secondary market purchases. This would improve mortgage credit availability, which along with strong demand for buildings, would stimulate a recovery in construction activity in the second half.

That optimistic outlook has drastically changed. Instead of abating, credit demands have intensified in response to prolonged double-digit inflation and government actions.



Instead of saving to beat inflation, today's consumers are spending, using more debt and cutting their savings rate to maintain their "standard of living." Their actions place a double "whammy" on the financial markets. First, expanded borrowings raise credit demands. Second, a reduced savings rate crimps the growth of loanable funds because household savings are a major source of funds for the financial markets.

Meanwhile, government borrowings are expected to increase. International crises and inflation have caused budget planners to raise their estimates of the Federal deficit in fiscal 1980. Projections now indicate that the deficit will rise from $30 billion to $40-44 billion, an $11-14 billion gain, depending on whose estimates (Administration or Congressional Budget Office) are accepted. Higher borrowing costs and automatic increases from escalator clauses in many Federal social programs, reflecting higher than anticipated inflation, are major reasons for the upward revision.

Government plans to boost defense expenditures, while having minimal impact on the budget this fiscal year, will also expand the demand for credit. Defense contractors will step up their borrowings to finance the improvements in their production capabilities needed to meet the higher level of government hardware orders.

The Federal Reserve has clearly signaled its determination to curb credit growth in its fight against inflation. Its message was in the form of a 1 per cent increase in the discount rate (12 to 13 per cent), designed to raise the cost of funds to commercial banks, inhibiting their willingness to lend. Implicit in its action was that other changes would follow, if necessary.

The financial markets have reacted. Interest rates have abruptly moved higher—many reaching new highs. *Significantly*, the rate structure has shifted above the level of inflation, meaning borrowers are facing a *real cost of borrowing.*

The Federal Reserve's firm resolve to fight inflation, coupled with a real cost of borrowing, will eventually rein in credit demands. This will take time. Meanwhile, mortgage funds will remain hard to find and very expensive. This will prolong the decline in construction activity and delay its recovery until late 1980, or early 1981.

Phillip E. Kidd
Director of Economic Research
McGraw-Hill Information Systems Co.

When your next project calls for reflective glass, spec Rayflect™

Time and time again, glaziers and architects spec reflective glass that's energy efficient, durable and aesthetic. Time and again, they specify high performance Rayflect Silver from Advanced Coating Technology.

As our name implies, we've taken the latest state-of-the-art vacuum coating and applied it to Rayflect Silver. The resulting permanent metallic coating provides a visual effect that complements most architecture.

Color uniform Rayflect Silver reduces glare and provides more uniform daylighting. The solar efficiency designed into each pane of Rayflect glass reduces hourly interior temperature variations. Shading co-efficients, u-values and heat gain factors outperform other reflective glasses.

Annealed, heat strengthened and tempered, Rayflect Silver coatings are backed by a limited 10-year warranty against peeling, cracking or deterioration.

Best of all, Advanced Coating Technology provides complete service, from your initial specifications through a quick, efficient delivery. Our service professionals will examine your requirements and recommend the Rayflect Silver that's right, be it clear, gray, bronze or blue-green. Call us and see why *the more you look, the better we look.*

For more information, see Sweets #8.26, or write:

Advanced Coating Technology, Inc.
Rayflect Division
A subsidiary of Worthington Industries, Inc.
306 Beasley Drive
Franklin, Tennessee 37064
615-790-6001
Telex 55-5145

Circle 54 on inquiry card

Privity of contract no longer required to sue architects

A major development in the expansion of architects' professional liability during the past 25 years has been the demise of the privity-of-contract defense. Previously, the law required, as a prerequisite to a lawsuit, the existence of a contract between the architect and the party suing for negligence in the performance of professional services. The contractual relationship between the parties was known as privity. In the absence of privity of contract, a plaintiff was legally barred from suing the architect. The first cases in which the courts invalidated the privity-of-contract defense involved only bodily or personal injury of some sort. The absence of a contractual relationship still prevented lawsuits involving claims other than for bodily injuries. In recent years, however, the courts have begun to permit third party lawsuits against architects simply for alleged economic losses. By doing so, the courts are significantly expanding the profession's liability exposure.

by Arthur T. Kornblut, Esq.

Although architects have been subjected for many years to lawsuits from third parties (such as construction workers) who suffered bodily injury, it was not until recently that the courts began to permit direct actions to recover damages for financial losses alone.

At common law, the architect generally was immune to a lawsuit unless it was brought by the client. A 19th-century legal concept known as privity of contract acted to bar a lawsuit by a plaintiff who did not have a contract with the architect. The logic behind this grew out of the English common law inclination to encourage economic development during the Industrial Revolution. It was a theoretical legal device that made liability commensurate with the contractual acceptance of risk.

As with many rigid rules, privity resulted in abuses. The law began to change in areas unrelated to architects, and lawsuits between non-contracting parties began to be permitted to prevent obvious injustices. Finally, in a series of cases in the 1950s, injured construction workers and members of the public brought suit alleging professional negligence on the part of architects. Given the trend in the law, courts could see no given reason to treat architects any differently than other defendants. They did not dismiss the suits, even though no contract existed between the parties, because the plaintiffs had suffered bodily injuries. However, cases involving only economic loss were still barred by the absence of a contract between the plaintiff and the architect.

Mr. Kornblut is a registered architect and practicing attorney in Washington, D.C.

In the early 1970s, the courts began to consider claims for economic loss

Specifically, they began to question the distinction between bodily injury (or death) actions and those involving economic loss. This diminished architects' ability to rely on the terms of professional service contracts with clients to determine their obligations. Unlike bodily injury claims which could be controlled somewhat by appropriate contract disclaimers about project safety responsibilities, claims by contractors and others for economic losses could arise out of every aspect of a project.

An early case resulting in an architect's exposure to suit by a contractor was decided by the Florida Supreme Court in 1973. In *Moyer* v. *Graham,* the court decided that the degree of control which an architect exercises over a contractor requires an architect to perform his functions without negligence insofar as they affect the contractor. The court ruled that a general contractor could maintain a direct action against an architect even when there is no direct contract between them. Because the court did not restrict the contractor's recovery for economic loss to the procedures set forth in the construction contract—change orders, extensions of time, and so forth—the contractor now could challenge the architect directly for alleged negligence if it became economically burdensome for the contractor to perform the construction contract.

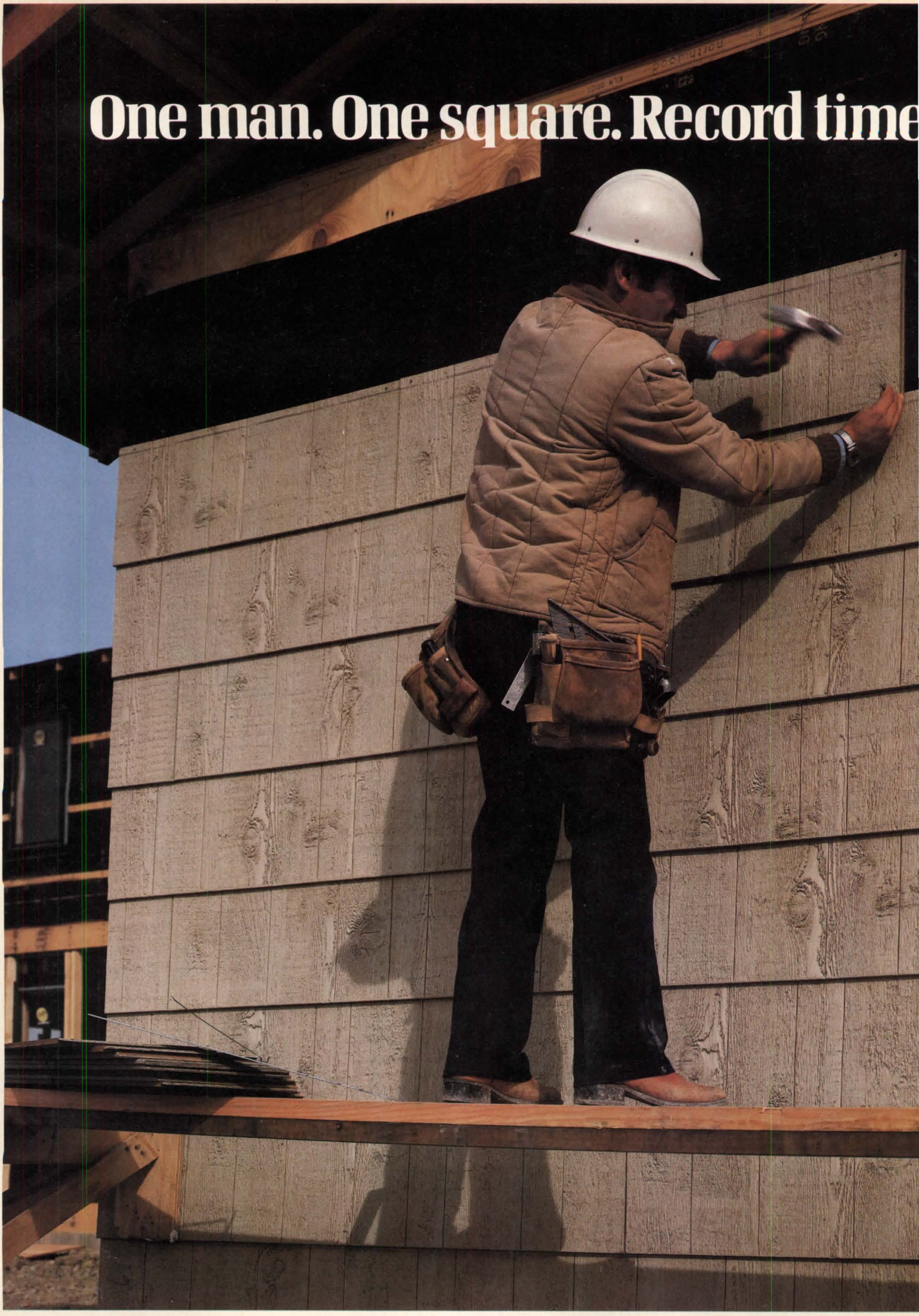
In 1976, a California appellate court permitted purchasers of condominium units to sue an architect, among others, for the cost of repairs due to defective workmanship (*Cooper* v. *Jevne*). Even though there was no contract between the parties, the court ruled that the architect had a duty extending to the purchasers of the condominium units to use reasonable care in the performance of professional services. The court said . . . "the architects must have known that the condominiums they designed and whose construction they supervised were built . . . for sale to the public and that purchasers of these condominiums would be the ones who would suffer economically, if not bodily, from any negligence by the architects in the performance of their professional services."

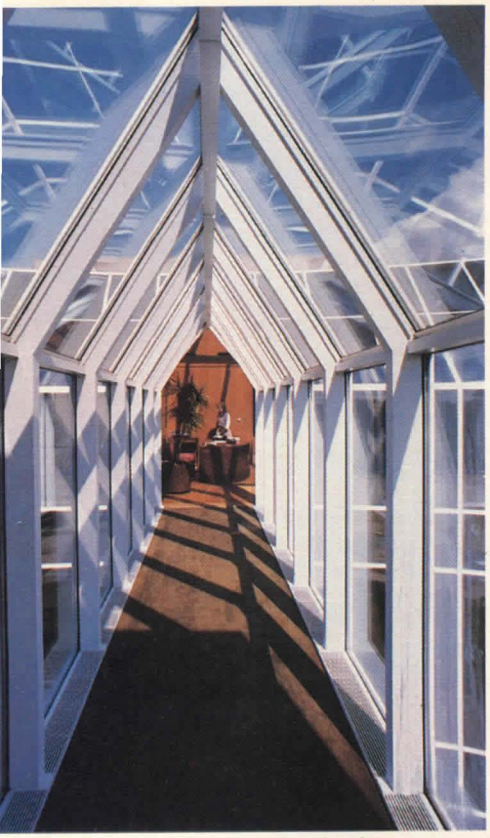
The key to this decision: the professional responsibility not to be negligent

As in the earlier Florida case, the court concluded that the architect had a duty to use care (i.e., not be negligent) to prevent any reasonably *foreseeable* injury or damage. Again, the court expanded the architect's liability to any *foreseeable* plaintiff, irrespective of the architect's duties as set forth in his contract with the client.

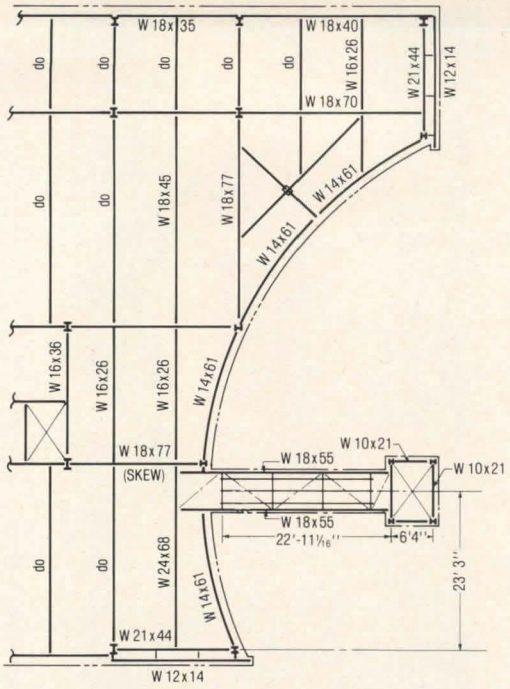
An even more recent case was decided by a North Carolina appellate court in 1979. (*Shoffner Industries* v. *W. B. Lloyd Construction Co.*) In this case, a general contractor was permitted to counterclaim directly against an architect. The contractor claimed he installed trusses in a workmanlike manner but that the architect's negligence in approving defective materials resulted in substantial additional costs. The architect denied he had any legal duty to the contractor because no contract existed between them. The court disagreed and permitted the contractor to sue the architect for extra costs which might have resulted from the architect's negligence. Calling the architect's contract with the owner an "incidental fact," the court would not let that contract negate the architect's responsibility when he engages in affirmative conduct affecting third parties.

In each of these cases, the courts were willing to expand an architect's liability exposure because the facts suggested that the defendant architect should have foreseen the consequences of his actions. The difficulty with this line of reasoning stems from the reality that architects need some objective device with which to determine their duties; typically, the professional service contract has served this purpose. If the courts are going to ignore the scope of an architect's contractual duties, and any limitations thereof, the mere threat of a lawsuit by any third party who might be adversely affected in any manner by the architect's performance of professional services may well chill the ability of architects to act in their clients' best interests.

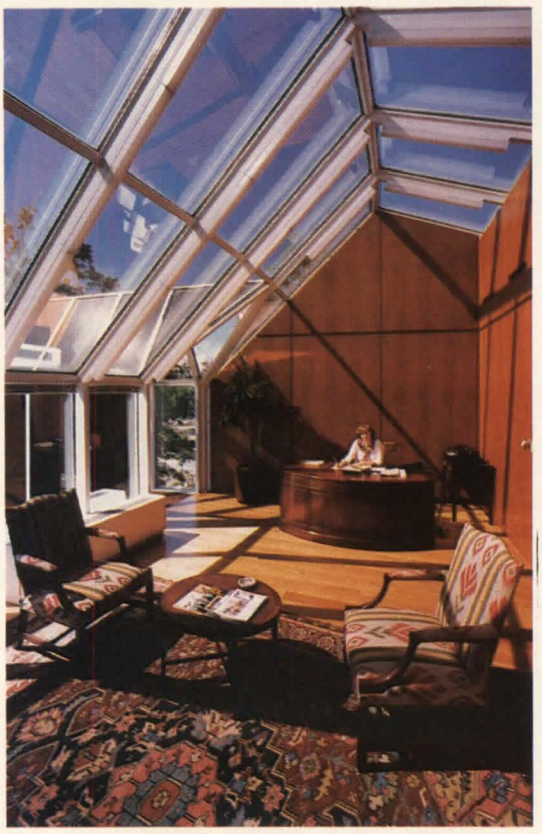

One man. One square. Record time



A steel-framed pedestrian bridge (above) connects the free-standing elevator tower to the garage, ground, and third levels. The concave facade (left) emphasizes the entrance and preserves as much of the landscape as possible.



Framing plan for the third floor and pedestrian bridge to the elevator. The contractor reported, "Time was a key factor. We saved two to three months by selecting steel framing in lieu of concrete."



Intersection of the pedestrian bridge and the third level.

In the final evaluation made by the construction manager, Louis Lee, Inc., structural steel proved to be the least expensive framing method. The engineers explained, "Steel framing proved to be more efficient because we were able to minimize the construction depth of the floors by using shallower beam depths."

The structural system

The structural system consists of a roof and the three steel-framed floors. The design is based on a nine-foot module. A ramped, underground garage provides parking for 60 cars.

The floor system is composed of a 2½-in. concrete topping poured on a 2-in.-deep composite steel floor deck, supported on structural steel filler beams. Lateral loads are resisted by X-bracing provided in the elevator shaft walls and in the stair walls of the building.

Two types of torsional considerations are involved. First, the exterior face of the stone cladding on the north, west, and south faces is 2 ft. 3 in. outside of the column centerlines. Second, the curved edge beams at the east face are subjected to torsional loading.

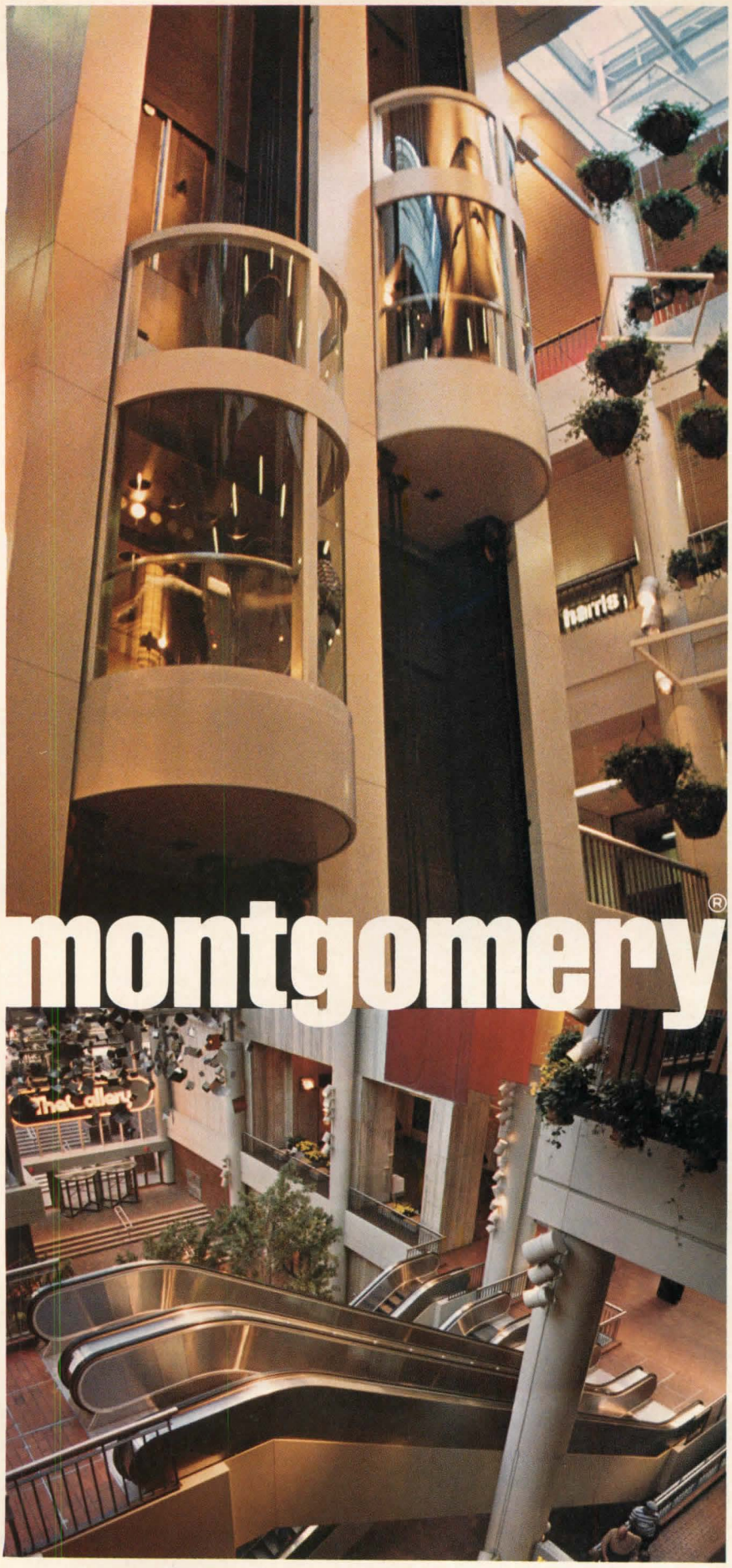
On the curved face, the curved edge beams are restrained from excessive rotation by the use of additional supports. The spans of the curved beams are limited to 21 ft.

The stone cladding, interrupted by a glass panel at each level, is supported by a continuous lintel, hung from the floor above by hanger angles spaced at a maximum of 4 ft.

Preliminary framing analysis available

Let us help you determine the most economical steel frame for your next building. Our District Office Sales Engineer and Home Office Buildings Group can provide you with a detailed budget cost study on the total framing system package. There's no fee or obligation involved.

Our Sales Engineer will be happy to give you more details on this program or on any of the other technical services we offer. You can get in touch with him through the Bethlehem Sales Office nearest you. Bethlehem Steel Corporation, Bethlehem, PA 18016.



ARCHITECT: BOWER & FRADLEY, PHILADELPHIA OWNER: REDEVELOPMENT AUTHORITY OF THE CITY OF PHILADELPHIA

Montgomery elevators and escalators move people at The Gallery Market Street East.

Aiding in the rebirth of downtown Philadelphia, the Rouse Company's new development, The Gallery at Market Street, presents a unique shopping environment.

Twelve Montgomery escalators and two glass enclosed Montgomery elevators move shoppers swiftly, safely and economically between the different levels that house over 125 boutiques, shops, restaurants and the major department stores.

The elevator and escalator installations blend into the mood created by earth tones in the walkways, trees, shrubbery and hanging plants throughout the mall.

Montgomery offers total capability in design, production, installation and maintenance of the equipment to move people anywhere, anytime.

Montgomery moves people.

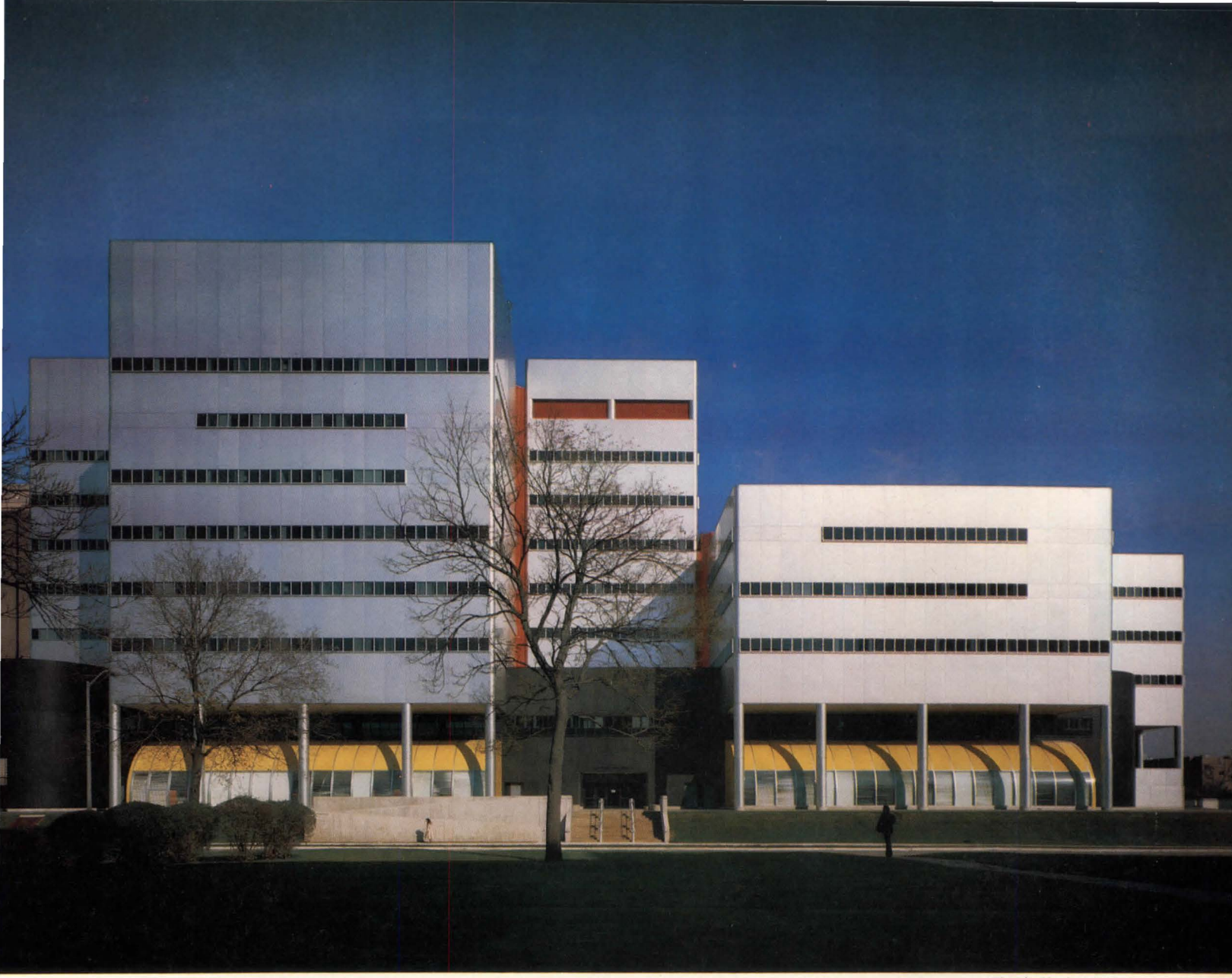
montgomery®

ELEVATORS/ESCALATORS
POWER WALKS & RAMPS

MONTGOMERY ELEVATOR COMPANY, MOLINE, ILLINOIS 61265
MONTGOMERY ELEVATOR COMPANY, *LIMITED*, TORONTO, ONTARIO M9B3S5
OFFICES IN PRINCIPAL CITIES OF NORTH AMERICA.

montgomery moves people

Circle 69 on inquiry card

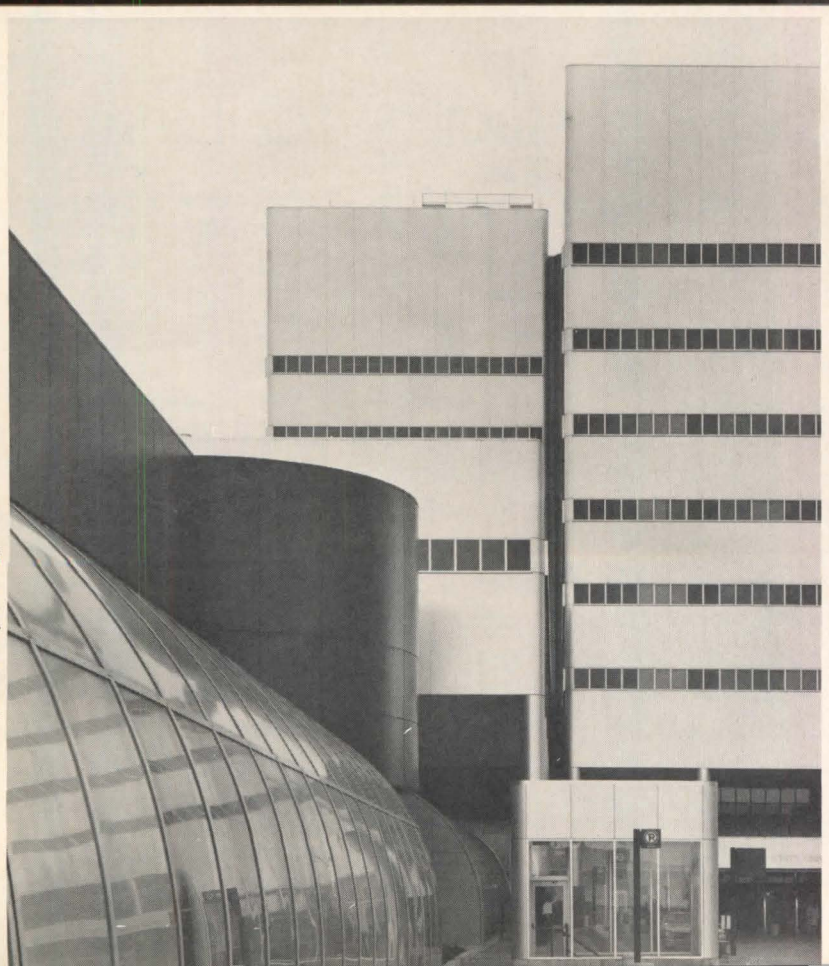


©Timothy Hursley/B. Korab Ltd.

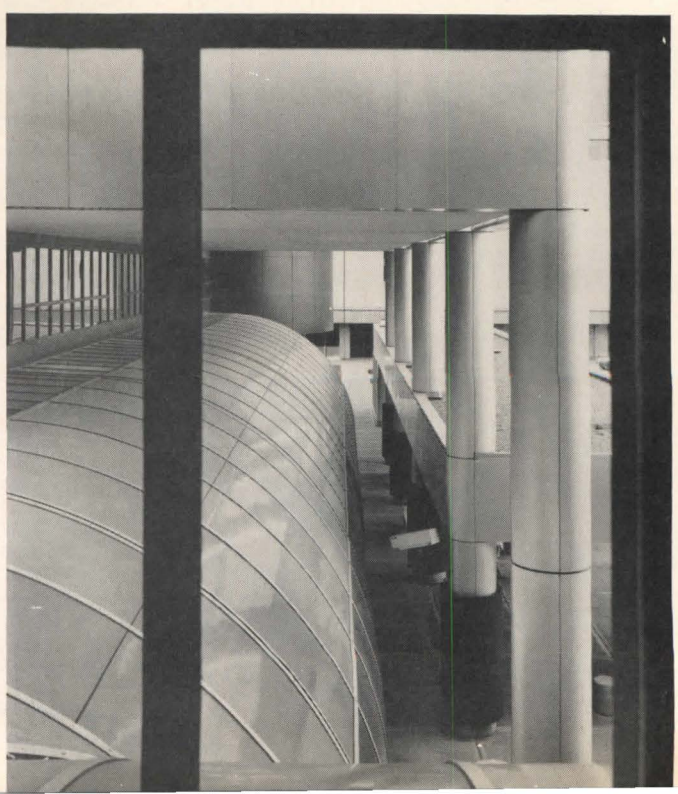
A major new health care facility for Detroit: an efficient machine designed with compassion

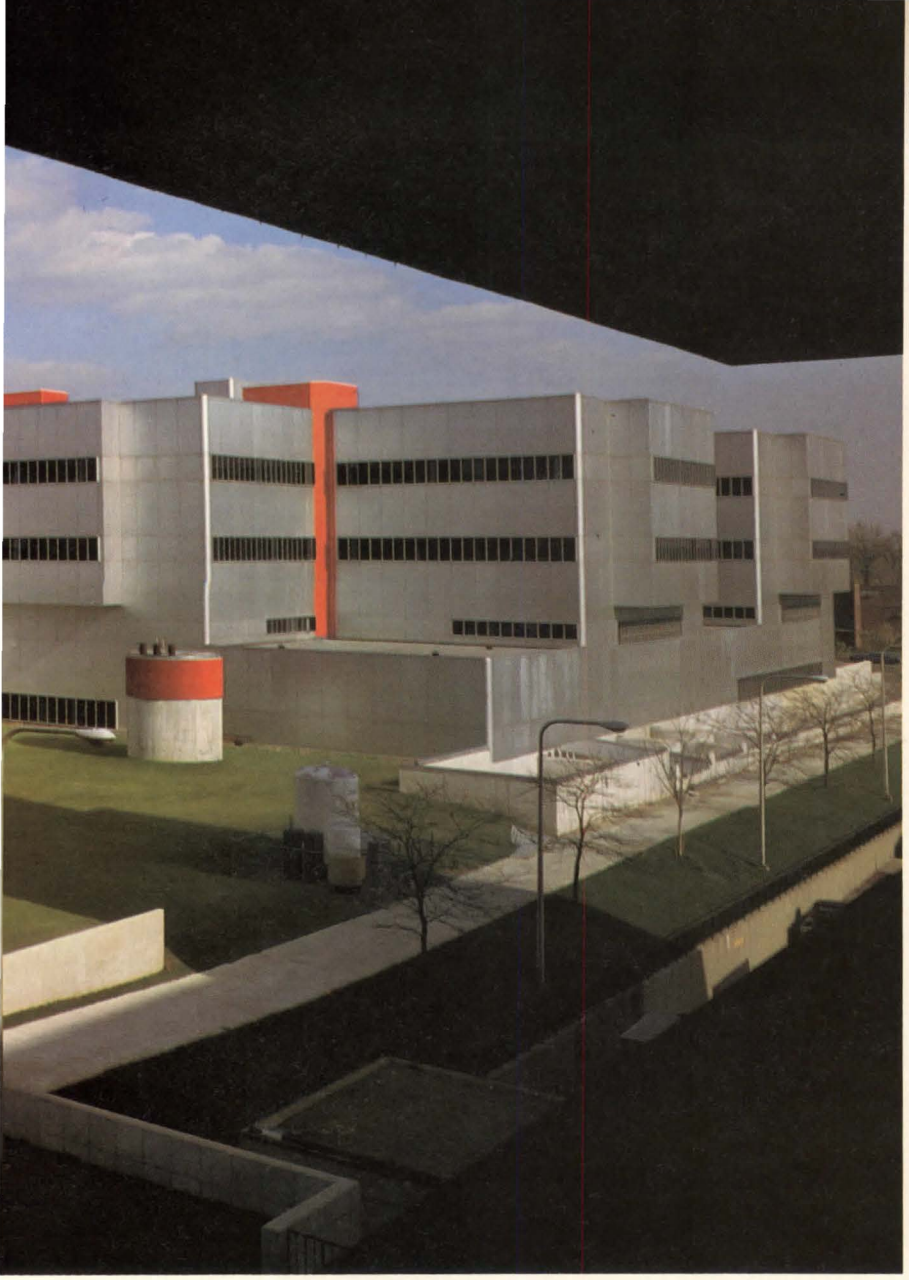
Like any large institutional building a hospital must operate on two levels: it must function as an integrated whole and as a collection of subsidiary autonomous parts. There are intrinsic problems of scale, size, circulation; and how fluently the various parts will relate to the whole. And with health care facilities there is an added mandate for design flexibility to accommodate rapid changes in technology, the vicissitudes of community need, and to ensure against early obsolescence.

William Kessler, in joint venture with the Zeidler Partnership and Giffels Associates, has spent seven years on the $125-million Detroit Receiving Hospital/Wayne State University Health Care Institute. His work represents not only a rare acumen for satisfying the programmatic needs of the local medical profession but also an astute sensitivity to the physical and psychic comfort of patients and staff. This sleek, modern facility is an impressive architectural success—combining the functional utility of an efficient machine with a compassionate awareness of the people who will use it. —*Charles K. Gandee*



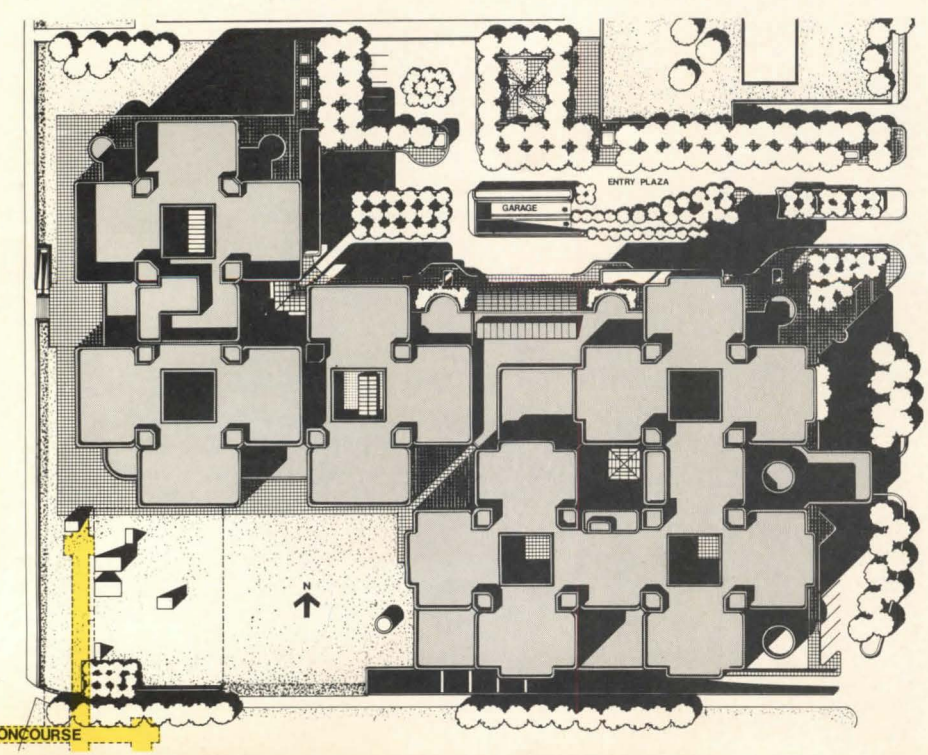
Giant concrete pyramids function as periscopes and light wells for an underground tunnel system connecting the various hospitals in the complex. The large black anodized aluminum cylinders serve as air intakes for a 630-car underground garage and the hospital. The yellow vaults serve to visually bridge the distance between building and site.





©Timothy Hursley/B. Korab Ltd.

The over-all design concept is based on a repetitive cruciform with atrium/light wells at each center and four vertical mechanical shafts per cross. This allows a maximum lighting perimeter for an essentially horizontal structure and allows the clusters to receive their orientation from the atriums.



Architect William Kessler—working in joint venture with Zeidler Partnership and Giffels Associates—has added a new clinic and hospital facility to a major health care complex in Detroit, Michigan. When fully operative this month, the combined new buildings—the Detroit Receiving Hospital and the Health Care Institute of Wayne State University—will serve as the focal point for the complex and the receiving axis from which patients will be referred to appropriate treatment.

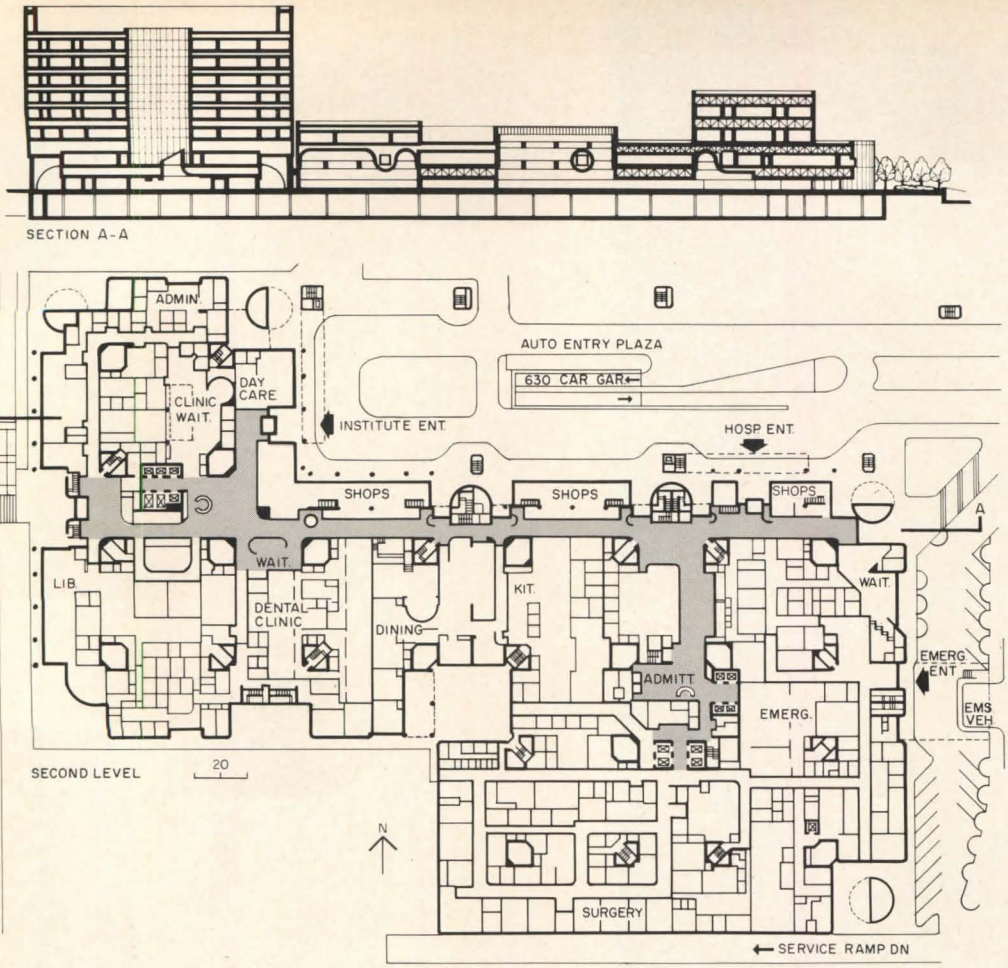
The new construction brings to seven the number of important public and private health care institutions which comprise the Detroit Medical Center complex. A sprawling urban facility physically overwhelming in size and intimidating in scale, it is a built indicator of the serious health care needs of the Detroit Community. Each of the original five hospitals contained in the center specializes in a particular form of care to avoid duplication of services. But in so vast a complex the need for organized centralization becomes evermore pressing. In 1972 the State of Michigan commissioned the Health Care Institute of Wayne State University as an outpatient clinic/teaching facility that would serve 550,000 patient visits annually and consolidate all outpatient services formerly provided by the five-member hospitals. At the same time, the City of Detroit requested an additional 340-bed hospital facility geared toward all emergency-trauma inpatient care. This became the Detroit Receiving Hospital.

The two facilities share their site and exchange services

The Hospital and the Institute have been placed on the same site and connected to each other on the first three levels. This connectedness allows for not only the economy of shared construction costs, but by symbiotically joining the two buildings certain expensive equipment and facilities can be shared; consequently the buildings have been built for less and to a lesser degree. For example, the Hospital provides all of the food services (because they must feed patients) and the Clinic provides all clinical laboratories. This aggregation around expensive services and neutral common spaces is an especially impressive coup when considering that the architects were working with two clients—not only a state but a city government.

Aluminum skins, brilliant in the sunlight, contrast effectively with the brick veneer of surrounding hospitals

To serve as a visual counterpoint, and to underplay the size of his two buildings, architect Kessler has used five-foot-wide aluminum panels. The aluminum is punctuated at intervals by bright orange-red porcelain-finished panels which again offset the massing and in practical terms designate, alternately, either vertical mechanical distribution ducts or stairwells. On an open lawn in front of the clinic, enormous concrete pyramids and black anodized aluminum cylinders (photo left) stand like existential sculpture. These objects serve both an esthetic and a practical end. The cylinders are air intakes for a 630-car



The entrance to the hospital opens onto a galleria leading either to the clinic or the hospital admitting desk. The floor is a bright red-orange ceramic tile and the ceiling a brilliantly reflective striated aluminum. The ceiling wraps sinuously around cylinders (see section above) leading from interior stairways to the stairways on the perimeter. Along the galleria, hospital related shops create a festive and friendly activity center.

underground garage and for the hospital. And the pyramids are combination periscopes and light wells serving an underground concourse (see page 90) that connects the various hospitals in the complex.

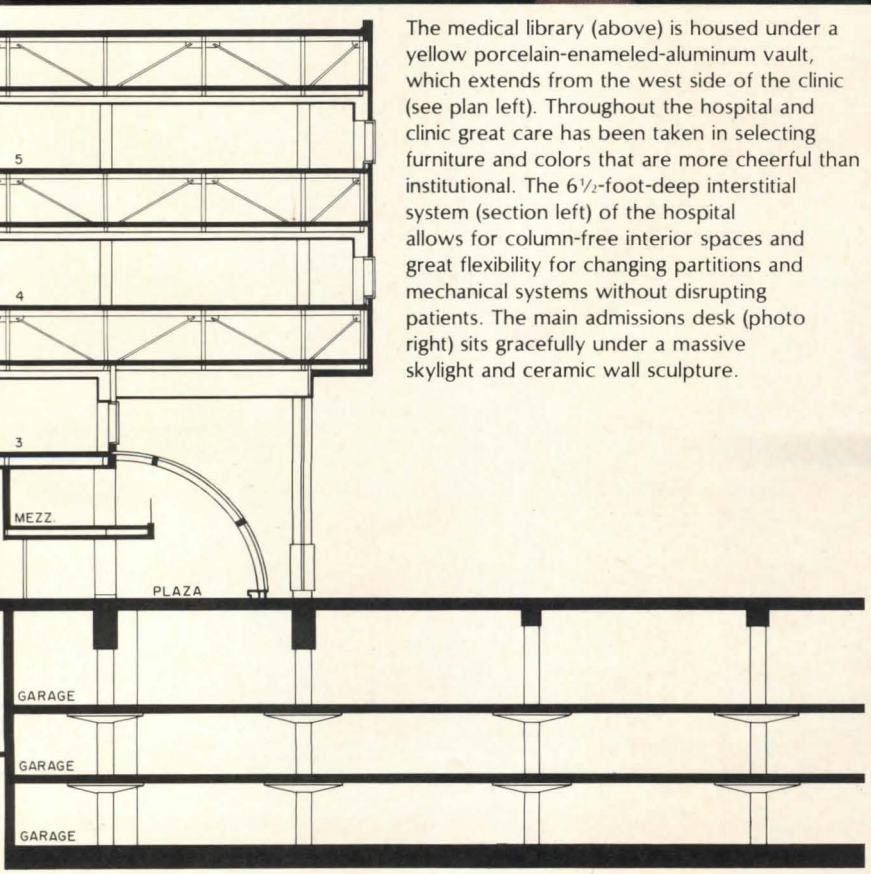
Along the main entrance bright yellow vaults extend out from the building and contain hospital related shops and commercial services. The hospital leases these spaces to a developer and the result is a pleasant shopping arcade along a galleria leading off the main entrance. On the exterior the yellow vaults serve to visually bridge the distance between the building and the ground, reducing the scale and making the building more inviting and accessible. Along the interior the shops, with their familiar air of commercialism, help to de-mystify the institutional character of the hospital by relating to the street and the street life. The yellow vaults, a bright red-orange ceramic tile floor, and a sensuously curving aluminum striated ceiling (that wraps around cylinders which connect interior stairs to the outdoors) create a festive welcoming atmosphere for the hospital entrance.

The architects chose a low-rise courtyard scheme to stay in scale with surrounding buildings and maximize daylight

The Hospital and the Clinic encompass almost 900,000-square-feet. In order to relieve the massing of so vast a structure, and to maintain an appropriate scale, Kessler has devised a cruciform parti. The Hospital and Clinic are constructed around six 48-foot-square atriums with space pods branching out from each corner and four vertical shafts (marked on the exterior by red-orange porcelain); the result is a cross form with a void center. The courtyard plan allows the building to be lower and still have maximum lighting perimeter. The more common alternative would have been to organize the space vertically with less area per floor, producing a hospital tower—a shape which accentuates size and thereby becomes a more formidable presence on the site. The horizontally massed courtyard scheme Kessler chose, however, is effective not only because of its reduced height but also because it makes it possible to direct all primary circulation around the atriums and sunlight. This plan has the additional benefit of welcoming pedestrians leaving elevators—and moving in any direction—with natural light; an improvement upon the dark linoleum corridors of yesteryear.

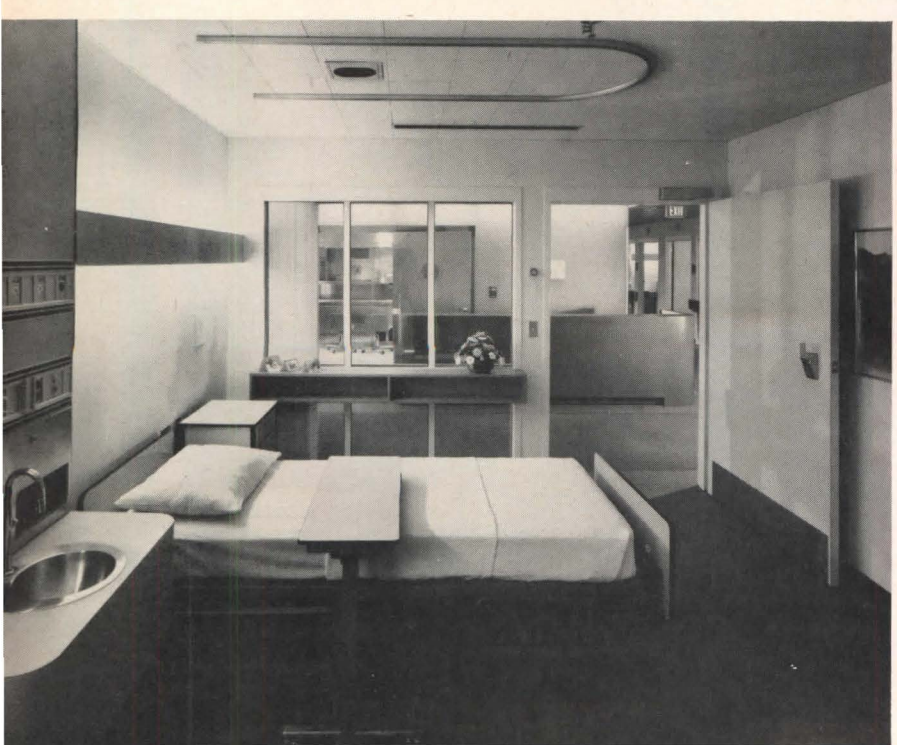
The waiting rooms and lounges are along the perimeter of the atriums and function as part of the corridor system—this allows for open freer interior spaces that have expanded unobstructed extensions; and again sunlight is welcomed in.

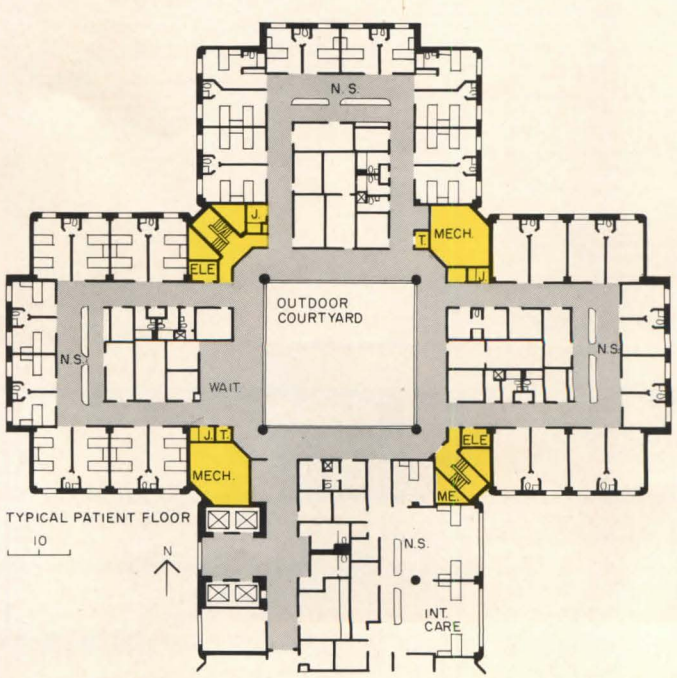
The architects have taken great care to create spatial interest and definition with light and an open circulation pattern. The patient rooms are placed along the exterior walls of the individual clusters, to open views to the outdoors. And the interior (corridor) walls of the rooms are glass (with vertical blinds for privacy) to let natural light pass through the rooms into the corridors and to allow the



The medical library (above) is housed under a yellow porcelain-enameled-aluminum vault, which extends from the west side of the clinic (see plan left). Throughout the hospital and clinic great care has been taken in selecting furniture and colors that are more cheerful than institutional. The 6½-foot-deep interstitial system (section left) of the hospital allows for column-free interior spaces and great flexibility for changing partitions and mechanical systems without disrupting patients. The main admissions desk (photo right) sits gracefully under a massive skylight and ceramic wall sculpture.

Patient rooms are clustered in cruciforms around atriums filled with sculpture that serve as orientation devices and to welcome natural light. Glass partitions replace solid walls along interior corridors, to open views of hospital activity. Lavatories are shared between adjacent rooms, with sinks placed between beds for easy access.





patients to watch the corridor activity if they choose, thereby reducing for some the sense of isolation often felt in hospitals. For economy each patient room shares a lavatory with the adjacent room; for convenience sinks have been placed in the rooms between the beds for easy access by both patients and staff. Because the plumbing facilities are on the partitions between rooms, the corridor partitions could be of glass. The patient room exterior windows are flanked by wardrobes which create a small private alcove for visitors. And the windows are just 14 inches from the floor to facilitate more expansive views from beds.

The same sensitivity to the comfort and convenience of patients has been carried to the examination/consultation rooms. These small rooms, 12 feet square, are divided in half by freestanding partitions: one side contains the physician's desk and the other side serves as examination space. This plan screens the examination paraphernalia from the patient and allows for a more comfortable consultation. All examination/consultation rooms have exterior windows with indirect lighting from the top of the cabinets.

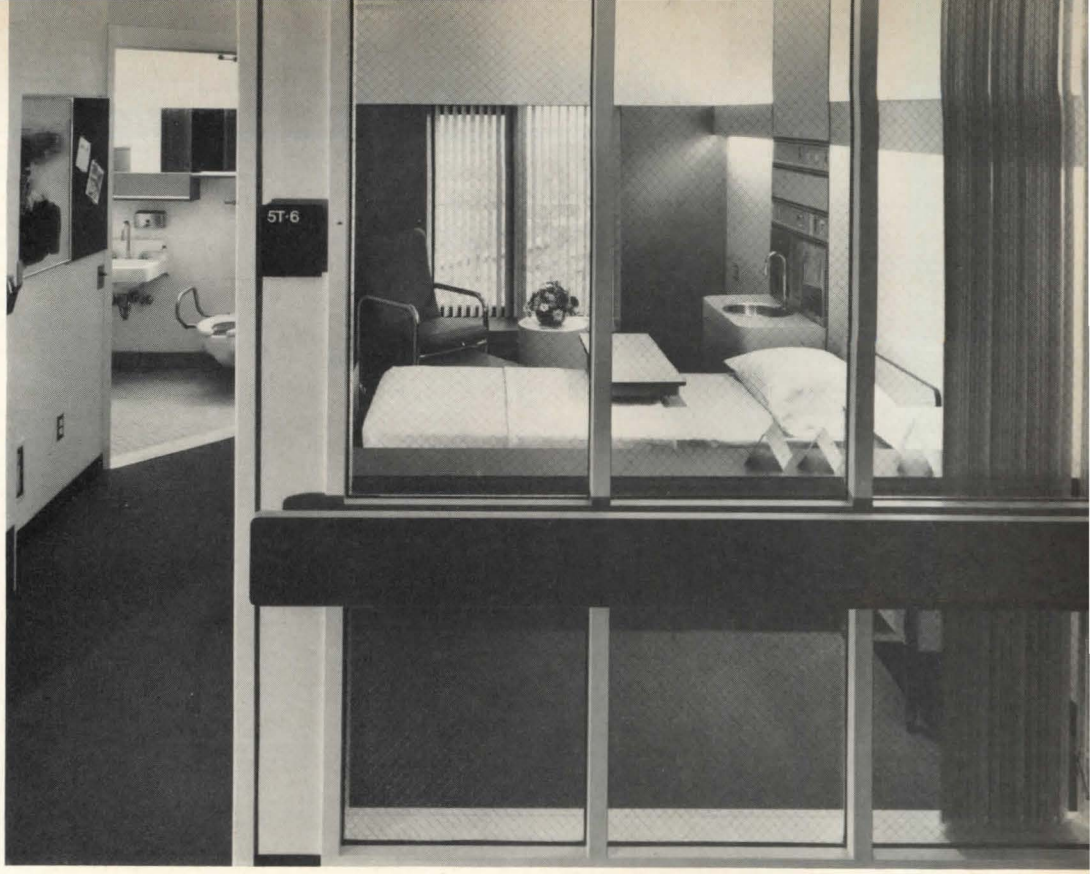
The individual cluster/pods around the courtyards replace the more conventional wards of more traditional hospitals. Patients can relate to the scale and the dimensions of their own area: the openness of the individual rooms and the light filled corridors, with views of atriums, create a pleasant friendly atmosphere. Although the hospital is large (340 beds), the private realm of the patient is small and (the architects hope) personal.

The architects have used color and artwork to brighten the interiors

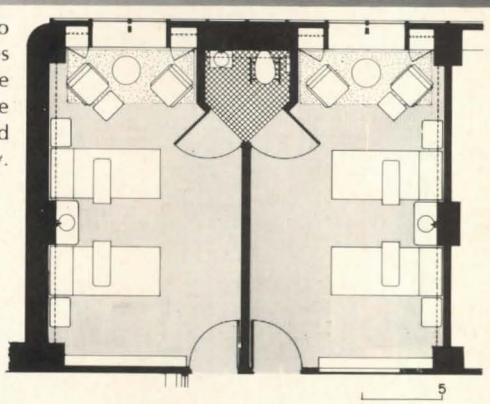
The six courtyards each contain large pieces of sculpture, specially commissioned for the hospital, and paid for by the building authority and volunteer fund raisers. The windows around the atriums not only open views to the sky and the sculpture within but give a cross section of the other floors with their brilliantly colored furnishings against a backdrop of hospital activity.

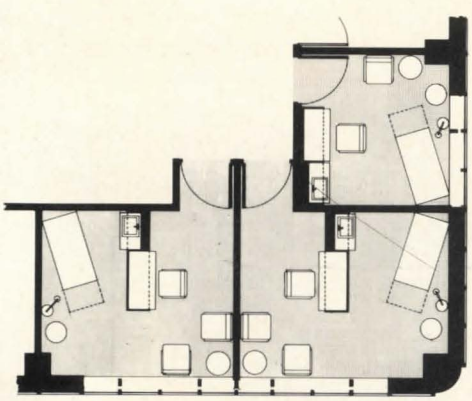
Structurally, the two interlinked facilities are discontinuous

From the fourth level up the Hospital and the Clinic divide into two separate units—the Hospital reaching to five floors and the Clinic to nine. Kessler has used a 6½-foot interstitial system in the hospital for discrete access at any point. This system affords column-free spaces and allows for enormous flexibility without disruption of hospital functions. The interstitial system is of course expensive not only because of the wide spans but because it requires fireproofing, a sprinkler system, and lighting. But since it allows workers to move partitions and adjust and alter the mechanical system without interfering with patients, the benefits to the hospital were considered worth the cost. In the outpatient clinic, a more conventional system was used, necessitating columns and beams on a 25-foot grid and some deeper floor spaces to align the Clinic with the Hospital.

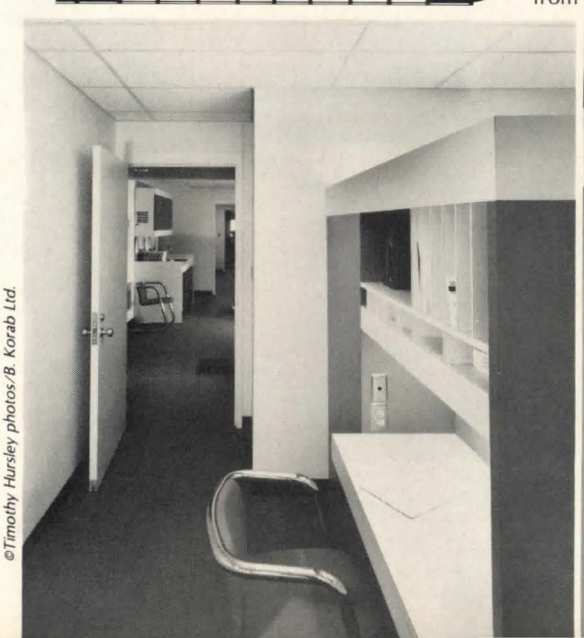


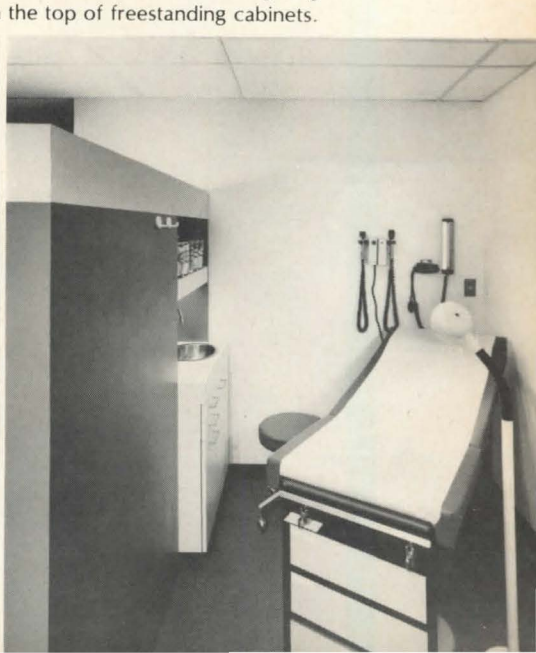
Windows are placed 14 inches from the floor to allow patients more expansive views. Wardrobes flank the windows to form a pleasant alcove for visitors. The glass partitions welcome daylight into the corridor or can be closed with vertical blinds for privacy.

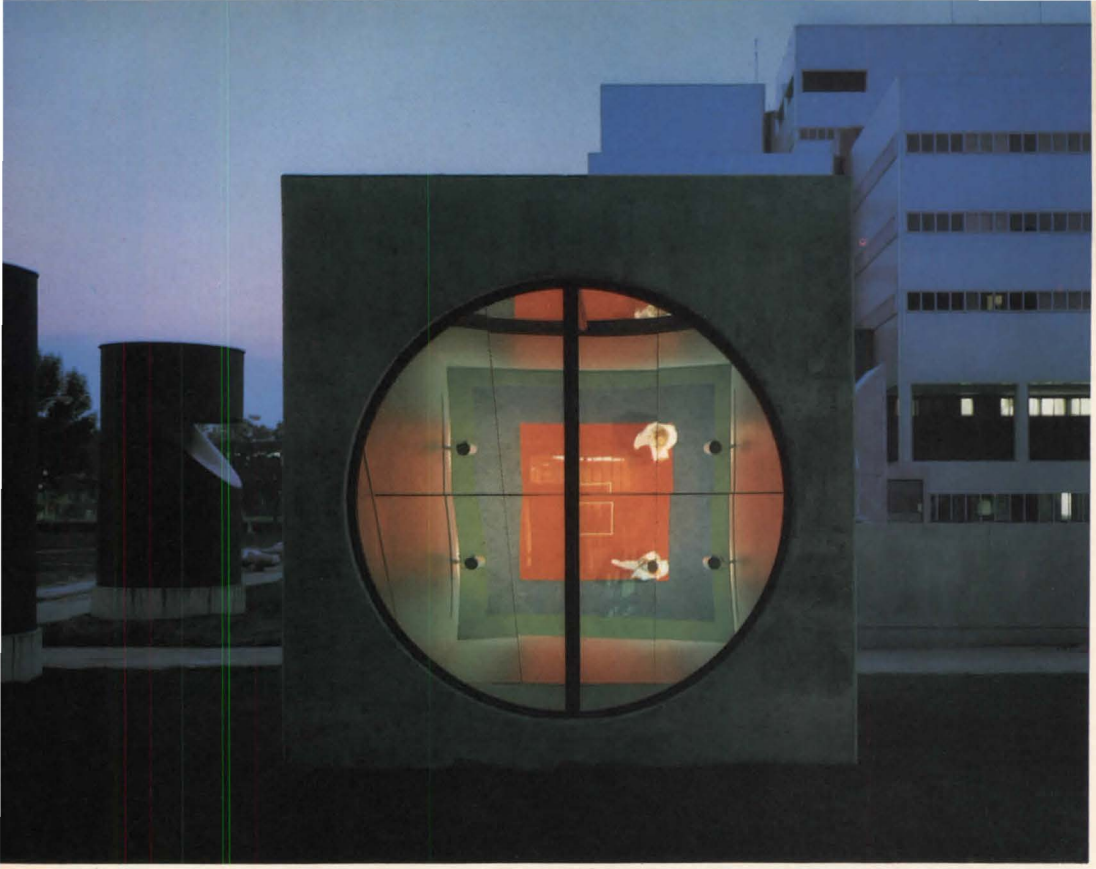




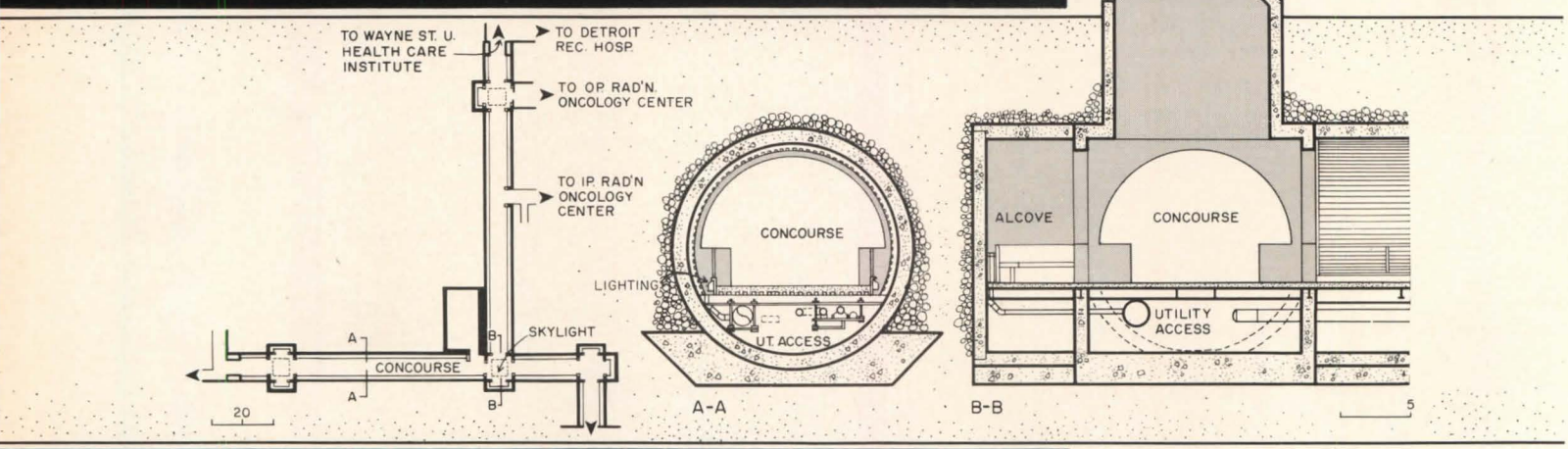
The examination/consultation rooms are 12-foot squares divided in half by freestanding cabinets: one side contains the physician's desk, the other serves as examination space. This design was felt to be more appealing to patients because it screens the examination paraphernalia. All exam/consult rooms have exterior windows with indirect lighting from the top of freestanding cabinets.





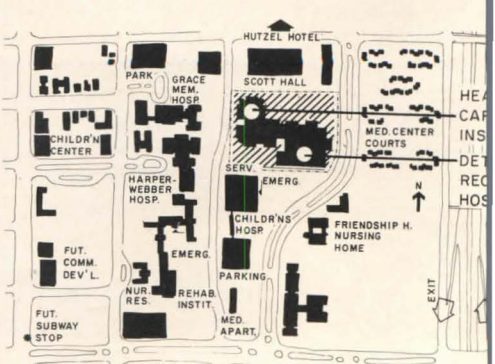


DETROIT RECEIVING HOSPITAL/WAYNE STATE UNIVERSITY HEALTH CARE INSTITUTE, Detroit, Michigan. Owner: *State of Michigan, City of Detroit, Detroit Medical Center Corporation.* Architects and engineers in joint venture: *William Kessler and Associates, Inc., Zeidler Partnership, Inc. and Giffels Associates, Inc. For William Kessler and Associates, Inc.—architect-in-charge: William H. Kessler; project designer: James A. Cardoza; project coordinator: Edward G. Rosella; project programmer: Robert H. Chapman; interior furnishings: Carolyn Howard/Kathleen Kelley. For Zeidler Partnership, Inc.—executive architect: Eberhard H. Zeidler; project architect: Thomas W. Gunn; project design coordinator: Harvey Levine; project programmer: Robert H. Jacobs; interior furnishings: Dian Bauer. For Giffels Associates, Inc.—project director: John M. Breed; assistant project director: John Urban; architectural engineering: A.V. Cornwall; mechanical engineering: George B. Davidson; electrical engineering: Fred L. Lantz; structural engineering: R.M. Patel; civil engineering: H.M. Baghdadi.* Landscape architects: *Elon Mickels and Associates.* General contractor: *Turner Construction Co.*



©Timothy Hursley/B. Korab Ltd.

The underground tunnel/concourse connects the hospital and clinic to the other facilities in the complex. This facilitates the movement of materials, patients, and staff without regard to weather conditions. Above-ground, pyramid-shaped periscopes serve to let sun into the underground passage and to orient pedestrians: as the mirrored periscopes reflect the building that the pedestrians are walking toward.
The concourse was constructed of 15-foot diameter precast concrete pipe with a steel and concrete decking for the walking surface. The ceiling is a brilliantly reflective striated aluminum painted five shades of blue. Lighting is directed upward to exploit the reflectivity of the aluminum.



Taisuke Ogawa

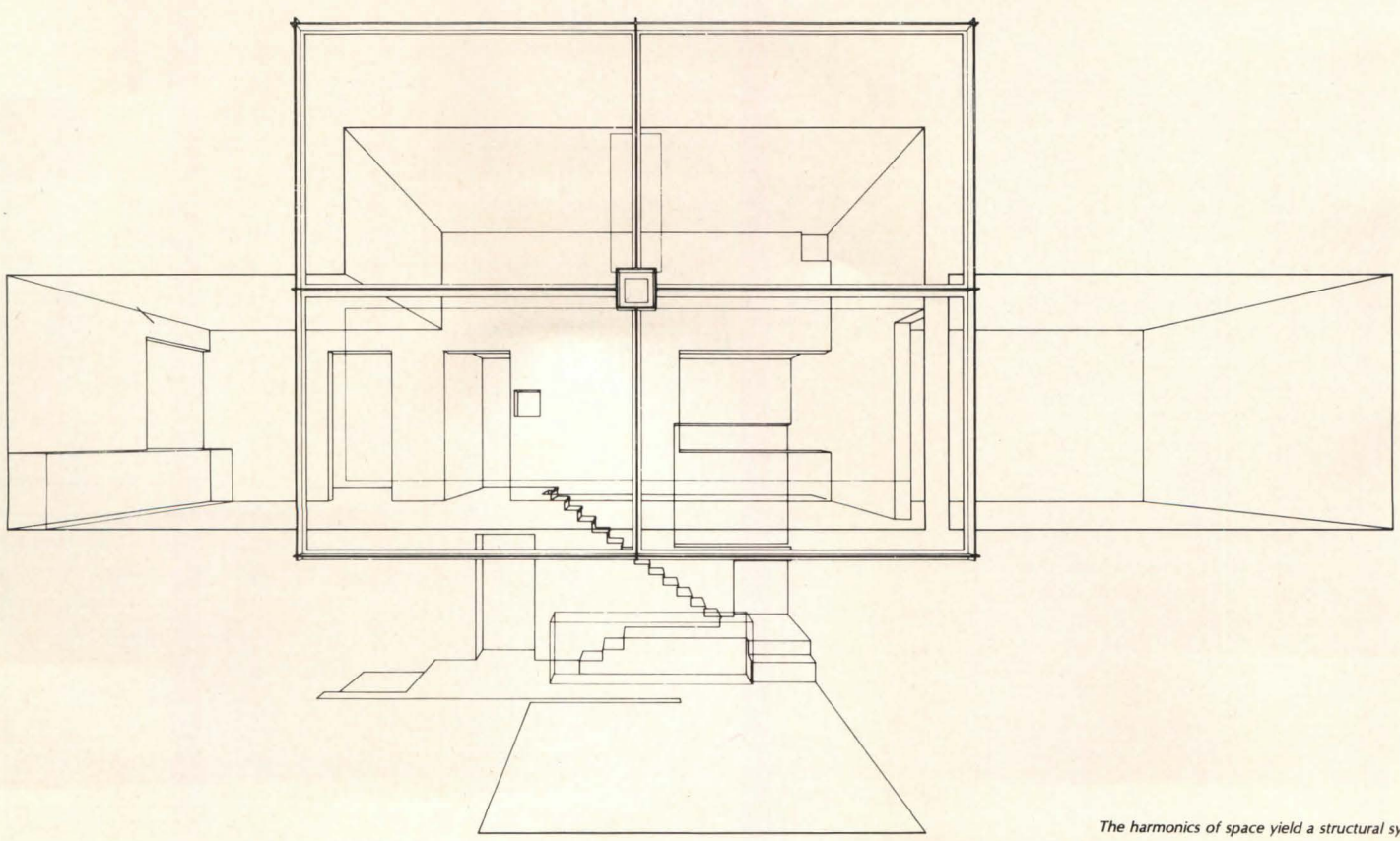
City house and country museum by Fumihiko Maki

Fumihiko Maki's architecture is the result of an extraordinary amount of introspection. Each building represents a search for answers to the questions raised not just by its site and surroundings, but by the cultural and symbolic qualities swirling about the creative challenge and by the groundswells of intellectual inquiry that constantly sweep through architecture—some of them stirred up by him. Recently appointed the Professor of Architecture at the University of Tokyo, and to be invested this June as an Honorary Fellow of the American Institute of Architects, he is today studiously reconnoitering his own propositions about "form" and "fit," and he is exploring further the thinking of others—historically, in the present period of comparative theoretical freedom, and in other fields of knowledge.

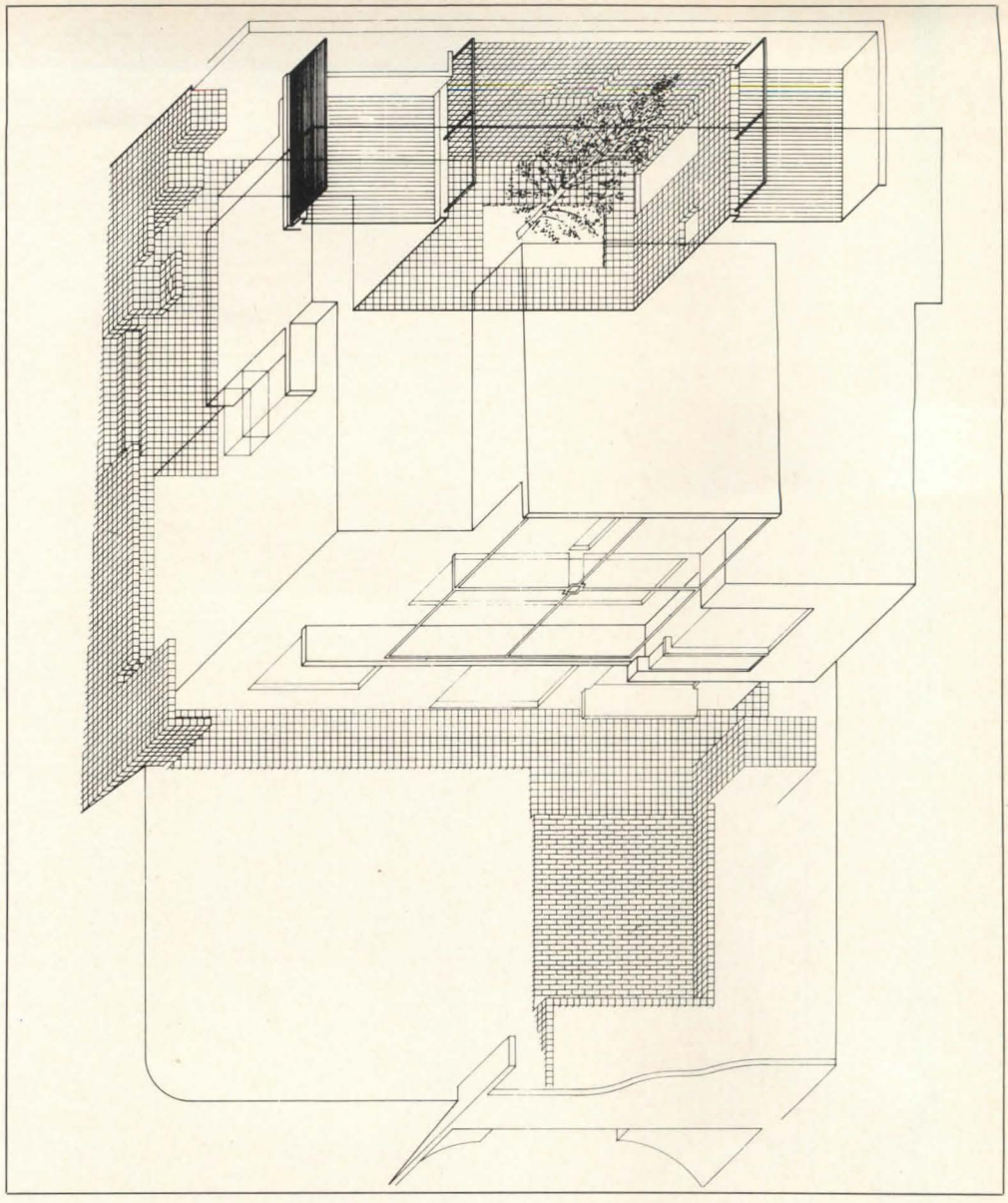
Maki was one of the original Metabolists, back in the early 1960s. He had returned to Japan after ten years of studying and teaching in the United States—at Cranbrook Academy, Harvard, and Washington University at St. Louis. But unlike some of his Japanese peers, he never completely accepted or espoused the Metabolist notion, with its technological and biological references, as a "new beginning" in architecture—as the one true, most timely depiction of the cycle of birth, growth, maturity, decay, death, and rebirth. Rather (see RECORD, August 1976), Maki's approach was calmer, quieter, seemingly controlled to the point of sobriety. The disciplinary tenets of modernism remained embedded in the work. Thus there has been force and counter-force in his work, a system of checks and balances.

text continued on page 100

Taisuke Ogawa



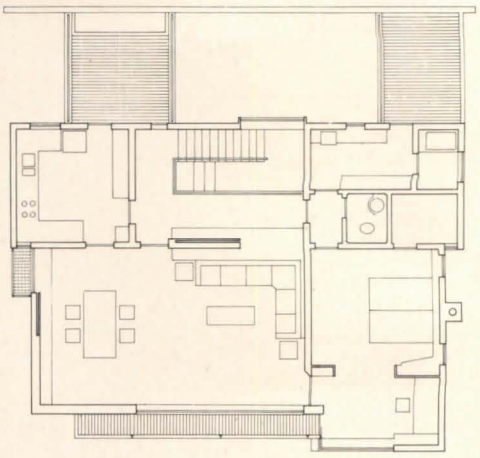
The harmonics of space yield a structural symbol

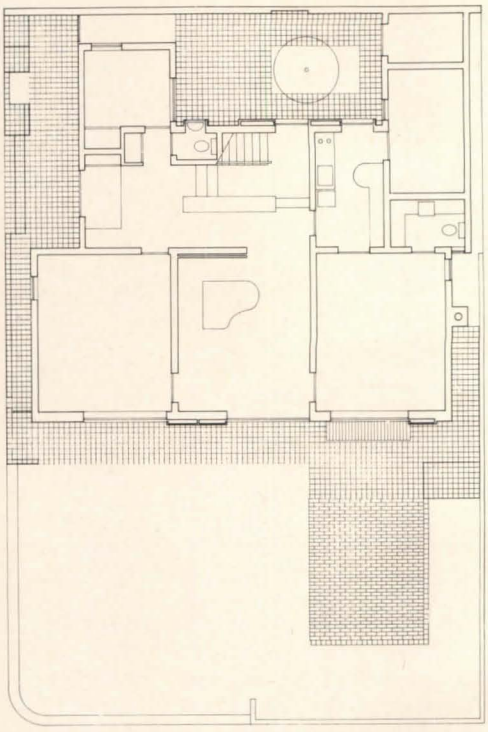


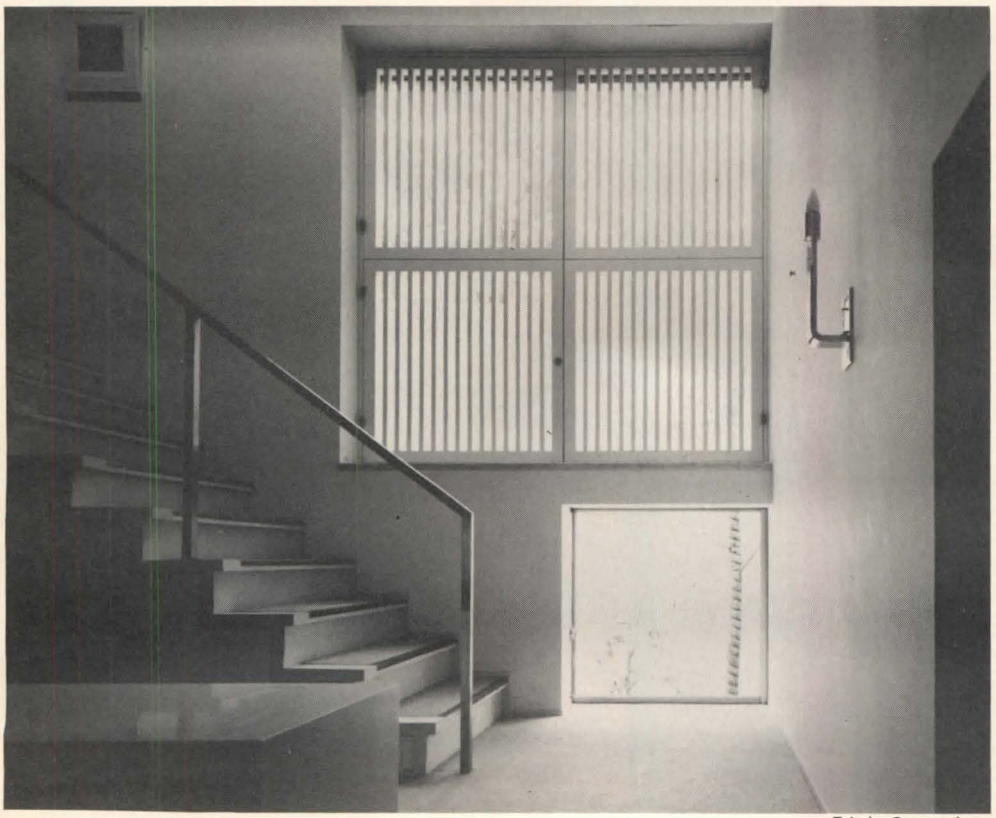
The Maki house interlocks with a hilly Tokyo site

The first house the architect has built happens to be his own. Completed in 1978, the two-story structure of reinforced-concrete, bearing-wall construction edges out to and up from the boundaries of the tight lot. Low walls of tile wed the subtle composition to the land, giving way to gentle steps up to the entrance (opposite, above). The space of the street, thus firmly reinforced by the richly textured formwork of the concrete, is of a piece with the shaded, recessed entrance; and from this elevation the building is like a strongbox, enticing us to open it. The key physical as well as symbolic element of the house is to be experienced on the south side (right, and drawing opposite, below), which opens to an intimate lawn next to a garage and machine shop that have been built on the site. This element is in the nature of spare cross-shaped members, which both comprise a deliberate reference to the idea and image of "house" and, by way of the horizontal member, hold sunscreens in place above the runs of window in the second-story living room. The upper reaches of this south elevation, penetrated by a single vertical window that is just behind and on axis with the vertical member of the cross, are finished with white-painted wood.

Osamu Murai





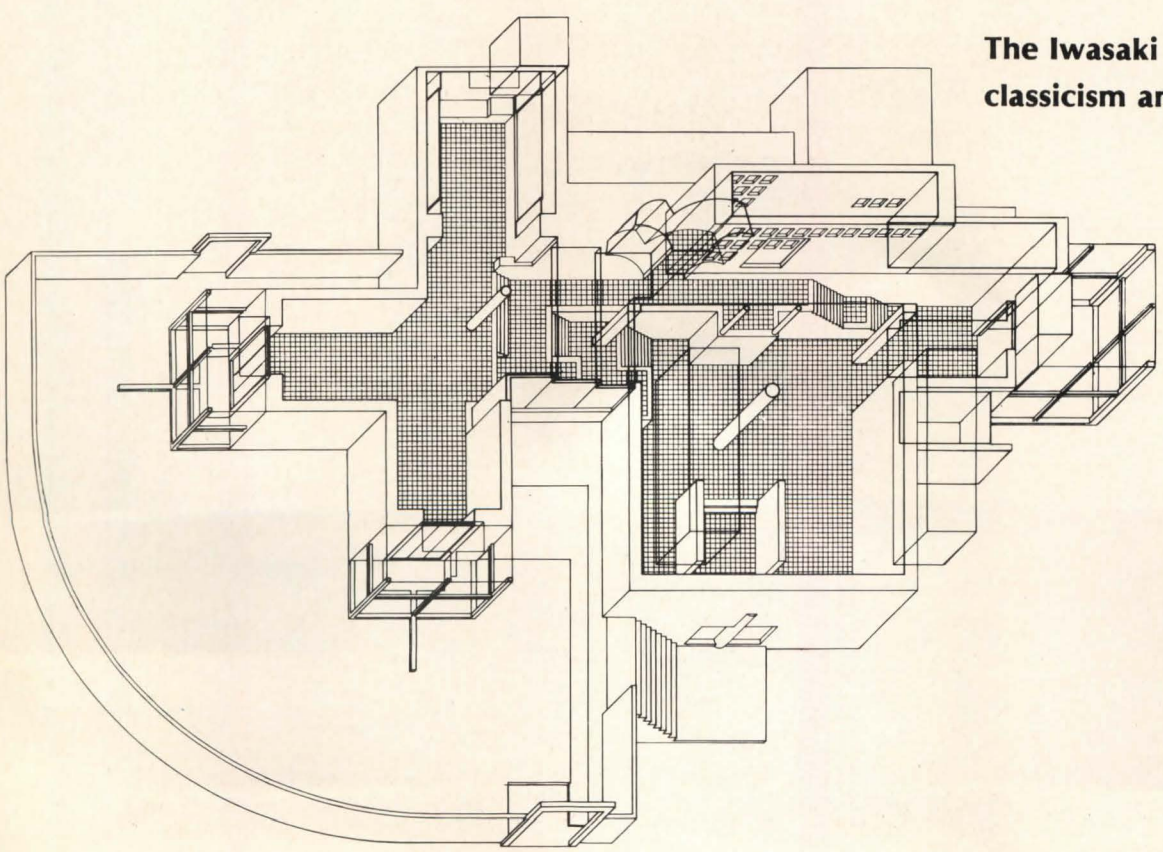


Taisuke Ogawa photos

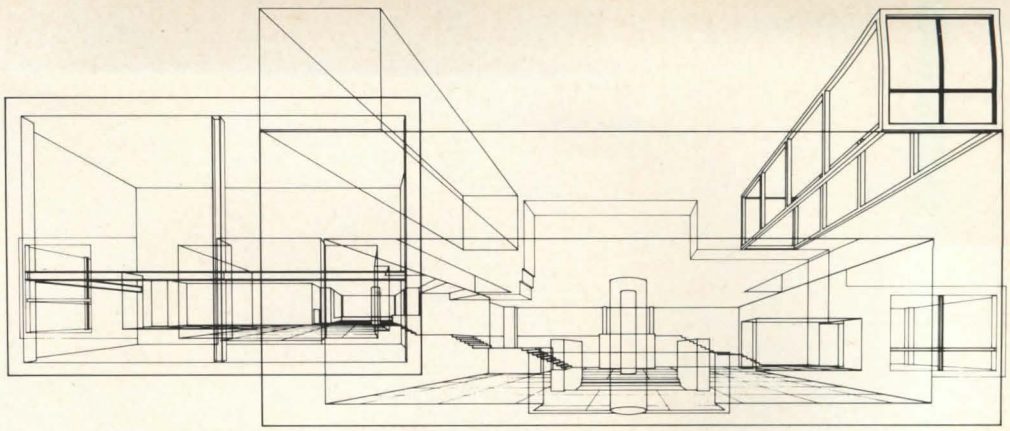
Osamu Murai

A medley of spatial experience begins with the enclosed courtyard on the north side of the house. Just inside, the stairway (opposite) is a dynamic and cleanly detailed little "room" in its own right. This area, lit both from the north courtyard and by a clerestory to the south, recalls the celebratory and symbolic importance placed on such key elements of circulation by such men as Wright, Kahn, Mackintosh, and Aalto—antecedents that Maki's scholarly interpretation of such examples respectfully welcomes. There are native antecedents of long lineage working in here too. Individual rooms—such as the family room and two flanking bedrooms along the south edge of the first floor—have their own identity but open to one another as in the traditional Japanese house. Recourse to "corridors," as they are thought of in the West, is eliminated and those spaces of circulation or connection (such as, again, stairway) take on an identity, an added dimension of use, and an esthetic worthiness of their own. Other, more apparent references to the Japanese tradition include the spare elegance of line and plane, the carefully cropped "partial view" to the outdoors, and the recurrent use of sunscreens that function to sift the light into various patterns.

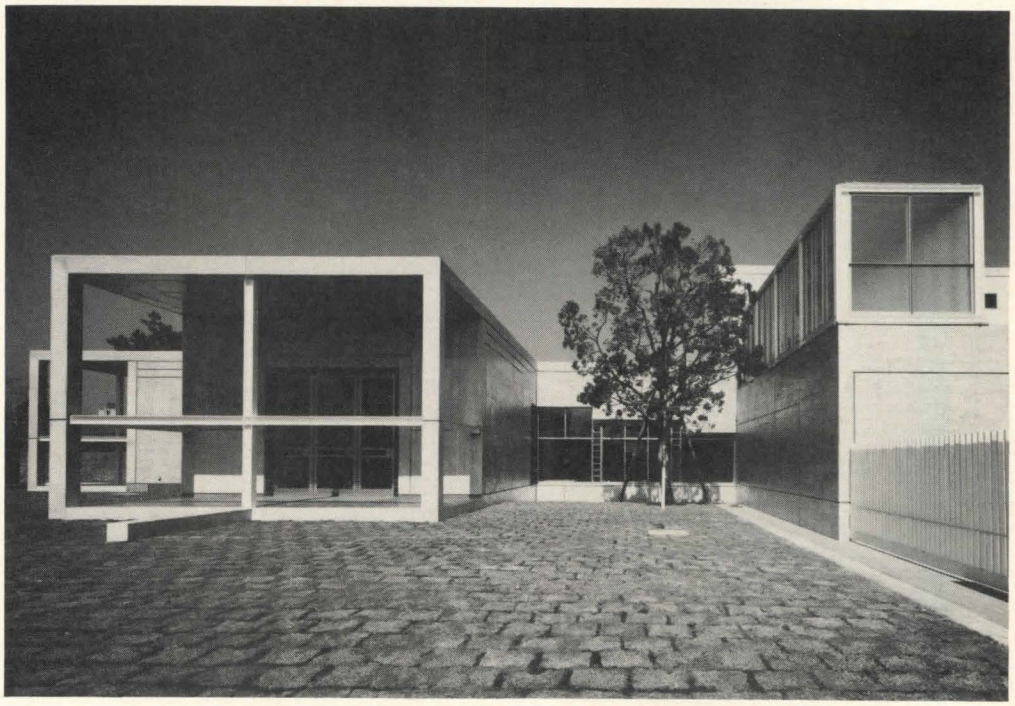
Osamu Murai photos



The Iwasaki Art Museum: a temperat
classicism amid a mild, rural climate

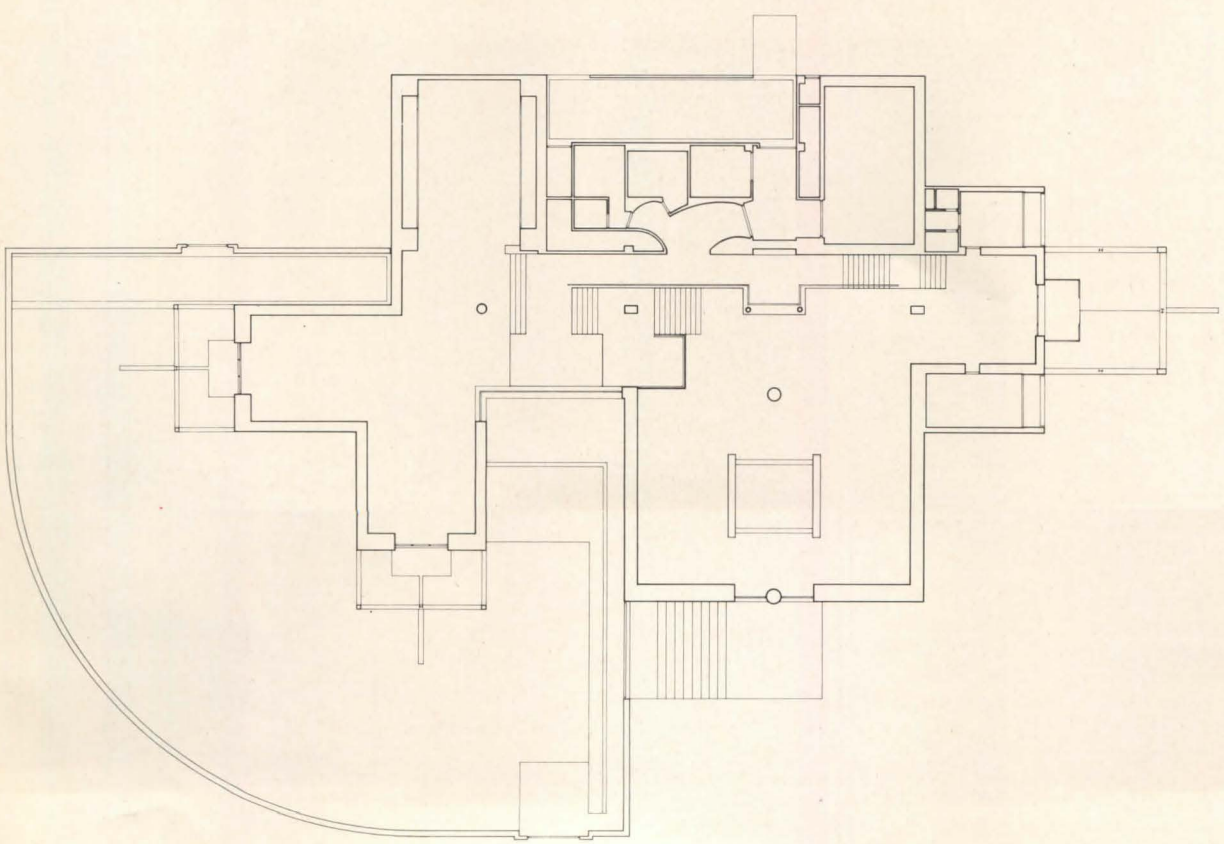


Taisuke Ogawa



Set into the rolling farmlands of a peninsula on the southerly, semi-tropical tip of the Island of Kyushu, this building, sprawling to hold the terrain and seemingly informal, is actually organized with the utmost strictness along axial and cross-axial lines. Designed in the image of a country villa and containing the private art collection of a local businessman, the building's material massing and the flowing nature of its interconnected spaces—one large exhibition area, uphill from which are three more intimate alcoves for display—express a small set of themes. One is the introduction of light, by way of both *rectilinear* "lanterns" above the main area and open porch-like terraces outside the alcoves and the main entrance that are symbolically "caged" by cross-shaped members similar to those used by Maki in his own house (previous pages). All these ports of entry for the sun—whether physical or symbolically enclosed—are termed "light rooms" by the architect. The steel cross members, very slender, such as those shown above at the entrance and to the upper right facing an enclosed semi-circular garden, are in succinct but explicit contrast to the concrete masses. These masses, in turn, are disposed to step up to one another, lightened by linear patterns.

Osamu Murai



Taisuke Ogawa photos

Reflecting the most immaculate kind of inclusiveness, the interior of the Iwasaki Art Museum is a confluence of Maki's long-standing contextual ideas, of his emergent interest in the classical axial controls and symbolic elements, and of his demonstrated skill at "hinting at" history—be it Old Modern or Old Japan. These photos are of the main exhibition area (opposite, above), which is laid out to the left of the marble-clad stairway and the mezzanine to which it leads from the main entrance. This stairway as well as the steps and levels beyond (above and right) define the north-south axis. The main east-west axis runs squarely through the middle of this stair mezzanine with its neo-Mackintosh fittings (plus real Mackintosh chair)—and this axis continues eastward through the exact middle of the main gallery where, again in the middle, there is a slightly sunken seating area with a restful outdoors view. This little "room within a room," bracketed by walls of the same buff-colored tile used throughout the interior, reinforces the axiality and symmetry of this major, most massive section of the building. The terrace-like landing shown above, between the main area and the upper alcoves, is a joyful co-mingling of building, space, and nature.

text continued from page 91

Maki seems to be saying that the more complex and variegated one's context of references becomes, there is a proportionately greater obligation to be *plain* in expressing them. Since he is now extending his own references to a whole new level, searching for an even broader definition of context in which to design, his work is indeed becoming plainer, employing and displaying much of the consistency and conventionalization of neo-classicism.

The two buildings shown here illustrate this. The Iwasaki Art Museum (lead photo and pages 96-100) is situated on the southernmost Japanese island of Kyushu and was completed last year. Maki's own house in a hilly Tokyo neighborhood (pages 92-95) was completed in 1978. The first was conceived as a commodious country villa housing a private art collection of a local businessman; the second, as a court-type city house, necessarily compact in its over-all dimensions and accommodating its tight, sloping site in a dignified, reticent manner. Despite their very different settings and programs, both are cut from the same piece of conceptual brocade. Their material means are similar: reinforced concrete, bearing-wall construction. The material massing is similar: a crisply formed, highly articulated mass of cubes, the concrete surfaces delicately but decisively graven with linear patterns. Especially is their element of symbolism similar: the cross-shaped, cage-like composition of steel members signifying, to Maki anyway, a mind's-eye visage of "house" or (more metaphysical yet) "enfoldment."

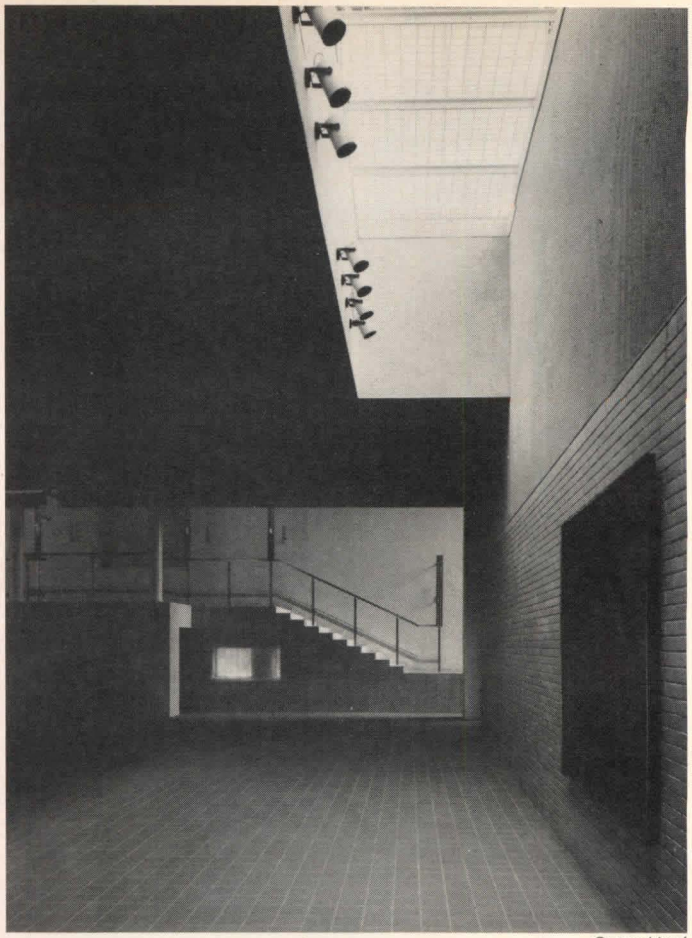
Question: What is the rationale for these similarities, given the two buildings' very different sites, functional formats, or "contexts"? Can two or more particular buildings, like these two, built in or out of very different circumstances, properly have a similar (or perhaps the same) material, organizational, and even symbolic base?

Answer: The rationale is Maki's search for a definition of architectural context that goes far beyond site, surroundings, and the stylistic interpretation—the context most architects work with. He sees these two buildings (and others to come, he says) as expressing a bold—need it be said, controversial—concept of the proper context for new buildings. Each becomes an experiment in relationships, not only between an individual design and the more apparent, visible characteristics of the neighboring environment, but also between the design and the more intangible social, cultural, and spiritual atmosphere.

The root of all this—Maki's root—is that all traditional philosophical and religious thinking of the East is postulated on the belief that there is an underlying, unseen, but nonetheless real "field" out of which any and all material compositions arise. Space in this view is a utilitarian and material presence—a kind of underlying, undulating sea comprised of energetic granular particles. Ironically (but not without its reassuring aspects) this same view has been gradually verified by contemporary physics and is closely related to Einstein's argument—and Maki invites the comparison—that " . . . we may regard matter as being constituted by the regions of space in which the field of energy is extremely intense." In this sense a building is a comparatively concentrated mass of high energy and high values, emanating out of and standing within its "field" or "context." And by this definition, any building must be expressive of and *accountable* to a range of energy and value that goes well beyond the stylistic and the structural, the site and its setting—indeed a range that pre- and post-exists the particular building, its architect, and his (along with present society's) theoretical and formal preferences. And that *is* a very broad base—broad context—against which to design; and as esoteric as it may seem to Western ears, it is this same sense of an underlying grid that occasioned, on one hand, the splendid simplicity of the *sukiya* style in Japan (Kastura Palace for example) and, on the other, the structural, sensory, and symbolic subtleties of the work of Frank Lloyd Wright, Alvar Aalto, and Louis Kahn.

In these two buildings, Fumihiko Maki is exploring some of the newest concepts of "context" (theoretical physics) and some of the oldest (the thought of the East). He is attempting to achieve a psychic correlation between the geometry of form and the organization of space—between these and the images that have been long built up in association with the over-all context. If these buildings do not suggest hard-and-fast answers, they do suggest another way to think about what context is "made of." Like the thoroughly structural nature of Japanese art in all mediums, these buildings are also exercises in the art of suggestion, understatement, inference.

As Frank Lloyd Wright wrote in 1912: "A Japanese may tell you what he knows in a single drawing, but never will he attempt to tell you all he knows. He is quite content to lay stress upon a single element, insignificant enough perhaps until he has handled it; then the very slight means employed touches the soul of the subject so surely and intimately that while less would have failed of the intended effect, more would have been profane." —*William Marlin*



Osamu Murai

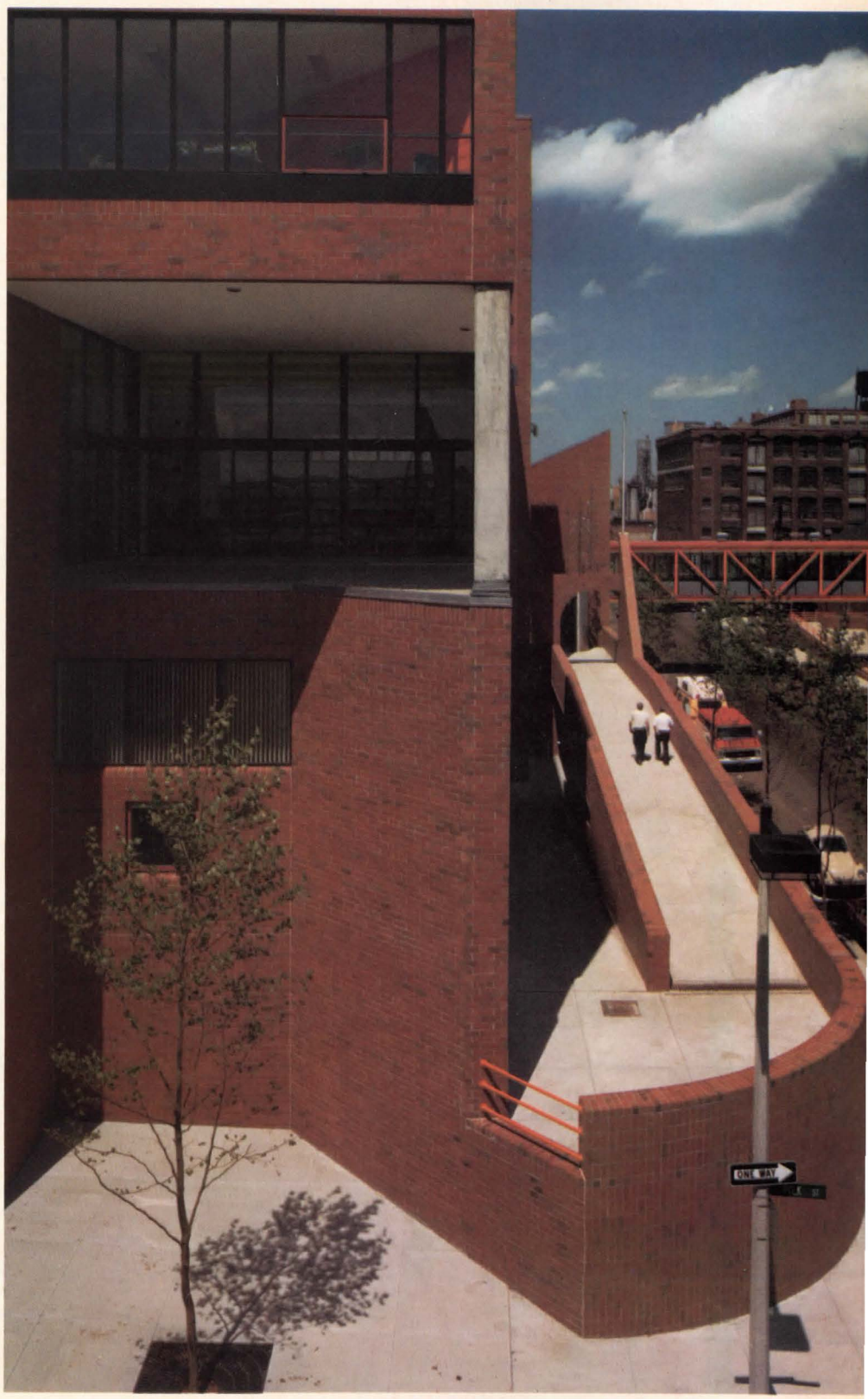
MAKI HOUSE, Tokyo. Architects: *Maki and Associates*. Engineers: *Kajima Structural Engineers, Ltd.* Contractor: *Toko Construction Co., Ltd.*

IWASAKI ART MUSEUM, Kagoshima Prefecture, Kyushu. Architects: *Maki and Associates*. Engineers: *Kimura Structural Engineers*. General contractor: *Hazama-gumi*.

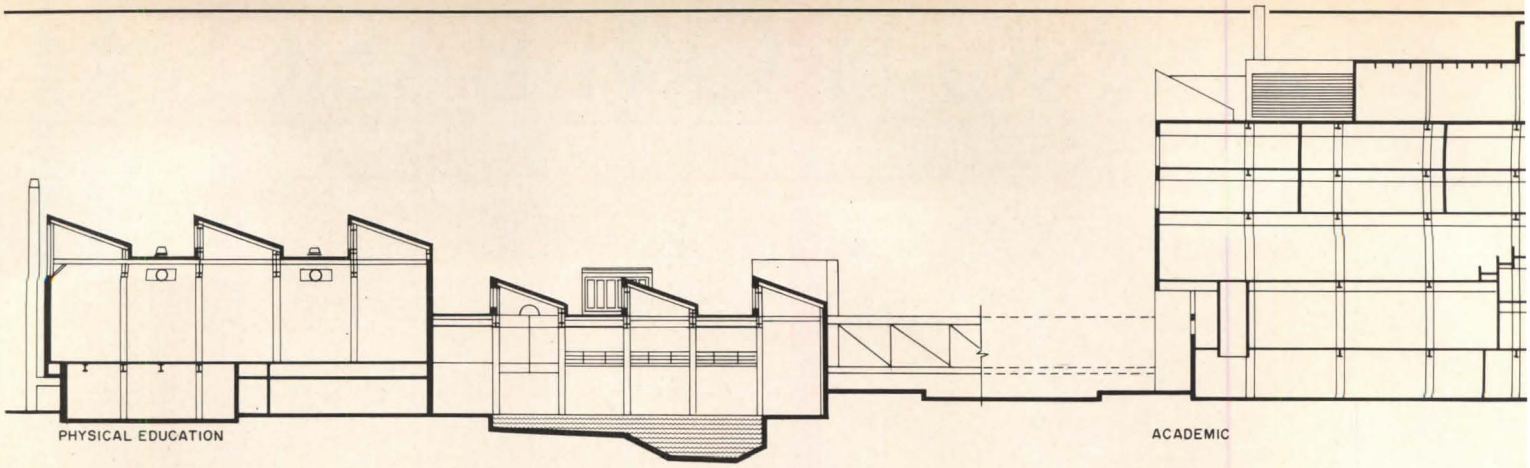
WORKING FROM BASICS:

THREE PROJECTS BY HILL MILLER FRIEDLAENDER HOLLANDER

Three very different designs—two schools and a firehouse—by the same architects have produced the three very different results shown on the following pages. For each, the architects approached given restraints *and* the context of varied locations with uncommonly fresh eyes and a willingness to get right down to what a given design "wants" to be. The schools, one rural and one urban, invite the most direct comparison. The Charlestown High School and Brewster Elementary School appear completely different, although their functions are similar. But, both are shaped by the architects' strongly held beliefs. For instance, open flexible teaching areas have been in vogue for some time now, but according to Fenton Hollander: "They are of little use unless the administrators are fully committed to the concept *and* to making it work. The worst kind of inflexibility comes from locking into plans either open areas or traditional classrooms, when the actual use is bound to change." Both of the schools here were programmed to be used either way, and—for the moment—they are divided into classrooms. "But these particular results are not to say that team teaching cannot work admirably." Another underlying belief that applies to all three of the architects' buildings is that they should be "humanizing." According to associate Mario Torroella, this means that people should have a strong sense of where they are inside and be able to see outside. Consequently the firm's work is characterized by spatial complexity that provides both drama and strong identification to any given interior location. Monitors, light wells, stepped-floor levels and windows between spaces bring natural light deep into the interiors to often unexpected places, such as central rooms and basements, as can be seen in the East Cambridge Fire Station (page 110). In all three buildings this is all the more surprising as governmental clients often veto windows as targets of vandalism. In their desire to introduce natural light, the architects have been against the mainstream of fashionable approaches in school design. And the value of such "humanizing" can be seen at the large urban Charlestown High School (overleaf). It was designed with the belief that better environments would produce not only better students, but happier ones who would treat the buildings better. And in this area of high vandalism and social unrest, Charlestown has been open for almost a year. According to Hollander: "Some were not sure that there would be time for photographs." But today the buildings look better respected than many of their counterparts in the affluent suburbs. So do the other two buildings—proof of the validity of the underlying common philosophy. —*C.K.H.*

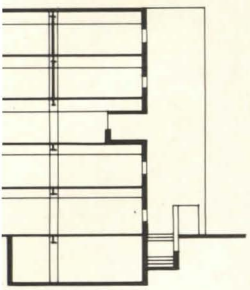


CHARLESTOWN HIGH SCHOOL



The siting and therefore the consequent massing of this school was influenced by the kind of urban forces over which the architects had very little control, but they have manipulated given constraints with consummate skill. As seen in the isometric below, both the larger academic building and the athletic facility are connected by a bridge over a road that carries a heavy traffic of containerized cargo. The buildings and playing fields are located on the northern fringes of an older neighborhood with predominantly Irish roots—where small-scale houses meet shipping-port facilities in industry strewn yards and isolated loft buildings. This location had been established by the Boston Redevelopment Authority some years earlier, and the community wanted the peripheral site. The local citizenry also wanted the playing fields to be made large enough to double as a community resource. Further, they wished the 1,000 student academic building to be constructed on a smaller isolated lot, which had been a traditional staging ground for vandalism. The academic building thus became a huge six-story mass. As such it posed a threat to the appearance and scale of the neighborhood with its historic and architecturally valuable character.

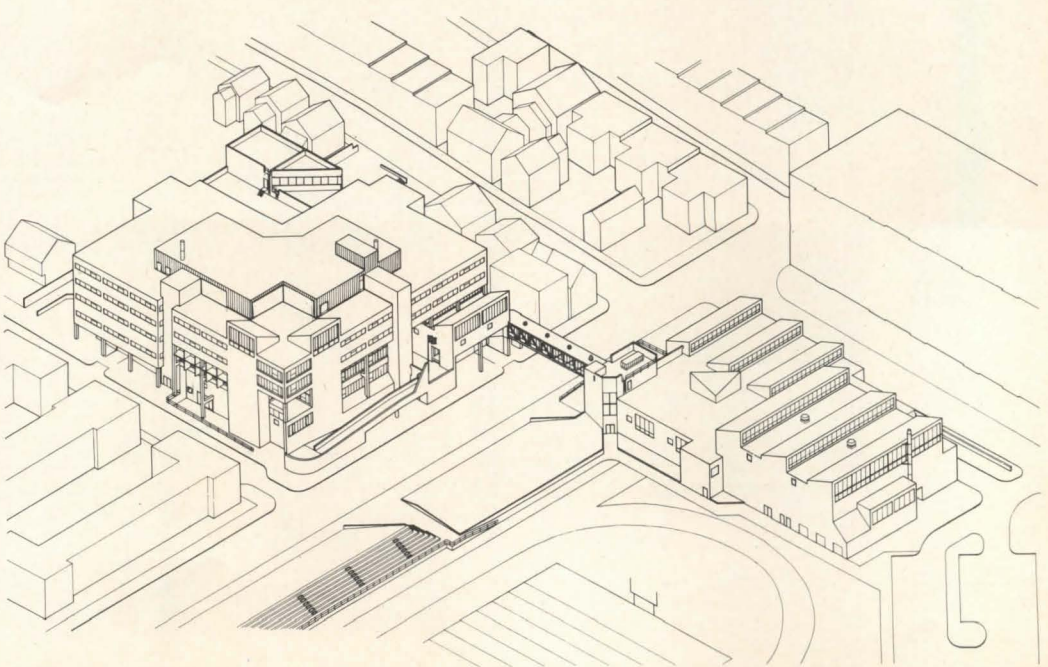
According to Hollander: "You have to bring your own set of niceties to such situations." The architects' first proposal was to build half of the new academic volume below grade. Because this solution did away with windows for much of the building, the architects put only the first floor of the industrial crafts and service spaces below grade. The remaining exposed volume at first appears complex. Indentations and projections break down the scale and align it with the surrounding existing structures (see caption). But its symmetrical L-shaped plan is easily understood from within. Further, the simple shape contributed to what was a surprisingly low construction cost of $13 million for the 235,000 square feet of space in the two steel-frame buildings. Both this school and Brewster Elementary on the following pages are recipients of coveted Walter Taylor national awards, given jointly by the AIA and the American Association of School Administrators for excellence in school design.



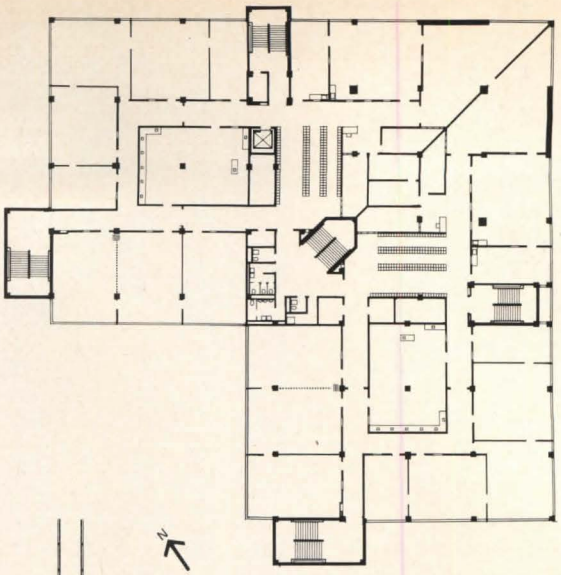
CHARLESTOWN HIGH SCHOOL AND COMMUNITY SCHOOL, Charlestown, Massachusetts. Architects: *Hill Miller Friedlaender Hollander, Inc.—John F. Miller, Mario Torroella, George Metzger, Fenton Hollander, Stephen Friedlaender, Walter S. Brodie, Dorothy Atwood.* Engineers: *Engineer Design Group, Inc.* (structural); *C.E. Maguire, Inc.* (foundation/soils); *Scorziello Associates, Inc.* (mechanical); *Lottero & Mason Associates, Inc.* (electrical). Landscape architects: *Carol R. Johnson & Associates.* Consultants: *William J. Cavanaugh* (acoustical); *HMFH Inc.* (interiors graphics). Contractor: *Rich Construction Co. and D. Antonellis Inc.*

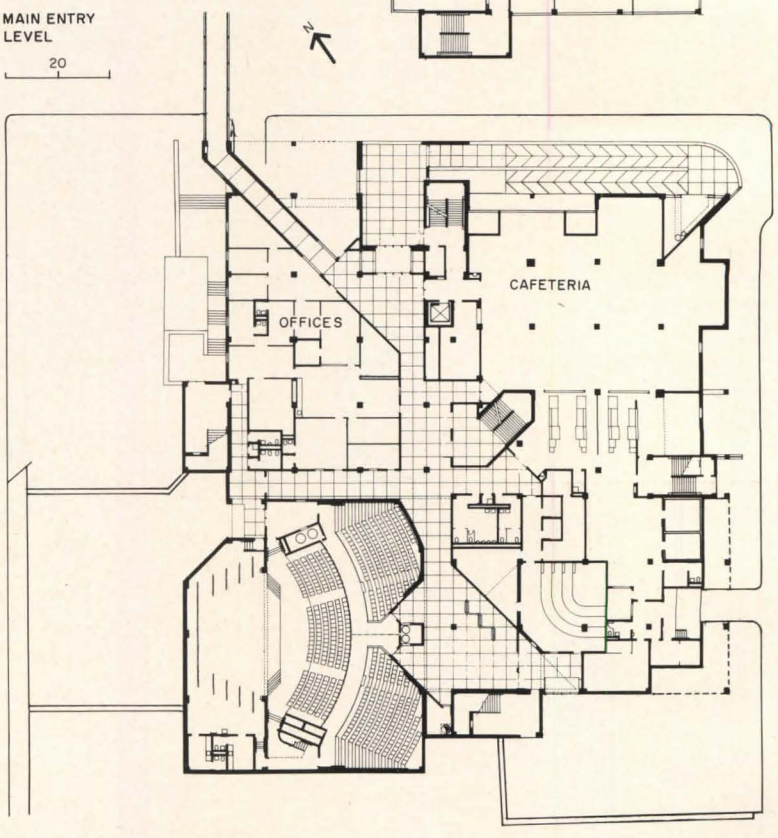
Peter Vanderwarker photos except where noted

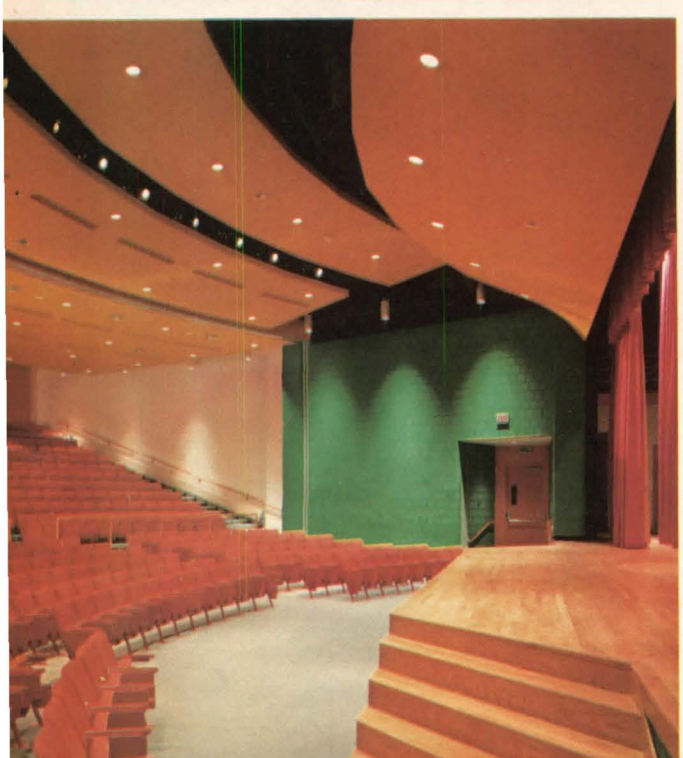
Two top floors of classrooms project over recesses in the large academic building's volume (photo above). The recesses relate to offices, special classrooms and to the cafeteria and library. Each of the latter occupy one-and-a-half stories for greater height (left in section above). The recesses and a projecting office wing have been designed to fracture the over-all volume in richly varied ways that align with and echo the smaller volumes of nearby housing (photo to left and isometric). The academic building is entered by a ramp to the second level. It is clad in a jumbo machine-made brick originally introduced for economy. A rich texture has been produced by having a normally reverse side exposed. A bridge over the street connects the main lobby with the physical education building and its adjacent athletic fields. The genesis of this siting is explained in the text.

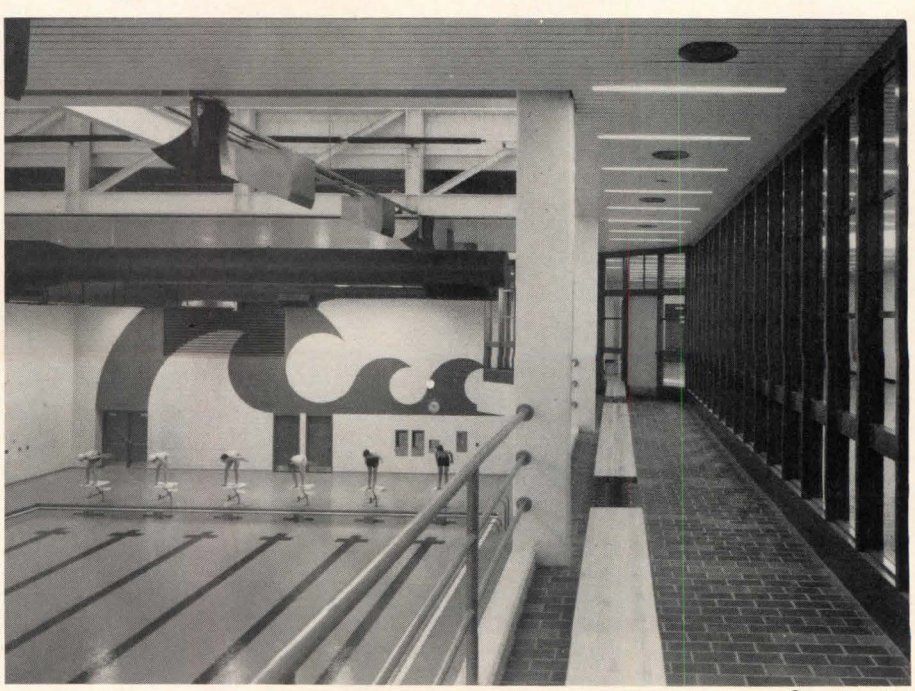


Each of the two top stories of classrooms is divided symmetrically about a central main stair (plan right). This provides a total of four "houses" that can function semi-independently for groups of 250 students, who must mingle only on the lower service-facility floors. A maximum number of those teaching spaces, as well as the respective triangular student lounges are located on outside walls for natural light. The second floor (lower plan) is the main entry floor and contains the auditorium (photo bottom left), which is accessible for community use and the main lobby (photo opposite) with its double height and clerestory lighting. Windows from the interior look across such light wells and provide light in surprising places. Such interior windows can be seen in the physical education building (photos below and bottom right). Painted block walls in bright colors form the interior finish in most spaces, and add further to a bright character—as well as ease of maintenance.



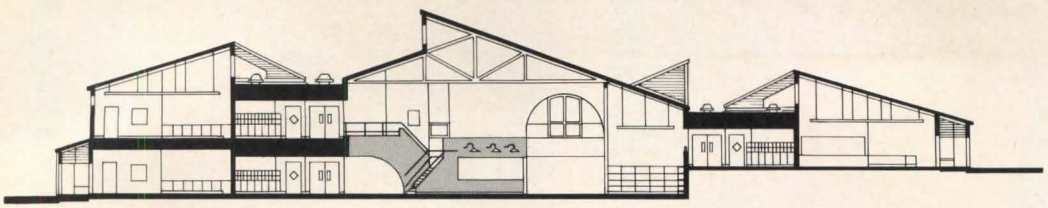




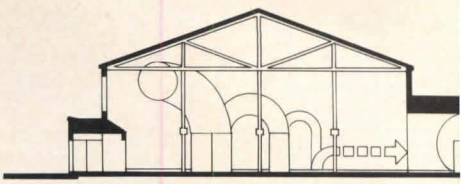


©Steve Rosenthal

BREWSTER ELEMENTARY SCHOOL



ACADEMIC WING

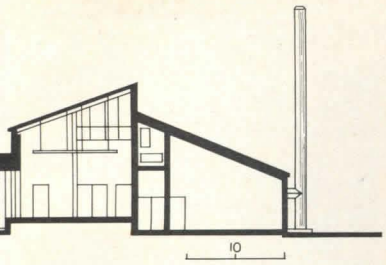


GYMNASIUM/CAFETORIUM

Designed for a generous 51-acre rural site on Cape Cod for a small dedicated school board, this handsome structure demonstrates Hill Miller Friedlaender Hollander's versatility. Such constraints as those affecting the Charlestown High School (pages 102-105) when imposed on designers who are thoughtful and experienced, can often produce the most accomplished and interesting result—if only because of the difficulty of the effort involved. But the 500-student school shown here illustrates equally interesting results that respond to a very different, albeit more benign, set of rules.

For this school, the architects were able to select the best possible location. The new building takes advantage of views to the north, and serves as a buffer for outdoor activities against a highway to the south. Sixty per cent of the wooded site has been preserved in its natural state. The architects have segmented the large building mass with various sloping roofs that allow for clerestory lighting within, and with such projecting elements as stairs, entrance porches and a shed-like bus shelter connected to the main entrance by a covered walkway. An unusually large number of parking spaces (350) were required to serve the gymnasium-auditorium which can be locked off from the academic wing, and used by the community in off hours. So that the children would not in architect Friedlaender's words: "Arrive each morning in a sea of asphalt," the spaces have been placed at a good distance from the entry behind berms and planting.

In order to provide the varied facilities and long-term operating efficiencies at a median construction cost for such schools, both flexible multi-use spaces and an economical construction system have been employed. The basic structure is lightweight steel—concrete filled pipe columns, bar joists, metal-stud walls and steel deck—while pitched roofs are built with fire-treated wood joists with plywood sheathing. Natural ventilation (supplemented by artificial ventilation) in summer and 6-inch-thick insulation reduce energy demands, while natural light from clerestories, windows and monitors make supplemental light sources necessary only in the "cafetorium" and toilets on even the cloudiest days.

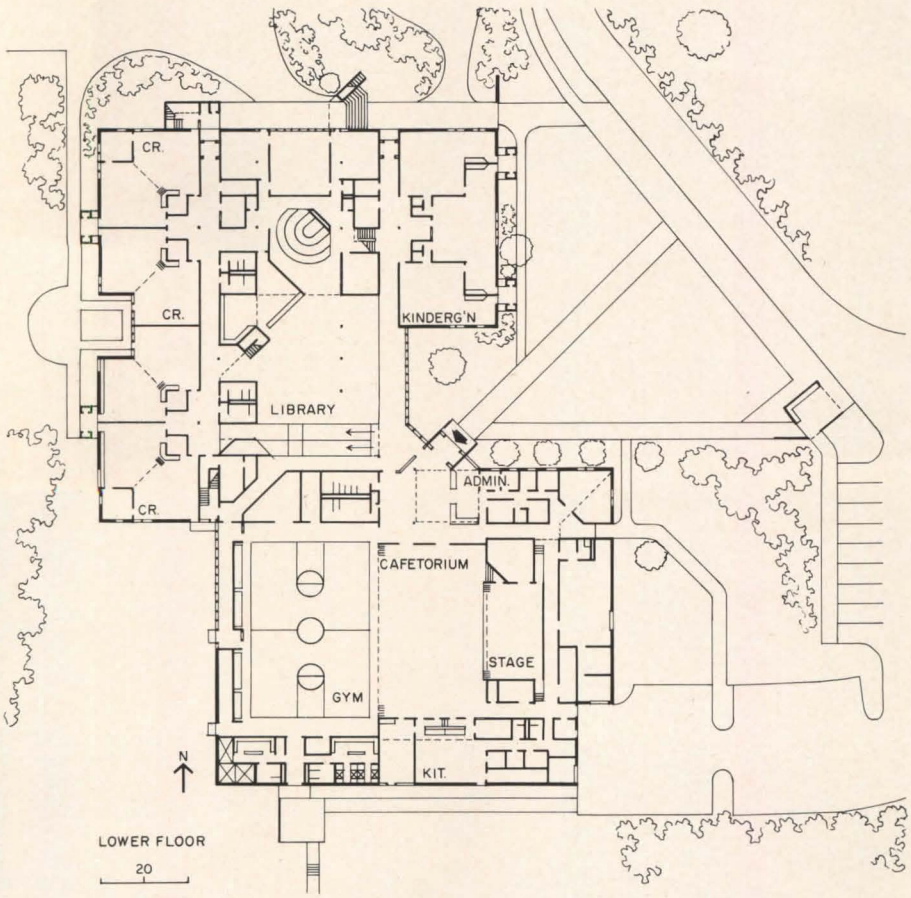


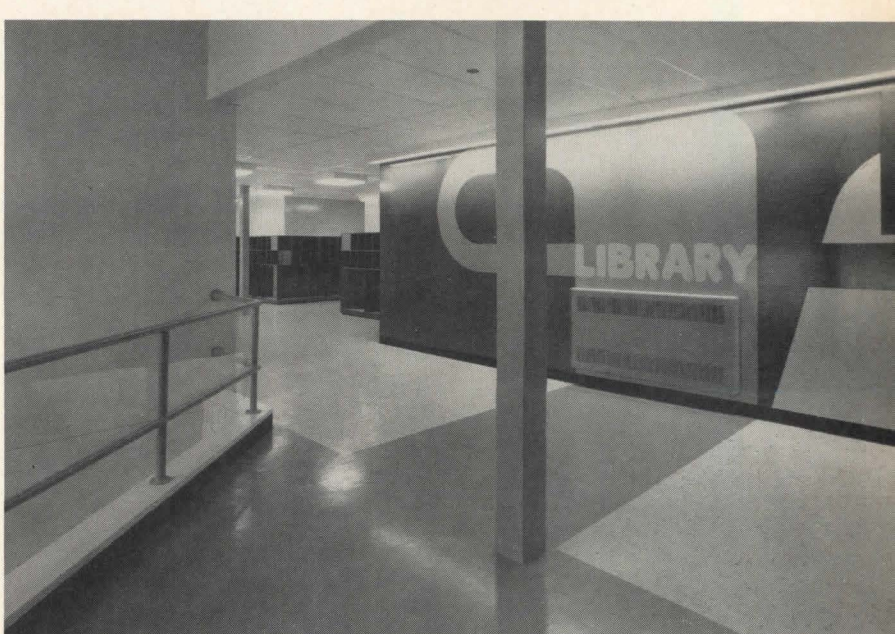
BREWSTER ELEMENTARY SCHOOL, Brewster, Massachusetts. Architects: *Hill Miller Friedlaender Hollander, Inc.—Stephen Friedlaender, Mario Torroella, George Metzger, Fenton Hollander, John Miller.* Engineers: *Souza and True, Inc.* (structural); *Goldberg Zoino Dunnicliffe, Inc.* (foundation/soils); *Scorziello Associates, Inc.* (mechanical); *Lottero & Mason Associates, Inc.* (electrical); *R.W. Sullivan, Inc.* (plumbing). Landscape architect: *Jeffry H. Gilbert.* Consultants: *William J. Cavanaugh, Inc.* (acoustical); *HMFH Inc.* (interior design/graphics); *Leslie Buckingham, P.E.* (cost). General contractor: *Jefferson Construction Corp.*

©Steve Rosenthal photos

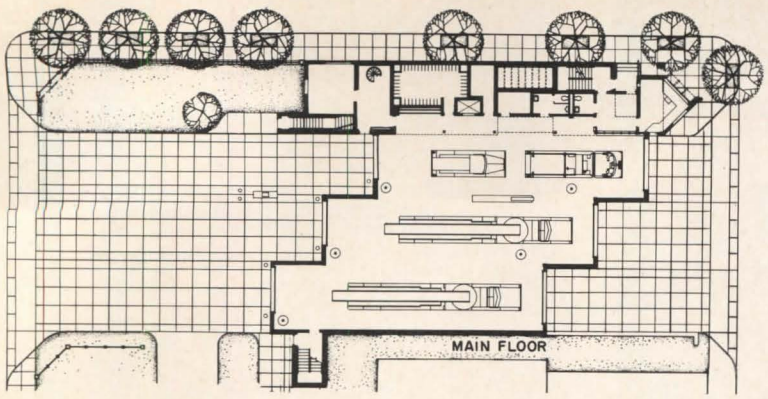
For a location within an historic district, the architects have created what at first glance seems to be an assemblage of barn-like parts. The large scale of windows and doors reduce the apparent size of the structures when viewed from a distance. These openings reflect local forms, and at the same time create an appropriately playful atmosphere. But behind the gray asbestos shingles and white trim there is not only a very efficient modern structural system (see text), but a very efficient machine for learning (see overleaf). According to Steven Friedlaender: "While there is great spatial and educational flexibility, there is also great care that the architecture is neither doctrinaire nor neutral to the point of blandness." A view of the end of the academic wing (photo left) best reveals the way in which the really large volume of building has been segmented into visually manageable sections and has been partially depressed below the grade to further reduce its impact on the rural scenery.

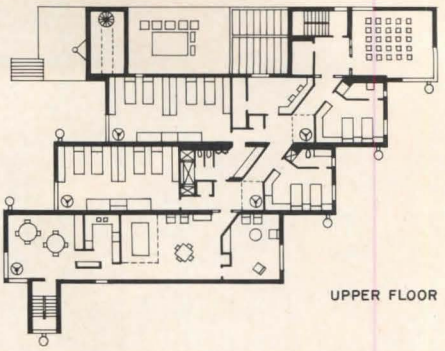
In the academic wing (top of plan), 16 classrooms on two floors are located to the left and a kindergarten to the right. These facilities are supplemented by rooms for art and special education, all of which surround the large library/media center (photo right) that unites the two levels and is the "heart" of the complex. Windows to the outside and between classrooms and library provide the transparency that the architects feel is critical—especially for small children—to orientation and to a psychological unity of function. While the four groups of classrooms are currently used individually for separate grades, they have been planned for possible use as large open teaching areas and multi-level mini-schools. The concept of flexible uses is particularly strong in the gymnasium-"cafetorium" wing (bottom of plan and photo below right). With a central acoustical partition retracted as shown in the photo, the wing becomes essentially one large room where over 1,100 persons can be seated for town meetings and other community gatherings. (The school is the only appropriate facility for such functions in Brewster). With the central partition closed, the area nearest the stage becomes appropriately proportioned for concerts and theatrical performances for audiences of up to 500 persons. Graphics in all of these spaces have been designed to integrate into the the over-all design. In the gymnasium these track the course of a bouncing ball.




LIBRARY

EAST CAMBRIDGE FIRE STATION

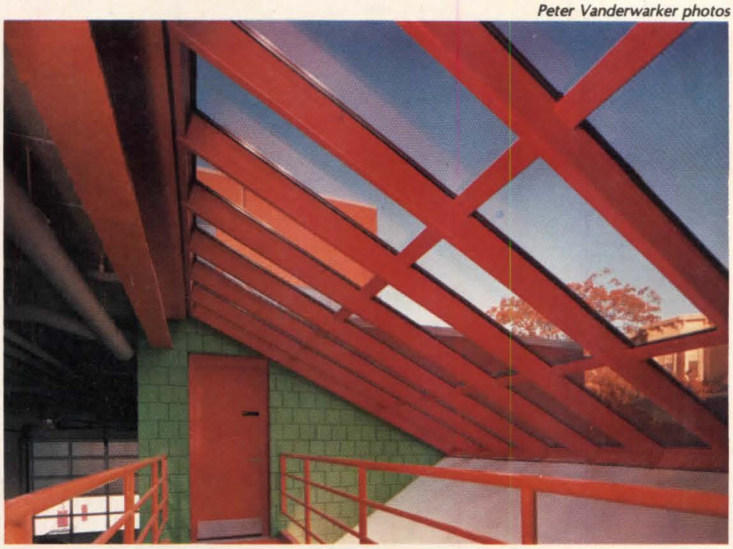




This bare-basics urban structure expresses the presence of three separate fire companies and their shared facilities by a strongly articulated four-part massing. The drive-through arrangement of the garages allows trucks to enter without the congestion caused by backing from the street. On the second floor, the dormitories for each company have been placed directly over their respective garages. As in the architects' other work on the previous pages, light is introduced into surprising parts of the building—here to the basement through a continuation of the skylight (photo to right). By a careful selection of basic materials and finishes, the architects have given the firemen a remarkably pleasant environment. The 17,000 square feet were built for a cost of $1,250,000.

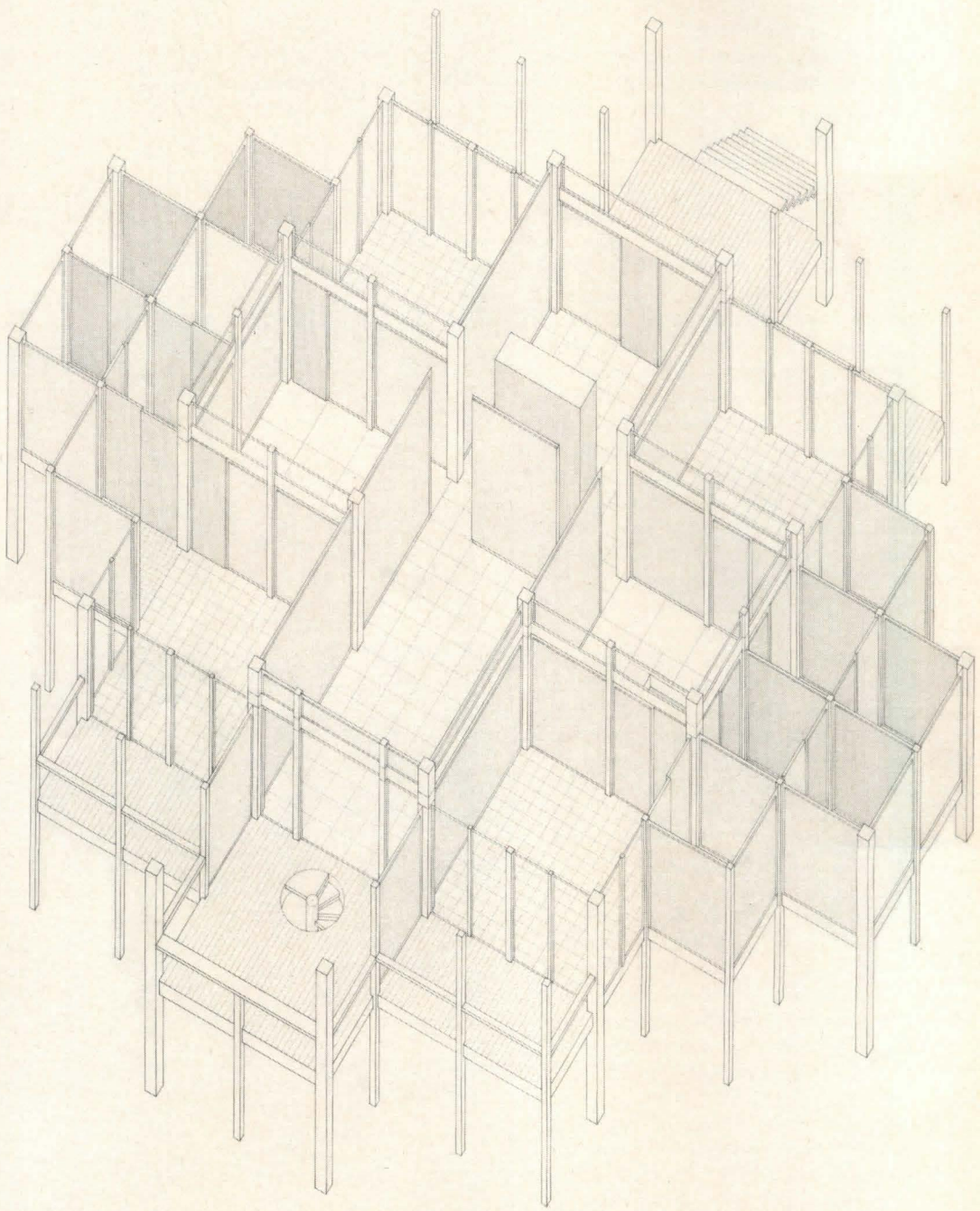
EAST CAMBRIDGE FIRE STATION, Cambridge, Massachusetts. Architects: *Hill Miller Friedlaender Hollander, Inc.—John Miller, Mario Torroella, George Metzger, Fenton Hollander, Walter S. Brodie, Lloyd Dyson, Hart Kelley.* Engineers: *see previous credits.* Landscape architects: *Carol R. Johnson & Associates.* Consultants: *see previous credits.* General contractor: *D. Antonellis Inc.*

Peter Vanderwarker photos



John Hejduk: Constructing in two dimensions

John Hejduk taught the architectural avant-garde of this generation to draw: to perceive volume in two dimensions. Hejduk's drawing techniques rode the crest of the revival and development of architectural drawing in this decade. His achievements—and what he has taught other architects to achieve—have been instrumental in winning architectural drawing the recognition now accorded it. Two recent New York exhibitions of Hejduk's drawings, one at the Institute of Architecture and Urban Studies, the other at the Max Protetch Gallery, illustrate different aspects of the architect's thinking. And the medium informs the message; the modes of presentation represent modes of perception. As these drawings make clear, the techniques Hejduk has developed have not only greatly influenced methods of architectural investigation in the last two decades, but also reflect the nature of that investigation. —*Eleni M. Constantine*



House No. 1, axonometric. (Texas series, 1954-61) IAUS.

In the place John Hejduk inhabits, the earth is at the center of the universe and the world is flat. Man and his perceptions are measure and maker of all things.

The renown Hejduk has won for his part in the revival of architectural drawing is a recognition that his architecture is not only portrayed, but conceived, in two dimensions. The isometric and axonometric projection, which he has raised from a drafting tool to a way of envisioning architecture—and elevated, in his own work, to an art form—provides a simultaneous reading of plan and elevation on a single plane. The taste for "paper architecture" that pervades this generation, and the conception of space as an infinite series of infinitely thin, layered planes which underlies that style, are perfectly captured by the isometric. That Hejdukian isometrics pervade current architecture indicates the pervasiveness of Hejduk's "painterly" concerns in the field.

In a 1977 interview Hejduk described himself as a student at Cooper Union: "I drew very well, but I didn't know how to transform an idea into three dimensions."

The capabilities possessed by the student have become the parameters of possibility for the teacher. "I believe the world is two-dimensional," Hejduk states now. "When you put two two-dimensional things together if they stand in correct relationship . . . "—he makes a gesture of a hand-held explosion. "I don't believe anybody can conceive a building in three dimensions. Maybe a fragment—but not a totality."

Hejduk terms his *oeuvre* "a reaffirmation of plan, section and elevation." Rather than speak of volume, he speaks of perspective.

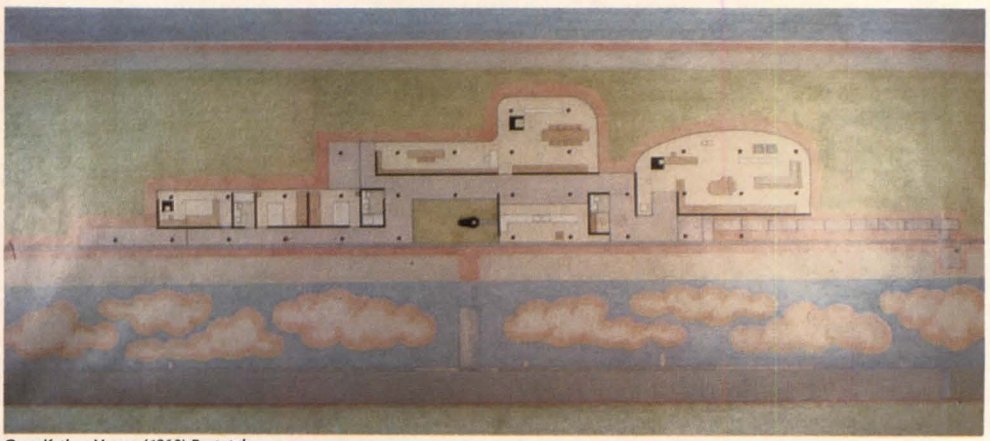
Presently Dean of Cooper Union's School of Architecture, Hejduk has taught the discipline since 1954. He imbues his definition of himself as a teacher with a certain prophetic, almost religious, status. His drawings are texts, intended for interpretation, from which lessons are to be derived. Together, Hejduk's drawings constitute a self-sufficient system within which images acquire additional significance through their references to other images, elements, or ideas in that system. New developments bring to the surface and incorporate earlier ideas.

The two concurrent shows in New York this February contained quite different lessons, presented in strikingly different styles. The Texas Houses at the Institute, done between 1959 and 1961 (one is shown on page 111) hold lessons about architecture.

The drawings for the Texas Houses embody the theory and practice the Institute furthers. These brittle lines, these meticulous axonometric projections freighted with dense architectonic content are models for the sort of architectural explorations supported by the Institute: digs into the strata of the discipline's significances. In choosing this series as the subject of an exhibit (and of an accompanying catalog which includes the first complete documentation of Hejduk's career and work published in the U.S.), the Institute has selected perhaps the least accessible, but most enduring aspect of the architect's work.

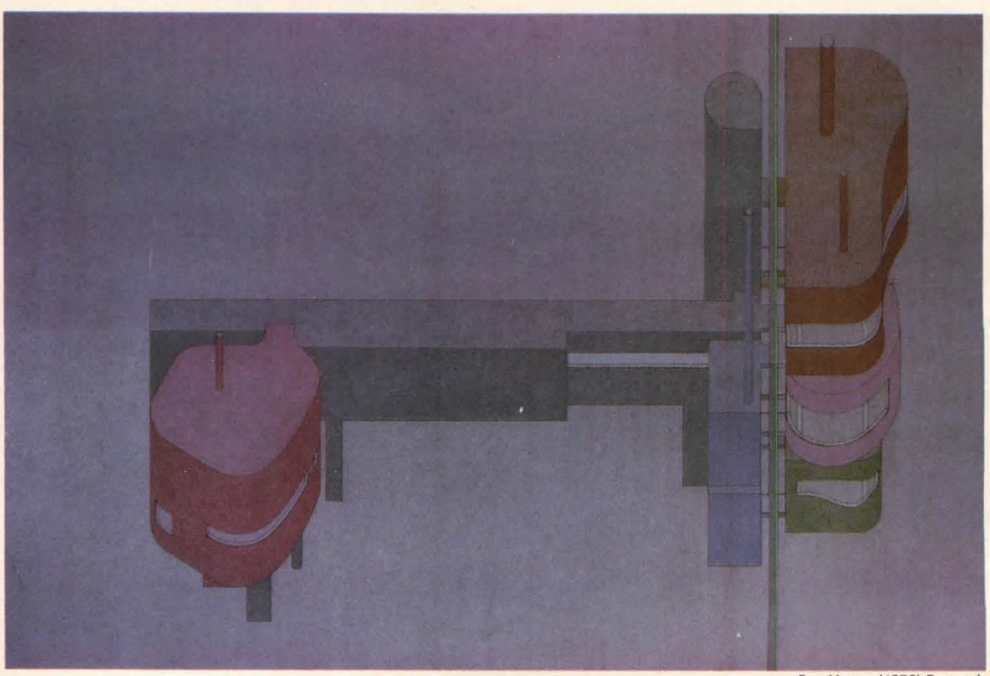
"Abstraction is always caught, surrounded by history."—*Hejduk*

The Grandfather House (below), the first of Hejduk's "Wall" houses, employs a non-objective, metaphorical vocabulary and an abstract, nonreferential syntax. Yet the project alludes to, and evokes, figurative and historical architecture. Hejduk comments: "Everything from Mies to Hadrian's Villa is in that drawing." Originally a pencil drawing, the project has been reworked in ink and subsequently in color. Hejduk considers the process ambiguous: "Maybe it was a taking away, in terms of thought, camouflaging the ideas with color." The pastel palette goes back to Hejduk's student days at Cooper Union (he claims to have borrowed it from one of Picasso's *Minotaure* drawings). Coloring in the outline of the house, Hejduk uses artistic techniques to appropriate the various architectural citations and makes visible warm and cool zones, spatial thresholds and meldings.

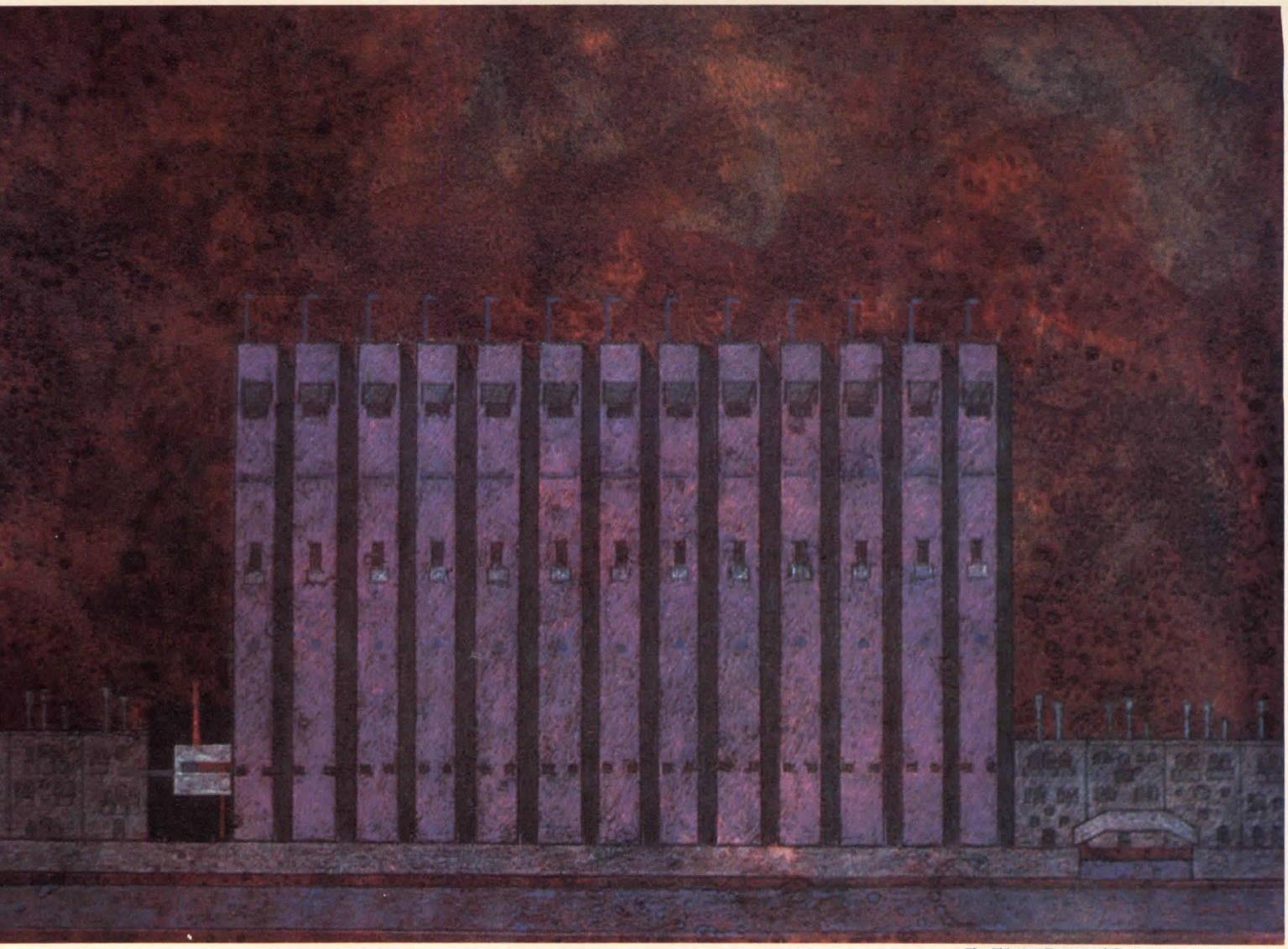


Grandfather House (1963) Protetch.

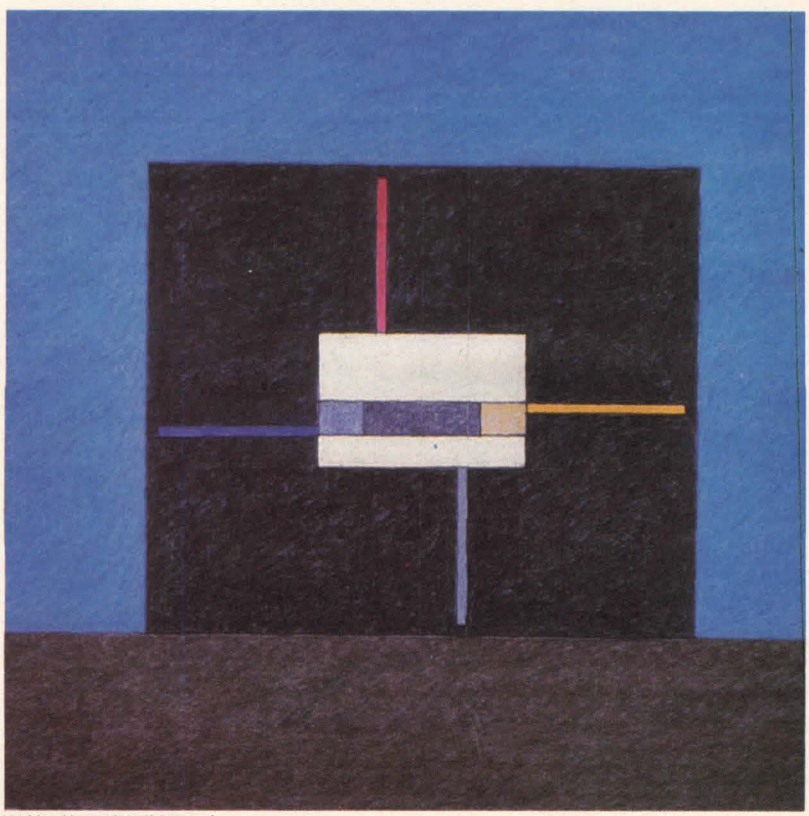
Perhaps the most influential unconstructed building of the seventies, the Bye House (1973) (below) arrays volumes containing separate activities along a circulation spine in a statement on habitation. An exercise in Rationalist precision, the house also, paradoxically, suggests a living body, sliced for dissection.



Bye House (1973) Protetch.



The Thirteen Towers of Cannareggio (1978) Protetch.



Waiting House (1978) Protetch.

"The Thirteen Towers of Cannareggio," (above and page 116) recounts an elaborate imaginary ritual, expressing in symbolic images the architect's reflections on the house, the individual, the city, and society. Set in Venice, the story concerns thirteen towers, 16 feet square and 96 feet high, colored Venetian pink and green and standing in a bare, paved, mysterious piazza. Adjacent to these medieval-looking structures is a fourteenth dwelling, a small modern house (left) which might, by its appearance, be one of Hejduk's "*Wall*" *Houses*. The towers are occupied by thirteen citizens of Venice, selected by the city; the "Waiting House" is inhabited by another man waiting to move into a tower when its occupant should die. In another piazza is the "House of the Inhabitant Who Refused to Participate" (page 115) a "Wall" house whose facade resembles a tower, also imprisoned in the community. The heavily shaded, atmospheric drawings of the towers, in opposition to the pristine, Mondrian-like rendering of the house, contrast the introspective "waiting" individual with the thirteen participating citizens.

The houses constitute seminal investigations in the plastics of architecture. They are to the architecture of the last two decades as Frank Stella's 1970-71 "Protractor" series is to painting of that period. They manipulate the architectural elements of plane and point as those exercises in color, curves and line manipulate expressive elements of painting. (Findings from such investigations percolate faster in painting than in architecture, it seems; Hejduk is only now receiving his due.)

These works pat their head while rubbing their stomachs: although they take their text, vocabulary and expression from architecture, they are informed by a pictorial vision. Their architectural aspects are obvious. Their basic text: the Palladian nine-square plan and the Modernist spatial continuum split by infinite planes; their vocabulary: the steel frame and the panel wall; their expression: weightless, slide rule-straight lines in 8H and 9H pencil.

Yet on closer examination the space is suspect: it has no volume. The planes and angles indulge in *passage*, that spatial ambiguity and tension selected by the Purist artists Ozenfant and Le Corbusier as the most valuable contribution of Cubism. Hejduk confesses of one of the Texas houses (House 6): "If built, it might reveal a spatial warp."

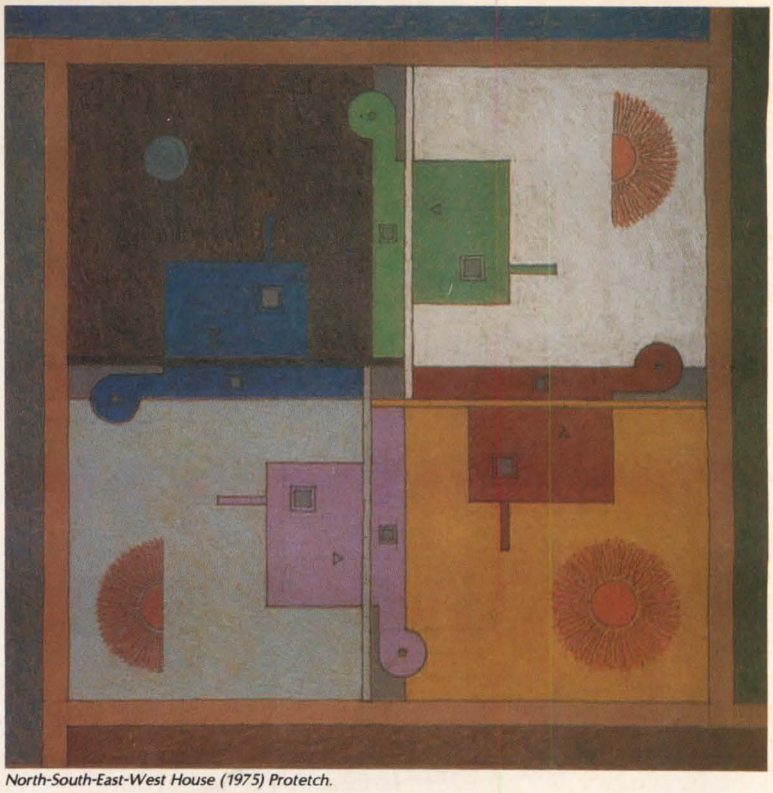
Executed with an inhuman precision of line, creating a surreal clarity of vision, the drawings reveal Hejduk's interest in the concerns of the Constructivist movement that grew out of Purism and produced De Stijl. Like the De Stijl artists, Hejduk concentrates energy on the points of space where vertical and horizontal forces intersect.

The drawings at Protetch—by an architect no longer 25, but 50—hold forth on the human condition. These drawings (illustrated on pages 112-116) which demonstrate a larger range of endeavor, furnish more graphic evidence of Hejduk's concern with Modern art. The retrospective—including examples of the "Diamond" and "Wall" projects, two of the three projects for the Venice Biennale, and a couple of recent "cycle" houses—shows a gradual turning outwards in both style and content: a growing expressionism that moves from abstract to figurative themes. The ascetic gray pencil is overlaid with tempera, pencil, and magic marker; the architectonic texts acquire plot and characters and address more public issues.

The dialectical relation between artistic media and content in Hejduk's drawings is analogous to that established by certain architects—Aalto, for instance—between architectural materials and a building. But Hejduk couches these issues in a manner that goes beyond the strictly architectural to the artistic.

He borrows freely from Modern art; the drawing of the "Grandfather House," (page 112) a much-reworked project, is shaded in a pastel palette which he claims to have borrowed from one of Picasso's 1933 *Minotaure* drawings—though the colors are reminiscent of Le Corbusier's sketches.

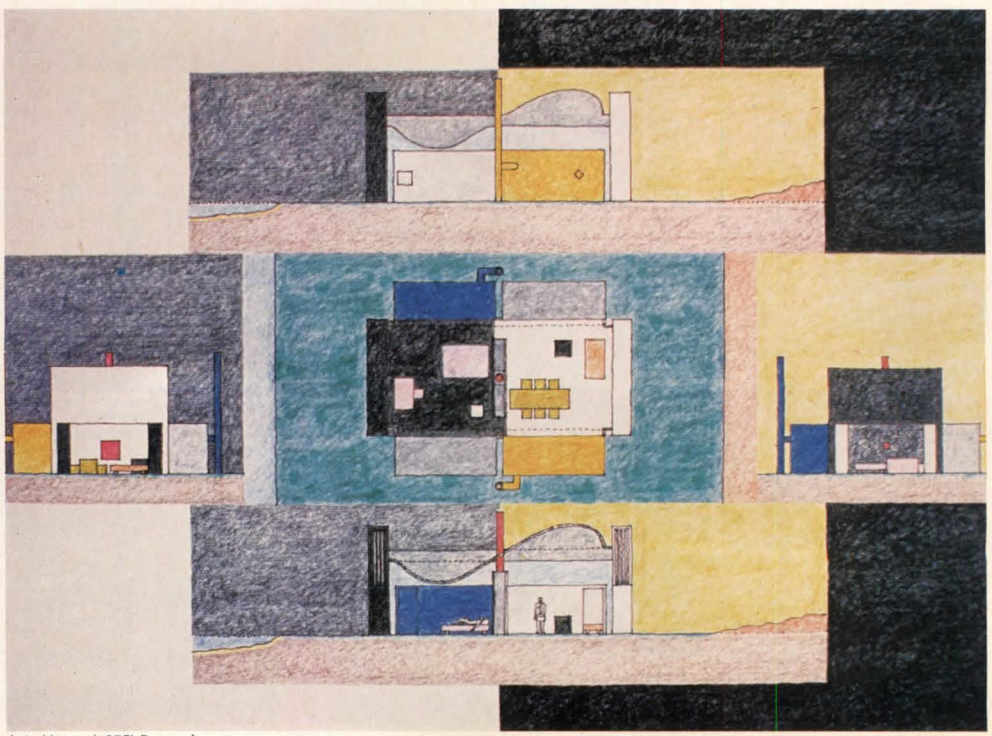
The primary colors of the "Element House" (not shown)—a white cube three of whose facades marked by a red, a yellow and



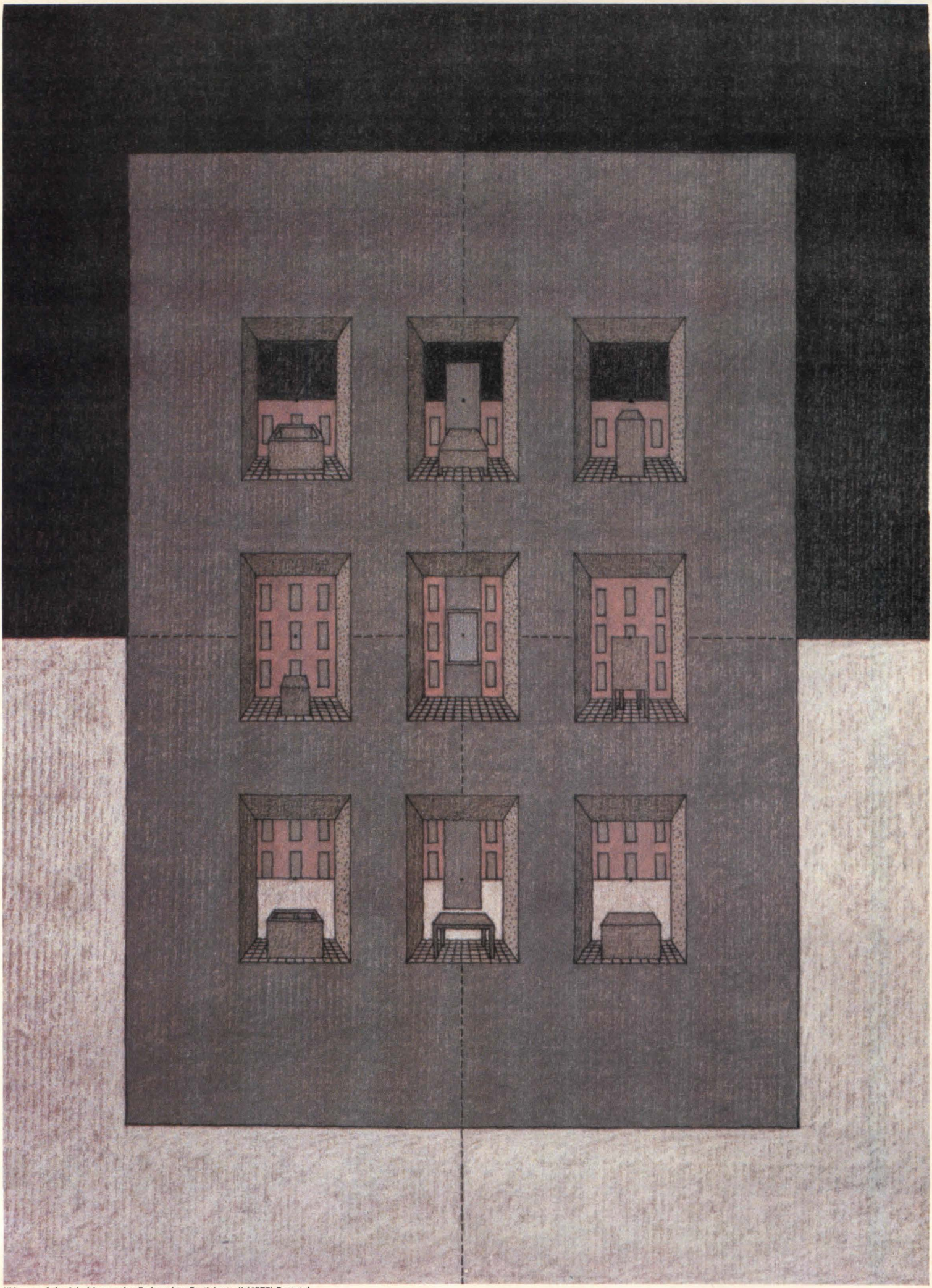
North-South-East-West House (1975) Protetch.

"I don't believe anybody can conceive a building in three dimensions. A fragment, perhaps, but not the totality."
—Hejduk

The North-South-East-West House (above) and the L.A. House (below) break down human activity through the cycle of a day, assigning a unique, significantly colored, area to the living of each quarter of the day. The four separate units of the North-South-East-West House, each organized around a central wall element, are joined so that the center is a void. The walls, spatial barriers, demarcate thresholds in the passage of time. Horizontally expressed in this house, the cycle of the day is vertically expressed in the L.A. House. In this beach cottage, the wave-like undulation of the roof compresses the "night" area—sleep is the undertow of the wave—and expands the "day" area, under the wave's crest.



L.A. House (1975) Protetch.



"House of the Inhabitant who Refused to Participate." (1978) Protetch.

a blue beam—are borrowed directly from Mondrian. The borrowing furnishes a clue to the house's significance: like a Mondrian canvas, this is the nucleus of an infinite order. The lines extending off Mondrian's paintings to a potential but invisible intersection, the rectangular fragments of a colored plane, are here swung through space to generate a three-dimensional version.

The colors of the Bye House (page 112) appear organic. They describe the house rather than ascribing qualities to its spaces. Like all of the "Wall" projects, the Bye House is a flayed "Diamond" house. The cube's skin has been stripped away, leaving the interior volumes, pulsing with Mediterranean color, attached to a long white spine.

Color indicates time, the color wheel the cycle of a day and of a year in a pair of "cycle" houses: the "L. A. House," and the "North-South-East-West House." Here the activity of the inhabitants is divided according to the cycle of the day, and assigned to separate units, colored to describe the activity they contain. But the ostensible statement on the ritual of daily life masks an exploration of the significance of color.

Charged with expressionistic color and the texture of overlaid media, the Venetian projects (pages 113, 115 and 116) set the stage for elaborate rituals. But here the drawings seem to cross the fine line between image and picture. Overburdened by literary explication, the forms lack intrinsic content; they become merely illustrations of a complex story.

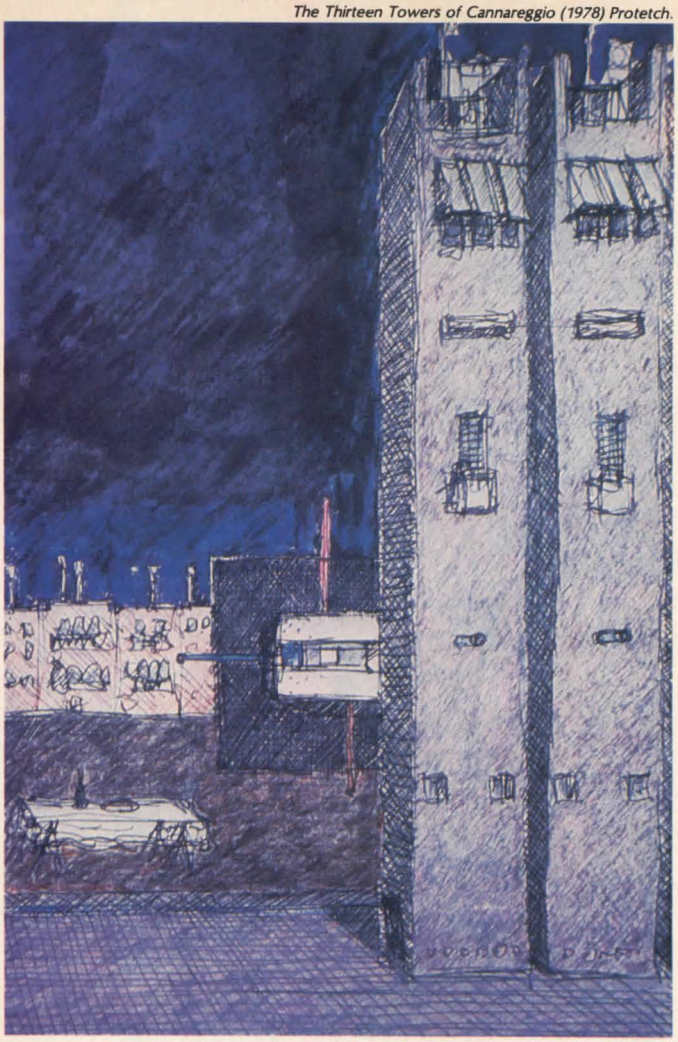
Serendipitously, the story generates a brilliant insight into Hejduk's dominant concern: perspective. A drawing for the "House for the Inhabitant who Refused to Participate" (page 115) represents a section through the back of that house but also, says Hejduk, "between the eye and the mind." It constitutes an analysis of apprehension: the viewer's eye is forced to focus on each of the twelve one-point perspectives of individual cells—the rooms of the house—singly, yet the habitation is understood in its totality. It is like looking someone "in the eye"—while you're actually looking at a single eye, what impresses your mind is the whole person.

The drawing is autobiography, metaphor, description and analysis. "That drawing," says Hejduk, "gives me the same tingle in my fingers as the Texas Houses do."

The Texas Houses, the "House for the Inhabitant," and Hejduk's other outstanding projects, the "Wall" and "Diamond" series (the Bye and Grandfather houses are examples of the first series) are close to the art that helped shape Modern architecture. These works, in which Hejduk seems most introspective, most personal, achieve that universal expression which, Mondrian wrote: "Art has shown . . . can only be achieved by a real equation of universal and individual."

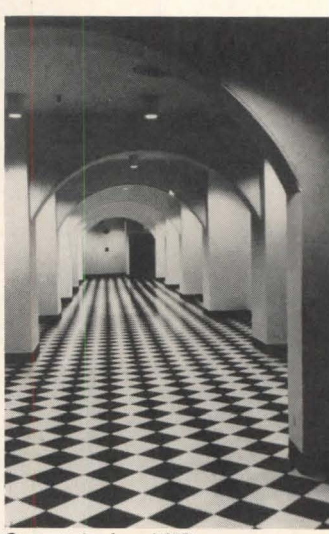
In these drawings, Hejduk approaches architecture with the sensibility of a Constructivist; with a concern for pure form, pure color, and their relations. The Constructivists took Modern art into a planar dimension. Hejduk works on modern architecture there.

The Thirteen Towers of Cannareggio (1978) Protetch.

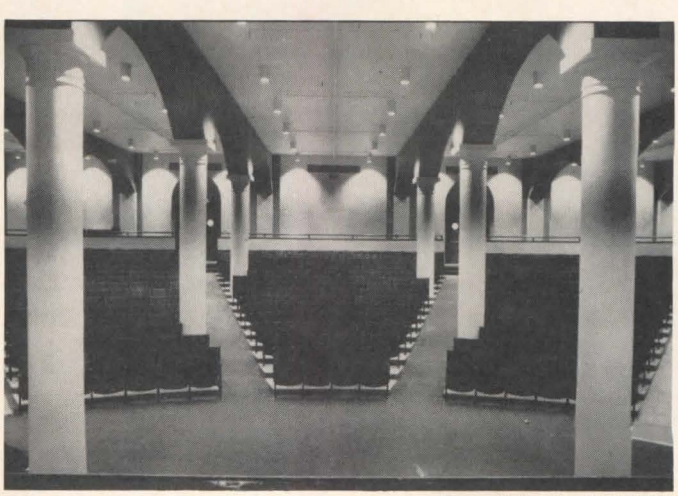


"These projects reaffirm that architecture has to do with plan, section, and elevation."
—Hejduk

Hejduk's artistic approach in the "Thirteen Towers" project (above and page 113) contrasts strongly with his approach to an actual building. In his widely-acclaimed 1975 renovation of the Cooper Union School Foundation Building, his major built project, Hejduk did no drawings, but worked directly from the model. As architect Robert Venturi recognized, the result was the successful transformation of a "formalist" building into a "user" building. The Great Hall (below) and the basement foyer (right) echo the geometric precision of the architect's two-dimensional works, but are tempered by a sympathetic appreciation of the existing structure and careful consideration for the programmatic requirements.



Cooper Union foyer (1975).



Cooper Union, Great Hall (1975).

HIGH-RISE OFFICE BUILDINGS

Almost every major city is experiencing tremendous growth upwards. Both completed buildings and a slew of designs still on the boards will, matter-of-factly, change the face of our cities and how we live in them. In some cases, this change is to the good—indeed mandatory to revitalize deteriorated center-city areas.

According to George Christie, vice president and chief economist for F.W. Dodge: "Most types of nonresidential buildings showed strong gains in January—the outstanding category was office buildings, with a 60 per cent increase over the year-ago value." And no repeat of the bust that followed the office building boom of the early 1970s—when many developers and architects were caught in the later economic downturn—is expected. "Even though the present rate of office construction is far outpacing the boom of the '70s," Christie continues, "the risk of overbuilding for the market of the '80s is low. While last year's record 235 million sq ft of new office space topped the 1973 peak volume by 20 per cent, the growth of the white collar work force in 1979 was 60 per cent greater than in 1973."

Almost every large American city and most foreign ones have experienced high-rise development: Los Angeles is creating a new high rise downtown; San Francisco is teeming with a new wall of high rises along Market Street, its main transportation corridor; Portland has had several major design competitions for high-rise office structures; Seattle and Denver also have high-rise-fever; the traditional high-rise cities of New York City, Boston, Chicago, Dallas and Houston are also getting new towers. Of particular interest, foreign money, especially Canadian and often with American partners, is being pumped into this building type. Western cities are experiencing the greatest Canadian development.

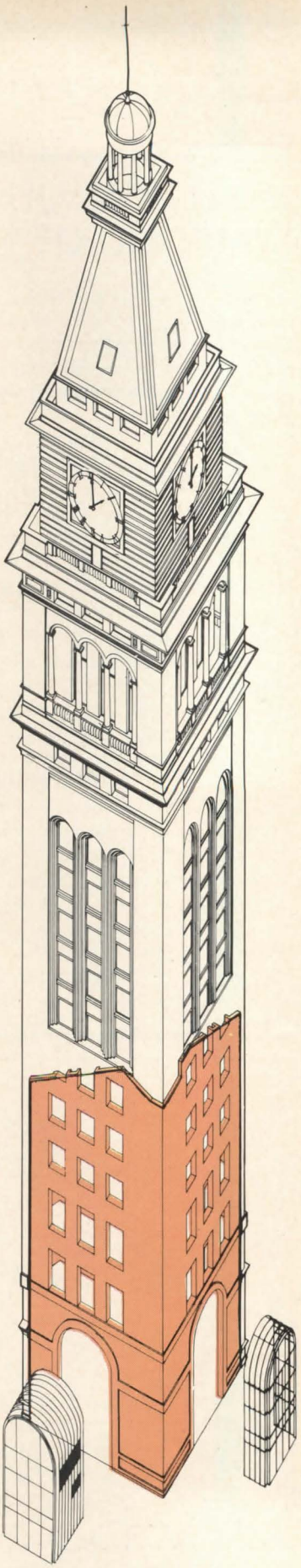
Major trends in this area are emerging for the 1980s. The dominant trend is toward more mixed-use complexes—though not in the long-hoped-for sense of including housing. Rather, most of the new towers are combining commercial, retail, and open space with offices. The all-in-one megastructure concept is supported by many such existing ventures, and their successes are encouraging many more. "Mixed-use projects mean much more than commercial vitality and financial return," states a report from the Urban Land Institute. "Increasingly, they represent a rediscovery of urbanity through integration of a rich mixture of mutually supporting activities into a single development project." Nearly all of the projects shown herewith demonstrate this trend.

Another trend is in the "fitting in" of new high rises into already overcrowded neighborhoods without drastically altering their look, scale and circulation yet providing contemporary requirements and amenities. There will be more trade-offs with city agencies, in which once highly-prized aspects, such as a plaza, will be relinquished for innovative land-use and people-oriented schemes. The new headquarters for Philip Morris in New York City shown in this study is an outstanding example of this trend.

Another trend is in the creation of office condominium space. This will have an effect on high-priced, in some cities limited, rental space. Denver and Dallas are pioneers in this experiment, but other cities are following their lead. One prime example of this trend is in the heart of Denver.

The Daniels & Fisher Tower (right)—all that remains of a large department store owned by May D&F and once the tallest structure outside of New York City—is being renovated and converted into office condominiums (RECORD, February 1980). Bought by French & Co. from the Denver Urban Renewal Authority at a cost of $73,000, the 21-story-high structure (built in 1910 and declared a national historic landmark in 1969) is the focal point for the developing downtown Transitway/Mall (RECORD, July 1979). The architects for the remodeling—Gensler and Associates—have designed a complete restoration of the lobby and renovation of 15 floors, 14 of which will be offices and one a common conference floor. Nearly 5,800 sq ft will be excavated beneath the tower and adjoining city land to be developed as a restaurant. A 30-foot-high glass atrium will be attached to one elevation as entrance to lobby and restaurant; a smaller arched glass enclosure on another elevation admits light into the restaurant below and will contain the monumental antique clock works which originally drove the tower clock.

Four more contemporary examples follow on pages 118-132. —*Janet Nairn*



Denver landmark Daniels & Fisher Tower is being renovated by Gensler and Associates into office condominiums, an example of one of the newest trends in high-rise office development.

BANK HEADQUARTERS SYMBOLIC OF "NEW" SINGAPORE

Dramatically towering above a mélange of older buildings is the newest, and at 52 stories the highest, building in Singapore—the Oversea-Chinese Banking Corporation's (OCBC) new headquarters. Designed by BEP Akitek (Singapore) with Ieoh Ming Pei and a number of his associates as design consultants, the building is symbolic of the fast-paced development of the "new" Singapore.

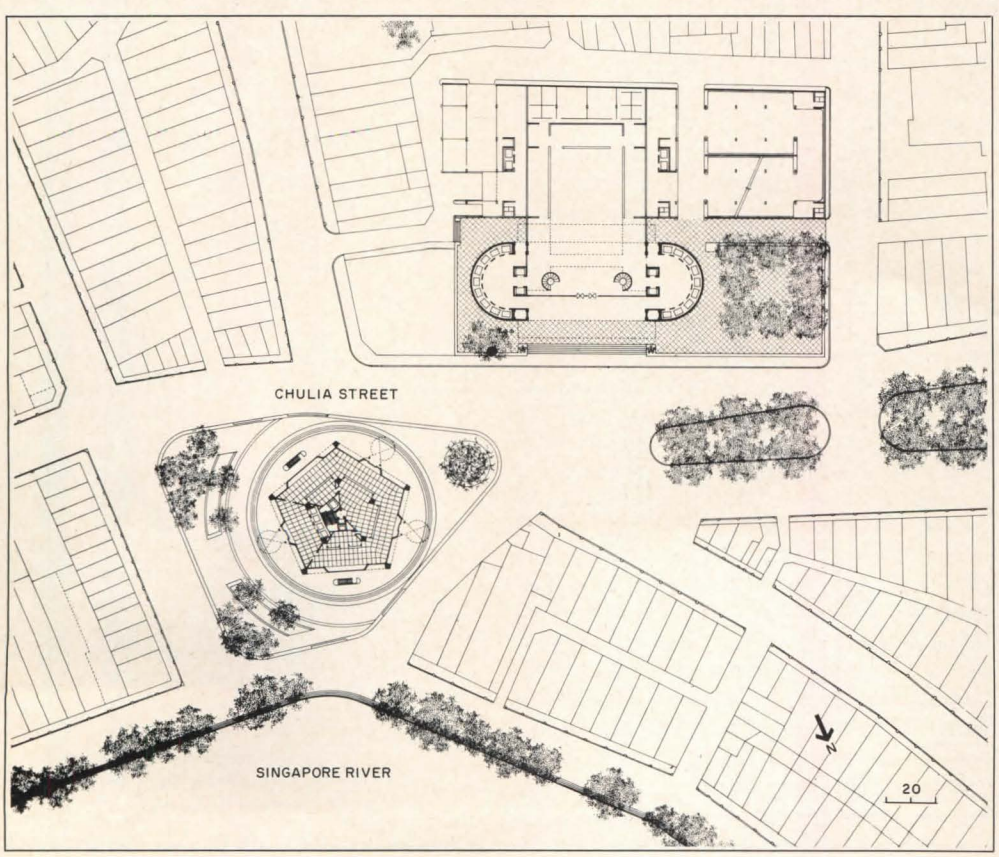
Through an aggressive urban renewal program, the historic Singapore of low-rise office buildings of British colonial days and "shop houses" (the small-scale, stucco-covered masonry houses capped with red tile roofs that make up the predominant texture of the city) is being transformed into a high-rise megalopolis. The city, on a small island off the Malaysia Peninsula, has little buildable land, and small hills have been scraped to provide land-fill stretching into the surrounding waters. The only other viable construction solution is to build upwards. Although OCBC appears out-of-context in some perspectives from its colorful environs, it was designed to fit into the developing high-rise cityscape.

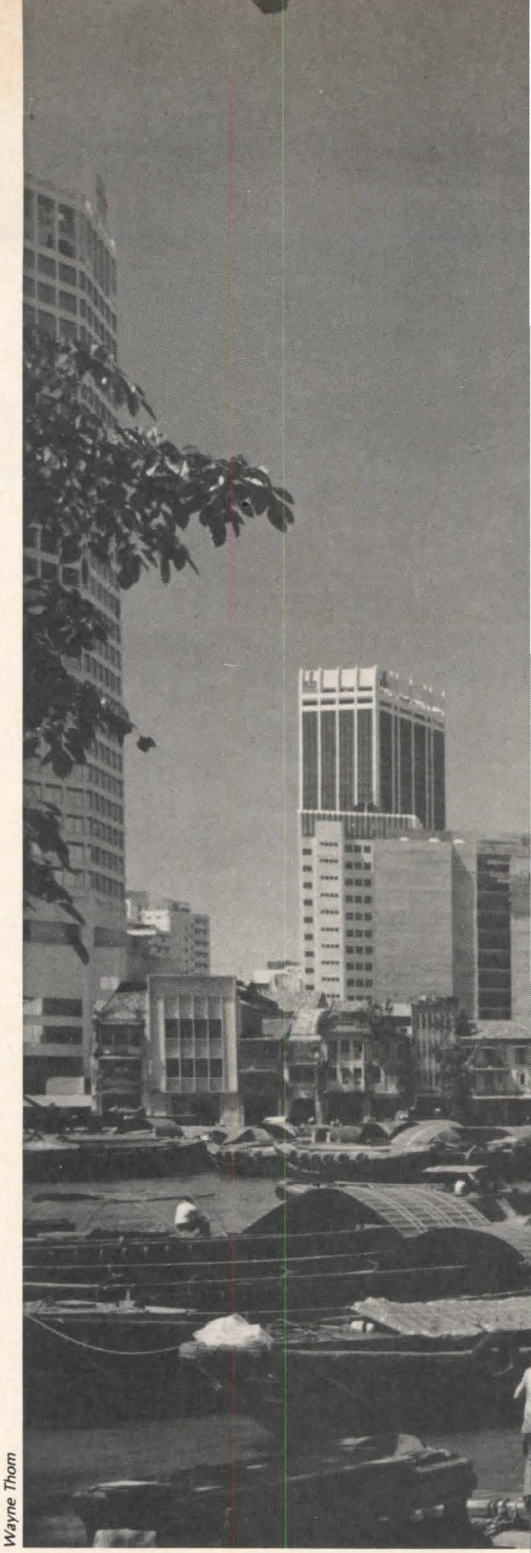
The site is significant in the city and for the client. Historically, it is the center of Chinese commerce, an area named the "Golden Shoe," and a short distance from a major spine, Shenton Way—the "Wall Street" of Singapore. It is also the homeground of the old headquarters called the China Building, a six-story-high building of classical design. OCBC prospered here, and according to an old Chinese belief known as *foong sway* the client will continue to prosper if he remains.

After demolition of the original building, the land was combined with adjacent bank-owned property to provide the 70,500 sq ft site, of which 53,000 sq ft was utilized. The building fronts Chulia Street with the major entrance off a plaza and forecourt formed from several street intersections.

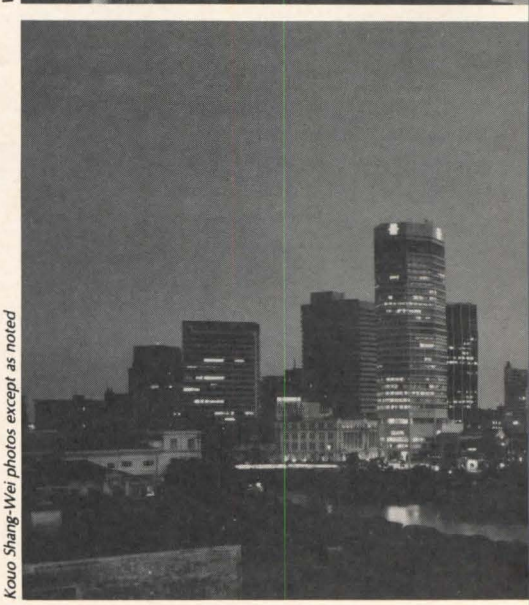
Views from the upper office floors are spectacular: in one direction, there are sweeping vistas of the Singapore River teeming with picturesque lighters (boats used mainly for freight transport), and beyond to an enclave of British government buildings, the Padang (cricket field) and war memorial, and further to the famous Raffles Hotel and an adjacent site of an international hotel for which I. M. Pei & Partners will also be design consultants. In other directions, there are equally magnificent views of bustling downtown Singapore.

The design concept consists of a 52-story-high tower with a six-story-high parking building. There is a total of 900,000 sq ft of

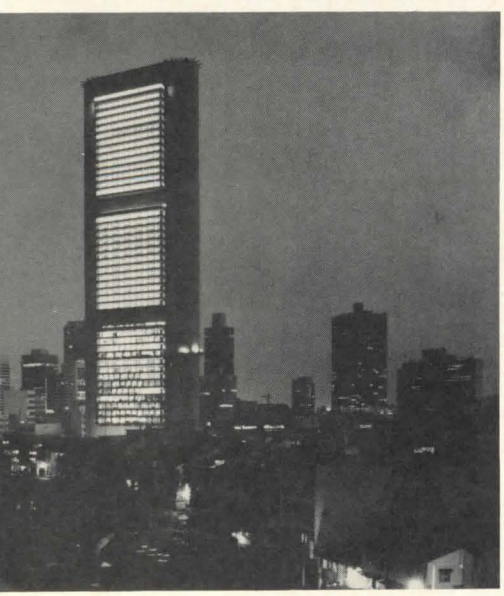




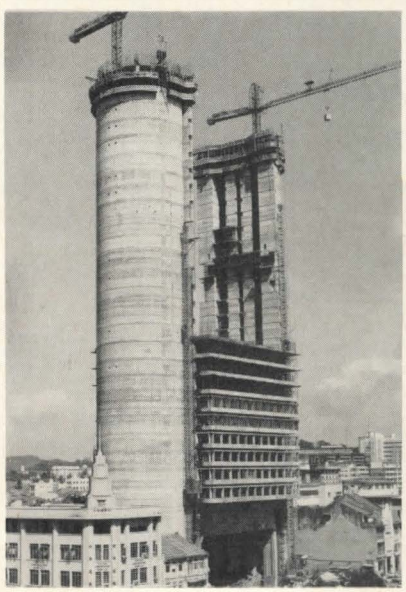
Wayne Thom



Kouo Shang-Wei photos except as noted



Facing the busy Singapore River stands the grand new headquarters bank for Overseas-Chinese Banking Corporation, complementing the city's new skyline. The first high rise in this neighborhood, it will face another high-rise building (shown in site plan is another I.M. Pei & Partners design proposal)—and others will join them as Singapore expands upwards in response to demand and the land shortage of the island. An innovative structural solution not only permitted efficient construction but produced an architectural expression of unusual shape and detailing, visible even at night when it is punched full of light.



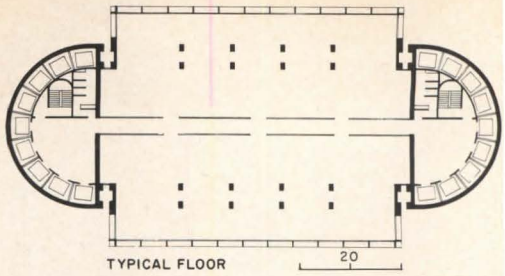
office floor area, most of which will be occupied by the client; some floors will be rented. *The structure* is of reinforced concrete—the most common and accessible building material—supported on steel piles. The client's requirement for a massive and unobstructed banking hall was achievable only by using advanced and efficient structural and construction systems. The solution: two semi-circular service cores at the ends of the building with office floors stretched between.

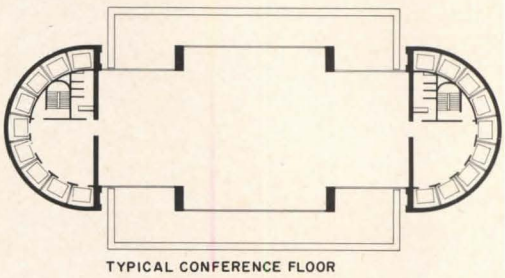
The end service cores are slip-formed reinforced concrete. A four-story-high banking hall was formed by two 115-ft long post-tensioned concrete box girders located at the fourth level and supported on four massive columns; these girders also support office floors above to the 19th level. At the 20th and 35th levels, steel girders were positioned to support 14 office floors above each. These transfer girders break up the office floors into three "cages," visually prominent on the exterior. The uppermost set of girders at the 52nd floor provide column-free spaces for executive offices and penthouse on the two floors below.

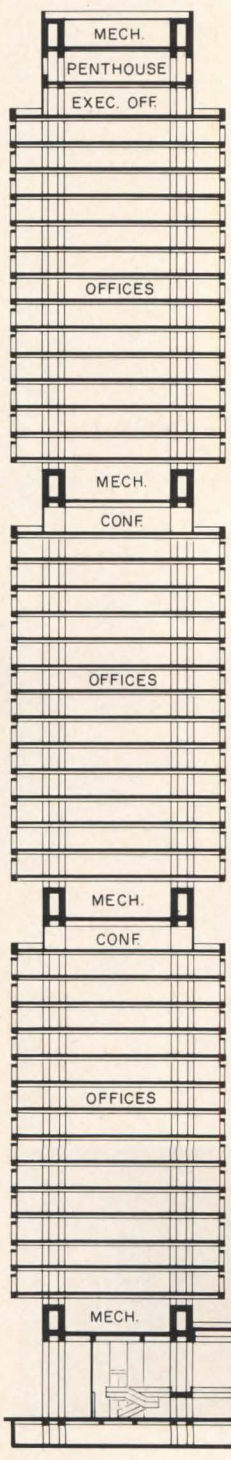
This structural solution made it unnecessary to totally complete the end core construction before work could begin on the office floors. Once the end cores were high enough, the fourth floor girders were positioned, and as the cores proceeded upward, floors were being constructed. When the cores reached the 20th floor, girders were installed, and work could begin on building office floors above it, even if the floor construction below was not yet finished. Thus, there was concurrent, independent construction proceeding on the cores and office floors.

Each of the office floors measures 115-ft long by 95-ft wide, with beam and slab construction. Each floor contains beams that cantilever to 15 feet beyond the plane of the service cores. Because of hot tropical weather and sun glare, office floor fenestration was set back from the framework to provide sunshading. Materials specified enhanced the bank's image—"solid as a rock" is their motto—with Sardegna granite (off-white color) in a sleek finish to deter growth of indigenous mold. The "cages" were clad in matching colored tiles.

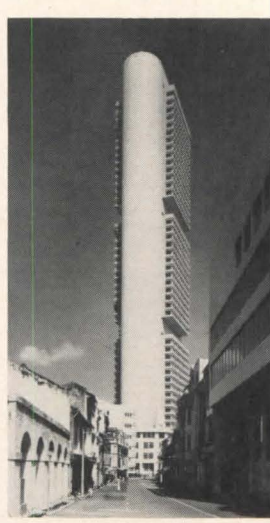
OCBC CENTRE, Singapore. Owner: *Oversea-Chinese Banking Corporation.* Principal architects: *BEP Akitek* (Singapore)—*Ong Eng Hung, partner-in-charge.* Architectural design consultants: *I. M. Pei & Partners—I. M. Pei, partner; Kellogg Wong, associate partner-in-charge; Bernard Rice, senior associate; Pershing Wong, associate partner.* Structural engineers: *Ove Arup & Partners; Weiskopf & Pickworth* (conceptual consultants). Mechanical/electrical engineers: *Preece Cardew & Rider, Southeast Asia; Cosentini Associates* (conceptual consultants). Consultants: *Peter Knowland* (acoustical); *Langdon, Every & Seah* (cost/quantity surveyors). General contractors: *Morrison-Knudsen-Low Keng Huat Joint Venture.*





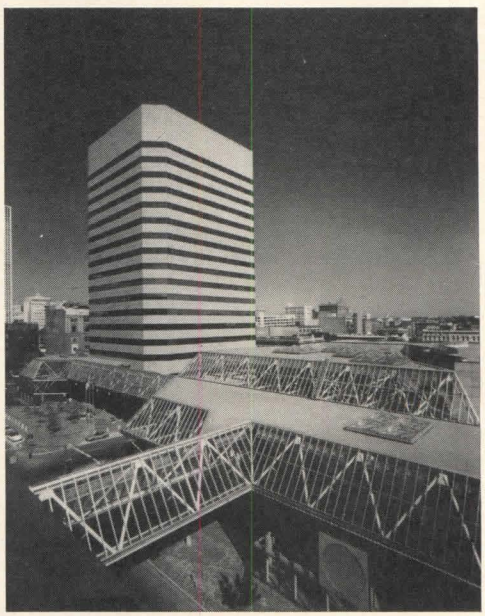


Wayne Thom



From some viewpoints, t building's drama is heighten by its unexpected slimne Semi-circular end service co offset patterned office floor

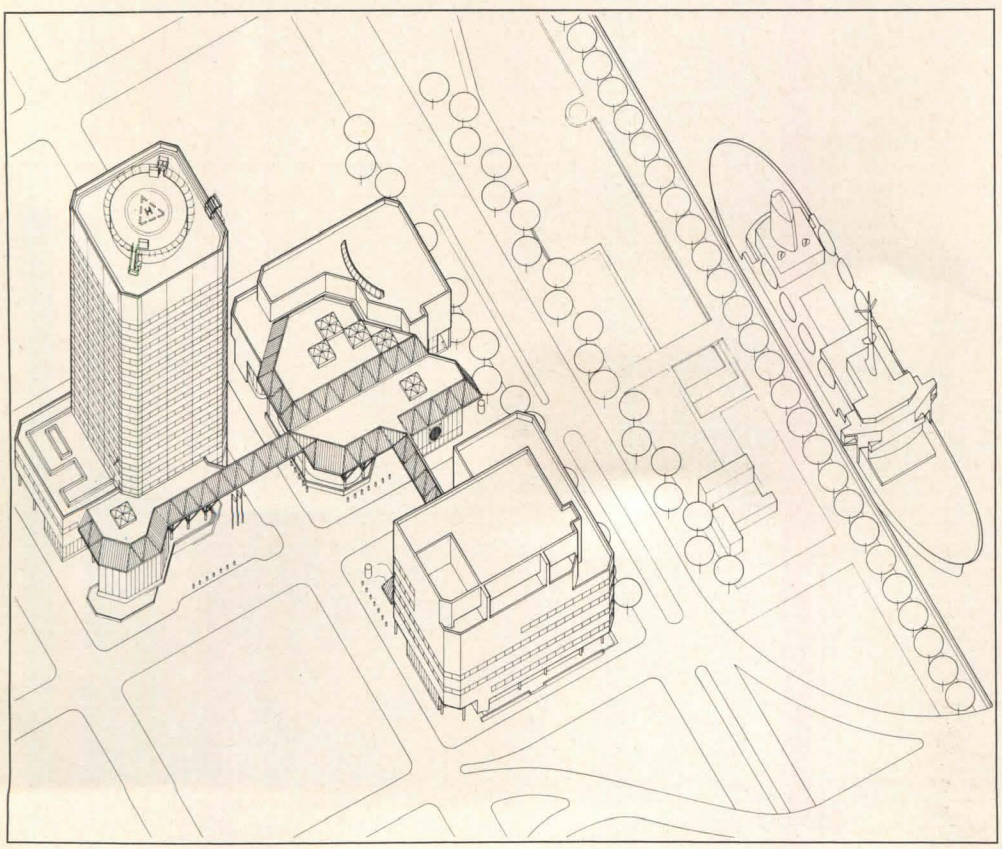
MIXED-USE HIGH RISE AFFORDS A SPECIAL SPACE FOR PEOPLE IN PORTLAND

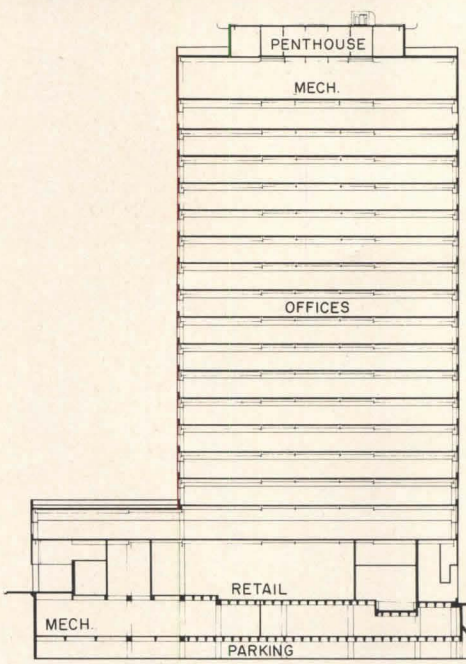


Portland is a city that is claimed to be one of the most livable in the country—which to many Portlanders means guarding against "Manhattanization." Nonetheless, as in most cities, the high-rise pressure is on—and the newest example is Willamette Center, headquarters for Portland General Electric Company. It has been as controversial as other high-rise development; it represents, however, a new and sensitive design thrust in the emerging and changing Portland. Architects Zimmer Gunsul Frasca Partnership viewed this project as a catalyst for the city's downtown redevelopment and a key connecting link between the center-city and waterfront along Willamette River—an area little developed until now, except for parking lots. "The complex has energized this area and is bringing public attention to the waterfront," says Robert Frasca, partner in the firm. "PGE pioneered this area, and adjacent neighborhoods are already being upgraded; an example is the Yamhill historical district."

Critics attacked the initial plan, which had the highest building of the complex positioned nearest the waterfront park. There was concern that the first design would shut-off possible open space along the waterfront and further contribute to "high-rise mania" in town. While this plan did have some special urban design qualities, citizen participation and corresponding client approval led to moving the office tower one block away from the waterfront. This second ZGF plan overcomes these objections with a design that makes much of pedestrian spaces and views in a mixed-use complex of offices, retail and open space for special events.

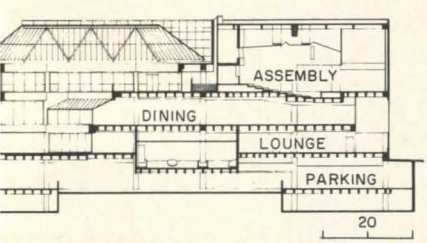
The L-shaped complex consists of three buildings with a total of 500,000 square feet, linked with extensive pedestrian walkways on the street and elevated bridges above ground level. The highest of the buildings is 18 stories, with office space for the public utility client. The second highest building is seven stories serving some division offices but with other leasable space, and retail on the ground level. The third building, only three stories high, is called the "open-block"—space jointly used by tenants and the public with a 300-seat theater, conference rooms, restaurants, retail, lounge and large open area on ground level. Presently, a grand merry-go-round will be installed here to add to the

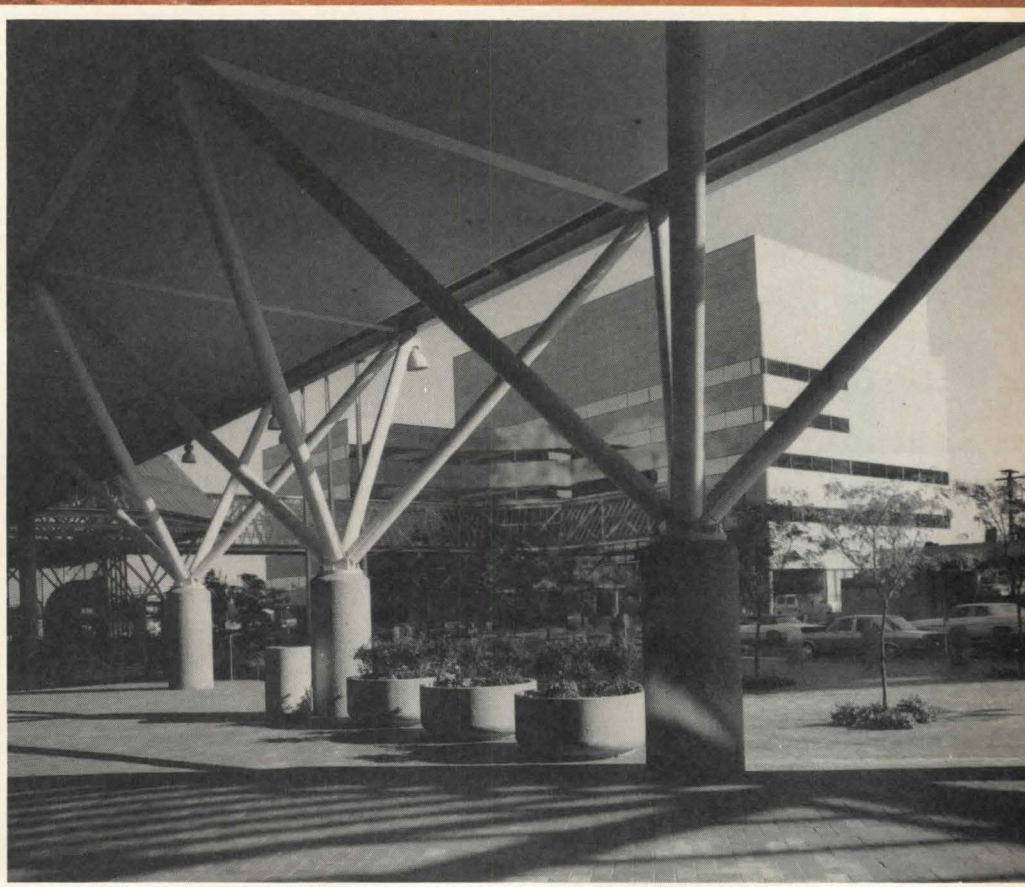




Located in downtown Portland, the Willamette Center mixed-use complex of three buildings is highlighted by elevated pedestrian walkways and exposed steel trusswork in the see-through pedestrian bridges and on street level arcade—all intended to be a drawing card to stores, shops and restaurants within. The tower is predominant in the complex but not on the cityscape, as there are many taller buildings nearby. The important site near the Willamette River afforded a rare opportunity for the architects to create a "people place" for public events near the waterfront.

Wayne Thom photos





over-all vitality. All parking is underground.

The crystalline quality of the space frame entry and bridge system that interlinks the project was designed to create prism-like patterns over the pedestrian areas and visually de-emphasize the office buildings. Its brilliancy, particularly at night—both from afar and underneath—provide an environment that fulfills the original mixed-use, day and night vitality.

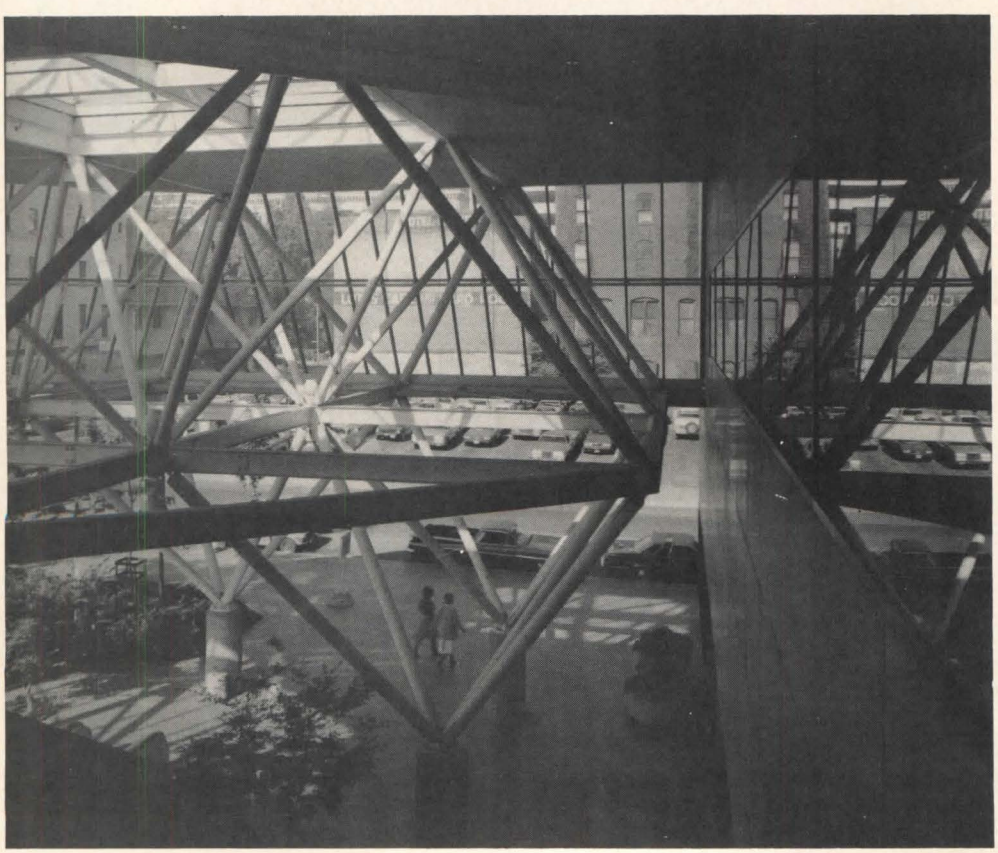
Circulation, obviously, was considered critical—wide sidewalks moving in-and-out of ground level open trusses allow pedestrian latitude, and escalators draw people up to the second level to the bridges. Planned retail activities will attract people from the main mass transportation spine, the Portland Transit Mall (RECORD July 1979). Car traffic was permitted around the complex on all sides.

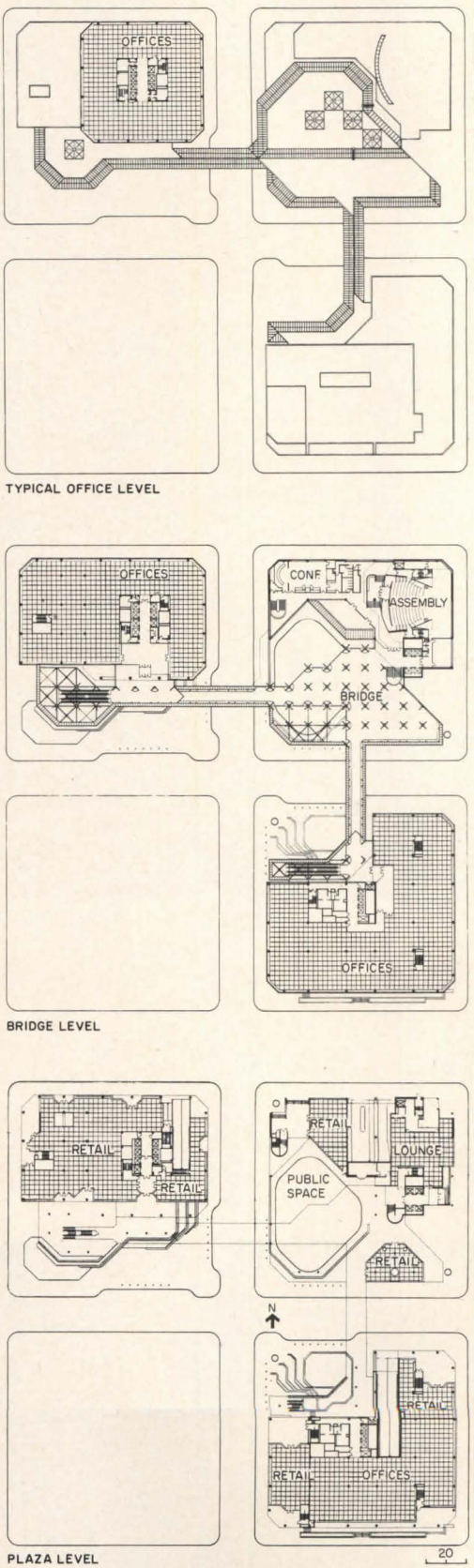
ZGF worked with the city and the Portland Development Commission to develop a master plan for the waterfront park. The first phase is complete at the northern end—with plaza and steps leading to the water. The second phase at the southern end—with marina and housing—is presently being designed. The land between will be developed in two other phases, and it is here that the pedestrian bridges from the complex will be extended to the park.

Structurally, a steel frame is supported by a concrete platform underground. The exterior is clad in honed Verde granite and a gray-colored reflective glass. The gray granite panels visually "lighten" the whole complex, and contrast with many other darker colored buildings in town. On darker days, the building blends with the west hills behind, and on bright, sunny days, the surface simply gleams.

There was no general contractor on the job; the owner's construction division managed 52 separate subcontractors to build the $35 million complex.

WILLAMETTE CENTER, HEADQUARTERS FOR PORTLAND GENERAL ELECTRIC COMPANY, Portland, Oregon. Owner: *American Property Investors V123.* Architects: *Zimmer Gunsul Frasca Partnership—Norman C. Zimmer, partner-in charge; Wallace W. Roeder, project manager; Robert J. Frasca and Gary H. Larson, design team.* Architectural design consultant: *Pietro Belluschi.* Engineers: *kpff Consulting Engineers* (structural); *Neil Twelker/Northwest Testing Laboratories* (foundation/soils); *W. A. DiGiacomo Associates* (mechanical/electrical). Landscape architects: *SWA Group.* Interior design: Zimmer Gunsul Frasca Partnership and Timothy H. Walker, Associates. Consultants: *Cerami and Associates, Inc.* (acoustical); *Howard Needles Tammen & Bergendoff* (parking); *Landry Hunt & Bogan and Kermit Shafck* (theater). Subcontractors: *Fought and Co., Inc.* (structural); *Natkin & Co.* (mechanical/plumbing); *Lord Electric Co., Inc.* (electrical); *Blaesing Granite Co., and Tom Benson Industries* (exterior wall).





Willamette Center shines at night, brightening the exposed trusswork at street level. The scale of these trusses is also perceived from the interior perimeter corridors (left)

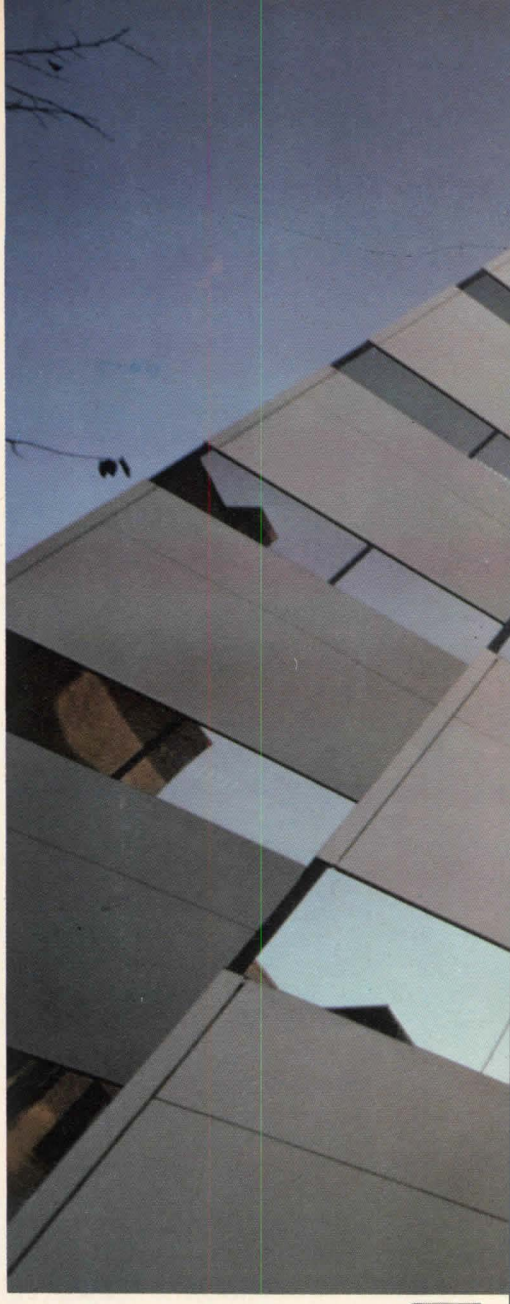

Willamette Center
the oregon bank
Foster & Marshall Inc.
PORTLAND GENERAL ELECTRIC COMPANY

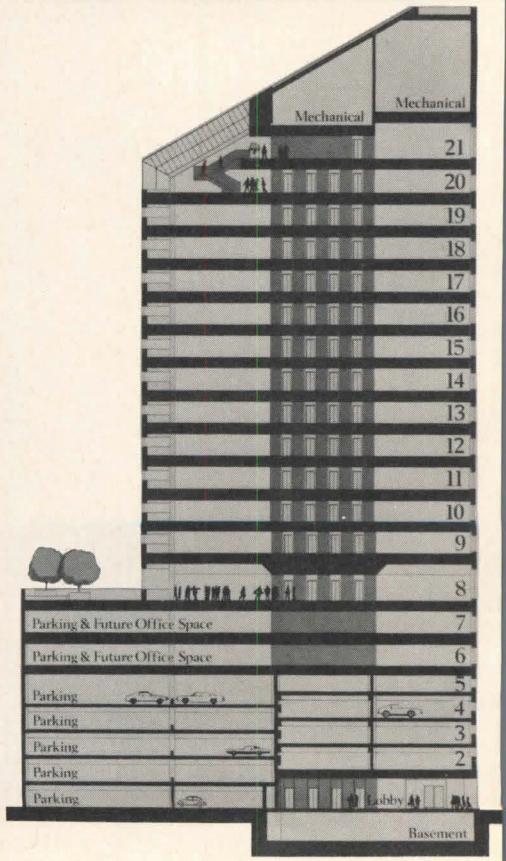
CINCINNATI TRIANGULAR TOWER CREATES CLIENT BENEFITS FROM PROGRAMMATIC PROBLEMS

The striking form of this new building in downtown Cincinnati grows out of very difficult construction and programmatic requirements, but creates some splendid amenities—a fine view and a host of extra "corner offices"—for the owner. Its architects, RTKL Associates Inc., were invited in 1977, along with four other architectural firms, to participate in a national design competition for Federated Department Store's headquarters building. Their winning proposal called for an office building of 350,000 square feet and two extra levels of parking to be built atop an existing five-story parking garage that the client had constructed in 1968.

The project was, of course, greatly complicated by the requirement that the tower be raised over the garage. Further, the desirable views to the Ohio River to the southeast, south and southwest, were partially blocked by existing high-rise structures to the south of the site. In response to those constraints, RTKL designed a 21-story-high tower, triangular in shape, with an area of approximately 25,000 gross sq ft on a typical floor. The building was positioned on the property line to the north to free-up space on the view side, and the triangular shape provides maximum views to the riverfront—taking advantage of "sight line" corridors to the southeast and the southwest. The shape also creates a strong, contemporary image for the client. The existing parking structure was increased in size by the addition of the required two levels, and renovation of the existing garage made it possible to create a centralized lobby and elevator core at ground level to service the tower floors. A system of deep beams transfers the office building load into the garage.

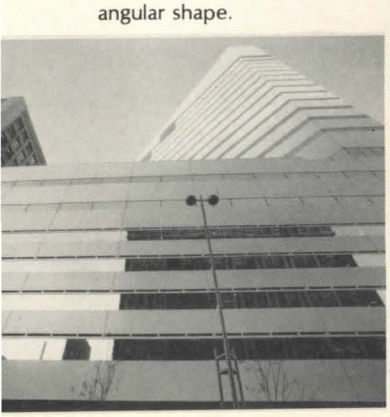
The most prominent visual aspect of the exterior is a set of "pleats" located at the intersection of the angled walls. This sawtooth edge creates intriguing light patterns and even appears to undulate. This design feature creates a host of extra "corner" offices (see plan), terminating at the upper 20th and 21st floors in a two-story-high atri-

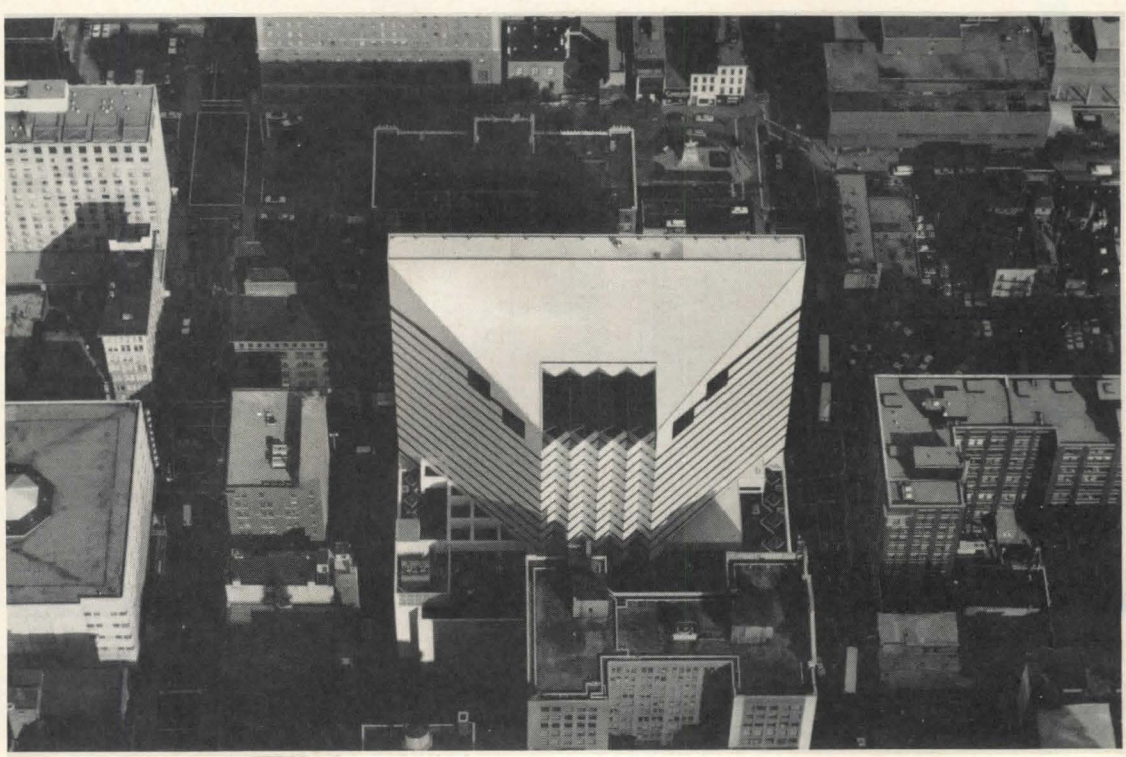


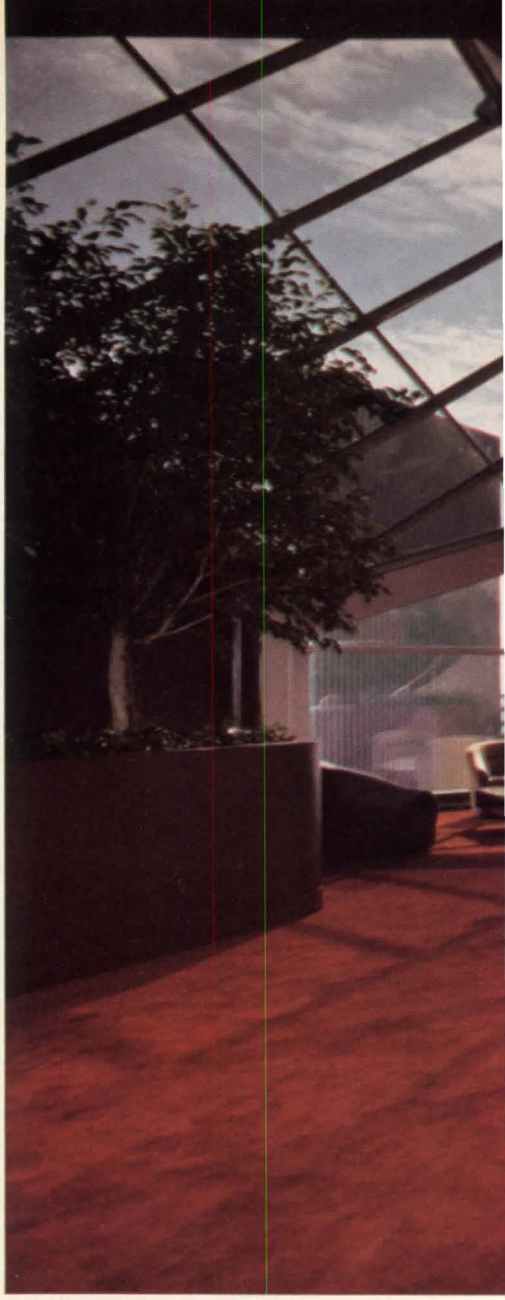


Richard Anderson photos

An existing parking garage is used as foundation for an office tower for Federated Department Store's headquarters in Cincinnati. The most exciting aspect of the structure is a sharp, angular, "pleated" wall at one corner of the triangular-shaped building (above). This unusual corner meets a sloping roof; at this point skylights dramatize the form while allowing light to enter the two-story-high executive space. Interesting perspectives of the tower are seen from the street level due to the tower's triangular shape.







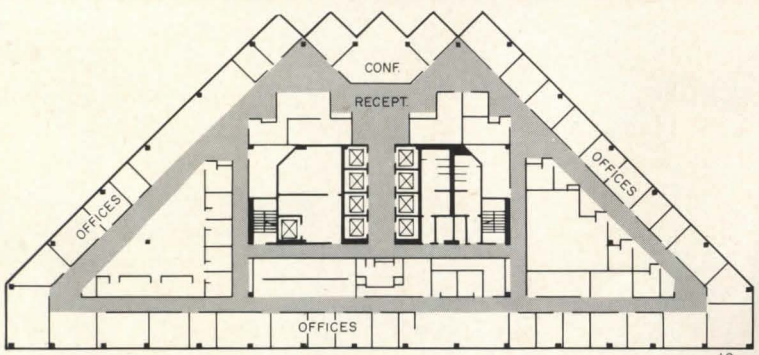
um. The atrium serves as reception area and display lobby for the client's executive suite, and serves the corporate boardroom and executive dining room.

Concerned about energy consumption, the client required in the original proposal a maximum energy consumption of 55,000 Btu's per square foot per year. This design, as measured since completion in the fall of 1979, uses 48,000 Btu's per square foot per year. The architects credit this low rate of energy use in part to the reflective skin and glass, in part to the orientation, and in part to the modest window area. Windows on southeast/southwest elevations are only 3 feet 6 inches high to minimize the heat load, and glazed portions of the north elevation, where there is less direct solar heat load, are 6 feet 6 inches high.

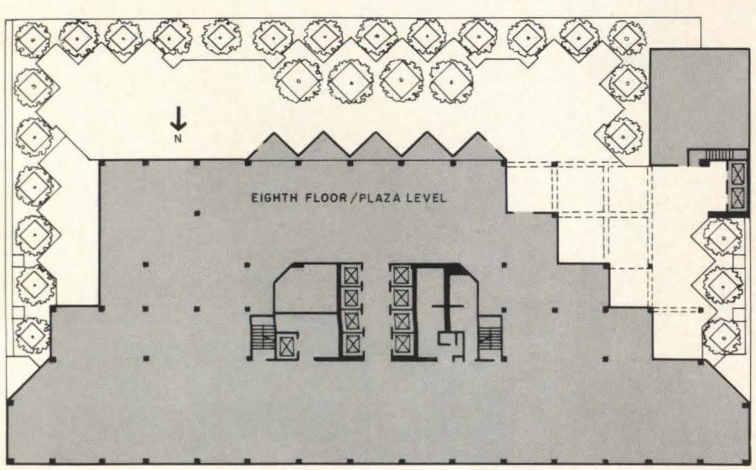
The tower is covered in off-white insulated aluminum panels, and glazed with silver-mirrored, double-insulating glass. While ribbon fenestration encircles the structure, there are special points of large glass areas, at roof level near the apex, emphasizing the atrium level from the exterior and providing a flood of light into the atrium space. The roof line is also sloped, with large skylights above the atrium space. These skylights are pyramid-shaped to complement the saw-toothed vertical facade. The original parking garage is clad in identical material as the tower. At ground level on the north facade, a continuous covered arcade opening to retail stores is marked by granite-clad columns.

On top of the parking garage (the 8th floor), where the transition to the triangular shape takes place, is a landscaped garden facing south. This garden furnishes generous planting and outdoor seating, and future access to Cincinnati's downtown elevated pedestrian "skywalk" system. The building cafeteria is also located at this level, taking advantage of the garden and outside dining.

THE FEDERATED BUILDING, Cincinnati, Ohio. Owner: *Federated Department Stores, Inc.* Architects: *RTKL Associates Inc.—Francis T. Taliaferro, principal-in-charge; Edward P. Haladay, principal-in-charge of design; S. Thomas Wheatley, III, principal-in-charge of production.* Engineers: *RTKL Associates Inc.* (structural); *The H.C. Nutting Co.* (soils consultant); *Brady & Anglin* (mechanical/electrical). Landscape architects: *RTKL Associates Inc.* Interior and graphic design: *Walker/Group, Inc.—Matthew Szczeniowski, partner; Joyce Blum, senior designer; Birch Coffey, Karen Dauler, project designers; Rob Esquivel, job captain; and Bloomingdale's Store Design.* Acoustical consultant: *Jaffe Acoustical Consultants.* General contractor: *Henry C. Beck Co.*

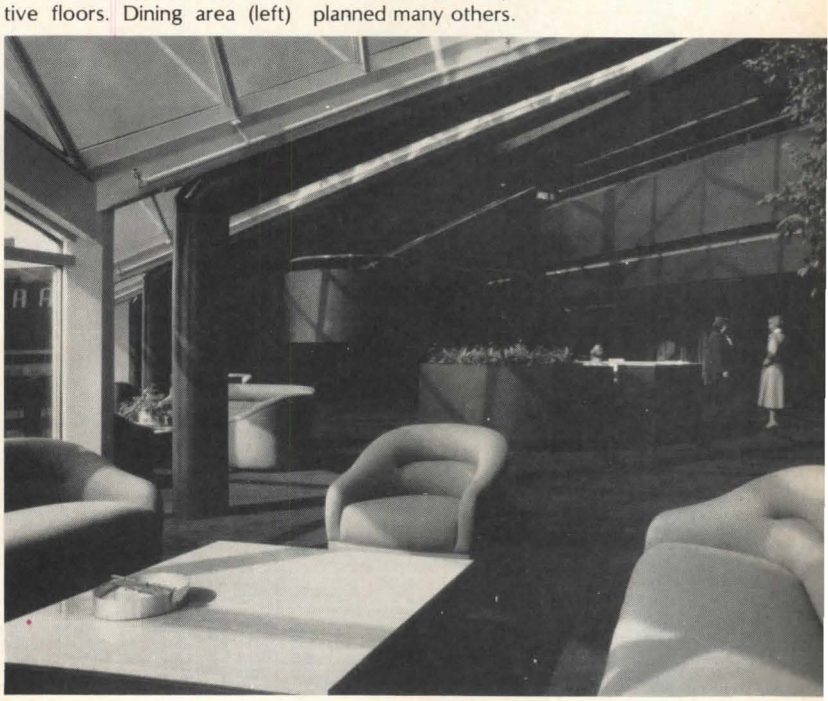


TYPICAL OFFICE LEVEL



SITE PLAN

A variety of interior spaces reflect the angularity of exterior facade. Pyramid-shaped skylights at the uppermost levels (above and below) augment brilliantly-colored executive floors. Dining area (left) also features a hung ceiling echoing the saw-tooth exterior treatment. The Walker Group Inc. designed eight floors while Bloomingdale's Store Design department planned many others.



NYC HIGH RISE ADDS A FESTIVE MUSEUM TO GRAND CENTRAL STATION AREA

On a significant site across from Grand Central Station in the heart of New York City, Ulrich Franzen's design for the 26-story-high headquarters for Philip Morris Inc. (now under construction) solves a lot of problems. For one, the site is most unusual—as Franzen says, "a chaotic juxtaposition of architectural styles." Indeed, New York City is the epitome of this diversity, but the design is a forward-thinking attempt to meet the dilemmas of unifying a disparate neighborhood through complicated external esthetics.

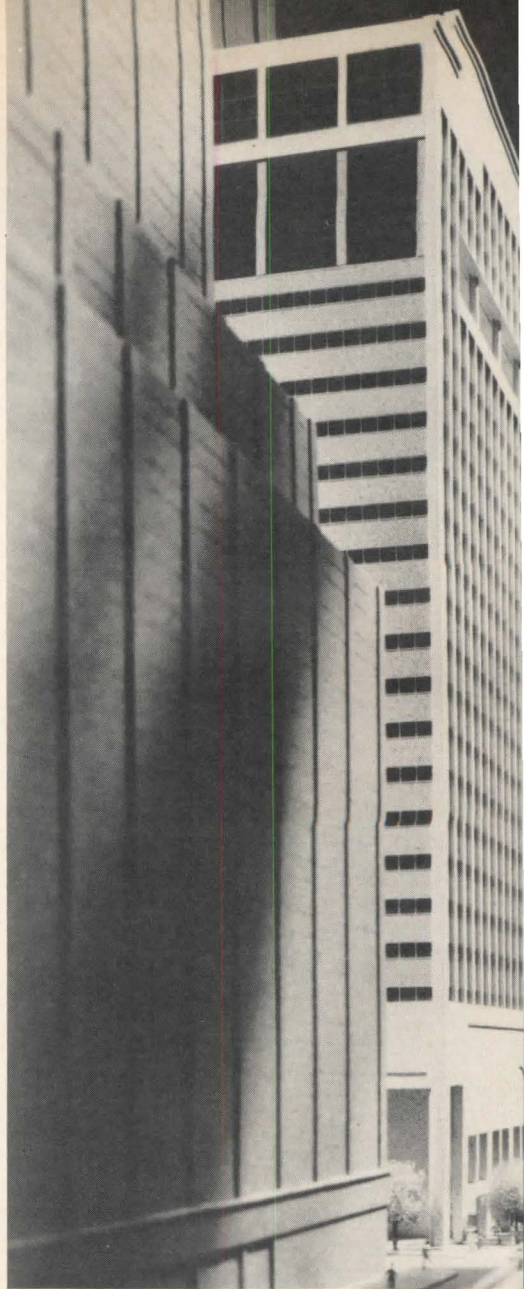
Sited on a corner lot with three visible sides, the building is bordered by 42nd Street, Park Avenue and 41st Street. The elevations read as distinct entities in relation to their respective streetfronts. The major facade is along Park Avenue (see photo)—an avenue that characterizes "corporate row." Philip Morris faces the Pershing Square building, designed with a traditional monumentality like others on Park Avenue. The base has an arcade set behind six regimented square columns, with one of the two major public entrances. Narrow vertical ribs stretch to a notched cornice, which relates to the cornice line of the Pershing Square building.

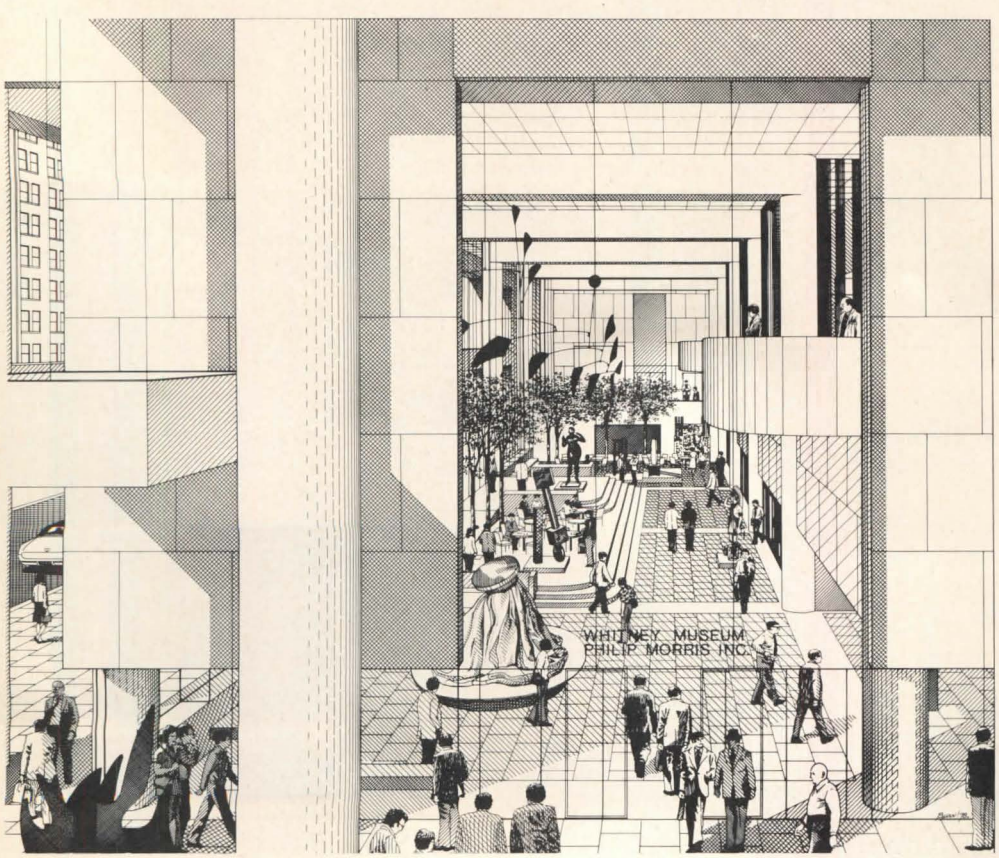
Differently designed is the elevation across from landmark Grand Central Station on 42nd Street, a major crosstown transportation spine with lots of small-scale commercial/retail hustle and bustle. As a foil to the Beaux Arts exuberance of Grand Central Station, this facade is responsive to the horizontality of the Station and to the massive Pan American building behind. Three round columns, each four-stories-high, are topped by broad horizontal bands representing the office floors; the line above the columns aligns with the neighboring building to the west. The top has indents corresponding to setbacks at street level.

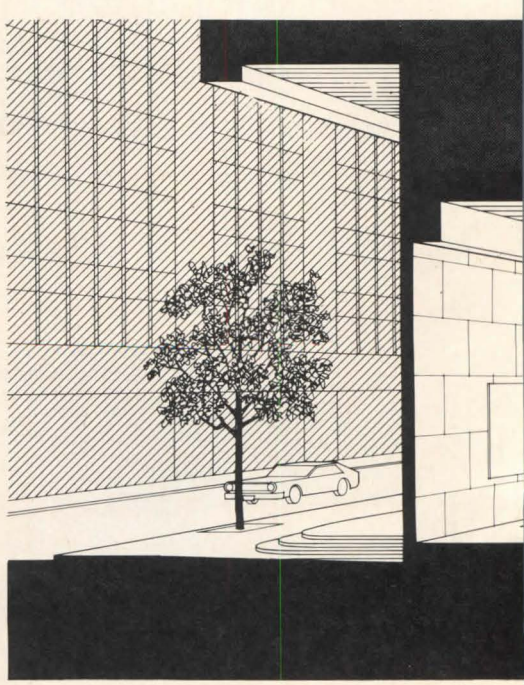
The 41st Street front is similar to that of 42nd Street. Vistas up Park Avenue to the Station and Pan Am will be framed by nearly equal heights of the Pershing Square building at 300 feet and Philip Morris at 362 feet.

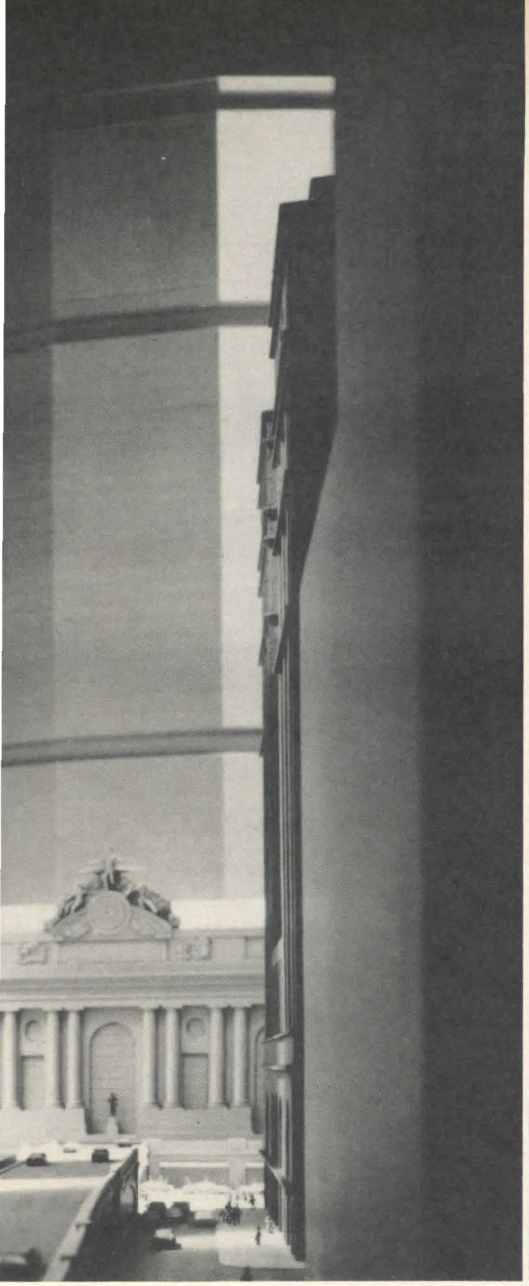
Not just as a trade-off under New York City's midtown zoning incentives program but as a splendid gesture to the public, there's a large pedestrian arcade inside the building on street level: a branch of the Whitney Museum will be housed here as well as retail shops. The public amenities were exchanged for a larger floor-area-ratio, which allowed for extra building height.

HEADQUARTERS FOR PHILIP MORRIS INC., New York City. Architects: *Ulrich Franzen & Associates.* Engineers: *Weiskopf & Pickworth* (structural); *Jaros, Baum & Bolles* (mechanical/electrical). Construction manager: *Morse/Diesel, Inc.*

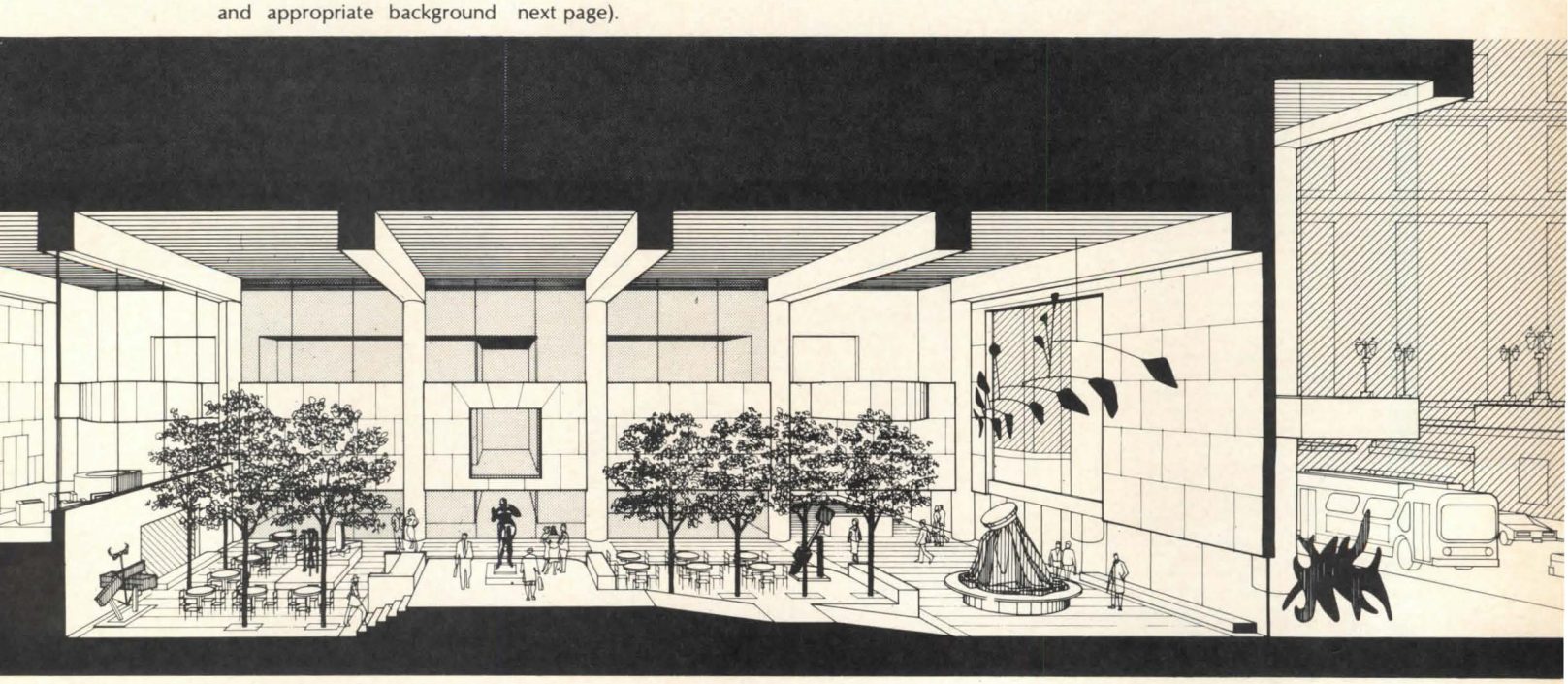


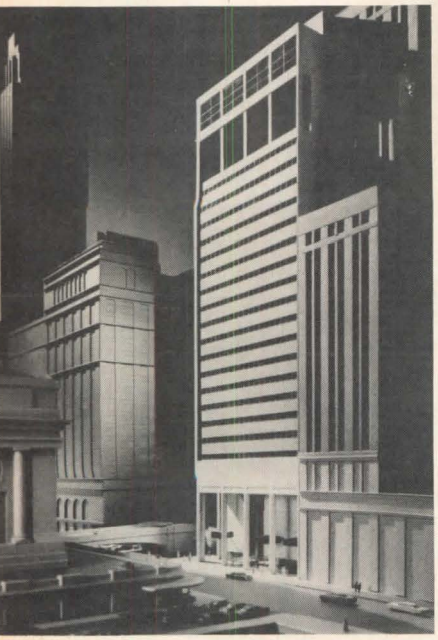




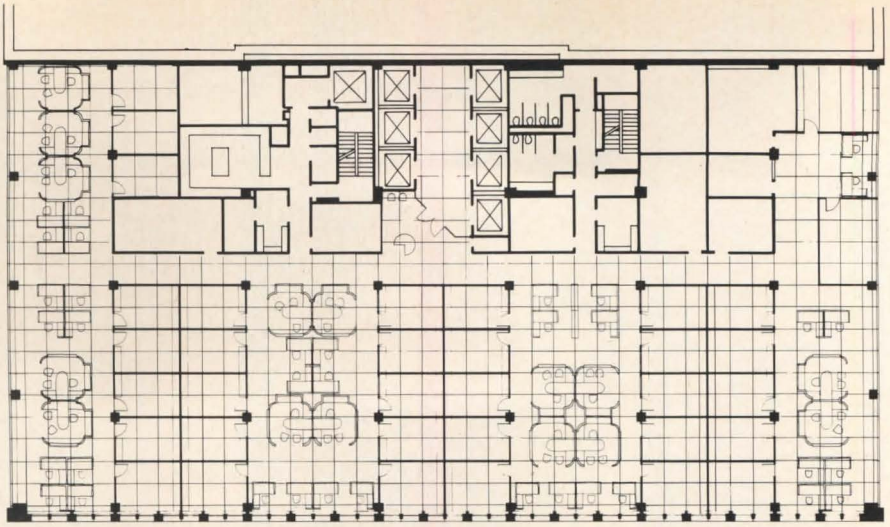


The 26-story-high Philip Morris building will be clad in gray granite panels and gray insulating glass on the tower and vision glass at arcade street level. This color is an effective and appropriate background to the lighter limestone of Grand Central Station across the street. A branch of the Whitney Museum will be housed in a large pedestrian concourse (see below and next page).

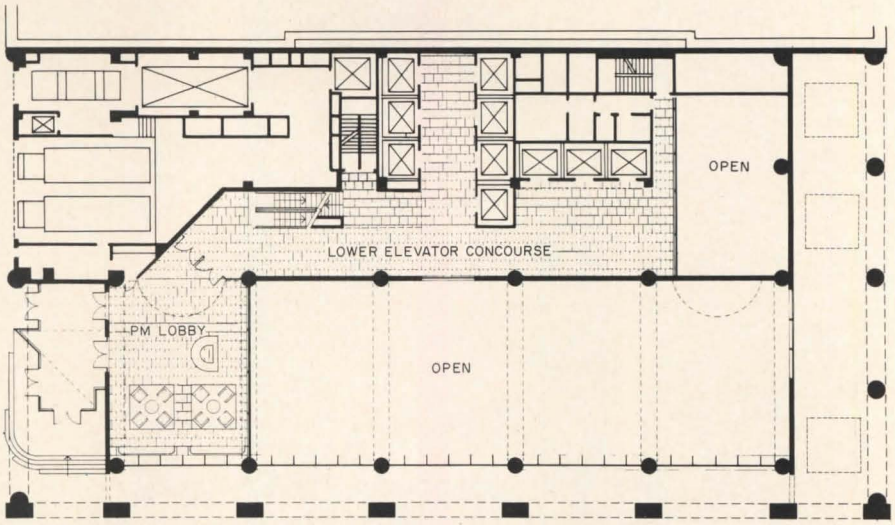




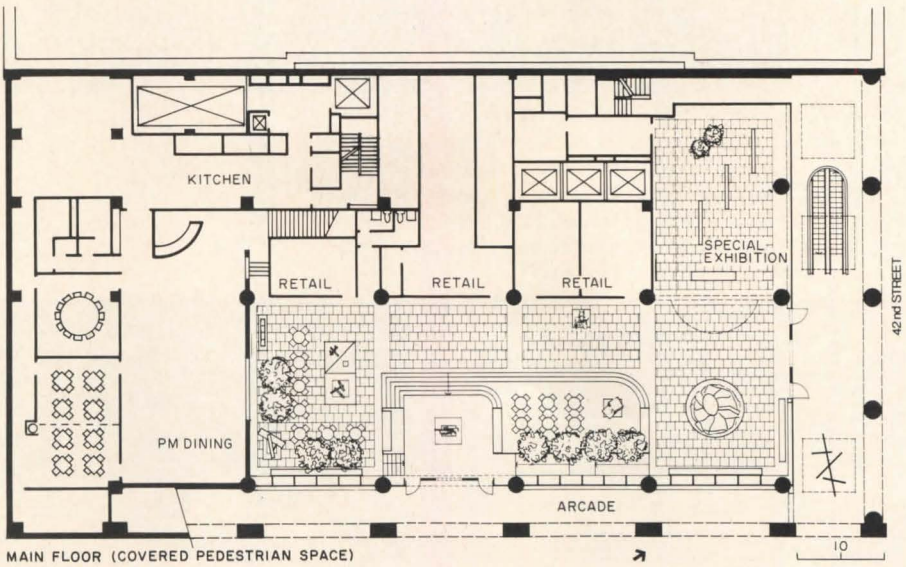
In a splendid mixed-use concept, the client funded and the architect designed an indoor, 42-ft-high pedestrian space (at ground level) for a sculpture park and downtown mini-exhibit area for the Whitney Museum, plus retail stores as an extension of 42nd Street shopping (9,600 sq ft gross area), entered from either Park Avenue or 42nd Street. A separate entrance for 1900 employees will be at the corner of Park Avenue and 41st Street leading to a two-story lobby. There will be escalator access to subway and to Grand Central Station. Completion is scheduled for mid-1981.



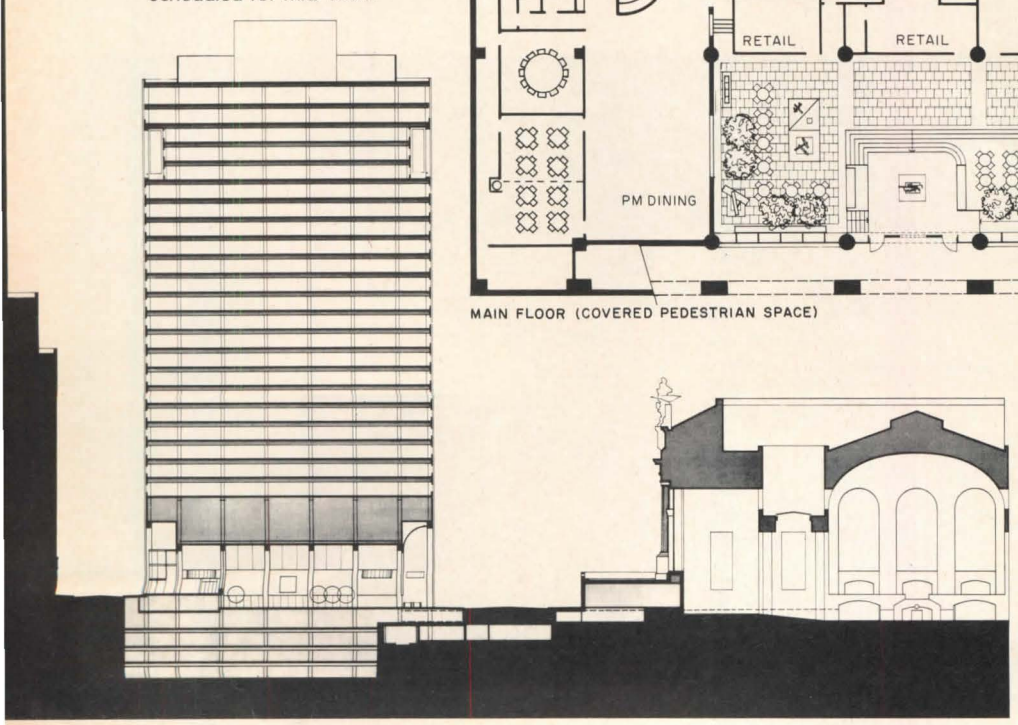
TYPICAL FLOOR



LOBBY FLOOR



MAIN FLOOR (COVERED PEDESTRIAN SPACE)

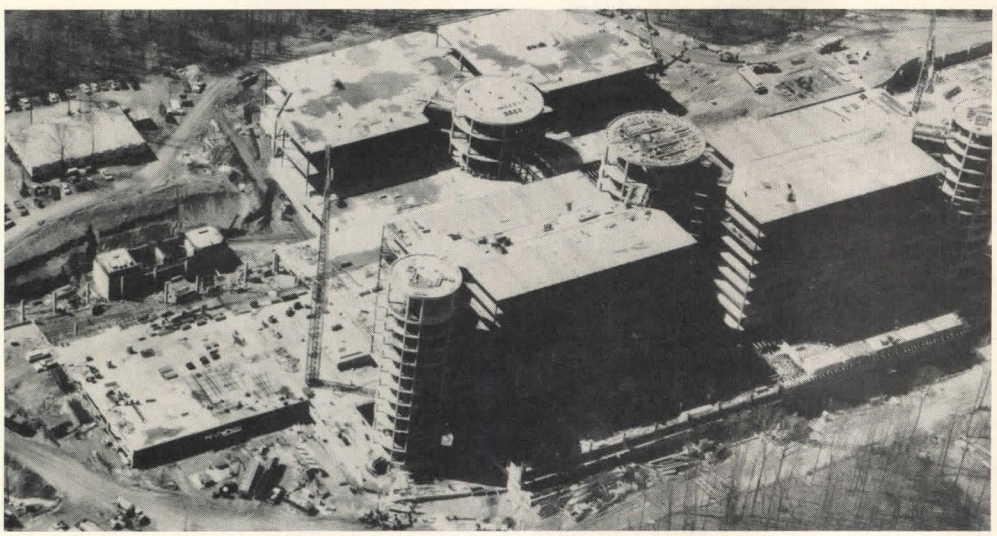


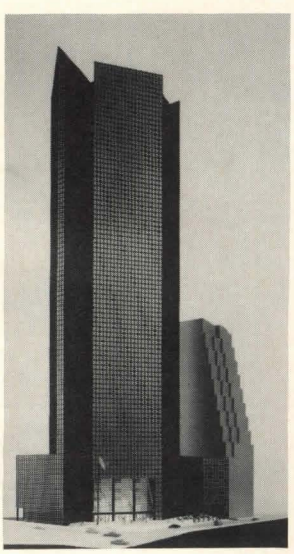
Thermal storage to limit energy costs: a growing technique

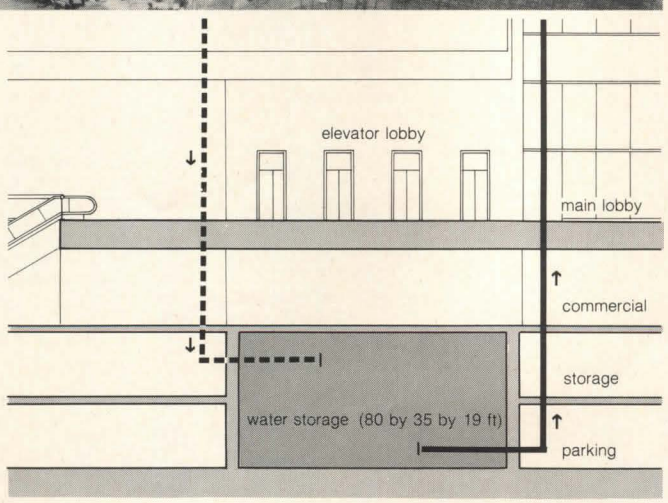
As energy costs continue to climb, with no letup in sight, building designers and owners are giving second thoughts to cost-saving techniques that once seemed marginal economically. One of these showing promise is thermal storage in which electricity is used at off-peak periods for cooling and heating.

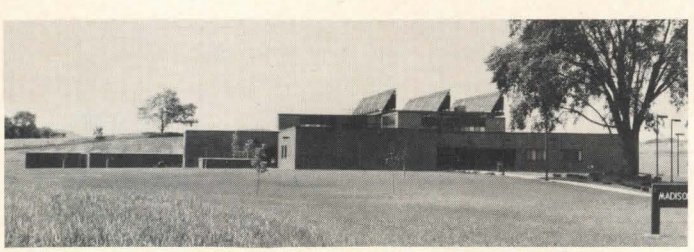
Though thermal storage systems vary in detail, and sometimes in concept, from building to building, essentially there are two basic types: systems that store thermal energy in tanks of water, and systems that make ice. Where penalizing electric rates are in effect for use of electricity during peak-load periods, equipment can be run at night and on weekends to store thermal energy that is then utilized during the daytime. During the time that water chillers and ice-making refrigeration equipment run to produce cooling, the heat extracted from water also can be stored and used to heat the building.

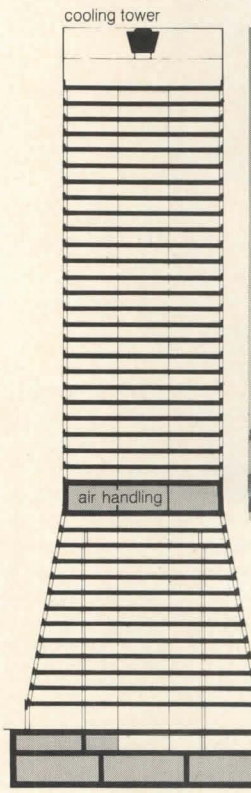
In addition to achieving lower electrical costs, the use of water thermal storage systems can permit a reduction in the size of











Most water-type thermal storage systems are in large buildings because of the economics of scale. In New York City new and heavy demand charges in the summer months are the reason two new million-square-foot office buildings will have chilled-water storage. In a 40-story building (above) designed by architects Swanke Hayden Connell & Partners, the engineers—Jaros Baum & Bolles—have called for three tanks occupying 7,400 sq ft and holding 1.4 million gallons so that all chilled water can be produced off-peak. Savings are estimated at about $40,000 a month. Developers are Tishman-Speyer Properties. A 50-story high-rise at 101 Park Avenue designed by Eli Attia + Associates (center) will have a 350,000-gallon water tank installed below the elevator pits. Engineers Cosentini Associates are providing a 500-ton centrifugal chiller for off-peak use, and a 2,000-ton absorption machine, effectively giving a total capacity of 3,000 tons. Developer is H. J. Kalikow & Company. In Fairfax County, Virginia, a suburban office building (above, left) designed by Hellmuth, Obata & Kassabaum for Mobil Oil Corporation has 500,000 gallons of storage (left, center in photo) for both hot and chilled water. On a worst-case day, the system's storage designed by engineers Hayakawa Associates, can handle about half the air-conditioning requirement. Ice-type storage is being tried out in smaller buildings such as the Madison Area Technical College (below, left) in Reedsburg, Wisconsin by architects Graven & Associates. Engineers: Arnold & O'Sheridan, Inc.

OPERATING MODE.	CHILLER LOAD PROFILE	CHILLER SIZE	STORAGE SIZE	ELECTRIC COST
1 follows load with no storage	1,000 tons; M 6 N 6 M	1,000 tons	none	demand 72; energy 28; *total 100
2 constant operation at full load with storage	385 tons; M 6 N 6 M	385 tons	330,000 gallons	28; 28; 56
3 full load operation with storage off electric demand	800 tons; M 6 N 6 M	800 tons	550,000 gallons	—; 28; 28

*Total energy cost for this case was taken as 100 units. It is a relative figure and not a dollar value.

When and how long an air-conditioning chiller operates determines the size of chiller needed and the cost of electricity. In the chart above, energy consultant Robert T. Tamblyn of Engineering Interface, Toronto, shows that the best buy to provide 9,200 ton-hours based on Toronto Hydro rates is to use an 800-ton machine operated off electric demand. Note that the energy cost is the same in all three cases (relative costs only are shown), but demand charge is highest when the chiller operation follows the load, less when it runs constantly, and zero when it runs off demand.

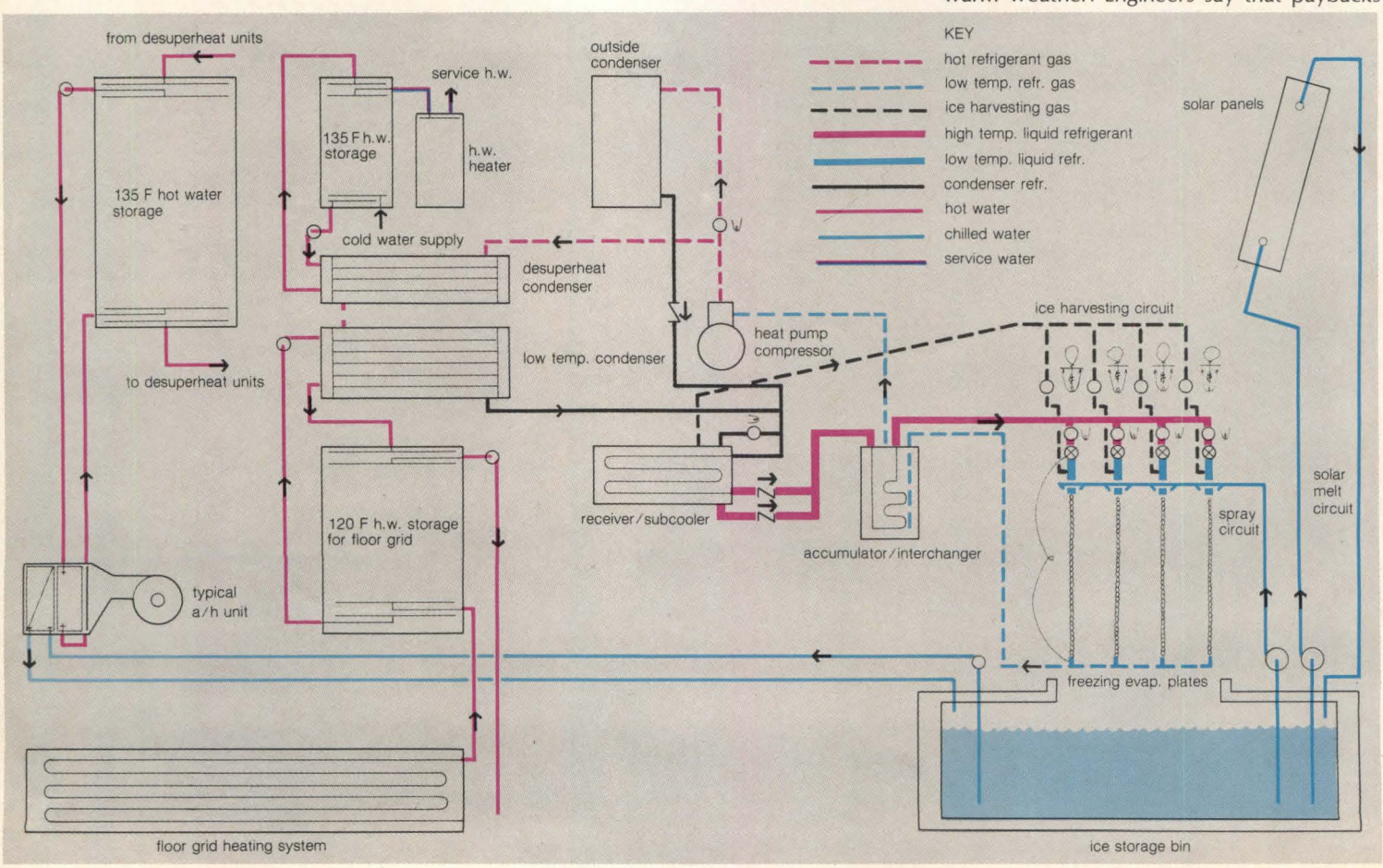
Packaged ice-maker heat pumps—which build thin sheets of ice on plates and slough it into bins—have been used recently in several smaller-scale buildings. The diagram below illustrates the operation of this type of system for the 16,800-sq-ft Madison Area Technical College in Wisconsin (photo previous page). Three 15-ton ice-maker heat pumps operated off-peak are designed to provide the heat for the building and the service water. Capacity of the ice bin is 3,800 cu ft. Excess ice accumulated during the heating season is melted by heat from solar panels on the roof.

chillers, pumps, piping and cooling tower because the water-chilling equipment does not have to have the capacity to produce a cooling effect instantaneously to match the peak cooling load. Rather, there is a reserve of cooling effect stored in the water tanks. The heating energy stored is, in one sense, free because it is the heat retrieved from lights, equipment and people in the building. Its cost is that of pumping energy and the additional cost of amortization of heat exchange equipment in the water chilling system (e.g., a double-bundle condenser). Providing this capability in a water chiller, however, may increase its cost by 50 per cent.

Water-type thermal storage systems have been used for a number of years. The Japanese have used them in high-rise office buildings since 1950 and altogether have more than 1,000 installations.

Projections of capital costs for water-type thermal storage systems show that their relative economics depend upon scale. Energy consultant Robert T. Tamblyn of Engineering Interface in Toronto states that thermal storage investment should be examined for buildings larger than 200,000 sq ft. The system for a 190,000-sq-ft Knoxville high school (system diagrammed on page 135) shows a payback of 5½ years, for 180,000 gallons of storage, assuming energy costs to escalate at 15 per cent per year. An elementary school by the same architect/engineer firm, on the other hand, shows a payback of 7½ years for 60,000 gallons of storage.

Paybacks for the large buildings shown on the first page are on the order of 4 to 6 years, based upon present electric rates that include higher demand charges during the warm weather. Engineers say that paybacks



of this order are possible when on-peak electricity costs are about three times as much as off-peak. The two skyscraper office buildings shown are using thermal storage for cooling only to avoid or reduce the high electric demand charges now in effect in New York City from May 15 to October 15 for large commercial customers. District steam will be used for heating inasmuch as it carries no demand charge. Translated into equivalent kilowatt hour costs, the New York City demand charges make electricity used during peak demand periods cost on the order of 15 to 18 cents per kWh, while off-peak electricity costs only 4 cents per kWh.

The rate structure of the utility serving a new office complex for Mobil in Fairfax County, Virginia, is very demand sensitive to peak loads occurring during the cooling season. For this reason, and because Mobil, being a major energy company, wanted an energy-efficient building, the building has a 500,000-gallon-capacity concrete water storage tank. It is divided into four compartments so that one, two or three compartments can be charged with chilled water, while the remaining compartments would be charged with hot water.

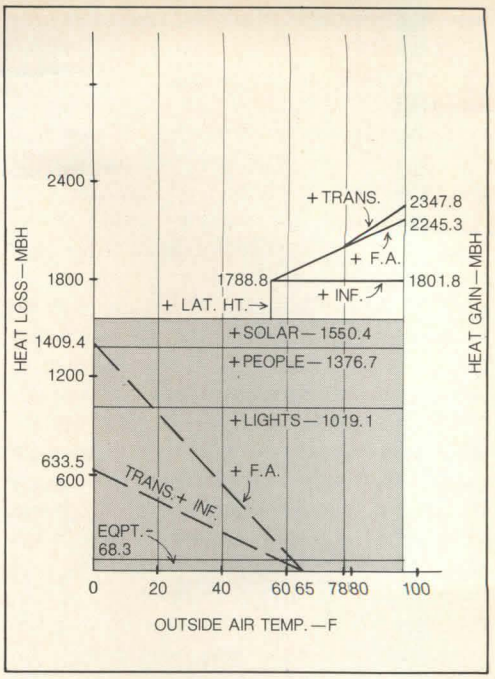
Water-storage capacities for the systems described above range between ½ and 1½ gallons per sq ft of floor area. Costs have run between 50 cents and $1.00 per gallon for tanks and system interfacing in these and other buildings, although concrete tanks from 100,000 to 500,000 gallons have cost as little as 20 cents per gallon.

When the system stores chilled water only, no savings in energy are achieved in the building—the time period of use is merely shifted. But as utilities acquire more and more off-peak demand, they can make greater use of high-efficiency generating units, which represents a savings in energy. Utilities that have peak load conditions in either summer or winter can benefit, as can their customers, if usage is shifted to off-peak, because tbe utility can produce more kilowatt hours without having to add more generating and distribution capacity, whose cost is reflected in the rates customers must pay.

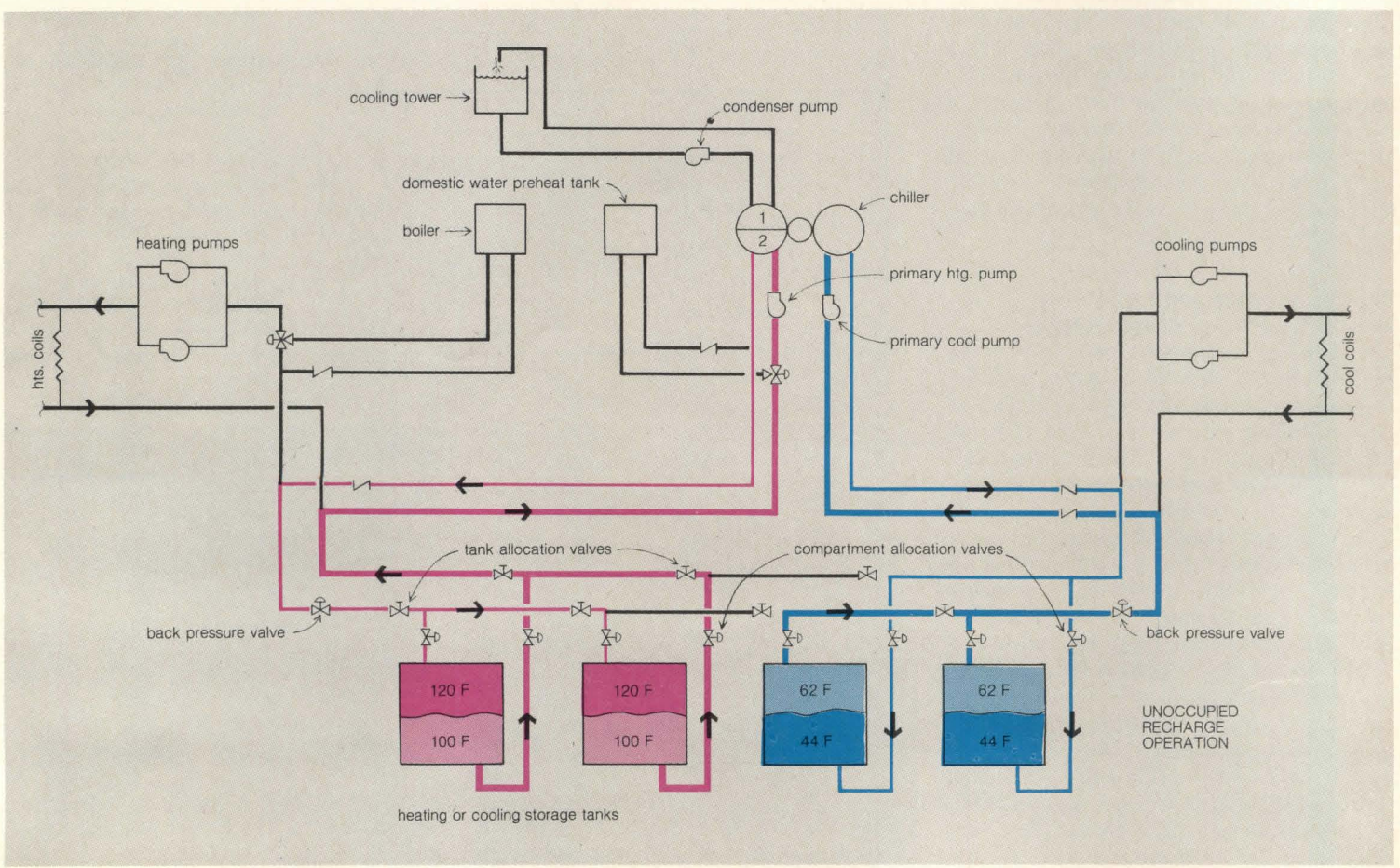
Cooling buildings with ice has been brought back in more sophisticated forms

The main advantage of cooling buildings with ice storage is that, potentially, the storage tank volume might be only 25 per cent of that required for water, but this is not always realized in practice. The reason smaller storage is possible is that it takes 144 Btu to melt a pound of ice, whereas raising the temperature of a pound of water by 1 F absorbs only 1 Btu. The ice storage applications in existence are of modest scale, though the approach is being considered for a 52-story office building in Dallas to be owned by the Placid Oil Company, which may use 31 steel storage tanks providing a capacity of 93,000 cu ft or 700,000 gallons, or about ½ gallon per sq ft. Because the tanks would be installed below ground on floors provided for car parking the designers wanted to reduce the area for thermal storage.

Ice-storage systems also can be used to provide hot water for space heating and domestic water by recovering the heat rejected in making ice. For the process to be regenerative, the ice has to be melted either with the heat recovered from lights, people



In buildings with a high ratio of internal to perimeter space and substantial heat loads, cooling is needed even at low outdoor air temperatures. This is illustrated above in the graph of heating and cooling loads for the Karns High School in Knoxville, Tennessee, designed by Galloway & Guthrey, architects and engineers. Balance point for the building is zero degrees. Excess heat can be recovered and used at night and on weekends. The designers provided four 45,000-gallon tanks to save money through heat recovery and reduced demand charges in operating the chiller. The schematic below illustrates system operation.



and equipment, or from an auxiliary source such as solar heating panels.

The cost of ice-storage refrigeration equipment is about at a standoff in comparison with that for water storage. Efficiency of the refrigeration equipment for making ice, on the other hand, is from 33 to 40 per cent less than that for making chilled water because of the larger temperature range over which it has to work.

There are basically two types of ice forming systems. One is the ice builder, in which ice is built up around pipes or grids of tubing mounted in a water tank. The other is the ice maker, in which thin layers of ice are frozen when water is sprayed on evaporator plates. The system removes ice periodically by running hot refrigerant through the plates so that ice will drop off into a tank. With these systems, the tank may need to be as large as that for water storage if the size of the ice maker requires it to make ice over the weekend to meet the next week's needs.

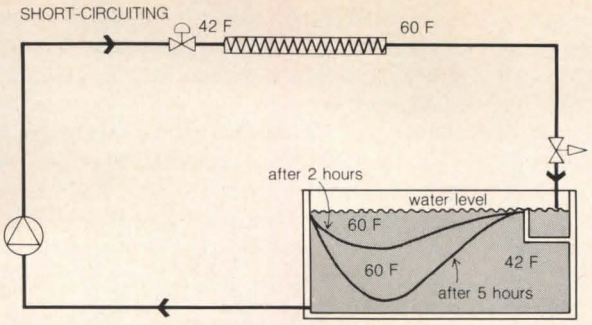
One place where ice-type storage systems are being tried out for off-peak cooling is in houses in a program initiated by DOE. The Long Island Lighting Company, for example, has installed ice storage systems in 50 existing houses. They are retrofitted with an ice-storage module, roughly 4 ft in diameter and 4 ft high, that can make 2,500 lb of ice.

Another utility, Wisconsin Electric Power, has installed ice-storage systems in 70 houses, and is using 25 other houses with conventional systems for comparison. The storage modules are 120-gallon water-heater tanks that have been fitted with evaporator coils instead of electric heating elements.

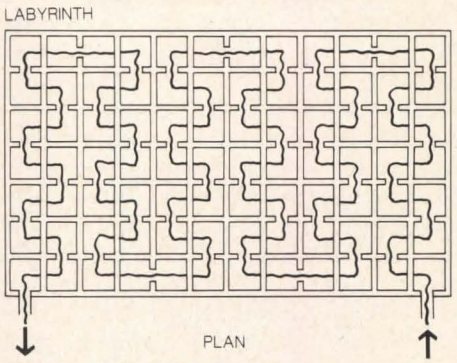
Examples of ice storage in buildings much larger than these houses include a 17,000-sq-ft vocational and technical school in Reedsburg, Wisconsin (diagram, page 134), a 40,000-sq-ft office building designed by Architectural Alliance for Cray Research, a manufacturer of scientific computers in Mendota, Minnesota, and a demonstration project for the Veterans Administration—a 66-bed nursing home in Wilmington, Delaware (RECORD, November 1976).

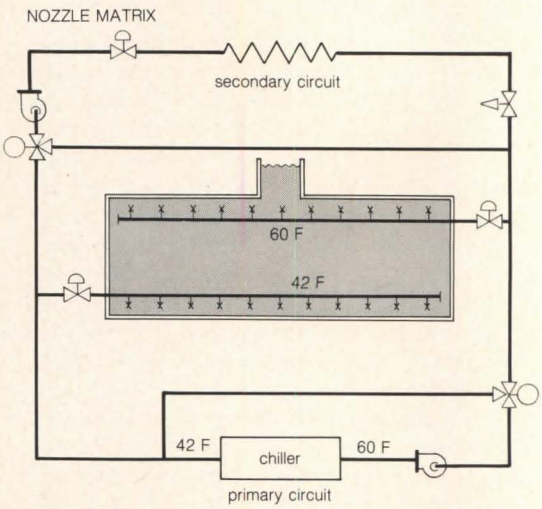
Blending of return and supply water reduces the efficacy of water-storage

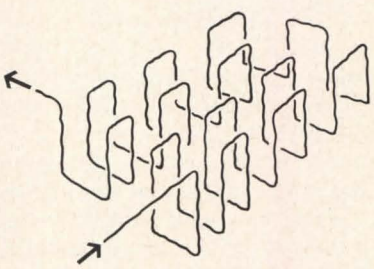
Chilled water storage can be vitiated if the return water is allowed to blend with the supply water. Chilled water for air conditioning generally is supplied at around 42 F and returned at around 60 F. There is little difference in buoyancy of water in this temperature range, so unless the supply and return is kept separate, mixing will warm the supply water to the extent that it will be ineffective in cooling. A number of different approaches have been developed to prevent this problem, and one of the most innovative is a diaphragm of plastic-coated fiberglass that moves in response to the relative amounts of return and supply water in the system. The inventor is Robert Tamblyn and the first application of the system was in a Toronto Federal office building (RECORD, mid-August 1977). This system will be used in the two New York skyscrapers discussed earlier.



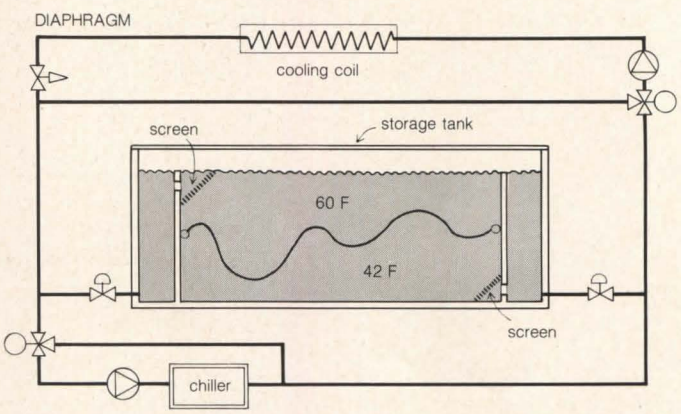
Because there is little difference in buoyancy of water at 42 F and 60 F, it readily mixes (above). If return and supply water mix, the cooling effect is vitiated. A number of preventive approaches have been tried with varying degrees of success. Engineer Robert T. Tamblyn has invented a floating membrane to separate the supply and return water. The membrane moves so that the relative amounts of 42 F and 60 F water can vary as the

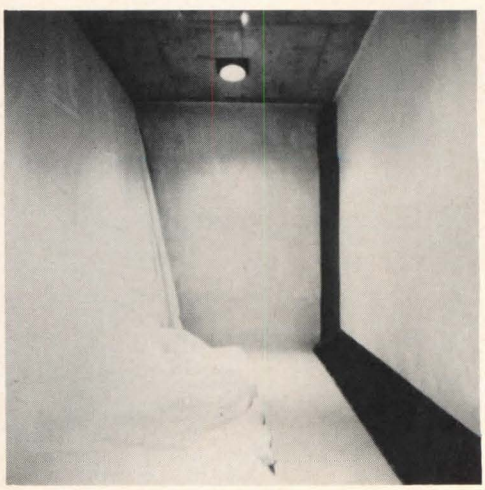






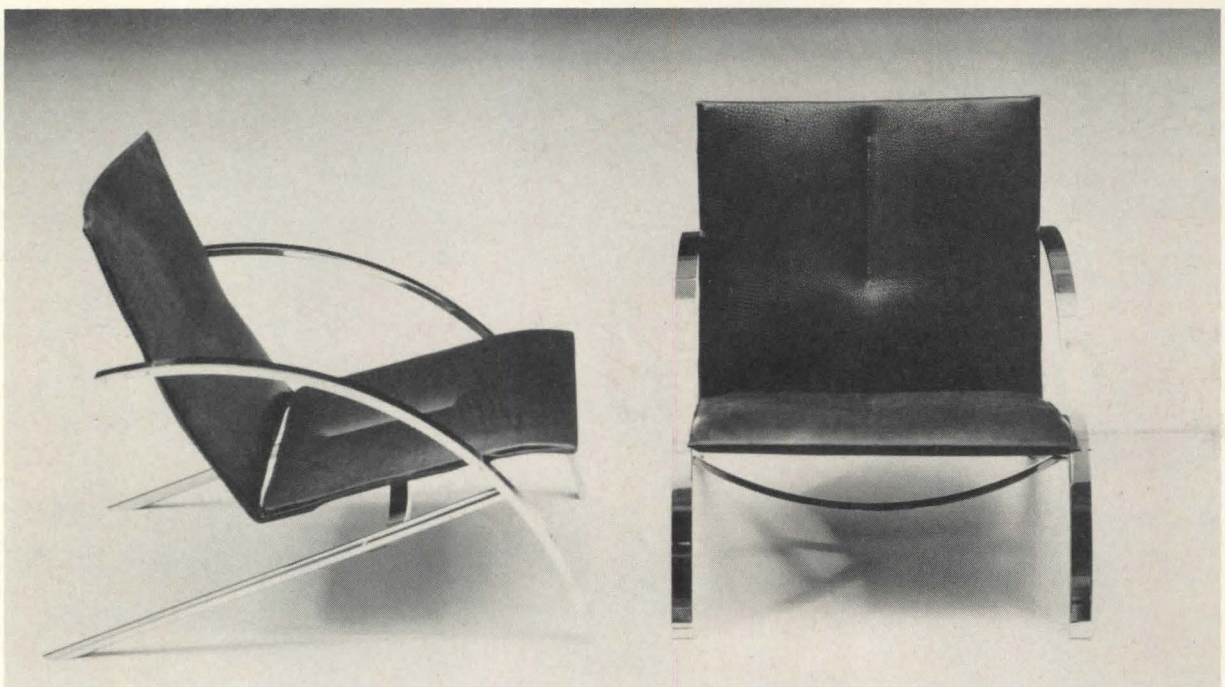
tanks are charged at off-peak periods, and as the chilled water is used during the daytime. Tamblyn first hung the membrane (diaphragm) vertically as in the Government of Canada Building (below), but he now favors horizontal mounting (drawing, left) for less wear on the membrane. In a technical paper in the January 1980 ASHRAE Journal, *Tamblyn describes four concepts that attempt to solve the problem, of which three are shown here. With the labyrinth scheme used by the Japanese, blending occurs after several successive days. The purpose of the nozzle matrix, used first at Stanford University, is to distribute water evenly at the top and bottom of the tank to minimize blending.*





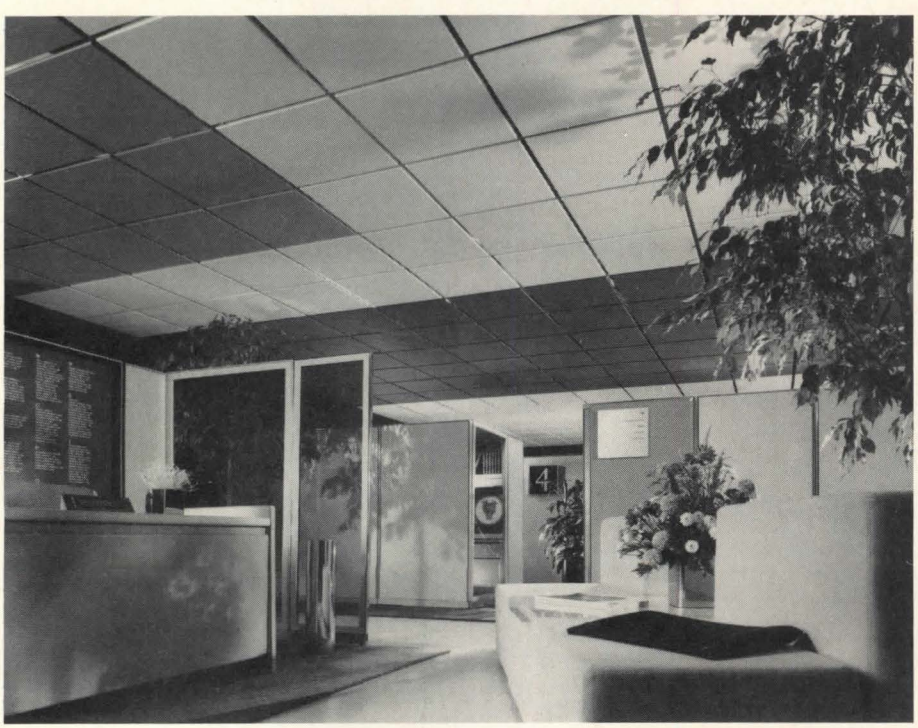
For more information, circle item numbers on Reader Service Inquiry Card, pages 195-196

Leather and chrome form a sculpture for use



Furniture designer and sculptor Paul Tuttle has designed the *Arco* lounge chair with angles and curves of chrome steel, with a low-slung seat that seems to float between the supporting frame. This urethane-padded seat is available in either textured or matte natural-grained aniline-dyed dark brown or black leather. For heavy-use contract applications, the roomy chair measures 28-in. high and 26-in. wide; seat height is 13-in. ▪ Atelier International, Ltd., New York City

circle 300 on inquiry card



Matte-finished colors available in lay-in office ceiling tiles

"Gallery" 2- by 2-ft tegular tile comes in 12 matte-finished colors keyed to contemporary office furnishings. Choices include white, black, tan, gray, medium brown, bronze, burnt orange, yellow, kelly green, blue, rust and forest green. The color is an integral part of the washable vinyl film surface. "Gallery" tile offers a design option of visually dividing room space by use of different colors in the ceiling. Suspended from standard grids, "Gallery" lay-in ceilings provide an NRC range of .55-.65. ▪ Armstrong Cork Co., Lancaster, Pa.

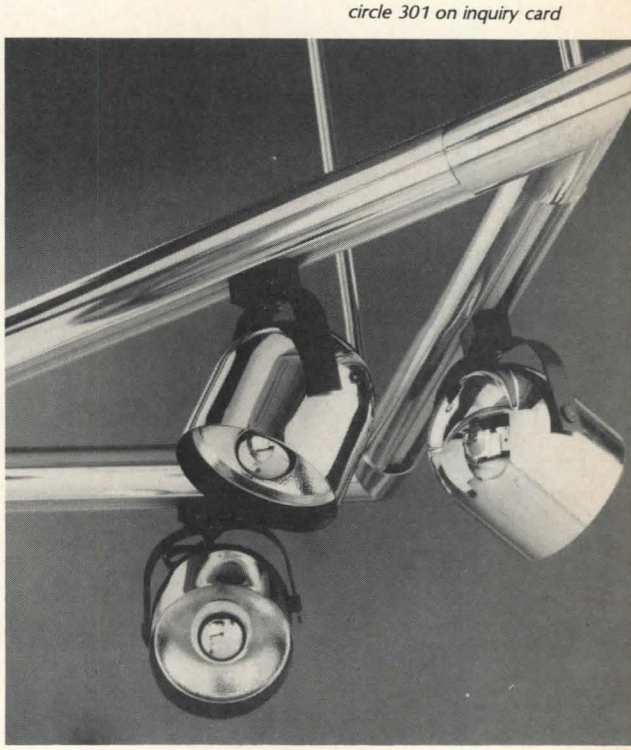
circle 302 on inquiry card

more products on page 145

Single circuit track lighting

Housed within an extruded chrome- or brass-finished tube, *Circa 1* track may be suspended from stems or cables as shown, cantilevered or surface-mounted. *Circa 1* track may be used with a wide range of light fixtures. ▪ Swivelier, Nanuet, N.Y.

circle 301 on inquiry card



EKG
Generation 2

Higher efficiency.
Greater pole spacing.
Better uniformity.
Higher maintained light levels.
Kim quality.

Send for complete catalog.
Circle 3 on inquiry card

KIM LIGHTING

Subsidiary of Walter Kidde & Company, Inc.
KIDDE

Box 1275, 16555 E. Gale, Industry, Calif. 91749
Phone (213) 968-5666

Outdoor Lighting and Architectural Fountains

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

GLUED LAMINATED TIMBER / The 1980 edition of "Glulam Systems" has been published by the American Institute of Timber Construction. Included in the four-color catalog are 40 pages of product descriptions, technical data, specifications, design information and connection details for structural glued laminated timber, as well as a variety of product application illustrations. ▪ American Institute of Timber Construction, Englewood. Colo.

circle 400 on inquiry card

ELECTRIC HEATERS / A 32-page color catalog presents a complete line of baseboard, forced-air wall units, radiant heaters, a tempered-forced air unit, unit heaters and controls and accessories. A special section features general application charts, fuel cost comparison tables, 1978 NEC wiring and conduit charts, and a glossary of basic heating and electrical terms. A sample work form and precomputed calculations are provided to accurately calculate heat loss for any room area. ▪ Square D Co., Mesquite, Texas.

circle 401 on inquiry card

ROOF WEATHERPROOFING / Brochure describes *Scotch-Clad* roof coating systems for guaranteed weatherproofing of new and existing roofs. Products for polyurethane foamed-in-place systems, concrete decks, IRMA roof assembly and built-up roofs are included. ▪ 3M Co., St. Paul.

circle 402 on inquiry card

COMPUTER SUPPLIES/CABLES / Featuring *Clear Signal* cable products, computer supply and accessory catalog uses color-coded diagrams to match computers from most manufacturers with the terminal, modem or CRT to be connected. Besides cables and related items, the catalog presents more than 1,000 other products, including magnetic media, furniture, filters, etc. ▪ Inmac, Santa Clara, Calif.

circle 403 on inquiry card

HOME VENTILATING PRODUCTS / Tested air delivery and sound levels of more than 700 products from 30 manufacturers and marketers are listed in the "Certified Home Ventilating Products Directory." Items include range hoods, wall and ceiling exhaust fans, exterior-mount room ventilators, powered attic space ventilators and whole-house fans. ▪ Home Ventilating Institute, Rolling Meadows, Ill.

circle 404 on inquiry card

OFFICE POWER DISTRIBUTION / This manufacturer's Architectural Systems Division offers a 12-page color catalog explaining its UL-listed prewired power and communications distribution system. Housed in the base of open office panels, outlets may be placed where they are needed. The two circuits available, one just for ambient lighting, the other for office equipment and task lighting, are also described in the brochure. ▪ Westinghouse ASD, Grand Rapids, Mich.

circle 405 on inquiry card

GLASS-CAB ELEVATORS / Brochure uses dramatic color photographs to demonstrate the view-catching potential of glassed-in vertical elevators installed in high-rise hotels, offices and apartment complexes. System design is said to emphasize safety, speed and solid state microprocessor-controlled elevator traffic programming, tailored to meet individual customer specifications. ▪ U.S. Elevator Corp., Spring Valley, Calif.

circle 406 on inquiry card

LOW-VOLTAGE LIGHTING / A full-color catalog, the "1980 Designers Portfolio" presents new lighting products for interior applications, including chandeliers, light curtains, single- and four-circuit *Feever* tubes, sparkle lamp fixtures, shadow chasers, and several troffered ceiling installations. The low-voltage-lighting catalog provides full product descriptions, listing model number, type of finish, and net price with each item. ▪ Neo-Ray Products Inc., Brooklyn, N.Y.

circle 407 on inquiry card

PLANT ENERGY SAVINGS / Capabilities brochure introduces an industrial "Energy Reduction Analysis" program, a computerized version of the Economic Thickness of Insulation calculation used to determine what thickness of insulation on a given pipe or vessel will yield the largest over-all savings. ▪ Johns-Manville, Denver.

circle 408 on inquiry card

COMMERCIAL LIGHTING / A 12-page technical brochure presents *Spectra* luminaires for commercial indoor and similar applications. Fixtures use HID lamps from 70 to 1000 Watts with a wide choice of options and models. Energy-saving lamps can be made even more efficient with HID dimming and automatic energy control operation of the luminaires, also described in the booklet. ▪ Wide-Lite Corp., San Marcos, Texas.

circle 409 on inquiry card

POLYESTER RESIN SEALANT / A penetrating, waterproofing sealant for use on painted and unpainted wood, concrete, brick and other masonry, and metal, *True Seal* provides a stain-resistant anti-skid surface for decks, stairways, service and pool areas. A product folder describes *True Seal's* applications, physical properties, surface preparation and coating requirements, etc. ▪ Lloyd & Murrell International, Santa Barbara, Calif.

circle 410 on inquiry card

WALLCOVERING GUIDE / Six different wallcovering lines—W.H.S. Lloyd, Dwoskin, Reed, Bolta, UltraTex and Sunworthy—are catalogued in a handy selection guide. From "Animals" to "Wood," designs are classified by pattern motif, giving the applicable book name and page numbers. In addition, the booklet contains a glossary of wallcovering terms, a section on how to estimate room measurements, and a price list. ▪ Reed Wallcoverings, Atlanta.

circle 411 on inquiry card

VISUALLY SIGNIFICANT ROOFS

. . . a trend of major significance in contemporary architecture—and architects everywhere are finding that Follansbee Terne uniquely incorporates the essential values of form, color and function in such roofs. In this non-traditionally designed mental health center the architects expunged the age-old stigma of such institutions by creating a warm, residential, more home-like atmosphere.

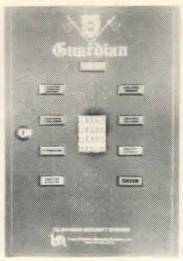
Terne helped to create this welcome departure from the "antiseptic line," for Terne has the important advantage of providing maximum creative latitude at relatively moderate cost. We'll be happy to send you substantiating evidence.

FOLLANSBEE

FOLLANSBEE STEEL CORPORATION • FOLLANSBEE, WEST VIRGINIA

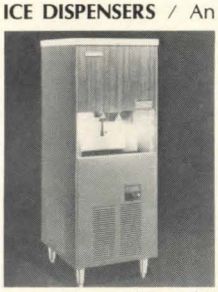
HUNTSVILLE-MADISON MENTAL HEALTH CENTER • HUNTSVILLE, ALABAMA
ARCHITECTS: RABUN, WHATLEY & HATCH, ATLANTA, GEORGIA
ROOFER: TIP TOP ROOFING & SHEET METAL, HUNTSVILLE, ALABAMA

APARTMENT DOOR CONTROL / Using microprocessor technology, the "Guardian" telephonic access control system needs no "hardwiring" for installation in small apartment buildings of up to 60 units. The only wiring required is connecting the unit to the telephone line to power supply and to the door strike. The "Guardian" contains a private, four-digit occupane code which permits entry into the building without the use of a key. The control panel has nine lighted color instruction displays, keyed to each telephone intercom and entry function. ▪ Trans-America Security Systems, Inc., Miami.



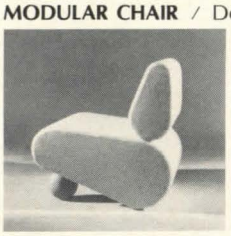
circle 303 on inquiry card

ICE DISPENSERS / An optional key switch accessory is now available with two models of the *Transtec II* commercial ice dispenser. The kit is installed in the front sink area and limits use of the dispenser to hotel/motel guests, who use their room keys to operate the ice machine. Housed in a compact, 24-in.-wide cabinet, *Transtec* units can produce up to 355 or 560 lb of small cube, square cube, or hard cracked ice. Fast recovery feature provides a good ice supply even during peak demand periods. ▪ Whirlpool Corp., Benton Harbor, Mich.



circle 304 on inquiry card

MODULAR CHAIR / Designed by Hans Krieks for residential and contract applications, the "Triumph" sofa and chair group uses a trapezoid corner which allows the pieces to serve in either corner, snake or circle arrangements. The strongly-slanted seat bottom is supported in front by solid wood balls, and rests on adjustable glides in back. "Triumph" seating is constructed in structural foam for fabric and leather upholstery. ▪ Cado/Royal System Inc., Woodside, N.Y.

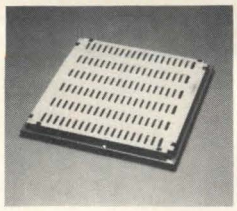


circle 305 on inquiry card

LOAD SCHEDULER / Designed specifically for small users of electrical or natural gas energy, the *Powerwatch 400* provides microcomputer-based load scheduling at an economy price. The unit controls four loads, with many energy management functions found in larger systems. *Powerwatch 400* can handle up to eight different schedules for each circuit each week, can duty cycle with any pattern desired, and can remember 13 holidays a year in advance. Remote photocell/thermostat override inputs, 10-day battery backup, and sequential restoration of loads after a power failure are standard features. Said to be easy to program, the *Powerwatch 400* is particularly suitable for small retail, banking and fast-food establishments. ▪ Trimax Controls, Inc., Sunnyvale, Calif.

circle 306 on inquiry card

AIR FLOW PANEL / A 24-in.-square welded steel air flow panel is available for this manufacturer's *ASD* access flooring system. The panel is perforated for use as an air supply or return opening for air distribution in computer rooms or general office areas. It provides 108 sq in. of free air flow, and the optional damper assembly affords full air volume control. The flush-to-floor surface of the panel eliminates the tripping hazard often presented by floor grille flanges; the low maintenance *Micarta* laminate surfaces used lessen the generation of static. ▪ Westinghouse ASD, Grand Rapids, Mich.



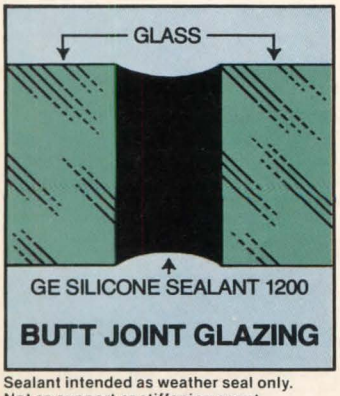
circle 307 on inquiry card

DECORATIVE CEILING / Rigid three-dimensional PVC panels, in depths of from 6 to 14 inches, drop in to any standard tee bar suspended ceiling. Opague panels allow for back lighting; the system may also be used with recessed or exposed lighting fixtures. Ceiling shapes come in many colors, as well as chrome and other metallic finishes. Over 30 different designs are available; custom panels incorporating logos, trademarks, etc. may be ordered. Ceiling forms will not support combustion, and meet all building code requirements. ▪ Lombardo & Co., Inc., Brooklyn, N.Y.

circle 308 on inquiry card

more products on page 147

The GE Silicone Seal. The difference between seeing the city and seeing the windows.



Sealant intended as weather seal only.
Not as support or stiffening agent.

In some designs, window mullions simply get in the way. But thanks to General Electric Silicone Sealant, you can have both the beauty of panoramic, unbroken lines of glass and the economy and easy handling of smaller glass units.

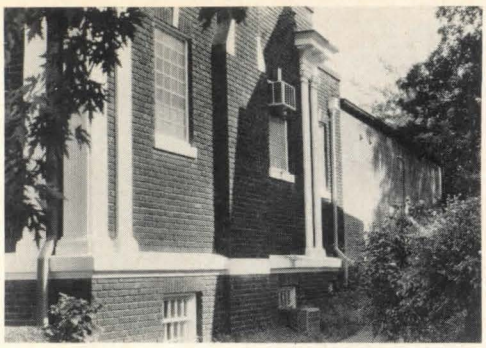
Butt-glazing with GE Silicone Sealant gives you weather protection. It maintains its resilience and bonding strength in vertical glass-to-glass joints despite shear stress and joint movement, wind, rain, UV attack, ozone, extreme heat and cold.

Find out how the GE Silicone Seal, standard of quality for a broad line of silicone sealants, can make a very visible difference in your building design.

Write Section 450 , General Electric Company, Silicone Products Department, Waterford, New York 12188.

GENERAL ELECTRIC

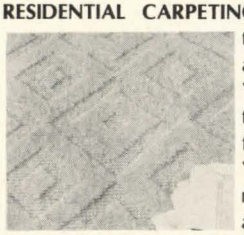
Circle 73 on inquiry card



BRICK PATTERN UNIT MASONRY / *Stud Block* construction permits building walls and studs in a single step: masons lay *Stud Block* in a regular three-quarter bond to form the wall; each block has integral stud projections on the inside which line up to form a vertical stud of three-inch depth. These studs contain a rounded raceway for wiring. *Stud Block* brick-embossed masonry units are made of lightweight aggregate concrete, with hollow cores that may be filled with a number of insulating materials. Wallboard and other interior finishes may be nailed directly to the *Stud Block*. *Stud Block* construction is shown here as an addition to a 1900s brick building; a custom-mixed *Thoroseal* weatherproof coating was used to blend the new wing with the color of the older brick. ▪ Lightweight Block Co., Inc., Roanoke, Va.

circle 309 on inquiry card

RESIDENTIAL CARPETING / New patterns and textures have been added to this maker's "California Look" collection of carpets designed for the West. Pictured is "Canyon Shadows," a multi-dimensional cut-and-loop saxony in a tracery pattern. Constructed of continuous filament Suessen-set nylon, "Canyon Shadows" is offered in 13 naturals and earthtones. ▪ Walter Carpets, City of Industry, Calif.

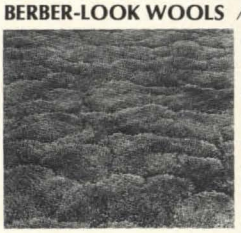


circle 310 on inquiry card

AIR CLEANER / A table-top electrically-operated air ionizer, the *Modulion* constantly emits negative ions, cleaning and refreshing room air. The unit is said to eliminate smoke and static, reduce the airborne bacteria count, and greatly cut down on dust, odors, smog and pollen. Manufactured in Israel, the room-capacity *Modulion* is now available in this country, with a list price of $80.00, postpaid. ▪ Michael Davidson, Ltd., New York City.

circle 311 on inquiry card

BERBER-LOOK WOOLS / Part of a large collection of natural berbers, "Oasis" contract carpeting is an all wood Wilton weave offered in three different cut/loop designs. Shown here is "Camel Walk," a raised vari-sized diamond pattern in four colorways. ▪ Couristan, New York.



circle 312 on inquiry card

WOOD/COAL STOVE / The "Wood Stocker Dyna Heat" is an airtight box heater with an air intake valve to control wood burning rate up to 15 hours, and coal combustion rates up to 30 hours. Equipped with a back mounted air circulator, the stove can heat more than 10,000 cu ft. A shaker grate and ash pan assembly permits ash removal without shutting down the stove. Constructed from ¼-in. steel, the heater is lined with fire brick; baffles trap and burn gases before they exit the flue. A 13½- by 20-in. pyroceramic glass door permits visual fuel monitoring. The "Dyna Heat 1" retails for $650; a larger model is priced at $850. ▪ Wood Stocker Heating Corp., Southbridge, Mass.

circle 313 on inquiry card

BRICK-PATTERN VINYL / "Rutherford Brick" tiles have textured individual brick shapes with detailed grout lines. Like other styles in the "Vinylcraft II" series, it is produced by a piecing process which makes it possible to fuse varied brick shapes and natural shadings on each ⅛-in.-thick tile. ▪ Flintkote Flooring Co., Dallas.

circle 314 on inquiry card

more products on page 149

You know us best for what we make—office furniture and systems that work and wear extremely well. But the products we make don't solve your customers' problems all by themselves. It takes planning, execution, and an efficient delivery system to produce the results they're paying for.

This is why we want to familiarize you with another side of Herman Miller. In hopes that, working together, we can meet those customer needs with the most intelligent solutions possible.

To begin, we offer a sophisticated program of services and software to complement your own—from computer based financial analyses to pre-planning, installation and employee orientation.

There's also a comprehensive package of planning and support materials, to guide you to successful Herman Miller product applications. Consistently. With minimum effort.

Strategically located Herman Miller facilities put everything at your fingertips for client presentations, seminars and training sessions. Including AV/conference spaces and "gaming" areas, along with resident technical experts for consultation and assistance.

Experienced sales representatives, backed by facility consultant specialists, are available for collaborative efforts anywhere, anytime. And our exclusive Rapid Response® program actually ships frequently-used Herman Miller products within 48 hours of receipt of your orders.

It comes down to this. You shouldn't have to scramble aboard any manufacturer's corporate machine; theirs should cater to yours. That's Herman Miller's way of doing business. And more reason than ever to choose us as your partner in the process.

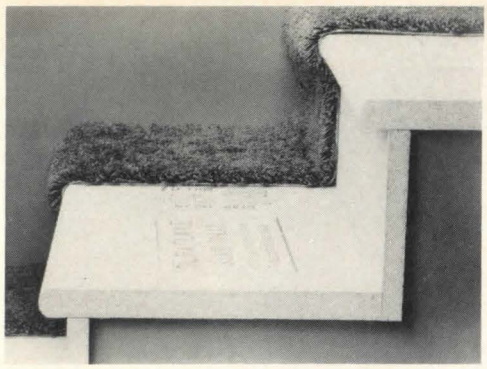
Write for our booklet, *Your Partner in the Process.* Herman Miller Inc., Marketing Department, Zeeland, MI 49464.

Sales/education facilities in Atlanta, Boston, Chicago, Dallas, Detroit, Houston, Los Angeles, New York, San Francisco, Washington D.C., Amsterdam, Basel (Herman Miller AG), Brussels, London, Paris, Toronto and other key cities internationally.

Circle 75 on inquiry card

Furniture and systems alone won't solve your customers' problems.

herman miller



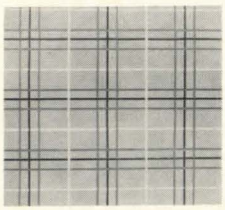
STAIR TREAD / *Duraflake* particleboard stair tread conforms to HUD/FHA UM-70 for interior stairway installations. Its smooth, uniform surface makes it easy to cover with carpeting, and edges are rounded so carpeting fits neatly. Stairs are available in standard widths and in 8-, 10-, 12-, and 14-ft lengths. ▪ Willamette Industries, Inc., Duraflake Div., Albany, Ore.

circle 315 on inquiry card

SINGLE-PLY ROOF MEMBRANE / The *Tremline* roof assembly is easy to apply over an existing built-up roof, with or without insulation. The reinforced polymer sheet is loose-laid and secured at all edges and lap joints. Once in place, the membrane readily accommodates roof movement and is unaffected by thermal shock. *Tremline* reroofing systems include spacial fascia and flashing configurations. ▪ Tremco, Cleveland.

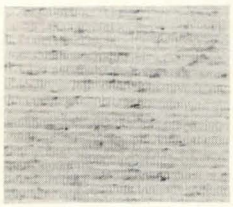
circle 316 on inquiry card

WALLCOVERING/FABRICS / From the "Donghia" collection of wallcoverings and companion fabrics, "Ascot" is a graphic pattern of vari-colored, various-width stripes offered in six colorways. The 21 designs in the wallcovering line are gravure-printed on vinyl, *Mylar, Tessitura* or Kraft paper grounds; the 10 fabrics are screen-printed on either all-cotton or cotton/polyester material. A "Sample Book" contains full-color room setting photos, estimating charts, and safety test data. ▪ James Seeman Studios, Div. Masonite Corp., Garden City Park, N.Y.

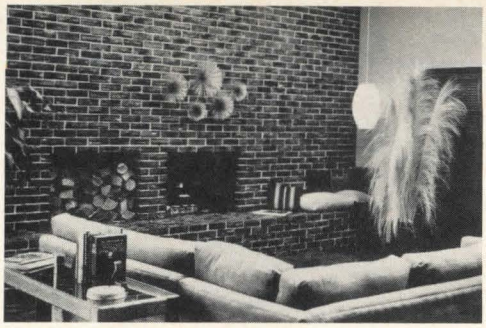


circle 317 on inquiry card

TEXTILE WALLCOVERINGS / Woven from jutes, silks and other natural fibers, "The Natural Look" line of domestically-produced wallcoverings consists of 54 stripe, silk, burlap and plain textile designs. Shown here is "#NL9045", a burlap weave offered in brown or rust colorways. Custom shades are available on contract orders. ▪ Wallco International, Inc., Miami, Fla.

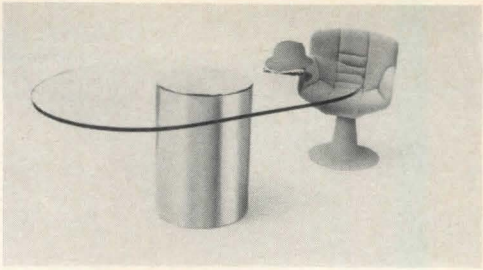


circle 318 on inquiry card



FACING BRICK / Earth-tone colored brick and stone are offered by the manufacturers of *Z-Brick* all-mineral facing products for interior and exterior use. The new line, Design Images, Ltd., contains dark red "Burnt Sienna" (pictured) and "Mesa Beige" brick, and deep gray and textured tan stone products. ▪ Z-Brick Co., Woodinville, Wash.

circle 319 on inquiry card



SINGLE PEDESTAL TABLE / The ¾-in.-thick glass top of designer Paul Mayen's pedestal table is held in place by a metal disc placed over glass and mechanically attached to inner, invisible, hardware. The base comes in 16- and 20-in. diameters, and either polished chrome or brass finish. ▪ Architectural Supplements, Inc., New York City.

circle 320 on inquiry card

more products on page 151

A new wall game at a faster clip.

This patented clip has revolutionized demountable partition systems. It is the heart of GB-350, the new gravity lock wall system from Gold Bond. With it, gypsum panels are tightly and securely suspended on a unique horizontal steel rail and stud system.

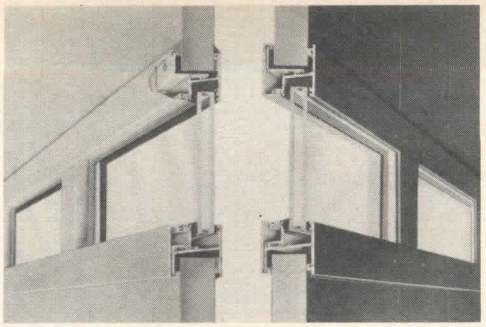
Engineered for the creators of inner space, and those who face the reality of change, GB-350 optimizes design flexibility and permits maximum control of space usage through a full range of modules. It is a true non-progressive system unmatched by any other system available today for speed of erection . . . and fast, easy demounting and rearrangement.

In concert with the exciting range of new earthtones, textures and dimensional patterns of vinyl covered Durasan panels, new GB-350 answers tomorrow's changing needs today.

For complete information on new GB-350, contact the Authorized GB-350 Master Partition Specialist in your area by calling 1-800-821-7700, extension 350. (Missouri residents, call 1-800-892-7655, extension 350). Additional details are also available in Sweet's General Building File 10Go; or, write: Gold Bond Building Products/A National Gypsum Division/Dept. AR/2001 Rexford Road/Charlotte, North Carolina 28211.

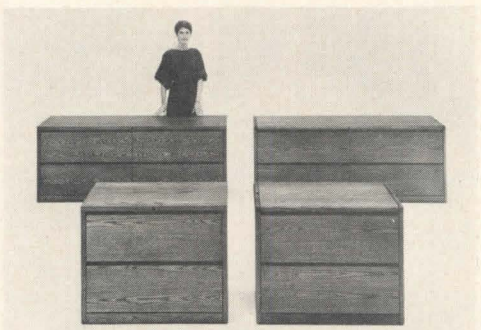
Gold Bond
GB-350
GRAVITY LOCK
Demountable Partition System

Gold Bond Building Products
A National Gypsum Division
Answers that make the difference.



WINDOW EXTRUSION SYSTEM / Engineered to become an integral structural component of the *Foamwall* exterior metal wall syste, the *Therm-a-Frame* sash extrusion system thermally separates all interior trim pieces from exterior components. Single pane or 1-in. insulated glass may be used; the *Therm-a-Frame* window can be installed and glazed from inside the building. Each window unit will accept a maximum of 30 sq ft of glazing in horizontal bands. The system can span several panel joints without caulking. ▪ Elwin G. Smith Div., Cyclops Corp., Pittsburgh.

circle 321 on inquiry card



LATERAL FILES / The "Designs in Wood" line of office furniture now offers four versions of the lateral file: two- and four-drawer models, with either radius or squared-off edges. An inner frame of steel assures proper drawer alignment. File units have adjustable hanging folder frames; central lock in top; safety interlock; and full-width concealed drawer pulls. Finish choices include walnut, light oak, dark oak, elm burl and laminates. ▪ Steelcase, Grand Rapids, Mich.

circle 322 on inquiry card

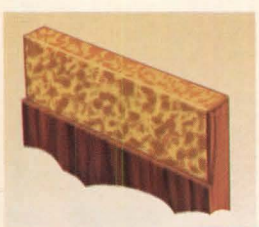
POTHOLE PATCH / "Hy-Speed 500" emergency repair cement patches dangerous potholes in industrial floors, driveways and walks, expanding as it sets to be traffic-ready in one hour. Mixed with water and poured like a batter, the cement forms a permanent bond to surrounding masonry and hardens to a final cure of 10,000 psi. ▪ Garon Products, Edison, N.J.

circle 323 on inquiry card

more products on page 153

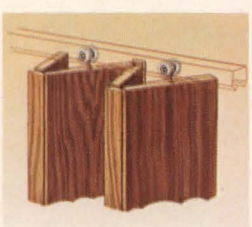
Pella designs wood folding doors with a distinctive difference.

Pella changes the image of folding doors with attention to detail that is the hallmark of excellence in design. The result is a series of exceedingly attractive folding doors of superior wood construction and mechanical precision that will be an asset in almost any interior environment. For distinctly elegant flair, choose the handsome Designer series shown here. Or choose plain panels, 3⅝" or 5⅝" wide, with genuine wood veneers finished in clear lacquer, or unfinished to allow custom painting, varnishing or staining. An attractive but economical alternative is Vinylwood in a variety of wood grains and white. All in all, Pella has more to offer than other wood windows and doors.



Durable wood construction. High quality veneers or vinyls are bonded to strong, stabilized wood cores with water-resistant plastic glues. This solid construction resists warping even in humid areas.

Smooth operating hinging system. Pella wood folding doors open and close quietly, evenly and easily thanks to individual, special steel-alloy springs which run horizontally through each panel to serve as hinges.



Quiet, dependable track and roller system. Free-riding hangers, attached to every other panel, allow doors to glide easily, while double rollers maintain proper balance and minimize sway. Nylon-tire construction eliminates noisy metal-to-metal contact.

Only Pella offers it all.

Circle 80 on inquiry card

FREE CATALOG. For more detailed information, send for your free copy of our full-color catalog on Pella Wood Folding Doors. See us in Sweet's General Building or Light Residential Construction File. Or look in the Yellow Pages under "doors" for the phone number of your Pella Distributor.

Please send me your catalog 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

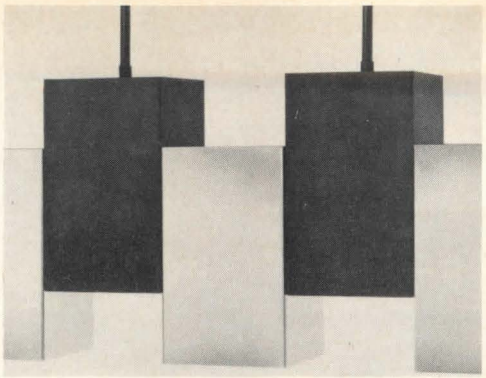
State Zip

Telephone

Mail to: Pella Windows & Doors, Dept. **T31D0**
100 Main St., Pella, Iowa 50219.

Also available throughout Canada.
This coupon answered within 24 hours.

Pella®



FOOD WARMERS / For food service in hotels, restaurants, schools and other commercial and institutional dining areas, food-warming units come in several modern and traditional styles. Offered in both single-and triple heat-lamp models, UL-listed warmers are constructed with polished nickel or brass, colonial bronze, oxidized bronze or antique copper finishes. ▪ The Feldman Co., Los Angeles.

circle 324 on inquiry card

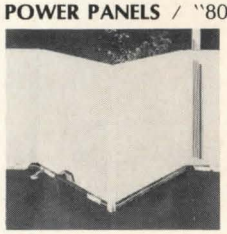
SAND URN/WASTE RECEPTACLE / Standing 35-in. high, designer Paul Mayen's combination sand urn and trash container is available in polished chrome, satin bronze, polished brass and gloss red. The cylindrical unit with protruding top section has an opening in center for inserting trash; a depression around the edge holds sand for extinguishing cigarettes. Standard plastic waste bag is held in place by the top section and is easily replaced. ▪ Architectural Supplements Inc., New York City.

circle 325 on inquiry card

UNBACKED VINYL FLOORING / *Contempora* resilient vinyl installs without adhesive or staples in less than half the time required for conventional sheet vinyl using standard techniques. It will not shrink or curl, and the vinyl's dimensional stability allows it to bridge over many minor subfloor irregularities. *Contempora* flooring can be installed over all subfloor types, including particleboard and cushioned sheet vinyl. Geometric pattern "Branham Crest" (pictured) and stone-look "Emerald Glen" are available in the unbacked vinyl line, each in 12-ft widths with a high-gloss wear layer. ▪ Congoleum Corp., Kearny, N.J.

circle 326 on inquiry card

POWER PANELS / "8000Series" power and electrical access panels may be ordered with individual power components based on exact user requirements. Power panels are compatible with standard panels which may be installed in-line using external wire management provisions. The base assembly provides two 20-amp, 125-Volt circuits, tapping power from floor or ceiling sources. The base contains ample pass-through and storage space for communications cords such as coaxial CRT cables and up to four 25-pair phone cables. ▪ All-Steel, Inc., Aurora, Ill.



circle 327 on inquiry card

Outside Salt Lake City, Vulcraft and the Army Corps of Engineers

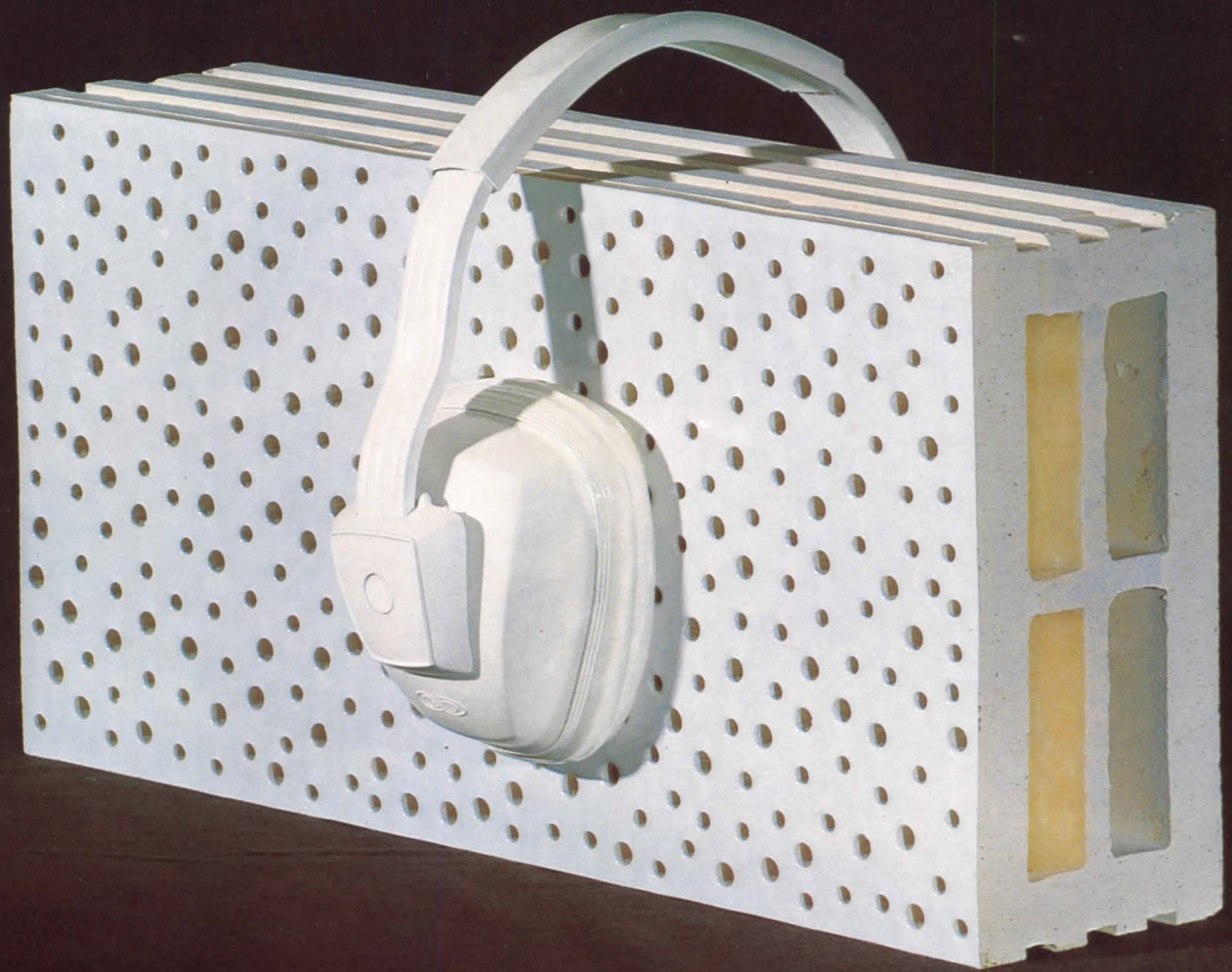
544,400 square feet, to be precise. For a new warehouse facility at Hill Air Force Base. The completed 1361' by 400' building could accommodate thirteen football fields.

The Corps of Engineers and the Air Force first considered making it an all concrete structure like its twenty year old counterpart next door.

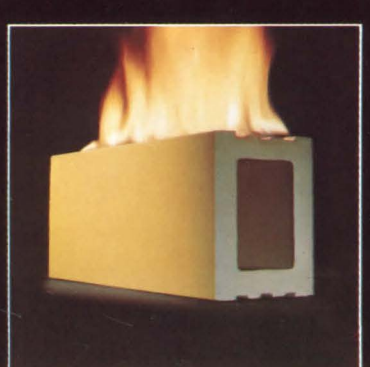
Then, Weyher Construction Company value engineered the structural system to see if they could reduce the contract price without altering the function or characteristics of the completed building. And to obtain the greatest possible savings they recruited Vulcraft to computer design steel joists and joist girders specifically for the job.

The resulting Value Engineering Change Proposal showed that an estimated $300,000 could be saved by using Vulcraft steel joists and joist girders instead of a reinforced concrete structural system.

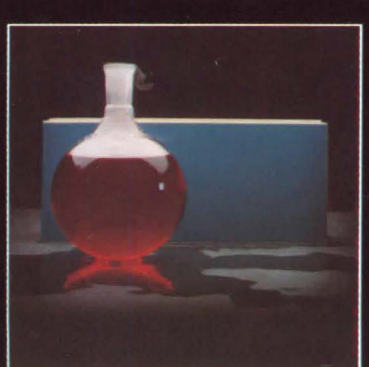
When the Army Corps of Engineers and the Air Force saw that Vulcraft joists and joist girders were the least expensive structural system for the job, they gave Weyher Construction the go ahead. Weyher then issued Vulcraft's orders: deliver the joists and joist girders fast. In time to meet the original contract deadline.



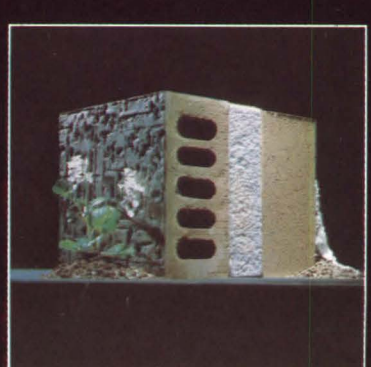
Stark Acoustical Tile absorbs sound and reduces sound transmission.
Lets you design noise control into problem areas.



Fire protection
Zero flame spread
Zero fuel contribution
Zero smoke density



Impervious surface
Fired on hard-as-glass finish



Insulation
"U" factor: 0.072
(10" insulated cavity brick and tile wall)

stark

Stark Ceramics, Inc.
P.O. Box 8880
Canton, OH 44711

Call toll free 1-800-321-0662
(In Ohio, call collect 216-488-1211)
Circle 112 on inquiry card

Stark Structural Tile is:
Glazed Facing Tile
Acoustical Tile
Textured Tile
Textured Acoustical Tile
. . . also utility and lustre finish utility brick and High Brick.

Long Island Home, Architect: Jay Lockett Sears, Quogue, Long Island; Wood surfaces treated with Cabot's #0241 Bleaching Oil for the weathered "driftwood" look.

Wood and Cabot's Stains...made for each other

Cabot's STAINS

Here is a wood at its wonderful best. The architect, in specifying a finish for this home, sought beauty and more...a finish that would stand up to summer sun and winter cold, that would require minimum maintenance while protecting the wood for a long, trouble-free life. His choice: Cabot's Stains.

Cabot's Stains, in 87 unique colors, enhance the wood grain, grow old gracefully, never crack, peel, or blister...are ideal for shingles, siding, clapboards, paneling, and decking. In terms of natural beauty, economy, and ease of application, Cabot's Stains are best for all types of wood, exterior or interior, and all wood surfaces, smooth, striated, or rough-sawn.

Cabot's patented colloidal manufacturing process assures exacting standards of color, deep penetration, and wood preservation. In a world that is constantly shouting "new," Cabot's Stains are very proud to be "old, the original, and still the best."

For color cards and information, write:

Samuel Cabot Inc.

One Union St., Dept. 429, Boston, Massachusetts 02108

"Cabot's Stains, the Original Stains and Standard for the Nation since 1877"

Circle 113 on inquiry card